

Texting bans and fatal accidents on roadways: Do they work? Or do drivers just react to announcements of bans?

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Online Appendix

Table A1
Effects of texting bans by state

Arkansas	0.0475 (0.0768)	New Hampshire	0.4732 (0.1399)***
California	-0.0991 (0.0420)**	New Jersey	-0.1941 (0.0823)**
Colorado	0.0137 (0.1047)	New York	0.1829 (0.0761)**
Connecticut	-0.3754 (0.3552)	North Carolina	-0.1799 (0.1136)
Georgia	0.0119 (0.0679)	Oregon	-0.3380 (0.1204)***
Illinois	0.0011 (0.1092)	Rhode Island	0.3523 (0.1825)*
Indiana	0.0571 (0.0721)	Tennessee	-0.0150 (0.0810)
Louisiana	-0.1759 (0.0732)**	Utah	-0.0662 (0.1538)
Maryland	-0.0391 (0.0836)	Vermont	0.2945 (0.2749)
Massachusetts	0.0342 (0.2252)	Virginia	-0.0744 (0.0809)
Michigan	0.3271 (0.0778)***	Washington	0.0828 (0.0666)
Minnesota	-0.1494 (0.1089)	Wisconsin	-0.9781 (0.0743)***
Missouri	0.1042 (0.0822)	Wyoming	0.4859 (0.1394)***
Nebraska	0.0119 (0.1045)		

Note: Reported are coefficients on an interaction of the texting ban variable with state dummies. The dependent variable is the natural logarithm of the number of fatal accidents plus one. Newey-West (1987) standard errors are reported in parentheses correcting for heteroskedasticity and allowing autocorrelation up to one lag. Each regression includes 49 states and 48 month dummy variables, as well as controls listed in Table 2 and used in the third column of Table 3.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table A2
Effects in selected states

Accidents	Single vehicle, single occupant	All crashes
California (vs. Arizona, Nevada, and Oregon)	-0.1395 (0.1080)	-0.0148 (0.0500)
Louisiana (vs. Arkansas, Mississippi, and Texas)	-0.1128 (0.0695)	-0.0637 (0.0423)
Minnesota (vs. Iowa and Wisconsin)	-0.0429 (0.2263)	0.0574 (0.0832)
Washington (vs. Idaho and Oregon)	0.0090 (0.1816)	0.1093 (0.0902)

Note: Each cell is from a separate regression. Reported are coefficients from a weighted least squares regression, weighted by state population size. The dependent variable is the natural logarithm of the number of fatal accidents plus one. Robust standard errors are in parentheses. Each regression includes state and month dummy variables, as well as controls listed in Table 2 and used in the third column of Table 3. The control states are those chosen by HLDI (2010)

Table A3
Additional estimates of the effect of texting bans, with robustness checks

		With state dummies	With state- specific trends	With both
(1)	Preferred Table 3 estimates	-0.0764 (0.0252)***	-0.0712 (0.0445)	-0.0253 (0.0414)
	<u>Different weights and population sizes</u>			
(2)	Unweighted OLS	-0.0099 (0.0493)	-0.0147 (.0696)	0.0149 (0.0644)
(3)	Unweighted OLS for states with at least 2 million residents (drops 14 small states; total of 35)	-0.0945 (0.0378)**	-0.1212 (0.0624)*	-0.0929 (0.0559)
(4)	Unweighted OLS for states with at least one accident in every month (drops 12 small states; total of 37)	-0.0780 (0.0456)*	-0.0935 (0.0756)	-0.0625 (0.0677)
(5)	Poisson for states with at least one accident in every month	-0.0613 (0.0300)**	-0.0648 (0.0459)	-0.0198 (0.0425)
(6)	Negative binomial for states with at least one accident in every month	-0.0606 (0.0311)*	-0.0714 (0.0499)	-0.0226 (0.0434)
	<u>Removing questionable states from Control group</u>			
(7)	Illinois because of Chicago ban	-0.0838 (0.0261)***	-0.0803 (0.0459)*	-0.0340 (0.0434)
(8)	New Mexico because of Albuquerque, Las Cruces, and Santa Fe	-0.0766 (0.0253)***	-0.0713 (0.0445)	-0.0257 (0.0414)
	<u>Alternative estimations</u>			
(9)	Balanced set of states with laws in effect for at least 6 months	-0.0611 (0.0256)**	-0.0478 (0.0435)	0.0041 (0.0404)

Note: See Table 4 notes.

Table A4
Full Lead and lag specifications

	Without state-specific trends		With state-specific trends	
	Weak bans	Strong bans	Weak bans	Strong bans
Lead 5	0.0097 (0.0373)	-0.0001 (0.0591)	0.0825 (0.0374)**	0.0259 (0.0598)
Lead 4	-0.1834 (0.0967)*	-0.0282 (0.0699)	-0.1028 (0.0861)	0.0011 (0.0653)
Lead 3	0.0982 (0.0722)	-0.0031 (0.0576)	0.1833 (0.0897)**	0.0295 (0.0571)
Lead 2	0.0396 (0.1191)	0.0210 (0.0593)	0.1304 (0.1434)	0.0566 (0.0601)
Lead 1	0.1375 (0.0626)**	0.0908 (0.0636)	0.2404 (0.0477)***	0.1291 (0.0699)*
P-value leads	0.04	0.83	<0.01	0.54
Lag 1	-0.1385 (0.0787)*	-0.1733 (0.1092)	-0.1362 (0.0825)*	-0.1754 (0.1074)
Lag 2	0.0357 (0.1523)	-0.1382 (0.0939)	0.0404 (0.1595)	-0.1367 (0.0905)
Lag3	-0.0789 (0.0955)	-0.0729 (0.1318)	-0.0717 (0.1001)	-0.0671 (0.1296)
Lag4	-0.0052 (0.0933)	0.0014 (0.1118)	0.0062 (0.0918)	0.0133 (0.1103)
Lag 5	0.1128 (0.0676)*	-0.0619 (0.0935)	0.1654 (0.0696)**	0.0040 (0.0889)
Log of population	1.4408 (1.1378)		2.5868 (1.4878)**	
Log of unemployment rate	-0.0753 (0.1161)		0.3490 (0.1732)	
Percent male	-0.0145 (0.0357)		-0.06077 (0.0491)	
Log of gas tax	-0.0486 (0.0825)		0.0430 (0.0758)	
Other accidents	0.1742 (0.0488)***		0.1586 (0.0497)***	

Note: Each column is from a separate regression (equation (3)). Each specification includes both 49 state and 48 month fixed effects, as well as controls listed in Table 2 and used in column (2) of Table 3. The lead and lag coefficients are plotted in Figure 1.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Table A5
Tests of significance of leads and lags in alternative models

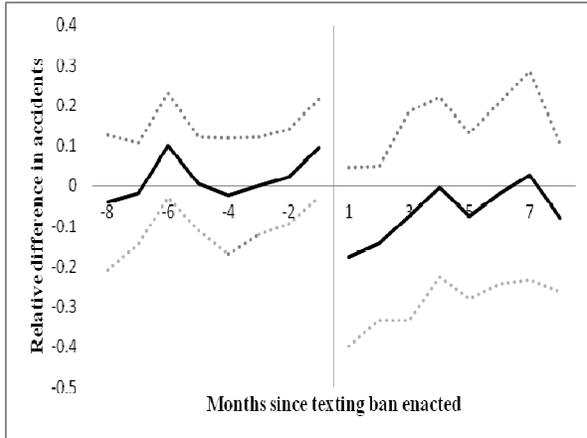
	Universally applied and primarily enforced (“strong”)						Limited coverage or secondary enforcement (“weak”)					
	p-vl. leads	lag 1	lag 2	lag 3	lag 4	lag 5	p-vl. leads	lag 1	lag 2	lag 3	lag 4	lag 5
<u>Alternative dependent variables</u>												
Multiple vehicles or multiple occupants	<.01	.022 (.041)	-.076 (.049)	-.009 (.052)	.005 (.063)	.003 (.044)	<.01	-.248 (.077)	-.043 (.136)	-.137 (.096)	-.206 (.102)	-.185 (.067)
Accidents per million vehicle miles travelled	.49	-.193 (.108)	-.155 (.101)	-.118 (.150)	.006 (.115)	-.033 (.094)	<.01	-.180 (.087)	.026 (.146)	-.104 (.115)	-.044 (.078)	.126 (.064)
<u>Alternative legislation/enforcement</u>												
Handheld cell phone ban also in place	.09	-.312 (.149)	-.257 (.099)	-.396 (.166)	-.129 (.119)	-.114 (.103)	<.01	-.002 (.116)	.257 (.113)	.035 (.133)	.295 (.118)	.413 (.136)
Handheld ban not in place	.76	-.122 (.120)	-.067 (.105)	.082 (.107)	.086 (.121)	.093 (.087)	<.01	-.181 (.125)	-.036 (.246)	-.029 (.117)	-.079 (.111)	.087 (.053)
<u>Alternative modeling</u>												
Negative Binomial	.35	-.090 (.067)	-.082 (.044)	.023 (.041)	.006 (.044)	.002 (.038)	.14	-.073 (.040)	-.031 (.064)	-.006 (.035)	-.017 (.039)	.040 (.020)
<u>Additional tests</u>												
Removing the control for state-specific effects	.68	-.116 (.060)	-.075 (.060)	.006 (.081)	.085 (.075)	.052 (.051)	<.01	-.017 (.087)	.147 (.144)	.035 (.071)	.111 (.101)	.266 (.068)
Balanced set of states with laws in effect for at least 6 months	.02	-.174 (.104)	-.164 (.092)	-.065 (.136)	.009 (.112)	-.005 (.089)	<.01	-.132 (.087)	.063 (.161)	-.041 (.098)	.023 (.094)	.190 (.070)

Note: Each row is from a separate regression estimation of equation (2). Each specification includes state and month fixed effects, as well as controls listed in Table 2 and used in the fifth column of Table 3. These include state-specific trends.

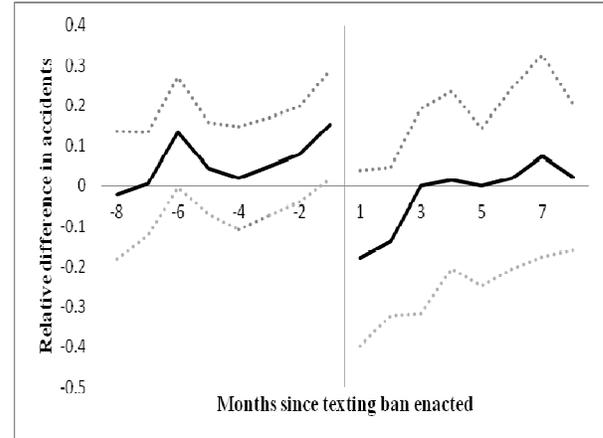
Appendix Figure A1

1a. *Universally applied and primarily enforced bans; lags extended to 8 months*

Without state-specific trends

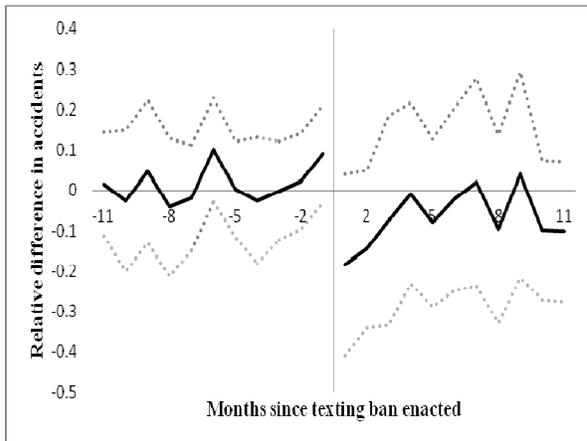


With state-specific trends

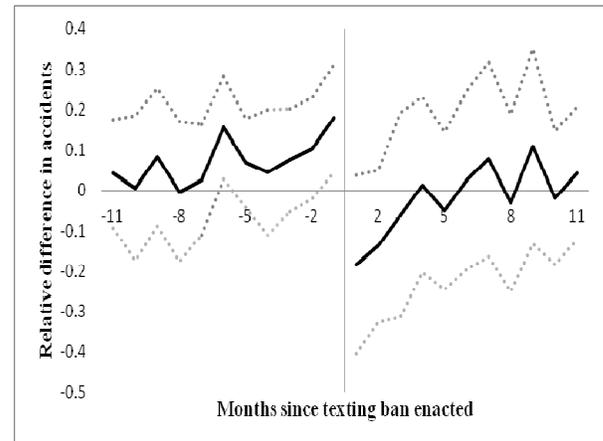


1b. *Universally applied and primarily enforced bans; lags extended to 11 months*

Without state-specific trends



With state-specific trends



Note: These figures plot the estimated lead and lag coefficients from equation (2) extended to additional leads and lags. Regressions include both 49 state and 48 month fixed effects and the control variables from the third column of Table 3.