September 2019

The Effect of Scaling Back Punishment on Racial Disparities in Criminal Case Outcomes

John MacDonald
Department of Criminology
University of Pennsylvania
johnmm@sas.upenn.edu

Steven Raphael
Goldman School of Public Policy
University of California, Berkeley
stevenraphael@berkeley.edu

We are grateful to Yotam Shem Tov for his excellent research assistance on this project and Alissa Skog for helping think through the structure of the administrative datasets. We are especially grateful to Maria McKee and Tara Regan Anderson for the many insights they provided us over the course of this project, and the District Attorney of San Francisco George Gascon for asking for this study to be conducted. This research was supported by a grant from the Frank and Denise Quattrone Foundation.

Abstract

Research Summary

In late 2014, California voters passed Proposition 47 that redefined a set of less serious felony drug and property offenses as misdemeanors. We examine how racial disparities in criminal court dispositions in San Francisco change in the years before (2010-2014) and after (2015-2016) the passage of Proposition 47. We decompose racial disparities in court dispositions into components due to racial differences in offense characteristics, involvement in the criminal justice system at the time of arrest, pretrial detention, criminal history, and the residual unexplained component. Before and after Proposition 47 case characteristics explain nearly all of the observable race disparities in court dispositions. However, after the passage of Proposition 47 there is a narrowing of racial disparities in convictions and incarceration sentences that is driven by lesser weight placed on criminal history, active criminal justice status, and pretrial detention in effecting court dispositions.

Policy Implications

The findings from this study suggest that policy reforms that scale back the severity of punishment for criminal history and active criminal justice status for less serious felony offenses may help narrow racial inequalities in criminal court dispositions. Efforts to reduce the impact of racial inequalities in mass incarceration in other states should consider reforms that reduce the weight that criminal history, pretrial detention, and active probation status has on criminal defendants' eligibility for prison for less serious drug and property offenses.

INTRODUCTION

Racial disparities in the criminal justice system are often framed in terms of a discrimination or criminal behavior dichotomy. On the one hand is the argument that Blacks and other racial minorities are treated differentially by law enforcement, prosecutors, and the courts. To the extent that this is the case, differential treatment in the criminal justice system will generate worse outcomes for members of minority groups. On the other hand, there may exist average differences in the propensity to commit criminal offenses across racial groups. Racial group differences in criminal offending may derive from social inequalities in poverty rates, educational attainment, family structure, and other factors that impact the propensity to engage in crime (Sampson, 2019).

Criminal justice sanctions in large part reflect how a given society's formal institutions responds to criminal offenses, a factor that is implicitly ignored by this dichotomization. Moreover, society's policies for responding to crime may be mediated by the socioeconomic characteristics of the defendant and the victim. For example, some offenses will be punished more harshly than others based on the severity of sentences prescribed in criminal codes enacted by legislatures. What criminal behaviors are deemed worthy of more severe punishment at the margin of a sentence of either probation or prison may also be based on class or race differences in the rate in which these offenses occur in the population. In addition, the degree to which criminal history, pretrial detention caused the inability to make bail, the quality of legal representation, and the resources a defendant can draw on from family and friends also depends in part on policy preferences and implementation choices made on how these factors weigh into shaping criminal justice processing and outcomes. There are important equity questions that

need to be understood in determining how much weight background factors should matter in determining criminal court dispositions. Understanding how specific cases characteristics impact court outcomes and the potential disparate impacts of specific practices and policies is equally important to assessing how much differential treatment or behavior has in shaping racial inequalities in the criminal justice system.

The punitive shift in sentencing policy that characterizes the U.S. criminal justice system during the latter quarter of the 20th century disparately impacted racial groups with high levels of criminal justice involvement (Tonry, 1995; National Research Council, 2014). While this may in part reflect differential treatment, shifts in policy likely increased the effective weight placed on such factors as criminal history in determining case outcomes. This implies that the turn towards tougher sentencing policy, even if implemented in a race neutral manner, disparately impacted economically disadvantaged minority communities with higher rates of criminal offending.

This argument raises the corollary proposition concerning what happens when severity of sentencing is scaled back. Specifically, does sentencing reform intended to reduce punitiveness disparately impact racial and ethnic minorities? Moreover, what particular mechanisms mediate this differential effect?

This paper analyzes the effect of a sentencing reform intended to reduce the severity of punishment for a series of lower-level felony offenses on racial disparities in criminal court dispositions. We study court dispositions for criminal cases processed by the office of the San Francisco District Attorney during the period 2010 through 2016. In late 2014, roughly two-thirds through our observation period, California voters passed Proposition 47 (Prop 47) that redefined

a set of drug and property felony offenses as misdemeanors. We analyze racial disparities in court dispositions before and after the passage of the proposition with the aim of assessing (1) whether case outcome disparities narrowed with the change in policy, and (2) whether the weighting of case characteristics changes with the passage of Prop 47 in a manner that disparately benefits minority defendants.

We use a method developed by Gelbach (2016) to decompose racial disparities in case outcomes into components due to race difference in offense characteristics, whether one was involved with the criminal justice system at the time of arrest, the extent of pretrial detention, criminal history, and a residual unexplained component. During both the pre and post Prop 47 periods, these observable case characteristics explain nearly all of the observable race disparities in court dispositions. However, we observe a narrowing of the disparities with the passage of Prop 47. This narrowing is driven by lesser weight placed on prior criminal history, a decline in the racial disparity in pretrial detention and its importance in determining case outcomes, and a smaller penalty associated with an active criminal justice status. These findings suggest that policy reforms that scale back the severity of punishment, even when implemented in a race-neutral manner, may help narrow racial inequalities in criminal justice outcomes.

1. DIFFERENTIAL TREATMENT, DISPARATE IMPACT, AND SENTENCING POLICY

Empirical studies of racial disparities in criminal justice processing tend to follow similar methodologies. Information is collected from administrative court processing data that contains details on court dispositions, offense charge, age, race, criminal history of defendant, and other observable case characteristics. Next, using multivariate analysis the analyst assesses the degree

to which average differences in court dispositions between racial groups can be explained by average difference in case characteristics, like the seriousness of the current charge and criminal history of the defendants.

For example, Steffensmeier et al. (2000) examine federal criminal court data in the 1990s and racial disparities in dispositions of prison and the length of prison sentences, after controlling for prior record scores, offense severity, multiple convictions, and whether the defendant went to trial. Mustard (2001) assesses the degree to which controlling for a defendant's position within the federal sentencing guideline grid explains the racial disparities in sentence length among felony defendants. Johnson (2006) examines how much racial disparities in prison and incarceration sentence lengths exist after controlling for offense severity, type of offense, criminal history, county and judge-level factors (e.g., the race, tenure, and age of the presiding judge). More recently, Nicosia et al. (2013) examine the extent to which racial disparities in California criminal court dispositions of prison or drug treatment for drug-involved offenders can be explained by race differences in charge seriousness, criminal history, and county location. They also examine whether racial disparities narrow after the passage of California's Proposition 36, which mandated drug treatment for nonviolent first and second-time offenders. MacDonald, Arkes, Nicosia, and Pacula (2014) also examine whether Proposition 36 changes the contribution that criminal case characteristics have in explaining racial disparities in prison and drug treatment dispositions. Rehavi and Starr (2014) assess the degree to which arrest charges recorded by the U.S. Marshal Service account for racial disparities in federal sentencing and the application of mandatory minimums. MacDonald and Donelly (2017) examine Black-White disparities in court dispositions to prison in the State of Delaware, after including extensive controls for criminal

history, pretrial detention, charge seriousness, and county location. In these studies, as many others published (see King & Light, 2019 for an extensive review), observable case characteristics explain the lion's share of race disparities in court dispositions to prison and sentence lengths. These findings are consistent with extant literature documenting clear racial disparities in offending levels and severity (Hindelang, 1978; Sampson & Lauritsen, 1997; Tonry 1995, Bureau of Justice Statistics, 2008; O'Flaherty, 2015). These general findings suggest that differential behavior by racial group, which in turn generates average difference in case characteristics, explains racial disparities in criminal justice outcomes.

However, it is worthwhile to consider what we mean in a multivariate setting when we argue that a given covariate explains a disparity and the implications that explanation has for understanding race disparities in criminal justice outcomes. Take for example charges recorded at arrest. Suppose that controlling for arrest charges eliminates race as a significant predictor in explaining variation in in case outcomes. This suggests that (1) there is a difference in the empirical distribution of cases across arrest charges when we stratify by race, and (2) that the effect of specific charges on the outcome in question are such that the difference in charge distributions generates different outcomes for one group relative to the other. Clearly, differences in practice and policy may affect differences in arrest charge distributions (e.g., whether arrests for powder cocaine are distinguished from arrests for crack cocaine) as well as the degree to which any given charge affects the outcome in question (e.g., the differential effect on sentencing of a charge involving crack). What we explain by controlling for arrest charge can be alternatively characterized as the disparate impact of a particular sentencing structure.

Explaining away racial disparities by controlling for charge effects may be partially throwing away information on the sources of racial inequalities in criminal justice outcomes.

This is particularly important when we consider case characteristics that may be unrelated to offense severity, and to some degree out of the control of the defendant. For example, several studies demonstrate that jurisdiction plays an independent role in determining court dispositions. Rehavi and Starr (2014) show that U.S. Attorneys in districts with proportionally large minority populations are more likely to seek mandatory minimum sentences, after controlling for an extensive list of criminal case characteristics. Raphael and Rozo (2019) find that law enforcement agencies with proportionally smaller minority populations in California are more likely to resolve youth arrests informally through consultation with the youth's family. Feinberg and Miller (2018) also find more aggressive prosecutions in jurisdictions that have maximum racial and ethnic diversity. In light of these findings, "explaining" observed disparities by controlling for jurisdiction effects would mask an important contributor to racial inequalities in criminal justice outcomes.

As a further example, several studies find that pretrial detention increases the likelihood of conviction and being incarcerated – even for similarly situated criminal cases (Dobbie, Golden, & Yang, 2018; Heaton, Mayson, & Stevenson, 2017; Donnelly & MacDonald, 2019). Given racial disparities in wealth and poverty, one would expect racial disparities in pretrial detention driven by a differential ability to make bail. Donnelly and MacDonald (2019), for example, find in the State of Delaware that the inability to make bail and pretrial detention explains nearly 30% of the Black-White disparity in the disposition of an incarceration sentence. Including pretrial detention as a control variable and focusing on residual disparity bypasses the important policy question of

whether pretrial detention should matter as much as it does in determining case outcomes, as well as the racially disparate impact of this factor.

More generally, any inter-group disparity in criminal justice outcomes reflect (1) average differences in case characteristics, (2) the effects, largely determined by policy choices, of case characteristics on outcomes, and (3) a residual unexplained component. The common finding that the products of the factors in (1) and (2) explain the lion's share of racial disparities in outcomes is indicative of the potential importance of both policy and the average differences in characteristics that drive racial inequalities in criminal justice sanctions. Excessive focus on the residual disparity bypasses how policy choices impact the weight society places on case characteristics in a manner that may either aggravate or mitigate racial inequalities in criminal justice outcomes.

The last quarter of the 20th century represented a period when U.S. criminal justice practices took a decisive turn towards the punitive. The period observed increased policing of drug offenses, greater use of prison as punishment both in scope and intensity for nearly all offense types, sentencing reform targeting individuals with criminal histories or specific forms of criminal affiliation for enhanced punishment, and back-end reforms to parole that limited flexibility to release prison inmate early (Raphael & Stoll, 2013). In terms of our schema, these reforms changed the effects of case characteristics on criminal justice outcomes, causing more severe outcomes in general, and specifically widening racial disparities in outcomes such as incarceration rates or the proportion of the population with a felony record.

More recently, several states and the federal government have enacted policy moving in the reverse direction. These reforms include changes to federal sentencing practices with

demonstrably disparate impacts on Blacks, redefining the line between felony and misdemeanor property offenses in many states, and enhanced use of alternative sanctions and diversion programs (Horowitz & Fuhrmann, 2018; PEW Charitable Trust 2016). California has implemented the most impactful reforms, reducing the state's overall prison and jail incarceration rate by more than one quarter since 2011. These reforms began with changes in sentencing and parole revocation policy that sharply reduced the prison population, and continued with several voter-initiated propositions that moderated sentencing for relatively less serious offenses (Lofstrom, Bird, & Martin, 2016).

Proposition (Prop) 47, passed in November 2014, provides the most impactful sentencing reforms passed by way of ballot initiative. Prop 47 redefines a subset of felony offenses as straight misdemeanors. To be specific, the proposition redefined shoplifting, forgery, crimes involving insufficient funds, petty theft, and receiving stolen property as misdemeanors for offenses involving $950 or less. The proposition also eliminated the offense of petty theft with a prior and redefined a subset of felony drug possession offenses as misdemeanors.[1]

Several researchers have evaluated the public safety impacts of Prop 47 (Bartos & Kubrin, 2018; Dominguez-Rivera, Lofstrom & Raphael, 2017), concluding that there is little evidence of an effect of the proposition on violent crime, but evidence of small to moderate effects on larceny. More relevant to the current study, Mooney et al. (2018) found that Black-White disparities in the rates of monthly drug arrests reduced sharply after the passage Prop 47.

[1] These new charging protocols went into effect immediately the day after the proposition passed on November 4 2014, and with the exception of instances where the individual in question has certain prior convictions, apply to all new cases. 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).

Lofstrom, Martin, and Raphael (2019) find that Prop 47 narrowed racial disparities in arrests and incarceration rates, with arrest rate differentials for some offenses (drug felonies in particular) narrowing by more than half. Arrest distributions shifted away from felonies towards misdemeanors that involved fewer jail bookings, more street citations, and less use of pretrial detention. These changes were larger for Blacks relative to other racial and ethnic groups. Given the lesser penalties for misdemeanor offenses, the lower likelihood of enhancement for prior criminal history, and the decline in pretrial detention, it is likely the case that the reform ushered in by Prop 47 generated disparate impacts on criminal cases involving Black defendants that operate through these channels.

In what follows, we lay out a strategy for assessing the effects of Proposition 47 reforms on racial disparities in criminal case outcomes processed by the San Francisco District Attorney's office.

2. DATA AND METHOD

In this section, we lay out our empirical strategy for estimating the impact of sentencing reforms that move in a less punitive direction on racial disparities in criminal case dispositions. We begin with a brief description of the case processing flow in the San Francisco District Attorney's office, and then our method for estimating and decomposing racial disparities in criminal case dispositions. Finally, we present an empirical profile of the cases analyzed that describes the contrast of average cases and outcomes before and after the passage of proposition 47.

A. Description of the Case Processing Flow and Data

We study all criminal cases presented to the office of the San Francisco District Attorney for the period 2010 through July 2016. Criminal cases in San Francisco generally begin with an arrest. Arrests may result in either a booking into a county jail, a street citation and release, or an informal release with warning and no further actions. For those cases generating a booking or a street citation the majority are referred to the district attorney (DA), with nearly all felony arrests referred to the DA and a subset of misdemeanor arrests referred at the discretion of the police. For referred cases, the DA's office may choose to file charges, may release the individual to another agency such as a local probation department, state parole, or another county's district attorney pursuing a separate case, or dismiss the charges altogether. For filed charges, there are many potential outcomes. The defendant's case may be dismissed at a later date either by the court or the DA. The defendant may be referred to a diversion program[2] and, in the event that the program is successfully completed, avoid conviction. The defendant may be found not guilty or convicted of the crime in a trial or through a plea agreement. For those who are convicted, sentencing outcomes range from fines to a probation term, to jail time coupled with probation, to a state prison sentence. As we will see shortly, the most severe sentencing outcomes tend to be the least likely. Figure 1 shows a schematic of the standard flow of criminal case processing and key agencies in determining outcomes.

[2] Many defendants are automatically eligible for pretrial diversion based on their offense charges and prior criminal history. Conversely, many defendants are conditionally eligible based on mitigating circumstances. Of course, there are many defendants for whom the alleged offense, prior criminal history, or current criminal justice status renders them ineligible for pretrial diversion. Diversion programs in San Francisco operate through the San Francisco Collaborative Court System, comprised of a set of specialty courts devoted to adults (such as the Behavioral Health Court, the Drug Court, and the Intensive Supervision Court), families and juveniles, and devoted to wellness programs in the juvenile justice system.

The manner in which these steps are recorded in official administrative records is complex and involves multiple criminal justice agencies. An arrest generates an incident number that may apply to multiple criminal suspects, but typically involves only one. The actual criminal act as observed and recorded by the police is summarized through a series of arrest charges, where there are often multiple charges per incident and per suspect. The actual alleged criminal activity associated with an arrest is assigned a court or docket number that uniquely identifies person-specific cases that may be referred to the DA for further action. Single arrest incidents may involve multiple court numbers. For example, someone arrested for shoplifting who is on probation for an earlier offense will pick up new charges on the old case (under the court number assigned at the initial arrest date for the earlier offense) and new charges for the current activity. Other situations may lead to multiple arrests for a single court case. For example, a failure to appear for a court date may lead to an arrest warrant and a subsequent arrest. There are many such instances in the DA's administrative data for the frequently arrested.

-FIGURE 1 ABOUT HERE-

The unit of analysis that is most relevant to the workflow and decision-making of this study is the criminal case as indexed by the court-number. Consequently, we construct a dataset from administrative case records in the following manner. We identify all of the charges accumulated on a given court number. We use the most serious charge to link the court number to a specific arrest date. This is functionally equivalent to attaching each court number to the earliest arrest date for the case. Next, we identify the seven most serious arrest charges associated with a given court number, regardless of whether all charges are accumulated in one arrest or across multiple arrests, and use these arrest charges to characterize the nature of the

alleged offense as recorded by the arresting officer. The overwhelming majority of cases involve seven or fewer arrest charges.

We use the data constructed from arrests with the court number defining the unit of analysis and merge information on charges filed by the DA, the disposition of each charge, and any sentencing information. We also merge information on whether the individual was booked into jail, pretrial detention length, and the reason for release for the arrest associated with the original court number. We also merged data to each arrest from the individual's California criminal history record at the time of arrest, and we use the San Francisco administrative data to generate a local criminal history for all recorded incidents occurring from 2008 onwards. Our final dataset has one record per court number and includes demographic information, information on pretrial detention and booking, information on specific arrest charge, information on filed charges, case disposition outcomes, sentencing outcomes, and various measures of the individual's local and statewide criminal history at the time of arrest.[3]

B. Empirical Method

The primary objective of this study is twofold. First, we estimate whether proposition 47, which scaled back punishment for a series of felony offenses by downgrading them to misdemeanors, impacts racial disparities in case disposition outcomes. Second, we estimate the

[3] The specific data sources for this project are the San Francisco DA's DAMIOM case management system, The San Francisco County Court Management System, administrative records on jail admissions and releases from the San Francisco County Sheriff, and automated criminal history records from the California Department of Justice. In addition, we use a data set constructed by the U.S. Census Bureau that calculates for each surname in the United States for which at least 100 people have the surname the proportion of individuals who self-identify as Hispanic. The names data base covers the surnames of roughly 90 percent of the U.S. resident population. We merge this data set to the administrative data by surname. We identify as Hispanic all individuals with surnames where the proportion who self-identify as Hispanic is 85 percent or higher.

relative importance of prior criminal history, pretrial detention, and other case characteristics to changes in case disposition outcomes after Prop 47.

We estimate separate models and decompositions that apportion the relative contribution of case characteristics to disposition outcomes for cases with arrest dates that occur before and after Prop 47. The before-after comparison of results allows us to assess overall changes in racial disparities in outcomes and how various case characteristics contribute to these changes.

We start by estimating a base model that includes only the race of the defendant and omits all statistical controls. Restricting the sample to arrests involving suspects that are White, Black, Asian, or Hispanic, we estimate a model according to the following form:

(1) $$Outcome_i = \alpha + \beta_1 Black_i + \beta_2 Asian_i + \beta_3 Hispanic_i + \varepsilon_i,$$

In model 1, *Outcome* measures the court disposition as measured by four mutually exclusive dummy variables that captures (1=yes, 0=no): whether the defendant was dismissed or charges were not filed; the defendant was diverted from prosecution to an alternative program; a motion was made to revoke the defendant based on parole or probation violation or the defendant was released agency with jurisdiction for a different event;[4] and whether the defendant received a prison, jail, or probation-only sentence. We also model the sentence length (measured in months) for those convicted defendants. Race is measured by a set of mutually-exclusive dummy variables (1=yes, 0=no) if the defendant is *Black*, *Hispanic,* or *Asian* (with White defendants the omitted category). In the dataset each case is measured by a given arrest (*i*), such

[4] Note, these cases do not result in new criminal convictions associated with the arrest in the jurisdiction we study. These cases may result in jail or prison sentences delivered by the agency to which the defendant is released.

that β_1, β_2, β_3 are parameters that estimate how much baseline estimates of the average disparity in the outcome variable for Black, Asian, and Hispanic suspects relative to White suspects arrested in San Francisco.

Next, we estimate a more complex model (2) that includes control variables that measure observable case characteristics. Specifically, we measure the seven most serious charges recorded on a given court number, where charge 1 is the most serious and charge 7 is the least severe offense (indexed by *k=1 to 7*) from a list of 66 specific offense categories (indexed by *j=1 to 66*).[5] For each arrest charge then we have a dummy variable of *Arrest Charge* as equal to one if charge number *k,* is for offense *j,* and suspect *i*. For cases with fewer than seven arrest charges, all of the dummy variables for the higher order charges (e.g., charges 5, 6, or 7) will be zero. We measure attempted offenses by a dummy variable *Attempt* equal to one if the charge (*k*) is recorded as attempt for a given arrest (*i*). For each arrest (*i*) we also include a dummy variable *Multiple* equal to one if there were multiple court numbers associated with the arrest. This measure whether the person arrested had an open or pre-existing case at the time arrest. We measure pretrial detention by an index of dummy variables, where $Detain_{mi}$ measures 0 to 29 days of detention (m=days) and the reference category is 30 or more days. Finally, we employ two sets of variables to measure the individual's criminal history at the time of arrest. Using the San Francisco administrative records, we measure prior arrests by type of offense, prior convictions, and prior prison, jail, and probation sentences since 2008. Average cases

[5] We use a penal code crosswalk maintained by the California Department of Justice to map each penal code into one of 66 specific offense categories. Appendix Table A3 presents the distribution of cases across these offense categories for suspects from each racial and ethnic group (offenses are listed from most to least severe).

characteristics, local criminal history, and arrest charge distributions by race are presented in Appendix Table A1.

We also use the state criminal history record data to calculate similar criminal history variables for prior arrests, convictions, prison, jail, and probation sentences. For the statewide data, we use a more expansive set of offense categories, with felony offenses being classified into murder, rape, robbery, assault, kidnapping, burglary, larceny theft/fraud, drugs, other sex, weapons, and other felony (see appendix Table A2). Misdemeanor arrests and convictions are classified as person, property, drug, theft, or other. To classify each offense observed in the in state criminal history records, we identify the most serious arrest and conviction charges and the most serious sentence based on California Department of Justice criminal severity rankings (coded from penal law and sentencing requirements). For each criminal history element (e.g., murder arrests, burglary convictions, prison sentences) we created dummy variables indicating the seriousness of offense.

Using these additional set of control variables, we estimate an expanded version of model 1 that incorporates these measures in the following form:

(2)

$$Outcome_i = \alpha + \beta_1 Black_i + \beta_2 Asian_i + \beta_3 Hisapnic_i + \sum_{k=1}^{7}\sum_{j=1}^{66}\gamma_{kj} Arrest\ Ch\arg e_{kji} + \sum_{k=1}^{7}\delta_k Attempt_{ki} + \varphi Multiple_i + \sum_{m=0}^{29}\kappa_m Detain_{mi} + f(offense\,history) + \varepsilon_{i.}$$

In model 2 the parameters β_1, β_2, and β_3 estimate the disparities in court dispositions between Black, Asian, and Hispanic relative to White suspects after controlling for differences in arrest

charges, whether the charge was an attempt, criminal history inclusive of having multiple court numbers associated with an arrest, and the extent of pretrial detention.

To apportion the difference in the estimates of β_1, β_2, and β_3 from the expanded model 2 and baseline model 1 to the various control variables, we employ the conditional decomposition method developed by Gelbach (2016). The decomposition relies on comparing the estimates for race under a base specification model (model 1) and those of full specification model (model 2), and apportioning how much of the change in predicted outcomes is attributable to the individual control variables in the full specification. To illustrate, suppose that the mean difference between Black and White suspects in the proportion of cases resulting in a motion to revoke probation is 10 percentage points (model 1), and that after controlling for whether the arrest was for a felony and whether the suspect has an open case at the time of the arrest reduces the estimated disparity to zero percentage points (model 2). Gelbach shows that the differences between the unadjusted base model differential and adjusted full specification differential can be decomposed into: (1) a component equal to the racial disparity in the proportion of cases that are open multiplied by the partial effect of having an open case on the likelihood of a motion to revoke probation, and (2) a component equal to the racial disparity in the likelihood that the arrest was a felony arrest multiplied by the partial effect of a felony arrest on the likelihood of a motion to revoke probation. In other words, one can use the change in the disparity associated with the multivariate adjustment along with the regression coefficients and differences in means

across racial groups to apportion the relative contribution of these two factors in creating the racial disposition disparity.[6]

We perform separate analyses of racial disparities in case outcomes for the pre and post Prop 47 periods. Using models 1 and 2, we decompose racial disparities in court dispositions of dismissal, diversion, revocation, conviction, jail sentence, prison sentence, probation sentence, and length of sentence according to differences in:

- the nature of the arrest charge list
- having an open case at the time of arrest,
- pretrial detention,
- criminal history,
- and the unexplained component that remains after controlling for pre-determined case characteristics.

Comparing the results from these decompositions for the pre and post Prop 47 period facilitates an assessment of how overall racial disparities in outcomes changes and what case-level factors are key contributors to these changes.

C. Descriptive Statistics

Table 1 describes the racial composition of all criminal suspects in San Francisco between 2010 and July 2016 and how the characteristics of cases vary within racial groups before and after the passage of Prop 47. Non-Hispanic Blacks account for the largest single share of cases (44.1

[6] More formally, suppose we first estimate the bivariate base regression model $Outcome_i = \alpha_{base} + \beta_{base} Black_i + \varepsilon_i$ where $Outcome_i$ is the dependent variable of interest, $Black_i$ is a dummy variable indicating a Black suspect, and ε_i is a random error term. In this model the estimate of the coefficient β_{base} provides the unadjusted racial disparity in this outcome. Suppose we then estimate the multivariate model $Outcome_i = \alpha_{multi} + \beta_{multi} Black_i + \varphi Open\ Case_i + \gamma Felony\ arrest_i + \varepsilon_i$ where we have added the additional variables $Open\ Case_i$ and $Felony\ arrest_i$ which are indicators of having another open case at the time of arrest and that the arrest was for a felony charge. Gelbach (2016) shows that the difference between β_{base} and β_{multi} is given by the following equation: $\beta_{base} - \beta_{multi} = \varphi \Delta_{open\ case} + \gamma \Delta_{Felony\ Arrest}$, where $\Delta_{open\ case}$ and $\Delta_{Felony\ Arrest}$ are the black white disparities in the proportion of arrests where the suspect already has an open case and the proportion of arrests that are felony arrests.

percent), followed by Whites (35.8 percent), and then Hispanics (15.4 percent) across time, with these three groups accounting for slightly over 95 percent of cases.[7] The most notable pre-post 47 change is that the percent of cases where the suspect is Black declines by a relative 6.6 percent (from 45 to 42 percent), which is offset by slight increases in percentages White, Asian, and Hispanic suspects. The share of cases with felony arrest charges among White, Black, and Hispanic suspects reduces after the passage of Prop 47, driven primarily by the decline in the proportion of cases that involve felony drug arrests. Roughly 20 percent of cases involving Black defendants involved a felony drug arrest charge in the pre-47 period, but this drops to 9 percent after Prop 47. Across both time periods, there are notable differences in offense severity, with Asian and Black suspects most likely to be arrested for a felony, followed by Hispanic and White suspects. Asians are the most likely to be arrested for a violent felony offense (indicated by a person-based offense under the felony category) followed by Hispanic and Black suspects. Black suspects are the most likely to be arrested for a felony drug offense, especially during the pre-47 period.

Table 1 also shows that the proportion of arrests that are booked into jail, the average number of days detained following arrest, and the median number of days all decrease after the passage of proposition 47. Asian and Black defendants are booked at the highest rates (92 and 83 percent), followed by Hispanic (74 percent) and White defendants (72 percent) in the pre Prop 47 period. But these differences narrow substantially post Prop 47. While the booking rate for Asian defendants does not decline, the booking rate for Blacks declines by 16.9 relative

[7] Non-Hispanic other defendants constitute a relatively small share of cases (roughly 5 percent) and are from many different groups. Given the great heterogeneity in this catchall residual racial category we focus on comparisons of White, Black, Asian, and Hispanic suspects. Including this group does not alter the results presented below.

percentage points (14 percentage absolute). There are also large changes in average and median pretrial detention days, with the largest reduction occurring for Blacks relative to other groups.

3. RESULTS

Before discussing the decomposition results, Figures 2 and 3 display average outcome values and 95 percent confidence intervals for Blacks, Asians, Whites, and Hispanics in the pre and post periods. The graphs show that for all racial groups there is a substantial reduction in the revocations, convictions, jail, prison, and sentence length after the passage of Prop 47. While the average chance of prison sentence for a given case is less than 2 percent, we see that Hispanic and Black defendants in the post Prop 47 period have an average expectation of a prison sentence that is near what White defendants faced in the pre-position 47 period. Overall, these figures convey the general narrowing racial disparities in more punitive sanctions after the sentencing reform was enacted.

Tables 2 through 6 present our decomposition analysis of racial disparities in disposition outcomes. The first row of the tables shows the unadjusted difference in outcomes. The second row shows the adjusted difference in outcomes after controlling for case characteristics. The subsequent rows show how much arrest charges, criminal justice status at time of the arrest, pretrial detention, and criminal history factors explain the difference between the unadjusted and adjusted racial disparities in outcomes. Positive numbers indicate that the outcome averages for a set of factors tend to increase the racial disparity, while negative values indicate the averages tend to reduce the relative racial disparity. Adding together the contribution of each of these sets of case characteristics factors yields the overall adjusted difference, or the difference

between the unadjusted coefficient estimates in rows 1 and the unexplained coefficients estimates in rows 2.[8]

Table 2 shows these results for estimates for whether the defendant's case was dropped/dismissed (panel A) or diverted (panel B). The Black-White unadjusted difference in the average likelihood that a case is dropped/dismissed is -0.020 in the pre 47 period (Blacks=0.564; Whites=.584) and -0.012 in the post 47 periods (Blacks=.608; Whites=.620). Adjusting for all control variables in the pre-47 period reduces the Black-White disparity to a statistically insignificant value of 0.004. By contrast, adjusting for control variables in the post-47 period increases the Black-White disparity to a statistically significant difference of 0.018 (with Black defendants more likely to have cases dropped after conditioning on observables).

Table 2 shows how much of the change in disparity is accounted for by different case level factors. For example, the value of -0.018 in the row labeled "Due to criminal history" in the pre-47 period shows that the average difference in criminal history between Black and White suspects accounts for 1.8 percentage points of the disparity in cases not filed or dismissed. Similarly, difference in pretrial detention reduce the average Black-White disparity in cases being dropped/dismissed by 4.9 percentage points. By contrast, difference in arrest charges increase the average Black-White disparity by 5 percentage points. In other words, Black defendants are more likely than Whites to be arrested for charges that are dropped or dismissed, but Black-Whites differences in status at arrest, pretrial detention, and criminal history tend to reduce the likelihood that cases are dropped. During the post-47 period the overall adjusted Black-White

[8] Due to rounding, the sum of the coefficient contributions of the control variables (adjusted difference) and the unexplained contribution may not equal the exact value of the unadjusted difference.

disparity in cases being dismissed is lower and arrest charges play a diminished role in increasing the gap between Blacks and Whites in the likelihood of dismissals.

Table 2 also shows that the overall unadjusted disparity between Blacks and Whites reduces slightly after the passage of Prop 47 and that this gap is reduced further after adjusting for control variables. For Hispanic and Asian defendants, the disparity relative to Whites in diversion is small and does not change meaningfully after including control variables or the passage of Prop 47. It is important to underscore that successful diversion is a rare outcome and that there may be less power to detect differences.

Table 3 shows a narrowing in the Black-White and Hispanic-White disparities in alternative actions (i.e., filing motion to revoke or releasing the defendant to another law enforcement agency) after the passage of Prop 47 for both the unadjusted and fully adjusted models. For example, the unadjusted disparity between Black and White defendants in this outcome declines from 0.069 to 0.037 (i.e., from 6.9 to 3.7 percentage points), while the regression adjusted disparity declines from 0.017 to 0.003. And, in this comparison one observes that arrest charge, status at time of arrest, pretrial detention, and criminal history contribute less to explaining the Black-White disparity after the passage of Prop 47. For convictions the results also show a narrowing of Black-White unadjusted disparities, but that the unexplained differential grows indicating that case level factors contribute less to explaining remaining disparities between Blacks and Whites in the likelihood of a conviction. The Hispanic-White differentials also change pre-post Prop 47. In the pre-47 period, Hispanic defendants are 1.9 percentage points more likely to be convicted. In the post-47 period, Hispanic defendants are 1.4 percentage points less likely to be convicted. There is a large drop in the contribution of

differences in arrest charge to the Hispanic-white differential in conviction rates across periods, from 0.024 to 0.007 in the pre and post period. We also observe the advent of a relative disadvantage for White defendants associated with pretrial detention and a widening of the relative disadvantage for White defendants associated with differences in criminal history.[9]

Table 4 presents results where the outcome is whether the case results in any incarceration sentence. For both the pre and post-47 period Blacks are less likely than Whites to receive a jail sentence, though the difference narrows somewhat. We believe that this is due to the higher likelihood that Black relative to White defendants are released to another agency (or a motion to revoke is filed). In such instances, we cannot see whether the arrest ultimately results in a new incarceration term. That being said, we do see that differences in pretrial detention between Black and White defendants increases the relative likelihood that black defendants receive an incarceration sentence. Most interestingly, the contribution of this factor to the black-white disparity declines by half.

The higher likelihood of an incarceration sentence for Hispanic defendants relative to white defendants of 2.6 percentage points in the pre-period reverse to a lower likelihood by 1.2 percentage points. This is driven primarily by a differential effect of the sentencing reform on arrest charge distributions for Hispanic and white defendants. We also see a very large decline in the Asian-white disparity for this outcome from 11.4 percentage points in the pre-47 period to 4.8 percentage points in the post-47 period. Similar to the results for the Hispanic-white

[9] In table 1, we observe no difference in booking rates between White and Hispanic defendants in the post-Prop 47 period, no difference in median pretrial detention days, and only slightly higher average pretrial detention days for Hispanic defendants. The fact that pretrial detention creates a disadvantage for whites in the post-Prop 47 period indicates that after conditioning on all of the other factors included in our regression (e.g. arrest charges, criminal history etc.), White defendants experience more pretrial detention relative to Hispanic defendants.

differential, this is due to a decline in the contribution of differences in the arrest charge distribution.

Table 5 presents the results from a decomposition analysis of the likelihood that a case results in a prison sentence. We find a substantial narrowing of the Black-White differential in the likelihood of receiving a prison sentence with the passage of proposition 47 (from 1 percent to .4 percent). This is driven primarily by a decline in the effect of the relative disadvantage experienced by Blacks relative to pretrial detention and criminal history. The passage of Prop 47 also reduces the Hispanic-White differential to zero (driven by the change in the contribution of arrest charge differentials) and slightly widens the Asian-White differential in this outcome.

Table 6 presents the results for sentence length conditional on having been convicted. The results again reveal a sizable impact of Prop 47 on this particular sentencing outcome. The unadjusted Black-White differential declines by roughly one-half, from 3.4 months to 1.8 months with the passage of Prop 47. The contributions of criminal history, criminal justice status at arrest, and pretrial detention to the Black-White differential diminish in parallel. In addition, the unexplained differential declines form 0.5 months to 0.3 months. The passage of Prop 47 eliminates the unadjusted disparity between Hispanic and White defendants. There is little evidence of significant differentials between Asian and White defendants either pre or post Prop 47.

4. CONCLUSION

Proposition 47 redefined several low-level felony offenses that were historically permitted to be charged as either a felony or misdemeanor to misdemeanors only. The effects

of the proposition on the state's prison population and the population of county jails occurred immediately, dropping the jail population by 9.4 percent and the prison population by 3.4 percent (Lofstrom et al., 2019). By statutorily changing these crimes to misdemeanor offenses, Prop 47 also enacted a sentencing reform that lowered punishments for crimes that had been eligible for prison as well as other lesser sanctions. One consequence of this change in sentencing was also to impact racial disparities in cases processed through the criminal justice system. We observed in San Francisco that the statutory changes exerted an impact on both lowering the overall likelihood that criminal cases would result in a disposition of conviction, jail, prison, and reduced prison sentence.

For dispositions that convey a sanction and greater punishment in sentencing a defendant to jail or prison, Black-White and Hispanic-White disparities on average narrow with the passage of Prop 47. The relative contribution of case characteristics that tend to increase the racial disparities, such as active criminal justice status, criminal history, and pretrial detention, contribute less to explaining racial disparities in outcomes after the passage of Prop 47. In other words, the case characteristics that tend to lead to relatively unfavorable outcomes for Blacks and Hispanics play a lesser role in the post-47 era.

The findings here illustrate the importance of digging more deeply into the results of studies of racial disparities in criminal justice outcomes and the benefits from focusing on which covariates matter and how much. While residual disparities are often the center of attention, due in large part to concern about differential treatment by the criminal justice system, our study demonstrates the equally important issue of disparate impact and how such disparate impacts interact with policy reform. Most notably, while stiffening penalties have created a disparate

impact on Blacks subjected to criminal court sanctions, the reverse is also true. Namely, we observe a narrowing of racial disparity in court dispositions when sentencing is moderated through policy reform and are able to identify the channels by which this narrowing occurs.

Our findings also highlight the important equity consequences of criminal justice practice. The degree to which any of the factors that we control for in our models impact court dispositions is clearly a policy choice. Conversations regarding whether tougher or lighter sentencing is merited often focus around issues of public safety and/or normative views on "just deserts." In this short-term, this sentencing reform had no apparent impact on violent crime, though some evidence of an impact on less serious property offenses. In addition to considerations of "just deserts" in deciding sanctions, policy makers should also consider equity of the impact that sentencing reforms have on affected communities. . Efforts to reduce the impact of racial inequalities in mass incarceration in other states should consider reforms like California's Prop 47 that reduce the weight that criminal history, pretrial detention, and active probation status has on criminal defendants' eligibility for prison for less serious drug and property offenses.

References

Bartos, B. J., & Kubrin, C. E. (2018). Can we downsize our prisons and jails without compromising public safety? Findings from California's Prop 47. *Criminology & Public Policy*, *17*(3), 693-715.

Bureau of Justice Statistics (2008), *Criminal Victimization in the United States, 2006 Statistical Tables*, U.S. Department of Justice Office of Justice Programs, Bureau of Justice Statistics, Washington D.C., NCJ223436.

California Judicial Council (2016), *Proposition 47 Frequently Asked Question, Updated November 2016,* California Judicial Council, San Francisco, CA.

Dobbie, W., Goldin, J., & Yang, C. S. (2018). The effects of pretrial detention on conviction, future crime, and employment: Evidence from randomly assigned judges. *American Economic Review*, *108*(2), 201-40.

Dominguez-Rivera, Patricio; Lofstrom, Magnus and Steven Raphael (2019), "The Effect of Sentencing Reform on Crime Rates: Evidence from California's Proposition 47," UC Berkeley Working Paper.

Donnelly, E. A., & MacDonald, J. M. (2018). The Downstream Effects of Bail and Pretrial Detention on Racial Disparities in Incarceration. *J. Crim. L. & Criminology*, *108*, 775.

Feigenberg, Ben and Conrad Miller (2018), "Racial Divisions and Criminal Jusice: Evidence from Southern State Courts," UC Berkeley Working Paper.

Gelbach, J. B. (2016). When do covariates matter? And which ones, and how much?. *Journal of Labor Economics*, *34*(2), 509-543.

Heaton, P., Mayson, S., & Stevenson, M. (2017). The downstream consequences of misdemeanor pretrial detention. *Stan. L. Rev.*, *69*, 711.

Hindelang, M. J. (1978). Race and Involvement in Common Law Personal Crimes. *American Sociological Review*, *43*(1), 93.

Horowtiz, Jake and Monica Fuhrmann (2018), "States Can Safely Raise Their Felony Theft Thresholds, Research Shows," https://www.pewtrusts.org/en/research-and-analysis/articles/2018/05/22/states-can-safely-raise-their-felony-theft-thresholds-research-shows.

Johnson, B. D. (2006). The multilevel context of criminal sentencing: Integrating judge-and county-level influences. *Criminology*, *44*(2), 259-298.

King, R. D., & Light, M. T. (2019). Have Racial and Ethnic Disparities in Sentencing Declined?. *Crime and Justice*, *48*(1), 365-437.

Lofstrom, Magnus; Bird, Mia and Brandon Martin (2016), *California's Historic Corrections Reform*s, Public Policy Institute of California.

Lofstrom, Magnus; Martin, Brandon and Steven Raphael (2019), "The Effect of Sentencing Reform on Racial and Ethnic Disparities in Involvement with the Criminal Justice System: The Case of California's Proposition 47," University of California Working Paper.

MacDonald, J. & Raphael, S. (2017). *An Analysis of Racial and Ethnic Disparities in Case Disposition and Sentencing Outcomes for Criminal Cases Presented to and Processed By the Officer of the San Francisco District Attorney.* Reported Prepared for the San Francisco District Attorney.

MacDonald, J., Arkes, J., Nicosia, N., & Pacula, R. L. (2014). Decomposing racial disparities in prison and drug treatment commitments for criminal offenders in California. *The Journal of legal studies*, *43*(1), 155-187.

MacDonald, J. M., & Donnelly, E. A. (2019). Evaluating the Role of Race in Sentencing: An Entropy Weighting Analysis. *Justice Quarterly*, *36*(4), 656-681.

Mooney, A. C., Giannella, E., Glymour, M. M., Neilands, T. B., Morris, M. D., Tulsky, J., & Sudhinaraset, M. (2018). Racial/Ethnic Disparities in Arrests for Drug Possession After California Proposition 47, 2011–2016. *American Journal of Public Health*, *108*(8), 987-993.

Mustard, D. B. (2001). Racial, ethnic, and gender disparities in sentencing: Evidence from the US federal courts. *The Journal of Law and Economics*, *44*(1), 285-314.

National Research Council. 2014. *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Washington, DC: The National Academies Press. https://doi.org/10.17226/18613

Nicosia, N., MacDonald, J. M., & Arkes, J. (2013). Disparities in criminal court referrals to drug treatment and prison for minority men. *American Journal of Public Health*, *103*(6), e77-e84.

O'Flaherty, B. (2015). *The economics of race in the United States*. Harvard University Press.

Works, H. J. R. (2016). *33 States Reform Criminal Justice Policies Through Justice Reinvestment*, A fact Sheet from the PEW Charitable Trusts.

Raphael, S., & Rozo, S. V. (2019). Racial Disparities in the Acquisition of Juvenile Arrest Records. *Journal of Labor Economics*, *37*(S1), S125-S159.

Raphael, S., & Stoll, M. A. (2013). *Why are so many Americans in prison?*. Russell Sage Foundation.

Rehavi, M. M., & Starr, S. B. (2014). Racial disparity in federal criminal sentences. *Journal of Political Economy*, *122*(6), 1320-1354.

Sampson, R. J. (2019). Neighbourhood effects and beyond: Explaining the paradoxes of inequality in the changing American metropolis. *Urban Studies*, *56*(1), 3-32.

Sampson, R. J., & Lauritsen, J. L. (1997). Racial and ethnic disparities in crime and criminal justice in the United States. *Crime and justice*, *21*, 311-374.

Steffensmeier, D., & Demuth, S. (2000). Ethnicity and sentencing outcomes in US federal courts: Who is punished more harshly? *American Sociological Review*, 65(5) 705-729.

Tonry, M. (1995). *Malign neglect: Race, crime, and punishment in America*. Oxford University Press.

Figure 1: Criminal Case Processing Flow

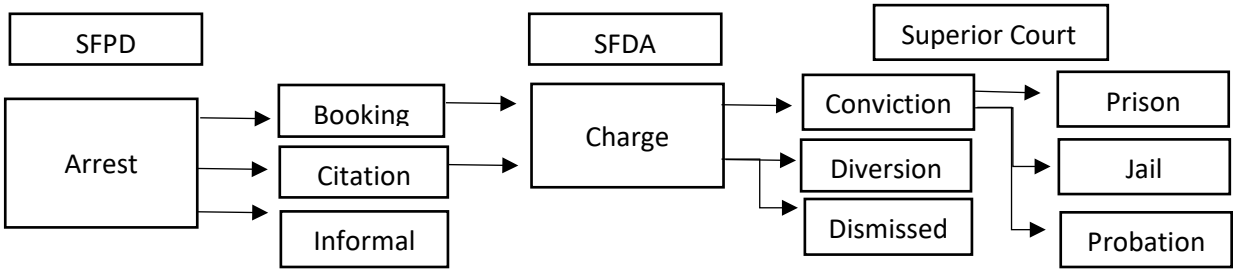

Figure 2: Average Case Disposition Outcomes Before and After Proposition 47 by Race/Ethnicity

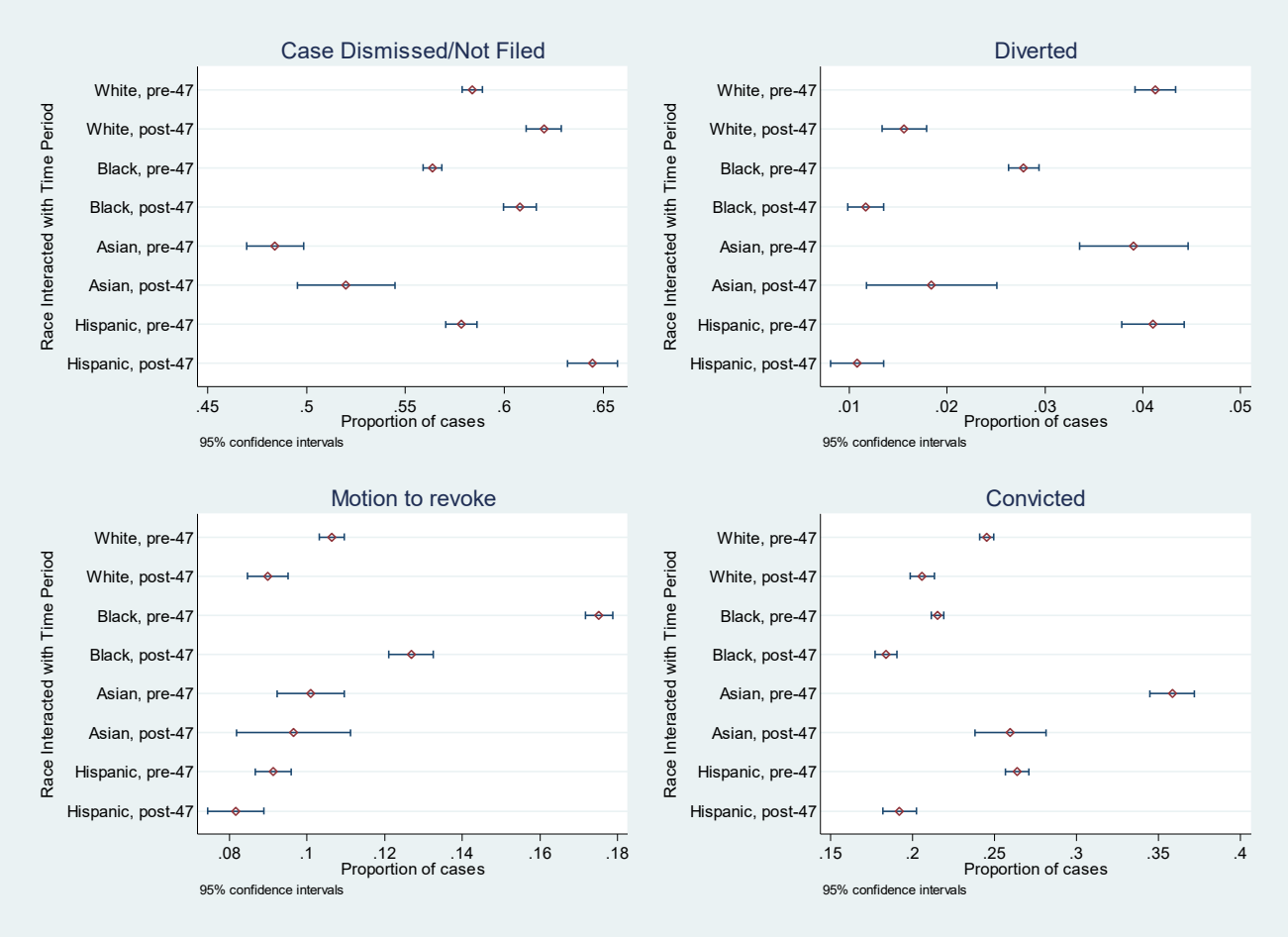

Figure 3: Sentencing Outcomes Before and After Proposition 47 by Race/Ethnicity

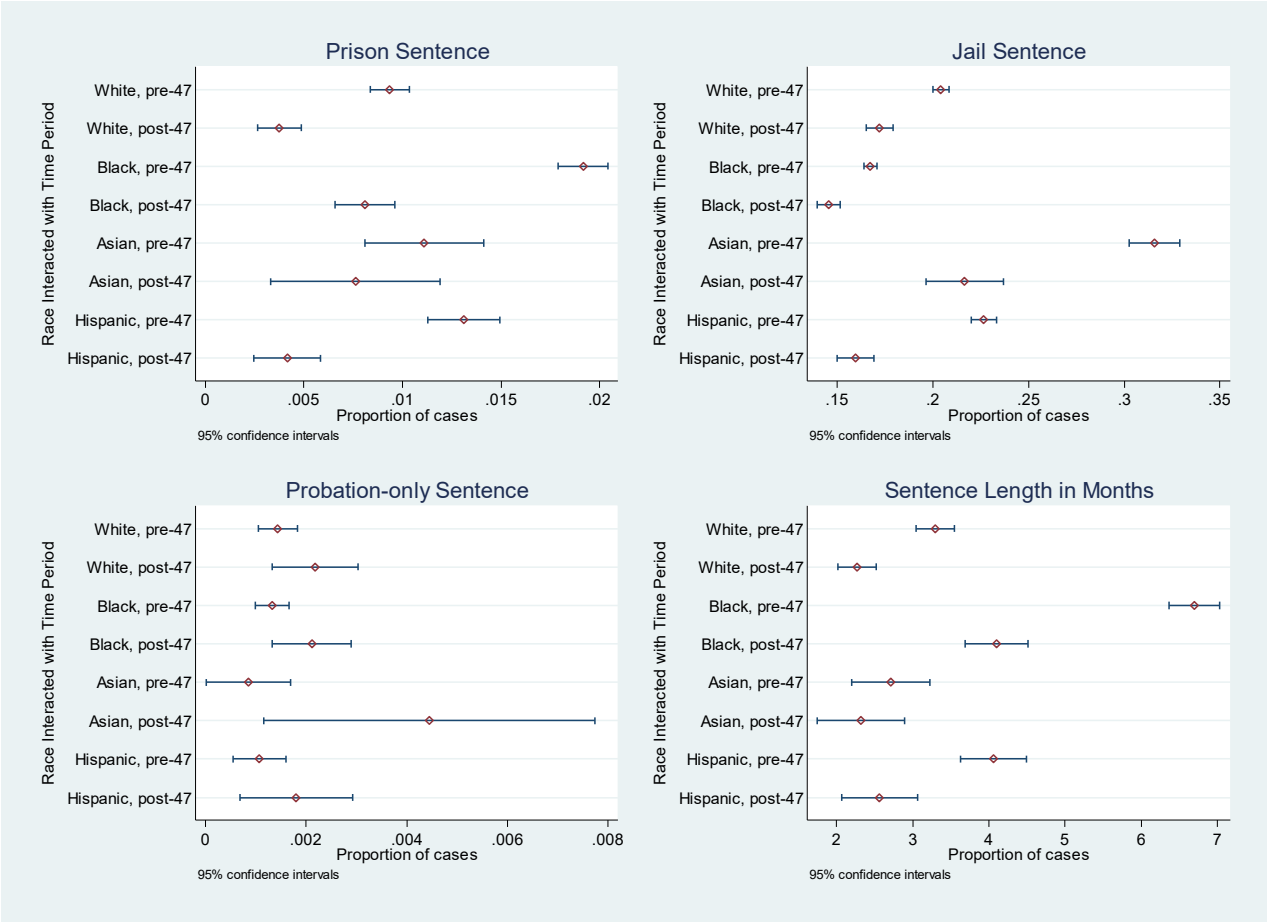

Table 1. Percent of Offenses by Race and Distribution of Case Characteristics within Groups Before and After Proposition 47

	Non-Hispanic White		Non-Hispanic Black		Non-Hispanic Asian		Hispanic	
	Pre Prop. 47	Post Prop. 47	Pre Prop. 47	Post Prop. 47	Pre Prop. 47	Post Prop. 47	Pre Prop. 47	Post Prop. 47
				Percent Cases				
All Offenses[1]	35.8	36.0	44.8	41.6	4.6	5.0	14.7	17.4
				Distribution of Cases				
Felony	46.28	40.5	56.10	49.48	54.82	57.59	48.11	41.59
Person	12.74	14.87	15.63	19.21	20.56	27.81	17.18	18.36
Property	13.42	12.17	13.76	14.24	16.14	15.87	9.75	8.18
Drug	14.93	6.66	19.85	8.68	11.93	6.03	15.21	8.25
Weapon	0.45	1.00	0.98	2.22	0.92	1.65	0.80	1.81
Other sex	0.51	0.64	0.66	0.56	0.51	1.40	0.58	0.51
Other	4.23	5.16	5.22	4.57	4.76	4.83	4.59	4.48
Misdemeanor	43.28	49.38	29.14	40.96	37.57	33.21	10.31	50.24
Person	9.94	11.48	7.71	10.78	7.32	8.89	10.31	10.54
Property	5.30	7.05	3.38	5.29	1.96	2.16	4.13	4.13
Drug	2.48	3.35	3.25	4.45	1.11	1.78	1.85	2.98
Other	25.56	27.50	14.80	20.44	27.18	20.38	26.72	32.59
Local Ordinance	10.45	10.13	14.76	9.55	7.60	9.21	8.88	8.18
Booked into Jail (%)	72	64	83	69	92	95	74	64
Average Days Pretrial	17.47	12.02	33.46	17.86	21.37	17.74	20.53	12.35
Median Days Pretrial	1	0	3	1	1	1	1	0

Note: Values for felony, misdemeanor, and local ordinance approximately sum to 100. Sub-categories for felonies and misdemeanors sum to the total percentage for felonies and misdemeanors.
Row values within time periods sum to approximately 100 percent. Any slight departure in the sum is due to rounding to the nearest 10^{th} of a percent.

Table 2. Sources of Disparities in the Likelihood that a Case is Not Filed or Diverted Before and After Proposition 47

Panel A: Decomposition of the difference relative to White suspects in the likelihood that the case is not filed or dismissed

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	-0.020[a] (0.003)	-0.012[b] (0.006)	-0.005 (0.005)	0.025[a] (0.008)	-0.100[a] (0.008)	-0.100[a] (0.013)
Unexplained differential	0.004 (0.003)	0.018[a] (0.005)	0.007[c] (0.004)	0.005 (0.006)	-0.019[a] (0.006)	-0.007 (0.010)
Due to arrest charges	0.050[a] (0.002)	0.014[a] (0.004)	-0.021[a] (0.003)	-0.006 (0.005)	-0.082[a] (0.004)	-0.058[a] (0.007)
Due to status at arrest	-0.008[a] (0.001)	-0.005[a] (0.001)	0.002[a] (0.001)	0.005[a] (0.001)	0.001[a] (0.0003)	-0.001 (0.002)
Due to pretrial detention	-0.049[a] (0.001)	-0.030[a] (0.001)	0.001 (0.001)	0.012[a] (0.002)	-0.0002 (0.002)	-0.032[a] (0.004)
Due to criminal history	-0.018[a] (0.001)	-0.010[a] (0.002)	0.006[a] (0.001)	0.008[a] (0.001)	0.0002[a] (0.001)	-0.002 (0.001)

Panel B: Decomposition of the difference relative to White suspects in the likelihood that the case results in a successful diversion

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	-0.013[a] (0.001)	-0.004[a] (0.001)	-0.0002 (0.001)	-0.005[a] (0.002)	-0.002 (0.003)	0.003 (0.003)
Unexplained differential	-0.002 (0.001)	-0.0005 (0.002)	-0.001 (0.002)	-0.003[c] (0.002)	0.006[b] (0.003)	0.003 (0.003)
Due to arrest charges	0.003[a] (0.001)	-0.0000 (0.0005)	-0.004[a] (0.001)	-0.003[a] (0.001)	-0.011[a] (0.001)	-0.001 (0.001)
Due to status at arrest	-0.003[a] (0.0002)	-0.0002[a] (0.0001)	0.001[a] (0.0001)	0.0003[a] (0.0001)	0.0004[a] (0.0001)	-0.0000 (0.0001)
Due to pretrial detention	-0.001[a] (0.0003)	-0.0003 (0.0002)	-0.0002 (0.0001)	0.000 (0.001)	-0.0002 (0.0002)	0.0005 (0.0004)
Due to criminal history	-0.011[a] (0.0005)	-0.003[a] (0.001)	0.004[a] (0.0003)	0.001[a] (0.0003)	0.002[a] (0.0005)	0.0000 (0.0005)

Standard errors in parentheses. a. Statistically significant at the one percent level of confidence. b. Statistically significant at the five percent level of confidence.

Table 3.
Sources of Disparities in the Likelihood that a Case is Transferred to Another Agency (Alternative Action Taken) or Results in a Conviction Before and After Proposition 47

Panel A: Decomposition of the difference relative to White suspects in the likelihood that an alternative action is taken

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	0.069[a] (0.002)	0.037[a] (0.004)	-0.015[a] (0.003)	-0.008[c] (0.005)	-0.005 (0.005)	0.007 (0.008)
Unexplained differential	0.017[a] (0.002)	0.003 (0.004)	-0.001 (0.003)	0.003 (0.005)	0.011[b] (0.005)	0.005 (0.008)
Due to arrest charges	-0.023[a] (0.001)	-0.003 (0.002)	0.003[c] (0.001)	0.007[a] (0.002)	-0.001 (0.002)	-0.008[a] (0.004)
Due to status at arrest	0.025[a] (0.001)	0.008[a] (0.001)	-0.005[a] (0.001)	-0.009[a] (0.002)	-0.005[a] (0.001)	0.001 (0.002)
Due to pretrial detention	0.033[a] (0.001)	0.012[a] (0.001)	-0.002[a] (0.0007)	-0.005[b] (0.001)	-0.001 (0.001)	0.012[a] (0.002)
Due to criminal history	0.029[a] (0.001)	0.017[a] (0.001)	-0.009[a] (0.0007)	-0.005[a] (0.001)	-0.010[a] (0.001)	-0.003[b] (0.0015)

Panel B: Decomposition of the difference relative to White suspects in the likelihood that the case results in conviction

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	-0.030[a] (0.003)	-0.022[a] (0.005)	0.019[a] (0.004)	-0.014[b] (0.007)	0.113[a] (0.007)	0.054[a] (0.010)
Unexplained differential	-0.019[a] (0.003)	-0.022[a] (0.004)	-0.006[c] (0.003)	-0.010[a] (0.005)	0.003 (0.005)	-0.029[a] (0.008)
Due to arrest charges	-0.030[a] (0.002)	-0.012[a] (0.003)	0.024[a] (0.002)	0.007[b] (0.003)	0.099[a] (0.003)	0.060[a] (0.006)
Due to status at arrest	-0.013[a] (0.001)	-0.003[a] (0.0005)	0.003[a] (0.0004)	0.003[a] (0.0006)	0.003[a] (0.001)	-0.0003 (0.0005)
Due to pretrial detention	0.029[a] (0.001)	0.015[a] (0.001)	0.001 (0.001)	-0.007[b] (0.002)	0.001 (0.001)	0.015[a] (0.002)
Due to criminal history	0.005[a] (0.001)	-0.0006 (0.002)	-0.003[a] (0.0009)	-0.007[a] (0.002)	0.007[a] (0.001)	0.008[a] (0.003)

Standard errors in parentheses. a. Statistically significant at the one percent level of confidence. b. Statistically significant at the five percent level of confidence.

Table 4.
Sources of Disparities in the Likelihood that a Case Results in a Jail Sentence Before and After 47 Cases

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	-0.027[a] (0.003)	-0.022[a] (0.005)	0.026[a] (0.004)	-0.012[b] (0.006)	0.114[a] (0.006)	0.048[a] (0.010)
Unexplained differential	-0.018[a] (0.002)	-0.022[a] (0.004)	-0.001 (0.003)	-0.013[a] (0.005)	-0.001 (0.005)	-0.032[a] (0.009)
Due to arrest charges	-0.027[a] (0.002)	-0.010[a] (0.002)	0.025[a] (0.002)	0.009[a] (0.003)	0.104[a] (0.004)	0.063[a] (0.005)
Due to status at arrest	-0.011[a] (0.0005)	-0.002[a] (0.0004)	0.002[a] (0.0004)	0.003[a] (0.0005)	0.002[a] (0.0005)	-0.0003 (0.0007)
Due to pretrial detention	0.026[a] (0.001)	0.012[a] (0.001)	0.001 (0.0008)	-0.006[a] (0.001)	0.0008 (0.001)	0.011[a] (0.002)
Due to criminal history	0.004[a] (0.001)	0.0005 (0.002)	-0.001[c] (0.0008)	-0.006[a] (0.002)	0.006[a] (0.001)	0.007[a] (0.002)

Standard errors in parentheses. a. Statistically significant at the one percent level of confidence. b. Statistically significant at the five percent level of confidence.

Table 5.
Sources of Disparities in the Likelihood that a Case Results in a Prison Sentence Before and After Proposition 47

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	0.010[a] (0.001)	0.004[a] (0.001)	0.004[a] (0.001)	0.0004 (0.001)	0.002 (0.002)	0.004 (0.002)
Unexplained differential	0.0001 (0.0008)	0.0007 (0.001)	-0.0000 (0.001)	-0.0003 (0.001)	-0.003 (0.002)	0.0008 (0.002)
Due to arrest charges	0.003[a] (0.0004)	0.002[a] (0.0003)	0.003[a] (0.0004)	0.0009[b] (0.0004)	0.005[a] (0.0006)	0.003[a] (0.001)
Due to status at arrest	0.001[a] (0.0002)	0.0002[a] (0.0001)	-0.0003[a] (0.00005)	-0.0002[a] (0.0001)	-0.0003[a] (0.0001)	0.00002 (0.00006)
Due to pretrial detention	0.003[a] (0.0002)	0.0004[b] (0.0002)	0.0005[a] (0.0001)	-0.00002 (0.0002)	0.0003 (0.0003)	0.0002 (0.0003)
Due to criminal history	0.003[a] (0.0002)	0.0006 (0.0004)	0.0002 (0.0002)	0.00002 (0.0002)	0.00003 (0.0002)	0.00008 (0.0003)

Standard errors in parentheses. a. Statistically significant at the one percent level of confidence. b. Statistically significant at the five percent level of confidence.

Table 6
Sources of Disparities in Sentence Length (months) for Cases Resulting in Conviction Before and After Proposition 47

	Black		Hispanic		Asian	
	Pre- 47	Post-47	Pre-47	Post-47	Pre-47	Post-47
Overall differences	3.405[a] (0.209)	1.832[a] (0.244)	0.762[a] (0.274)	0.296 (0.312)	-0.587 (0.380)	0.050 (0.448)
Unexplained differential	0.500[a] (0.196)	0.298 (0.241)	-0.234 (0.241)	0.089 (0.288)	-0.442 (0.333)	-0.032 (0.405)
Due to arrest charges	1.130[a] (0.122)	1.005[a] (0.143)	0.614[a] (0.133)	0.291[b] (0.169)	0.053 (0.183)	0170 (0.232)
Due to status at arrest	0.253[a] (0.026)	0.029[a] (0.013)	-0.068[a] (0.019)	-0.031 (0.016)	-0.088[a] (0.027)	-0.031 (0.020)
Due to pretrial detention	0.759[a] (0.069)	0.227[a] (0.076)	0.329[a] (0.059)	-0.070 (0.077)	-0.031 (0.087)	0.054 (0.107)
Due to criminal history	0.762[a] (0.083)	0.274[a] (0.112)	0.121[b] (0.059)	-0.016 (0.95)	-0.078 (0.075)	-0.111 (0.120)

Standard errors in parentheses. a. Statistically significant at the one percent level of confidence. b. Statistically significant at the five percent level of confidence.

Appendix Table A1
Additional Case Characteristics At time of Presentation and Criminal Histories within the City and County of San Francisco by Race

	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Asian	Hispanic
Average arrest charge variables				
# arrest charges	2.36	2.38	2.93	2.64
# felony arrest charges	1.01	1.21	1.55	1.15
# misd. arrest charges	1.13	0.90	1.19	1.28
Proportion with multiple court numbers at arrest	0.22	0.33	0.20	0.18
SF Criminal history variables[1]				
Prior convictions	0.66	0.97	0.56	0.45
Prior probation only	0.00	0.00	0.00	0.00
Prior jail sentence	0.47	0.71	0.42	0.33
Prior prison sentence	0.05	0.10	0.03	0.04
SF Prior Arrests				
Prior felony person	0.23	0.53	0.22	0.25
Prior felony property	0.62	0.71	0.53	0.30
Prior felony drug	0.38	1.04	0.30	0.33
Prior felony lewd beh.	0.01	0.03	0.00	0.00
Prior felony weapons	0.02	0.04	0.01	0.02
Prior felony other	0.13	0.25	0.10	0.11
Prior misd. person	0.17	0.23	0.12	0.12
Prior misd. Property	0.18	0.15	0.12	0.09
Prior misd. Drug	0.11	0.24	0.07	0.07
Prior misd. other	0.47	0.58	0.33	0.31
Prior local ordinance	0.50	0.98	0.40	0.34
No prior SF cases	0.48	0.30	0.59	0.56
N	47,607	58,525	6,259	20,431

1. For the local criminal history variables, the values represent criminal histories observed for cases filed within the City and County of San Francisco from 2008 onwards.

Appendix Table A2
Criminal History From California Department of Justice Automated Criminal History System: Prior Felony and Misdemeanor Convictions and Arrests as of the Event Arrest Date

	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Asian	Hispanic
Felony convictions	0.52	0.79	0.32	0.43
Misd. convictions	0.34	0.28	0.20	0.33
Fel. arrest cycles	1.52	2.61	0.97	1.32
Mis. arrest cycles	1.55	1.61	0.75	1.30
Prior prison	0.06	0.13	0.04	0.05
Prior jail	0.60	0.75	0.36	0.54
Prior probation	0.62	0.72	0.40	0.56
Prior convictions				
Fel. person	0.10	0.19	0.07	0.11
Fel. property	0.22	0.29	0.15	0.14
Fel. drug	0.15	0.26	0.08	0.13
Fel. lewd	0.01	0.01	0.00	0.00
Fel. weapons	0.01	0.02	0.01	0.01
Fel. other	0.03	0.02	0.01	0.03
Mis. person	0.06	0.06	0.02	0.05
Mis. property	0.05	0.05	0.03	0.04
Mis. drug	0.06	0.03	0.02	0.04
Mis. other	0.18	0.15	0.12	0.20
Prior arrest cycles				
Fel. person	0.27	0.62	0.23	0.36
Fel. property	0.60	0.86	0.40	0.39
Fel. drug	0.51	0.96	0.25	0.44
Fel. lewd	0.02	0.03	0.01	0.01
Fel. weapons	0.04	0.06	0.03	0.05
Fel. other	0.09	0.09	0.05	0.08
Mis. person	0.23	0.31	0.12	0.22
Mis. property	0.19	0.22	0.11	0.13
Mis. drug	0.31	0.22	0.10	0.21
Mis. other	0.82	0.85	0.43	0.75

Appendix Table A3
Distribution of Cases Presented to the District Attorney by Most Serious Arrest Charge Using Detailed Charge Categories and by Race (bolded sub-totals sum to 100 percent within columns)

	White	Black	Asian	Hispanic
Felony Person	**12.65**	**14.8**	**22.21**	**16.88**
Willful Homicide	0.5	0.85	1.47	1.07
Manslaughter - Non Vehicular	0.01	0	0.05	0.01
Manslaughter -Vehicular	0.03	0.01	0.03	0.03
Forcible Rape	0.16	0.22	0.44	0.32
Robbery	1.9	4.53	3.14	3.17
Assault	10.03	9.12	16.93	12.25
Kidnapping	0.02	0.07	0.15	0.03
Felony Property	**12.98**	**12.5**	**16.34**	**8.76**
Burglary	5.77	5.85	6.16	3.46
Theft	6.29	5.73	8.85	4.49
Motor Vehicle Theft	0.59	0.56	0.8	0.55
Forgery, Checks, Access Cards	0.33	0.36	0.53	0.26
Felony Drugs	**14.93**	**21.24**	**10.99**	**15.74**
Narcotics	7.71	16.93	4.28	11.32
Marijuana	3.11	2.32	2.52	1.79
Dangerous Drugs	4.06	1.89	4.14	2.59
Other Drug Law Violations	0.05	0.1	0.05	0.04
Felony Lewd Behavior, Other Sex	**0.61**	**0.64**	**0.7**	**0.62**
Lewd and Lascivious	0.06	0.03	0.09	0.15
Unlawful Sexual Intercourse	0.02	0.01	0	0.02
Other Sex Law Violations	0.53	0.6	0.61	0.45
Weapons	**0.63**	**1.29**	**1.09**	**1.11**
Felony Other	**3.96**	**3.82**	**4.66**	**3.95**
Drive Under the Influence	0.53	0.16	0.94	0.78
Hit and Run	0.11	0.04	0.14	0.14
Escape	0.02	0.01	0.02	0.01
Bookmaking	0	0	0	0
Arson	0.22	0.08	0.38	0.07
Felony Traffic, Accessory, Treason, Abortion, Bigamy, Bribery, Extortion, Neglect, Perjury, Malicious Mischief, Gambling, Other Felony	2.14	1.36	2.35	2.09

Appendix Table A3
Distribution of Cases Presented to the District Attorney by Most Serious Arrest Charge Using Detailed Charge Categories and by Race (bolded sub-totals sum to 100 percent within columns)

	White	Black	Asian	Hispanic
Federal Offense	0.02	0.01	0.03	0.02
Probation/Parole –Felony	0.92	2.16	0.8	0.84
Misdemeanor Person	**13.61**	**9.77**	**9.42**	**11.98**
Vehicular Manslaughter	0.01	0.01	0.08	0
Assault and Battery	9.17	7.09	7.63	8.92
Petty Theft	4.43	2.67	1.71	3.06
Misdemeanor Property	**0.47**	**0.34**	**0.26**	**0.45**
Other Theft	0.44	0.32	0.24	0.43
Checks, Access Cards	0.03	0.02	0.02	0.02
Misdemeanor Drug	**3.57**	**4.34**	**1.45**	**2.73**
Marijuana	0.9	0.92	0.39	0.79
Dangerous Drugs	0.77	0.45	0.26	0.74
Other Drug Law Violations	1.9	2.97	0.8	1.2
Misdemeanor Other	**25.23**	**15.32**	**25.21**	**27.86**
Indecent Exposure	0.14	0.08	0.05	0.09
Annoying Children	0.17	0.12	0.02	0.31
Obscene Matter	0.01	0	0	0
Lewd Conduct	0.04	0.01	0.03	0.02
Prostitution	1.86	1.41	0.77	3.04
Contributing Delinquency of Minor	0.01	0.01	0.02	0.04
Liquor Laws	0.89	0.53	0.97	1.27
Disorderly Conduct	2.95	1.78	0.41	0.99
Disturbing Peace	0.3	0.16	0.11	0.19
Vandalism	1.17	0.4	0.35	0.82
Malicious Mischief	0.08	0.06	0.08	0.07
Trespassing	3.24	1.57	0.7	1.63
Weapons	0.17	0.12	0.14	0.2
Drive Under the Influence	7.04	1.68	16.96	8.41
Hit and Run	0.19	0.09	0.09	0.33
Selected Traffic	0.09	0.08	0.12	0.18
Joy Riding	0.01	0.01	0.02	0.01
Gambling	0.01	0.03	0.02	0.04
Non-Support	0	0	0	0
Glue Sniffing	0.01	0	0	0.01
CI/CO Ordinances	0.31	0.17	0	0.17
Failure to Appear/Non-Traffic	0.02	0	0	0
Other Misdemeanors	2.9	3.99	3	2.95

Appendix Table A3
Distribution of Cases Presented to the District Attorney by Most Serious Arrest Charge Using Detailed Charge Categories and by Race (bolded sub-totals sum to 100 percent within columns)

	White	Black	Asian	Hispanic
Burglary tools	0.31	0.19	0.21	0.14
Other Sex Offenses	0.01	0.01	0.02	0.05
Arson-Misdemeanor	0	0	0	0
Probation-Parole Misdemeanor	0	0.01	0	0
Truancy	0	0	0	0
Miscellaneous Traffic	3.15	2.7	1	6.78
Burglary Misdemeanor	0.15	0.11	0.12	0.12
Local Ordinance, Other	**10.32**	**15.23**	**7.55**	**8.59**
Unknown	**1.05**	**0.7**	**0.17**	**1.35**