

Technical Data

To Accompany Article:

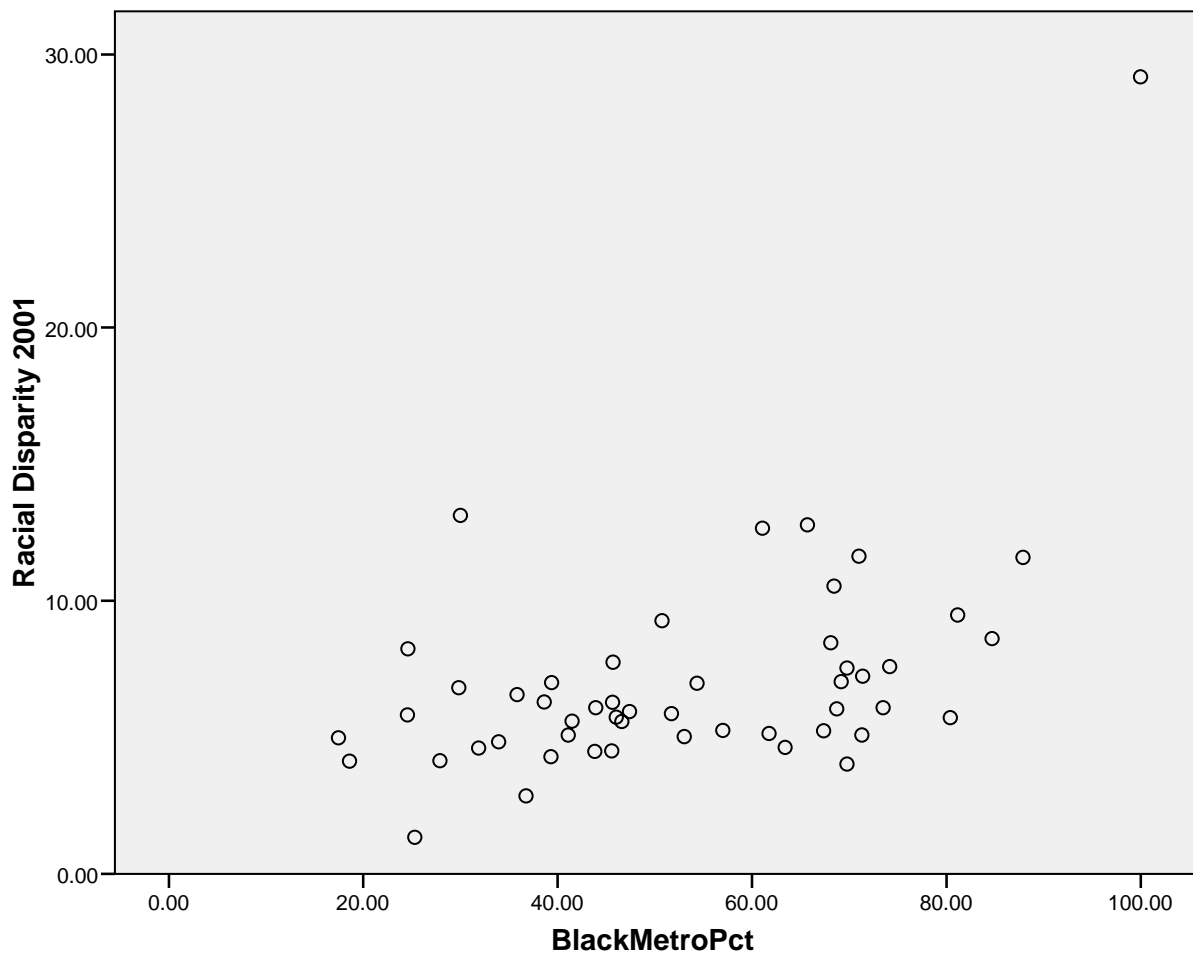
Does Wisconsin Lock Up Too Many Blacks?

... on the web site of the Wisconsin Policy Research Institute.

Modeling Racial Disparity Across States

We examine this possibility in Figure 1, in which we plot the racial disparity index for each state (and the District of Columbia) against the percentage of all blacks living in the state who live in a central city of a Metropolitan Statistical Area.¹ As one can see, there is a strong correlation between these variables. The greater the proportion of blacks living in central cities, the greater the racial disparity of incarceration rates.

Figure 1 – Racial Disparity as a Function of Residence of Blacks



The slope of the line is .103. That is to say, every percent increase in the proportion of all blacks in the state living in a central city increases the racial disparity index in the state by .103. A ten percent increase should increase the index by about one, and a 30 percent increase should increase the index by about 3.

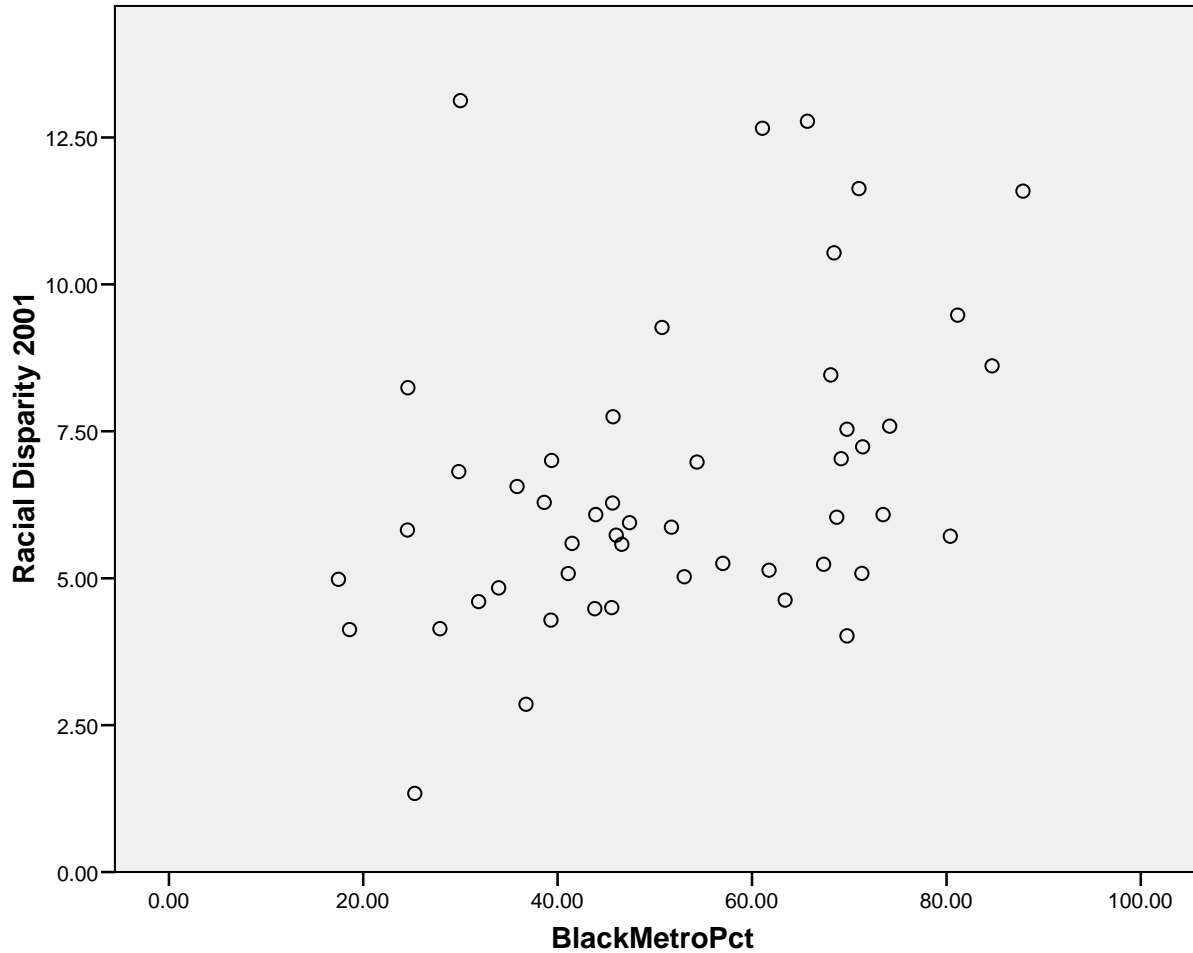
Of greater interest to Wisconsinites, however is the “residual:” the difference between what the model predicts and what actually happens in the state.

The residual for Wisconsin in this model is .897. That is to say, the index in the state is less than one point above where the model predicts it will be. The model predicts a racial disparity index of 10.69, and the actual figure is 11.58.

One might, of course, question the fact that our analysis has a single “outlier,” Washington, DC, which has both a high central city population (100%) and a very high disparity in incarceration. What would happen if we deleted this outlier? We have to point out that there is no pressing need to. Unlike the case where a natural scientist deletes an outlier when he strongly suspects that his equipment malfunctioned, we know this data to be accurate.

However, for the sake of argument, we deleted Washington, DC and ran a scattergram based on the 50 states. It’s reproduced as Figure 2.

**Figure 1 – Racial Disparity as a Function of Residence of Blacks
(Washington, DC Excluded)**



While the statistical relationship is weaker, a significant relationship remains. In this model, the residual for Wisconsin is 2.99, the difference between predicted disparity of 8.59 and an actual disparity 11.58.

Of course, using only one variable to predict racial disparity is simplistic, and we ran other models including the percentage of poverty among blacks in each state (assumed to increase the black crime rate and thus racial disparity), and the percentage of poverty among whites in a state (assumed to drive up the white crime rate and thus *reduce* racial disparity). We then entered a variable for the South (defined as the eleven states of the Old Confederacy).

Table 1 shows the results of these models, both with and without the District of Columbia included.

Table 1 – Residuals for Wisconsin

	Washington, DC Included	Washington, DC Omitted

Only Percentage Blacks in Metro Areas	0.897	2.99
Blacks in Metro Areas + Poverty	-.550	1.21
Blacks in Metro Areas + Poverty + South	-.99	.703

The results are striking. Only arbitrarily excluding the District of Columbia yields consistently positive signs for the residual, and only doing that and also using a rather simplistic model with one explanatory variable creates any *substantial* residual. Wisconsin, in other words, is about where it could be expected to be among American states.

Blacks vs. Whites: Length of Prison Sentence

The fact that Wisconsin’s racial disparity index is about where we would expect it to be doesn’t, therefore, rule out considerable racial discrimination in the system. If blacks are disproportionately incarcerated in Wisconsin, this could be the result of either or both of two factors. First, it could be that blacks are more likely to get incarcerated for committing the same crime that a white person commits. Secondly, it might be that blacks, once sentenced for a certain crime, serve longer sentences. If the latter is true, it might be for legitimate reasons – having a prior felony conviction or chronically breaking prison rules, for example. Or it might be for discriminatory reasons. Blacks might simply be given longer sentences for the same crime. Parole boards might be less inclined to let blacks out of prison than they are similarly situated whites.

To examine this issue, we obtained data on every prisoner released from prison in Wisconsin in the years 1998-2002.²

We produced a statistical model where the dependent variable (what we are trying to explain) is the number of years a prisoner serves before being released. We estimate the *independent* effects of being black, Hispanic, being male and being previously incarcerated. By “independent effects” we mean that we are estimating the effect of each variable *after* controlling for all the others.

Our results are found in Table 3. We are dealing here with FBI “index offenses,” which fall into two categories – violent offenses (murder, forcible rape, robbery and aggravated assault) and property crime (burglary, larceny-theft, motor vehicle theft and arson). We also add a third category: drug offenses. It is often asserted (with considerable evidence) that drug crimes are largely responsible for the high levels of incarceration of blacks.³

**Table 3 – Time Served Upon Release in Years
(Standard Errors in Parentheses)**

Independent Variable	Violent Crimes	Property Crimes	Drug Offenses
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Black offender	-.048 (.096)	-.427 (.058)	-.129 (.050)
Male offender	1.366 (.209)	.779 (.109)	.295 (.068)
Prior Incarceration	1.465 (.092)	1.300 (.057)	.908 (.042)
Hispanic offender	-.447 (.194)	-.351 (.133)	.141 (.082)
Constant	2.42	1.650	1.469
Number of Cases	6197	7065	6456

Readers may not know, right offhand, how to interpret the “standard errors” associated with the estimates. As a rule of thumb, if an estimated effect is twice the standard error, it is “statistically significant” and not likely to have happened merely by chance. If it is smaller, it could well be the result of chance, and there is no statistical reason to believe that the real effect is different from zero.

The results are pretty much what somebody who is used to looking at data like this would expect. Males stay in jail longer for the same class of offense. And prior incarceration produces a longer sentence. For a violent crime, we estimate that an offender who has been previously incarcerated will serve 1.465 years longer than an otherwise identical offender who has served no previous time. For a drug offender, a prior stint in prison adds about nine-tenths of a year to time served.

What about race? Being black seems to *reduce* the time served by an offender. This is especially true for property crimes, and true for drug offenses. For violent crimes, we can’t be statistically confident that race has any effect at all.⁴

One might wonder, of course, whether breaking offenses down into narrower categories (rape only, murder only, robbery only, etc.) would show some significant racial effects. We tried doing that, and to no avail. There is simply no evidence that the prison system in Wisconsin keeps blacks behind bars longer than it does whites.

Prison Admissions

Who Goes to Prison?

If there is no apparent bias against blacks in the length of sentences, is there a bias in who gets sent to prison?

Any social scientist has some major problems dealing with this, because data isn’t available to do it the obvious way. If we had a database of every crime committed, and the race of the offender, we could see whether blacks who commit a certain crime are more likely to get sent to prison than whites. There has long been such data where

murders are concerned.⁵ And a new reporting system, which is just beginning to come into use in Wisconsin, has similar information (more on that later).

But in the absence of such information, we have to make do with less than the ideal data. For example, a recent report from the Wisconsin Sentencing Commission examined only offenders who had been charged, gone to court and convicted (or more likely, copped a plea) to see whether blacks were more harshly sentenced.⁶ As the report clearly acknowledges, this fails to take into account several stages in the process, including whether the offender is apprehended, charged and prosecuted. Yet all these processes could produce racial disparity.

We tackled this problem by using aggregate data. We produced a statistical model of admissions to prison in the years 1998-2002, using all counties in Wisconsin. Our model used the number of Uniform Crime Report offenses in each county to predict the number of admissions to Wisconsin state prisons from each county.⁷ Obviously, there is a strong relationship. The more crimes committed in any county, the more people get convicted and sent to prison.

We then added to our model the number of black citizens in each county. If blacks are disproportionately imprisoned, the greater the black population, the more people will be imprisoned from that county. If blacks are treated like everybody else, race will add nothing to the predictive power of our model. Our findings were as follows. The regression coefficients are below.

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	.710	.637		1.116	.268
	Thousand's of Blacks in Population	1.379	.133	.432	10.363	.000
	Annual Property Crime - 1000s	6.947	.499	.581	13.924	.000

a Dependent Variable: Yearly Mean Property Crime Offenders Imprisoned

b Weighted Least Squares Regression - Weighted by WLS Weight

Coefficients(a,b)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-.501	.460		-1.090	.279

Annual Mean Violent Crimes -- 1000s	140.358	7.047	1.171	19.918	.000
Thousand's of Blacks in Population	-.641	.209	-.180	-3.064	.003

a Dependent Variable: Yearly Mean Violent Offenders Imprisoned
b Weighted Least Squares Regression - Weighted by WLS Weight

An Alternative Approach to Bias in Prison Admissions

An alternative approach to bias in the admission of offenders to prison is to look at the prior offenses of black and white prisoners admitted to the Wisconsin state prison system.

The Department of Corrections Public Information Data File contains information on inmates in state prisons. We analyzed a subset of *admissions* to Wisconsin prisons between 2001 and 2006.⁸ For about 46,000 cases, there was information on both the race of the offender (self-reported) and the number of prior offenses.

Prior offenses is a powerful predictor of both whether an offender will be sentenced to prison (versus jail, or parole, or a suspended sentence), and of the amount of time an offender will serve.

Our logic in looking for racial bias was simple. If there is a bias against blacks, it should be “easier” for a black offender to get himself admitted to prison. That is to say, more blacks than whites should be locked up with no prior convictions. Conversely, it should take more prior convictions to get a white sent away. Think of this as a kind of perverse affirmative action program. A bias against black offenders will lead to a “less qualified” (in terms of prior offenses) freshman class of blacks. Perhaps, for a particular offense, a black with no prior convictions will be imprisoned, while a white will not – at least not until he commits *another* offense. The table below contains our results.⁹

Table 1

Prior Felony Convictions by Race Crosstabulation

		White	Black	Indian
Priors	Current Only	10200	5948	562
		48.2%	37.5%	37.1%
1		3935	3485	303
		18.6%	22.0%	20.0%
2		2822	2598	236
		13.3%	16.4%	15.6%
3		1730	1666	148
		8.2%	10.5%	9.8%
4		852	755	100
		4.0%	4.8%	6.6%
5		1640	1398	165
		7.7%	8.8%	10.9%

Total	21179	15850	1514
	100.0%	100.0%	100.0%

Working With Better Data: The Milwaukee Police Department Incident Reporting

A new system of crime reporting, the Incident Based Reporting System, is slowly coming into use across the nation. In Wisconsin, the only city with a large black population that uses this system is Milwaukee.¹⁰ The data allow, in theory, researchers to identify both the race of the victim and the race of the offender for any crime that came to the attention of the Milwaukee Police Department, and thus created an “incident report.”¹¹

The first thing we will look at the race of offenders in violent offenses. For the 6085 violent offenses in the database, only 12.6% have missing data for the race of the offender. Thus our data is pretty good in terms of completeness.

The “offender” in each offense was coded as black, white or some other race.¹²

Table 2
Race of Offender – Violent Offenses

	Frequency	Percent	Valid Percent
Valid Black	4470	73.5	84.1
White	749	12.3	14.1
Other Race	99	1.6	1.9
Total	5318	87.4	100.0
Missing	767	12.6	
Total	6085	100.0	

The key, indeed stunning, thing about this is the nearly six to one ratio of black to white offenders. In the city of Milwaukee, violent crimes are overwhelmingly committed by blacks. This, of course, is a disparity in the raw *numbers* of offenders. Given that there are 1.338 times as many whites as blacks in the city’s population, this translates into a 7.99 disparity ratio.¹³ A randomly drawn black in Milwaukee is about eight times as likely to commit a violent crime as a white. Ideally, we would like to look at prison admissions for the city of Milwaukee, and see whether this disparity in offenses matches the disparity in imprisonment. Unfortunately, prison admission data are available by county, but not by city. And there is no way to know the racial composition of offenders in the suburbs. Since we lack the necessary data, any precise estimate of racial disparity among people entering prison from Milwaukee isn’t possible. Given the lopsided numbers that we see, however, it seems likely that the disparity in imprisonment mirrors a disparity in offenses.

The incident reports turned out to be less helpful with regard to other kinds of crime. Where property crimes were concerned, for over three-quarters of the cases the race of

the offender is not known. This is not surprising. Things are stolen all the time by people not seen. Cars are taken for a joyride and then abandoned, with nobody having any knowledge of the thief.

Where drug crimes were concerned, we faced a very different, but equally nettlesome problem. By a ratio of about three to one, blacks are the offenders in drug crimes in the Milwaukee incident reports. Unfortunately, since this is a “victimless” crime it is a certainty that most offenses go unreported. Further, particularly for white users in suburbs, a drug offense may lead to only a municipal citation, rather than a criminal charge. So again, we can say little about racial disparity.

The following is the census data used to calculate the disproportion of offenses committed by blacks.

GEO_ID	GEO_ID 2	SUMLEV EL	GEO_NA ME	P00300 1	P00300 2	P00300 3	P00300 4
Geography Identifier	Geograp hy Identifier	Geograp hic Summary Level	Geograph y	Total populati on: Total	Total populati on: Populati on of one race	Total populati on: Populati on of one race; White alone	Total populati on: Populati on of one race; Black or African America n alone
16000US5553 000	5553000	160	Milwauke e city, Wisconsin	596974	580824	298379	222933

If we turn to property crimes, we get a somewhat different picture. The most important – and for our purposes unfortunate – thing about this data is the fact that for over three-quarters of the cases, the race of the offender is not known. This is not surprising. Things are stolen all the time by people not seen. Cars are taken for a joyride and then abandoned, with nobody having any knowledge of the thief. Unfortunately, this fact means that the incident reports can help us very little in assessing racial disparity. We can’t know whether blacks are disproportionately imprisoned if we don’t know the rate at which they offend.

Race of Offender – Property Crimes

		Frequency	Percent	Valid Percent
Valid	Black	6363	16.8	74.5
	White	2072	5.5	24.3
	Other Race	107	.3	1.3
	Total	8542	22.5	100.0
Missing		29349	77.5	
Total		37891	100.0	

If we turn to drug crimes, we face a very different, but equally nettlesome problem. By a ratio of about three to one, blacks are the offenders in drug crimes in the data. Unfortunately, since this is a “victimless” it is a virtual certainty that most offenses go unreported. Further, particularly for white users in suburbs, a drug offense may lead to only a municipal citation, rather than a criminal charge. So again, we can say little about racial disparity.

Race of Offender—Drug Crimes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Black	4061	73.3	73.7	73.7
	White	1357	24.5	24.6	98.4
	Other Race	89	1.6	1.6	100.0
	Total	5507	99.4	100.0	
Missing	99.00	32	.6		
Total		5539	100.0		

DrugOffense * Race Crosstabulation

			Race					Total
			White	Black	Indian	Asian	Unknown	White
DrugOffense	0	Count	18859	10665	1509	259	37	31329
		% within Race	82.2%	61.6%	89.0%	82.2%	68.5%	74.0%
	1	Count	4094	6655	187	56	17	11009
		% within Race	17.8%	38.4%	11.0%	17.8%	31.5%	26.0%
Total		Count	22953	17320	1696	315	54	42338
		% within Race	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

¹ Populations were taken from 2000 Census data, Summary File 3. Ratios of incarceration were taken from “Table 16: Number of inmates in State prisons and local jails” from the web site of the Bureau of Justice Statistics.

² This data did not include inmates released from jails (unlike the data for racial disparity, which does count as “incarcerated” inmates in jails). Since jail terms tend to be short, and there is less room for discretion to be used in a discriminatory manner, this should not affect our analysis.

³ It is not uncommon for someone to be convicted of multiple offenses. When we categorized the crime for which they were convicted, but used the offense with the longest possible prison sentence, in other words, the most serious charge.

⁴ Hard core econometrics wonks may notice that we have a dependent variable with a highly skewed distribution. This might cause a problem called “heteroscedascity” which would make our standard error estimates suspect. We ran the model through a more advanced statistical procedure called “ordinal logit,” and came up with estimates substantively identical to those reported above.

⁵ See John C. McAdams, “Racial Disparity and the Death Penalty,” 61 *Law & Contemp. Probs.* 153 (Autumn 1998).

⁶ Brenda R. Mayrack, *Race & Sentencing in Wisconsin: Sentence and Offender Characteristics Across Five Criminal Offense Areas*. Wisconsin Sentencing Commission, 2007.

⁷ Unfortunately, drug crimes are not among FBI “index crimes,” and thus we had no data on drug crimes in this analysis.

⁸ Note that our unit of analysis is an *admission*, and not a particular inmate. Given a fairly high rate of recidivism, some inmates in our sample were admitted twice during the time included time span. Also, the dataset includes admissions to programs besides prison. We filtered out these cases.

⁹ A very small number of Asians, and all inmates whose race is unknown are omitted from the table.

¹⁰ A detailed technical description of the data can be found on the Wisconsin Office of Justice Assistance web site at: <http://oja.state.wi.us/docview.asp?docid=3603&locid=97>

¹¹ Quite obviously, some crimes are never reported. Unfortunately, this underreporting is doubtless not uniform across types of offenses and segments of the population. But fortunately, it’s probably most complete and accurate for the most serious violent crimes (with the possible exception of rape).

¹² In cases where there were multiple offenders, where they were all of the same race, they were coded as that race. If there was a mixed race group of offenders, they were coded as “other race.”

¹³ This is based on 2000 Census population.