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THE EFFECTS OF PRO-MARIJUANA LEGISLATION ON OPIOID MORTALITY RATES IN THE UNITED STATES

Eduardo Jacobo, Varun Parekh and Jackson Smith

Mentor: Bernardo Silveira

This paper empirically investigates the relationship between pro-marijuana legislation and opioid mortality rates. In order to model the effects of legislation in the periods both before and after its passage we used a differences-in-differences model. Our model used data from the United States Center for Disease Control and Prevention's data sets regarding opioid deaths per state. With 445 total data points, our model consists of a panel of 36 states observed from 1999 to 2015. Each year, we indicate whether the state had passed legislation that made marijuana more accessible in any of the following ways: decriminalized marijuana by reducing penalties for those found to be in possession, legalized marijuana strictly for medical purposes, legalized marijuana for recreational purposes, or legalized the establishment of dispensaries through which marijuana can be sold legally. The four categories of pro-marijuana legislation serve as the independent variables in our model. The dependent variable in the model is opioid deaths per one million people. Our results indicate that marijuana decriminalization increases opioid deaths per million by 1.22286, a 37.61% increase over the 3.251521 predicted deaths per million for a state without marijuana decriminalization. Medical legalization, recreational legalization, and legalization of sales through dispensaries were not found to have a statistically significant impact on opioid deaths.