

Online Appendix to "Does Defensive Gun Use Deter Crime?"

I. Alternative copulas

Our main incident-level probit specification assumes the dependence between the fatality or injury status of an encounter and the presence of defensive gun use follows a bivariate normal distribution. We present ATE and ATET estimates obtained by assuming other dependence relations (copula types) between the binary outcome and treatment variables. Most of our estimates retain, or indeed increase, their significance under varying distributional assumptions, suggesting our results are robust to violation of the identifying assumption.

Compared to the elliptical Gaussian copula, the Frank and Plackett copulas allow for weaker dependence between the two variables; that is, estimates under an assumption of either of these copulas will be unbiased if there is even less correlation between defensive gun use and outcome (conditional on our included incident-level covariates) than permitted under the bivariate normal distribution. Unlike any of these symmetric relations, the Clayton copula exhibits lower-tail dependence, such that the correlation between defensive gun use and fatality/injury is heightened when they are both extremely unlikely. This would model our data best if a certain class of GVA incidents, perhaps similar in some unobservable characteristics, present both very low risk as well as low propensity for defensive gun use, while this relationship breaks down for other "types" of incidents.

TABLE A1—THE EFFECT OF DEFENSIVE GUN USE ON CRIME (INCIDENT LEVEL) - ALTERNATIVE COPULA

Frank copula ATE $P(\text{Victim killed})$	-0.10*** (0.01)	-0.17*** (0.02)	-0.28*** (0.03)	-0.19 (0.13)	Frank copula ATET $P(\text{Victim killed})$	-0.01*** (0.00)	-0.05*** (0.01)	-0.07*** (0.02)	-0.01 (0.01)
$P(\text{Victim injured})$	-0.27*** (0.02)	0.02*** (0.00)	-0.75*** (0.03)	-0.17*** (0.03)	$P(\text{Victim injured})$	-0.04*** (0.00)	-0.25*** (0.00)	-0.09*** (0.02)	-0.01*** (0.00)
$P(\text{Suspect killed})$	0.38*** (0.07)	0.02*** (0.00)	0.15 (0.14)	0.42** (0.17)	$P(\text{Suspect killed})$	0.06*** (0.00)	0.18*** (0.00)	0.03*** (0.00)	0.02*** (0.00)
$P(\text{Suspect injured})$	0.43*** (0.03)	0.40*** (0.06)	0.71*** (0.01)	0.44*** (0.07)	$P(\text{Suspect injured})$	0.06*** (0.00)	0.18*** (0.01)	0.05*** (0.00)	0.01*** (0.00)
Plackett copula ATE $P(\text{Victim killed})$	0.01 (0.02)	-0.07*** (0.03)	-0.27*** (0.03)	-0.21 (0.40)	Plackett copula ATET $P(\text{Victim killed})$	0.00 (0.00)	-0.01** (0.01)	-0.06** (0.03)	-0.01 (0.03)
$P(\text{Victim injured})$	-0.23*** (0.05)	-0.60*** (0.01)	— —	-0.19*** (0.03)	$P(\text{Victim injured})$	-0.04*** (0.01)	-0.26*** (0.00)	— —	-0.01*** (0.00)
$P(\text{Suspect killed})$	0.38*** (0.12)	0.40 (20.04)	0.76 (0.01)	0.44 (0.36)	$P(\text{Suspect killed})$	0.06*** (0.00)	0.18 (1.50)	0.05*** (0.00)	0.02*** (0.00)
$P(\text{Suspect injured})$	0.41*** (0.07)	0.32* (0.17)	0.76*** (0.01)	0.50*** (0.09)	$P(\text{Suspect injured})$	0.06*** (0.00)	0.16*** (0.04)	0.05*** (0.00)	0.01*** (0.00)
Clayton copula ATE $P(\text{Victim killed})$	-0.22*** (0.01)	-0.27*** (0.08)	-0.28*** (0.02)	-0.17*** (0.05)	Clayton copula ATET $P(\text{Victim killed})$	-0.03*** (0.00)	-0.12*** (0.02)	-0.07*** (0.02)	-0.01*** (0.00)
$P(\text{Victim injured})$	-0.34*** (0.02)	-0.49 (12.48)	— —	-0.52*** (0.02)	$P(\text{Victim injured})$	-0.05*** (0.00)	-0.20 (76.39)	— —	-0.03*** (0.00)
$P(\text{Suspect killed})$	0.34*** (0.07)	0.36*** (0.09)	0.13*** (0.08)	0.33*** (0.03)	$P(\text{Suspect killed})$	0.05*** (0.00)	0.17*** (0.01)	0.03*** (0.00)	0.02*** (0.00)
$P(\text{Suspect injured})$	0.41*** (0.04)	0.44*** (0.01)	0.37 (1.83)	0.33*** (0.03)	$P(\text{Suspect injured})$	0.06*** (0.00)	0.19*** (0.00)	0.05 (0.13)	0.01*** (0.00)

Note: For clarity, incident types are suppressed in the table headers: columns 1 and 5 are armed robbery, columns 2 and 6 are home invasions, columns 3 and 7 are road rage, and columns 4 and 8 are bar/club assaults. The numbers of observations of each type are as in main paper. Discontinuous regions in the victim injury observations prevented estimation under the Plackett and Clayton copulas. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

II. Robustness check: straight-line distance

In section III of the paper, we use the driving distance to shooting ranges as an instrument. Here we show that most of our individual-level instrumental variable regression results are robust to using the straight-line distance instead.

As could be expected, some coefficients lose significance. We expect this result since the driving distance to a shooting range is likely to be a more relevant instrument for the probability of gun-carrying than the straight-line distance, which ignores natural obstacles. This result thus increase confidence in the driving distance to a shooting range as a relevant instrument.

TABLE A2—THE EFFECT OF DEFENSIVE GUN USE ON CRIME (INCIDENT LEVEL) - STRAIGHT-LINE DISTANCE

	Armed robbery	Home invasion	Road rage	Bar/Club assault
Probit marginal effect				
<i>P</i> (Victim killed)	-0.27*** (0.02)	-0.31*** (0.01)	-0.19*** (0.05)	-0.20*** (0.04)
<i>P</i> (Victim injured)	-0.31*** (0.02)	-0.43*** (0.01)	-0.48*** (0.04)	-0.25*** (0.03)
<i>P</i> (Suspect killed)	0.15*** (0.00)	0.32*** (0.01)	0.09*** (0.01)	0.07*** (0.00)
<i>P</i> (Suspect injured)	0.19*** (0.00)	0.35*** (0.01)	0.12*** (0.00)	0.10*** (0.00)
IV marginal effect (ATE)				
<i>P</i> (Victim killed)	-0.34*** (0.02)	-0.34*** (0.03)	0.65*** (0.01)	-0.37*** (0.01)
<i>P</i> (Victim injured)	-0.06 (0.15)	-0.73*** (0.03)	-0.75*** (0.01)	-0.48 (0.75)
<i>P</i> (Suspect killed)	0.20 (0.30)	0.58*** (0.08)	0.05 (0.63)	0.84*** (0.01)
<i>P</i> (Suspect injured)	0.38* (0.22)	0.32* (0.17)	0.78*** (0.01)	0.19 (0.13)
IV marginal effect (ATET)				
<i>P</i> (Victim killed)	-0.55*** (0.09)	-0.37*** (0.04)	0.34*** (0.03)	-0.96*** (0.03)
<i>P</i> (Victim injured)	-0.07 (0.17)	-0.90*** (0.02)	-0.98*** (0.00)	-0.46 (0.55)
<i>P</i> (Suspect killed)	0.29* (0.15)	0.57*** (0.06)	0.18 (0.60)	0.54*** (0.03)
<i>P</i> (Suspect injured)	0.40*** (0.11)	0.34** (0.16)	0.77*** (0.04)	0.27*** (0.06)
Number of incidents	15,173	6,971	2,072	6,755
Linear F-Statistic	0.66	3.23	0.28	6.61

Note: Robustness check for Table 5 of the main paper where the instrument is the straight-line distance to the nearest shooting range instead of the driving distance. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

III. Robustness check: all counties

In section IV of the paper, we cannot use our full sample of about 90% of the 3,100 US counties since the firearm control based on CDC data is not available for all of them. Here we show that our aggregate-level instrumental variable regression results are robust to dropping this instrument and using all 2,780 counties instead.

TABLE A3—THE EFFECT OF DEFENSIVE GUN USE ON CRIME (AGGREGATE LEVEL) - WITHOUT FIREARM SUICIDES

	Victims killed	Victims injured	Suspect killed	Suspect injured	Gun-related incident	Armed robbery	Home invasion	Road rage	Club incident	Unlawful possession
OLS										
Defensive gun use	5.00*** (1.09)	12.28*** (2.40)	0.42*** (0.02)	0.68*** (0.03)	14.77*** (2.61)	1.09*** (0.10)	0.48*** (0.03)	0.16*** (0.03)	0.34*** (0.04)	0.38*** (0.07)
IV										
Defensive gun use	9.64*** (3.57)	33.24** (14.43)	0.51*** (0.08)	0.73*** (0.15)	36.30** (14.78)	2.24*** (0.63)	0.82*** (0.18)	0.41*** (0.14)	0.76*** (0.18)	1.65** (0.67)
Density	-85.88 (376.19)	459.68 (1434.88)	11.97 (9.14)	-29.44* (15.69)	354.24 (1457.66)	-2.17 (54.76)	3.09 (21.10)	10.05 (14.09)	-45.21* (23.31)	27.13 (62.50)
Rent	-15.58** (7.68)	-11.86 (36.00)	-0.04 (0.27)	-0.75** (0.31)	-19.97 (34.84)	-1.53 (1.41)	-0.58 (0.57)	0.44 (0.41)	-0.56 (0.66)	-1.50 (1.73)
% Male	23.90 (92.41)	-26.68 (421.11)	3.44 (2.62)	-1.75 (4.15)	-31.63 (417.63)	-1.70 (14.75)	1.05 (5.27)	2.44 (2.79)	5.36 (6.52)	-8.94 (18.57)
% 18-25 years old	-93.21 (67.20)	-74.27 (222.92)	2.01 (1.75)	-3.22 (2.84)	-126.35 (233.61)	5.44 (10.19)	8.31** (3.65)	1.98 (2.60)	-2.88 (4.24)	18.16 (11.34)
% 35-55 years old	-62.92 (98.08)	-65.12 (323.50)	3.31 (2.69)	-14.17*** (4.00)	-115.58 (341.87)	-2.57 (13.73)	1.84 (4.95)	9.04*** (3.26)	-8.76 (7.60)	-7.49 (16.43)
% White	9.00 (29.11)	10.97 (87.27)	-0.59 (0.63)	0.14 (1.19)	15.21 (91.92)	-0.88 (3.73)	-1.00 (0.92)	-0.67 (0.89)	-0.12 (1.45)	-3.10 (3.52)
% Black	142.51** (64.63)	136.52 (233.23)	-1.07 (1.39)	3.15 (2.43)	203.42 (241.54)	5.91 (9.81)	-2.23 (2.72)	-2.59 (2.08)	1.36 (3.50)	-7.94 (10.92)
% Hispanic	12.54 (10.07)	31.98 (40.52)	0.12 (0.29)	-0.11 (0.38)	30.15 (38.82)	2.21 (2.19)	-0.38 (0.69)	0.99 (0.61)	0.80 (0.64)	-0.40 (1.97)
% Homeowner	-7.50 (32.67)	-35.96 (104.99)	1.47 (0.92)	-3.61** (1.52)	-39.99 (108.91)	-3.25 (4.52)	0.73 (1.42)	0.84 (1.28)	-3.65* (2.14)	-0.72 (5.71)
Median household income	78.05 (162.18)	32.85 (646.59)	-0.28 (5.52)	14.00** (6.87)	70.94 (641.61)	58.78** (24.11)	2.92 (9.73)	-1.54 (6.11)	13.10 (11.98)	30.82 (30.71)
Republican vote	-29.06* (15.55)	-78.97 (57.35)	0.27 (0.37)	-0.41 (0.72)	-79.07 (59.64)	-1.25 (3.05)	1.65 (1.25)	0.00 (0.73)	-2.17 (1.36)	5.38 (3.76)
State firearm ownership	299.91** (128.96)	1495.74*** (507.31)	-7.18*** (2.68)	-7.36 (5.48)	1471.47*** (528.46)	87.58*** (23.52)	5.21 (6.89)	13.78** (5.35)	18.13** (7.79)	65.29*** (24.45)
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of counties	2780	2780	2780	2780	2780	2780	2780	2780	2780	2780
Robust F-Statistic	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38	11.38

Note: Robustness check for Table 6 of the main paper where firearm suicide rate is omitted. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

IV. Additional tables

Table A4—: Full individual-level results: Probit

	Armed robbery	Home invasion	Road rage	Bar/Club assault
P(Victim killed)				
DGU	-0.84*** (0.06)	-1.17*** (0.04)	-0.61*** (0.16)	-0.54*** (0.12)
Density	-0.64 (1.69)	-0.31 (1.99)	-7.58** (3.46)	0.39 (1.41)
Rent	0.04 (0.06)	-0.01 (0.07)	0.11 (0.12)	-0.03 (0.07)
% Male	0.15 (0.17)	0.51** (0.25)	-0.63* (0.33)	-0.14 (0.13)
% 18-25 years old	0.15 (0.13)	-0.16 (0.20)	-0.43 (0.33)	-0.14 (0.17)
% 35-55 years old	-0.01 (0.15)	0.06 (0.22)	-0.60* (0.34)	0.23 (0.19)
% White	-0.18** (0.08)	-0.23* (0.12)	-0.63*** (0.19)	-0.52*** (0.16)
% Black	-0.03 (0.10)	0.25 (0.16)	-0.37 (0.23)	-0.11 (0.17)
% Hispanic	0.06 (0.07)	-0.10 (0.11)	0.06 (0.18)	0.04 (0.12)
% Homeowner	0.21*** (0.07)	0.18** (0.08)	0.02 (0.14)	0.22*** (0.08)
Median household income	-0.88 (0.93)	0.70 (0.98)	-0.80 (1.61)	0.52 (1.01)
State firearm ownership	-0.60 (.)	-1.47 (1.45)	5.36** (2.31)	0.80 (1.14)
Firearm suicide rate	0.36 (0.34)	0.06 (0.36)	0.49 (1.02)	0.37 (0.33)
Republican vote	0.31 (0.19)	0.09 (0.17)	-0.57 (0.54)	0.16 (0.16)
Constant	-0.75*** (0.24)	-0.14 (0.56)	-2.06*** (0.78)	-0.75 (0.49)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
P(Victim injured)				
DGU	-0.92*** (0.06)	-1.39*** (0.04)	-1.58*** (0.16)	-0.84*** (0.09)
Density	0.17 (1.12)	-0.55 (2.13)	6.31** (2.57)	-0.55 (1.58)
Rent	0.00 (0.06)	0.05 (0.07)	-0.09 (0.10)	-0.01 (0.06)
% Male	0.03 (0.17)	-0.25 (0.24)	0.68** (0.34)	0.27* (0.16)
% 18-25 years old	-0.05 (0.13)	0.11 (0.20)	0.35 (0.36)	0.15 (0.20)

% 35-55 years old	0.11 (0.14)	0.21 (0.28)	0.71* (0.41)	-0.57*** (0.18)
% White	0.18* (0.09)	0.03 (0.13)	0.52** (0.22)	0.21 (0.16)
% Black	0.15* (0.09)	-0.12 (0.16)	0.37 (0.27)	-0.03 (0.18)
% Hispanic	0.09 (0.09)	0.20 (0.13)	-0.01 (0.22)	-0.01 (0.13)
% Homeowner	-0.19*** (0.07)	-0.19** (0.10)	-0.11 (0.12)	-0.03 (0.08)
Median household income	0.01 (0.85)	-1.03 (0.86)	0.26 (1.62)	0.19 (1.27)
State firearm ownership	0.54 (.)	-0.56 (1.15)	-4.90* (2.78)	-1.02 (1.11)
Firearm suicide rate	-0.30 (0.31)	0.26 (0.30)	-0.34 (1.18)	0.12 (0.37)
Republican vote	-0.34** (0.16)	-0.34** (0.16)	0.62 (0.60)	-0.37** (0.19)
Constant	0.59** (0.25)	1.13** (0.52)	2.02** (0.93)	1.15*** (0.41)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

P(Suspect killed)

DGU	2.21*** (0.04)	1.85*** (0.05)	4.60*** (0.79)	2.48*** (0.18)
Density	1.50 (2.71)	-0.79 (4.14)	2.94 (27.97)	0.09 (2.21)
Rent	0.06 (0.09)	0.06 (0.07)	-1.25*** (0.42)	-0.20 (0.21)
% Male	-0.03 (0.31)	-0.63** (0.27)	-5.57*** (2.09)	-0.04 (0.73)
% 18-25 years old	-0.04 (0.23)	-0.23 (0.25)	-1.72 (2.28)	-0.66 (0.45)
% 35-55 years old	-0.14 (0.33)	-0.55** (0.25)	-0.59 (1.53)	-0.55 (0.96)
% White	-0.10 (0.23)	-0.23 (0.22)	2.38** (0.94)	-0.40 (0.36)
% Black	-0.07 (0.22)	-0.08 (0.23)	0.45 (1.36)	-0.42 (0.26)
% Hispanic	-0.15 (0.14)	-0.17 (0.15)	2.96*** (0.95)	-0.42** (0.22)
% Homeowner	-0.03 (0.11)	0.17 (0.15)	-0.05 (0.78)	-0.48*** (0.16)
Median household income	0.68 (1.78)	0.34 (1.25)	0.01 (7.57)	2.78 (3.31)
State firearm ownership	5.13** (2.41)	-0.18 (.)	5.35 (3.33)	10.54** (5.18)
Firearm suicide rate	0.36 (0.59)	-0.19 (0.34)	-4.05 (2.90)	-0.22 (1.12)
Republican vote	0.13	0.06	-2.86**	-0.48

	(0.18)	(0.22)	(1.11)	(0.68)
Constant	-5.22***	-1.09***	0.39	-7.06***
	(0.85)	(0.38)	(1.67)	(2.23)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
P(Suspect injured)				
DGU	1.82***	1.62***	2.36***	1.74***
	(0.04)	(0.05)	(0.17)	(0.09)
Density	-0.53	-3.28	6.46**	-0.51
	(1.59)	(2.20)	(3.26)	(4.01)
Rent	-0.16***	-0.10	0.65**	0.10
	(0.06)	(0.08)	(0.28)	(0.14)
% Male	-0.26	0.30	-0.49	-0.33
	(0.23)	(0.28)	(1.39)	(0.52)
% 18-25 years old	-0.11	0.30	1.07	0.34
	(0.18)	(0.23)	(0.76)	(0.28)
% 35-55 years old	0.06	0.37	-0.04	0.49
	(0.19)	(0.23)	(0.67)	(0.37)
% White	-0.13	0.15	-0.32	0.44
	(0.15)	(0.16)	(0.52)	(0.29)
% Black	-0.16	-0.07	-0.25	0.07
	(0.17)	(0.15)	(0.56)	(0.32)
% Hispanic	-0.12	0.01	0.03	-0.01
	(0.12)	(0.13)	(0.51)	(0.20)
% Homeowner	-0.02	-0.06	0.57	-0.20
	(0.11)	(0.13)	(0.50)	(0.16)
Median household income	2.05*	0.71	-12.45***	-0.94
	(1.09)	(1.10)	(4.48)	(2.37)
State firearm ownership	-0.20	-1.59	3.42	-4.80**
	(.)	(.)	(7.81)	(2.33)
Firearm suicide rate	0.08	0.41	-0.35	1.47**
	(0.44)	(0.37)	(1.36)	(0.70)
Republican vote	0.30**	-0.06	1.60**	-0.19
	(0.14)	(0.20)	(0.65)	(0.37)
Constant	-1.48***	-1.33***	-3.95	-0.90
	(0.35)	(0.36)	(2.95)	(0.92)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Supplementary log-odd coefficients for Table 5 of the main paper.

Missing standard errors due to lack of log-likelihood convergence.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5—: Full individual-level results: IV Probit

	Armed robbery	Home invasion	Road rage	Bar/Club assault
P(Victim killed)				
DGU	-1.43***	-1.49***	1.20	-2.12***
	(0.25)	(0.13)	(.)	(0.33)

Density	-0.81 (1.61)	-0.58 (1.97)	-8.11** (3.29)	-0.30 (1.37)
Rent	0.04 (0.06)	-0.02 (0.08)	0.13 (0.12)	-0.04 (0.07)
% Male	0.10 (0.17)	0.55** (0.26)	-0.69** (0.35)	-0.20 (0.13)
% 18-25 years old	0.18 (0.13)	-0.14 (0.20)	-0.37 (0.35)	-0.18 (0.17)
% 35-55 years old	-0.01 (0.15)	0.03 (0.23)	-0.55 (0.36)	0.28 (0.19)
% White	-0.18** (0.08)	-0.20* (0.12)	-0.64*** (0.18)	-0.50*** (0.17)
% Black	-0.04 (0.10)	0.24 (0.17)	-0.38* (0.23)	-0.12 (0.17)
% Hispanic	0.05 (0.08)	-0.13 (0.12)	0.11 (0.16)	0.08 (0.14)
% Homeowner	0.22*** (0.06)	0.20*** (0.08)	0.02 (0.14)	0.17** (0.08)
Median household income	-0.78 (0.92)	0.84 (1.01)	-0.85 (1.54)	0.93 (0.97)
State firearm ownership	-0.16 (.)	-0.12 (.)	-54.55 (.)	0.07 (.)
Firearm suicide rate	0.40 (0.34)	0.09 (0.37)	0.59 (0.96)	0.31 (0.31)
Republican vote	0.28 (0.19)	0.10 (0.17)	-0.64 (0.50)	0.12 (0.17)
Constant	-0.90*** (0.24)	-0.79** (0.35)	29.53*** (0.54)	-0.27 (0.20)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
P(Victim injured)				
DGU=1	-0.40 (0.43)	-1.83 (.)	-3.05*** (0.09)	-1.33 (2.29)
Density	0.31 (1.09)	-0.90 (1.92)	7.21*** (2.34)	-0.69 (1.73)
Rent	0.00 (0.06)	0.03 (0.07)	-0.11 (0.10)	-0.01 (0.06)
% Male	0.07 (0.17)	-0.20 (0.23)	0.70** (0.34)	0.25 (0.17)
% 18-25 years old	-0.07 (0.13)	0.12 (0.20)	0.28 (0.39)	0.14 (0.21)
% 35-55 years old	0.10 (0.14)	0.17 (0.27)	0.64 (0.43)	-0.56*** (0.19)
% White	0.19** (0.10)	0.06 (0.13)	0.51** (0.20)	0.21 (0.17)
% Black	0.16* (0.10)	-0.14 (0.15)	0.36 (0.27)	-0.04 (0.19)
% Hispanic	0.09 (0.10)	0.17 (0.12)	-0.11 (0.19)	-0.00 (0.12)
% Homeowner	-0.20***	-0.15	-0.12	-0.04

	(0.06)	(0.10)	(0.12)	(0.08)
Median household income	-0.04 (0.84)	-0.78 (0.88)	0.06 (1.38)	0.29 (1.34)
State firearm ownership	0.08 (.)	0.21 (.)	47.82 (.)	-0.38 (.)
Firearm suicide rate	-0.34 (0.33)	0.33 (0.30)	-0.47 (1.13)	0.10 (0.36)
Republican vote	-0.31** (0.16)	-0.31* (0.16)	0.70 (0.57)	-0.38** (0.19)
Constant	0.77*** (0.23)	0.74*** (0.26)	-25.72*** (0.72)	0.86*** (0.29)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
P(Suspect killed)				
DGU=1	1.94** (0.91)	2.05 (.)	2.90 (2.57)	3.13 (28.84)
Density	1.47 (2.82)	-0.37 (4.05)	5.33 (24.25)	0.31 (5.83)
Rent	0.07 (0.09)	0.06 (0.07)	-1.29* (0.69)	-0.15 (1.76)
% Male	-0.04 (0.29)	-0.65** (0.27)	-5.35* (3.17)	-0.02 (3.02)
% 18-25 years old	-0.01 (0.25)	-0.24 (0.24)	-1.60 (2.39)	-0.65 (3.11)
% 35-55 years old	-0.14 (0.33)	-0.53** (0.24)	-0.59 (1.51)	-0.59 (2.44)
% White	-0.11 (0.23)	-0.25 (0.21)	2.48** (1.23)	-0.42 (0.86)
% Black	-0.07 (0.22)	-0.06 (0.22)	0.60 (1.15)	-0.38 (0.92)
% Hispanic	-0.15 (0.14)	-0.15 (0.15)	2.54 (1.80)	-0.41* (0.23)
% Homeowner	-0.02 (0.11)	0.16 (0.15)	-0.05 (0.70)	-0.44 (1.74)
Median household income	0.72 (1.75)	0.25 (1.25)	0.07 (7.22)	2.38 (15.57)
State firearm ownership	0.39 (.)	0.58 (.)	-18.86 (15.20)	1.11 (.)
Firearm suicide rate	0.53 (0.57)	-0.16 (0.35)	-4.01 (3.17)	0.43 (1.08)
Republican vote	0.10 (0.17)	0.05 (0.22)	-2.40** (1.16)	-0.57 (2.30)
Constant	-2.84*** (0.59)	-1.61*** (0.37)	13.23** (6.74)	-2.72 (2.37)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
P(Suspect injured)				
DGU=1	1.76*** (0.62)	1.40** (0.55)	4.23*** (0.16)	1.31*** (0.49)
Density	-0.49	-3.53	2.23	-0.75

	(1.55)	(2.19)	(4.70)	(3.97)
Rent	-0.16***	-0.10	0.64***	0.09
	(0.06)	(0.08)	(0.21)	(0.14)
% Male	-0.26	0.33	-0.05	-0.35
	(0.24)	(0.28)	(1.19)	(0.53)
% 18-25 years old	-0.10	0.31	1.41*	0.32
	(0.20)	(0.22)	(0.85)	(0.28)
% 35-55 years old	0.07	0.35	0.04	0.51
	(0.20)	(0.25)	(0.85)	(0.38)
% White	-0.12	0.17	-0.27	0.42
	(0.15)	(0.15)	(0.56)	(0.30)
% Black	-0.15	-0.09	-0.30	0.07
	(0.17)	(0.15)	(0.54)	(0.33)
% Hispanic	-0.11	-0.01	0.33	0.00
	(0.12)	(0.14)	(0.39)	(0.20)
% Homeowner	-0.02	-0.05	0.54	-0.21
	(0.12)	(0.15)	(0.39)	(0.16)
Median household income	2.06*	0.78	-9.19***	-0.78
	(1.08)	(1.02)	(2.83)	(2.36)
State firearm ownership	0.08	-0.33	22.09	-1.05
	(.)	(.)	(.)	(.)
Firearm suicide rate	0.14	0.41	-0.19	1.48**
	(0.44)	(0.38)	(1.29)	(0.72)
Republican vote	0.29**	-0.06	0.87*	-0.20
	(0.14)	(0.21)	(0.52)	(0.37)
Constant	-1.70***	-1.91***	-19.60***	-2.88***
	(0.37)	(0.47)	(1.28)	(0.63)
State fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

Supplementary log-odd coefficients for Table 5 of the main paper.

Missing standard errors due to lack of log-likelihood convergence.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE A6—THE EFFECT OF DEFENSIVE GUN USE ON CRIME (AGGREGATE LEVEL) - ALTERNATIVE CONTROLS

	Victims killed	Victims injured	Suspect killed	Suspect injured	Gun-related incident	Armed robbery	Home invasion	Road rage	Club incident	Unlawful possession
No controls										
Defensive gun use (OLS)	8.28*** (0.93)	18.86*** (2.70)	0.45*** (0.02)	0.78*** (0.03)	22.68*** (2.80)	1.44*** (0.10)	0.57*** (0.03)	0.19*** (0.03)	0.53*** (0.05)	0.64*** (0.11)
Defensive gun use (IV)	23.25*** (9.98)	70.26*** (33.12)	0.41*** (0.05)	0.81*** (0.11)	74.30*** (33.42)	4.23*** (1.55)	0.43*** (0.19)	0.64*** (0.24)	1.26*** (0.39)	0.57 (0.44)
Number of counties	2783	2783	2783	2783	2783	2783	2783	2783	2783	2783
Robust F-Statistic	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29
Controls but no FE										
Defensive gun use (OLS)	5.24*** (1.09)	12.49*** (2.37)	0.43*** (0.01)	0.68*** (0.02)	15.07*** (2.57)	1.13*** (0.09)	0.48*** (0.03)	0.18*** (0.03)	0.35*** (0.04)	0.35*** (0.08)
Defensive gun use (IV)	8.46*** (2.47)	26.57*** (9.36)	0.46*** (0.05)	0.68*** (0.09)	28.91*** (9.37)	1.89*** (0.31)	0.77*** (0.13)	0.33*** (0.06)	0.74*** (0.23)	1.08*** (0.39)
Density	-617.54** (292.62)	-708.92 (1153.99)	4.60 (7.07)	-39.26*** (13.54)	-1093.92 (1111.49)	-45.66 (33.52)	1.72 (13.98)	9.53 (10.13)	-32.01* (16.79)	-50.25 (45.75)
Rent	-23.48** (11.58)	-98.06** (44.47)	0.03 (0.18)	-1.32*** (0.46)	-100.90** (44.41)	-4.92*** (1.08)	-0.74* (0.42)	-0.26 (0.27)	-1.69** (0.81)	-1.72 (1.43)
% Male	110.66 (97.03)	161.07 (417.41)	2.82 (3.26)	-4.72 (4.03)	182.83 (405.38)	-1.15 (13.60)	-5.90 (5.67)	3.86* (2.11)	-0.68 (8.17)	-6.03 (16.25)
% 18-25 years old	-179.34*** (48.14)	-327.88** (151.37)	0.52 (1.35)	-3.61 (2.28)	-417.64*** (158.65)	-5.20 (7.51)	7.93*** (2.60)	-0.16 (2.02)	-3.65 (3.40)	3.91 (6.75)
% 35-55 years old	-232.96*** (62.04)	-470.91* (245.77)	-0.04 (1.88)	-14.49*** (3.30)	-613.14** (243.94)	-16.58* (9.96)	0.45 (4.06)	4.83 (3.10)	-8.34 (6.59)	-32.28** (14.41)
% White	-13.41 (26.51)	61.90 (67.71)	-1.33*** (0.46)	-0.32 (0.92)	40.87 (72.74)	4.61 (3.03)	-0.67 (0.77)	0.86 (0.57)	3.80*** (1.38)	-0.93 (2.34)
% Black	108.10** (45.86)	220.25* (133.84)	-0.83 (0.99)	3.39** (1.62)	262.10* (142.43)	13.40** (5.30)	-1.57 (1.81)	-0.89 (1.21)	4.90 (3.42)	-0.23 (5.35)
% Hispanic	-11.58 (13.98)	-62.01 (47.28)	0.43 (0.28)	-0.64* (0.36)	-64.97 (46.37)	-0.02 (1.53)	-1.99*** (0.46)	1.35*** (0.40)	-0.00 (1.09)	-5.89** (2.74)
% Homeowner	-30.93 (33.47)	-47.36 (114.13)	0.53 (0.84)	-3.77** (1.54)	-76.94 (115.16)	-6.82* (3.88)	0.12 (1.54)	-0.03 (1.10)	-4.45** (2.14)	-0.31 (4.69)
Median household income	218.14 (192.33)	920.76 (602.45)	1.89 (4.00)	18.67*** (7.23)	974.20 (637.11)	97.51*** (19.75)	4.53 (8.67)	10.70** (5.15)	27.09* (14.22)	17.39 (34.93)
Firearm suicide rate	-27.95* (15.01)	-198.77*** (49.49)	0.83** (0.39)	-0.35 (0.78)	-183.31*** (49.05)	-5.54** (2.18)	-0.01 (0.92)	0.10 (0.61)	-3.39** (1.57)	-5.21** (2.58)
Republican vote	-54.67*** (14.61)	-224.27*** (78.90)	0.66* (0.37)	-0.97* (0.54)	-221.46*** (73.94)	-6.42*** (1.81)	1.26 (0.97)	-1.30*** (0.33)	-2.65* (1.38)	-1.53 (2.70)
State firearm ownership	-13.58 (26.20)	-105.20 (95.88)	0.27 (0.55)	1.10 (1.13)	-92.08 (95.37)	-6.01* (3.40)	-2.90** (1.29)	-0.31 (0.69)	-0.33 (1.88)	-1.86 (4.17)
Number of counties	2247	2247	2247	2247	2247	2247	2247	2247	2247	2247
Robust F-Statistic	24.53	24.53	24.53	24.53	24.53	24.53	24.53	24.53	24.53	24.53

Note: Progressive introduction of covariates for Table 6 of the main paper. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$