

Online Appendix:

Can Easing Concealed Carry Deter Crime?

David Fortunato
University of California, Merced
dfortunato@ucmerced.edu

Regulations included in institutional context measure

As noted in the main text, the institutional context measure is a measure of overall firearm regulation derived from an IRT decomposition of a binary matrix. The matrix indicates whether or not each state has some form of the following rules: background checks for unlicensed sales; expiring purchase permits; required mental health reporting; sale prohibitions to persons with violent/firearm criminal record, persons on no-fly/terror watch lists, persons with drug/alcohol abuse issues, juvenile offenders, persons with mental illness history; background checks for all firearms; mandated removal of firearms from domestic violence scenes; removal of firearms from persons under a protective order; dealer licensing; alternative dealer regulation; mandated record of sales; restrictions on multiple purchases; waiting periods; possession licensing requirements; firearm registration mandates; required loss/theft reporting; prohibition on guns in bars, schools, state parks, houses of worship; mandated allowance in parking lots; “stand your ground;” assault bans; large capacity magazine bans; fifty caliber rifle ban; license for ammunition requirement; purchase age minima; safe storage mandates; authorized use technology mandates; liability for accidental child injury; imposed mechanical safety standards; microstamping requirements; local authority discretion; federal exemptions; medical gag rules.

The results of the scaling model produce a distribution of estimates, pictured in Figure 2 of the main text. Reestimating the main models in a bootstrap to assess the impact of measure uncertainty does not change the substantive conclusions.

Table S2:
Law Key

Number	Description	Number	Description
1	Background check on all unlicensed sales	22	Require registration for all firearms
2	Background check on select unlicensed sales	23	Require reporting of stolen firearms
3	Require expiring purchase permit	24	Concealed guns in bars
4	Mental health reporting	25	Concealed guns in schools
5	No sales to fire-arm misdemeanants	26	Concealed guns in parks
6	No sales to terror suspects or “no-fly” listees	27	Concealed guns in church
7	No sales to drug/alcohol abusers	28	Concealed guns in parking lots
8	No sales to juvenile offenders	29	“Stand your ground”
9	No sales to those with mental health histories	30	Assault weapons ban
10	Mandated background checks on handguns	31	High capacity cartridge ban
11	Removal of firearms from domestic violence scenes	32	Fifty caliber rifle ban
12	Removal of firearms from protection order focal person	33	Require license to buy ammunition
13	Require dealer license	34	Minimum purchase age higher than federal
14	Non-license dealer regulation	35	Safe storage requirements
15	All sales records must be sent to law enforcement	36	Personalized, owner-authorization technology mandates
16	Handgun sales records must be sent to law enforcement	37	Child access liability
17	Multiple purchases restricted	38	Other specific safety standards
18	3+ day waiting period	39	Microstamping mandate
19	1-2 day waiting period	40	Allow additional local regulation
20	License for purchase or possession of all firearms	41	Federal law declared inapplicable
21	License for purchase or possession of select firearms	42	Penalize medical experts for firearm risk discussions with patients

Data Description

Table S3:
Number of Respondents per State

State	Respondents	State	Respondents
Alabama	11	Montana	12
Alaska	7	Nebraska	14
Arizona	25	Nevada	4
Arkansas	5	New Hampshire	4
California	117	New Jersey	23
Colorado	19	New Mexico	12
Connecticut	11	New York	58
Delaware	5	North Carolina	27
Florida	47	North Dakota	5
Georgia	19	Ohio	51
Hawaii	1	Oklahoma	3
Idaho	6	Oregon	18
Illinois	56	Pennsylvania	45
Indiana	27	Rhode Island	8
Iowa	10	South Carolina	8
Kansas	19	South Dakota	7
Kentucky	6	Tennessee	16
Louisiana	8	Texas	77
Maine	3	Utah	7
Maryland	14	Vermont	3
Massachusetts	14	Virginia	19
Michigan	26	Washington	23
Minnesota	27	West Virginia	4
Mississippi	18	Wisconsin	19
Missouri	21	Wyoming	1

Table S4:
Descriptive Statistics for Included Covariates

Covariate	Mean	SD
Perceived Carriers	307.264	331.090
No Permit Required	0.036	0.187
Shall-Issue	0.710	0.454
Open Carry	0.548	0.498
$\ln(\text{Ownership})$	7.557	1.358
$\ln(\text{Criminal Export})$	2.398	0.727
$\ln(\text{Gun Death})$	2.268	0.323
Institutional Climate	0.029	0.586
Republican Vote	0.481	0.085
Male	0.567	0.496
Age (categorical)	2.337	1.427
Income (categorical)	1.349	0.738
Suburban	0.464	0.499
Urban	0.404	0.491
$\ln(\text{Active Permits})$	2.887	1.273

Table S5:
Correlation Matrix for Included Variables

DV	DV	None	Shall	Permits	Open	Ownership	Export	Death	Climate	Republican	Male	Age	Income	Suburban
DV	1.000													
No Permit Required	0.001	1.000												
Shall-Issue	0.126	-0.304	1.000											
Active Permits	0.109	-0.441	0.725	1.000										
Open Carry	-0.085	-0.214	-0.396	-0.134	1.000									
Ownership	0.017	-0.065	-0.114	-0.179	0.077	1.000								
Crimil Export	0.143	0.231	0.468	0.287	-0.475	-0.033	1.000							
Gun Death	0.153	0.270	0.425	0.120	-0.393	0.127	0.839	1.000						
Institutiol Climate	-0.177	-0.217	-0.681	-0.371	0.532	-0.069	-0.577	-0.633	1.000					
Republican Vote	0.187	0.129	0.622	0.355	-0.320	0.102	0.641	0.684	-0.804	1.000				
Male	-0.097	-0.004	-0.069	-0.008	0.038	0.060	-0.061	-0.059	0.044	-0.043	1.000			
Age	0.019	0.113	-0.078	-0.075	-0.040	-0.069	-0.006	-0.035	0.030	-0.057	-0.029	1.000		
Income	-0.097	-0.034	-0.177	-0.078	0.141	-0.026	-0.120	-0.151	0.214	-0.206	0.008	-0.003	1.000	
Suburban	0.013	-0.029	0.134	0.073	-0.097	-0.037	0.144	0.102	-0.101	0.116	-0.009	0.027	0.067	1.000
Urban	-0.070	-0.017	-0.154	-0.080	0.180	0.041	-0.217	-0.169	0.169	-0.159	0.039	-0.074	-0.058	-0.766

Full model specifications

Table S6 shows all binomial model estimates as well as two normal linear model estimates. The models show that permitting procedures only exert the predicted effects when all contextual variables are kept out of the model. In sum, the analyses suggest that permitting procedures most likely have no effect on perceptions of how many firearm carriers there are in a given state.

Table S6:
Model Estimates

	Binomial Models					Normal Models	
	Naive Model	Individual Controls	Contextual Controls	All Controls	Hierarchical Model	All Controls	Hierarchical Model
Concealed carry permit: baseline category is <i>May Issue</i>							
Shall-Issue	0.191 (0.007)	0.093 (0.007)	-0.353 (0.010)	-0.284 (0.017)	0.219 (0.400)	-115.330 (50.758)	-87.435 (78.950)
No Permit Required	0.432 (0.013)	0.337 (0.013)	-0.285 (0.017)	-0.382 (0.010)	-0.987 (0.618)	-114.274 (82.906)	-96.679 (122.935)
$\ln(\text{Active Permits})^*$	0.091 (0.003)	0.105 (0.003)	0.124 (0.003)	0.135 (0.003)	-0.108 (0.007)	27.699 (13.811)	20.723 (19.629)
Individual level controls: baseline urban density is <i>Rural</i>							
Male		-0.209 (0.004)		-0.208 (0.004)	-0.208 (0.004)	-59.960 (20.897)	-60.758 (20.578)
Age		0.023 (0.001)		0.031 (0.001)	0.039 (0.002)	5.612 (7.319)	6.019 (7.228)
Income		-0.115 (0.003)		-0.087 (0.003)	-0.128 (0.003)	-28.541 (14.411)	-33.683 (14.503)
Suburban		-0.149 (0.006)		-0.122 (0.006)	-0.162 (0.006)	-50.518 (32.272)	-47.512 (32.258)
Urban		-0.196 (0.006)		-0.143 (0.007)	-0.227 (0.007)	-65.869 (33.381)	-64.236 (33.613)
Contextual controls							
Open Carry			-0.094 (0.005)	-0.075 (0.005)	0.106 (0.255)	-9.123 (27.878)	-3.562 (46.152)
$\ln(\text{Ownership})^*$			0.004 (0.001)	0.011 (0.002)	0.212 (0.100)	-1.819 (8.527)	1.810 (16.041)
$\ln(\text{Criminal Export})^*$			-0.051 (0.006)	-0.056 (0.006)	0.183 (0.267)	-10.281 (30.964)	-3.232 (47.240)
$\ln(\text{Gun Death})^*$			0.303 (0.014)	0.272 (0.014)	0.036 (0.597)	77.956 (70.654)	57.671 (105.098)
Institutional Climate			-0.260 (0.008)	-0.234 (0.008)	-0.230 (0.318)	-59.667 (40.325)	-40.525 (62.658)
Republican Vote			0.545 (0.054)	0.621 (0.054)	-1.153 (1.649)	418.246 (239.579)	423.845 (324.770)
Intercept	-1.607 (0.006)	-1.215 (0.011)	-2.102 (0.031)	-1.862 (0.033)	-2.294 (0.936)	90.015 (158.120)	93.130 (206.167)
Random effects							
$\text{var}(\text{State random intercepts})$					0.445 (0.667)		59.158 (19.421)
Model fit							
$\ln(\text{likelihood})$	-142645	-139891	-139313	-137079	-126886	-7117	-7049
Parameters	4	9	10	15	16	15	16
AIC	285299	279801	278646	274188	253804	14266	14133
* Measured as number per 1,000 residents							
Single-tailed tests: $p < 0.10$ $p < 0.01$							