

Race, Justifiable Homicide, and Stand Your Ground Laws: Analysis of FBI Supplementary Homicide Report Data

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There are racial disparities throughout the criminal justice system. From stop and frisk, to motor vehicle searches at traffic stops, to sentencing and the application of the death penalty, African Americans disproportionately are contacted by the criminal justice system in myriad ways. Notably, finding a racial disparity is not synonymous with finding racial animus. African Americans are more likely to live in dense, impoverished places, and poverty and segregation are clearly linked to criminal incidence and prevalence. Distinguishing racial animus within racial disparities is exceedingly difficult with existing datasets that do not include such key measures as setting and context. However, it is possible to compare the rates of racial disparity across points of criminal justice system contact. Such an effort could help highlight comparatively disproportionate laws and procedures.

One area of possible racial disparity—differences in findings that a homicide was ruled justified—has received little attention and could measurably improve that comparison. This paper addresses three research hypotheses to test for racial disparities in justifiable homicide findings:

- Do the rates of justifiable homicides differ by the race of the victim and offender?
- If there are racial disparities in the rates homicides are found justified, how does that disparity compare to other racial disparities in criminal justice system processing? and
- Are there fact patterns of homicides that increase racial disparities?

The purpose of this analysis is to analyze objective national data that could measure the presence of racial disparities in rulings of justifiable homicides. In this analysis, the phrase “racial disparity” is value free: the presence of a racial disparity is a necessary but insufficient condition to identify racial animus in criminal case processing. Racial animus can only be causally identified if all other competing explanations for the existence of a racial disparity can be rejected. Without a prospective, randomized controlled trial—obviously impossible—such causal claims must have caveats. However, a well-designed retrospective study of observational data can identify important correlations between homicide case attributes and the presence of racial disparities. Other research can compare these rates of racial disparities to other racial disparities in the criminal justice system to determine how the rates of racial disparity in self-defense cases differ.

The paper will also examine the effects of Stand Your Ground laws on these disparities. Since the expiration of the federal assault weapons ban in 2004, arguably the broadest change in law related to firearms ownership and use has been the adoption of Stand Your Ground (SYG) laws in 23 states.¹ A priori, the effect of SYG is ambiguous. If the system is racially biased, the shift in the burden of proof in many SYG states may offer additional protections to African Americans and may lead to more findings that homicides were defensive and legitimate. Similarly, if SYG makes fact finding more difficult and case outcomes more arbitrary, SYG may unintentionally lessen disparities. On the other hand, the application of SYG protections may be subject to the same factors that cause racial disparities in the first place, and thus may exacerbate those disparities.

Data

The study uses data from the Federal Bureau of Investigations Supplementary Homicide Report (SHR). Typically, local law enforcement sends the FBI only aggregate monthly data about crimes (property crime as well as violent crimes), which obscures the facts about any particular case. After a homicide, however, law enforcement submits additional information about the details of each case to the FBI, which makes those data publicly available through the SHR. Those data include a variable that records whether a given homicide was ruled justified by law enforcement. The data are arranged by event, meaning there is one row of data per homicide. In addition to homicides, the data include cases charged as involuntary manslaughter and justified homicides.²

While these data can help establish the presence or absence of racial disparities in homicide rulings, they have two main limitations. First, information about the perpetrator in a given homicide case is available only if he or she is apprehended. Thus, these data may be biased if cases with a known perpetrator systematically differ from those where the perpetrator is unknown. Second, the SHR does not include information about where the homicide occurred, which is relevant to determining the presence of racial animus. If, for instance, white-on-black homicides were mainly defensive shootings in a residence or business, and black-on-white shootings mainly occurred during the commission of a street crime, then the disparity would be warranted. This last issue is particularly important to understanding the results and is discussed in more detail in the paper's final section.

Data from 2005 through 2010 (the latest year available) were downloaded from the National Archive of Criminal Justice Data maintained by the University of Michigan.³ All analysis was done using SAS 9.1 statistical software. Each year of SHR data was downloaded separately and merged into a combined file. In total, there were 82,986 observations across six years of data. This study used only those observations for which information about both victim and offender was available, which will only be possible in cases where the perpetrator was known (the offender or victim was not known in 28,001 cases). And, only those observations with a white or black victim-offender combination were retained (1,966 cases were excluded, including relatively similar numbers of cases across the four race groups [white, black, Asian or Pacific Islander, and American Indian or native Alaskan]). The final sample size includes 53,019 observations.

Construction of the Dependent Variable

The primary dependent variable in the analysis is whether a homicide was ruled justified. This binary variable had a value of 1 if the homicide was ruled justified and 0 if it was not. A homicide was coded as a justified homicide whenever the variable “circumstances” was coded as “80,” the value denoting an event in which a private citizen killed a felon.⁴ A total of 2.57 percent of homicides were ruled justified.

Independent Variables

Since the data are retrospective and observational, there are many competing explanations in addition to race for why a shooting was ruled justified. The standard social science approach to these data is to control for those other explanation using multiple regression. The primary variable of interest in this analysis was the race of the victim and the race of the offender. According to the Census, the federal government standard for measuring race is the classifications, “White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander.”⁵ For ethnicity, “People who identify their origin as Hispanic, Latino, or Spanish may be of any race.”⁶ Race data are recorded for both perpetrators and victims.

From these data, four binary variables were coded that describe each cross-race combination for white and black perpetrators and victims (white on black, black on white, black on black, and black on white). For all analyses, white-on-white homicides were used as the reference group. As shown in table 1, 44.14 percent of homicides were white on white, 43.18 percent were black on black, 8.77 percent were black on white, and 3.9 percent were white on black.

Next, a binary variable was coded identifying whether the event took place in a state with a Stand Your Ground law and whether the state’s SYG law was in effect at the time of each shooting. Where a Stand Your Ground law was in effect, the variable SYG was coded as 1 (27.94 percent); otherwise it was coded as 0. Cases were coded as having occurred in an SYG state if the law was statutory and not a judicial precedent. This decision was made on the grounds that statutory changes in SYG law can be affirmatively changed by the legislature, unlike judicial precedent. The list of SYG states was obtained from the American Bar Association’s Stand Your Ground National Task Force.⁷

Table 1. Homicide Frequencies

		Number	Percent
Justified	No	51,654	97.4
	Yes	1,365	2.6
White on white	No	29,616	55.9
	Yes	23,403	44.1
White on black	No	50,950	96.1
	Yes	2,069	3.9
Black on white	No	48,368	91.2
	Yes	4,651	8.8
Black on black	No	30,123	56.8
	Yes	22,896	43.2
Firearm	No	38,203	72.1
	Yes	14,816	27.9
Multiple	No	20,367	40.9
	Yes	29,393	59.1
Stranger	No	33,272	62.8
	Yes	19,747	37.3
Young on old	No	24,585	46.4
	Yes	28,434	53.6
Offender gender	Female	4,898	9.2
	Male	48,084	90.8
Victim gender	Female	13,149	24.8
	Male	39,860	75.2
Year	2005	9,166	17.3
	2006	9,271	17.5
	2007	9,025	17.0
	2008	8,734	16.5
	2009	8,582	16.2
	2010	8,241	15.5

Source: FBI Uniform Crime Statistics Supplemental Crime Reports.

Note: Young on old is coded as 1 if the offender is older than the victim

Additional control variables were coded (table 1). A binary variable was created from a categorical variable of the number of victims and offenders, and was coded as 1 if there was a “Single victim/single offender” and 0 otherwise (95.32 percent). A binary variable was coded as 1 if a “Handgun—pistol, revolver, etc.” was used in the homicide (59.07 percent of cases) and 0 otherwise. A binary variable was created indicating whether the victim and perpetrator were strangers (37.25 percent), and binary variables were created for each year (2006 was the most prevalent—17.49 percent—and 2010 the least—15.54 percent). To account for regional differences in attitudes toward race and public safety, states were grouped into 10 regions: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, Pacific, and Territories and Possessions. The largest regional representation was South Atlantic states (18.64 percent), and the smallest were New England (2.31 percent) and the territories (0.03 percent). While almost all offenders were male (90.76 percent), almost a quarter of victims were female (24.8 percent). The average age of offenders was 30.96 years, the average age for the victims was 32.88 years, and the offender was older than the victim in 53.63 percent of cases.

Observations involving law enforcement were deleted, as were observations where the charge was manslaughter. Data were then cleaned, with items with out-of-range or otherwise invalid values recoded to missing (such as a negative value for age). Observations missing the dependent variable were deleted.

Analysis

First, Pearson’s simple correlation coefficients were calculated for each independent and dependent variable. The goal of these tests is twofold. First, the correlation between the dependent variable (case ruled justified) and each independent variable is calculated to determine empirically if there is a basis for theoretically related variables to be included in the regression analysis. Each proposed predictor was correlated with the dependent variable at $p < 0.0001$. The one exception was the correlation between black-on-black homicides and rulings of justifiable homicide, where $p = 0.0639$. Given the primacy of this variable in the analysis, it was included in the final model.

The other goal of the correlation analysis was to determine if any of the independent variables were collinear. Multicollinearity exists if two or more variables measure essentially the same phenomena (such as including date of birth and age in the same model) and leads to inconsistent (but unbiased) estimates. There is no mathematical standard for multicollinearity; generally, researchers will choose to exclude a variable if it is correlated at $p > 0.80$. In this analysis, no two independent variables were correlated at $p > 0.50$.

Next, t -tests compared the means of each independent variable with the dependent variable. The t -test determines if the mean of the dependent variable compared to the mean of each independent variable is significantly different. This step tests the robustness of the relationship between the independent variables, such that the strongest conclusion can be drawn from the analysis of observational data when the results remain unchanged through various statistical tests.

Finally, a logistic regression was specified:

$$\text{Log}(Y/1-Y) = \alpha + \beta_{\text{SYG}}X + \beta_{\text{STRANGER}}X + \beta_{\text{HANDGUN}}X + \beta_{\text{SINGLE}}X + \beta_{\text{RACE}}X + \beta_{\text{REGION}}X + \beta_{\text{YEAR}}X + \beta_{\text{CONTROL}}X + \epsilon$$

Thus, the “justified shooting” binary variable was regressed on three binary variables describing three of the four race combinations ($\beta_{\text{RACE}}X$), with white-on-white killings omitted as the reference group (in these data, white-on-white homicides were most common). The model was also conditioned on a vector of control variables, including whether a handgun was used, whether the victim and perpetrator were strangers, whether there was a single victim and single shooter, the region of the country where the homicide occurred, the year, the age of the victim, the age of the offender, and whether the offender was older than the victim. In summary, every commenting explanation to race that was available in the data was included in the model. Odds ratios were reported as the main outcome of interest.

Results

Table 2 describes the percentage of homicides ruled justified. Overall, 2.57 percent of homicides in the six-year period were ruled justified (1,365 out of 53,019). White-on-black homicides were most likely to be ruled justified (11.4 percent), and black-on-white homicides were least likely to be ruled justified (1.2 percent). Whether a state was an SYG state also affects the likelihood of a homicide being ruled justified. Each cell in table 2 under the “Stand Your Ground states” and “Non–Stand Your Ground states” columns reports the percentage of cases ruled justified by race combination.

Table 2. Percentage of Homicides Ruled Justified, 2005–10

	Total	Non-Stand Your Ground states	Stand Your Ground states
White on white	2.21	1.68	3.51***
White on black	11.41	9.51	16.85***
Black on white	1.20	1.13	1.40
Black on black	2.43	2.15	3.16***
Total	2.57	2.15	3.67***

Source: 2005–10 FBI Uniform Crime Statistics Supplementary Homicide Reports.

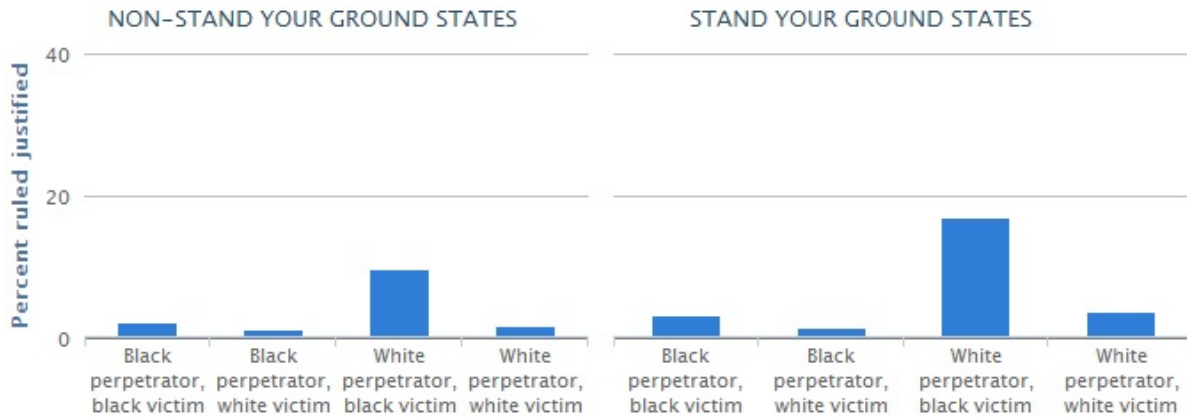
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The asterisks report the result of t -tests within rows that compare whether that race combination in SYG states (for instance, white-on-white homicides in non-SYG states) has a rate of justifiable homicide determinations that is statistically different from that race in YG states. Overall, states with SYG laws have statistically significantly higher rates of justifiable homicides than non-SYG states ($p < 0.001$). The presence of a SYG law is associated with a statistically significant increase in the likelihood a homicide is ruled to be justified for white-on-black, black-on-black, and white-on-white homicides (figure 1). The change in likelihood for black-on-white homicides being found justified is not significant ($p = 0.48$).

Figure 1. Justifiable Homicide Rates by Race and Stand Your Ground Status

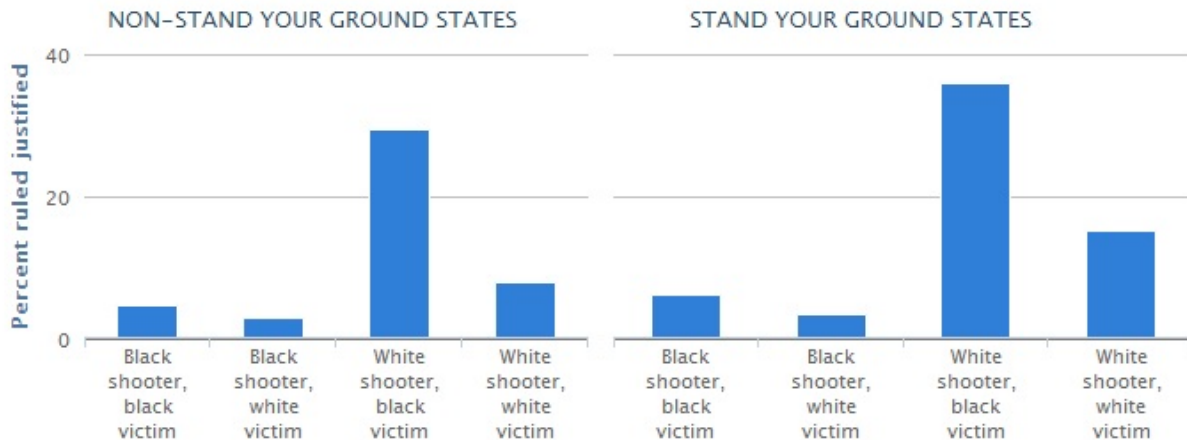
Homicides ruled justified 2005-2010

All cases



Gun homicides ruled justified 2005-2010

Two strangers who are not law enforcement



Source: FBI Supplementary Homicide Report

Note: The differences in rates of homicides ruled justified are all statistically significant at $p < .01$, except black-on-black killings in non-Stand Your Ground states.

The data can be parsed further to examine cases that are similar to the fact pattern in the Trayvon Martin homicide. On February 6, 2012, Trayvon Martin was shot to death by George Zimmerman in Sanford, Florida. Zimmerman was subsequently found not guilty at trial. While Zimmerman did not affirmatively claim a Stand Your Ground defense in the case, he did claim self-defense as his motivation for the shooting, the jury was instructed about Florida's SYG law, and jurors did discuss the law in their deliberations.

Several facts about the Martin homicide are known. Zimmerman and Martin were strangers, they were the only two people involved in the incident, neither was law enforcement, a handgun was used in the homicide, Zimmerman was white, Martin was black, and Zimmerman was older than Martin. All those variables can be observed in the SHR data, and the frequency of findings that shootings are justified can be calculated to compare cases with those attributes to all cases.

Table 3 describes the likelihood a homicide is ruled justified when there is a single victim and single shooter, they are both male, they are strangers, and a firearm is used. In the six years of FBI data, this fact pattern occurred in 2,631 cases.

Table 3. Percentage of Homicides Ruled Justified, Martin Case Attributes, 2005–10

	Total	Non-Stand Your Ground states	Stand Your Ground states
White on white	16.28	12.95	23.58**
White on black	42.31	41.14***	44.71***
Black on white	8.57	7.69**	11.10
Black on black	10.14	10.24***	9.94***
Total	14.90	2.15***	3.67

Source: 2005–10 FBI Supplementary Homicide Reports.

* $p < 0.05$; ** $p < 0.01$ ***; $p < 0.001$

Overall, the rate of justifiable homicides is almost six times higher in case with attributes that match the Martin case. Racial disparities are much larger, as white-on-black homicides have justifiable findings 33 percentage points more often than black-on-white homicides. Stand Your Ground laws appear to exacerbate those differences, as cases overall are significantly more likely to be ruled justified in SYG states than in non-SYG states ($p = 0.02$).

Table 4 describes the results of a logistic regression that regressed justified homicide rulings on the case attributes described in table 1.

With respect to race, controlling for all other case attributes, the odds a white-on-black homicide is found justified is 281 percent greater than the odds a white-on-white homicide is found justified. By contrast, a black-on-white homicide has barely half the odds of being ruled justifiable relative to white-on-white homicides. Statistically, black-on-black homicides have the same odds of being ruled justifiable as white-on-white homicides.

All the other variables in the model, except the variable describing whether the offender was older than the victim, are significant. Being in a SYG state increases the odds of a justifiable finding

by 65 percent. Older offenders, female victims, those committing a homicide with a firearm, and homicides of strangers are all statistically significant predictors of increased odds a homicide was justified. Younger offenders, male offenders, homicides with multiple victims or multiple offenders, and older victims are all significantly likely to reduce the likelihood of a justifiable homicide finding.

Table 4. Logistic Regression Output

	Maximum likelihood estimate	Odds ratio	95% Confidence Interval	
			Lower bound	Upper bound
Ruled justified				
Black on black	0.08	1.08	0.94	1.25
White on black	1.33*	3.81	3.18	4.56
Black on white	-0.67*	0.51	0.38	0.69
Stand Your Ground state	0.49*	1.65	1.46	1.85
Firearm homicide	0.37*	1.44	1.27	1.64
Multiple	-0.91*	0.40	0.27	0.61
Region	0.09*	1.10	1.07	1.13
Stranger	1.12*	3.07	2.70	3.48
Offender gender	-0.39*	0.67	0.56	0.82
Victim gender	2.74*	15.63	10.46	23.36
Victim age	-0.02	0.98	0.98	0.99
Offender age	0.05*	1.05	1.05	1.06
Young on old	-0.08	0.92	0.79	1.09
Intercept	-8.20*			
Observations	45,954			
Dependent variable	Ruled justified			

Source: FBI Uniform Crime Statistics Supplemental Crime Reports.

* Statistically significant at the $p < .001$ confidence level.

In a separate analysis, the model in Table 4 was re-run and the justifiable homicide ruling was regressed on all of those variables and three interaction terms that measured the odds a case was found to be justified for the three race combinations specifically in SYG states. Comparing the three race combinations in SYG states to white on white homicides in SYG states finds that there is no difference between white on black homicides odds of being found to be justified in SYG states. However, black on black homicides have lower odds of being found to be justified in SYG states ($p=0.002$) and black on white homicides also have lower odds of being found to be justified ($p=0.04$).

Discussion

This paper finds substantial evidence of racial disparities in justifiable homicide determinations. Regardless of how the data are analyzed, substantial racial disparities exist in the outcomes of cross-race homicides. These findings hold throughout the analysis, from differences in average rates, to bivariate tests of association, to regression analysis. In addition, the recent expansion of Stand Your Ground laws in two dozen states appears to worsen the disparity.

As noted earlier, it is possible that this finding of racial disparity is not associated with any conscious or unconscious racial animus in the justice system. If the facts of white-on-black homicides differ from the facts associated with black-on-white homicides such that one routinely occurs as part of self-defense and the other as part of a street crime, then there is no animus. The data here cannot completely address this problem because the setting of the incident cannot be observed. Thus, the analysis is at risk due to omitted variable bias, where the lack of a data element leads to a spurious conclusion.

One technique used by social scientists in the absence of missing data is to include in the statistical model variables thought to co-vary with the omitted variable. The SHR data do include valid measures of attributes that could be expected to correlate with setting. For instance, age of the victim and age of the offender should be associated with setting, with younger victims and offenders more likely to be on the street than older persons. Use of a firearm in a homicide could be expected more often outside the home, as would a homicide involving strangers. While this is not a particularly strong way to adjust for setting, it should allow the models to explain some of the variance in the dependent variable associated with setting. To settle this question, it would be relatively easy for the FBI to add this variable to the data it collects and make public in future years.

Notes

¹ According to data from the American Bar Association's Stand Your Ground Taskforce, 23 states have made a statutory change extending the Castle Doctrine by limiting the duty to retreat outside the home. Other states have equivalent laws that have been established through the courts. This paper focuses solely on states with changes in statute.

² Manslaughter cases were excluded from this analysis.

³ Uniform Crime Reporting Program Data: Supplementary Homicide Reports, 2010 (ICPSR 33527). Downloaded June 4, 2013, from

<http://www.icpsr.umich.edu/icpsrweb/NACJD/studies/33527?permit%5B0%5D=AVAILABLE&archive=NACJD&y=0&x=0&q=supplementary+homicide+2010>.

⁴ A homicide can only be ruled justified if the victim is threatening the life of the killer, a felonious act.

<http://www.cdc.gov/ncipc/pub-res/nvdrs-coding/Supplementary-Homicide-Report.pdf>, accessed July 23, 2013.

⁵ <http://www.census.gov/population/race/>, accessed July 19, 2013.

⁶ Ibid.

⁷ Personal communication, Leigh Ann Buchanan, co-chair.

Appendix Table. Homicides Ruled Justified by State

	Not Justified		Justified	
	Number	Percent	Number	Percent
Alabama	1,364	99.34	9	0.66
Arizona	1,368	94.48	80	5.52
Arkansas	736	99.06	7	0.94
California	6,022	97.33	165	2.67
Colorado	665	96.38	25	3.62
Connecticut	364	98.91	4	1.09
Delaware	207	98.57	3	1.43
Washington, DC	121	98.37	2	1.63
Georgia	2,090	96.85	68	3.15
Idaho	152	98.70	2	1.30
Illinois	1,075	99.26	8	0.74
Indiana	1,061	96.81	35	3.19
Iowa	226	100.00	0	0.00
Kansas	477	97.95	10	2.05
Kentucky	723	96.14	29	3.86
Louisiana	1,735	96.07	71	3.93
Maine	113	97.41	3	2.59
Maryland	1,548	98.41	25	1.59
Massachusetts	528	99.62	2	0.38
Michigan	2,076	97.51	53	2.49
Minnesota	387	98.72	5	1.28
Mississippi	739	99.33	5	0.67
Missouri	1,322	97.35	36	2.65
Montana	88	100.00	0	0.00
Nebraska	112	96.55	4	3.45
Nevada	667	96.81	22	3.19
New Hampshire	59	98.33	1	1.67
New Jersey	1,165	98.98	12	1.02
New Mexico	497	97.83	11	2.17
New York	2,747	99.13	24	0.87
North Carolina	2,057	98.70	27	1.30
North Dakota	38	100.00	0	0.00
Ohio	1,831	98.76	23	1.24
Oklahoma	843	95.58	39	4.42
Oregon	332	94.05	21	5.95
Pennsylvania	2,925	97.99	60	2.01
Rhode Island	91	98.91	1	1.09
South Carolina	1,566	97.63	38	2.37
South Dakota	57	98.28	1	1.72

	Not Justified		Justified	
	Number	Percent	Number	Percent
Tennessee	1,968	93.89	128	6.11
Texas	5,527	96.22	217	3.78
Utah	197	98.50	3	1.50
Vermont	59	100.00	0	0.00
Virginia	1,761	97.83	39	2.17
Washington	677	97.97	14	2.03
West Virginia	331	100.00	0	0.00
Wisconsin	739	97.11	22	2.89
Wyoming	57	98.28	1	1.72
Alaska	72	92.31	6	7.69
Hawaii	77	95.06	4	4.94
Virgin Islands	15	100.00	0	0.00
Total	51,654	97.43	1365	2.57

Source: FBI Uniform Crime Statistics Supplemental Crime Reports.

Note: Florida does not report to the Supplemental Crime Report.