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The Effects of “Shall-Issue” Concealed-Carry Licensing Laws: A Literature Review

This information brief reviews major research studies on the effects of enacting “shall-issue” laws which govern the licensing of people to carry concealed firearms.

Laws that govern the licensing of private citizens to carry concealed firearms vary greatly among the states, but they generally fall into two broad categories:

- 1) “**may issue**” licensing systems — sometimes referred to as **discretionary permit systems** — allow legal authorities to grant licenses to carry concealed firearms to citizens who establish a compelling need for doing so; and
- 2) “**shall issue**” licensing systems — often referred to as **presumptive right-to-carry laws** — require authorities to provide a license to any applicant who meets specified criteria.

Over the past decade or so, a number of states have enacted legislation establishing shall-issue licensing systems, thereby kindling considerable debate and some noteworthy scholarly research into the effects of such systems. Because of their obvious policy implications, these studies themselves have generated considerable controversy. Perhaps the most central and controversial of these studies is the one by Lott and Mustard, which purports to provide evidence of crime deterrence and substitution effects of shall-issue licensing laws. The report was released in mid-1996 and published in the January 1997 issue of the University of Chicago’s *Journal of Legal Studies*. There have been several scholarly critiques of that study. Within the past year, Lott has extended his analysis with the publication of a second research paper (Bronars and Lott, 1998), and that study too is likely to receive close scrutiny by both criminologists and policymakers. A few other key scholarly research papers focusing on the effects of shall-issue licensing laws have

been published in recent years, as well.

This information brief consists of the following:

- Part I briefly summarizes three competing theories regarding the possible effects of shall-issue licensing laws;
- Part II describes the design and findings of the initial Lott and Mustard study (and the extension by Bronars and Lott), and summarizes some of the key scholarly critiques of that research; and
- Part III summarizes certain other key research into shall-issue licensing laws, including:
 - a) a frequently cited study — by McDowall, et al. — of the effects of enacting shall-issue licensing laws in three states, including limited critique by Lott and Mustard, and
 - b) an article by Kopel that discusses the findings of the Miami/Dade County Police Department regarding the implementation of the Florida shall-issue law.

This information brief does not evaluate any of these scholarly works, nor does it draw any conclusions from them.

Part I: Alternative Possible Effects of Shall-Issue Licensing Laws¹

There are logical and/or theoretical grounds on which to alternatively expect shall-issue licensing laws to: 1) decrease crime; 2) increase crime; or 3) have little effect on crime. These theories are summarized below.

Decrease crime. Advocates of shall-issue licensing laws generally argue that such laws reduce crime — particularly violent crime committed in public places — by deterring would-be offenders. According to this theory, criminals generally wish to avoid any victim who might be carrying a gun that could be used against an assailant. In jurisdictions with shall-issue licensing laws, almost any adult potential victim in almost any situation could be armed for self-defense. Since a potential assailant cannot be sure which potential victims may be armed and, thus, would be potentially capable of self-defense, the criminal chooses to forego committing some crimes, particularly those that would bring him or her into direct contact with a victim.

¹ This brief section borrows heavily from discussion in the article by McDowall, et al., which is summarized in a later section of this document.

Thus, advocates of shall-issue licensing laws expect that such laws act to deter many violent crimes and, possibly, displace many others to circumstances in which the risk to the offender is not as great. In support of this theory, the advocates often cite the 1986 survey study by sociologists James Wright and Peter Rossi in which imprisoned felons reported a greater fear of armed citizens than of police, as well as available data showing that criminals are far more likely to be shot by an armed citizen than by the police.²

Increase crime. Opponents of shall-issue licensing laws generally argue that such laws might raise levels of criminal violence, primarily by increasing the number of persons with easy access to guns in public places. According to this theory, assaults are often impulsive acts involving the most readily available weapons. Since guns are especially lethal weapons, more guns might result in more firearms-related homicides and injuries.

Advocates of shall-issue licensing laws often cite figures showing that few legal carriers misuse their guns. Yet, opponents argue, greater tolerance for legal carrying might result in an increase in illegal carrying as well. For example, criminals may have more reason to carry firearms — and to use them — when their victims might be armed. Furthermore, if permission to carry a concealed firearm is easy to obtain, citizens and law enforcement officials might be less inclined to view illegal carrying as a serious offense. In addition, illegal carrying might become less easy to detect since any stranger observed carrying a concealed firearm might well be doing so legally.

No effect on crime. Some might argue that shall-issue licensing laws are irrelevant to crime, since generally only a small fraction of adults (usually 1 percent to 5 percent) obtain licenses to carry concealed firearms, and since many licensed persons do not routinely carry firearms. Of those who do carry, many might still take precautions to avoid situations in which victimization is more likely, as well as to avoid intervening in criminal encounters not directly involving themselves. Finally, some legally armed persons might, under certain circumstances, choose not to resist a crime rather than risk a shootout with an armed criminal. To continue with this theory, many citizens already keep guns in their homes or legally carry firearms in conjunction with their businesses, and police officers often carry guns when off-duty and in plain clothes. Thus, the increase in available firearms due to shall-issue licensing laws may be of little consequence.

² *Armed and Dangerous: A Survey of Felons and Their Firearms*, James D. Wright and Peter H. Rossi. New York: Aldine Press (1986). *Point Blank: Guns and Violence in America*, Gary Kleck (University of Florida criminologist); New York: Aldine Press (1991).

Part II: The Major Research Controversy — the Lott and Mustard Study and Critiques

The 1997 Lott and Mustard Study³

Summary of findings. This study concludes that shall-issue licensing laws:

- 1) deter violent crimes, including murder, rape, aggravated assault, and (marginally) robbery;
- 2) increase property crimes, such as larceny and auto theft (but not burglary), in which there is less chance of confrontation with an armed victim (i.e., a substitution effect); and
- 3) essentially have no effect on the number of accidental deaths.

Lott and Mustard argue that the benefits of the reduction in violent crimes far offset the social and economic costs of any increases in property crime that they induce. Specifically, they estimate that if those states that did not have shall-issue licensing laws had adopted them, then there would have been 1,570 fewer murders, 4,177 fewer rapes, and over 60,000 fewer aggravated assaults in 1992.⁴ They estimate that the net annual economic gain from such enactments would amount to \$6.2 billion in 1992 dollars.

Lott and Mustard note that these results are empirically large; they credit shall-issue licensing laws in a state with an 8.5 percent reduction in murders, a 5 percent reduction in rapes, and a 7 percent reduction in aggravated assaults, on average. They further report that for most violent crime (i.e., murder, rape, and aggravated assault) the deterrent effect of these laws is greatest in high-crime counties, while the substitution effect into property crime appears to be greatest in low-crime counties. They also report a greater deterrence effect in high-population counties as compared with lower population counties. Finally, the Lott and Mustard study reports that high arrest and conviction rates have an even more consistent and dramatic effect than shall-issue licensing laws in deterring crime.

³ “Crime, Deterrence and the Right-to-Carry Concealed Handguns,” John R. Lott, Jr. and David B. Mustard; University of Chicago: *Journal of Legal Studies*, January 1997. John Lott is a professor of law at the University of Chicago Law School, and David Mustard is a graduate student in economics at the University of Chicago.

⁴ By 1992, 18 states had adopted shall-issue licensing laws.

Methodology of the Lott and Mustard Study. This study employs county-level data from 3,054 counties in all 50 states for the 16-year period from 1977 to 1992. The authors note that this study is the first to analyze the impact of shall-issue licensing laws using county-level data (as opposed to state or city-level data, as has been done in most other deterrence studies). They base this decision on their finding that counties within any given state vary widely in crime rates and often in the willingness of local authorities to grant permits to carry concealed weapons under the may-issue licensing systems, and they argue that using the county as the unit of analysis greatly enhances the sensitivity of their analysis.

The crime data used in the study were initially collected by local agencies for use in the FBI’s annual Uniform Crime Report, organized into seven categories: the four violent crime categories of murder, rape, robbery, and aggravated assault; and the three property crime categories of burglary, larceny-theft, and motor-vehicle theft. Data include both the number of reported crimes and the number of arrests.

The study also used various demographic data (i.e., population data, stratified by age, gender, and race) obtained from the Census Bureau, as well as various income data from the U.S. Commerce Department. Some additional data on conviction rates and sentence length was provided directly by a few states, permitting some additional analysis of effects in those states.

The analysis employs two-stage regression methods to estimate the parameters of the same multivariate model to explain each of the nine crime-type variables (i.e., the seven types of crime listed above, and the violent and property crime summary measures), while statistically controlling for arrest rate, population and population density, and various income and other demographic factors. Several additional regression analyses were run using various sub-samples of the data (e.g., high-crime counties), as well as substituting competing model specifications, in order to test competing hypotheses. The authors interpret the findings from these additional analyses as providing support for their interpretations, as reported above.

Black and Nagin’s Re-analysis of Lott and Mustard’s Data⁵

Summary of findings. This study was presented in 1996 at the Consortium on Violence Research at Carnegie Mellon University. In this paper, the authors reanalyze the impact of shall-issue licensing laws on crime rates using the data from the Lott and Mustard study. By employing alternative econometric models, this study rejects the Lott and Mustard statistical model as inconsistent with the data, and claims to find no basis for drawing confident conclusions about the impact of shall-issue licensing laws on violent crimes.

⁵ “Do Right-to-Carry Laws Deter Violent Crime?” Dan A. Black and Daniel S. Nagin; paper presented at the National Consortium on Violence Research at Carnegie Mellon University, Pittsburgh, 1996. The authors are associated with Carnegie Mellon University (Black and Nagin), as well as with the University of Kentucky (Black). Financial support for this work was provided by the National Consortium on Violence Research at Carnegie Mellon University.

More specifically, the authors claim to have found no evidence that shall-issue licensing laws deter aggravated assault or rape. However, they do report finding, for some sub-samples, evidence of declines in murder and robbery following enactment of such laws, but they report that this evidence evaporates in analyses based on the full data set and on counties with populations of at least 100,000. They further note that the decline in murders is limited to only the state of Florida.

Black and Nagin’s study also finds evidence that shall-issue licensing laws have different effects in different states. They find that for any given type of crime, shall-issue licensing laws have statistically significant positive results in some states and statistically significant negative results in other states. Black and Nagin conclude that their analysis strongly suggests that the Lott-Mustard methodology has not correctly identified the impact of shall-issue licensing laws on crime rates.

Black and Nagin criticize the Lott and Mustard statistical model for making what they term two rather restrictive assumptions: 1) that shall-issue licensing laws have an impact that is constant over time; and 2) that the model assumes that the impact is the same across all states that enact such laws.

The Black and Nagin study also finds evidence that, for six of the seven types of crime analyzed, the crime rates in the states enacting shall-issue licensing laws were higher just prior to enactment, as compared to the non-enacting states. They criticize the Lott and Mustard model for not taking into account this fact regarding the cyclical nature of crime rates.

Black and Nagin’s study concludes that their reanalysis of Lott and Mustard’s data provides no basis for drawing confident conclusions about the impact of shall-issue licensing laws on violent crimes.

Methodology of the Black and Nagin Study. As is customary in scientific circles, Lott and Mustard provided their data base to Black and Nagin upon request for reanalysis. Black and Nagin first successfully replicated the Lott and Mustard study to confirm their understanding of the data base. They then repeated the analysis a number of times while varying specific methodological features (e.g., using different sub-samples of counties, different methods of handling missing data, and alternative specifications of the statistical model) in order to test the robustness of the Lott and Mustard model. To the extent that the model’s parameter estimates remain stable during such sensitivity analysis, then confidence in the model is sustained. According to Black and Nagin, the Lott and Mustard model did not meet this confidence test.

Lott’s Response to the Black and Nagin Critique⁶

In a second article in the *Journal of Legal Studies*, Lott addresses each of the criticisms raised by the Black and Nagin article regarding the original Lott and Mustard study. Lott’s central concern is as follows:

“Black and Nagin claim that our original article assumes that the effect of concealed-handgun laws is constant over time, that the effect is the same across states, that our article does not control for local time trends, and that we did not investigate whether the results were sensitive to the missing values of the arrest rate. They are wrong. We raised these issues ourselves and then suggested (statistical) tests for them. . . . Normally, a comment (i.e., a critique) would explain why the approaches that we used to solve these (analytic) problems were inadequate and then offer alternative approaches. Instead, Black and Nagin claim that we completely ignored these issues and contend that they are raising them for the first time. . . . (This) is so easily verified by the reader.”⁷

Lott’s article, then, seeks to demonstrate how each of these methodological concerns was addressed in his original article with Mustard.

Perhaps the central methodological issue in this debate concerns the competing interpretations given to the empirical finding that in most of the states that have enacted a shall-issue carry law, the violent crime rate was increasing prior to the enactment and has decreased following the enactment.

- Lott and Mustard interpret and statistically model this reversal in the violent crime rate as being the effect of that law change (i.e., they view the law as having deterred violent crime).
- Alternatively, Black and Nagin interpret and statistically model this phenomenon as a “cyclical” trend, in which the enactment of shall-issue laws (and other major crime counter-measures) in any state occurs in response to public concern about rising violent crime in the state, and in which the violent crime rate would have turned downward even without the enactment of the shall-issue law, following inevitable cyclical trends and in response to a variety of other crime counter-measures.

⁶ “The Concealed Handgun Debate,” John R. Lott, Jr., *Journal of Legal Studies*, Vol. XXVI (January, 1998): pp 221-243.

⁷ Ibid, p. 243.

Ludwig’s Study of State Homicide Rates and Critique of the Lott and Mustard Study⁸

Ludwig’s paper analyzes murder rates — defined as the ratio of adult homicides to juvenile homicides within the same state — between 1982 and 1991, and argues that no significant relationship exists between shall-issue licensing laws and adult murder rates. Ludwig reconciles these finding with conflicting findings from the Lott and Mustard study by asserting that Lott and Mustard’s statistical model is improperly specified.

Most importantly, Ludwig asserts that states with increasing crime rates are more likely than other states to enact shall-issue licensing laws, and that the Lott and Mustard model fails to account for this factor, which he terms the cyclic pattern of crime rates across time. According to this reasoning, shall-issue licensing laws, as well as a number of other crime counter-measures, tend to be enacted during periods of rising crime; thus, the subsequent reductions in crime which Lott and Mustard attribute to the shall-issue licensing laws may be due to the other crime fighting measures and/or to a commonly observed downward drift in crime levels following peaks in those levels.

Ludwig also takes issue with several of the measures of variables used in the Lott and Mustard study, and substitutes several other measures for similar concepts in his own state-level analysis. Ludwig’s study generally obtains different results, which he interprets as evidence that Lott and Mustard’s model is improperly specified and, therefore, its parameter estimates are biased (i.e., that the Lott and Mustard study reached invalid conclusions). Ludwig concludes by acknowledging that laws which increase the prevalence of guns in public places could, in theory, have a deterrent effect on crime, but that there is potential for misuse as well. In his view, the Lott and Mustard study does not offer any convincing evidence for the claimed benefits of such a policy.

Webster’s Critique of the Lott and Mustard Study⁹

Webster critiques the Lott and Mustard study, not with any empirical analysis of its own, but by accepting and discussing the findings of the Black and Nagin study and Ludwig’s analysis. Nevertheless, Webster’s critique adds some unique discussion.

Webster claims that Lott and Mustard’s findings depart from established thinking and certain

⁸ “Do Permissive Concealed Carry Laws Reduce Violent Crime?” Jens Ludwig, Georgetown University: unpublished paper (October 8, 1996). The author is an economist and professor of public policy at the Public Policy Institute, Georgetown University.

⁹ “The Claims that Right-to-Carry Laws Reduce Violent Crime are Unsubstantiated,” Daniel W. Webster; Baltimore: The Johns Hopkins Center for Gun Policy and Research, Johns Hopkins University (1997). A footnote to Webster’s paper notes that The Johns Hopkins Center for Gun Policy and Research is dedicated to reducing gun violence.

known facts in criminology. According to his argument, shall-issue licensing laws were adopted principally to deter predatory street crime, most commonly robbery. But Lott and Mustard’s results indicate that such laws have had little effect on robbery rates. Instead, the strongest deterrent effects found were for rape, aggravated assault, and murder. However, he argues, most rapes, aggravated assaults, and murders are not committed as predatory street crimes. Thus, Webster concludes, it seems counter-intuitive that the strongest impacts found by Lott and Mustard were for crimes for which the concealed carrying of a firearm in public is typically not highly relevant.

Webster further argues that the property crime substitution effect found by the Lott and Mustard study does not comport with any credible criminological theory because theft is the motive for only a small fraction of the violent crimes for which Lott and Mustard find effects for shall-issue licensing laws. Webster reasons, for example, that it is difficult to rationalize why a criminal would steal a car because he or she felt deterred from raping or assaulting someone.

Spillover Effects of Shall-Issue Licensing Laws: Further Analysis by Bronars and Lott¹⁰

This 1998 study by Bronars and Lott extends the analysis of the Lott and Mustard study by examining whether the adoption of a shall-issue licensing law in one state alters crime in neighboring areas. The authors remind the reader of the earlier analysis of the same data in which Lott and Mustard claimed to have found strong evidence that shall-issue licensing laws deter crime in counties of enacting states, and they hypothesize that some of the deterred crime is perhaps being shifted to nearby areas not having such laws.

The methodology of this study appears to address some of the methodological criticisms of the earlier Lott and Mustard study. Like the earlier study, the present study employs multiple regression analysis of annual county-level crime data from 1972 to 1992. However, it sharpens the statistical control for arrest rates to the same type of crime (violent versus property), and also assesses absolute changes in crime in addition to the relative (percentage) changes. Like the earlier study, this one includes variables to control for crime trends both before and after the law change, as well as a control for the nationwide trend in the same type of crime being analyzed. As with the earlier study, it applies the statistical model separately to each of the seven types of Part I crime from the FBI’s Uniform Crime Report.

The analysis purports to reveal significant “geographic spillover” or displacement effects of crime in the counties that border the enacting states, with murders, rapes, and robberies all increasing (by 4.5 percent, 4.2 percent, and 7.5 percent, respectively), burglary also increasing (by an unspecified amount), and assaults decreasing by 3.6 percent in those neighboring counties.

¹⁰ “Criminal Deterrence, Geographic Spillovers, and the Right to Carry Concealed Handguns,” by Stephen G. Bronars and John R. Lott, Jr.; *American Economic Review*, May 1998. House Research is not yet aware of any scholarly critiques of this recently published research article.

These spillover effects onto neighboring counties are found to be immediate following the law

change, and they increase for a period of years following enactment. However, the study finds that the magnitude of the spillover effects are mitigated and essentially erased for counties that have themselves already enacted shall-issue licensing laws.

The authors conclude that, taken together, these results imply that concealed handgun carrying deters criminals and that the largest reductions in violent crime will be obtained when all states adopt shall-issue licensing laws.

Part III: Other Key Research

A 1995 Study of Shall-Issue Licensing Laws in Three States, by McDowall, et al.¹¹

This study examines the frequency of homicides in the large urban areas of Florida, Mississippi, and Oregon, before and after their shall-issue licensing laws went into effect (in 1987, 1990, and 1990, respectively). The analysis provides no support for the idea that the laws reduced homicides; instead, it purports to have found evidence that shall-issue licensing laws increase murders committed with a firearm.

This study uses interrupted time-series analysis (ARIMA modeling) to separately analyze the firearms homicide number and rate for five large cities within these three enacting states. When properly performed, this type of analysis statistically controls for pre-enactment trends in the variable being analyzed. The methodology also statistically controls for national firearm homicide trends. The study found that homicide rates increased in four of the five cities following enactment of the law; on average, gun homicides increased by 26 percent in these five cities, ranging from a *decrease* of 12 percent in Portland to an *increase* of 75 percent in Jacksonville. Homicides by other means did not show any consistent pattern of effects. When controlling for population changes by analyzing rates of homicide, the study found that gun homicide rates increased by an average of 4.5 percent in the five cities, while non-firearm homicide rates did not change significantly.

From this study, McDowall and his co-researchers draw two conclusions about shall-issue licensing laws:

- 1) that such laws do not reduce homicides involving firearms; and

¹¹ “Easing Concealed Firearms Laws: Effects on Homicide in Three States,” David McDowall, Colin Loftin, and Brian Wiersema; *Journal of Criminal Law and Criminology*, Vol. 86(1), Fall 1995: pp. 193-206. The authors are members of the Violence Research Group and Department of Criminology and Criminal Justice, University of Maryland at College Park.

- 2) that they may actually increase them.

The authors note that they must hedge on this second conclusion, due to the inconsistency in their findings (i.e., since firearm homicides were found to increase significantly in three of the five cities studied, but to decrease significantly in one city). The authors urge policymakers to be cautious in enacting such laws.

In their 1997 research paper, Lott and Mustard critique this study by McDowall, et al., for its sample selection techniques (i.e., for focusing on only three cities in Florida and one each in Mississippi and Oregon, and for not using the same time frame or area-definition method for all of the selected cities) as well as for their choices regarding certain definitions of key variables (i.e., by focusing on only murders involving firearms and, thus, in Lott and Mustard’s view, rendering the research incapable of discovering any substitution effects involving other types of murders or other types of crimes).

Kopel’s Summary of the Florida Experience with Shall-Issue Licensing¹²

Kopel’s article summarizes the history of Florida’s experience with the shall-issue licensing law enacted in that state in 1987. He credits that enactment with sparking a national movement leading to the adoption of shall-issue licensing laws in several other states since 1987.

Kopel relates that when Florida’s law went into effect, Miami’s police chief ordered his officers to compile detailed reports of all police encounters with permit holders. According to Kopel, the number of permits issued in Miami increased from 1,200 in September 1987 to 21,092 in August 1992, when the police department decided that the behavior of permit holders did not merit further study. In five years, permit holders were convicted of criminal misuse of a firearm in the following instances:

- two cases of aggravated assault involving a firearm;
- one case of armed trespass; and
- one case of a motorist shooting at another driver.

In addition, one permit holder attempted (reportedly unthinkingly) to enter the secure area at Miami’s airport with a firearm in her purse, and another accidentally shot himself in the leg.

Kopel reports that the Dade County police also recorded the following incidents involving defensive use of licensed concealed firearms:

¹² “The Untold Triumph of Concealed Carry Permits,” David Kopel; *Policy Review*, July-August 1996. Kopel is the research director of the Independence Institute in Golden, Colorado. Note that House Research has not yet confirmed this description of the Florida findings with the Miami/Dade County authorities.

- two robbery cases in which the permit holder produced a firearm and the robbers fled;
- two cases in which permit holders intervened to stop a robbery, but the robbers were not apprehended and no one was hurt;
- one robbery victim whose gun was seized by the robber;
- a man who shot a pit bull dog that was attacking him;
- two cases of a citizen capturing a burglar;
- three cases of a burglar who was frightened off but not captured;
- one case of thwarted rape; and
- a bail bondsman who fired two shots at a fleeing bail-jumper wanted for armed robbery.

According to Kopel, there were no reports of permit holders in Miami shooting innocent people by accident.

Kopel notes that in Florida statewide, 315,000 concealed carry permits had been issued by the end of 1995, with only five having been revoked because the permit holder committed a violent crime with a gun.