Research Review: Impacts of Measure 11 and Other Factors on Crime

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The mission of the Oregon Criminal Justice Commission is to improve the legitimacy, efficiency, and effectiveness of state and local criminal justice systems.

Introduction

There was a large drop in crime rates during the 1990s, not only for the state of Oregon but at national and international scales as well.[1] Many researchers have looked into this pattern and tried to identify the cause(s) of this crime drop. In Oregon, the implementation of Measure 11 in 1995 is one of several possible causes. For a set of serious violent crimes, Measure 11 stipulated mandatory minimum sentences, eliminated possible sentence reductions, and required that juveniles 15 or older be charged as adults.[2] Determining whether Measure 11 was a major factor in the 1990s crime drop in Oregon, however, is complicated. We must consider all of the possible explanations of the crime drop in order to identify whether Measure 11 was a relevant factor. This research brief reviews the most prominent of these possible explanations and compares them to the possible effects of Measure 11.[3]

Research Review: What causes reductions in crime?

Economic, Demographic, and Immigration Trends

Many researchers have found that economic growth and changing demographics played a significant role in the 1990s crime reduction. Baumer & Wolf (2014) find that poverty reductions, reduced urbanization, and aging populations are most predictive of homicide rate declines. Colen et al (2016) find that increases in the number of service sector workers, increases in the Latinx and immigrant segments of the population, and reductions in poverty rates all lead to reductions in violent crimes. Wadsworth (2010) also finds that increased immigration decreases violent crime rates, while controlling for major differences between US states. Roeder et al (2015) find that an aging population and changes in income also played a role in crime reductions. Comparing two crime drops from the 1990s and late 2000s, respectively, Parker et al (2017) find that a reduction in the number of neighborhoods with high concentrations of poverty was the primary economic factor leading to declines in homicides.

Policing and Public Policy

Researchers have also found that changes to crime prevention policies and the adoption of more sophisticated police practices have driven down crime rates. Evaluating gun control laws in all 50 states from 1999 to 2017, Chien & Gakh (2020) find that more stringent gun laws lead to reductions in firearm homicides and mortality rates, but that this effect is delayed by 7 years. Roeder et al (2015) find that increases in data-driven policing and the targeting of police resources has reduced crime by 5-15% in jurisdictions that have implemented those changes and Braga et al (2014) largely confirm these findings. Levitt (2004) finds that, more broadly, increases in the size of police forces lead to decreases in crime. Regarding other community resources, Sharkey et al (2017) find that many communities' response to spikes in violent crime was to form non-profit organizations that specifically address violence in the community. Sharkey et al find that the creation of these additional non-profits effectively reduced violent crime.

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[1] The exact start date and magnitude varies. Some researchers, for example, have argued that the drop may have actually begun in the 1980s and this largely depends on which metrics the research chooses to evaluate (e.g., Baumer & Wolf 2014).

[2] There have been several revisions to Measure 11 since its passage.

[3] Two research notes: First, several additional hypotheses beyond those covered in this brief have been discussed by policymakers and researchers, but are omitted from this review. These include, but are not limited to, the stabilization of drug markets after large expansions pre-1990; regulations of and changes in lead gas exposure that impedes brain development; increased use of video games; increased civility and self-control; and changes in family arrangements. These factors' exclusion here is not to discount these hypotheses, but merely a result of their relative lack of representation in the research literature. Second, the causes of crime and crime drops are the basis of a robust and extensive research literature. The research summarized here is meant as a set of examples of the major threads in the literature and the likely complexity that has driven drops in crime, rather than an exhaustive review of all possible explanations of crime drops.

Security Technology

The "security hypothesis" states that increased use of security technology discourages property crimes and this was a significant factor in the 1990s crime drop. Farrell et al (2010; 2014; and Farrell 2013) find that the expansion of security technology, especially technology used to prevent car theft, has been the strongest and most consistent predictor of crime reductions. The security hypothesis, however, may be limited in the type of crimes impacted, depending on the extent to which car-based crimes co-occur with other crimes. It may also be the case, however, that reductions in car and other property crimes lead to reductions in violent crime.

Reduced Teenage Childbearing and Increased Abortion Access

Teenage fertility rates are also closely correlated with crime rates over time, suggesting that there may be a causal effect of teenage fertility on crime rates. Whether and/or how these rates are linked, however, is widely debated. Levitt (2004) argues that increased access to abortion in the 1970s led to reductions in the number of young adults at risk of criminal involvement in the 1990s, thereby reducing crime. Shoesmith (2017) later confirmed Levitt's findings for individual states, rather than at the national level. Relatedly, Colen et al (2016) found that increasing access to Medicaid family planning waivers reduced both teenage childbearing and violent crimes based on data from all 50 states over a 20-year period.

Increased Health Care Provision and Reduced Risky Behavior

Researchers have also found that increased healthcare provision, especially psychiatric care, has led to reductions in crime, but causes of these linkages are debated. Changes in risky behavior patterns have also led to crime drops, which may be closely related to healthcare provision. Roeder et al (2015) find that reductions in alcohol consumption contributed to crime reductions through, for example, fewer violent interactions and fewer instances of drunk driving. Mishra & Lalumière (2008) find that the reductions in violent crimes in the United States and Canada are correlated with certain risky behaviors (e.g., unsafe sex, drunk driving). In broader studies, researchers have found that increased access to healthcare (Vogler 2020) and increased provision of psychiatric care (Landersø and Fallesen 2021) are directly linked to crime rate declines.

Punishment as Deterrence and Incapacitation through Incarceration

Historically, many proponents have claimed that deterrence and incapacitation are major reasons for crime drops. Supporters of deterrence theory argue that if individuals with a propensity to commit crimes are aware of an increased level of punishment for those crimes, then those individuals balance the wish to commit the crime against the "cost" of increased punishment and choose not to commit the crime because of the high costs. Incapacitation is a more direct process, where otherwise repeat offenders are incarcerated and thus are unable to commit additional crimes in society during their detention.

Among other factors, Levitt (2004) found that increased prison populations led to reductions in crime in the 1990s, a correlation that naturally exists when repeat offenders are incapacitated through their removal from society. Roeder et al (2015) find that increases in incarceration, however, "had a limited, diminishing effect on crime" and that continued high incarceration rates have virtually no effect on reducing violent crime. These two sets of findings, however, may not be as contradictory as they seem. Parker et al (2017), for example, finds evidence for both a violent crime drop in the 1990s as well as another drop from 2007-2011, a period with very different social, economic, and criminal justice trends. Here, in particular, incarceration was widely expanding in the 1990s, but dropped from 2007-2011.

Increased incarceration may only have an effect on reducing crime when other societal factors occur at the same time[4], which we saw in the 1990s but not in the 2000s.

Further, some studies point to a criminogenic effect of incarceration. Through a comparison across states that controls for changes in prison populations over time, Vieraitis et al (2007) find that prison causes incarcerated adults to be more likely to commit crime after release. Clear et al (2003) find that high rates of incarceration actually lead to increases in crime when compared to moderate levels of incarceration. Similarly, Liedka et al (2006) find that moderate levels of incarceration have a negative impact on crime rates, but these effects disappear at high levels of incarceration.[5] Thus, the incapacitation effect is likely only present at moderate levels of incarceration, with some evidence that high, mandatory levels of incarceration may actually increase crime rates.

The deterring effect of Measure 11 has also been posited as a major driver of reductions in crime: mandatory minimum sentences guarantee stiff punishment and, assuming individuals rationally understand these repercussions, discourages those crimes. In a well-cited review and analysis of a large literature on this subject, Pratt et al (2006) find that the deterring effect of imprisonment is "modest to negligible," becoming essentially zero when multivariate statistical models are used. These non-existent effects are especially notable when research controls for the effects of peers, self-control levels, and antisocial attitudes of individuals. When focusing on the *certainty* that an individual will receive punishment rather than the *severity* of that punishment, Pratt et al find that these effects only exist with "white-collar" crimes (e.g., financial, regulatory). Pratt et al find that the primary evidence for a non-zero deterring effect is with non-legal sanctions, such as "the potential loss of employment, spouse, respect," but find little evidence for a deterring effect with either more severe imprisonment or more certain imprisonment for the types of crimes affected by Measure 11.

Discussion

The underlying causes of crime rates are complex and multifaceted. The extensive research on this topic shows that the following factors, in no particular order, are most closely linked to crime drops:

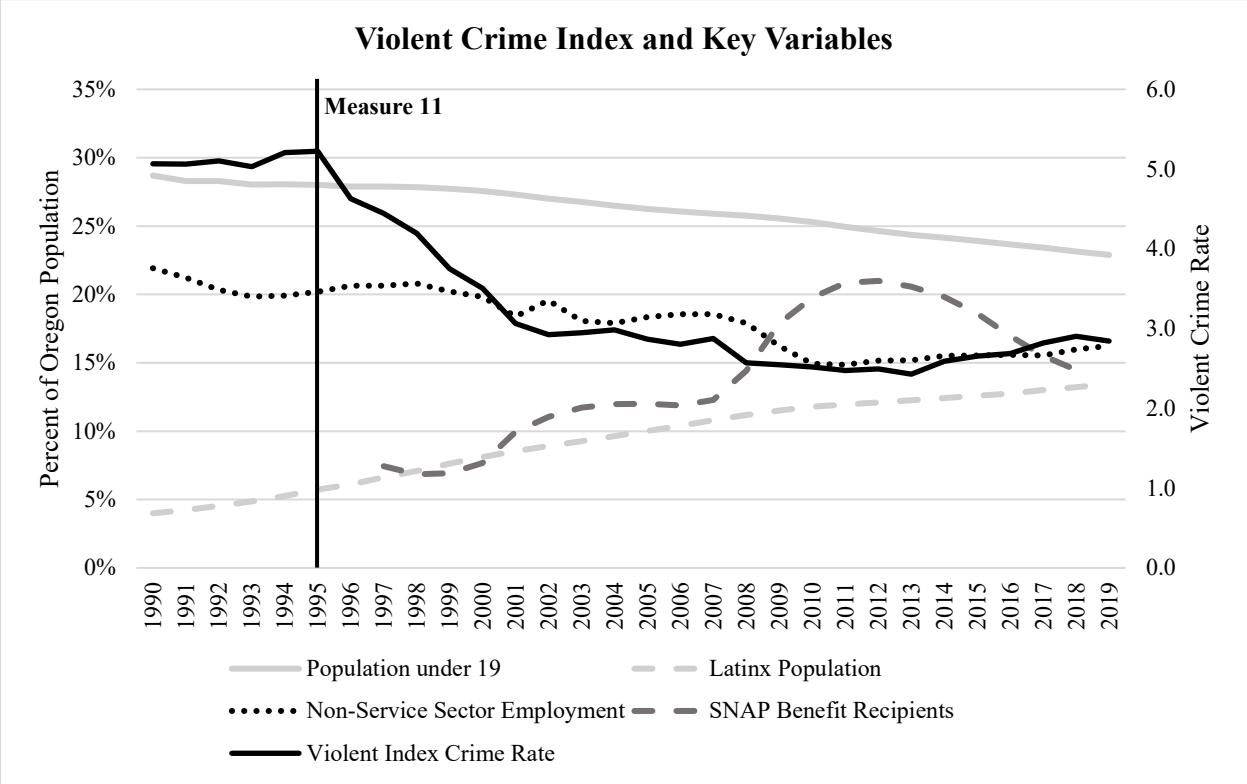
- Aging populations
- Expanded healthcare access
- Expanded non-profit activity focused on reducing violence
- Expanded use of security technology
- Increased and more data-driven policing practices
- Increased immigration and diversity
- Increased incapacitation of repeat offenders
- More stringent gun laws
- Reduced concentrations of poverty
- Reduced risky behaviors
- Reduced teenage fertility and increased family planning

All of these factors, and others, played some part in reducing crime throughout the 1990s and also in subsequent changes in crime rates, but how these and other factors interact to influence crime is highly complex. This research suggests that Measure 11 likely had an impact on crime rates through incapacitation, but that this effect is relatively small, diminishing to close to zero by the late 2000s, and conditional on other societal patterns and trends. In general, single-faceted strategies to reduce crime,

[4] See Parker et al (2017) for a discussion of these factors.
[5] High and moderate levels of incarceration are subjective terms with complex underpinnings. The authors point interested readers to the original research articles.

especially those focused on increasing incapacitation and deterrence through more severe punishment, as Measure 11 does, are relatively ineffective in reducing crime rates and not cost-effective compared to other strategies.

An additional concern with this review is the possibility that that the national and international-level research discussed here is not applicable to or reflective of Oregon, in particular; either the national patterns are not closely reflected in Oregon or Oregonians act and respond to societal conditions in ways that are significantly different than people in other places. To partially address these concerns we compared the violent crime rate, the property crime rate, and the murder rate with four metrics similar to those identified in the literature specifically for Oregon[6]: the proportion of the population age 19 and under, the proportion of the population that identifies as Latinx, the proportion of the population in the service sector[7], and the proportion of the population receiving SNAP benefits.[8] We also plot a vertical line in 1995 to mark the passage of Measure 11.



The figure above shows the decline in violent crime rates in the period following the passage of Measure 11, but the data show that it is unclear if Measure 11 or other factors are the drivers of this trend. We see a notable decline in the crime rate beginning in the 1990s, which is positively correlated with declines in the population under 19 and declines in non-service sector employment. Conversely, the proportion of the population receiving SNAP benefits and the proportion of the population that identifies as Latinx both

[6] We only present the chart for violent crime rates here, but the violent crime, property crime, and murder rates all have similar patterns over this period (all available upon request).
[7] Measured as the inverse, non-service sector, to facilitate charting.
[8] We also gathered data on poverty rates, median incomes, and other potential explanatory variables, but limited the number of variables included here for illustrative purposes. Data presented here were obtained from
the FBI's UCR reporting https://www.fbi.gov/services/cjis/ucr;
the St. Louis Federal Reserves FRED Economic Database https://fred.stlouisfed.org/;
and the CDC's WONDER database. https://wonder.cdc.gov/

steadily increased over this same period, each negatively correlated with the crime drop. For all of these indicators the pattern closely mirrors that found by researchers in other states over this period. Oregon had similar trends to other states, similar mandatory sentencing laws, and a similar crime drop. This suggests that these and other societal factors discussed in this review likely played a part in the crime drops. While the implementation of Measure 11 also appears correlated with the crime drop, the broad research on this topic suggests that these patterns and laws found in Oregon are similar to other places and that laws like these had a small and diminishing impact on crime rates.

Many factors are correlated with the 1990s crime drop, both in Oregon and at national and international scales. Measure 11 and laws like it are one of those factors, but the research shows that mandatory minimum sentencing laws have relatively small or insignificant effects on crime rates when compared to other factors. Measure 11 may have benefits to society, but significant crime reductions are not likely one of these benefits.

Bibliography

Baumer, E.P., and K.T. Wolff. "Evaluating Contemporary Crime Drop(s) in America, New York City, and Many Other Places." *Justice Quarterly* 31, no. 1 (January 2, 2014): 5–38. https://doi.org/10.1080/07418825.2012.742127.

———. "The Breadth and Causes of Contemporary Cross-National Homicide Trends." *Crime and Justice* 43, no. 1 (September 2014): 231–87. https://doi.org/10.1086/677663.

Pratt, T. C., F. T. Cullen, K. R. Blevins, L. E. Daigle, & T. D. Madensen. "The Empirical Status of Deterrence Theory: A Meta-Analysis." In F. T. Cullen, J. P. Wright, & K. R. Blevins (Eds.), *Advances in criminological theory: Vol. 15. Taking stock: The status of criminological theory*. 2006. (p. 367–395). Transaction Publishers

Braga, A.A., A.V. Papachristos, and D.M. Hureau. "The effects of hot spots policing on crime: An updated systematic review and meta-analysis." Justice Quarterly 31, no. 4 (2014): 633–663.

Chien, L.-C., and M. Gakh. "The Lagged Effect of State Gun Laws on the Reduction of State-Level Firearm Homicide Mortality in the United States from 1999 to 2017." *Public Health* 189 (December 2020): 73–80. https://doi.org/10.1016/j.puhe.2020.08.028.

Clear, T. R., D. R. Rose, E. Waring, and K. Scully. "Coercive Mobility and Crime: A Preliminary Examination of Concentrated Incarceration and Social Disorganization." *Justice Quarterly* 20, no. 1 (March 1, 2003): 33–64. https://doi.org/10.1080/07418820300095451.

Colen, C.G., D.M. Ramey, and C.R. Browning. "Declines in Crime and Teen Childbearing: Identifying Potential Explanations for Contemporaneous Trends." *Journal of Quantitative Criminology* 32, no. 3 (September 2016): 397–426. https://doi.org/10.1007/s10940-016-9284-y.

Eisner, M., A. Nivette, A. L. Murray, and M. Krisch. "Achieving Population-Level Violence Declines: Implications of the International Crime Drop for Prevention Programming." *Journal of Public Health Policy* 37, no. S1 (September 2016): 66–80. https://doi.org/10.1057/s41271-016-0004-5.

Farrell, G. "Five Tests for a Theory of the Crime Drop." *Crime Science* 2, no. 1 (December 2013): 5. https://doi.org/10.1186/2193-7680-2-5.

Farrell, G., N. Tilley, and A. Tseloni. "Why the Crime Drop?" *Crime and Justice* 43, no. 1 (September 2014): 421–90. https://doi.org/10.1086/678081.

Farrell, G., N. Tilley, A. Tseloni, and J. Mailley. "Explaining and Sustaining the Crime Drop: Clarifying the Role of Opportunity-Related Theories." *Crime Prevention and Community Safety* 12, no. 1 (February 2010): 24–41. https://doi.org/10.1057/cpcs.2009.20.

Landersø, R., and P. Fallesen. "Psychiatric Hospital Admission and Later Crime, Mental Health, and Labor Market Outcomes." *Health Economics* 30, no. 1 (January 2021): 165–79. https://doi.org/10.1002/hec.4186.

Liedka, R. V., A. M. Piehl, and B. Useem. "The Crime-Control Effect of Incarceration: Does Scale Matter?" *Criminology & Public Policy* 5, no. 2 (May 2006): 32. https://doi.org/10.1111/j.1745-9133.2006.00376.x.

Levitt, S. D. "Understanding Why Crime Fell in the 1990s: Four Factors That Explain the Decline and Six That Do Not." Journal of Economic Perspectives 18, no. 1 (February 1, 2004): 163–90. https://doi.org/10.1257/089533004773563485.

Mishra, S., and M. Lalumière. "Is the Crime Drop of the 1990s in Canada and the USA Associated with a General Decline in Risky and Health-Related Behavior?" *Social Science & Medicine* 68, no. 1 (January 2009): 39–48. https://doi.org/10.1016/j.socscimed.2008.09.060.

Parker, K. F., A. Mancik, and R. Stansfield. "American Crime Drops: Investigating the Breaks, Dips and Drops in Temporal Homicide." *Social Science Research* 64 (May 2017): 154–70. https://doi.org/10.1016/j.ssresearch.2016.09.029.

Roeder, O. K., L. B. Eisen, J. Bowling, J. E. Stiglitz, and I. M. Chettiar. *What Caused the Crime Decline?* Brennan Center for Justice, 2015. https://doi.org/10.2139/ssrn.2566965.

Sharkey, P., G. T. Espinosa, and D. Takyar. "Community and the Crime Decline: The Causal Effect of Local Nonprofits on Violent Crime." *American Sociological Review* 82, no. 6 (December 2017):

1214–40. https://doi.org/10.1177/0003122417736289.
Shoesmith, G. L. “Crime, Teenage Abortion, and Unwantedness.” *Crime & Delinquency* 63, no. 11 (October 2017): 1458–90. https://doi.org/10.1177/0011128715615882.
Vogler, J. “Access to Healthcare and Criminal Behavior: Evidence from the ACA Medicaid Expansions.” *Journal of Policy Analysis and Management* 39, no. 4 (September 2020): 1166–1213. https://doi.org/10.1002/pam.22239.
Vieraitis, L. M., T. V. Kovandzic, and T. B. Marvell. “The Criminogenic Effects of Imprisonment: Evidence from State Panel Data, 1974-2002.” *Criminology & Public Policy* 6, no. 3 (August 2007): 589–622. https://doi.org/10.1111/j.1745-9133.2007.00456.x.
Wadsworth, T. “Is Immigration Responsible for the Crime Drop? An Assessment of the Influence of Immigration on Changes in Violent Crime Between 1990 and 2000 n.” *Social Science Quarterly*, 2010, 24.