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Is violent crime a function of drug enforcement?

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IS VIOLENT CRIME A FUNCTION OF DRUG ENFORCEMENT?

by

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This paper examines the relationship between the incidences of violent crime and the level of drug enforcement. To do this, the paper compiles a panel dataset from 30 large cities across the US and using fixed effect regression analyzes the dataset. The paper finds that increase in drug enforcement does not lead to significant or noticeable decrease in violent crime offenses. Specifically, the paper finds that the relationship between drug enforcement and violent crime offenses has a positive and significant contemporaneous relation although it is no longer significant with lagged enforcement.

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CHAPTER 1

INTRODUCTION

In the recent history of the United States of America, the question of drug enforcement has never been too long out of the public discourse. From the Harrison Narcotics act of 1914 to the war on drugs by President Nixon to the calls over the last 5 to 10 years for decriminalization and legalization of marijuana, America has not been too far from the question of drug enforcement (Sacco 2014). With the recent decriminalization and legalization of marijuana in states across the United States, the question of whether the policies implemented over the last half a century worked to reduce crime needs to be asked. Although drug enforcement in general creates many effects, this paper considers one possible effect, namely the impact on crime. This paper adds to the existing research in this field by taking a more macro view and looking at the relationship between drug enforcement and violent crime in some of the most populous cities across the U.S. as opposed to focusing on specific states.

There has always been the perception that the level of drug use in a society could somehow predict the incidence of violent crime in that society. This has led to calls for strict drug enforcement policies like the three-strike rule as well as very harsh punishments for arrests on minor drug offenses to quell incidences of larger crimes (Sacco 2014). The question of the relation between various crimes and drug enforcement has been researched in various papers and the results will be summarized in the next section. This paper looks to understand the relationship between violent crime and drug enforcement. It shows that there is no significant relationship between the level of violent crime offenses in a city and the level of drug enforcement in that city. The paper uses data from 30 U.S cities for the years 1995 to 2014 to test the relationship between violent crime and drug enforcement. The following sections of the

paper will contain a literature review explaining what other researchers have done in the field, data and methodology, results, and the conclusion.

CHAPTER 2

LITERATURE REVIEW

Several papers have considered the impact of drug enforcement on crime. Werb et al (2011) conduct a systematic review of the available literature on drug law enforcement's effect on drug violence. They found that increasing drug law enforcement is unlikely to reduce drug market violence. They found that the violence is an inevitable consequence of prohibition. One reason for the small effects is that drug enforcement policies could have sizable indirect effects that offset the direct impact of the policy. They suggest that the policies put in place only serve to increase the incidences of other subsets of crimes like gun violence and high homicide rates. Yang (2008) shows that increases in enforcement of crimes induce displacements, while using the Philippines as a case study. The author shows that these displacements respond to the size of the illicit profits threatened by the increase in enforcement. Such price increases could encourage more people to engage in these activities and so offset the direct impact of drug enforcement. Silverman and Spruill (1977) show that based on data from Detroit, an increase of 50% of the price of heroin would lead to an estimated increase of 14% in property crime. In fact, less enforcement might actually reduce crime. Adda et al (2014) use a policy experiment in Lambeth to check the relationship between decriminalization of cannabis and crime. They find that decriminalization led to long-run reductions in crime in five nondrug areas. Resignato (2001) finds that drug related violent crime is based mostly on systemic factors that arise from the prohibition and enforcement of drug laws.

Other studies reached similar conclusions when looking at single cities or states. Blackley and Shepard (2005) show that increasing drug enforcement in a bid to reduce crime in a location does not reduce any crime. Using New York as a case study they show that increasing drug

enforcement as a means of reducing the general crime level has an adverse effect on other types of crime. Lawton et al (2005) examine Operation Safe Streets as a case study for policing drug enforcement operations. This operation was conducted by the Philadelphia police department. The paper shows that the operation failed to have a significant impact on the level of violent crime throughout the city. However, the paper also shows that the local regions where the operations occurred benefitted and that crime in those specific areas went down.

Other studies consider effects on non-violent crime such as property crime. Benson and Rasmussen (1992,1994, 1995, 1998) reflect on the question of the effects of drug enforcement on property crime. Benson et al (1994) using Florida as a case study focuses on the opportunity cost of policing resources during a drastic increase in drug enforcement policies in the state. They find that as more resources are put into enforcement, contrary to popular belief, the level of property crime increases. This they believe is because of the opportunity cost of the scarce resources the police are using. Benson et al (2001) examine a similar issue in Florida but focus on a period of "normal" circumstances, meaning there was no increase in the policy of resources for drug enforcement. They find that an increase in drug enforcement pulls scarce resources from areas like property crime enforcement and so increase these types of crimes.

However, not all results are negative. Caulkins and Reuter (2010) explain that increases in enforcement work better when stopping a new market for drugs from starting in the first place. The authors speculate that it would be more profitable to start somewhere else instead of paying the very high entry fee required in a new, heavily policed market. They also conclude that enforcement increases for already established markets hit a point of diminishing returns when more enforcement does not lead to fewer drugs but instead higher prices.

This paper looks to add to the research done by the other researchers in this field by taking a more macro view. Instead of focusing on one state and its policies, this paper uses 30 of the largest population centers in the U.S for the case study. The paper updates the data and uses the generic crime model to assess the relationship between the incidences of violent crime and drug enforcement.

CHAPTER 3

DATA AND METHODOLOGY

Consider the following equation:

$$\ln(o_{it}) = \propto + \beta \ln(de_{it}) + \emptyset lnX_{it} + \epsilon_{it}$$

The equation states that the level of violent crime offences in city i at time t, denoted by o, is a function of the level of drug enforcement, *de*, and other explanatory characteristics, *X*. Data for drug enforcement comes from the FBI's Uniform Crime Reports and is the sum of the total number of violent crime offences reported in a specific city in the United States. The data is compiled from police precincts in the city and collated by the FBI. Violent crime offences include murder, forcible rape, robbery and assault. The *de* variable represents the drug enforcement variable which represents the relative level of police resources allocated to reduce drug crime. Drug enforcement is calculated by dividing the total number of drug arrests over the total number of arrests. The data for both numbers come from the Department of Justice. The expectation would be that there is a positive relationship between violent crime and drug enforcement. This assumption is made based of previous research done in enforcement and prohibition and their relationship to crime, as researchers like Rasmussen and Benson have shown in their works.

Matrix *X* comprises population (pop), population density (popden), the unemployment rate (URate), and the percentage of the population that is white (%White). The X variables are chosen to represent demographic and economic characteristics. The population and population density variables account for the size of the city. It is expected that the higher the population the

higher the number of offenses. Moreover, perpetrators who commit crimes in more dense cities could find it harder to escape detection as shown Christens and Speer (2005). The unemployment rate controls for the economic conditions present. A stronger economy is expected to lead to less crime (Raphael and Winter-Ebmer, 2001). The data for the unemployment rate comes from the Bureau of Labor Statistics. The percentage of a city that is white accounts for the demographic composition as well as an imperfect proxy for income (Manduca 2018). Data comes from the Census Bureau. The expectation is that there would be a negative relationship between percentage white and violent crime. Dummy variables for the 30 cities as well as for the 20 years are also included.

Table 1 presents summary statistics.

Table 1 – Summary Statistics

	Mean	Standard Deviation
violent crime offences	11568.80	13329.29
de	0.15	0.06
Urate	6.64	2.95
Pop	1101506.38	1109028.78
popden	6133.84	7379.28
%white	55.68	16.57

CHAPTER 4

RESULTS

Column one of Table 2 shows the fixed effect log regression results. The drug enforcement variable tests the hypothesis put forth that drug enforcement does not reduce the incidence of violent crime. In reading through the table, we find that the drug enforcement variable is positive and significant. From the data it can be shown that when there is a one standard deviation change in the magnitude of the drug enforcement variable, there is about a 10.3% increase in the number of violent crime offenses[11]. This further expands on the results and its implication that continued increase in the level of drug enforcement means continued increase in the level of violent crime offenses. The regression also shows that the unemployment rate has a positive and insignificant relationship with violent crime. It indicates that the population variable has a positive and significant (to 0.01) relationship with the dependent variable. This means that as the population increases there is an increase in violent crime as expected. Population density has a negative relationship with violent crime which was expected, even though the value is not significant. An unexpected result is the fact that the percentage white variable has a positive relationship with violent crime, although it is not significant.

Column two replaces the right-hand side variables of column one with their lags so as to better address endogeneity concerns. The drug enforcement variable is negative and insignificant. This is the opposite of what was expected from the earlier regression results. A one standard deviation change in the drug enforcement variable has a very insignificant and negligible change in violent crime (about -0.029)[2]. The results of the lagged regression show

[1] formula for calculation $= \frac{b*std(de)}{std(o)}$

[2] formula for calculation $= \frac{b*std(de)}{std(o)}$

significant results in both the unemployment rate and population variables. The relationship between unemployment rate and violent crime is negative, which differs from the contemporaneous regression. The coefficient on unemployment is also significant at the 0.01 level. The population variable is positive as was expected and is significant at the 10% level. Population density, interestingly, has a negative relationship which was unexpected, even though it is not significant. The result for the percentage of a city that is white variable now has a negative relationship with violent crime, although it is not significant. The adjusted R2 of both regressions show that the model used for the estimations are a good fit.

Table 2 – Regression Results

	Dependent variable:	
	Contemporaneous	lagged
	(1)	(2)
de	0.175***	-0.005
	(0.037)	(0.031)
URate	0.067	-0.261***
	(0.057)	(0.053)
pop	0.724***	0.071*
	(0.261)	(0.037)
popden	-0.014	0.001
	(0.207)	(0.025)
%White	1.205	-0.048
	(1.393)	(0.064)
Observations	442	441
R2	0.952	0.949
Adjusted R2	0.945	0.942
Residual Std. Error	0.170 (df = 390)	0.175 (df = 387)
F Statistic	150.765*** (df = 51; 390)	135.603*** (df = 53; 387)

[3]Note: *p<0.1; **p<0.05; ***p<0.01. City and year dummies included in regressions but not presented in order to ease presentation.

[3] City and year dummies were included but not presented.

CHAPTER 5

CONCLUSION

The relationship between the incidences of violent crime and the level of drug enforcement has been explored in this paper. It was shown that there is no negative relationship between the two, meaning that there is no evidence that tougher drug enforcement reduces crime. It needs to be stated that the results do not directly address causality as an increase in violent crime could cause an increase in the level of drug enforcement. However, use of lagged enforcement at least partially addresses this issue.

The perception that violent crime is a result of drug use and as such the drug use should be combated first has had a negative effect on the policing situation in the country. As Benson et al (1994) show there is an opportunity cost of devoting more resources into drug enforcement as the available police resources are not infinite. Therefore, their resources need to be employed in the positions where they can provide the most social good. This paper's results provide skepticism that resources are being used in the most beneficial way. Although this paper does not consider other policies[4] that could reduce drug use, my results show no evidence that drug enforcement reduces crime. The lack of any strong effect casts doubt that drug enforcement is an effective policy instrument in the "War on Drugs" and warrants further consideration of other policies.

[4] Other policies could include support for treatment or wholesale decriminalization policies like those employed in Portugal and Switzerland.

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