



**THE EFFECTS OF RECREATIONAL MARIJUANA LEGALIZATION ON DRUG-RELATED CRIME: EVIDENCE FROM COLORADO, OREGON, AND WASHINGTON**  
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**Introduction**

The legalization of recreational marijuana is known to be a very controversial policy proposal and more research is needed to make accurate claims on the social consequences that may come from approval. In this research, Professor Wu and I are very interested in the effects that recreational legislation creates in impact on drug-specific crime in Colorado (CO), Oregon (OR), and Washington (WA), and the possible spillover of that legalization on drug-specific crime in states that neighbor. The research question goes as follows: Have states with recreational marijuana laws experienced a substantial increase or decrease in such drug-specific crimes as possession and sales of marijuana, heroin, synthetic narcotic, and other drugs? Drug-specific crimes will be defined as actions such as drug possession arrests and sales arrests. Researching this impact is imperative as more and more states are following others in its recreational legalization.

There exist competing views about whether legalization would increase or decrease crime. Opponents argue that marijuana legalization would increase crime not only because marijuana may be the gateway to more serious drugs, but also because of the potential criminogenic effects of the increasing presence of marijuana dispensaries. Proponents assert that legalization would lead to lower crime rates given the decriminalization of this drug and the reduction in the underground marijuana market that tends to generate criminal activities. Proponents also argue that legalization would have a crime-reducing effect because the police would be able to allocate

resources and efforts to more serious crimes rather than focusing on marijuana possession arrests, which would in turn lead to increased crime clearance rates and deterrence effects.

### **Method**

We used county-level Uniform Crime Reports (UCR) data from 2003-2016, obtained from the National Archive of Criminal Justice Data (NACJD, 2021). After data collection, we used Difference-in-Differences (DID) analysis to examine the impact of marijuana legalization on multiple types of drug-related offences in Colorado, Washington, and Oregon, three of the first states that legalized recreational marijuana in the US. DID is a quasi-experimental research design that allows the identification of causal effect and is commonly used in policy evaluation. In this study, using DID analysis, we compared changes in arrest rates for a variety of drug related offenses (such as possession and sales of marijuana, heroin, cocaine, and other illicit drugs) between each legalized state and the 19 states that have not legalized either recreational or medical marijuana (serving as a control group) before and after legalization, to identify the effects of legalization on drug-related offences.

### **Results**

Preliminary data results (using DID) show that, relative to the 19 non-legalized states, recreational marijuana legalization has overall resulted in significant decreases in marijuana possession and sales arrests in the legalized states of CO, OR, and WA (see Table 1 for example of DID results). Current findings suggest that arrests for overall drug-related offenses (including possession and sales of marijuana, heroin and cocaine, and other illicit drugs) have substantially decreased in WA and OR relative to the 19 non-legalized states, following legalization. Although overall drug-related offenses have decreased, recreational marijuana legalization has led to significant increases in heroin and cocaine possession arrests in CO and WA (categorized as more serious drugs). The effects of recreational marijuana legalization on drug-related offenses

vary based on states (see Figure 1). More analysis is needed, using the synthetic control design, to provide a greater insight on the preliminary results. The synthetic control design will be used as a secondary robustness check, meant to ensure that the other counties in the 19 non-legalized states are appropriate for counties in CO, OR, and WA states in our Difference-in-Differences analysis as a control group.

### **Discussion**

After completion of the DID analysis, it seems that the average drug arrest rates per county in CO, OR, and WA do decrease (refer to figure 1). It is important to note, however, that this decrease is not shown in the arrest rates of heroin and cocaine for counties in all three states. In fact, it was found that the increase was statistically significant and is important to note as these are categorized as more worrisome, controlled substances. While it is hard to give conclusions before testing our DID results more thoroughly, it seems that the legalization of marijuana increases the arrest rate of heroin and cocaine possession either due to policing having a higher focus on these drugs (with the removal of the concern of marijuana) or that marijuana is, indeed, a “gateway drug” that may lead to more serious drug use with its legalization.

Dr. Wu and I plan to be finished processing our synthetic control design by the end of May and plan to have the official research paper completed by August of 2021. In this final draft, we will have a complete, and complementary, literature review included that is in its final stages currently. Something important to note when analyzing our data is that these results are based on county level data, meaning that our results will pertain to counties within each state. Using the table found in Figure 1, for example, it would read as: counties in Colorado experienced, on average, an increase of 19.8 cases of heroin and cocaine possession arrests ( $p < .05$ ) per 100,000 population relative to the counties in the 19 non-legalized states following legalization. Additionally, Alaska may be included in our final paper with Colorado, Oregon, and

Washington, but the examination of Alaska is a bit more complicated. This is due to many of the counties in Alaska having very small populations, which need to be thoughtfully considered in the data analysis. We decided to remove Alaska from our group for our preliminary findings and may continue to exclude it after further future consideration.

## References

NACJD | Uniform Crime Reporting Program Resource Guide. (2021). NACJD.

[https://www.icpsr.umich.edu/web/pages/NACJD/guides/ucr.html#desc\\_cl](https://www.icpsr.umich.edu/web/pages/NACJD/guides/ucr.html#desc_cl)

**Table 1**

*The Effects of Recreational Marijuana Legalization on Drug-related Offenses in Colorado (control group: 19 non-legalized states; 2003-2016)*

	Marijuana Sales Arrest Rate	Heroin and Cocaine Sales Arrest rate	Arrest Rate for Sales of All Types of Drugs	Marijuana Possession Arrest Rate	Heroin and Cocaine Possession Arrest Rate	Arrest Rate for Possessions of All Types of Drugs
<i>Legalization</i>	-7.960†	4.789	-15.245	-92.276†	19.765*	-100.784
	(5.113)	(4.506)	(11.525)	(61.585)	(9.002)	(73.471)
<i>N</i>	17,201	17,201	17,201	17,201	17,201	17,201
County Dummies	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES

Note. †p ≤ .1. \*p ≤ .05. \*\*\*p ≤ .001.

Legalization effect was examined based on the pre-legalization period of 2003-2012, and post-legalization period of 2013-2016. Possession and sales arrest rates are measured per 100,000 people.

**Figure 1**

