

## First Supplement to Memorandum 2020-7

**Sentencing Topics and Trends, Including Recent Changes  
to California Law and Effects on Public Safety:  
Overview and Panelist Materials**

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The Committee on Revision of the Penal Code met by teleconference on June 24, 2020. Professor Steven Raphael of UC Berkeley's Goldman School of Public Policy, Caitlin O'Neil of the Legislative Analyst's Office, and Professor Charis Kubrin of UC Irvine's Department of Criminology, Law & Society, presented information to the Committee about sentencing issues.

Professors Raphael and Kubrin have prepared written submissions expanding on their opening presentations. The submissions are attached as Exhibits A (Raphael) and B (Kubrin).

The sole purpose of this supplement is to place those materials in the Committee's record. **No Committee action is required with regard to this supplement.** This supplement will be posted to the Committee's website and distributed to its electronic mailing list, but will not be part of the materials considered at a future meeting.

Respectfully submitted,

Thomas M. Nosewicz  
Senior Staff Counsel



# Exhibit A



**The relationship between incarceration and crime rates**  
**Prepared for the Committee on Revision of the Penal Code**  
**June 24, 2020**

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Criminologists and other social scientists who study the criminal justice system hypothesize several channels through which incarceration may causally impact crime rates. First, prisons and jails incapacitate people and thus may prevent crimes that would have otherwise occurred. Second, people may be deterred from committing crime by the threat of a prison spell, an effect referred to as general deterrence. Finally, the experience of serving a jail or prison sentence may either increase or decrease the likelihood of future criminal offending. Some may desist from offending as a result of the incarceration experience and do everything necessary to avoid returning to prison. For others, the prison experience may enhance future criminality through exposure to more criminally active peers, reduced opportunities due to the stigma associated with conviction and prior prison/jail time, or weakened connections to friends and family who may otherwise exert a positive influence.

There are large bodies of research on each of these possible causal pathways (incapacitation, general deterrence, and whether prison and jail sentences lead to specific deterrence or enhance the likelihood of criminal activity), as well as several reviews of the relevant research conducted by National Academies of Sciences. The findings from this research support the following conclusions.

- There is empirical evidence of criminal incapacitation. However, average incapacitation is quite low when incarceration rates are high as is currently the case throughout the United States.
- General deterrence effects tend to be small especially for sentencing changes that tag on extra time for offenses that already receive lengthy sentences. There is stronger evidence that sanction certainty deters.
- The evidence pertaining to long-term impacts are mixed. Former inmates certainly suffer stigma associated with prior convictions and incarceration sentences, a factor that limits employment and other opportunities that foster socioeconomic mobility. There are several recent high-quality studies in U.S. jurisdictions indicating that criminal justice involvement tends to increase the likelihood of future criminal justice involvement and diminishes future employment. However, there is also research in national settings where prisons devote markedly more resources and effort towards rehabilitation that provide evidence that for some the incarceration experience reduces future offending.
- California has not experienced notable increases in crime despite very large reductions in the state's incarceration rate. Careful research on the effects AB109 (the realignment reforms) and Proposition 47 find no evidence of an impact of these reforms on violent crime and mixed evidence of a slight increase in property crime.

In this memo, I briefly discuss each of these points. I also include at the end a list of readings upon which these conclusions are based.

### ***Incapacitation effects***

Individuals differ considerably in their propensity to criminally offend. Moreover, there are clear average lifetime trajectories in the propensity to engage in crime that are observed throughout the world and even among incarcerated populations (Raphael and Stoll 2013). In general, a small number of individuals commit the lion's share of serious offenses. Moreover, the likelihood of engaging in criminal activity tends to decline sharply with age beyond the age of 18, even among those with criminal histories.

This cross-person heterogeneity in the propensity to offend is central to understanding how the magnitude of the average incapacitation effect of prison changes with policy-induced increases in the incarceration rate. In a world where incarceration is reserved for only the most serious offenses and where sentences are relatively short, the criminal justice system will prosecute and incarcerate those who commit the most serious offenses, and for periods of time that will span their younger, most criminally active years. As a consequence, the average amount of crime prevented per prisoner-year served should be relatively high. By contrast, in a world where incarceration is applied liberally (as is frequently) and long sentences are the norm, the average number of crimes prevented per prison year served will be relatively low. This will be due to the fact that the criminal justice system is dipping further into the population of people who commit crimes in the application of incarceration (and netting less criminally active individuals as a result) and incarcerating people into more advanced age ranges when offending tends to diminish.

Research on average incapacitation effects tends to find large effects in countries/regions and time periods with lower incarceration rates and lower effects in countries/regions and time periods with higher incarceration rates. For example, research on a mass prison release in Italy (Buonanno and Raphael 2013) and sentence enhancements in the Netherlands (Vollard 2012) both find evidence of sizable incapacitation effects. However, incarceration rates in these countries are roughly one-fifth those of the United States. Moreover, even in these low incarceration settings, both studies find evidence of diminishing returns in terms of crime prevented as the scale of incarceration increases even in these low incarceration national settings.

Empirical research for the U.S. predating California's recent wave of reforms strongly suggest that the crime-preventing effects of incarceration have declined as the U.S. incarceration has increased. Johnson and Raphael (2012) and Raphael and Stoll (2013) estimate the marginal effects of an increase in incarceration rate and find that increases during the 1990s and 2000s (a time period when the U.S. incarceration rate approached historically high levels) prevented much less crime relative to change in incarceration during the 1980s (when incarceration rates were considerably lower). Similar evidence of diminishing returns to scale are also reported in Liedke, Piehl and Useem (2006).

### ***The Threat of Prison and General Deterrence***

There is a large and growing body of empirical research that attempts to measure general deterrence. The basic premise motivating this empirical work is that the threat of severe punishment will deter criminal offending. Some of the more high profile and influential research in this domain focuses on the deterrent effect of capital punishment. Two extensive reports by the National Academies of Sciences (Blumstein, Cohen and Nagin 1978; Nagin and Pepper 2012) as well as four thorough reviews of this body of work (Donohue and Wolfers 2005, 2009, Chalfin,

Haviland, and Raphael 2012, Charles and Durlauf 2012) conclude that nearly all of the research in this field is fraught with basic methodological problems and does not support the conclusion that capital punishment deters crime.

Certainly punishment via confinement is a less drastic sanction than capital punishment. Nonetheless, a prison sentence is a severe punishment, and thus, it is theoretically plausible that the threat of a prison sentence deters crime.

General deterrence requires that those at risk of committing an offense be cognizant of the likelihood of being caught and the punishment that awaits them. Moreover, the extent to which one factors in the potential costs of incarceration certainly depend on the weight that one places on costs that will be borne in the distant future (and for a long prison sentence far into the future). In other words, a lengthy prison sentence will deter criminal activity only insofar as potential offenders take into account future costs and benefits when deciding whether to offend. Such considerations likely have little influence in determining levels of un-premeditated violent offenses occurring in emotionally charged settings. Even for premeditated offenses, poor knowledge of the likelihood of being caught, of the likely sanction, as well as extreme present orientation may neutralize the effectiveness of incarceration as a deterrent.

There are many empirical studies of the deterrent effects of incarceration. On balance, our reading of this research is that the evidence for general deterrence from severe sentencing is relatively weak. An excellent relatively recent review of the general deterrence research is provided by Nagin (2013). There are studies that find convincing evidence of general deterrence when the targeted individuals (usually individuals with prior convictions facing very severe sanctions for subsequent crimes) are well-informed regarding the consequences of their actions, though the magnitudes are generally small (Helland and Tabarrok 2007; Drago, Galbiati, Vertova 2009). There is also some evidence that the certainty of a sanction as well as the swiftness of a sanction may deter, even when sanctions are modest. Regarding sanctions swiftness, most of this research focuses on programs inspired by the HOPE probation program in Honolulu, Hawaii. The HOPE program manages probation violation and pretrial misconduct with swift and certain yet modest sanctions and also places heavy emphasis on drug rehabilitation and other services for clients most in need. Evaluations of the program in Hawaii provide evidence of greater compliance for high-risk individuals on probation and felony defendants released to pretrial supervised release (Hawkin et. al. 2016; Davidson et. al. 2019). The evaluation evidence of mainland jurisdictions adopting this approach is more mixed (Hamilton et. al. 2016; Lattimore et. al. 2016; O'Connell et. al. 2016).

### *The Experience of Prison and Future Offending Post-Release*

The relatively high current incarceration rate in the U.S. translates directly into a larger pool of former prison inmates in non-institutional society. Roughly five percent of non-institutionalized adult males and up to 17 percent of non-institutionalized African American males have served time in a state or federal prison (Raphael and Stoll 2013). Much larger percentages have been incarcerated in a local jail. A prison experience may either increase or decrease offending among former inmates relative to what it otherwise would have been. For example, a harsh punishment may cause individuals to desist from future crime to avoid being re-incarcerated. Programming and services provided to inmates while incarcerated may rehabilitate and reduce future offending as a result. Many participate in educational programming while incarcerated as well as other forms of therapeutic programs such as substance abuse programming or cognitive behavioral therapy that may ultimately impact future offending. The strongest recent evidence of

such a rehabilitative effect comes from Scandinavia. Bhuller et. al. (2020) find strong evidence that Norwegian prisons, known for their extensive programming and training investments, relatively short sentence, as well as humane conditions of confinement, substantially reduce recidivism. Moreover, the authors find that most of the benefit accrues to those inmates with poor work histories preceding their incarceration. The optimistic findings from this study are tempered somewhat by the finding of a negative effect of incarceration on the future employment prospects of inmates with strong prior attachment to the labor market.

On the negative side, prison inmates are exposed to peers with extensive criminal histories while institutionalized. To the extent that inmates adopt the norms and values of their peers, this may increase criminal offending post release. Moreover, inmates may build stronger criminal ties behind bars and draw upon these social networks in non-institutional society. Former prison inmates also face substantial and real stigma upon release. To the extent that such stigma makes it difficult to achieve conventional markers of success (find legitimate employment, form lasting relationships), this may increase the likelihood of future offending.

There is a large body of research that focuses on evaluating the net effect of these mechanisms on offending levels post release. Nagin, Cullen, and Lero-Johnson (2009) provide a very thorough review of these studies. The authors review several groups of studies that vary in their methodological approaches, time period studies, as well as jurisdiction, though most of the research studies the U.S. The authors also provide a review of research on the effects of time served on future offending behavior. While the reviewed body of empirical work does not consistently point in one specific direction, the findings regarding the net effects of having served a prison sentence tend to point towards a slightly criminogenic impact of having served time on future offending.

Of course given the multiple avenues linking serving time to future offending, the ultimate effects of a prison sentence is likely to vary greatly from individual to individual as each will respond differently to the influences and incentives faced while incarcerated. For example, there is evidence that inmates held in harsher conditions are more likely to reoffend. Chen and Shapiro (2007) analyze the effects of serving time in higher security facilities relative to lower security facilities in the federal prison system. Like many states systems across the country, the federal prison system employs a numeric security classification score based on factors that predict behavioral risks and escape risk (in many states, age, sentence length, prior misconduct, and gang affiliations are often key determinants). When security scores rise above pre-determined cutoffs inmates are assigned to higher security institutions where there is considerably less freedom of movement and where peer inmates are on average a more serious group of offenders. The authors find that inmates who just miss the cutoff to be assigned to lower security institutions are more likely to recidivate post release than inmates placed in less harsh prisons

A particularly interesting demonstration of the heterogeneous impacts of incarceration on future offending behavior is presented by Bayer, Hjalmarsson, and Pozen (2009). Using administrative data on the Florida juvenile justice system, the authors assess whether the criminal histories of the peers with which one is incarcerated impacts the likelihood that one offends in the future and the types of future offenses committed. The study provides quite convincing evidence of adverse peer effects that tend to reinforce (or perhaps aggravate is a more appropriate word) the offending tendencies of incarcerated youth. For example, the authors find that among youth serving time for burglary, those whose peers are disproportionately comprised of those convicted of burglary are more likely to commit a new burglary after being released. The authors find similar patterns for youth convicted of larceny, drug offenses, aggravated assault and felony sex offenses.



Interestingly, peers are found to have a strong reinforcing effect on offending behavior (someone convicted of burglary housed with other convicted of burglary are more likely to commit more burglary in the future) but not for youth without a history of committing a specific offense.

There is also evidence suggesting that the stigmatizing effect of incarceration may differ, with particularly serious effects for African American men. Stigma poses very real challenges for former inmates, especially in seeking legitimate employment. Employers often actively screen out those with prior convictions and prior time served (Holzer, Raphael and Stoll 2006, 2007).

The stigmatization associated with prior convictions and prison time most certainly inhibits a successful transition upon release to productive, law-abiding roles in non-institutional society. While many former inmates overcome these particular challenges, employer inhibitions likely throw sand in the gears for many. There is some evidence from audit studies suggesting that these barriers pose particular problems for African American men. Pager (2003) provides evidence that employer perception of the relationship between race and criminality may interact in a complicated manner. Pager conducted an audit study in Milwaukee whereby pairs of auditors of the same race were sent to apply for the same jobs, one with a spell in prison listed on his resume and one with no such signal. Among the white auditors, 34 percent of the non-offenders received a call back in contrast to 17 percent of ex-offenders. The comparable figures for blacks were 14 and 5 percent. While all of the African American auditors experience very low call back rates, the extremely low call-back rate (5 percent) for African Americans with criminal histories signaled on their resumes is particularly salient.

Before closing this section, I would like to mention two relatively new studies that exploit the random assignment of cases to judges to estimate the long-term effects of incarceration on future offending behavior. The first study by Aizer and Doyle (2015) studies the effect of juvenile incarceration in a large U.S. urban district. The authors demonstrate that those youth who are randomly assigned to harsher judges who are more prone to imposing incarceration sentences, are less likely to graduate from high school and more likely to be incarcerated as an adult, with significant effects on adult convictions for violent crime. In an adult correctional setting, Mueller-Smith (2018) exploits random assignment of adult cases to judges in Harris County, Texas. Mueller-Smith finds that those defendant assigned to judges who are more likely to impose incarceration sentences have higher future recidivism rates, worse employment outcomes, and are more likely to be dependent on public assistance.

### ***What Recent California Reforms Have Taught Us about the Prison-Crime Relationship***

Over the past nine years, two broad factors converged to generate a large reduction in California's prison incarceration rate, and to a lesser extent, the state's jail incarceration rate. First, decades of litigation pertaining to conditions of confinement and the availability of health and mental health services in the state prison system culminated in a federal court order to reduce state prison overcrowding. Second, public opinion pertaining to sentencing severity and the use of incarceration in particular shifted, resulting in several notable ballot measures aimed at undoing many of the stringent sentencing practices introduced in past decades.

To address the court order, California enacted broad corrections reform legislation under the banner of corrections realignment (passed in April 2011 and implemented on October 5, 2011).<sup>1</sup> The legislation eliminated the practice of returning parolees to state prison custody for

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<sup>1</sup> The legislation was prompted by pressure from a federal three-judge court overseeing the California prison system, impaneled as a result of legal decisions in two lawsuits against the state filed on behalf of California prison inmates. In one (*Coleman v. Brown*), it was alleged that California was providing inadequate health care services to its prison

technical parole violations for all but a small set of the most serious offenders. The legislation also defined a group of non-serious, non-sexual, non-violent offenders who upon conviction serve their sentences in county jails.

Regarding the change in public opinion, in recent years California voters passed several state ballot initiatives aimed at reducing the use of prison along both the intensive and extensive margins. In 2012, voters approved a ballot measure that narrowed the definition of felonies that would qualify for second and third-strike sentence enhancements, limiting these felonies to serious and violent offenses (proposition 36). More recently, voters passed a proposition that incentivizes prison inmates to engage in rehabilitative programming and refrain from institutional misconduct in exchange for shorter prison terms (proposition 57 passed in November 2016).

The passage of proposition 47 in November 2014 is one of the most far-reaching sentencing reforms passed by way of ballot initiative and had immediate impacts on the operations and practices of several different arms of the state's criminal justice system. Put simply, the proposition redefined a sub-set of "wobbler" offenses (offenses that can be charged as either a misdemeanor or felony) as straight misdemeanor offenses. Regarding property offenses, the proposition redefined shoplifting, forgery, crimes involving insufficient funds, petty theft, and receiving stolen property offenses where the value of the property theft falls below \$950 as misdemeanors. The proposition also eliminated the offense of petty theft with a prior. Regarding drug offenses, a subset of possession offenses were redefined as misdemeanors. These new charging protocols apply to all new cases with the exception of instances where the individual in question has certain prior convictions. The proposition also included a provision for individuals currently serving sentences for reclassified offenses to file a resentencing petition, as well as a provision for those convicted in the past to file a petition to have the prior conviction reclassified as a misdemeanor (California Judicial Council 2016).

The cumulative effects of these reforms have been a sharp reduction in the state's prison incarceration rate. There are no jurisdictions in the United States that have experienced such a change, and only a few countries in the world that have experienced a rapid and large reduction in the incarcerated population of similar magnitude. Figure 1 presents the prison incarceration rates for California and for the U.S. from the late 1970s through 2016. Both series exhibit pronounced increases during the last two decades of the 20<sup>th</sup> century. From the early 2000s on however, there are notable departures with large relative decreases in California's incarceration rates post 2010. Given the size of the state, California's reforms have brought down the national incarceration rate, accounting for roughly one half the decline since the national rate peaked in 2007. We should note that since 2016 the size of the state's prison population has declined further. At the end of 2016, there were approximately 130,000 inmates in California state prisons. In the beginning of March 2020 prior to the COVID-19 shutdown of the state, the state prison population stood at 126,478.

The research reviewed above would predict that the declines in incarceration in California would likely have small effects on crime rates. This is based on (1) the fact that California's incarceration rate on the eve of these reforms was high by historical standards for the state and certainly relative to other nations of the world, and (2) the population reductions were carried out

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population. In the other (*Plata v. Brown*) it was alleged that the system was providing inadequate mental health services. Both resulted in rulings in favor of the plaintiffs finding that prison overcrowding was the primary cause of the inadequate services and that the poor health and mental health care systems violated the 8<sup>th</sup> amendment prohibition against cruel and unusual punishment. Assembly Bill 109 (referred to in the state as "corrections realignment") was passed and implemented under threat of a federal court order to release up to 35,000 inmates if the state failed to act on its own.

in a selective manner, taking into account the severity of the conviction offense and the nature of behaviors that were generating returns to prison. Figure 2 presents long term trends for overall California violent and property crime rates. California's violent crime rate peaks in the early 1990s before declining to current historical lows. While the historical peak for property crime occurs in the early 1980s, the largest declines in property crime occur post 1990, with the rate declining by roughly 50 percent over the subsequent 26 years. In both figures, the years 2010 (the last pre-realignment year) and 2014 (a year mostly preceding the implementation of proposition 47) are marked with vertical lines. Notably, these reforms reduced the state's prison incarceration rate to early 1990s levels while crime rates have remained at historical lows.

There have been several studies of the effects of these reforms on state crime rates. Two illustrative examples are Lofstrom and Raphael's (2016) analysis of the effects of realignment and Bartos and Kubrin's (2018) analysis of the effects of proposition 47. Both find no evidence of an impact of these reforms on violent crime. Both also find suggestive evidence of small effects on property crime, though these effects are not quite statistically significant in all models, especially for the studies of proposition 47. Since Professor Kubrin will testify separately about the effects of proposition 47, here I provide a brief review of the findings pertaining to realignment from Lofstrom and Raphael (2016).

Figures 3 and 4 below show crime trends in California and a matched comparison group of states chosen in a manner that render the time trends for California and the comparison states prior to realignment (through the year 2010) as similar as possible. In figure 3, we see that violent crime trends in California parallel quite closely the violent crime trends in other states and do not rise above the rates for comparison states after the implementation of realignment reforms. Hence, there is no evidence that the reforms increased violent crime. In figure 4 we observe a small increase in property crime in California relative to comparison states following the implementation of realignment. A detailed analysis in Lofstrom and Raphael (2016) finds that this is driven largely by an increase in auto theft which when scaled by the size of the prison population change suggests a small reverse incapacitation effect for this crime only.

While this memo is primarily devoted to discussing the relationship between incarceration and crime, I would like to offer a few closing thoughts regarding how recent reforms in California have impacted other outcomes of importance; in particular, racial disparities in criminal justice involvement. Lofstrom, Martin, and Raphael (2019) show that the large declines in California incarceration rates have also caused a narrowing in racial disparities in incarceration that has not been observed in other states. Similarly, Mooney et. al. (2018) and Lofstrom, Martin, and Raphael (2019) find substantial narrowing in racial disparities in arrest rates, in particular for felony drug offenses, driven largely by the implementation of proposition 47. Finally, MacDonald and Raphael (2020) find that proposition 47 narrowed race disparities in pretrial detention and criminal case dispositions for criminal cases processed in the City and County of San Francisco.

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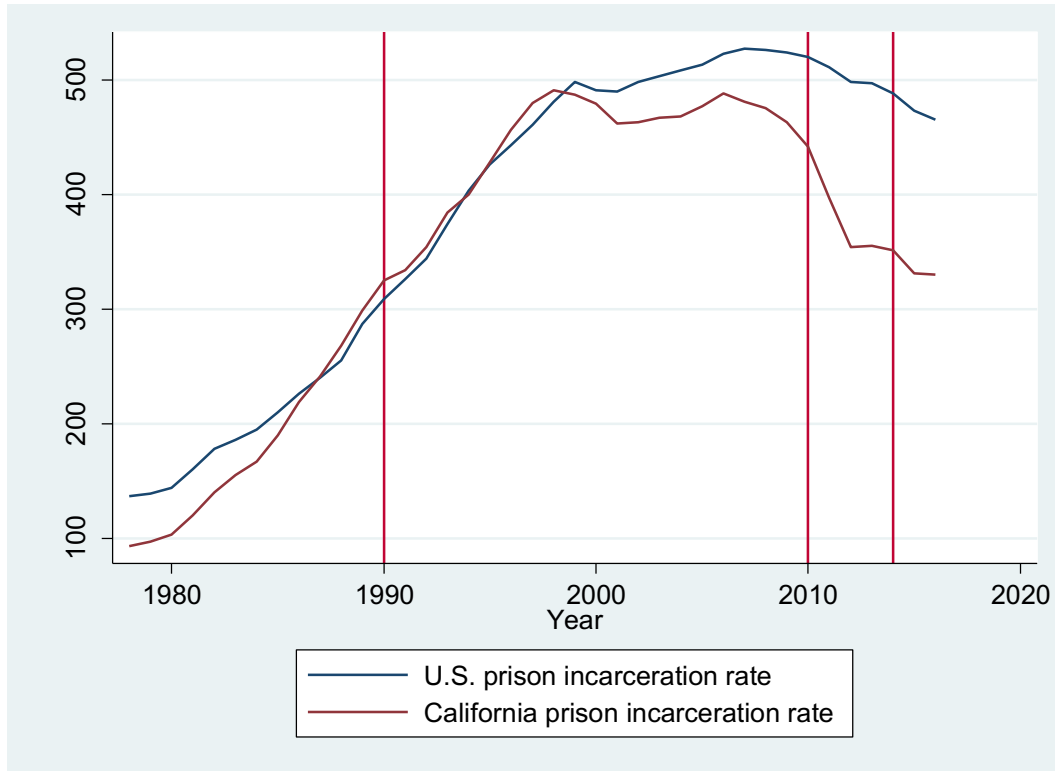
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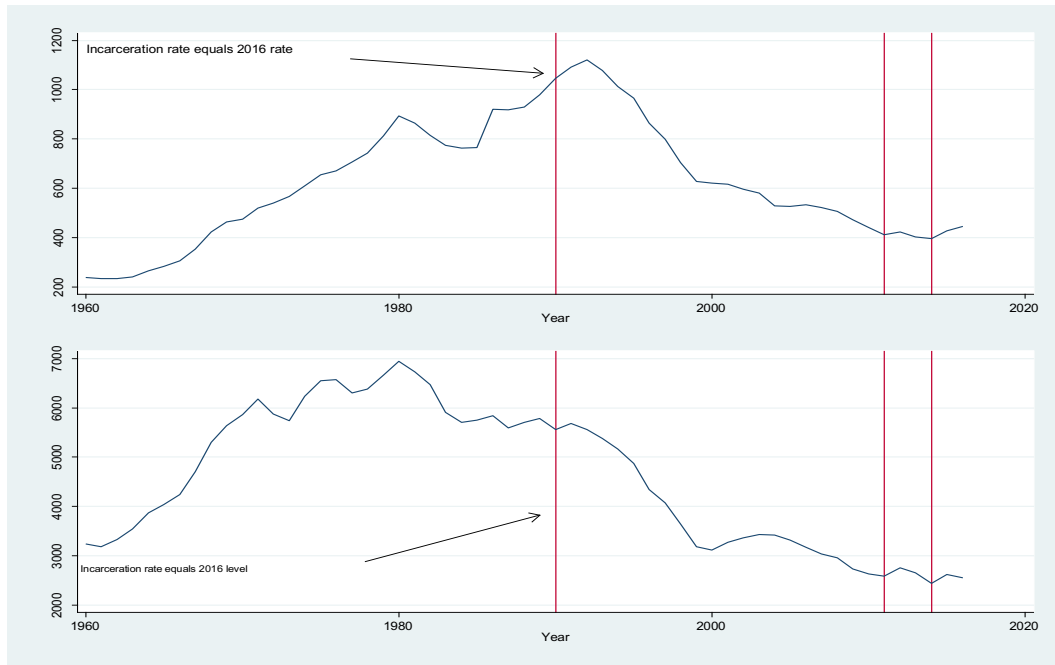
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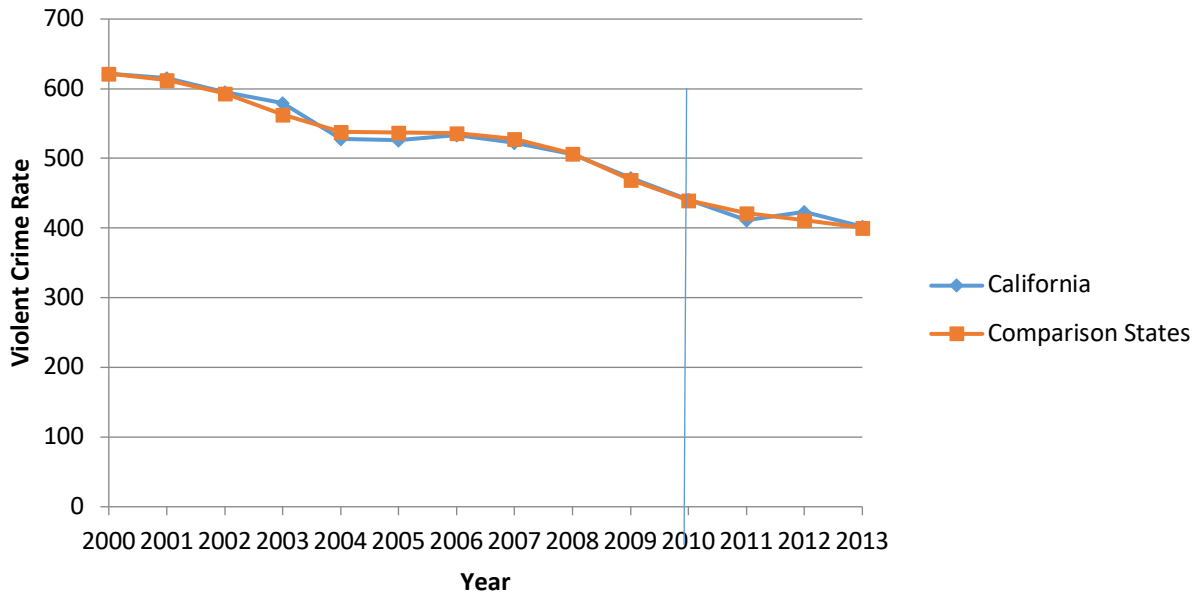
**Figure 1: Long-term Trends for California and U.S. Prison Incarceration Rates**



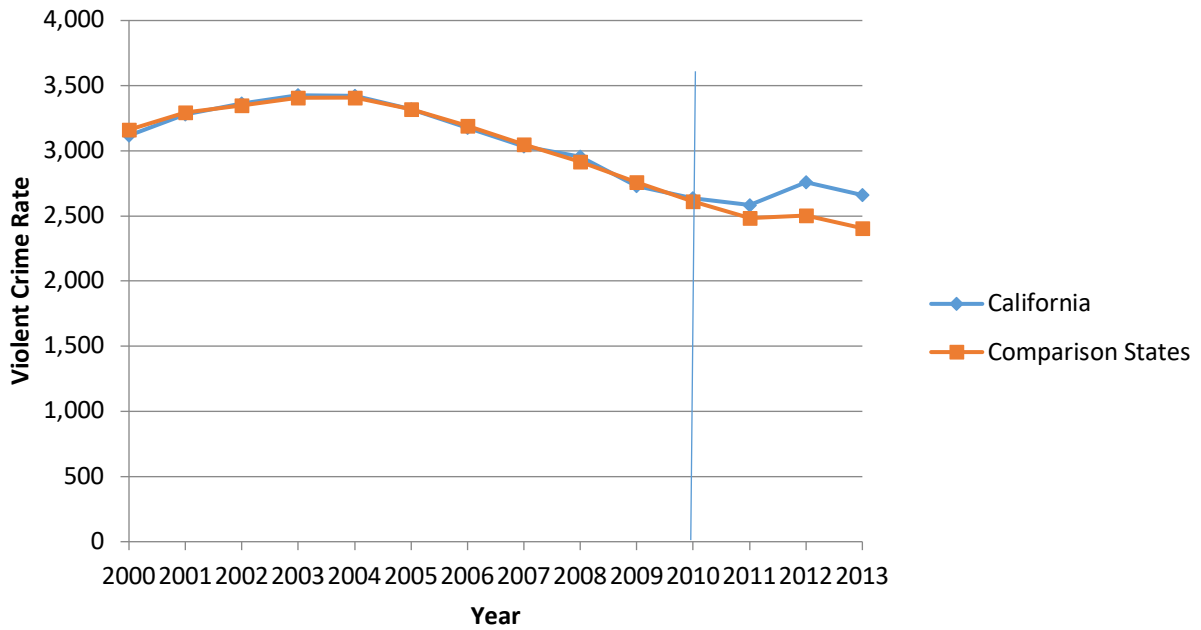
**Figure 2: Long-term Trends for California Violent and Property Crime Rates**



**Figure 3: Violent Crime Rate Trends in California and Comparison States: 2000-2013**



**Figure 4: Property Crime Rate Trends in California and Comparison States: 2000-2013**





## Exhibit B



Testimony of Charis E. Kubrin  
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Committee on Revision of the Penal Code

June 23, 2020

## **Introduction**

Thank you for the opportunity to speak with you about my research on criminal justice reform in California. My name is Charis Kubrin. I am a Professor in the Department of Criminology, Law & Society at the University of California, Irvine. Among other topics, I research the impact of criminal justice reform—prison downsizing in particular—on crime rates.

## **AB 109 Realignment**

I first got interested in criminal justice reform in 2011, when I moved from Washington DC to California to start my job at the University of California, Irvine. It happened that AB109 (Realignment) had just been implemented. AB 109 realigned from state to local (county) jurisdictions certain responsibilities for lower-level nonviolent offenders and parolees. Counties were given discretion regarding how they chose to spend their Realignment dollars, be it on jail space, community supervision, or electronic monitoring. Each county drafted a unique Realignment plan.

I had no idea what Realignment was but everywhere I turned I heard dire predictions of an impending crime wave. I came to learn that despite these grave concerns, there was no state funding set aside to evaluate the impact of Realignment and to my knowledge, no studies had yet been conducted so we did not have evidence on Realignment's impact one way or another. I decided to do something about it.

My colleague Dr. Carroll Seron and I received funding from the National Science Foundation and the UC Office of the President to hold a 2-day workshop at UC Irvine where we invited leading scholars who research prison downsizing to analyze Realignment's impact statewide. The workshop was organized around various themes and within these themes, researchers addressed essential questions including: Did Realignment cause crime and recidivism rates to rise?

Those who participated conducted original research. The studies were peer-reviewed and published in a special issue of the *Annals of the American Academy of Political and Social Science* (Kubrin and Seron 2016) titled, "The Great Experiment: Realigning Criminal Justice in California and Beyond," which Dr. Carroll Seron and I co-edited. Our volume represents the first systematic, scientific analysis of Realignment and its impact.

While the volume contained many important findings, I want to review those related to crime, given the panel's focus. Drs. Magnus Lofstrom and Steve Raphael conducted a study of statewide crime trends pre- and post-Realignment (Lofstrom and Raphael 2016). They found that Realignment had no impact on violent crime and only a very modest impact on property crime, and only for crime of auto-theft (see accompanying paper). Lofstrom and Raphael (2016) also conducted a cost benefit analysis. They found that 1 year served in prison instead of at-large as a result of Realignment prevents 1.2 auto-thefts a year and saves roughly \$12,000 in crime-related costs, as well as harm to victims and their families. On other hand, keeping an individual behind bars for a year costs California nearly \$52,000 (in 2013 dollars). They

ultimately conclude that, at the statewide level, the prison-crime effects are small and that the criminogenic consequences of Realignment have been modest.

We worked hard to disseminate these findings. We published an op-ed in the *Washington Post*, held a briefing in Sacramento, spoke with numerous reporters, and met with various law enforcement officials.

### **Prop 47**

During the outreach on Realignment, something interesting happened. As we spoke about Realignment people also expressed interest in Prop 47—another criminal justice reform—and its impact on crime statewide. Prop 47, implemented in November 2014, reduced certain drug possession felonies to misdemeanors and required misdemeanor sentencing for various crimes including shoplifting (where the value of the stolen property does not exceed \$950), grand theft (where the value of the stolen property does not exceed \$950), receiving stolen property (where the value of the stolen property does not exceed \$950), forgery (where the value of the forged check, bond, or bill does not exceed \$950), fraud (where the value of the fraudulent check, draft, or order does not exceed \$950), and writing a bad check (where the value of the check does not exceed \$950).

Just like its predecessor Realignment, Prop 47 quickly became politicized. I witnessed the same claims being made (e.g., Prop 47 led to an increase in crime), the same alarming headlines (with phrases such as “crime explosion,” “crime wave,” “spike in crime”), and the same situation with no state funding set aside to evaluate Prop 47’s impact so no proper evaluation had yet been conducted. One claim, in particular, concerned me. Many assumed that if crime rates rose following Prop 47’s enactment, that this was evidence that Prop 47 *caused* those rising crime rates. However, crime rates going up (or down for that matter) tells us nothing about the causes behind those rises (or drops) as crime is caused by a constellation of factors, not just a single policy. A proper evaluation study is necessary to isolate Prop 47’s causal impact.

This time I didn’t wait for someone else to do the evaluation. I did the research myself along with my graduate student Bradley Bartos, who specializes in policy evaluation research and has co-authored a leading text on cutting-edge research methods for causal inference and analysis (McCleary, McDowall and Bartos 2017). Our goal was to examine the impact of Prop 47 on crime in the year following its implementation (2015). In particular, we wanted to identify Prop 47’s causal effect on violent (murder, rape, robbery, assault) and property (burglary, larceny, auto-theft) crime statewide. Toward that end, we created a state-level panel dataset containing UCR Part I offenses from 1970-2015.

In an ideal world, we would use an experimental method to determine Prop 47’s impact on crime. In particular, we would randomly assign some states to have Prop 47 and others not to have Prop 47 and then we would see what happens to crime in the “treated” vs. “control” groups. Clearly, random assignment is impossible and unethical in this case. The next best thing is a quasi-experimental design, which has all the benefits of the experimental method minus random assignment. The particular quasi-experimental method we use in our study is called

Synthetic Control Group Design. This method allows us to construct a comparison unit that approximates California had it not enacted Prop 47; we call this comparison unit “Synthetic California.” We can compare crime in California in 2015 to crime in “Synthetic California” in 2015 to determine Prop 47’s causal impact. Any causal effect of Prop 47 will be reflected in the distance between the two time series that emerges following the intervention.

Confidence in our findings is predicated on the quality of our comparison unit—that is, how we constructed Synthetic California. So, how did we construct Synthetic California? Synthetic California is comprised of a weighted combination of donor pool states (other states in the U.S.) that optimally fits California’s crime trends from 1970-2014, the pre-intervention period (N=44 years). Donor pool states are those states which did not experience a Prop 47 style intervention. Because no other state enacted a Prop 47 style intervention, all remaining states in the U.S. were eligible. We created a “Synthetic California” for each crime type in the analysis. To reiterate, when a gap emerges between California and its synthetic counterpart following the enactment of Prop 47, the difference between the two time series can be interpreted as the causal effect of Prop 47 on crime.

What did our analysis reveal? For homicide, rape, aggravated assault, and robbery we find no evidence that the impact of Prop 47 was any different from zero. That is, Prop 47 had no effect on these offenses. The same is true for burglary. However, for larceny and motor vehicle theft, Prop 47 did appear to have an impact on these offenses (see Figure 1 in Bartos and Kubrin 2018 for a visual illustration of these findings).

Before we can conclude that this was, in fact, the case it is necessary to perform standard “robustness checks” on the findings. These tests are done in order to address questions of spuriousness (e.g., could the findings be due simply to noise in the time trends of crime?) and to determine the extent to which the findings for larceny and motor vehicle theft may be sensitive to model specification (e.g., the findings shouldn’t change simply by changing what Synthetic California looks like).

The first standard test we conducted is called an In-sample placebo test. This test determines whether the findings for larceny and motor vehicle theft are sufficiently meaningful by asking: Are these findings for California large relative to other states? Stated alternatively, pretending we do not know which state enacted Prop 47, we construct synthetic control groups for every other state and estimate the effect of Prop 47 on crime in 2015. Since California is the only state that, in fact, enacted Prop 47, it should produce a larger effect (i.e., finding) than any other state if the effect is real and meaningful. To conduct this test, we iteratively reassigned the treatment condition (Prop 47) to each state in our sample and constructed a synthetic control group for that state. We then ranked the states based on how large their Prop 47 effects were, with 1 being the largest. We did this for larceny and motor vehicle theft only since we did not observe any effect for the other crimes.

Figure 2 in Bartos and Kubrin (2018) shows the rankings for all states. Looking first at motor vehicle theft (Panel B), we see that California did not rank sufficiently highly for this

crime (13<sup>th</sup>/50), suggesting that the estimated effect for motor vehicle theft appears smaller in California than the random variation observed in the donor pool states. Thus, Prop 47's estimated effect on motor vehicle theft in California is likely spurious. This finding drops out. However, larceny is ranked 4<sup>th</sup>/50 (Panel A) suggesting that the estimated larceny increase following Prop 47 that we identified is not trivially small relative to changes in larceny observed in non-Prop 47 states. Thus, the larceny finding remains, at least for now.

The second standard post estimation test required is called the Leave One Out Test. This test evaluates whether our only remaining finding—larceny—is sensitive to changes in Synthetic California's composition. We conduct this test by iteratively excluding donor pool units contributing the largest weight to Synthetic California until all original states with non-zero weights are excluded (for larceny this includes the states of NY, MI, NV, NJ). In other words, the weights for these states get redistributed to remaining donor states to produce the next best Synthetic California. At the end of the process, Synthetic California is comprised of a different set of donor pool units than it was in the original model. If the original effect for larceny persists in sign and magnitude even after this change, we can be confident that the finding for larceny is meaningful and robust (i.e., not sensitive to changes in Synthetic California's composition).

Figure 3 in Bartos and Kubrin (2018) reveals that, when key donor pool states are excluded, Synthetic California drastically changes and the interpretation of the gap no longer holds. Thus, larceny, our only non-zero, non-trivial effect, appears to be dependent upon which states comprise Synthetic California. We therefore conclude that the finding for larceny must be interpreted with caution.

In sum, the robustness checks reveal the findings for both larceny and motor vehicle theft do not hold. These findings are both sensitive to alternative specifications of our synthetic control group and small enough that placebo testing cannot rule out spuriousness. Overall, then, we find next to no evidence to suggest that Prop 47 caused crime to increase in California.

These findings were published in the peer-reviewed journal *Criminology & Public Policy* (Bartos and Kubrin 2018), a leading crime and policy journal in the field (see accompanying paper).

## **Conclusion**

What is the larger take-away from both of these studies? We can downsize our prisons without risking public safety.

The findings from these studies have implications well beyond Realignment and Prop 47, and California. The steps taken by the state to reform its criminal justice system are being closely watched by other states also confronting similar fiscal and legal challenges related to overcrowding. These states are asking whether the large-scale prison downsizing in California will compromise public safety or whether they can look to reforms such as Realignment and Prop 47 as possible solutions to replicate in their own states. Although speculation abounds,

rigorous, high-quality scientific research is necessary to answer this question. Although additional studies are welcome, the findings thus far suggest that these reforms are not associated with meaningful increases in crime. As the nation debates prison downsizing, clearly the experience of California must be front and center.



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