The Impact of Liberalized Concealed Carry Laws on Homicide: An Assessment[1]

K. Alexander Adams[1*] and Youngsung Kim[2]

1. Firearms Research Center, University of Wyoming College of Law
2. Department of Political Science, Colorado State University

Abstract: This paper uses panel data from 1980 to 2018 in all 50 U.S. states and the District of Columbia to examine the relationship between liberalized concealed carry laws, homicide, and firearm homicide. Multivariate regression analysis was conducted with state and time fixed effects. A general-to-specific procedure was also used to reduce the arbitrariness of choosing control variables in the crime equation. Various robustness checks were also employed, including the use of a generalized synthetic control model. The relationship between shall-issue, permitless carry laws and homicide were statistically insignificant at the 1%, 5%, and even 10% level. The results were robust to multiple alternative model specifications. We find no evidence that looser concealed carry laws pose a significant public health or criminological risk.

[1] Direct all correspondence to: K. Alexander Adams, kalexanderadams@outlook.com

Acknowledgements: We would like to thank Lucy Sorensen, Carl Moody, Mike Hogan, David Kopel, Jeremy Kidd, and George Mocsary for their comments on this version of this paper.

Introduction

In 2018, there were 18,830 homicides in the United States, and 13,481 of those were committed with firearms—approximately 71% (CDC 2020). Because of America's elevated rates of homicide compared to other countries, there has been widespread scholarly interest in gun policy and related violence.

Beginning in the mid-1980s, states began to rapidly liberalize their right to carry (RTC) laws in the form of "shall-issue" laws, which require states to issue a license if a citizen meets the minimum requirements for a permit. Before the 1980s, most states were either "may-issue," which gave discretion to the issuing authority as to whether or not the permit ought to be issued, or "no-issue," which outright banned concealed carry in public. Beginning in the early 2000s, yet another policy, colloquially known as "constitutional carry" or permitless carry, has emerged, which allows all law-abiding citizens above the age of 21 to carry a firearm concealed without a license or training. Alaska, in 2003, was one of the first states to implement this policy, though Vermont has had it since the early 20th century due to the wording of its state constitution. As of early 2022, 25 states had instituted permitless carry laws. Table 1 displays the adoption years of liberalized concealed carry laws by state through early 2022.

[TABLE 1]

As can be seen in Table 1, the adoption of permitless carry has been exceedingly rapid. In 2021 alone, five states adopted permitless carry, and several more states are considering adopting the legislation in 2022. Given the exceedingly rapid trend towards permitless carry, it is important to test the impact of this new legislation on public health and criminological outcomes.

This paper contributes to the literature by methodologically improving from prior studies in multiple ways. First, this study is one of the first papers that analyze the impact of permitless carry laws on homicide. Prior to this point, the data was limited as many states have only

recently adopted these laws, and thus the applicability of previous results was limited (Hamill et al. 2019). This paper, however, includes 12 states that have passed such ordinances during the period studied. By studying permitless carry, this paper offers a unique test of both the "more guns, less crime" hypothesis. If these laws were to impact homicide either positively or negatively, we would expect their effects to be largest in permitless carry states given that these laws allow *any* non-criminal adult to carry a firearm concealed without any licensure or training.

Second, our paper attempts to reduce the likelihood of endogeneity biases. This paper spans a long time period: 1980-2018 (i.e., a total of 39 years). While some recent studies extended their datasets past the mid-2000s, they often excluded data from the 1980s (Siegel et al. 2017; Zimmerman 2014). This data limitation may have significant empirical consequences since concealed carry laws passed in the 1980s typically have lower fees, training requirements, and minimum ages. For example, the average inflation adjusted (2013 dollars) fee to obtain a concealed carry license in states that passed their laws in the 1980s was $85, but the average fee for states that passed their laws in the 2000s was $113.82 (Lott 2016). Failing to include data from the 1980s removes a significant amount of data from these early shall-issue adopters that have higher rates of public firearm carrying than more recent adopters due to their lower training, age, and fee requirements. This difference between 1980s and 2000s may also explain the different empirical findings between early and more recent studies.

We also attempt to reduce endogeneity problems by including a larger number of control variables than many prior studies. One of the major criticisms of past firearms research is its failure to include statistically significant control variables in the crime equation. Papers with multiple statistically significant control variables produce radically different results than those that include few or no significant control variables (Kleck 2018).

Third, our paper is one of the first that uses a general-to-specific modelling procedure suggested by Moody and Marvell (2010), and the first to apply it to permitless carry laws. This procedure eliminates the somewhat arbitrary nature of selecting control variables and prevents over-parameterization that makes explanatory variables insignificant. That is, it helps balance between too few and too many control variables.

Finally, our paper uses a novel version of the synthetic control method developed by Xu (2017) to test the robustness of our panel regression results. This method has many significant advantages over an early version of the synthetic control method used by other researchers in this field, such as the ability to produce uncertainty estimates, and allows us to make a unique methodological contribution to the study of firearms.

Literature Review

There has been a heated debate on the effects of concealed carry laws. Some scholars have argued that these laws primarily serve to deter crime and save lives (Lott and Mustard 1997; Lott 2010). Drawing from economic theory, these scholars maintain that armed civilians may serve to deter crime by increasing the cost of perpetrating crime. Other proponents of concealed carry laws have noted that the benefits of these laws are not limited to criminal deterrence (Hsiao and Bernstein 2015), but these claims are beyond the scope of this paper.

Opponents of liberalized concealed carry laws have argued that these laws lead to increased aggression—either by escalating situations that otherwise would have been mere unpleasant confrontations or by making it easier for criminals to get access to firearms via theft (Donahue et al. 2019). Indeed, if more people are carrying a firearm in public, it stands to reason that criminals will have more opportunities to steal firearms from vehicles or other locations as

citizens carrying in public move around. In the case of permitless carry, where any adult with a clean criminal record can carry a firearm without training, it seems likely that higher rates of concealed weapons carrying could increase the number of violent encounters as well. As a result, these laws may increase crime and reduce public safety.

It is also possible that these laws may have no impact on crime at all. Perhaps both deterrence and aggression exist at the same time leading to a null effect cancelling each other out, or perhaps neither criminal deterrence nor aggression is impacted by the liberalization of concealed carry laws. Indeed, some research suggests that the public's perception of the number of firearms carriers is not significantly correlated with a state's concealed carry law, so assuming criminals and the general public have the same general knowledge about gun laws, it is possible that criminals may not know enough about a state's gun laws or gun culture to be deterred by changes in concealed carry policies (Fortunato 2015). On the other hand, concealed carry holders are extremely law abiding, so it is possible that liberalized concealed carry laws have not impacted aggression (Lott 2010). Concealed carry laws may also have little impact on actual carrying behavior. If that were the case, the effects of these laws on crime would be nill. The existing research shows uncertain effects of liberalized concealed carry laws on gun ownership outcomes (Steidley and Kosla 2018), and unfortunately research on carrying behavior is nonexistent.

Empirical findings on the effects of concealed carry laws are mixed. Many early empirical studies suggested that these laws reduced violent crime, including murder (Lott and Mustard 1997; Moody 2001; Plassman and Tideman 2001). Others found null effects (Black and Nagin 1998; Ludwig 1998). The academic debate at that time was between negative effects and

null effects, but most of these early studies concluded that these laws reduce murder (Moody and Marvell 2008).

The debate in recent years has shifted. Using data between 1991 and 2016, Siegel et al. (2017) found that shall-issue concealed carry laws were associated with *elevated* homicide rates. While not analyzing murder or homicide rates directly, Donahue et al. (2019) found that shall-issue concealed carry laws were associated with elevated levels of violent crime. Using a similar dataset, however, Moody and Marvell found no effect (Moody and Marvell 2019). Barati (2016) found that shall-issue concealed carry laws reduce crime rates in states that previously had no-issue laws but had no effect on crime when the state transitioned from may-issue to shall-issue, while Gius (2019) found that shall-issue laws elevate state-level murder rates by 4.9% with a fixed effects model, but his synthetic control methods found no impact of shall-issue laws on murder. An earlier paper came to the opposite conclusion: he found *restrictive* concealed carry laws increased state level murder rates (Gius 2013).

Few studies have studied the impact of permitless carry laws on any violent crime outcomes. Adams (2022) included permitless carry as a covariate and found these laws may be correlated with reduced criminogenic outcomes, but the study focused primarily on stand your ground laws, not concealed carry laws. Hamill et al. (2019) generally found no significant shifts in homicide when states liberalized their concealed carry laws, including the adoption of permitless carry. Overall, the existing research on permitless carry and criminogenic outcomes is limited and inconclusive.

Given this mixed empirical evidence of prior studies, this paper aims to provide a more robust answer to the question: what are the effects of liberalized concealed carry laws, especially permitless carry laws, on homicide rates? We examine the relationship between shall-issue and

permitless concealed carry laws and homicide rates across all 50 U.S. states and D.C. from 1980 to 2018. Multiple empirical specifications were tested, all of which confirm the robustness of our main finding that these laws have no statistically significant effect on homicide.

Methods

Dependent variables

The primary outcome variable in this study is total homicide rates. We also used firearm homicide rates as our secondary outcome variable to further examine the validity of the aggression hypothesis because if liberalized concealed carry laws increased homicide, the effect would be most pronounced in homicides committed with a firearm. These data were acquired from the CDC's WONDER database. They were extracted from the National Center for Health Statistics (NCHS) and provide annual estimates for the number of homicides in all 50 states and D.C.

Independent Variables

We created dummy variables to indicate whether states had shall-issue or permitless carry laws using the data obtained from the Rand Corporation's Firearm Law database (version 3.0). Following Lott and Mustard (1997), the implementation years of all laws were lagged by one year to make them consistent across the states—the first full year of the law's implementation. Many prior studies dropped the observations of permitless carry states from their analyses. Although some studies included these states for analyses, the applicability of their findings were limited due to the small number of these states in their study period (Siegel et al. 2017; Hamill et

al. 2019). However, our study improves from these prior studies by including 12 states that adopted constitutional carry laws during our study period.

The selection of control variables in criminological studies is often arbitrary. It has been demonstrated that the same authors include different control variables in different articles (Moody and Marvell 2010). Even when authors include many control variables, it is common for the variables included to lack statistical significance, and papers that include statistically significant control variables obtain different results than papers that include few significant control variables (Kleck 2015; Kleck 2019).

While too few significant control variables can cause problems, there is a critical problem that could result from too many control variables: an over-parameterized model causes the standard errors to become too large, falsely rendering some variables insignificant. To resolve this issue, this paper uses the general-to-specific (GETS) methodology proposed by Moody and Marvell (2010).

Our estimates begin with a "full" model including 23 demographic, economic, and law enforcement variables as well as state linear trends, a lagged dependent variable, and state and year fixed effects. The specific control variables used in the "full" homicide model are execution rates, incarceration rates, police per capita, civilian police employees per capita, percent black, percent white, percent college educated, population density, per capita alcohol consumption, construction employment per capita, military employment per capita, poverty rates, unemployment rates, the Fryer et al. crack-cocaine index, percent of the population aged 15-19, 20-24, 25-29, 30-34, and 65+, and other gun control laws. These variables were taken from the FBI's UCR reports, the Death Penalty Information Center, the Census Bureau, Crime Research and Prevention Center, the University of Kentucky's Center for Poverty Research, National

Institute on Alcohol and Alcoholism, the RAND Corporation, and the Bureau of Justice Statistics. Our model also includes linear state trends to control for slow moving variables such as the advent of the cellphone or increased 911 coverage over the study period.

After estimating the full model, all control variables that are empirically irrelevant are repeatedly removed from the model using *t*- and *F*-tests until we obtain the "final parsimonious model" (Moody and Marvell 2010).

Empirical Model

To estimate the effects of liberalized concealed carry laws on homicide rates, we use panel regression analysis with state and year fixed effects and include many important control variables used in the firearms literature. To deal with the issue of heteroskedasticity and serial correlation in the panel data set, standard errors are clustered by state, as suggested by Bertrand et al. (2004). The standard errors include the Huber-White correction for heteroskedasticity. Given that homicide rates are not normally distributed, the dependent variable is logged. Our empirical model for homicide rates is as follows:

$$ln(Y_{it}) = \alpha_0 + \alpha_1 RTC_{it} + \alpha_2 Permless_{it} + \alpha_3 X_{it} + \zeta_i + \gamma_t + \varepsilon_{it}$$

Y_{it} is the homicide rate at state *i* in year *t*. ζ_i and γ_t represent state and year fixed effects, respectively. $\varepsilon_{i,t}$ is the disturbance. RTC_{it} and $Permless_{it}$ represent the shall-issue and permitless carry dummy variables, respectively. X_{it} represents a vector of time-varying state covariates.

As a robustness check to our panel results, we also used a synthetic control model—a method that has become popular in the firearms literature (Donahue et al. 2019; Gius 2019; Moody and Marvell 2019). The use of this method is important to check the robustness of our results on permitless carry, because although our dataset has more data on permitless carry laws than prior papers such as Hamill et al. 2018, the data is still limited enough to where one ought to exercise caution when interpreting results from a standard panel analysis. The use of the synthetic control method allows us to be more confident in our findings.

The proliferation of the synthetic control method in the firearms literature should not be surprising: the synthetic control method produces elegant, easily interpretable graphical evidence which even a nontechnical audience can easily understand. The synthetic control method runs a matching algorithm to generate a weighted average of the dependent variable on a set of control states. In this study, the dependent variable is homicide and firearm homicide. This generated average serves as our counterfactuals: what would have happened if states did not adopt liberalized concealed carry laws. In the pre-treatment period, assuming the method chose appropriate control states, the treatment effect—the difference between states with liberal concealed carry laws and those with restrictive laws—should be close to zero. After a law's adoption, if these laws have any impact on homicide, we expect the treatment effect to differ from zero.

This paper opts to use a novel version of the synthetic control method, allowing us to methodologically advance the firearms literature. We use a more advanced version of the synthetic control method called the Generalized Synthetic Control Method (GSCM) that was developed by Xu (2017). Although the idea is very similar, the GSCM has a few advantages over the standard the synthetic control method. First, as the name implies, it allows us to generalize

the results. It does so by providing an *average* treatment effect across all treatment states—the standard synthetic control method only looks at each state one by one like a case study. Second, the GSCM produces uncertainty estimates via bootstrapping techniques. One of the biggest drawbacks of the standard synthetic control method is that while it produces easily interpretable graphical evidence, determining statistical significance is difficult. The GSCM overcomes that drawback. And, finally, GSCM uses an interactive fixed effects model to model time-varying confounders, which Xu (2017) argues can outperform the other synthetic control methods.

Results

Main Results

Table 2 presents the impact of liberalized concealed carry laws on homicide and firearm homicide using two-way fixed effects regression models. It indicates that shall-issue and permitless carry laws have no effect on homicide and firearm homicide rates in both full and GETS models. For example, the GETS model in column 2 indicates that while shall-issue laws are associated with 0.53% lower homicide rates, the relationship is not statistically significant ($p = 0.795$). The column also indicates that permitless carry laws are associated with 3.48% lower homicide rates, but the result is likewise insignificant ($p = 0.589$).

[TABLE 2]

Column 4 indicates that the laws are associated with 0.50% higher firearm homicide rates, but the result is insignificant ($p = 0.818$). It also shows that permitless carry laws are also

associated with slightly higher firearm homicide rates (1.4%) than the control states, but we fail to reject the null hypothesis ($p = 0.881$).

Synthetic Control Method Results

Figure 1 presents our primary GSCM result: the impact of permitless carry on homicide. The results of the GSCM examining the impact of permitless carry laws on homicide are null. Similar to many of our panel regression results, the association between permitless carry laws and homicide are actually negative: shortly after adoption, permitless carry states tend to have lower homicide rates than the control states in the model, as the treatment effect turns negative. However, at no point did we see a statistically significant deviation from zero and were unable to reject the null hypothesis.

[FIGURE 1]

The results for firearm homicide were similar and can be seen in Figure 2. Similar to our results in Figure 1, the results in Figure 2 suggests the impact of permitless carry laws on firearm homicide are likewise null. While permitless carry states are associated with less firearm homicide on average, the results fail to reach the traditional 5% level of statistical significance. The results from our synthetic control method suggest permitless carry laws neither significantly increase nor decrease either total or firearm homicide.

[FIGURE 2]

Other Robustness Tests

Table 4 shows the regression results of GETS and full models that weight the observations by population. They all confirm that liberalized concealed carry laws have no effect on homicide and firearm homicide.

[TABLE 3]

Discussion and Conclusion

This paper improves upon prior research by including a larger number of control variables and a longer study period. It also does so by employing the GETS methodology to reduce the arbitrariness of selecting control variables. Being one of the only papers to test the impact of permitless carry provides a unique test of the impact of liberalized concealed carry laws. Our use of the synthetic control method further bolsters our main findings related to more recently adopted permitless carry laws. Our results do not comport with the "more guns, less crime" hypothesis. On the other hand, the results do not support claims that these laws will increase homicide either. The results presented suggest that liberalized concealed carry laws may have no effect on homicide or firearm homicide.

With null effects, the net social impacts of these laws are up for debate. For example, liberalized carry laws may have a positive social impact by eliminating the arbitrary nature of issuing permits under a may-issue regime and thus reduces the risk of unjust bias against racial, gender, or socio-economic groups in permit approval rates. Permitless carry laws may be a further improvement upon shall-issue concealed carry laws, as costly licensing and training requirements may be more burdensome for some groups than others, such as women and poor African Americans. Furthermore, firearms have also been shown to be an effective means of self-defense, which may mean that permit holders may lose less property or suffer less injury

than they otherwise would in the event they are attacked even if they fail to prevent the event from occurring in the first place via criminal deterrence (Kleck 1997). On the other hand, RTC laws may have a negative social impact if the distress among the many Americans skeptical of gun carrying outweighs the potential benefits. This study focuses on homicide, but these laws may have negative social costs by increasing other forms of violent crime not studied here as well (see, e.g., Donahue et al. 2019).

Despite the strengths of this paper, this study is not free from limitations that can be addressed in future research. First, empirical models in this paper assume that there is an immediate increase in the number of permit holders in a state when a shall-issue law is passed, but the rate of increase in permit holders varies between shall-issue states (Lott 2010). Likewise, changes in carrying behavior even in permitless carry states may not occur overnight. Second, while we include more permitless carry law states than prior studies and analyze the impact of these laws more rigorously than past research, many of these states have only had these laws for a few years. Future research will need to be done on the impact of permitless carry laws on homicide, especially as a bevy of states have adopted these laws after the study period. Third, state-level data can introduce problems related to aggregation. Despite the potential issues with county-level crime data reporting, aggregation issues may be addressed through the use of county-level or city-level data in future study (Maltz and Targonski 2002; Lott and Whitley 2003). Fourth, even if permitless carry has no impact on homicide, it may potentially impact assault, rape, robbery, or suicide—both in a positive direction due to aggression and increased gun access or in a negative direction due to deterrence. Future research can answer these questions. Finally, it is exceedingly difficult to *prove* null findings; thus, future research is needed to continue to dig into the criminological effects of permitless carry laws.

The results presented here suggest that there is no strong association between RTC laws and homicide rates. The results for both shall-issue and permitless carry are insignificant, and in the case of permitless carry, the direction of the relationship is consistently negative in all our empirical models. As public health scholars, social scientists, and public officials continue to study and debate the causes of gun violence, this paper suggests that allowing citizens to carry firearms may not endanger public health or criminological outcomes at least as far as homicide rates are concerned.

References

Adams, K. A. (2022). No Retreat: The Impact of Stand Your Ground Laws on Violent Crime. *Criminal Justice Review* (Forthcoming, Online).

Ayres, I., & Donahue, J. J. (2003). Shooting down the "More Guns, Less Crime" hypothesis. *Stanford Law Review*, 55, 1193–1312.

Barati, M. (2016). New evidence on the impact of concealed carry weapon laws on crime. *International Review of Law and Economics*, 47, 76–83.

Bertrand, M., Duflo, E., & Mullainathan, S. (2004). How much should we trust differences-in-differences estimates? *The Quarterly Journal of Economics*, 119(1), 249–275.

Black, D., & Nagin, D. (1998). Do right-to-carry laws deter violent crime? *The Journal of Legal Studies*, 27(1), 209–219.

Center for Disease Control. (2020). Underlying cause of death, 1999-2018. CDC WONDER. Retrieved December 14, 2020, from https://wonder.cdc.gov.

Donohue, J. J., Aneja, A., & Weber, K. D. (2019). Right-to-Carry laws and violent crime: A comprehensive assessment using panel data and a state-level synthetic control analysis. *Journal of Empirical Legal Studies*, 16(2), 198–247.

Fortunato, D. (2015). Can easing concealed carry deter crime? *Social Science Quarterly*, *96*(4), 1071-1085.

Gius, M. (2013). An examination of the effects of concealed weapons laws and assault weapons bans on state-level murder rates. *Applied Economics Letters*, 21(4), 265–267.

Gius, M. (2019). Using the synthetic control method to determine the effects of concealed carry laws on state-level murder rates. *International Review of Law and Economics*, 57, 1–11.

Hamill, M. E., Hernandez, M. C., Bailey, K. R., Zielinski, M. D., Matos, M. A., & Schiller, H. J. (2019). State level firearm concealed-carry legislation and rates of homicide and other violent crime. *Journal of the American College of Surgeons*, 228(1), 1–8.

Hsiao, T., & Bernstein, C. (2015). The moral right to keep and bear firearms. *Public Affairs Quarterly*, 29(4), 345–363.

Kleck, G. (1997). Targeting guns: Firearms and their control. Routledge.

Kleck, G. (2015). The impact of gun ownership rates on crime rates: A methodological review of the evidence. *Journal of Criminal Justice*, 43(1), 40–48.

Kleck, G. (2019). Macro-level research on the effect of firearms prevalence on suicide rates: A systematic review and new evidence. *Social Science Quarterly*, 100(3), 936–950.

Kovandzic, T. V., & Marvell, T. B. (2003). Right-to-Carry concealed handguns and violent crime: Crime control through gun decontrol? *Criminology & Public Policy*, 2(3), 363–396.

Lott, J. R., & Mustard, D. (1997). Crime, deterrence, and right-to-carry concealed handguns. *The Journal of Legal Studies*, 26(1), 1–68.

Lott, J. R., & Wang, R. (2020). Concealed carry permit holders across the United States: 2020. Report from the Crime Prevention Research Center, 2020, Available at SSRN: https://ssrn.com/abstract=3703977.

Lott, Jr., J. (2016). Not all right-to-carry laws are the same, yet much of the literature keeps ignoring the differences. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2524729.

Lott, J. R. (2010). More Guns, Less Crime: Understanding Crime and Gun-Control Laws. University of Chicago Press.

Lott, J. R., & Whitley, J. E. (2003). Measurement error in county-level UCR data. *Journal of Quantitative Criminology*, 19(2), 185–198.

Ludwig, J. (1998). Concealed-gun-carrying laws and violent crime: Evidence from state panel data. *International Review of Law and Economics*, 18, 239–254.

Maltz, M. D., & Targonski, J. (2002). A note on the use of county-level UCR data. *Journal of Quantitative Criminology*, 18(3), 297–318.

Moody, C. (2001). Testing for the effects of concealed weapons laws: Specification errors and robustness. *The Journal of Law and Economics*, 44(S2), 799–813.

Moody, C. E., & Marvell, T. B. (2008). The debate on shall-issue laws. *Econ Journal Watch*, 5(3), 269–293.

Moody, C. E., & Marvell, T. B. (2010). On the choice of control variables in the crime equation. *Oxford Bulletin of Economics and Statistics*, 72(5), 696–715.

Moody, E. E., & Marvell, T. B. (2019). Do right to carry laws increase violent crime? A comment on Donohue, Aneja, and Weber. *Econ Journal Watch*, 16(1), 84–96.

Plassmann, F., & Tideman, T. (2001). Does the right to carry concealed handguns deter countable crimes? Only a count analysis can say. *The Journal of Law and Economics*, 44(S2), 771–798.

Siegel, M., Xuan, Z., Ross, C. S., Galea, S., Kalesan, B., Fleegler, E., & Goss, K. A. (2017). Easiness of legal access to concealed firearm permits and homicide rates in the United States. *American Journal of Public Health*, 107(12), 1923–1929.

Steidley, T., & Kosla, M. T. (2018) Toward a Status Anxiety Theory of Macro-Level Firearm Demand. *Social Currents*, 5(1), 86–103.

Xu, Y. (2017). Generalized synthetic control method: Causal inference with interactive fixed effects models. *Political Analysis, 25*(1), 57–76.

Zimmerman, P. R. (2014). The deterrence of crime through private security efforts: Theory and evidence. *International Review of Law and Economics*, 37, 66–75.

Table 1: Adoption Years of Liberalized Concealed Carry Laws by State					
State	Shall-Issue	Permitless Carry	State	Shall-issue	Permitless Carry
Alabama	1975	2022	Montana	1991	2021
Alaska	1994	2003	Nebraska	2007	
Arizona	1994	2010	Nevada	1995	
Arkansas	1995	2018	New Hampshire	1923	2017
Colorado	2003		New Mexico	2004	
Connecticut	1969		North Carolina	1995	
D.C.	2017		North Dakota	1985	2017
Florida	1987		Ohio	2004	2022
Georgia	1989		Oklahoma	1996	2019
Idaho	1990	2016	Oregon	1990	
Illinois	2013		Pennsylvania	1989	
Indiana	1980	2022	South Carolina	1996	
Iowa	2011	2021	South Dakota	1985	2019
Kansas	2007	2015	Tennessee	1996	2021
Kentucky	1996	2019	Texas	1996	2021
Louisiana	1996		Utah	1995	2021
Maine	1985	2015	Vermont	NA	1903
Michigan	2001		Virginia	1995	
Minnesota	2003		Washington	1935	
Mississippi	1990	2016	West Virginia	1989	2016
Missouri	2004	2017	Wisconsin	2011	
			Wyoming	1994	2011

This table includes the adoption dates for both shall-issue and permitless carry up through early 2022 using Version 3 of the RAND Corporations Firearms Law Database.

1

Table 2: Impact of Concealed Carry Laws on Homicide and Firearm Homicide Rates

	(1)	(2)	(3)	(4)
	Homicide Rates		Firearm Homicide Rates	
VARIABLES	Full Model	GETS Model	Full Model	GETS Model
Shall-Issue	-0.00493	-0.00529	0.0118	0.00503
	(0.0219)	(0.0202)	(0.0234)	(0.0217)
Permitless	-0.0215	-0.0348	0.0327	0.0139
	(0.0640)	(0.0640)	(0.0923)	(0.0930)
Constant	1.499**	0.770**	0.684	0.673***
	(0.615)	(0.344)	(0.981)	(0.166)
Controls	Full controls	Relevant controls	Full controls	Relevant controls
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,896	1,905	1,760	1,763
R-squared	0.950	0.950	0.947	0.946

Robust standard errors in parentheses (clustered at the state level)
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Impact of Concealed Carry Laws on Homicide and Firearm Homicide Rates (Population Weighted)

	(1)	(2)	(3)	(4)
	Homicide Rates		Firearm Homicide Rates	
VARIABLES	Full Weighted Model	GETS Weighted Model	Full Weighted Model	GETS Weighted Model
Shall-Issue	0.00990	0.00571	0.0161	0.00353
	(0.0225)	(0.0231)	(0.0231)	(0.0239)
Permitless	-0.0118	-0.0233	0.0213	0.00862
	(0.0755)	(0.0754)	(0.0853)	(0.0821)
Constant	2.313***	1.625***	1.730**	1.394***
	(0.667)	(0.375)	(0.770)	(0.405)
Controls	Full controls	Relevant controls	Full controls	Relevant controls
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,896	1,910	1,760	1,772
R-squared	0.952	0.952	0.958	0.957

Robust standard errors in parentheses (clustered at the state level)
*** p<0.01, ** p<0.05, * p<0.1

Figure 1: Impact of Concealed Carry Laws on Homicide Rates (GSCM)

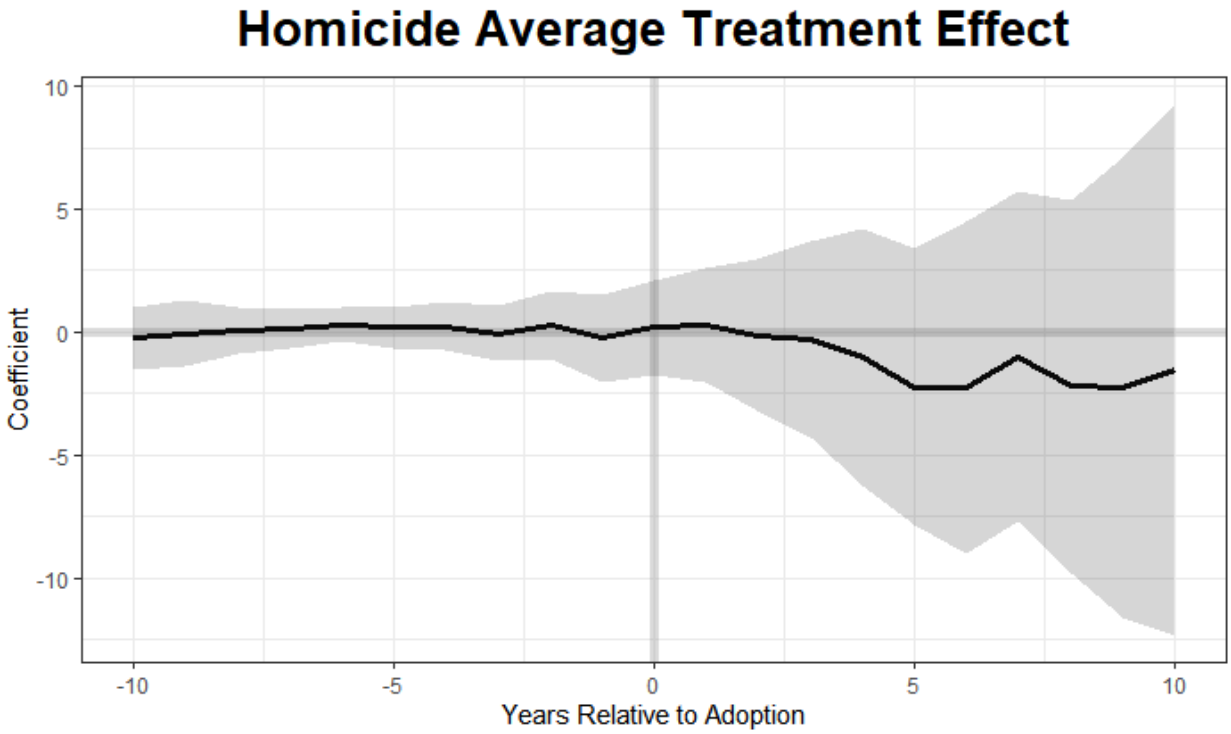

Figure 2. Impact of Concealed Carry Laws on Firearm Homicide Rates (GSCM)