

# Measuring Realignment



**COST-BENEFIT ANALYSIS**

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**MICHAEL WILSON**



# What is cost-benefit analysis



- An approach to policymaking
- A systematic tool for evaluating public policy
- A method to weigh options
- A way for finding out what will achieve the greatest results at the lowest cost

# Why use cost-benefit analysis

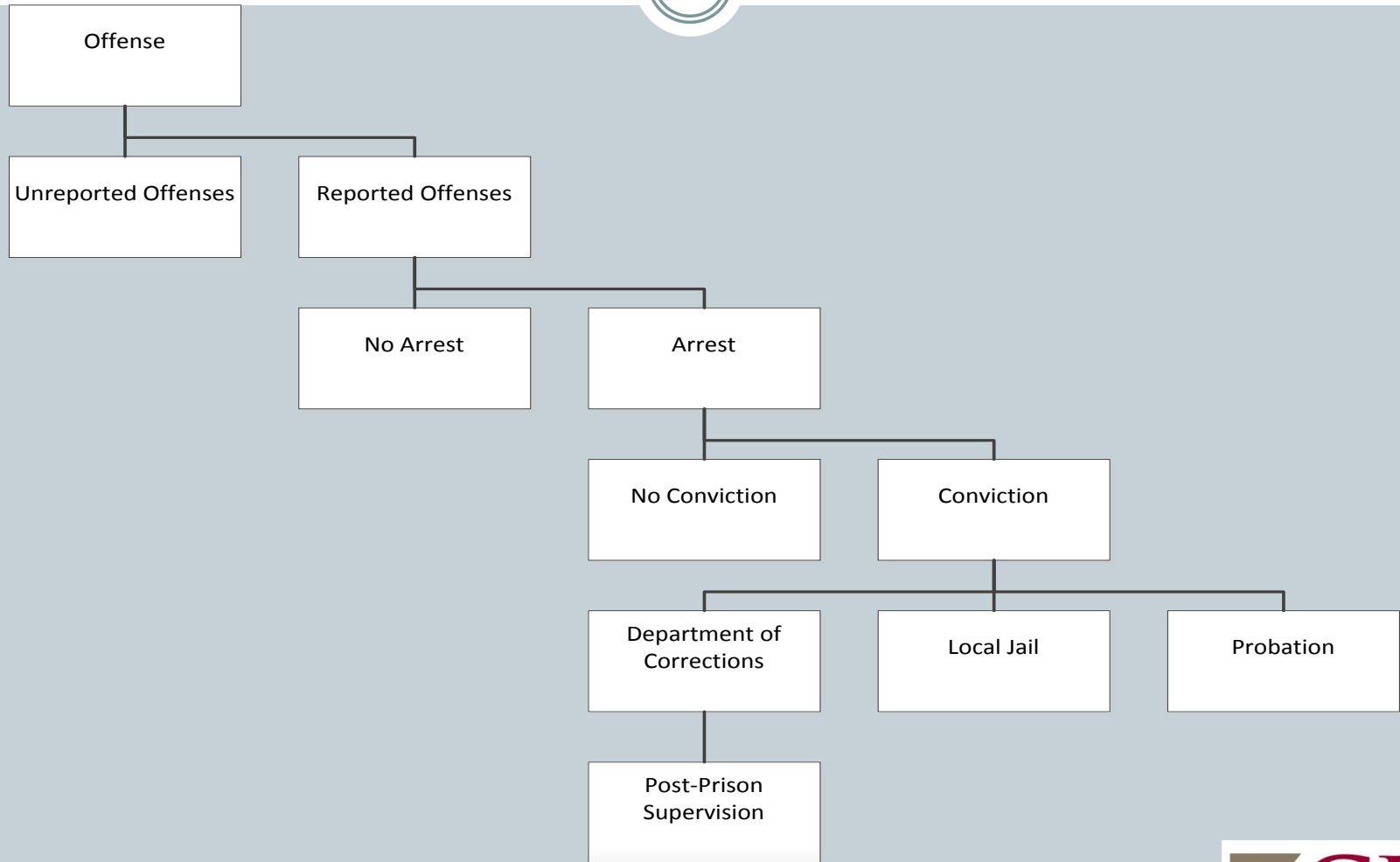


- **Strengths:**
  - Inform policy
  - Efficient use of resources
  - Common measurement
- **Limitations:**
  - Accuracy
  - Dependent on assumptions

# Cost-Benefit Model



# Offender resource use



# Costs by crime type

- Murder/manslaughter
- Sex offense
- Robbery
- Assault
- Property
- Drug
- Other
- Misdemeanor

# Resource Use: Taxpayer Costs

- Police
- Courts
- Juvenile detention state
- Juvenile detention county
- Juvenile probation
- Juvenile parole
- Juvenile county supervision
- Adult probation
- Adult jail (county)
- Adult prison
- Adult post prison supervision

# Victimization costs



- How can we estimate costs to victims?
- Victimization estimates:
  - National Institute of Justice, *Victim Costs and Consequences: A New Look* (1996)
  - K. E. McCollister, M. T. French, & H. Fang (2010). The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation. *Drug and Alcohol Dependence*, 108(1), 98-109.
- Tangible and intangible losses
- Loss estimates



# Costs by crime and resource



## Taxpayer and Victimization Costs of one Felony Conviction

	Taxpayer Costs					
	Homicide	Rape	Robbery	Aggravated Assault	Property	Other
Arrest	\$670	\$670	\$1,082	\$953	\$944	\$944
Conviction	\$152,378	\$18,770	\$9,865	\$4,877	\$201	\$201
Probation	\$0	\$1,273	\$352	\$935	\$742	\$1,590
Post-Prison Super.	\$32,583	\$16,101	\$7,402	\$6,006	\$4,216	\$2,693
Dept. of Corrections	\$164,458	\$66,785	\$59,796	\$34,800	\$23,350	\$12,378
Jail	\$20,884	\$4,262	\$4,213	\$3,236	\$2,098	\$1,949
<b>Total Taxpayer</b>	<b>\$370,973</b>	<b>\$107,861</b>	<b>\$82,709</b>	<b>\$50,807</b>	<b>\$31,551</b>	<b>\$19,755</b>
	Victimization Costs					
Out of Pocket	\$564,061	\$13,462	\$6,462	\$13,248	\$5,789	\$0
Quality of Life	\$6,456,536	\$480,262	\$9,747	\$20,459	\$0	\$0
<b>Total Tax and Victim</b>	<b>\$7,391,570</b>	<b>\$601,585</b>	<b>\$98,919</b>	<b>\$84,515</b>	<b>\$37,340</b>	<b>\$19,755</b>

# Application of cost benefit: three examples

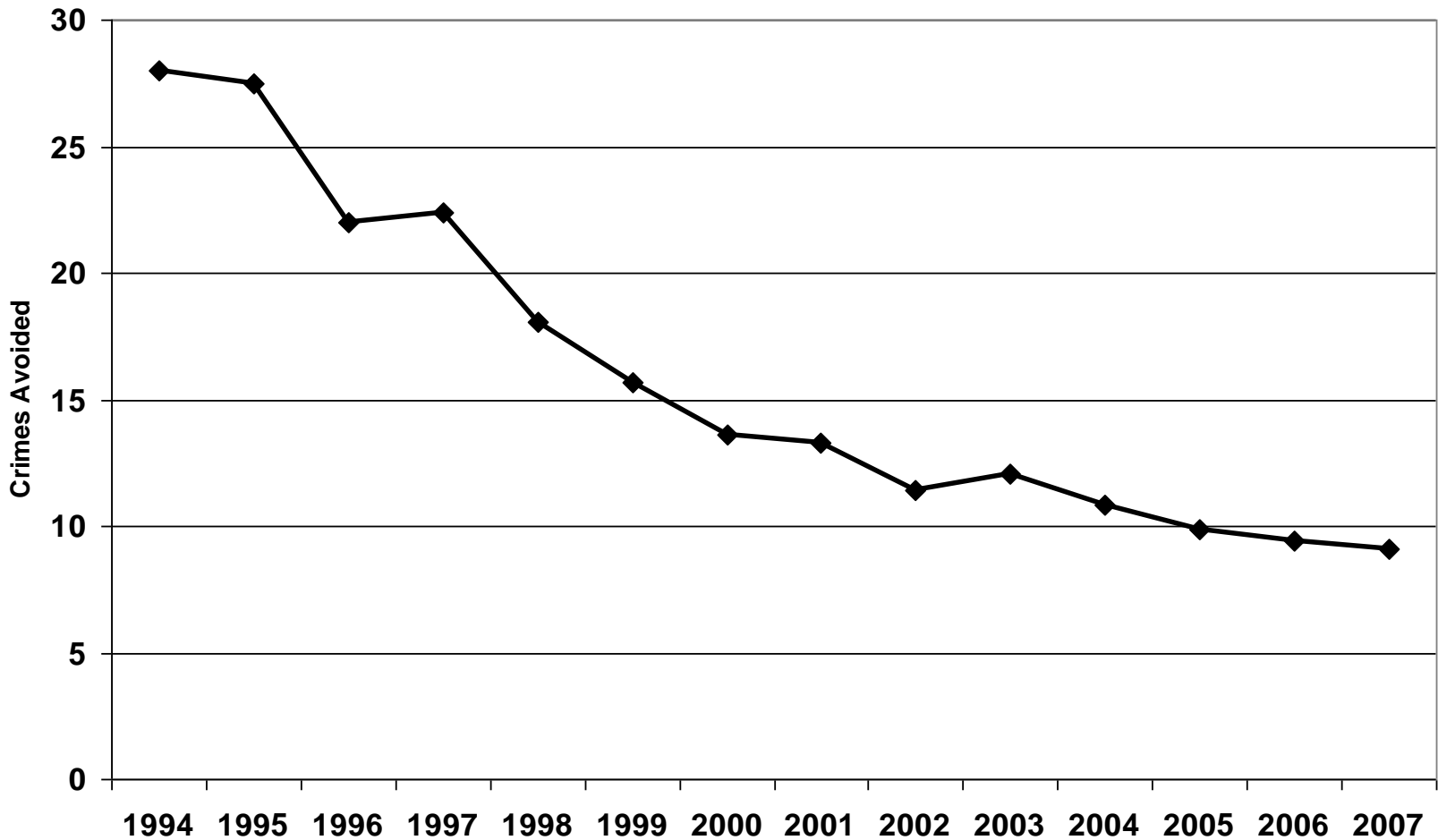


# Example 1: Prison economics



- What is the impact of incarceration on crime?
  - The Oregon Criminal Justice Commission found that a 10% increase in the incarceration rate leads to a 2.6% reduction in crime.
  - Others, including the Washington State Institute of Public Policy (WSIPP), have found similar results.
- How many crimes are avoided by incarceration?
- What is the cost-benefit ratio of incarceration?

## Crimes Avoided by Incarcerating an Additional Offender



Source: Oregon Criminal Justice Commission

# Cost-Benefit Analysis of Incarceration



<b>Cost-Benefit Analysis of Incarceration</b>				
	<b>Oregon</b>	<b>Washington</b>		
<b>Year</b>	<b>All</b>	<b>Violent</b>	<b>Property</b>	<b>Drug</b>
<b>1994</b>	\$2.78	\$9.57	\$2.36	\$0.37
<b>1995</b>	\$2.42	\$8.20	\$2.40	\$0.37
<b>1996</b>	\$1.98	\$7.06	\$2.23	\$0.34
<b>1997</b>	\$1.81	\$6.58	\$2.22	\$0.36
<b>1998</b>	\$1.60	\$5.85	\$1.94	\$0.36
<b>1999</b>	\$1.31	\$5.37	\$1.74	\$0.32
<b>2000</b>	\$1.10	\$5.24	\$1.61	\$0.31
<b>2001</b>	\$1.11	\$4.87	\$1.46	\$0.28
<b>2002</b>	\$0.95	\$4.46	\$1.20	\$0.26
<b>2003</b>	\$1.01	\$4.82	\$1.26	\$0.29
<b>2004</b>	\$1.01	\$4.33	\$1.18	\$0.32
<b>2005</b>	\$0.93	\$4.35	\$1.10	\$0.35
<b>2006</b>	\$0.96	N/A	N/A	N/A
<b>2007</b>	\$0.91	N/A	N/A	N/A

Source: Oregon Criminal Justice Commission and WSIPP

# Example 2: Cost-benefit and programs



- Determine the impact of the program.
- Determine whose perspective(s) matter.
- Measure costs (in dollars).
- Measure benefits (in dollars).
- Compare costs and benefits.

# Determine the impact of the program

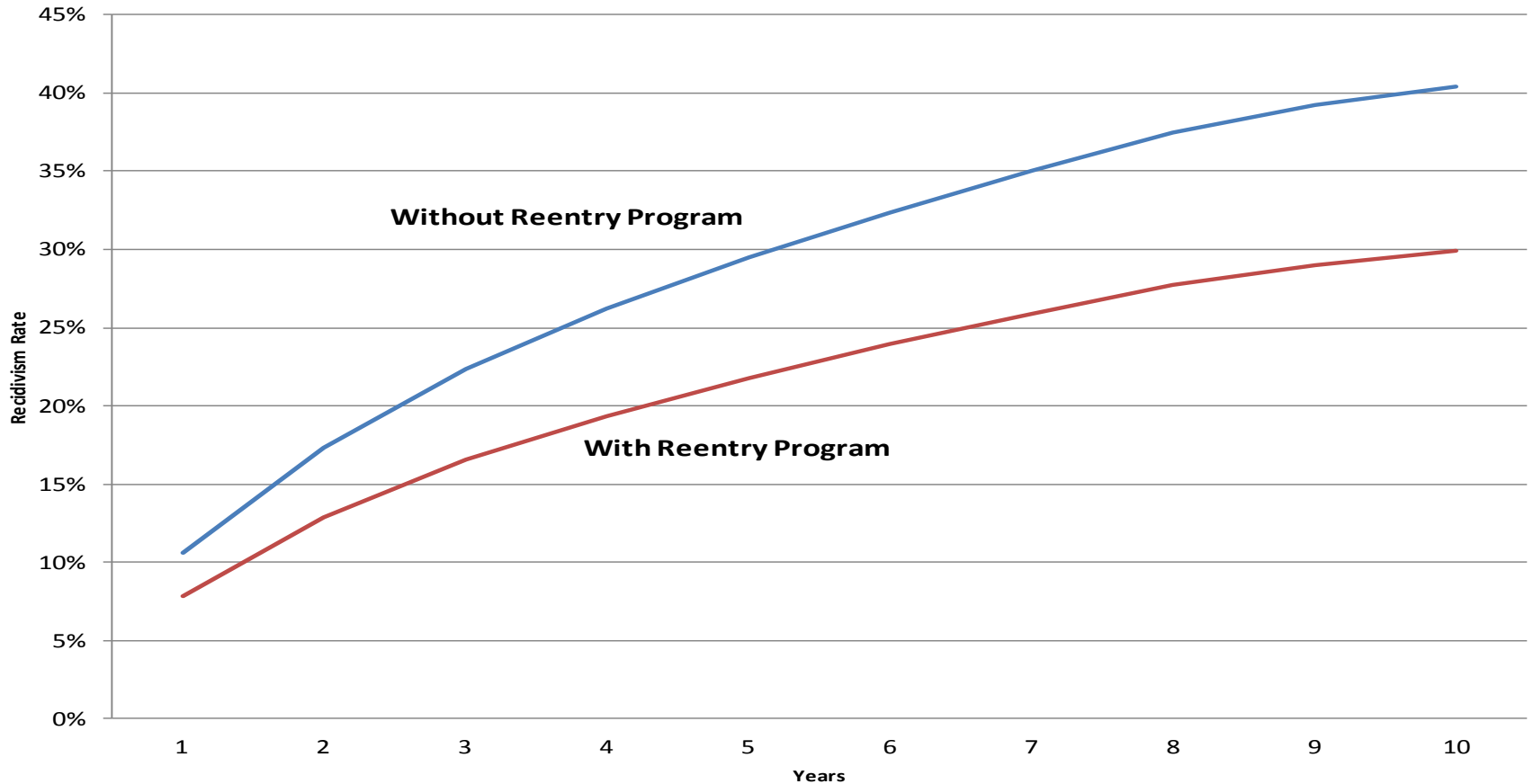


- Do Oregon's reentry programs reduce recidivism?
- Is there an evaluation of the program in your jurisdiction?
  - Yes, they were estimated to reduce recidivism by 26%.
  - If no evaluation in your jurisdiction can look at national research of similar programs (meta-analysis).

# Reentry programs reduced recidivism by 26%



**10 Year Recidivism Rate**





# Measure benefits (in dollars)



- Taxpayer benefits (avoided costs):
  - Costs per conviction
  - Average number of convictions avoided per participant
- Victimization benefits (avoided costs):
  - Costs per conviction
  - Average number of convictions avoided per participant

# Benefit cost analysis of reentry program



<b>Benefit Cost Analysis of Reentry</b>	
<b>Benefits of Reduced Recidivism</b>	
Criminal Justice Tax Payer Cost Avoided per Participant	\$7,118
Crime Victim Costs Avoided per Participant	\$15,226
Total Crime-Related Costs Avoided per Participant	\$22,344
<b>Cost of the Reentry Program</b>	\$3,419
<b>Net Gain per Participant</b>	\$18,925
<b>Benefit-to-Cost Ratio</b>	\$6.54

# CBA of other criminal justice programs

Topic Area/Program	Monetary Benefits			Costs	Summary Statistics			
	Total Benefits	Taxpayer	Non-Taxpayer		Benefits Minus Costs (net present value)	Benefit to Cost Ratio <sup>1</sup>	Rate of Return on Investment <sup>1</sup>	Measure of Risk (odds of a positive net present value)
Benefits and costs are life-cycle present-values per participant, in 2010 dollars. While the programs are listed by major topic area, some programs attain benefits in multiple areas. Also, some programs achieve benefits that we cannot monetize. See Technical Appendix I for program-specific details.								
<b>Juvenile Justice</b>								
Aggression Replacement Training (Inst. <sup>2</sup> )	\$66,954	\$13,669	\$53,285	(\$1,473)	\$65,481	\$45.50	n/e	93%
Functional Family Therapy (Inst.)	\$60,539	\$13,719	\$46,820	(\$3,198)	\$57,341	\$18.98	n/e	99%
Aggression Replacement Training (Probation)	\$36,043	\$8,144	\$27,898	(\$1,476)	\$34,566	\$24.44	n/e	93%
Functional Family Therapy (Probation)	\$37,739	\$8,536	\$29,203	(\$3,190)	\$34,549	\$11.86	641%	99%
Multidimensional Treatment Foster Care	\$40,787	\$8,343	\$32,443	(\$7,739)	\$33,047	\$5.28	142%	85%
Multisystemic Therapy (MST)	\$29,302	\$6,521	\$22,782	(\$7,206)	\$22,096	\$4.07	28%	91%
Family Integrated Transitions (Inst.)	\$27,020	\$5,448	\$21,572	(\$10,968)	\$16,052	\$2.47	17%	86%
Drug Court	\$12,737	\$2,859	\$9,878	(\$3,024)	\$9,713	\$4.22	38%	80%
Coordination of Services	\$5,270	\$1,340	\$3,930	(\$386)	\$4,884	\$13.63	444%	78%
Victim Offender Mediation	\$3,922	\$977	\$2,946	(\$566)	\$3,357	\$6.94	89%	90%
Scared Straight	(\$6,031)	(\$1,591)	(\$4,440)	(\$63)	(\$6,095)	n/e	n/e	1%
<b>Adult Criminal Justice</b>								
Dangerously Mentally Ill Offenders	\$103,596	\$24,391	\$79,205	(\$31,626)	\$71,969	\$3.28	19%	100%
Drug Offender Sentencing Alternative: drug offenders	\$28,013	\$6,680	\$21,333	(\$1,511)	\$26,502	\$18.57	n/e	99%
Correctional Education in Prison	\$19,923	\$4,785	\$15,138	(\$1,102)	\$18,821	\$18.11	n/e	100%
Electronic Monitoring	\$17,068	\$4,068	\$13,000	\$1,044	\$18,112	n/e	n/e	100%
Vocational Education in Prison	\$19,083	\$4,634	\$14,449	(\$1,537)	\$17,547	\$12.43	n/e	100%
Drug Treatment in the Community	\$15,419	\$3,671	\$11,748	(\$2,102)	\$13,317	\$7.35	n/e	100%
Drug Offender Sentencing Alternative: prop. offenders	\$14,324	\$3,410	\$10,914	(\$1,513)	\$12,811	\$9.47	n/e	76%
Mental Health Court	\$14,230	\$3,424	\$10,806	(\$2,878)	\$11,352	\$4.95	44%	100%
CBT (in prison)	\$10,741	\$2,588	\$8,153	(\$217)	\$10,524	\$49.55	n/e	99%
Drug Treatment in Prison	\$14,351	\$3,467	\$10,883	(\$3,894)	\$10,456	\$3.69	25%	100%
Intensive Supervision: with treatment	\$17,521	\$4,216	\$13,305	(\$7,712)	\$9,809	\$2.28	11%	96%
Drug Court	\$11,750	\$2,644	\$9,106	(\$4,099)	\$7,651	\$2.87	18%	100%
CBT (in the community)	\$7,739	\$1,848	\$5,891	(\$217)	\$7,522	\$35.70	n/e	99%
Work Release	\$6,466	\$1,552	\$4,914	(\$649)	\$5,817	\$9.97	n/e	97%
Correctional Industries in Prison	\$6,398	\$1,546	\$4,851	(\$1,387)	\$5,011	\$4.63	36%	100%
Community Employment Training/Job Assistance	\$4,641	\$1,104	\$3,537	(\$132)	\$4,509	\$35.13	n/e	100%
Intensive Supervision: surveillance only	(\$556)	(\$132)	(\$424)	(\$4,050)	(\$4,606)	(\$0.14)	n/e	10%
Domestic Violence Perpetrator Treatment Programs	(\$3,724)	(\$886)	(\$2,839)	(\$1,335)	(\$5,059)	(\$2.91)	n/e	20%

Source: Washington State Institute for Public Policy (2011)

# Example 3: Cost-benefit and risk assessment

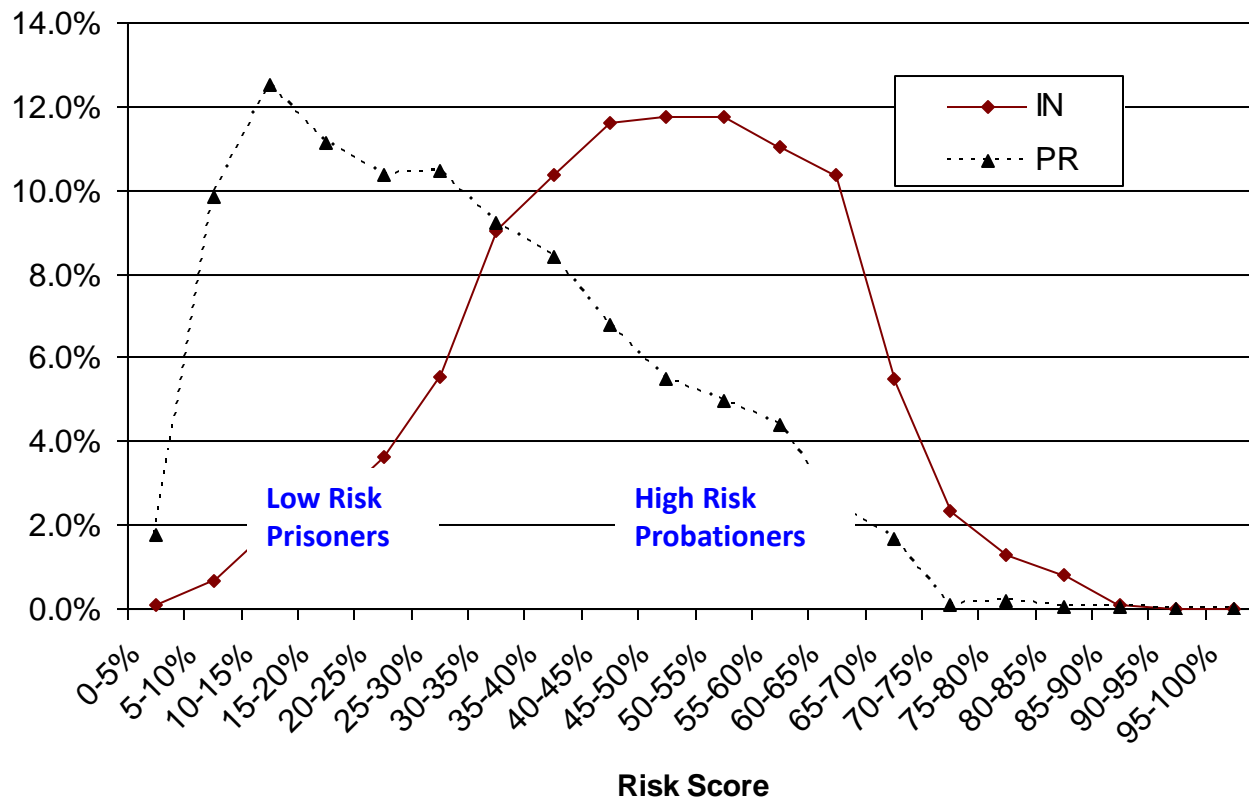


- Examine property offenders from 2005-2007
- Examined their risk of being reconvicted of a felony
- Overlap where some high risk property offenders were sentenced to prison and some low risk property offenders were sentenced to probation
- By using risk at sentencing it is possible to save prison beds while keeping crime constant or to reduce crime while keeping beds constant

# Distribution of risk score by sentence type



**Risk Scores by Sentence Type**  
Property Convictions 2005-2007



# Swap high risk probationers with low risk prisoners



- Method 1 – Prison bed neutral
  - Move 650 high risk probationer to prison
    - ✦ Expect to avoid 350 felony arrests
  - Move 650 low risk prisoners to probation
    - ✦ Expect to have 240 felony arrests
  - Savings of 110 felony arrests
  - Using the cost-benefit model we avoid an estimated \$3.9 million in costs to tax payers and crime victims

# Swap high risk probationers with low risk prisoners



- **Method 2 – Crime neutral**
  - Move 780 low risk prisoners to probationer
    - ✦ Expect to have 900 felony arrests
  - Move 550 high risk probationers to prison
    - ✦ Expect to avoid 940 felony arrests
  - Savings of 230 prison beds and avoids 40 felony arrests
  - Using the cost-benefit model based on Oregon's cost of incarceration we save \$3.4 million to tax payers

# Big picture take-aways



- Research shows that programs can reduce crime and victimizations while reducing future spending.
- CBA can provide a framework to compare across policy choices and improve public safety.



# Contact Information



- Michael Wilson, Economist and Research Consultant
  - [michaelkeithwilson@hotmail.com](mailto:michaelkeithwilson@hotmail.com)
  - 503-949-8702