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THE CRIMINAL JUSTICE SYSTEM IN WASHINGTON STATE: INCARCERATION RATES, TAXPAYER COSTS, CRIME RATES, AND PRISON ECONOMICS

This report reviews basic information on Washington's criminal justice system and the level of crime in the state. The purpose is to provide policymakers with a "big picture" summary of long-term trends and relationships.

The report is organized in four parts. First, we present historical information on state and local incarceration rates in Washington. Second, we draw a fiscal portrait of the taxpayer cost of Washington's criminal justice system over the last quarter century. We then review information on crime rates in Washington. Finally, we present an analysis of how the increased use of incarceration in Washington has affected crime rates, as well as our current estimates of the costs and benefits of incarceration in Washington. Contact: Steve Aos at (360) 586-2740, or saos@wsipp.wa.gov.

Part One of Four: The Use of Incarceration in Washington: 1960 to 2002

Washington's Sentencing Laws.¹ Each of the 50 states has developed its own system for sentencing adults and juveniles convicted of felonies. The main sentencing decisions that must be made in each state include determining which offenders will be incarcerated, and for how long.

In more than half the states, judges in the judicial branch of government have wide flexibility in making these decisions. Also, executive branch agencies (parole boards and correctional agencies) in these states typically have considerable influence over how long offenders remain incarcerated.

In contrast, in Washington the legislature has asserted the primary role in determining these

decisions for felony offenses. As a result of bills passed in 1977 for juveniles and 1981 for adults, Washington has a form of "determinate" sentencing.

Under this system, the Washington legislature enacts statewide adult and juvenile "sentencing grids" that judges must use to sentence convicted offenders.² Judges can make case-by-case exceptions to the legislature's juvenile and adult grids, but the law presumes that the grids will determine the sentences received for nearly all offenders.³ County prosecutors also have a central role in Washington's sentencing system by determining the charges that are filed in a case.⁴

Since passage of the 1977 and 1981 laws, the legislature has periodically returned some discretion to the judicial and executive branches. The sentencing framework established over 20 years ago, however, continues to operate for most sentencing decisions.

While Washington is one of 14 states with a form of determinate sentencing for adults, Washington is the only state with a juvenile determinate sentencing system.

Incarceration Rates Have Increased. Since the early 1980s, policymakers in Washington and other states have turned to incarceration as the primary public policy to combat crime and administer justice. The magnitude of this change in public policy can be understood by examining

¹ For a full history of Washington's juvenile and adult sentencing systems, see D. Boerner and R. Lieb, "Sentencing Reform in the Other Washington," in *Crime and Justice: A Review of Research*, Volume 28, ed. Michael Tonry (Chicago: University of Chicago Press, 2001).

² Washington's adult and juvenile grids include two basic factors: the severity of an offender's current offense, and the offender's prior criminal history. The grid determines the range of sanctions a judge must impose.

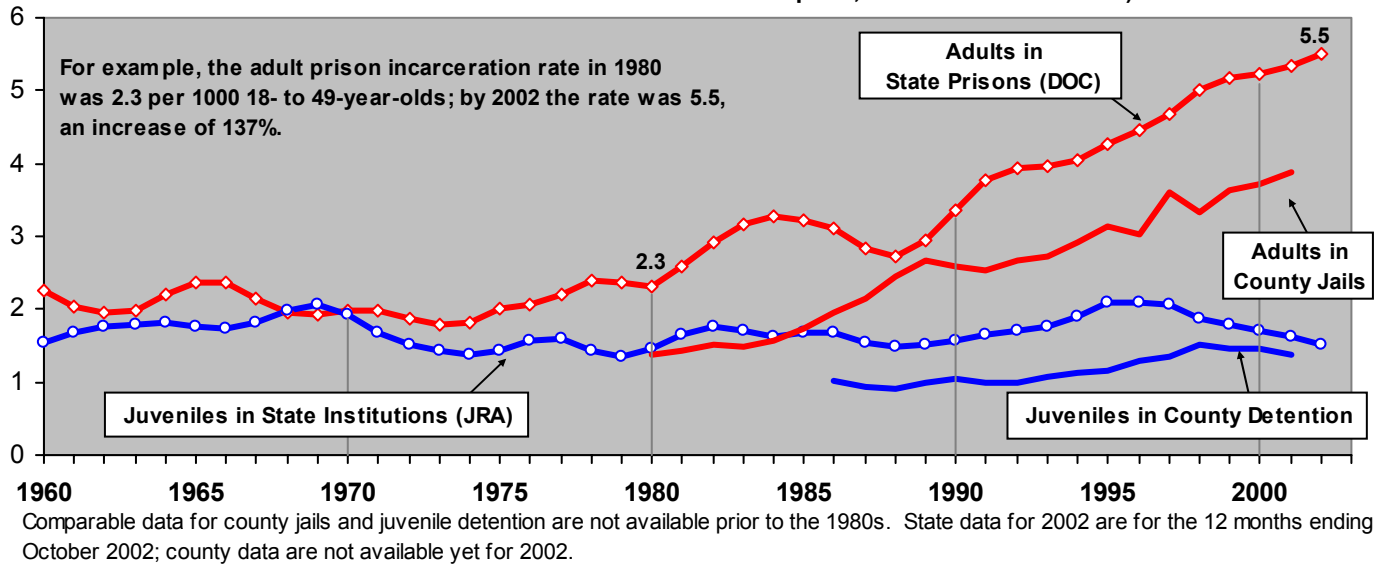
³ The record indicates that this presumption is correct. Recent data show that judges impose sentences outside the grid's ranges in only 3.6 percent of adult cases and 2.3 percent of juvenile cases. Source: Institute analysis of data from: State of Washington Sentencing Guidelines Commission, *Statistical Summary of Adult Felony Sentencing, Fiscal Year 2001*, and the Governor's Juvenile Justice Advisory Committee, *2001 Juvenile Justice Report*.

⁴ Boerner and Lieb (2001) p. 96-97.

Figure 1

Adult and Juvenile Incarceration Rates in Washington: 1960 to 2002

(The Number of Adults Incarcerated Per 1,000 18- to 49-Year-Olds, and the Number of Juveniles Incarcerated per 1,000 10- to 17-Year-Olds)



statistical indicators known as “incarceration rates.” An incarceration rate simply measures, for any point in time, the number of people behind bars out of every 1,000 people living in the state.⁵

Under Washington’s sentencing laws, there are four types of confinement and, therefore, there are four relevant incarceration rates. Adults convicted of crimes can be sentenced to serve time in state prisons or county jails, depending on the seriousness of the crime and the criminal history of the offender. Similarly, juvenile offenders can be sentenced to confinement in state juvenile institutions or county detention facilities.⁶ Figure 1 displays long-run incarceration rates on these four types of confinement.

State Prisons. On an average day in 1980, about 2.3 people per 1,000 18- to 49-year-olds were behind bars in state adult prisons operated by the Department of Corrections (DOC). As of late 2002, there were about 5.5 inmates locked up in DOC

prisons per 1,000 people. Thus, Washington’s state adult prison incarceration rate, which had been quite stable between 1960 and 1980, has more than doubled over the last two decades.⁷

County Jails. Figure 1 also shows that the incarceration rate for adult offenders in county jails has increased significantly since the early 1980s—growing from about 1.4 people per 1,000 10- to 49-year-olds on an average day in 1980, to 3.9 in 2001. This means that the local jail incarceration rate has grown by 184 percent over those years.

State Juvenile Facilities. The juvenile incarceration rate in state institutions operated by the Juvenile Rehabilitation Administration (JRA) has been much more stable over the long term and has declined in recent years. Today, the JRA incarceration rate is almost identical to the rate in 1960, 42 years ago.⁸

County Juvenile Facilities. Unlike the relative stability in the *state* juvenile rate, however, the *county* juvenile detention rate is today about 35 percent higher than it was in the late 1980s, although its growth has leveled off recently.

⁵ Technical note: In this report, we express *adult* incarceration rates as the number of people behind bars per 1,000 18- to 49-year-olds in Washington, and we calculate *juvenile* incarceration rates as the number of juveniles locked up per 1,000 10- to 17-year-olds. Adult and juvenile incarceration rates in state facilities can be calculated back to 1960. Reliable data for local adult jails and juvenile detention facilities are only available beginning in the 1980s. The juvenile detention average daily population estimates were derived by the Institute with detention admission data reported by the Governor’s Juvenile Justice Advisory Committee.

⁶ In Washington, a person under 18 years of age who commits a criminal offense is subject to the state’s juvenile justice laws. As a result of legislative changes in the 1990s, however, 16- and 17-year-olds accused of certain serious offenses are automatically adjudicated in the adult criminal justice system.

⁷ An even longer-term analysis of the DOC incarceration rates (not shown here) reveals that rates were quite stable (between 2 and 3 inmates per 1,000 adults) from 1925 to the early 1980s.

⁸ As a result of laws passed in the 1990s, (see footnote 6) more juvenile offenders are now in DOC prisons rather than JRA facilities. If these changes hadn’t been made, JRA’s incarceration rate would be higher today—it would be about 1.9 per 1,000 youth instead of 1.5 per 1,000).

How do Washington's incarceration rates compare with those in the rest of the United States? Unfortunately, reliable statistical comparisons between Washington and national data can only be made for adult prisons, not for the other three types of confinement just described.

The comparable prison data indicate that Washington's policymakers have not been alone in increasing the use of incarceration for adult offenders. In fact, the rest of the United States has seen incarceration rates grow much faster than Washington's. Table 1 shows that while Washington's rate increased 125 percent between 1980 and 2000, the national rate grew by 220 percent. As of 2000, Washington's adult prison incarceration rate was about half (55 percent) of the national rate.

Table 1
Comparison of State Prison Incarceration Rates
(Adults Incarcerated per 1,000 18- to 49-Year-Olds)

Year	Washington	United States
1980	2.32	2.94
2000	5.22	9.42
Percent Change	+125%	+220%

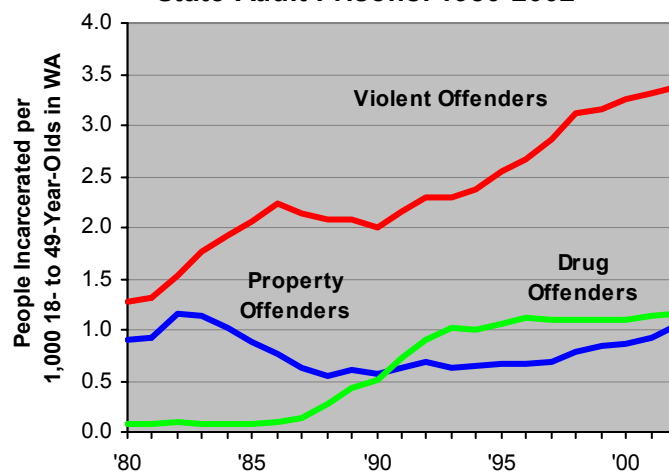
Source: Institute analysis of data reported by the U.S. Department of Justice, Bureau of Justice Statistics.

Changes in the "Mix" of Adult Offenders in State Correctional Facilities. Washington's prisons are filled with offenders who have been convicted of many different types of crimes. These crimes can be grouped into three broad categories: violent crimes, property crimes, and drug crimes. Figure 2 highlights adult prison incarceration rates for these three types of offenders.

Violent offenders—those convicted of murder, sex offenses, robbery, and aggravated assault—make up the largest portion (60 percent in 2002) of all offenders incarcerated in state prisons. Figure 2 shows that the violent offender incarceration rate has grown significantly during the 1990s and continues to rise.

Figure 2 also plots the incarceration rates for property offenders—those convicted of burglaries, theft, motor vehicle theft, and other property crimes—and drug offenders. The incarceration rate of property offenders dropped during the 1980s; it has, however, increased in the last few years and is now about where it was in 1980. Today, property offenders make up 19 percent of the prison population.

Figure 2
The Type of Offenders Incarcerated in State Adult Prisons: 1980-2002



The incarceration rate for drug offenders grew significantly between the late 1980s and the mid-1990s and has been relatively stable in the last several years. Drug offenders make up 21 percent of DOC's current prison population.

Part Two of Four: The Taxpayer Cost of Washington's Criminal Justice System: 1975 to 2001

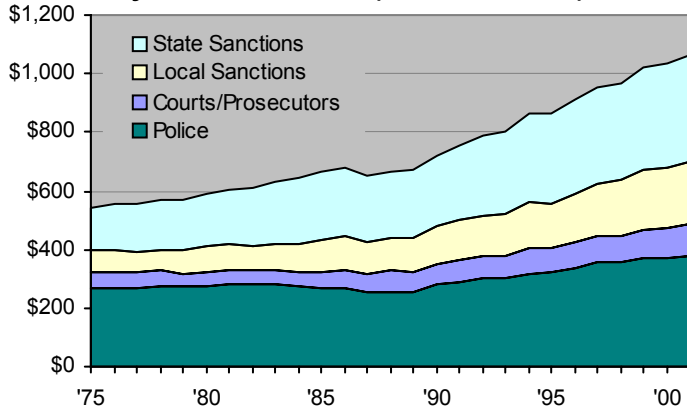
The taxpayer cost of Washington's criminal justice system has increased significantly in recent years. The system in Washington can be analyzed fiscally in terms of four components:

1. Police;
2. Criminal courts and prosecutors;
3. Local government adult and juvenile sanctions including jail, juvenile detention, and local community supervision; and
4. State government adult and juvenile sanctions (the department of corrections and the juvenile rehabilitation administration).

Figure 3, on page 4, provides fiscal information from 1975 to 2001 for these four sectors of Washington's criminal justice system. To make the dollar amounts meaningful over time, we removed the general rate of inflation. We also divided expenditures by the number of households in the state to make the numbers even more comparable over time. Thus, Figure 3 shows inflation-adjusted criminal justice spending per household over the last 27 years—a "big picture" view of state and local government spending on crime.

Figure 3

The Per Household Taxpayer Cost of Washington's Criminal Justice System: 1975-2001 (in 2001 dollars)



Data Source: Washington State Auditor, Legislative Fiscal Committees

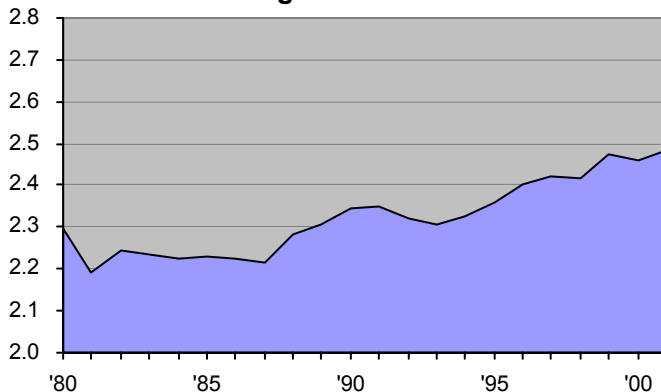
Figure 3 indicates that there has been a substantial increase in the level of public spending on Washington's criminal justice system. Today, the average household in Washington spends about \$1,062 in taxes per year to fund the criminal justice system. In 1975 the typical household spent \$539. This means that inflation-adjusted taxpayer spending on the criminal justice expenditures has nearly doubled since 1975.

Why have expenditures increased? Two factors stand out: the growth of the local police force in Washington and, more importantly, the increased use of incarceration.

Figure 4 shows city and county police employment information. In 2001, there were 8,833 commissioned officers and 3.554 million people in the 10- to 49-year-old age group. This means that there were about 2.5 commissioned officers per 1,000 people in this key demographic group. In the early 1980s, there were about 2.2

Figure 4

Commissioned Police Officers Per 1,000 10- to 49-Year-Olds in Washington: 1980-2001



Data Source: Washington Association of Sheriffs & Police Chiefs

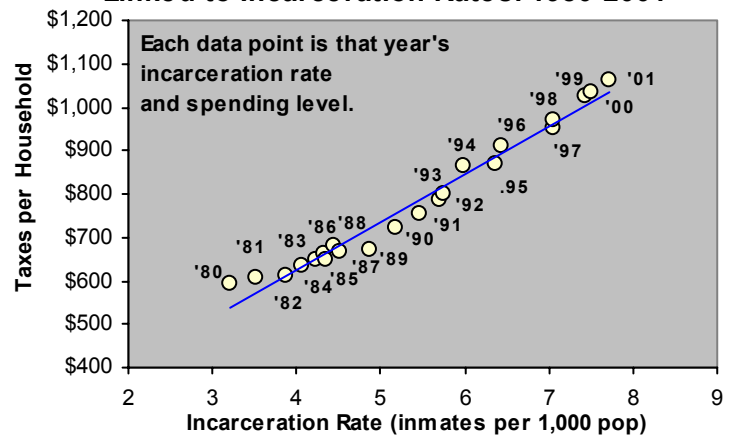
officers for every 1,000 people. Thus, the police employment rate has grown by about 13 percent over the last two decades, contributing to the rise in police expenditures shown on Figure 3.

The main factor driving criminal justice system spending, however, has been the increased use of incarceration in county jails and state prisons.

Figure 5 provides an indication of the strong historical relationship between total criminal justice system spending and the overall incarceration rate in Washington.⁹ Over the period for which data are available, total criminal justice system spending has increased in step with changes in the rate of incarceration.

Figure 5

Criminal Justice Spending Is Strongly Linked to Incarceration Rates: 1980-2001



Part Three of Four: Crime Rates in Washington: 1980 to 2001

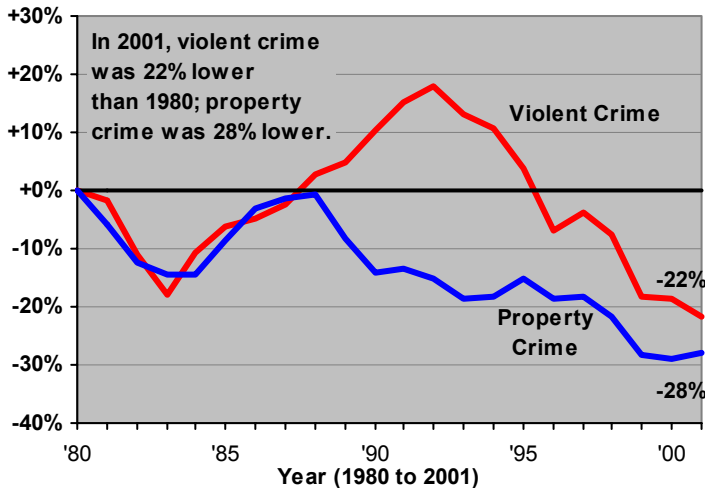
Crime Rates Have Dropped. If the increase in total taxpayer spending on the criminal justice system is the bad news, then the good news is that crime rates have declined significantly in recent years. Violent crime rates are 22 percent lower today than they were in 1980, and property crime rates are 28 percent lower.¹⁰

⁹ The "overall" incarceration rate shown in Figure 5 is the sum of the adult prison and jail rate and the juvenile rate in state JRA institutions. Local juvenile detention was left out of the overall rate because data for those facilities are not available prior to 1986.

¹⁰ Crime rates are calculated by dividing the total amount crime reported to police (by type of crime) by the total population in the state. The crime data are reported by the Washington Association of Sheriffs and Police Chiefs, which is part of the F.B.I.'s Uniform Crime Reporting program.

Figure 6

The Change, Since 1980, in Violent and Property Crime Rates in Washington



Data Source: Washington Association of Sheriffs & Police Chiefs

Figure 6 shows these trends from 1980 to 2001, the latest year available.¹¹ Violent crime rates increased significantly from the early 1980s until the peak year of 1992. Since then, the reported violent crime rate in Washington has dropped dramatically. Property crime rates, on the other hand, have generally declined throughout the entire period with a rise only during the mid 1980s.

How do the trends in Washington's crime rates compare with those in the rest of the United States? Table 2 shows that Washington's *violent* crime rate is lower than the national rate and that it declined faster between 1980 and 2001. Washington's *property* crime rate, on the other hand, is higher than the rest of the United States and the rate of decline has been smaller. *In broad measure, however, Washington's and the nation's crime rates tell the same story: crime rates are significantly lower today than 22 years ago.*

Table 2
Comparison of Crime Rates
In Washington and the United States
(Reported Crimes per 1,000 People)

Year	Violent Crime		Property Crime	
	WA	U.S.	WA	U.S.
1980	4.52	5.97	66.21	53.53
2001	3.53	5.04	47.69	36.56
Percent Change	-22%	-15%	-28%	-32%

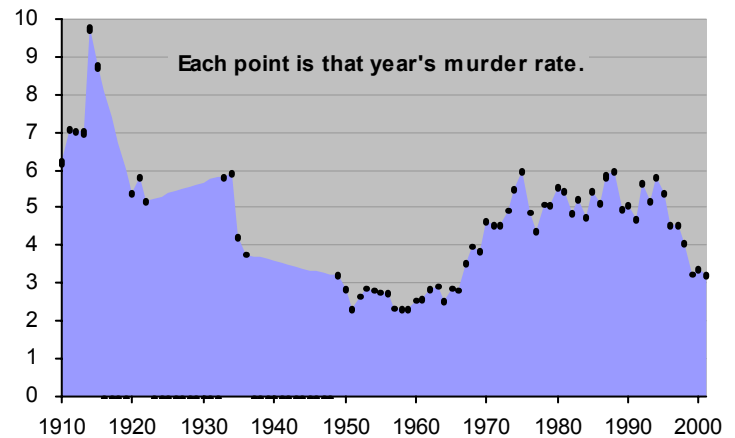
Source: Institute analysis of data from the F.B.I. and the Washington Association of Sheriffs and Police Chiefs

¹¹ We use 1980 as the first year in this analysis because that is when data on crimes reported to police were aggregated at the state level by the Washington Association of Sheriffs and Police Chiefs.

Another way to examine long-run trends in crime rates in Washington is to focus on the most serious crime: murder. Figure 7 shows data back to 1910 on murder rates as determined by county coroners as the cause of death. The data indicate that murder rates were considerably higher in the first part of the 20th century in Washington than they are today. In fact, a person was much more likely to be a murder victim in 1912, 1922, or 1932, than in 2002. Since 1999, the murder rate in Washington has dropped to levels not seen since the 1950s and early 1960s.

Figure 7

Murder Rates in Washington: 1910-2001
(murders per 100,000 population)



Data Source: Washington Dept. of Health, *Vital Statistics*. Data for some of the years prior to 1948 are not available; for those missing years, the data are interpolated on the chart.

To summarize the first three parts of this report:

1. Adult incarceration rates have more than doubled in the last two decades after being relatively stable from 1960 to 1980. Today, about 60 percent of state adult prisoners are violent offenders, 19 percent are property offenders, and 21 percent are drug offenders.
2. Juvenile incarceration rates in *state* facilities have been quite stable over the long run, while *local* juvenile detention rates have increased 35 percent since the late 1980s.
3. The taxpayer cost of the criminal justice system, in inflation-adjusted dollars per household, has nearly doubled in the last two decades, largely as a result of the increase in incarceration rates.
4. Both violent and property crime rates in Washington have dropped over 20 percent in the last two decades.

Part Four of Four: Prison Economics—Has Washington's Increased Incarceration Rate Affected the Crime Rate?

For about 30 years, academic experts have been arguing about the relationship between incarceration rates and crime rates. Some contend there is virtually no link between imprisonment and the crime rate. Others believe that a relationship exists—the only question is an empirical one: *how much* do changes in the incarceration rate affect the crime rate? An additional debate concerns the costs and benefits of using incarceration as a public policy to control crime. In this section, we examine these issues for Washington's system.

Significant strides have been taken in the last ten years to estimate the magnitude of the prison-crime relationship. Several independent studies conducted with national data have used improved statistical methods to investigate the question.¹² William Spelman of the University of Texas at Austin has summarized the findings of these recent studies.¹³ His conclusion is the following: **a ten percent increase in the state incarceration rate leads to a two-to-four percent reduction in the crime rate.** The same relationship works in reverse: a ten percent decrease in the state imprisonment rate results in a two-to-four percent increase in crime.

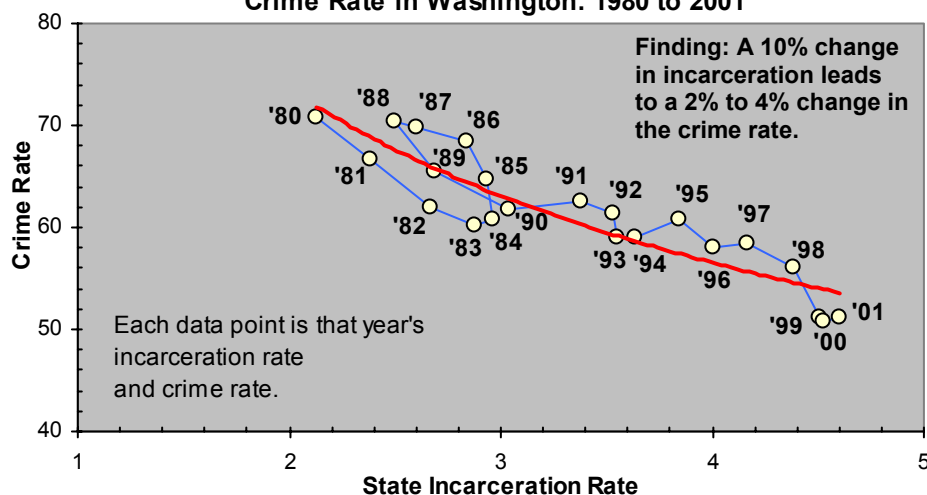
We examined whether Spelman's empirical conclusion applies to Washington. We found that it does.

Figure 8 plots incarceration rates and crime rates in Washington from 1980 to 2001.¹⁴ In 1980, for example, Washington had a state imprisonment rate of 2.1 per 1,000 10- to 49-year-olds and a crime rate of 70.7 crimes per 1,000 people in the state. The chart traces how this basic relationship evolved

between 1980 and 2001: in general, as the incarceration rate went up, the crime rate went down. The strength of this unadjusted prison-crime correlation for Washington is consistent with Spelman's conclusions from the national studies.

Figure 8 is just a simple plot of incarceration and crime rates. We also conducted a multivariate statistical analysis of Washington's prison-crime relationship, controlling for other factors that account for some of the change in crime rates since 1980. We included measures of Washington's local economy; the age-, gender-, ethnic-, and rural/urban-structure of Washington's county population; the size of the local police force and local jail use; and other fixed differences among Washington's counties. This in-depth analysis also produced results consistent with both the simple relationship shown on Figure 8, and Spelman's national findings.¹⁵

Figure 8
The Incarceration Rate's Influence on the Crime Rate in Washington: 1980 to 2001



Thus, the latest statistical evidence confirms that **by influencing the incarceration rate, policymakers do have an effect on the crime rate.** Two economic questions follow from this conclusion: How has the system's effectiveness changed over time, and what are the system's costs and benefits?

¹² Citations to these studies are listed in: S. Aos, *The 1997 Revisions to Washington's Juvenile Offender Sentencing Laws: an Evaluation of the Effect of Local Detention on Crime Rates*, (Olympia: Washington State Institute for Public Policy, 2002).

¹³ W. Spelman, "What Recent Studies Do (and Don't) Tell Us about Imprisonment and Crime," in *Crime and Justice: A Review of Research*, Volume 27, ed. Michael Tonry (Chicago: University of Chicago Press, 2002) p. 422.

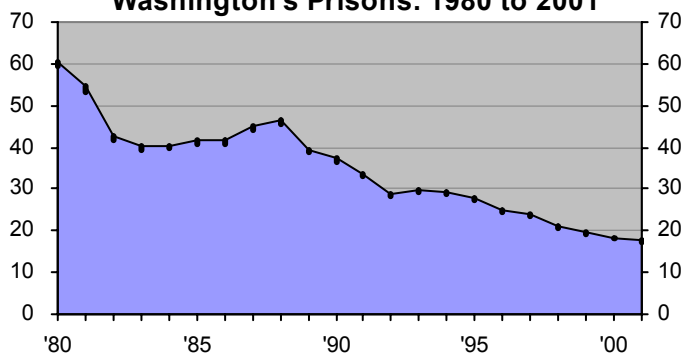
¹⁴ The data plotted in Figure 8 are state incarceration rates (DOC and JRA rates, combined, as shown in Figure 1, per 1,000 10- to 49-year-olds) and total crime rates (violent and property crime rates, combined, as shown in Figure 6).

¹⁵ Technical note: See footnote 1 to Table 3 on page 8 for the methodological details. The prison elasticity was a statistically significant $-.24$ ($p=.03$, White heteroskedasticity-consistent standard errors). The equation explained 80 percent of the variation in county crime rates. The equation did not, however, control for the simultaneity that exists between crime and prison, an omission known to *underestimate* the true effect of prison on crime. Thus, the estimated $-.24$ elasticity is lower than the true elasticity had we been able to control for the simultaneity. Based on findings from national studies that have estimated the simultaneity effect, we conclude that any elasticity between $-.3$ and $-.4$ is probably an accurate reflection of the overall prison-crime relationship for Washington.

The key to understanding the costs and benefits of prison as a crime-control strategy is the economic concept of **diminishing marginal returns**. When applied to prison policy, this fundamental axiom of economics means that, as Washington increased the incarceration rate significantly in the last two decades, the ability of the additional prison beds to reduce crime has declined. In 1980, the state had about two people per 1,000 behind DOC bars; today the rate is over five people per 1,000. Diminishing returns means that locking up the fifth person per 1,000 did not, on average, reduce as many crimes as did incarcerating the second, third, or fourth person per 1,000.¹⁶

Figure 9 summarizes our estimates of diminishing marginal returns for prison use in Washington (technical details are on page 8). When the state incarceration rate first began to expand in the early 1980s, there were, on average, 50 to 60 crimes avoided per year by imprisoning one more offender. As the prison system continued to expand, however, the number of crimes avoided per average new prisoner declined. By 2001, we estimate that about 18 crimes were avoided per year by adding a new prison bed.

Figure 9
**Crimes Avoided Per Year,
Per Average Inmate Added in
Washington's Prisons: 1980 to 2001**



Source: see the Technical Appendix on page 8.

Therefore, an increase in the incarceration rate today avoids considerably fewer crimes than it did just a decade or two ago. Diminishing marginal returns affects the effectiveness of prison in the same manner that diminishing returns affects any other industry—that is why it is one of the so-called “iron laws” of economics.

¹⁶ The ability of prison to reduce crime can happen in two ways: *incapacitation* (a greater proportion of the crime-prone population is locked up rather than on the streets) and *deterrence* (those not locked up do not commit as many crimes out of fear that they will be incarcerated). The analysis we present here measures the combined effect of these two factors.

The Bottom Line: The Costs and Benefits of State Incarceration. When incarceration (or any effective rehabilitative or prevention program) lowers the crime rate, benefits accrue to taxpayers and crime victims in the form of avoided costs. That is, when crime is reduced, taxpayers do not have to spend as much money on the criminal justice system, and there are also fewer crime victims. As we have seen, however, it costs taxpayers money to incarcerate people. We quantified these opposing factors to estimate the *net* economics of state incarceration.

As we showed on Figure 2, Washington has had very different patterns of incarceration rates for violent, property, and drug offenders. To be more useful for policy purposes, we analyzed separately the costs and benefits of Washington's incarceration rates for these three categories of offenders (the technical details are shown on Table 3 on page 8). Our conclusions are listed here.

Five Findings

1. Looking back to 1980, there was a substantial net benefit to taxpayers and crime victims to expand the prison system, especially for violent offenders. As incarceration rates were increased over the ensuing two decades, however, diminishing returns began to erode the benefits of continued prison expansion.
2. Today, incarcerating more violent and high-volume property offenders continues to generate more benefits than costs, although diminishing returns has reduced significantly the net advantage of increasing incarceration rates for these offenders.
3. During the 1990s, the economic bottom line for increasing the incarceration rate for drug offenders turned negative. That is, it now costs taxpayers more to incarcerate additional drug-involved offenders than the average value of the crimes avoided.
4. We find that, today, some researched-based and well-implemented rehabilitation and prevention programs can produce better returns for the taxpayer's dollar than prison expansion. For example, some drug treatment programs give taxpayers a better return than increasing the incarceration rate for drug-involved offenders.¹⁷
5. This analysis is a first step in applying business-like cost analysis to Washington's crime and prevention policies. Additional research on the costs and benefits of sentencing and prevention policies could help lead to a better allocation of taxpayer dollars.

¹⁷ For a list of programs with research-based evidence, see S. Aos, P. Phipps, R. Barnoski, R. Lieb, *The Comparative Costs and Benefits of Programs to Reduce Crime Version 4.0*, (Olympia: Washington State Institute for Public Policy, 2001).

Table 3

**Technical Appendix: Worksheet to Estimate Benefit-to-Cost Ratios for Incarceration Rates
for Violent, Property, and Drug Offenders in Washington: 1980, 1990, and 2001**

Type of Offender Incarcerated			Aggrav.							Motor Vehicle Theft	Total
Year			Murder	Rape	Robbery	Assault	Burglary	Theft			
Estimated Prison-Crime Elasticities¹	Violent	all years	-1.29	-0.50	0.00	-1.03	0.00	0.00	0.00	0.00	-
	Property	all years	0.00	0.00	-0.44	0.00	-0.69	-0.24	-0.58	-	-
	Drug	all years	0.00	0.00	-0.13	0.00	-0.11	0.00	-0.10	-	-
Crimes Reported to Police²	-	1980	224	2,161	5,529	10,748	76,226	181,187	16,171	292,246	
	-	1990	236	3,093	6,313	14,628	61,145	193,396	21,660	300,470	
	-	2001	177	2,596	5,877	12,433	52,851	193,465	38,614	306,012	
Percent of Actual Crime Reported to Police³	-	1980	100%	33%	57%	54%	51%	27%	69%	37%	
	-	1990	100%	33%	50%	59%	51%	29%	75%	39%	
	-	2001	100%	33%	61%	59%	54%	30%	82%	43%	
Crimes Avoided by Increasing the Average Daily Population by One Offender⁴	Per Violent Offender	1980	0.1	1.2	0.0	7.3	0.0	0.0	0.0	8.5	
		1990	0.1	0.9	0.0	4.8	0.0	0.0	0.0	5.7	
		2001	0.0	0.4	0.0	2.1	0.0	0.0	0.0	2.5	
	Per Property Offender	1980	0.0	0.0	1.9	0.0	46.2	70.8	6.1	125.1	
		1990	0.0	0.0	3.1	0.0	46.7	88.8	9.5	148.1	
		2001	0.0	0.0	1.4	0.0	22.6	50.3	9.2	83.5	
	Per Drug Offender	1980	0.0	0.0	9.0	0.0	112.0	0.0	16.0	137.0	
		1990	0.0	0.0	1.3	0.0	9.6	0.0	2.1	13.0	
		2001	0.0	0.0	0.4	0.0	3.2	0.0	1.4	4.9	
	Per Average Offender in Mix	1980	0.1	0.6	1.1	3.9	23.0	30.6	3.1	62.3	
		1990	0.0	0.6	0.9	3.0	11.4	18.8	2.3	37.0	
		2001	0.0	0.2	0.3	1.3	4.8	9.3	2.0	17.9	
Victim and Criminal Justice Costs Per Crime⁵	Victim \$	all years	\$3,512,790	\$106,099	\$9,778	\$11,223	\$1,567	\$414	\$4,254	-	
	Taxpayer \$	all years	\$502,351	\$11,026	\$7,432	\$7,138	\$1,617	\$404	\$548	-	
Cost Per Year of Prison, 2001 Dollars⁶			State Incarceration (ADP) by Type of Offender⁷				Benefit to Cost Ratios⁸				
			Type of Offender	Year	ADP				Type of Offender	Year	B/C
Operating	\$26,252		Violent	1980	2,809	Violent	1980	\$10.70	Violent	1980	\$10.70
Annual Capital Payment/Bed	\$5,653			1990	5,307					1990	
Subtotal (taxpayer prison \$)	\$31,906			2001	10,111					2001	
Multiplier Used to Estimate Taxpayer and Other Social Collateral Costs of Imprisonment	2.00		Property	1980	2,237	Property	1980	\$4.19	Property	1980	\$4.19
				1990	1,774					1990	
				2001	3,016					2001	
			Drug	1980	140	Drug	1980	\$9.22	Drug	1980	\$9.22
				1990	1,308					1990	
Estimated Total Costs	\$63,812			2001	3,280					2001	\$0.37

¹ The elasticities shown were estimated with fixed effects models using county-level panel data for 1982 to 1990 (N=741: 19 years times 39 counties). Seven OLS regressions were developed, one for each crime type. Explanatory variables included: the state violent, property, and drug incarceration rates; the size of the local police force and county jail average daily population; statistical measures for the county economy including real per capita income, real retail wage rates, the unemployment rate, and the percent of personal income derived from public assistance; county demographic variables including the age-, gender-, and ethnic-structure of Washington's population and the rural/urban character of Washington's population; and separate county dummy variables. The dependent variable(s) and the incarceration variables were estimated in logs, implying a constant elasticity over time. White heteroskedasticity-consistent standard errors were used to determine statistical significance. Only statistically significant prison elasticities were used in this analysis; a non-significant estimate from the regressions is listed as zero on this table. Estimation was carried out with EViews 4.1© software. The equations developed for this analysis did not control for the simultaneity that exists between crime and prison, an omission that is known to underestimate the true effect of prison on crime; future research could help to refine the elasticities reported here.

² Washington Association of Sheriffs and Police Chiefs. The Institute made adjustments for non-reporting jurisdictions.

³ U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey, various issues. The rates for murder are assumed to be 1.0 (these rates are not reported in the NCVS) and for rape, .33 (the rape rate on the NCVS is not consistently defined over the 1980 to 2001 time frame).

⁴ The marginal effect was calculated as follows: $AVOIDEDCRIMES_{cot} = [(ELAS_{co}) * (RPTCRIME_{ct} / ADP_{ot})] / RPRATE_{ct} - 1$ where AVOIDEDCRIMES are the crimes avoided of type c for offender o in year t for an increase in the ADP (average daily population) for offender type o for year t. ELAS is the estimated elasticity coefficient for crime c for offender type o. RPTCRIME is the reported number of crimes of type c in year t. RPRATE is the reporting rate for crime c in year t. All of the values for these variables are listed on this table. For example, the AVOIDEDCRIMES for violent offender ADP for 2001 for aggravated assault is computed as follows: $2.1 = (-1.03 * 12433 / 10111) / 0.59 - 1$.

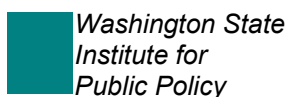
⁵ Dollars are in 2001 dollars. Sources and methods for the victim and criminal justice system cost estimates are listed in: S. Aos, P. Phipps, R. Barnoski, R. Lieb (2001). "The Comparative Costs and Benefits of Programs to Reduce Crime Version 4.0," Washington State Institute for Public Policy. The crime victimization estimates are from: T. Miller, M. Cohen (1996). "Victim Costs and Consequences: A New Look," Research Report, Washington DC: National Institute of Justice. The taxpayer costs listed are the expected values of the costs per reported crime, based on the probabilities of arrest and conviction in Washington.

⁶ Sources for the operating and capital cost estimates are listed in: S. Aos, et al (2001). The assumed multiplier for the collateral cost of imprisonment is a rough estimate since there are few estimates of the magnitude of these costs in the research literature. A recent report identifies collateral costs as including: lost current and future employment, earnings, and taxes; other social service costs of broken families; lost voting rights; and other community costs. See, M. Tonry and J. Petersilia (1999) "American Prisons at the Beginning of the Twenty-First Century." In Crime and Justice: A Review of Research, Volume 26, edited by Michael Tonry. Chicago: University of Chicago Press.

⁷ The average daily population figures are the sum of the violent, property, and drug offender populations for both the Department of Corrections and the Juvenile Rehabilitation Administration. The most recent numbers are from the Washington State Caseload Forecast Council and the Washington State Office of Financial Management.

⁸ The benefit-to-cost ratios for each type of offender are computed by summing the products of avoided crimes for each crime type by the victimization and taxpayer cost per crime. This sum is then divided by the estimated total costs of a year in prison. Few drug offenders were in prison in 1980; the benefit-cost ratio is not meaningful for that year.

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