

Supplemental Materials: The association between state minimum wage and firearm homicides, 2000-2020

Count Data Models

Let t denote time and let I denote state

$$\text{Model: } Y_{it} \sim NB(\mu_t, \mu_t^2/k)$$

$$\log(E[Y_{it}]) = \log(\mu_t) = \alpha + \beta K_{it} + \gamma P_{it} + \delta X_{it} + \theta_i + \theta_t$$

Where,

Y_{it} is the number of firearm suicides in state i at time t

K_{it} is the Kaitz Index in state i at time t

P_{it} is a set of firearm policy variables (i.e., permit to purchase, comprehensive background checks, and concealed carry laws) for state i at time t

X_{it} is a set of socioeconomic and demographic variables for state i at time t :

- percent of state population in a MSA
- Percent of the state population consisting of male persons
- Percent of the state population consisting of non-Hispanic White persons
- Percent of the state population consisting of non-Hispanic Black persons
- Percent of the state population consisting of Hispanic persons
- Percent of the state population between the ages of 35 and 44 years
- Percent of the state population between the ages of 45 and 54 years
- Percent of the state population between the ages of 55 and 64 years
- Percent of the state population that held a high school diploma or higher
- Percent of the state population who were veteran
- Percent of the state population who was married
- State unemployment rates

θ_i are state fixed effects

θ_t are year fixed effects

Notes: The above model specification was also estimated with the dependent variable stratified by decedent demographic characteristics (e.g., male firearm suicides, non-Hispanic Black firearm suicides, etc.). Furthermore, additional models included interaction terms between the Kaitz Index and firearm ownership quartile variables. All models used the relevant state-year population as the model offset for interpretability of findings. Poisson regressions were used in place of negative binomial regressions when overdispersion was not detected.

Predicted Suicides averted in 2020 from \$1.00 increase in minimum wage

The following math was used to calculate the predicted suicides that would have been averted in 2020 from a theoretical \$1.00 increase in minimum wage across all states.

Kaitz Index Models:

$$A_{2020} = 4 \times (\hat{\beta} \times S_{2020})$$

Centered Minimum Wage Model:

$$A_{2020} = (\hat{\phi} \times S_{2020})$$

Where,

A_{2020} is the predicted suicides averted in the year 2020 from a \$1.00 increase in minimum wage.

$\hat{\beta}$ is the coefficient estimate of the Kaitz Index variable from the main model specification.

S_{2020} is the number of suicides in the United States in 2020 (pulled from WISQARS)

$\hat{\phi}$ is the coefficient estimate of the centered minimum wage variable from the alternate model specification.

Note: The Kaitz Index models include a multiplier of 4 because a 1 percentage point increase in the Kaitz Index corresponds to roughly a \$0.25 increase in the minimum wage.