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CRIME CONTROL AND RECIDIVISM

# Impact of defelonizing drug possession on recidivism

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**Research Summary:** California's Proposition 47 (Prop 47), passed in November 2014, sought to scale back punishment for selected drug and property offenses, making them misdemeanors rather than felonies. Although others have examined the impacts of Proposition 47 on crime rates, here we examine the impacts on a range of recidivism outcomes specifically for individuals convicted for drug possession offenses. We focus on the defelonization of drug possession because nationally evidence suggests that public and policy maker sympathy for reducing incarceration use is greatest for nonviolent drug offenders. Thus, the greatest relevance of Proposition 47 to the nation lies in its strategy of defelonizing drug possession. We draw on an ongoing data collection effort on criminal justice populations in 12 California counties and link these data to rearrest and reconviction data from county and state-level sources. We find people who received drug possession convictions after Prop 47 had lower overall rearrest and reconviction rates than people with comparable convictions and criminal histories released prior to the proposition. Overall reductions in recidivism rates for Prop 47 drug offenders were driven by reductions in rearrest and reconviction for drug possession offenses. These findings are robust to a variety of specifications and sensitivity analyses. When we complicate the narrative of declines in nonviolent recidivism, however, we find evidence of a 2.8-percentage-point increase in rearrest for crimes against

  

persons, mainly assaults and domestic violence. Reconviction rates for crimes against persons for drug possession offenders also increased by 1.1 percentage points.

**Policy Implications:** These findings add to the growing body of evidence that a targeted reform like Prop 47 does not result in increases in most measures of reoffending for people convicted of drug possession. Although we cannot rule out that the declines we observe in rearrest and reconviction are the result of behavioral change among offenders, it seems likely that those declines are partly, perhaps mostly, the result of changing decision-making among law enforcement and prosecutors. Converting drug possession to be chargeable only as a misdemeanor has significantly reduced the likelihood individuals convicted of drug possession will return to jail or prison once they have been released and therefore stemmed some of the flow of people with such offenses through the system. Evidence from California, however, shows that there can be small increases in crimes against persons, which provides a cautionary note and points to the need to consider interventions that do not involve criminal justice responses in response to the negative aspects of drug use. Our conclusion discusses considerations in applying our findings to other states that have defelonized drug possession.

**KEYWORDS**

California, correctional reform, prison downsizing, recidivism

There are multiple policy pathways for reducing reliance on jail and prison incarceration (Grattet & Bird, 2018). One group of reforms target "back-end" policies that reduce sentence lengths, introduce greater use of indeterminate sentences, or constrain the use of revocations (Tonry, 2014). Another group focuses on "front-end" policies that affect the flow into custody by reducing punishments, downgrading certain offenses from felonies to misdemeanors, legalization of some types of drugs, and increasing the use of noncustodial sanctions like diversion or probation (Turner et al., 2015). California has undertaken a wide range of both front-end and back-end reforms, and a small research literature is now emerging on the impacts of these policy changes (Bird & Grattet, 2014; Bird, Lofstrom, Martin, Raphael, & Nguyen, 2018; Bird, Tafoya, Grattet, & Nguyen, 2016; Lofstrom & Raphael, 2013). One of the more ambitious and controversial front-end reforms is California's Proposition 47 (also known as "the Reduced Penalties for Some Crimes Initiative" or "Prop 47"), which downgraded a range of drug and property offenses to misdemeanors. A portion of Prop 47 is particularly noteworthy because it targets a sympathetic and politically viable group—nonviolent drug offenders. As an approach to

scaling back incarceration, Prop 47's defelonization of drug possession may hold some appeal for other jurisdictions across the country.

Prior work on Prop 47 has focused on its impact on crime rates (Bartos & Kubrin, 2018; Bird et al., 2018). Here we focus on recidivism to assess the impact of Prop 47 on drug offender rearrest and reconviction rates. In other words, we examine the impact of this front-end oriented reform on back-end dynamics that return the particular offenders to custody. The article is structured as follows: First we consider how Prop 47 fits into the broader context of downsizing reforms occurring nationally and describe some of the key findings from research on the impacts of correctional reform in California on recidivism. Next we discuss the unique sources of data we have constructed to explore the question of how Prop 47 affected recidivism and the matching strategy we employ to create a comparison group for those treated by Prop 47. We then describe our methodology and findings and offer some conclusions and cautions about defelonization of drug possession for policymakers.

## 1 | POLICY CONTEXT OF PROPOSITION 47: CALIFORNIA AND BEYOND

Recent public opinion polls have shown a high degree of support for criminal justice reforms that aim to reduce reliance on prisons and jails for certain kinds of offenders. In January 2018, Public Opinion Strategies, commissioned by the Justice Action Network, reported that 87% of respondents in a national poll agreed that some of the money spent on locking up nonviolent offenders should instead be spent on alternatives like electronic monitoring, community service, and probation (Blizzard, 2018).[1] Even in a red state like Texas, there appears to be widespread support for rehabilitation, more discretion, and greater use of alternatives to incarceration (Thielo, Cullen, Cohen, & Chouhy, 2015). These polls have been used to suggest that mass incarceration is in retreat and that the public is ready to embrace policies that roll back the use of prisons and jails. Some caution about the limits of public support is reflected in a recent survey (commissioned by Vox.com and performed by Morning Consult), which reveals that Americans' agree that there are too many people in prison, but they also only favor more lenient approaches for nonviolent drug offenders (Lopez, 2016). The poll also reveals that most respondents mistakenly believe that prisons are populated mostly by nonviolent drug offenders, which is not the case.[1]

Over the last decade or more, researchers have also documented the role of felony drug crime on the growth incarceration nationally from 1980s onward (Travis, Western, & Redburn, 2014, pp. 4, ch. 2). Research also shows the negative consequences of felony convictions to prison on people's employment and income, their health (Massoglia & Pridemore, 2015), and their children (Foster & Hagan, 2009; Hagan & Dinovitzer, 1999), as well as on racial inequality (Wheelock, 2005) and on the negative consequences of incarceration for the communities they return to (Clear, 2009). Research also shows that incarceration of drug offenders produces no better recidivism outcomes (Mitchell, Cochran, Mears, & Bales, 2017) and sometimes worse outcomes than probation sentences (Spohn & Holleran, 2002). Combined, this work gives support to the idea that defelonizing drug crimes may improve a wide range of outcomes by removing a large group of offenders from eligibility to serve prison sentences.

Capitalizing on this context of research and public support, a diverse group of states has crafted reforms designed to partially or completely defelonize drug possession (Durnan & Elderbroom, 2018; Elderbroom & Durnan, 2019). Elderbroom and Durnan (2019) focused on five states that have adopted defelonization reforms (Utah, California, Connecticut, Oklahoma, and Alaska) and identified the common elements of these reforms as the following: They all classify drug possession, regardless of the type of drug, as a misdemeanor offense; they declare drug possession sentences ineligible

for prison; and they provide greater state support of substance abuse and mental health treatment (either through reinvestment of prison cost savings or via contemporary legislation). Oklahoma and Alaska's laws contain no exclusions based on criminal history. California excludes people who were previously convicted of serious, violent, or sexual offenses, as defined in state penal code. Utah and Connecticut allow for drug possession to be charged as a felony after the second possession conviction.

California's law goes beyond drug possession to include five property offenses for which the dollar value was less than $950.[2] Prior to the passage of the proposition, these offenses could be charged as either felonies or misdemeanors. After passage they were all classified as misdemeanors. Moreover, the California law applied to individuals sentenced after November 2014 as well as retroactively to individuals already serving prison or jail sentences at the time of passage, although judges have the authority to deny petitions for resentencing (Grattet, Tafoya, Bird, & Nguyen, 2016). As of December 2018, there have been over 380,000 petitions and applications for resentencing (Judicial Council of California, 2019).

California's reinvestment approach requires that a portion of the savings (65%) from the reduction of prison bed utilization that results from the proposition is to be directed back to local governments to support mental health and substance-use treatment. Thus, even though California's law is similar to the other states that have recently adopted reforms to defelonize drug possession, it has some distinctive features as well. It contains greater restrictions based on criminal history than Alaska and Oklahoma, but it is retroactive and thus may affect a greater proportion of the population of people convicted for drug possession than the other states.

Thus far, work evaluating Prop 47 has been focused on crime. Bartos and Kubrin (2018) found that by comparing California crime trends with a synthetic control group there is no difference in Uniform Crime Reports (UCR) Part I violent or property crime. These findings are supported by a report by the Public Policy Institute of California using a similar approach and a somewhat longer post-Prop 47 observation period (Bird et al., 2018). In their conclusions, Bartos and Kubrin called for more research on Prop 47's effects, focusing specifically on recidivism:

> *[A]part from Prop 47's impact on crime, some question how Prop 47 has impacted recidivism rates throughout the state. Prior to both Realignment and Prop 47, recidivism rates in California were high, as noted earlier. Unfortunately, they remain stubbornly high today, even as prison and state parole populations have dropped dramatically (Lofstrom et al., 2016). What explains this trend? And more to the point, what is the recidivism rate of Prop 47ers?" (Bartos & Kubrin, 2018, p. 18)*

This article considers these questions in detail. Proponents of the proposition, which included a coalition of criminal justice reform organizations, progressive law enforcement leaders, labor unions, religious leaders, and celebrities (Ballotpedia, 2014), argued that it would have beneficial or neutral effects on recidivism. Writing on behalf of the proposition, San Francisco District Attorney George Gascon, former San Diego Chief of Police William Lansdowne, and victim's advocate Dionne Wilson argued that individuals targeted by the reform do not pose a significant risk, they can be better managed with less severe sanctions; and that incarceration has little deterrent effect so lessening sanctions will not lead to higher levels of reoffending (California Secretary of State, 2014). Moreover, they argued that the reform would free up law enforcement resources and jail and prison space for more serious offenders. Finally, they argued that preexisting in-custody treatment programs were not enough to cause offenders to rehabilitate. Money spent on custody would be better spent on services in the community, including prevention (California Secretary of State, 2014).[3]

Opponents of Proposition 47, which included the California Police Chiefs Association, other law enforcement organizations, victims' rights groups, and U.S. Senator Diane Feinstein, argued that it defelonized crimes that were serious and deserving of felony-level punishment; that it placed dangerous offenders on the street instead of in custody (California Secretary of State, 2014); and that it would lessen deterrence. As San Diego Superior Court Judge Frederic Link put it, reducing penalties for drug crimes is "like taking the teeth out of the tiger" (Littlefield, 2018, para. 5).[4] Opponents also argued that the change would result in a disincentive for Prop 47 offenders to engage with services and thus benefit from treatment to lower recidivism. San Diego County Deputy District Attorney David Greenberg said, "Drugs are a motivator for a lot of crimes. Low-level crimes to high-level crimes. We don't believe that this proposition will allow us to intervene and do forced intervention on these individuals, so that those crimes don't get committed" (Cavanaugh, Lane, & Pico, 2014, para. 6). Indeed, the *Los Angeles Times* reported that drug court admissions decreased by 50% in the year after passage of Prop 47 (Chang, Gerber, & Poston, 2015). Thus, proponents thought that there would be negligible impacts of defelonization on crime and recidivism and opponents argued that lower deterrence would encourage offending generally, but also lower the specific deterrence for Prop 47 offenders and stimulate increases in offending.

## 2 | RECIDIVISM AND CALIFORNIA CORRECTIONAL REFORMS

Prior work on the impacts of correctional reforms and recidivism suggests policy reforms designed to reduce incarceration can have varied impacts. For example, research on the California's 2011 Public Safety Realignment, which aimed to reduce the prison population by redirecting selected groups of offenders to local criminal justice systems rather than the state prison and parole systems,[5] showed that recidivism patterns of offenders released from state prison did not change much in terms of overall rearrest rates, which remained extremely high; reconvictions slightly increased as the option of revoking parole violators to prison was eliminated under Realignment; and returns to prison dropped sharply post-Realignment (Lofstrom, Raphael, & Grattet, 2014). This work, however, focused on prison releases as a whole and did not differentiate between the particular subgroups targeted for different treatment by Realignment. Subsequent work on Realignment and recidivism focused more narrowly on the subset of prisoners that prior to Realignment were released to state parole supervision but after Realignment were released to county supervision. Under Realignment these offenders, known as "Post-release Community Supervision" (PRCS), are now supervised county probation departments. Bird and Grattet (2014) examined this group as a test of whether probation was getting better recidivism outcomes than state parole had previously achieved. They found no evidence of a statewide effect of Realignment on the measure of recidivism that included supervision violations and rearrests for felonies and misdemeanors. They argued that the decreases observed in rearrests in earlier work (Lofstrom et al., 2014) are likely the result of decreases in rearrests among state parolees and not PRCS offenders. When recidivism rates were further decomposed into felonies and misdemeanors, however, Bird and Grattet (2014) found evidence of sizeable increases in both felony arrests and convictions. In other words, offenders whose supervision shifted from state parole to county probation under Realignment were substantially more likely to be rearrested and reconvicted for serious crimes than their pre-Realignment counterparts. Bird and Grattet suggested that "these increases are likely due to the elimination of the option to use parole revocation to return offenders to prison" (2014, p. 2) and could not be attributed to worsening behavior among PRCS under probation supervision.

Research on Realignment underscores two important issues raised in the broader research literature on recidivism (Maltz, 1984). First, it is critically important to examine different measures of recidivism because the effects of policy changes often differ depending on whether rearrest, reconviction, or return to custody are used. These divergent results can provide evidence of changes in discretionary practices within the system. Even within the broad measures of rearrest and reconviction, it is also often informative to distinguish between offense levels (misdemeanor, felony, supervision violations/revocations) and offense types (drug, property, person, etc.) because it can help provide evidence of how policy changes shift incentives within the system, causing changes in case processing rather than changes in offender behavior. Grattet and Bird (2016) discussed the challenges to interpreting recidivism statistics along these lines. As a further example, Bird, Grattet, and Nguyen (2017) found that because Realignment mandated that revocations be served locally, it appears to have incentivized officials to seek reconvictions in cases that prior to Realignment they may have relied on revocation. Their research also found that prior to Realignment, some parolees who violated their supervision were taken directly to a prison reception center without a formal arrest being entered into the system. As a result, rearrests in the pre-Realignment period were suppressed compared to the post-Realignment period, which meant it appeared that rearrests had worsened, but in fact they were slightly improved (see also Lofstrom et al., 2014). Lofstrom et al. (2014) also found evidence that probability of conviction given arrest increased after Realignment because revocations out of a county and into state prison were no longer an administrative option. Instead, prosecutors likely sought reconvictions in cases that prior to Realignment would have been processed through the parole revocation process.

Examples like these teach us that reported rates of rearrest and reconviction are susceptible to change in discretionary decision-making within the system and should not be considered to be solely the result of behavior changes of offenders. In the case of Prop 47, defelonization of drug possession may result in changes in rearrest and reconviction statistics even if the underlying behavior of offenders remains constant. Evidence from jail data shows a precipitous drop in bookings for Prop 47 offenses immediately after the passage of the proposition, suggesting that converting those offenses to misdemeanors disincentivized law enforcement from using jail beds for them. Given law enforcement and prosecutorial discretion, Prop 47 might encourage a shift in charging practices at booking and conviction away from Prop 47 offenses, perhaps swapping what previously would have been charged as a Prop 47 with a non-Prop 47 offense. If "charge swapping" occurs with respect to drug possession, we would expect to see increases in charges for crimes like drug possession for sale, which is distinguishable primarily through an assessment of intent to sell drugs found in an individual's possession. We might also see an increase in other kinds of non-Prop 47 drug offenses or in supervision violations and revocations. Thus, an analysis of changing recidivism patterns must explore evidence of "charge swapping" by examining increases in other kinds of offenses that are similar to drug possession. Prior research also shows that policy changes are often accompanied by changes in population characteristics, and as a result, it is critically important to employ strategies to ensure that apples-to-apples comparisons before and after reforms and thus isolate the causal effect of the reform as much as possible (Bird et al., 2017).

## 3 | DATA

We draw on data collected through the BSCC–PPIC Multi-County Study (MCS) to analyze the effects of California's Proposition 47 on recidivism outcomes of drug possession offenders before and after Prop 47. The MCS is a collaborative effort between the California Board of State and Community Corrections (BSCC) and the Public Policy Institute of California. The MCS was established in the wake of Public Safety Realignment with the goal of bringing together the data needed to rigorously

evaluate the effects of statewide policy reforms and to identify the most effective recidivism-reduction interventions at the local level. To achieve these goals, we identified a group of counties representative of the state as a whole and partnered with these counties to collect data on local jail and probation systems after Realignment. The 12 counties participating in the study include Alameda, Contra Costa, Fresno, Humboldt, Kern, Los Angeles, Orange, Sacramento, San Bernardino, San Francisco, Shasta, and Stanislaus. Taken together, these counties comprise 60% of California's population and represent the state's geographic diversity by including counties from the north, south, coastal, and valley areas. Although similar in many respects to aggregate statewide characteristics, MCS counties tend to be more urban (as measured by population density) and have higher shares of African Americans, Asian Americans, and Latinos. In addition, the poverty and unemployment rates are slightly higher among the MCS counties.

Data from the participating counties in the MCS were merged with data from the California Department of Justice (DOJ) and the California Department of Corrections and Rehabilitation (CDCR). Measures from these later sources include criminal history and recidivism outcomes. The participation of the MCS counties allows us to expand on previous research by assessing outcomes for individuals sentenced to serve time in county correctional agencies who, because they pass through local systems, are not tracked at the state level.

## 4 | METHODOLOGY

To identify the effects of Prop 47 on recidivism, we leverage the swift passage and implementation of this natural policy experiment. Drawing on a rich set of individual-level characteristics, including demographics and criminal histories, we use matching to construct a pre-Prop 47 untreated group with similar characteristics to the post-Prop 47 treatment group. We then use a regression model to estimate the effects of Prop 47 on rearrest and reconviction rates, controlling for any remaining differences in individual characteristics and including county fixed effects. We test our findings with and without the inclusion of Los Angeles County, which contributes the most cases to the sample, in order to test whether patterns in Los Angeles are consistent with the other counties in the sample. Finally, we draw on other drug offenders—those not included under Prop 47—and employ a difference-in-differences specification that allows us to assess whether changes in the recidivism rates of Prop 47 drug offenders are attributable to Prop 47 or, instead, to broader recidivism trends.

The pre-Prop 47 group includes individuals released from custody or convicted out of custody between November 2012 and October 2013, allowing for a 1-year recidivism window before the passage of Prop 47.[6] The post-Prop 47 group includes individuals released from custody or convicted out of custody between November 2014 and October 2015 and followed for 1 year after release. Given that the characteristics of individuals in the post-Prop 47 group differ from those of their counterparts released prior to Prop 47, we have a two-stage approach to addressing selection on observables.

First, we use a matching strategy to identify those individuals from the pre-Prop 47 group that are most similar, in terms of their characteristics, to those in the post-Prop 47 group. The specific strategy we use is referred to as "genetic matching" because it employs an evolutionary search algorithm to refine the untreated group to improve covariate balance between the treated and the untreated. This approach is similar to, but distinct from, the better known propensity score matching strategy. Propensity score matching uses a parametric model to estimate the likelihood of treatment for each individual based on his or her characteristics. Then, individuals are matched based on their likelihood of treatment, and those individuals in the untreated group who have similar propensity scores to the treated individuals are included in the control group for further analysis. Genetic matching improves

on propensity score matching by directly matching on characteristics to construct a control group that is most similar to the treated group across all the observed factors that may drive selection into treatment. The genetic matching approach is used less frequently because it is computationally intensive. We use it here, however, because it has been shown to outperform propensity score matching in recovering experimental estimates of treatment effects (see Diamond & Sekhon, 2013).[7]

It is important to recognize that genetic matching may improve the balance of characteristics across groups, but we are still limited by the plausibility of the selection on observables assumption. Variables used in the matching procedure are listed in Table 1, which also displays the characteristics of the unmatched and matched pre-Prop 47 and post-Prop 47 group. The table shows that the matched pre-Prop 47 improves covariate balance over the unmatched pre-Prop 47 group. The Prop 47 treated group is composed of 14,002 individuals. Prior to matching, the pre-Prop 47 untreated group includes 21,303 individuals; after matching, the untreated group is narrowed to include 7,490 individuals who have similar characteristics to those in the treated group. This refinement is particularly important in the context of Prop 47 because we see a decline in jail bookings immediately after the passage of the initiative, which suggests law enforcement practices changed in response to Prop 47. Therefore, the smaller post-Prop 47 group is likely to be selected relative to the larger pre-Prop 47 group.

The matched control group has means that are closer to post-Prop 47 means in 14 of 21 covariates overall, including 11 of 13 criminal history covariates. The matching process allows us to narrow the pre-Prop 47 group to those individuals who are most similar to the post-Prop 47 treatment group. After matching, we then use a linear probability model to estimate treatment effects, addressing any remaining differences in characteristics between the post-Prop 47 treatment group and the pre-Prop 47 comparison group. This strategy improves on the traditional approach by reducing reliance on the regression model to adjust for differences in observable characteristics. Although we leverage the Prop 47 policy experiment and draw on a rich set of individual-level characteristics, it is possible that there are unobserved differences between the post- and pre-Prop 47 groups and that these differences could play a role in the estimated differences in recidivism outcomes.

We are also concerned that a pre–post comparison alone neglects the possibility that changes in recidivism after Prop 47 are attributable to broader recidivism trends. In other words, it may be that measures of recidivism were trending downward and thus decreases found after the proposition may be merely a continuation of a trend that began before Prop 47 was passed. To assess this possibility, we undertake a difference-in-differences analysis to compare changes in recidivism outcomes for people convicted of drug possession relative to changes in recidivism for people convicted of other drug offenses, such as possession for sale, sales, or manufacturing. If there were trends influencing offending that shape the patterns we observe with respect to drug possession offenders, we would expect that they are also reflected among the other drug offenders.

Our difference-in-differences analyses uses data on both drug possession offenders and other drug offenders. In the post-Prop 47 period, the other drug offender group includes 20,090 individuals convicted for non-Prop 47 drug offenses released from custody or convicted out of custody between November 2014 and October 2015. The full pre-Prop 47 group of other drug offenders includes 18,138. We again use a genetic matching strategy to construct a pre-Prop 47 control group that closely resembles the post group in terms of demographic and criminal history characteristics. After matching, this comparison group is narrowed to 11,008 individuals convicted for non-Prop 47 offenses released from custody or convicted out of custody between November 2012 and October 2013. Table 2 presents covariate balance for matched groups of non-Prop 47 drug offenders. The matched group has means that are closer to post-Prop 47 means in 18 of 21 covariates.

In our descriptive analysis, we find that both drug possession and other drug offenders experience declines in rearrest and reconviction rates in the post-Prop 47 period, suggesting there may be

**TABLE 1** Descriptive statistics for matched and unmatched Pre- and Post-Prop 47 drug possession offenders

| Variable | Unmatched Pre-Prop 47 Drug Possession ($n$ = 21,303) | Std Dev | Pre-Prop 47 Drug Possession ($n$ = 7,490) | Std Dev | Post-Prop 47 Drug Possession ($n$ = 14,002) | Std Dev | Difference Between Unmatched Pre-Prop 47 and Post-Prop 47 | Difference Between Matched Pre-Prop 47 and Post-Prop 47 Improvement in Balance With matched-Pre group |
|---|---|---|---|---|---|---|---|---|
| Age | 36.265 | 11.283 | 37.092 | 10.871 | 36.831 | 11.264 | 0.566 | −0.261* |
| % Male | 0.795 | 0.403 | 0.824 | 0.381 | 0.815 | 0.389 | 0.019 | −0.009* |
| % White | 0.379 | 0.485 | 0.359 | 0.480 | 0.390 | 0.488 | 0.011 | 0.032 |
| % Black | 0.173 | 0.378 | 0.185 | 0.388 | 0.169 | 0.374 | −0.004 | −0.016 |
| % Hispanic | 0.403 | 0.490 | 0.411 | 0.492 | 0.397 | 0.489 | −0.005 | −0.014 |
| % Asian | 0.021 | 0.144 | 0.020 | 0.141 | 0.019 | 0.136 | −0.002 | −0.001* |
| % Native American | 0.004 | 0.063 | 0.005 | 0.073 | 0.005 | 0.068 | 0.001 | −0.001 |
| % Other Race | 0.020 | 0.141 | 0.019 | 0.138 | 0.020 | 0.141 | 0.000 | 0.001 |
| Age at First Conviction? | 25.011 | 7.873 | 24.291 | 7.252 | 24.435 | 7.610 | −0.577 | 0.143* |
| Prior Serious Conviction Count | 0.070 | 0.282 | 0.110 | 0.349 | 0.108 | 0.351 | 0.038 | −0.002* |
| Prior Violent Conviction Count | 0.053 | 0.251 | 0.089 | 0.320 | 0.092 | 0.328 | 0.040 | 0.003* |
| Total Arrests | 16.283 | 12.827 | 18.882 | 13.930 | 18.716 | 13.977 | 2.433 | −0.166* |
| Total Felony Arrests | 9.289 | 7.396 | 10.697 | 8.159 | 10.504 | 8.025 | 1.215 | −0.193* |
| Total Arrests Person Crimes | 2.054 | 2.952 | 2.533 | 3.259 | 2.475 | 3.195 | 0.421 | −0.058* |
| Total Arrests Property Crimes | 3.383 | 4.368 | 3.997 | 4.647 | 3.970 | 4.630 | 0.587 | −0.028* |
| Total Arrests Drug Crimes | 6.897 | 6.497 | 7.746 | 7.185 | 7.503 | 7.116 | 0.606 | −0.243* |
| Total Convictions | 5.993 | 4.606 | 6.853 | 5.134 | 6.699 | 5.101 | 0.706 | −0.154* |
| Total Felony Convictions | 2.810 | 2.432 | 3.003 | 2.838 | 2.785 | 2.813 | −0.025 | −0.219 |
| Total Convictions for Person Crimes | 0.577 | 1.121 | 0.767 | 1.246 | 0.728 | 1.195 | 0.151 | −0.039* |
| Total Convictions for Property Crimes | 1.155 | 1.736 | 1.375 | 1.889 | 1.367 | 1.902 | 0.212 | −0.007* |
| Total Convictions for Drug Crimes | 2.891 | 2.514 | 3.179 | 2.838 | 3.030 | 2.728 | 0.139 | −0.149 |

*Improvement in balance with pre-matched group.

**TABLE 2** Non-Prop 47 drug offender descriptive statistics

| Variable | Unmatched Pre-Prop 47 ($n$ = 18,135) | Std Dev | Pre-Prop 47 ($n$ = 11,008) | Std Dev | Post-Prop 47 ($n$ = 20,090) | Std Dev | Difference Between Unmatched Pre-Prop 47 and Post-Prop 47 | Difference Between Matched Pre-Prop 47 and Post-Prop 47 Improvement in Balance With matched-Pre Group |
|---|---|---|---|---|---|---|---|---|
| Age | 35.334 | 11.415 | 35.614 | 11.140 | 36.054 | 11.502 | 0.720 | 0.440* |
| % Male | 0.811 | 0.391 | 0.813 | 0.390 | 0.812 | 0.390 | 0.001 | −0.001* |
| % White | 0.340 | 0.474 | 0.354 | 0.478 | 0.357 | 0.479 | 0.018 | 0.004* |
| % Black | 0.200 | 0.400 | 0.185 | 0.389 | 0.172 | 0.377 | −0.029 | −0.014* |
| % Hispanic | 0.409 | 0.492 | 0.410 | 0.492 | 0.414 | 0.493 | 0.005 | 0.004* |
| % Asian | 0.022 | 0.145 | 0.024 | 0.153 | 0.028 | 0.165 | 0.006 | 0.004* |
| % Native American | 0.004 | 0.060 | 0.003 | 0.059 | 0.004 | 0.064 | 0.001 | 0.001 |
| % Other Race | 0.026 | 0.159 | 0.024 | 0.154 | 0.025 | 0.156 | −0.001 | 0.001* |
| Age at First Conviction? | 25.109 | 8.219 | 25.004 | 8.108 | 24.905 | 8.242 | −0.203 | −0.099* |
| Prior Serious Conviction Count | 0.072 | 0.292 | 0.075 | 0.292 | 0.082 | 0.306 | 0.010 | 0.008* |
| Prior Violent Conviction Count | 0.049 | 0.240 | 0.049 | 0.236 | 0.050 | 0.245 | 0.001 | 0.001 |
| Total Arrests | 15.446 | 14.968 | 16.273 | 15.171 | 17.323 | 15.628 | 1.877 | 1.050* |
| Total Felony Arrests | 7.675 | 7.465 | 8.063 | 7.526 | 8.631 | 7.847 | 0.956 | 0.568* |
| Total Arrests Person Crimes | 2.061 | 3.209 | 2.094 | 3.138 | 2.207 | 3.249 | 0.147 | 0.113* |
| Total Arrests Property Crimes | 2.831 | 4.006 | 2.964 | 3.947 | 3.227 | 4.236 | 0.396 | 0.263* |
| Total Arrests Drug Crimes | 5.963 | 6.833 | 6.289 | 6.840 | 6.795 | 7.237 | 0.832 | 0.506* |
| Total Convictions | 5.611 | 4.955 | 5.862 | 4.984 | 6.297 | 5.334 | 0.686 | 0.435* |
| Total Felony Convictions | 2.199 | 2.339 | 2.340 | 2.444 | 2.599 | 2.695 | 0.400 | 0.259* |
| Total Convictions for Person Crimes | 0.547 | 1.128 | 0.544 | 1.038 | 0.602 | 1.124 | 0.055 | 0.058 |
| Total Convictions for Property Crimes | 0.924 | 1.577 | 0.965 | 1.571 | 1.074 | 1.723 | 0.150 | 0.109* |
| Total Convictions for Drug Crimes | 2.517 | 2.650 | 2.632 | 2.652 | 2.859 | 2.894 | 0.342 | 0.227* |

*Improvement in balance with pre-matched group.

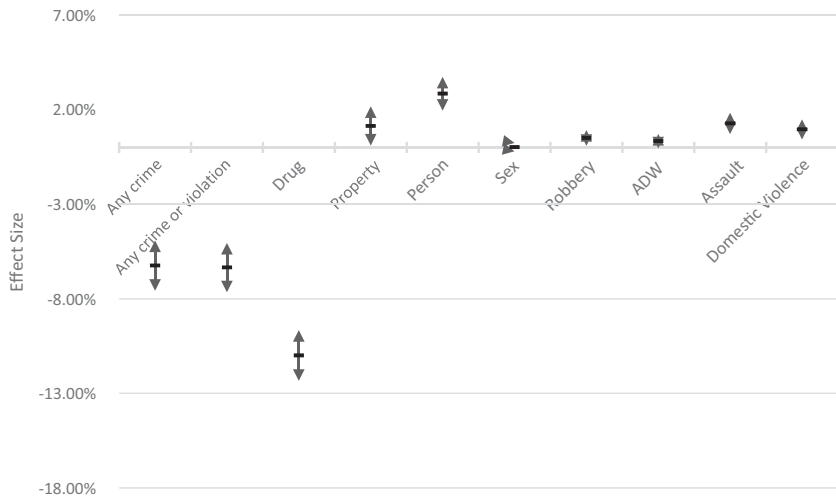


**FIGURE 1a** Change in rearrest within 1 year by offense type

*Note.* Pre–post design, genetic matched, regression with controls, county fixed effects (with 95% confidence).

broader trends in recidivism affecting our treatment group of drug possession offenders. We include the differences-in-differences analysis as a supplement to the main analysis because it allows us to compare the change in recidivism outcomes for drug possession offenders with the change in outcomes for individuals convicted of other types of drug offenses over the same period (see Appendices B and D). If we continue to see evidence of declines in recidivism for the drug possession group under Prop 47, this would suggest that even in an environment of declining enforcement for drug offenses, the drug possession offenders achieved better recidivism outcomes compared with their counterparts convicted of other drug offenses.[8]

## 5 | FINDINGS

We find evidence that Prop 47 reduced overall rearrests and reconvictions for offenders originally sentenced for drug possession. The reduction in recidivism rates for drug offenses drives this finding, although we also see reductions in recidivism for property offenses. We find no evidence indicating charge swapping from drug possession to other drug offenses (or to violations and revocations). We find a small increase in recidivism rates for person-related offenses, however, driven primarily by an increase in assaults. These results hold for both our pre-—post analysis and our differences-in-differences analysis. Detailed findings are presented below.

Figures 1a and 1b show the results of the analyses of effects of Prop 47 on the 1-year rearrest rate individuals convicted of drug possession offenses using regression with controls, including demographic and criminal history characteristics and county fixed effects. Figure 1a presents the main results from our pre–post analysis of changes in rearrest rates, and Figure 1b presents results from our difference-in-differences analysis. We find the rearrest rate decreased 6.4 percentage points for the group released in the post-Prop 47 period relative to their pre-Prop 47 counterparts. The results from the difference-in-differences analysis confirm this finding. After controlling for changes over time in recidivism rates, the differential decline in the rearrest rate for the drug possession group treated by Prop 47 is 4.8 percentage points. Although the estimated effect of Prop 47 on the rearrest rate is lower

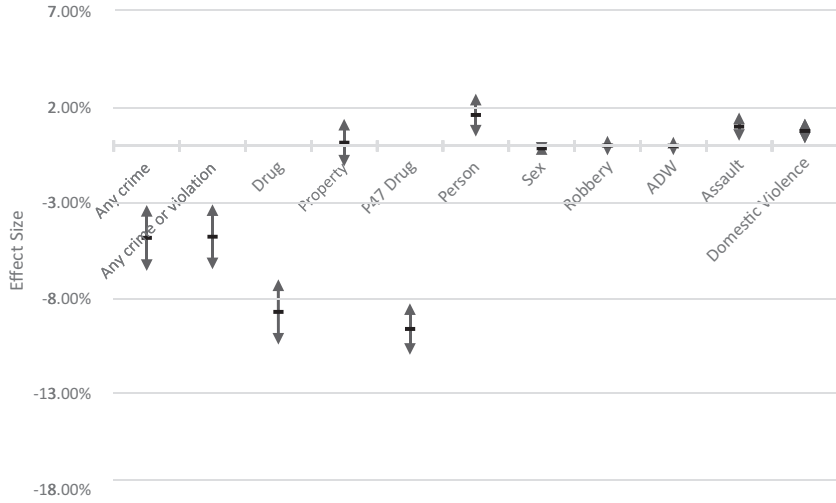


**FIGURE 1b** Relative change in rearrest within 1 year by offense type

*Note.* DID design, genetic matched, regression with controls, county fixed effects (with 95% confidence intervals).

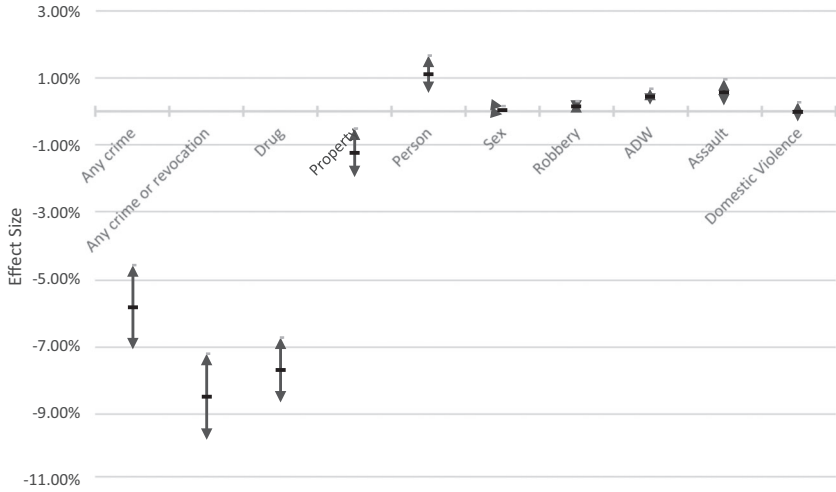


**FIGURE 2a** Change in reconviction within 1 year by offense type

*Note.* Pre–post design, genetic matched, regression with controls, county fixed effects (with 95% confidence intervals).

in the difference-in-differences specification, suggesting there was some overall decline in rearrests for individuals convicted of drug offenses during the period, the estimate remains substantial and negative.

Figure 2a presents results from the pre–post analysis of changes in reconviction rates, and Figure 2b presents results for the complimentary difference-in-differences analysis. We also find evidence of declines in reconviction rates for Prop 47 drug offenders. We estimate a pre–post decline of 5.8 percentage points in the reconviction rate. The difference-in-differences analysis confirms there is a differential decline in reconviction for the drug possession group, but the estimate is lower at 2.7 percentage points.

To explore this issue of charge-swapping between criminal charges and probation violations or revocations, we also report findings for a measure of rearrest that includes supervision violations and a

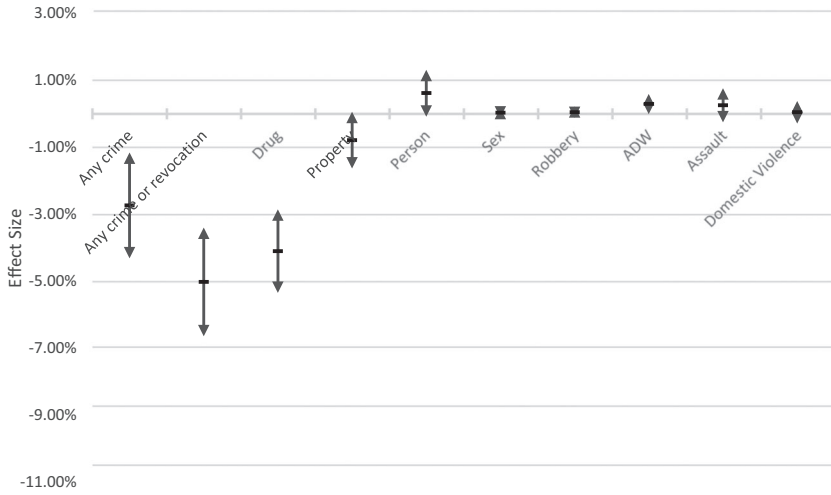


**FIGURE 2b** Relative change in reconviction within 1 year by offense type

*Note.* DID design, genetic matched, regression with controls, county fixed effects (with 95% confidence intervals).

measure of reconviction that includes revocations. If law enforcement in the post-period are pursuing violations instead of criminal charges, we would expect that decreases in rearrests for felonies and misdemeanors would be offset, or even partially offset, by increases in supervision violations. This does not appear to be the case, as our estimates of the effects of Prop 47 on rearrest rates do not change with the addition of violations, In the case of reconvictions, we find that the estimates in the pre–post and the difference-in- differences analysis remain negative and become larger in magnitude with the inclusion of revocations. These findings show there is no evidence that charge-swapping of violations or revocations for formal arrests or convictions is driving our results.

In addition to overall rates, we also examine recidivism rates within specific offense categories. For drug offenses, we estimate a pre–post decline of 11.0 percentage points in the rearrest rate and 7.7 percentage points in the reconviction rate. The difference-in-differences analysis confirms that the decline in recidivism rates for drug offenses holds after controlling for changes in recidivism trends over time, although the effect sizes are somewhat smaller.

Our findings on the effects of Prop 47 on recidivism rates for property and drug offenses, however, is mixed. We initially estimate a small increase of 1.1 percentage point in the rearrest rate for property offenses, but this findings does not hold in the difference-in-differences analysis. We estimate a small decline in the reconviction rate for property offenses, which again does not hold in the difference-in-differences analysis. In the case of recidivism for crimes against persons (referred to here as person offenses), we estimate an increase of 2.8 percentage points in the rearrest rate and 1.1 percentage points in the reconviction rates. After controlling for broader trends in recidivism using the difference-in-differences analysis, the effect of Prop 47 on reconviction rates for person offenses disappears. The differential rearrest rate for the drug possession offenders treated by Prop 47, however, remains positive at 1.6 percentage points. Even evidence of a small increase in the rearrest rate for person offenses can raise public concern. Therefore, we break down the person offense category to explore the types of reoffending that may be driving this increase.

When we further decompose rearrests for crimes against persons, the results of the pre–post analysis show increases in rearrests for crimes against persons are driven by slight increases in rearrests for robbery, assault with a deadly weapon (albeit at the .1 probability threshold), other assaults, and domestic

violence. The difference-in-differences analysis, however, shows that some of these increases, namely, for rearrests for robbery and assault with a deadly weapon, were the result of trends that also increased rearrests for these offenses for other drug offenders. What remains different about the drug possession group is small but statistically significant increases in rearrests for assault and domestic violence. When we examine reconviction rates, we find evidence of small pre–post increases in the reconviction rates for assault, assault with a deadly weapon, and domestic violence. When we turn to the differences-in-differences analysis, however, the only case where we see evidence of a relative increase is in assault with a deadly weapon—a .2 percentage point increase at the .1 significance level.[9]

Taken together, these findings suggest the reduction in penalties for drug possession associated with Prop 47 led to an overall reduction in recidivism rates. Although overall and drug offense recidivism rates declined for this group relative to other drug offenders over the period, property offense rates remained stable. We do find evidence of a small increase in recidivism for certain crimes against persons, however.

## 6 | CONCLUSION AND DISCUSSION

Prior research showed that jail and prison populations dropped after the passage of Prop 47, which was part of the intent of the reform. Moreover, bookings into jail, specifically for Prop 47 offenses, decreased after passage and those decreases were behind the decreases in the jail bookings overall (Bird et al., 2018). Two studies of the impact of Prop 47 on crime rates showed little to no effect of the reform on crime (Bartos & Kubrin, 2018; Bird et al., 2018). By these measures, Prop 47 achieved a reduction in the use of incarceration without much negative impact on public safety. These studies, however, focus primarily on the front end of the criminal justice system.

The findings reported here add to this by showing that Prop 47 also impacted back-end dynamics by reducing recidivism among offenders convicted of drug possession and that much of the decrease is attributable to reductions in rearrests and reconvictions for drug offenses. Although nothing in Prop 47 rendered drug possession legal, the defelonization of drug possession in California appears to have resulted in lowered enforcement of laws about this kind of offending with impacts on both front-end and back-end enforcement and sentencing. Moreover, because our data come from the period immediately following the implementation of Prop 47, it seems highly unlikely that the prevention and treatment strategies that the proposition aimed to support affected the declines we document as these funds were not awarded to counties until June 2017. These contextual considerations provide further support for the idea that Prop 47 changed enforcement patterns rather than drug possession itself.

We do not find much evidence of charge swapping—the idea that law enforcement and prosecutorial discretion might shift to pursue charges that commonly co-occur with drug possession. Nor has law enforcement and prosecution turned to the more discretionary supervision violations and revocation process to incarcerate drug possession offenders in the post-Prop 47 period. We do find evidence of a small increase in the rearrest rates for crimes against persons among drug possession offenders, however. This could be interpreted as evidence in support of charge swapping, but given that we do not find evidence charge swapping among offense types that are similar to or necessarily included with possession, this seems less likely. Instead, we are concerned that lessoning of sanctioning for drug possession means a small segment of those who would previously have been rearrested for drug possession and are now left without a criminal justice intervention experience an escalation of their problems and wind up in a physical altercation. This should not be overstated, the effect size on crimes against persons rearrest rate is small and we find any effects on reconviction rates do not hold after controlling for changes in recidivism trends over time. Moreover, it is not clear that

the solution would be to refelonize drug possession rather creating greater supports and services for drug possession offenders upon release, perhaps focusing those services on those who may be most prone to escalating their drug habits. It does, however, add a degree of caution that defelonization alone may have some counterproductive consequences and that critics of Prop 47 for removing incentives for treatment were, in fact, partially right that some drug offenders would fare worse under the proposition.

As discussed above, California's approach is, in some ways, more ambitious than that of the other states that have defelonized drug possession and, in some ways, less ambitious. No state has taken exactly the same tack as Prop 47. This limits our ability to draw conclusions about whether the benefits associated with Prop 47 can be expected elsewhere. Similar analyses of crime and recidivism carried out in the other states that have defelonized drug possession would be useful to identify the specific policy features that can be incorporated without negative consequences for public safety. Nonetheless, our analysis suggests that the most liberal feature of California's law, making defelonization retroactive, does not appear to result in worse recidivism outcomes. It may also be that California's exclusion of serious and violent offenders from eligibility under Prop 47 is also critical feature in the positive results. It could be that California has found the sweet spot, but it could also be the case that the results we find would be possible even if the restrictions on serious and violent offenders were removed. Investigations of crime and recidivism in states that do not have such restrictions in their defelonization laws could be useful to inform such consideration.

Another implication of our findings, together with the other studies of Prop 47, is that the greatest impact of defelonization may be on how the criminal justice system responds to it rather than on changes in offender behavior. System changes are difficult to anticipate by reformers, and despite the fact that we do not find evidence of charge swapping in our analyses, it seems plausible to expect that officials in the system may find ways to continue reliance on incarceration for some types of drug possession offenders by pursuing other kinds of charges. Conversely, defelonization may incentivize nonenforcement. When offenses are downgraded to misdemeanors, law enforcement may feel that such charges are not worth pursuing, especially in circumstances when compelling an individual to undergo treatment, which a felony conviction along with jail or prison term, can allow.

California's experience with Prop 47 also shows that declines in recidivism can result even before resources for treatment and prevention have begun to flow. Although an important feature of Prop 47 is the channeling of prison savings to treatment and prevention programs in California counties, cities, and school districts, those programs were not in place during the period of our study. Over time, as those resources come to local governments, there may be greater opportunities for changing offender behavior, although given that local agencies have the freedom to develop programs as they see fit, there will be a continued need for research to identify programs that produce actual reductions in recidivism.

## CONFLICTS OF INTEREST

All authors have no conflict of interest to declare.

## ENDNOTES

[1] A poll of voters in Florida, North Carolina, Nevada, Kentucky, Missouri, and Wisconsin, by The Tarrance Group in 2016, also commissioned by the Justice Action Network, found support ranging from 72% to 80% for "changing the

way that non-violent criminals are sentenced so judges can use their discretion to impose a range of sentences instead of having a one-size-fits all mandatory minimum system" (Nienaber & Goeas, 2016, p. 3).

[2] The five property offense categories included under Prop 47 are theft, receiving stolen property, shoplifting, check forgery, and writing bad checks. Individuals only qualify under Prop 47 if the dollar value of the property is less than $950. Individuals with certain prior offenses are excluded.

[3] Broader arguments in favor of drug possession defelonization are summarized in Elderbloom and Durnan (2018), who cited the contribution such offenses make to the prison in some states, that behavioral health-care interventions are more successful in treating drug use than criminal justice responses, and that custodial punishments produce collateral consequences and unnecessary barriers to reentry (2018, pp. 2–3).

[4] As anecdotal evidence of the loss of deterrence, the *Los Angeles Times* cited an arrested bike thief "Proposition 47, it's cool… Like for me, I can go do a [commercial] burglary and know that if it's not over $900, they'll just give me a ticket and let me go" (Chang, Gerber, & Poston, 2015, para. 34).

[5] Public Safety Realignment was adopted in the wake of a U.S. Supreme Court case and severe budget crisis that hit the state in 2009. The Supreme Court upheld an order by a Three-Judge Panel in the Ninth Circuit to reduce the state's prison population to 137.5% of design capacity as a means to deliver constitutionally adequate mental and medical health care in the state's prisons (see Bird & Grattet, 2014, for further details about Realignment).

[6] A conviction out of custody occurs when an individual charged with an offense is not held in jail at the time of case disposition. After receiving a conviction out of custody, an individual may be sentenced to serve time in jail or may receive a sentence to remain in the community under probation supervision.

[7] To perform the genetic matching, we use the Matching package developed for the R platform by Jas Sekhon (which can be found at https://cran.r-project.org/web/packages/Matching/Matching.pdf). Jas Sekhon is a professor at the University of California—Berkeley, and more information on the development and use of the genetic matching approach can be found on his webpage (http://sekhon.berkeley.edu).

[8] An interaction term computed from a dummy variable coded 1 for drug possession offenders and a variable coded 1 for the post-Prop 47 cohort represents a test of whether the change in Prop 47 drug possession offender recidivism is similar or different from the change in the non-Prop 47 drug offenders.

[9] Given that Los Angeles County is by far the largest segment of our data, we ran all of the analyses on the other 11 counties to test whether dynamics in Los Angeles were driving our results. All of the findings were the same in terms of magnitude and direction. Results available on request from the authors.

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## APPENDIX A: REARREST BY OFFENSE TYPE (N = 21,492)

| Variable | Any Crime | Any Crime or Violation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | .744*** | .763*** | .469*** | .328*** | .141*** | .006 | .046*** | .025*** | .036*** | .040*** |
| Post-Prop 47 | –.062*** | –.064*** | –.110*** | .011* | .028*** | .000 | .005* | .003 | .013*** | .010*** |
| Age | –.012*** | –.012*** | –.007*** | –.009*** | –.005*** | .000* | –.001*** | –.001*** | –.002*** | –.001*** |
| Male | .054*** | .057*** | .041*** | –.002 | .056*** | .003* | .009*** | .007** | .020*** | .021*** |
| White | .038 | .029 | .041 | .011 | .001 | .001 | –.004 | –.005 | .011 | –.008 |
| Black | –.026 | –.033 | –.041 | –.034* | .023 | .001 | .007 | .002 | .012 | .001 |
| Hispanic | .016 | .009 | .001 | –.016 | .005 | –.001 | –.002 | .000 | .010 | –.006 |
| Asian | –.017 | –.036 | –.008 | –.003 | –.022 | .002 | –.006 | –.002 | .003 | –.026* |
| Specific marijuana possession | –.179*** | –.182*** | –.141*** | –.096*** | –.035** | –.003 | –.012* | –.003 | –.015 | –.003 |
| Age at first conviction | .003*** | .003*** | .002*** | .003*** | .002*** | .000 | .000* | .001*** | .001** | .000 |
| Previous serious convictions | –.006 | .008 | –.019* | –.015 | .020** | –.002 | –.004 | .015*** | .015*** | –.007 |
| Previous violent convictions | .000 | .026* | –.017 | –.017* | .006 | .004* | .013*** | –.002 | –.006 | –.009* |
| Total past arrests | .008*** | .010*** | .006*** | .000 | .003*** | .001*** | .001*** | .000 | .003*** | .000 |

(Continues)

| Variable | Any Crime | Any Crime or Violation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Total past felony arrests | –.002 | –.002* | –.005*** | .002* | –.002* | –.001** | –.001** | .001 | –.001** | .001 |
| Total past persons arrest | .004 | .002 | –.001 | –.001 | .013*** | .001* | .003*** | .002*** | .002* | .007*** |
| Total past property arrests | .005** | .003 | .001 | .013*** | .000 | .000 | .001 | .000 | .000 | –.002* |
| Total past drug arrests | .003* | .001 | .009*** | .001 | –.002* | .000 | .000 | .000 | –.001 | –.001 |
| Total past convictions | .001 | –.002 | –.004 | .005** | .000 | –.001* | –.001 | .001 | –.001 | .001 |
| Total past felony convictions | .011*** | .016*** | .006* | .005* | .003 | .001* | .002* | .000 | .001 | –.001 |
| Total past persons convictions | –.002 | .001 | .003 | –.001 | .002 | .001 | –.004** | .000 | .007*** | –.001 |
| Total past property convictions | –.001 | .001 | .005 | .002 | –.001 | .000 | .002 | –.001 | –.001 | .000 |
| Total past drug convictions | –.008* | –.006 | .004 | –.011*** | –.004 | .000 | .001 | –.002 | –.002 | .000 |
| *F*-test | 72.14*** | 82.38*** | 58.81*** | 53.91*** | 41.87*** | 3.92*** | 11.91*** | 8.34*** | 18.28*** | 14.48*** |
| Adjusted $R^2$ | .096 | .108 | .079 | .073 | .057 | .004 | .016 | .011 | .025 | .020 |

*Note.* All models contain fixed effects for counties.
*$p < .05$; **$p < .01$; ***$p < .001$.

## APPENDIX B: REARREST BY OFFENSE TYPE, DIFFERENCE-IN-DIFFERENCES (N = 52,590)

| | Any Crime | Any Crime or Violation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | .617*** | .628*** | .380*** | .240*** | .117*** | .003 | .031*** | .016*** | .041*** | .034*** |
| Difference-in-Difference | –.048*** | –.048*** | –.087** | .002 | .016** | –.001 | .000 | .000 | .010** | .008* |
| Prop 47 offense | .093*** | .097*** | .090*** | .038*** | .000 | .002 | .004 | .001 | –.008** | .002 |
| Post-Prop 47 | –.015** | –.017** | –.023** | .010* | .011** | .001 | .004* | .003* | .002 | .002 |
| Age | –.012*** | –.011*** | –.007*** | –.008*** | –.005*** | .000*** | –.001*** | –.001*** | –.002*** | –.001*** |
| Male | .023*** | .025*** | .008 | –.008* | .045*** | .003*** | .006*** | .007*** | .018*** | .014*** |
| White | .045*** | .046*** | .040** | .019* | .013 | .002 | .003 | .003 | .008 | –.005 |
| Black | –.020 | –.019 | –.047** | –.023* | .025** | .002 | .013*** | .004 | .005 | .002 |
| Hispanic | .014 | .015 | –.009 | –.009 | .013 | –.001 | .005 | .004 | .004 | –.001 |
| Asian | –.010 | –.010 | –.010 | .016 | –.011 | .003 | .001 | .000 | –.004 | –.018** |
| Age at first conviction | .004*** | .003*** | .002*** | .003*** | .002*** | .000 | .001*** | .001*** | .001*** | .000* |
| Previous serious convictions | –.005 | .012 | –.010 | –.012* | .025*** | –.002* | .002 | .011*** | .013*** | –.002 |
| Previous violent convictions | .004 | .023** | –.013 | –.007 | .006 | .001 | .015*** | –.001 | –.006 | –.009** |

(Continues)

| | Any Crime | Any Crime or Violation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Total past arrests | .007*** | .008*** | .007*** | .000 | .003*** | .001*** | .000** | .001*** | .002*** | .000 |
| Total past felony arrests | –.002* | –.002* | –.004** | .000 | –.002*** | –.001*** | .000 | .000 | –.002*** | .001** |
| Total past persons arrest | .005*** | .004*** | –.001 | .001 | .014*** | .001*** | .002*** | .002*** | .004*** | .006*** |
| Total past property arrests | .006*** | .005*** | .000 | .016*** | .001 | .000 | .001** | .000 | .000 | .000 |
| Total past drug arrests | .005*** | .004*** | .008*** | .003*** | .000 | .000 | .000 | .000 | .000 | .000 |
| Total past convictions | .006*** | .004* | –.002 | .003** | .002 | .000 | .000 | .000 | .000 | .002** |
| Total past felony convictions | .003 | .007*** | .001 | .002 | –.002 | .001** | .000 | –.001 | –.001 | –.002*** |
| Total past persons convictions | .003 | .005 | .005 | .001 | .004 | .001 | –.004*** | .000 | .006*** | .000 |
| Total past property convictions | .002 | .002 | .006* | .005** | .000 | .000 | .001 | .000 | .000 | –.001 |
| Total past drug convictions | –.008*** | –.007*** | .004 | –.007*** | –.004** | –.001* | –.001 | .000 | –.003** | –.001 |
| *F*-test | 179.5*** | 196.8*** | 136.9*** | 131.5*** | 102.7*** | 10.84*** | 5.15*** | 17.86*** | 55.11*** | 29.3*** |
| Adjusted $R^2$ | .101 | .109 | .079 | .076 | .060 | .006 | .003 | .011 | .033 | .018 |

*Note.* All models contain fixed effects for counties.
*$p < .05$; **$p < .01$; ***$p < .001$.

## APPENDIX C: RECONVICTION BY OFFENSE TYPE (N = 21,492)

| | Any Crime | Any Crime or | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | .444*** | .498*** | .170*** | .170*** | .050*** | .004 | .007* | .003 | .021** | .014* |
| Post-Prop 47 | –.058*** | –.085*** | –.077*** | –.013*** | .011*** | .000 | .001 | .004*** | .006** | .000 |
| Age | –.011*** | –.011*** | –.004*** | –.004*** | –.002*** | .000 | .000** | .000*** | –.001*** | .000*** |
| Male | .063*** | .056*** | .031*** | .008 | .024*** | .002 | .002* | .004** | .010*** | .007*** |
| White | .015 | .002 | .017 | –.003 | .003 | –.002 | .003 | .003 | .003 | –.003 |
| Black | –.033 | –.048* | –.014 | –.024* | .010 | –.002 | .003 | .005 | .006 | .000 |
| Hispanic | –.002 | –.020 | .000 | –.016 | .009 | –.003 | .004 | .003 | .005 | .000 |
| Asian | .014 | .002 | .034 | –.023 | .009 | –.001 | .011** | .002 | .001 | –.003 |
| Specific marijuana possession | –.125*** | –.153*** | –.062*** | –.049*** | –.010 | .000 | –.003 | –.003 | –.001 | –.002 |
| Age at first conviction | .004*** | .004*** | .002*** | .001*** | .001* | .000 | .000 | .000** | .000 | .000 |
| Previous serious convictions | –.004 | –.013 | –.005 | –.008 | .007 | .000 | –.001 | .002 | .005 | .000 |
| Previous violent convictions | –.011 | –.012 | –.016 | –.010 | –.003 | .001 | .000 | –.002 | –.002 | –.001 |

(Continues)

| | Any Crime | Any Crime or | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Total past arrests | .005*** | .006*** | .003*** | –.001 | .002*** | .000*** | .000 | .000* | .001*** | .000 |
| Total past felony arrests | –.002 | –.002* | –.003*** | .001 | –.001 | .000*** | .000 | .000 | –.001 | .000 |
| Total past persons arrest | .002 | .003 | .000 | .001 | .002* | .000 | .000 | .000 | .001 | .001* |
| Total past property arrests | .003 | .003 | .000 | .007*** | –.001 | .000 | .000 | .000 | –.001 | .000 |
| Total past drug arrests | .001 | .002 | .002 | .001 | –.002* | .000 | .000 | .000 | –.001* | .000 |
| Total past convictions | .007** | .006** | –.001 | .003* | .000 | .000 | –.001 | .000 | .000 | .000 |
| Total past felony convictions | .013*** | .013*** | .007*** | –.001 | .001 | .000 | .000 | .000 | .001 | –.001 |
| Total past persons convictions | .003 | .005 | .002 | –.001 | .006*** | .001 | .000 | .002* | .004** | .001 |
| Total past property convictions | –.002 | –.001 | .001 | .002 | .001 | .000 | .001 | .000 | .000 | .000 |
| Total past drug convictions | –.006 | –.007* | .009*** | –.004* | –.002 | .000 | .000 | –.001 | –.001 | .000 |
| *F*-test | 179.7*** | 85.29*** | 50.18*** | 23.09*** | 18.39*** | 2.53*** | 3.01*** | 4*** | 10.16*** | 4.44*** |
| Adjusted $R^2$ | .095 | .112 | .068 | .032 | .025 | .002 | .003 | .004 | .014 | .005 |

*Note.* All models contain fixed effects for counties.
*$p < .05$; **$p < .01$; **$p < .001$.

## APPENDIX D: RECONVICTION BY OFFENSE TYPE, DIFFERENCE-IN-DIFFERENCES (N = 52,590)

| | Any Crime | Any Crime or Revocation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Intercept | .340*** | .377*** | .134*** | .111*** | .038*** | .001 | .005** | .004 | .019*** | .009** |
| Difference-in-Difference | –.027*** | –.050*** | –.041*** | –.008 | .006 | .000 | .000 | .003 | .003 | .000 |
| Prop 47 offense | .064*** | .081*** | .041*** | .024*** | .001 | .000 | .001 | –.002 | –.001 | .002 |
| Post-Prop 47 | –.030*** | –.034*** | –.036*** | –.004 | .005* | .000 | .001 | .001 | .003 | –.001 |
| Age | –.010*** | –.011*** | –.004*** | –.003*** | –.002*** | .000* | .000*** | .000*** | –.001*** | .000*** |
| Male | .045*** | .036*** | .022*** | .004 | .020*** | .002*** | .001* | .004*** | .009*** | .005*** |
| White | .024* | .022 | .011 | .007 | .003 | .000 | .000 | .003 | .002 | –.002 |
| Black | –.030* | –.040** | –.019 | –.013 | .010 | .001 | .001 | .005* | .003 | .001 |
| Hispanic | .005 | –.005 | –.012 | –.004 | .008 | –.001 | .002 | .003 | .002 | .002 |
| Asian | –.009 | –.018 | –.002 | –.004 | .002 | –.001 | .003 | .002 | .001 | –.003 |
| Age at first conviction | .004*** | .004*** | .002*** | .001*** | .001*** | .000 | .000 | .000*** | .001*** | .000* |
| Previous serious convictions | .010 | –.002 | –.002 | –.006 | .008** | –.001 | –.001 | .001 | .006** | .001 |
| Previous violent convictions | .010 | .009 | .000 | –.002 | .002 | .000 | .001 | .001 | –.001 | .000 |

(Continues)

| | Any Crime | Any Crime or Revocation | Drug | Property | Person | Sex | Robbery | Assault with Deadly | Assault | Domestic Violence |
|---|---|---|---|---|---|---|---|---|---|---|
| Total past arrests | .005*** | .006*** | .004*** | .000 | .001*** | .000* | .000* | .000** | .001*** | .000 |
| Total past felony arrests | –.004*** | –.003*** | –.004*** | .000 | –.001*** | .000*** | .000 | .000 | –.001*** | .000 |
| Total past persons arrest | .004*** | .003** | –.001 | .000 | .003*** | .000 | .000 | .000 | .002*** | .001*** |
| Total past property arrests | .006*** | .005*** | –.001 | .006*** | .000 | .000 | .000 | .000 | .000 | .000 |
| Total past drug arrests | .003*** | .003*** | .002** | .001** | .000 | .000 | .000* | .000 | .000 | .000 |
| Total past convictions | .011*** | .009*** | .005*** | .001 | .001** | .000 | .000 | .000 | .001 | .000 |
| Total past felony convictions | .009*** | .009*** | .004*** | –.001 | –.001 | .000* | .000 | .000 | .000 | –.001*** |
| Total past persons convictions | .001 | .005 | –.001 | .000 | .004** | .001* | .000 | .001 | .003** | .000 |
| Total past property convictions | –.001 | .000 | .001 | .005*** | .001 | .000* | .000 | .001 | .000 | .001 |
| Total past drug convictions | –.005** | –.006** | .005*** | –.002 | –.002** | .000* | .000 | .000 | –.002** | .000 |
| *F*-test | 179.7*** | 214*** | 121.9*** | 52.02*** | 42.94*** | 3.92*** | 5.15*** | 7.87*** | 27.34*** | 9.07*** |
| Adjusted $R^2$ | .101 | .118 | .071 | .031 | .026 | .002 | .003 | .004 | .016 | .005 |

*Note.* All models contain fixed effects for counties.
*$p < .05$; **$p < .01$; ***$p < .001$.