How Much Does Your Prosecutor Matter? An Estimate of Prosecutorial Discretion

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Abstract

Many argue prosecutors wield more discretion and power than any other agent in the criminal justice system. Despite this widespread belief, little work has documented the extent of prosecutorial discretion. Using data that tracks cases from arrest through disposition, this paper exploits the conditionally random assignment of cases to prosecutors. To quantify prosecutor discretion, I use a random effects model to estimate prosecutor-specific measures of leniency. Results show prosecutors are important for case disposition. Replacing a prosecutor with one that is a standard deviation harsher increases the odds of a guilty outcome by 3 percentage points or 5 percent. This magnitude is similar to the average difference in guilty outcomes between black and white defendants, or half the effect of a prior arrest. Additional results indicate prosecutor race and gender are not primary determinants of leniency. However, prosecutors are willing or able to exercise significant discretion for defendants with no prior arrests and less severe crimes.

1 Introduction

There is consensus that prosecutors have more discretion than any other agent when handling alleged crimes (Luna and Wade, 2015; Pfaff, 2017; Sklansky, 2018; Stith, 2008; Pfaff, 2017; Rehavi and Starr, 2014; Smith and Levinson, 2011). For example, according to the American Civil Liberties Union, "Prosecutors are the most influential actors in the criminal justice system" (American Civil Liberties Union, 2020). In particular, prosecutors choose whether and how to dismiss a case, assign charges, offer plea deals, strike potential jury members, and handle a case at trial. Despite the widespread belief that prosecutors play a dominant role in case outcomes, there is little empirical evidence to back these assertions. In this paper, I estimate the importance and magnitude of prosecutor discretion.

This study's primary advantage is that I can estimate the degree of prosecutor discretion using a dataset that includes the *universe* of *conditionally randomly assigned* cases. It is challenging to evaluate the full scope of prosecutor discretion using a dataset that does not include the universe of cases. As court records often miss cases dismissed early on by prosecutors, they only capture cases for which some prosecutor discretion has already been exercised. Notably, the dataset in this paper tracks cases from arrest until disposition. These data allow me to investigate prosecutor discretion for the margin where discretion is likely to matter most — whether the case receives a guilty outcome.

Estimating prosecutor discretion also requires a setting where prosecutors cannot choose their cases. Nonrandom matching is commonplace, as prosecutors are often allowed to choose their cases or are assigned cases by a supervisor. To overcome this endogeneity concern, I exploit the random assignment—conditional on screening date—of defendants to prosecutors in New York County through the Early Case Assessment Bureau. During each shift at the Early Case Assessment Bureau, cases are assigned on a rotational basis, depending on a case's timestamp or when the case was received. The case assignment process works as follows: when prosecutors arrive at the office, they are given the earliest timestamped case available by the office administrator, who strictly enforces this procedure. Prosecutors cannot screen

or even look at the case before they begin to work on it. When they finish writing up their case, they return to the office administrator and are again assigned the earliest timestamped case available.

This as good as random assignment of prosecutor implies that a prosecutor's leniency is uncorrelated with a defendant's underlying guilt. Consequently, some defendants are randomly assigned, condition on case-screening dates, to prosecutors that are harsher (more likely to have guilty outcomes). Others are paired with more lenient prosecutors (more likely to dismiss cases). I provide empirical evidence for this random assignment by showing that prosecutor leniency is uncorrelated with defendant and case characteristics. I use this quasi-random assignment to estimate prosecutor-specific measures of prosecutor leniency. Specifically, I estimate a random effect for each prosecutor, similar to other studies on professor quality (e.g., Carrell and West, 2010). A prosecutor's leniency measure summarizes their average, time-invariant, propensity for guilty outcomes. Finally, I investigate how prosecutor leniency varies across prosecutor and case characteristics. For cases and prosecutors where leniency varies the most, I can conclude prosecutor discretion is the greatest.

I identify effects using detailed administrative data from the New York County District Attorney's Office, which were collected by the Vera Institute (Kutateladze, 2017). The New York County District Attorney's Office prosecutes all cases originating in New York County (Manhattan). This totals over 100,000 cases per year from a jurisdiction of over 1.6 million people, making it the nation's fourteenth largest prosecutor's office (City of New York, 2015). These data include information on the case assignment process and conviction (as well as dismissal) decisions for all cases assigned via the Early Case Assessment Bureau. This means I can estimate prosecutor leniency for 135 prosecutors and over 100,000 cases.

Results indicate prosecutors are important for the disposition of a case. Replacing a prosecutor with one that is a standard deviation harsher increases the odds of a guilty outcome by 3 percentage points or 5 percent. This magnitude is similar to the average difference in guilty outcomes between black and white defendants, or half the effect of a prior arrest. I also investigate potential sources of prosecutor discretion. There is some evidence white and

male prosecutors may be harsher on average, and there is more dispersion in non-white and female prosecutor leniency. While there are some differences in prosecutor discretion across prosecutor race and gender, most of the leniency variation is not explained by prosecutor characteristics. However, there is strong evidence prosecutors use their discretion differently based on a defendant and case characteristics. The scope of prosecutor discretion is greater when defendants have no criminal record and commit less severe crimes.

This paper contributes to the empirical literature on prosecutor behavior in general by providing the first estimates of individual prosecutor discretion in guilty outcomes (Arora, 2019; Krumholz, 2019; Rehavi and Starr, 2014; Tuttle, 2019; Yang, 2016). Some existing papers focus on how prosecutors respond to financial and electoral pressures. Yang (2016) uses pension eligibility and judge deaths as instruments for judicial vacancies and resource constraints, concluding that these cause more prosecutor case dismissals. Using a regression discontinuity created by close elections, Arora (2019) and Krumholz (2019) find that when a District Attorney is Republican (versus a Democrat), defendants receive harsher punishments for felonies. Krumholz (2019) also finds that the election of a nonwhite District Attorney leads to fewer prison admissions by comparing counties with and without a nonwhite District Attorney over time. Also, Rehavi and Starr (2014), Sloan (2019), and Tuttle (2019) document racial discrimination by prosecutors in guilty outcomes and sentencing. Finally, there is a broader literature summarized by Kutateladze and Andiloro (2014) and Kutateladze et al. (2012) that uses selection-on-observables to address the impact of defendant characteristics at various stages of the criminal justice process.

By estimating prosecutor leniency measures, this paper complements a literature using judge leniency instruments to estimate incarceration's impact (e.g., Aizer and Doyle Jr, 2015; Heaton et al., 2017; Dobbie et al., 2018; Bhuller et al., 2020; Kling, 2006; Mueller-Smith, 2015). Weisburst (2017) also documents police discretion by estimating police officer arrest propensities. These papers focus on arrests, sentencing, and pretrial detention, not guilty outcomes or prosecutors' behavior.

This paper is most closely related to concurrent work by Harrington and Shaffer (2020).

Harrington and Shaffer (2020) considers prosecutor discretion over felony sentencing in North Carolina Superior Courts. They find that prosecutors vary systematically in incarceration and recidivism effects. Further, they conclude that since their incarceration effects cannot fully explain differences in prosecutor recidivism effects, prosecutors also differ in their "skill" – ability to incarcerate defendants most likely to re-offend selectively. One contribution of this study compared to Harrington and Shaffer (2020), is that I consider prosecutor discretion over guilty outcomes instead of sentencing.[1] While prosecutors do play an important role in sentencing, the scope for prosecutor discretion is plausibly greater for guilty outcomes. This is because prosecutors do not face as many structural limits on discretion in guilty outcomes. In many settings, prosecutors can drop or dismiss a case with little to no oversight from other prosecutors, judges, or defense attorneys. Second, I observe all cases from arrest until disposition. Cases are often disposed of before Superior Court. For example, in North Carolina, 56 percent of felonies and 95 percent of non-traffic misdemeanors did not survive to Superior Court (North Carolina Judicial Branch, 2012). By observing cases from arrest to disposition, I can estimate the full scope of prosecutor leniency in guilty outcomes.

Even so, this paper has limitations. The first is that this sample is composed of misdemeanors, rather than felonies, since felonies assigned non-randomly. However, I note that many prosecutors in my sample later prosecute felonies – indeed, nearly all prosecutor of felonies in this county begin their careers in Early Assessment Bureau. Also, because actual guilt is unobserved, as with previous studies, it is not possible to determine prosecutor exercise their discretion the most accurately.

2 Background and Data

2.1 Case Assignment and the Prosecutor's Role in New York County

One problem in estimating the degree of prosecutor discretion is the nonrandom matching of cases. To overcome this problem, I chose to study New York County, which gives prosecutors

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[1] I also plan to investigate sentencing outcomes, but the focus of the paper will remain on guilty outcomes.

no discretion in case selection for certain crimes. In New York County, after a defendant is arrested, the police are responsible for recording all arrest charges and prior arrest history during booking. If the case is a less serious offense, such as an infraction or violation, the defendant is often given a desk appearance ticket or court summons, and the case is not assigned to a prosecutor. Next, the police fax or email misdemeanor and felony cases to the Early Case Assessment Bureau, where all misdemeanors and felonies in New York County are assigned to a prosecutor. Felony and misdemeanor cases follow a different assignment procedure. For felonies, a head prosecutor screens each case and assigns it to another prosecutor based on their experience with particular types of cases. Because the assignment of felony cases is not as-good-as random at the Early Case Assessment Bureau, I exclude them from my analysis.

In contrast to felonies, the assignment of misdemeanor cases is as-good-as random. During each shift at the Early Case Assessment Bureau, cases are assigned on a rotational basis depending on a case's timestamp, which is when the bureau received it. The assignment process works as follows: when prosecutors arrive at the office, the office administrator gives them the earliest timestamped case available. The timestamp on the case is essential. During my visit to the Early Case Assessment Bureau, multiple prosecutors and administrators mentioned the importance of handling cases in the order they arrived. To this end, the administration works 24 hours a day to handle arrests that come in outside of typical work hours, to ensure that timestamps are correct.[2] A prosecutor cannot screen, or even look at, a case before she begins working on it. When she is finished writing up her case, she will return to the administrator and is again assigned the earliest timestamped case available. I was able to observe this prosecutor case assignment when I visited the Early Case Assessment Bureau. The as-good-as-random assignment of cases was also confirmed by the researchers who originally collected these data. However, they do not estimate the degree of prosecutor discretion, nor do they solely examine cases with as-good-as-random assignment (Kutateladze and Andiloro, 2014). In short, this assignment procedure means that the prosecutor

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[2]On average more than 250 cases come through the Early Case Assessment Bureau each day.

and defendant pairing is as-good-as random throughout each screening day.[3]

Nearly all first-year prosecutors will work at the Early Case Assessment Bureau as part of their training. Each month, a group of first-year prosecutors is assigned to work at the Early Case Assessment Bureau to handle misdemeanor cases by a supervisor. Because of these rotations, I can observe the decisions of many different prosecutors. However, they are primarily less experienced. When first-year prosecutors are not working at the Early Case Assessment Bureau, they are also exposed to the many different bureaus and units within the District Attorney of New York County's Office. These bureaus and units specialize in specific types of crimes, as prosecutors tend to believe that decision-making differs enough across case types to require specialization. After their first few years at the District Attorney of New York County, prosecutors will shift to working on more felony cases and begin to specialize in particular case types. Nearly all prosecutors who work on more specialized felony cases spent some time working at the Early Case Assessment Bureau with misdemeanors.

After a case is assigned to a prosecutor at the Early Case Assessment Bureau, the prosecutor has multiple opportunities to alter case outcomes. Specifically, the prosecutor can decide to decline to prosecute the case, change a defendant's charges, endorse pretrial detainment, pursue a case dismissal through adjournment in contemplation of dismissal, offer a plea deal, and design the plea deal. All of these decisions may alter a defendant's most crucial case outcome: guilty or not guilty.

The first decision a prosecutor makes is whether to decline to prosecute a case. In contrast to many other settings, prosecutors in New York County decline relatively few cases, likely due to the close relationship between the New York County's District Attorney's Office and the New York City Police Department (Kutateladze and Andiloro, 2014). This outcome is rare because most cases are only declined if the case has a complete lack of evidence or if

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[3]One limitation of this dataset is that I do not observe which shift a prosecutor works within a screening day. Prosecutors do not get to explicitly choose their shift, but rather are assigned by a supervisor. In order for shift selection to explain my results, it must be the case that prosecutors with different leniency measures are selected by their supervisors to work a specific shift, and defendants with specific unobservable characteristics correlated with guilt commit crimes during their shift. For example, if harsher prosecutors were assigned to shifts where defendants have unobservably low underlying probabilities of guilt, I would underestimate prosecutor discretion. This is particularly unlikely given that prosecutor do not typically select their shifts and that many cases come through ECAB everyday, so just because a crime was committed at 8 am (for example) does not mean that a prosecutor working at 8 am that same day will screen the case.

the defendant was arrested for a crime that the District Attorney's Office has decided not to prosecute anymore.

Next, the prosecutor decides which charges to bring against a defendant at screening. Often this includes the option of increasing or decreasing the severity of charges assigned to a defendant's case.[4] For example, a defendant may be booked for a Class B misdemeanor crime, punishable by up to 90 days in jail, but a prosecutor may increase the crime at screening to a Class A misdemeanor punishable by up to 1 year in jail (New York State, 2018). The severity of charges is critical because prosecutors often choose to follow department norms for pretrial detainment, plea deals, and sentencing based on charge severity (Frederick and Stemen, 2012).

The prosecutor also has the option of offering and designing a plea deal for all defendants. A plea deal can include charges that are higher or lower than the initial charges for which a defendant is booked. During plea bargaining, a prosecutor can also recommend a particular sentence to the judge. While a judge must approve of any plea or sentence, prosecutors play a significant role in designing the attributes of the plea deal and sentencing request. If a defendant accepts a plea deal, she will be considered guilty.

Instead of a plea deal, the prosecutor can also offer the defendant a particular type of dismissal, referred to as an adjournment in contemplation of dismissal. This acts as an agreement to dismiss a case in 6 to 12 months if there are no subsequent arrests. In New York, an adjournment in contemplation of dismissal is not a conviction or an admission of guilt.[5] It is also extremely rare that an adjournment in contemplation of dismissal will be reopened, let alone lead to a guilty outcome. During 2010 and 2011 in New York County, 36,411 court events had an adjournment in contemplation of dismissal outcome. Of these events, only 1 percent (384) had a later recalendaring. A recalendaring implies that the case could have been reopened, but not that the defendant was tried again and found guilty. Like a plea deal, an adjournment in contemplation of dismissal must be approved by a judge, but

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[4]Prosecutors in Manhattan are specifically trained to be very careful in assigning screening charges. For example, prosecutors are told not to merely rerecord the arresting charges because the police officer may be unaware of a defendant's criminal history or the details of the characteristics of a specific charge.

[5]New York Criminal Procedure §170.55

it cannot be offered without the approval of the prosecutor.[6]

Finally, a case can be disposed through a dismissal. A dismissal can be the result of a motion brought by a judge, defendant, or prosecutor. Misdemeanor cases can also be dropped unilaterally by a prosecutor (Kutateladze and Andiloro, 2014). For dismissals, charges against the defendant are immediately dropped. The most common reason for a dismissal in New York County is a lack of speedy prosecution, which makes up 34 percent of dismissals. A prosecutor's decision to prioritize certain cases could influence which cases are dismissed. Specifically, a prosecutor could choose to work on particular cases first, knowing that non-prioritized cases are more likely to be dismissed if the evidence is not gathered in time.

Cases may also be disposed through a trial. However, in my sample, which is primarily misdemeanors, only 0.02 percent of cases go to trial. Therefore, I do not separately investigate the probability of guilt through a trial or an acquittal. Cases with these outcomes are included in my measure of guilty or not.

Finally, for most cases, the New York County District Attorney's Office practices vertical prosecution, which means that the same prosecutor remains with the case from screening through disposition. Specifically, for 57 percent of misdemeanor cases, the prosecutor assigned to the case at the Early Case Assessment Bureau is the only one on the case. Other cases are reassigned to another prosecutor after arraignment. Importantly, in regard to those cases, I observe both prosecutors in my data. This allows me to conduct my entire study as an intent-to-treat analysis using the first assigned prosecutor to the case.

2.2   Data

I use data from the New York County District Attorney's Office, a large prosecutor's office responsible for prosecuting all crimes in the Manhattan borough of New York City. The dataset was compiled by the Vera Institute and is housed by the National Archive of Criminal Justice Data (Kutateladze, 2017).

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[6]There are also special marijuana adjournment in contemplation of dismissals that can be offered without the approval of the prosecutor. These can only be offered in marijuana drug cases.

I use the New York County District Attorney's Office's detailed administrative data on all misdemeanor cases disposed through the Early Case Assessment Bureau in 2010–2011 for New York County. All data were collected at the case level. I focus my analysis on prosecutors with more than 200 cases to improve the precision of my estimates. This allows me to keep 90 percent of cases.[7]

Police officers record their perceptions of defendant race on the New York Police Department's arrest reports. The New York County District Attorney's Office reports prosecutor race and gender. Information on defendant and case characteristics are missing for 11,096 cases. For the remaining analysis, I only show results for the sample of cases where I observe all case and defendant characteristics (125,428 cases). Although these missing characteristics are likely the result of clerical mistakes and are not related to prosecutor leniency or case outcomes, I address this minor issue in Section 4.4. Specifically, I show that my results are robust to the inclusion of cases with missing characteristics and to numerous assumptions about the value of missing characteristics.

Data from the New York County District Attorney's Office include case, defendant, and prosecutor characteristics. For each case in the dataset, I observe arrest, screening, and sentencing charges, type of crime, prior arrest history, prior conviction history, gender, and age for the defendant. I also have information on the gender and race of the prosecutor, as reported by the New York County District Attorney's Office. Finally, I observe the disposition of every case that originated at the Early Case Assessment Bureau. Potential dispositions include conviction through trial, acquittal through trial, plea deal, decline to prosecute, dismissal, and dismissal through adjournment in contemplation of dismissal. Importantly, I also observe the screening date for each case. Because as-good-as-random variation in prosecutor leniency only requires I condition on the screening date of a case, I show in Section 4.2 that prosecutor race is uncorrelated with other case and defendant characteristics.

My primary outcome of interest is an indicator for whether the defendant was found guilty at the case level. This means that if a defendant is guilty of any charge on her case, she is

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[7]I begin with 151,984 cases.

considered guilty. Importantly, this includes all cases, even the dismissed ones. A defendant can be found guilty in two ways: by accepting a plea offer or by conviction through a trial. A defendant is considered not guilty if her case is declined or dismissed or if her trial ends in an acquittal. As mentioned before, the vast majority (99.9 percent) of guilty outcomes come from plea deals.[8]

Next, I also consider other decisions influenced by prosecutors that may determine a defendant's final case outcome (guilty or not guilty), to investigate what mechanism may drive the results. These outcomes include declined prosecution, case dismissal, and dismissal through adjournment in contemplation of dismissal. Declined prosecution means a case was dropped in the Early Case Assessment Bureau by a prosecutor, and case dismissal is a dismissal by a judge or prosecutor. An adjournment in contemplation of dismissal is an agreement to dismiss a case in 6 to 12 months if there are no subsequent arrests. Declined prosecution, case dismissal, and adjournment in contemplation of dismissal all directly lead to a not guilty outcome.

Crime types are defined by the researchers who originally collected the data according to New York law.[9] The three most common types are drug crimes, property crimes, and person crimes. All other crimes are classified as other.[10] Although I do not observe the specific crime type associated with a case, the most common drug misdemeanor in New York County is the possession of marijuana (Kutateladze and Andiloro, 2014). Most property misdemeanors are petit larceny (theft of property worth less than $1,000), and the most common person crime is a third-degree assault (Kutateladze and Andiloro, 2014; Chauhan et al., 2014). Drug crimes account for 23 percent of all cases, property crimes 39 percent, person crimes 7 percent, and other crimes 30 percent. Cases are categorized and handled primarily based on their top (most severe) charge. However, I also observe the other (non-top and less severe) charges on a case.

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[8]Two hundred and eight cases go to trial, and 119 trial cases end in a conviction.

[9]Kutateladze et al. (2012) defines crime types using the New York Penal Law: person offenses, New York Penal Law §120.00–135.75; property offenses, §140.00–165.74; and drug offenses, §220.00–221.55.

[10]Unfortunately, I do not observe the specific crimes that fall into the other category. I do know that the most common crime types in the "other" category are escape and others relating to custody (PL §205), firearms and other dangerous weapons (PL §265), and offenses against public order (PL §240).

Table 1 displays summary statistics. I have a total of 125,428 cases. The majority, 82 percent, of defendants are male with an average age of 33 years. Half of the defendants have at least one prior arrest, and 45 percent have at least one prior conviction. Black defendants, white defendants, and Hispanic defendants make up 46, 15, and 33 percent of my sample, respectively. On average, 22 percent of cases are dismissed, 21 percent are dismissed through adjournment in contemplation of dismissal (ACD), and 57 percent end with a guilty verdict. As my cases are misdemeanors, 99.9 percent of convictions come from plea deals.

In total, there are 135 prosecutors. Most prosecutors are white (96 prosecutors or 71 percent). However, there are 19 black, 11 Asian, and 9 Hispanic prosecutors in my sample. Sixty percent of prosecutors (82) are female.

3 Empirical Strategy

The conditional random assignment of cases to prosecutors provides an ideal context for investigating prosecutor discretion. To do so, I estimate prosecutor-specific random effects, which represent a prosecutor's time-invariant propensity for guilty outcomes. The distribution of these estimates captures an overall measure of prosecutor discretion.

I estimate prosecutor leniency measures using a random effects model similar to Carrell and West (2010). Random effects estimators are minimum variance and efficient but rare in teacher quality or police officer leniency papers because of the stringent requirement for consistency. Namely, consistency requires that leniency measures be uncorrelated with all other explanatory variables in the model. This requirement is often violated when students select classes, or police officers choose 911 calls to respond to. In New York County, however, this requirement is satisfied after accounting for screening date fixed effects. Because of the conditional random assignment, both random and fixed effects models will produce consistent estimates, but random effects are efficient.

To estimate prosecutor leniency measures, I first residualize *Guilty* by removing screening date fixed effects. Then I estimate a mixed effects model by controlling for defendant and case

characteristics using fixed effects and estimating the individual prosecutor leniency measures using random effects.[11] Formally, I begin by estimating:

$$Guilty_{c,s} = \mu_s + \epsilon_{c,s}, \tag{1}$$

where $Guilty_{c,s}$ is a binary variable equal to one when the defendant is considered guilty for case c, on screening date s, and zero for all other case dispositions. Because case assignment is within screening date, I include screening date fixed effects (μ_s). Intuitively this allows me to calculate $Guilty$ after differencing out screening date fixed effects. Next, I calculate the residuals from Equation (1). Using these residuals, I estimate:

$$\hat{Guilty}_{c,s,p} = \lambda_p + \beta_1 X_c + \epsilon_{c,s,p}$$

where $\hat{Guilty}_{c,s,p}$ is the residualized outcome from Equation (1), and X_c includes control variables at the case level. Specifically, X_c includes defendant gender, age, criminal history, as well as case type (drug, property, person, other), number of top counts, type of misdemeanor (a, b, or u), and characteristics (number of counts, number of charges) for other charges on the case. I also include fixed effects for arrest Zipcode. The estimate of interest, λ_p, captures a prosecutor-specific random effect that summarizes a prosecutor's average, time-invariant, propensity for guilty outcomes. Higher values of λ_p indicate a prosecutor is harsher or produces more guilty outcomes, and lower values of λ_p indicate less guilty outcomes or that a prosecutor more lenient.

This model's identifying assumption is that prosecutor leniency is not correlated with case or defendant characteristics after controlling for screening date fixed effects. Identification, therefore, relies on the random assignment of cases to prosecutors. The identifying assumption could fail if prosecutor leniency is correlated with other factors that also alter a case's outcome. For instance, in different settings, harsher prosecutors may choose to work on "stronger" cases with higher preexisting odds of a guilty outcome. In this case, I would

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[11]I estimate the random effects regression model using Stata's mixed command. To be precise, prosecutor random effects are predicted (not directly estimated), but I use the term estimated for ease of exposition.

overstate the dispersion of prosecutor effects and overestimate prosecutor discretion. I avoid this problem by using a setting where cases are conditionally randomly assigned. I can also illustrate empirically that prosecutor leniency is uncorrelated with many observed defendant and case characteristics that would alter case outcomes.

Even in the case of no prosecutor selection, there could be concerns that the prosecutor leniency distribution I estimate is due to chance. This is because even in the absence of meaningful differences in prosecutor leniency, there would be some dispersion in prosecutor leniency. To deal with this concern, I perform a placebo test where I randomly reassign prosecutor to cases. If my estimate of the standard deviation of prosecutor leniency is well outside of the distribution of estimates from the placebo test, then I can conclude my findings are not due to chance.

4   Results

4.1   Estimates of Prosecutor Leniency

First, I plot the distribution of prosecutor leniency in Figure 1. Prosecutor leniency is a prosecutor-specific random effect that summarizes a prosecutor's average, time-invariant, propensity for guilty outcomes. Higher prosecutor leniency indicates a prosecutor is harsher or produces more guilty outcomes, and lower values indicate less guilty outcomes or that a prosecutor more lenient.

Given the distribution in Figure 1, the prosecutor assigned to a defendant's case is very important for conviction. Prosecutor leniency ranges from -7 to 8.4 percentage points, indicating that replacing the most lenient prosecutor with the harshest increases the odds of a guilty outcome by 15.4 percentage points or 27 percent. One standard deviation (0.029 percentage point) increase in prosecutor leniency corresponds to a 5 percent increase in the odds of a guilty outcome.

The variation in prosecutor leniency has a meaningful magnitude compared with other defendant characteristics determined to be very important for case outcomes. Prosecutors

are often trained to design plea deals (or exercise their leniency) based on a defendant's criminal history. For example, defendants with a prior conviction are 85 percent less likely to receive an adjournment in contemplation of dismissal than those with no previous convictions. Replacing a prosecutor with one that is two standard deviations harsher is similar to adding a prior arrest to a defendant's record (5.8 versus 7.4 percentage points based on the effects in column 1 of Table 2). Second, there is a vast literature establishing racial disparities and the importance of race in criminal justice outcomes. A one standard deviation increase in prosecutor leniency is similar to the difference in the odds of a guilty outcome between a black and white defendant (2.9 versus 3.5 percentage points).

Finally, even without meaningful variation in prosecutor leniency, it is possible to estimate a distribution of prosecutor leniency by chance. To deal with this concern, I perform a placebo test where I randomly reassign prosecutors to cases. Suppose my estimate of the standard deviation of prosecutor leniency from Figure 1 is well outside of the distribution of estimates from the placebo test. In that case, I can conclude my findings are not due to chance. The results of this test are shown in Figure 2. No estimate from the placebo exercise is greater than my estimate. Therefore, I conclude there is meaningful variation in leniency across prosecutors.

4.2   Exoegenity of Prosecutor Leniency

I start this section by showing that prosecutor leniency is not correlated with important confounding factors. While I expect this to be true based on the case assignment process at the New York County District Attorney's Office, I also provide empirical evidence. First, I demonstrate that the factors I consider are predictive of a guilty outcome. I do so by regressing *Guilty* on defendant and case characteristics. Each specification includes screening date effects. Specifically, I examine whether defendant gender, age, criminal history, case type (drug, property, person), number of charges, type of misdemeanor (a or b), and characteristics of the other case charges are correlated with prosecutor leniency. Results are reported in column 1 of Table 2. In this column, most of the coefficients are statistically

significant at the one percent level. Further, the large F-statistic (F=790) indicates that these characteristics are highly predictive of a guilty outcome.

Next, I regress my prosecutor leniency estimate on defendant and case characteristics (determined before a case is assigned to a prosecutor). Of the 20 coefficients reported in Column 2 of Table 2, only two are statistically significant, which is consistent with random chance. Further, the coefficients on each covariate are close to zero. For example, the coefficient on prior conviction indicates defendants with a previous conviction happen to have prosecutors that are 0.08 percentage points harsher. This estimate corresponds to a prosecutor that is 3 percent of one standard deviation harsher. Case and defendant characteristics are marginally jointly significant with an F-statistic of 1.617. However, compared to the F-statistic in column 1, which is nearly 500 times larger, this F-statistics is small. Finally, the adjusted R-Squared of 0.002 shows that only 0.2 percent of variation in prosecutor leniency can be explained by the variables included.

To supplement the exogeneity test in Table 2, I also demonstrate that case and defendant controls do not meaningfully change my prosecutor leniency estimates. To do so, I calculate Equation (2) both with and without case and defendant characteristics. Given the conditional random assignment of prosecutors to cases, we should expect that the two estimates' distributions should be very similar. Figure 3 shows the two distributions of estimates with screening date fixed effects removed. The two distributions are visibly very similar. The estimates across these models have a very high correlation (correlation coefficient = 0.89). The distribution of estimates with and without controls have similar standard deviations, 0.029 and 0.032, respectively. This exercise shows that case and defendant characteristics are not very important for estimating prosecutor leniency.

I also include another test to demonstrate prosecutor leniency is not correlated with confounding factors. The intuition behind this test is to show the underlying probability of guilt for a defendant, as predicted before her case is assigned to a prosecutor, is unrelated to her prosecutor's leniency. To do so, I predicted the probability of a guilty outcome for each defendant using all observable characteristics. Precisely, I predict guilt using defendant

gender, age, criminal history, case type (drug, property, person), number of charges, type of misdemeanor (a or b), and characteristics of the other charges after removing prosecutor leniency estimates. Next, I plot the average predicted value of guilt at the prosecutor level and prosecutor leniency after controlling for screening date fixed effects. If the predicted values are similar for prosecutors with different leniency levels, I provide further evidence that the underlying probability of conviction is not correlated with prosecutor leniency. The results of this test are shown in Figure 4. There is no visible or statistically significant relationship between predicted guilt and prosecutor leniency.[12] This figure illustrates prosecutor leniency is uncorrelated with potential confounding factors. Together these three tests provide strong support for the conditional random assignment of prosecutors.

4.3 Prosecutor Characteristics

In this section, I explore prosecutor leniency across defendant race, defendant criminal history, arrest severity, and arrest crime type. I consider defendant race because there is an extensive literature documenting racial disparities and the importance of race in criminal justice outcomes. I also choose defendant criminal history, arrest severity, and arrest crime type because these characteristics often determine prosecutor guidelines for plea deals and sentencing. Spohn and Holleran (2001) document that prosecutors believe the strength of evidence, seriousness of offense, and defendant criminal history drive prosecutor decision making. At the District Attorney of New York, plea offers are made based on the office's guidelines. These guidelines explicitly design offers based on a defendant's record and the severity of charges (Kutateladze and Andiloro, 2014).

Because prosecutor leniency from Equation (2) is measured at the prosecutor level, it is difficult to examine how case and defendant characteristics alter leniency. Therefore, I reestimate Equation (2) and allow random effects to vary at the prosecutor-by-characteristic level. For example, for prior arrests, I estimate two random effects for each prosecutor, one for a prosecutor's cases where the defendant has a prior arrest and one for cases where the

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[12]Formally, I regress predicted guilt on prosecutor leniency. The coefficient on prosecutor leniency from the regression of predicted guilt on leniency is 0.07. The coefficient is not significant at conventional levels (p-value=0.247).

defendant has no prior arrests. This will give me 270 unique prosecutor leniency measures.

First, I show results for defendant race in Figure 6. On average, prosecutors earn more guilty outcomes for black and Hispanic defendants compared to white defendants. Prosecutors also earn on average more guilty outcomes for black defendants compared to Hispanic defendants. This is consistent with the first stage results in Table 2. A Kolmogorov-Smirnov test also shows that the distribution of leniency for white and black defendants and Hispanic and black defendants are not equal (p-value = 0.001 and p-value=0.001). However, I cannot reject the equality of the white and Hispanic defendant's distributions (p-value = 0.299). The right tail of each of the distributions is reasonably similar. However, there is a longer left tail for white defendants. This is consistent with prosecutors deviating downward from the average odds of a guilty outcome more for white defendants than black and Hispanic defendants. The effect of being assigned a one standard deviation more lenient prosecutor decreases the odds of a guilty outcome by 4.3 percent for black defendants, 4.7 percent for Hispanic defendants, and 5.2 percent for white defendants. These results are consistent with the story that prosecutors exercise greater leniency for white defendants than minorities, but they are equally likely to be harsher across defendant race. It is important to note that differences across races are relatively small, indicating that discretion is not exercised in a vastly different manner across defendant race.

Next, I show characteristics that the District Attorney of New York explicitly considers in offering plea deals. I begin with criminal history in Figure 7a. There is a sizeable visible difference in the average prosecutor leniency for defendants with and without a prior arrest. On average, defendants with a prior arrest are much more likely to face a guilty outcome than those without. A Kolmogorov-Smirnov test also concludes that the two distributions are not equivalent (p-value=0.000). It also appears that prosecutors exercise more discretion for defendants with no prior arrests. The standard deviation for defendants with no criminal history is 46 percent larger than those with no prior conviction (standard deviations of 0.039 and 0.057, respectively). The effect of being assigned a one standard deviation harsher prosecutor increases the odds of a guilty outcome by 7 percent for defendants with a prior

arrest, but 10 percent for defendants with no prior arrest. This indicates prosecutors are more willing or able to exhibit discretion when their defendants do not have prior arrests.

In Figure 7b, I show results by arrest severity. A Misdemeanors are the most severe type of misdemeanor, punishable by up to a year in jail. Those convicted of B Misdemeanors face at most 90 days in jail. All other misdemeanors at unclassified (U Misdemeanor). U Misdemeanors are considered the least severe arrest type. Prosecutors exercise the most discretion for the least severe misdemeanors (U and B). The standard deviation in prosecutor leniency is the greatest for U Misdemeanors, then B Misdemeanors, and finally A Misdemeanors (standard deviation = 0.058, 0.052, and 0.047, respectively). Each distribution is statistically different from the others (p-value=0.000). The effect of being assigned a one standard deviation harsher prosecutor increases the odds of a guilty outcome by 8 percent for A Misdemeanor cases, but 10 percent for U Misdemeanor cases.

Prosecutors also consider the quality of evidence when disposing of a case. While I do not directly observe case evidence, I can explore effects by crime type. It is also generally believed that most property crimes have less hard evidence than other types of crimes. For example, physical evidence is considered the most reliable kind of evidence by prosecutors, and prosecutors agree that physical evidence in property cases is typically weaker than in drug cases (Frederick and Stemen, 2012; Kutateladze et al., 2016). Results for crime type are shown in Figure 7c. Each distribution is statistically different from the others (p-value=0.000). Guilty outcomes are more common on average for other and property crimes. Property crimes and person crimes have greater dispersion in leniency measures than drug and other crimes (standard deviation of 0.109 versus 0.048 and 0.055). The effect of being assigned a one standard deviation harsher prosecutor increases the odds of a guilty outcome by 19 percent for property crimes compared to 8 percent for drug crimes. This indicates that for cases with less physical evidence, there is greater room for prosecutor discretion. This is also likely to be true for person crimes; however, there are many fewer person crime misdemeanors in New York County, so these results should be interpreted cautiously.

Taken together, these results show that prosecutors are willing or able to exercise the most

significant discretion for cases where defendants have no prior arrests, commit less severe crimes, and have less physical evidence on their cases.

4.4   Missing Values

Look forward to reading this in a future draft!

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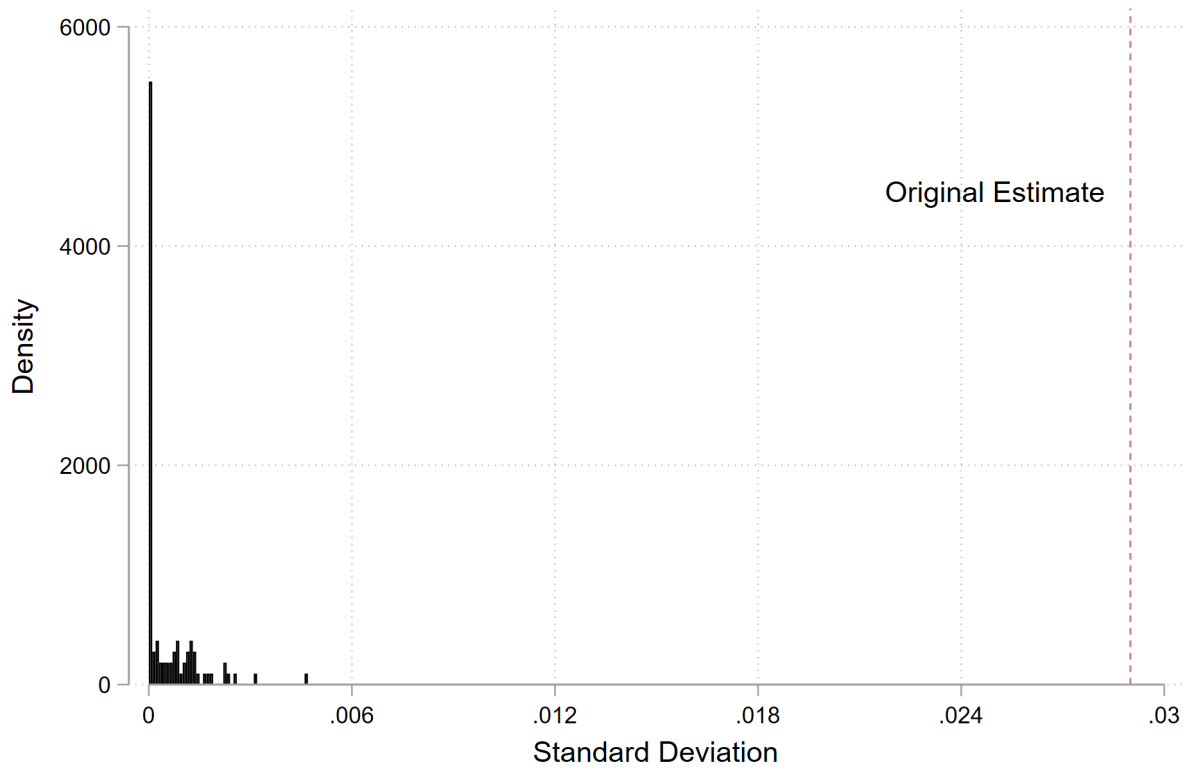
5   Tables and Figures

Figure 1: Prosecutor Leniency


Standard Deviation = .029
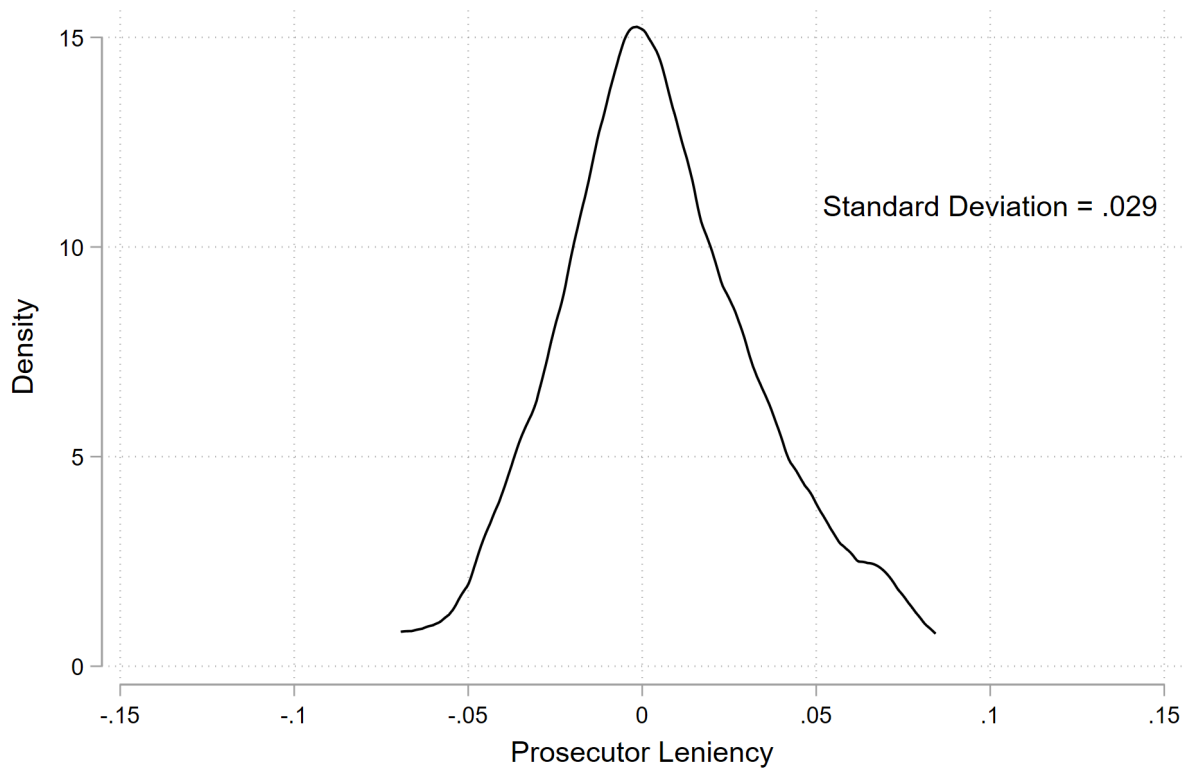
Notes: This figure shows the distribution of prosecutor leniency estimates. Higher values indicate a prosecutor is more likely to earn a guilty outcome. There are 135 prosecutor in the sample.

Figure 2: Placebo Test

Notes: This figure plots the results from placebo test where I randomly re-assign prosecutors to cases. I then plot the standard deviation in prosecutor leniency from each iteration after prosecutor effects are re-calculated. The original estimate is also plotted for reference.

Figure 3: Prosecutor Leniency With and Without Controls (Exogeneity Test)
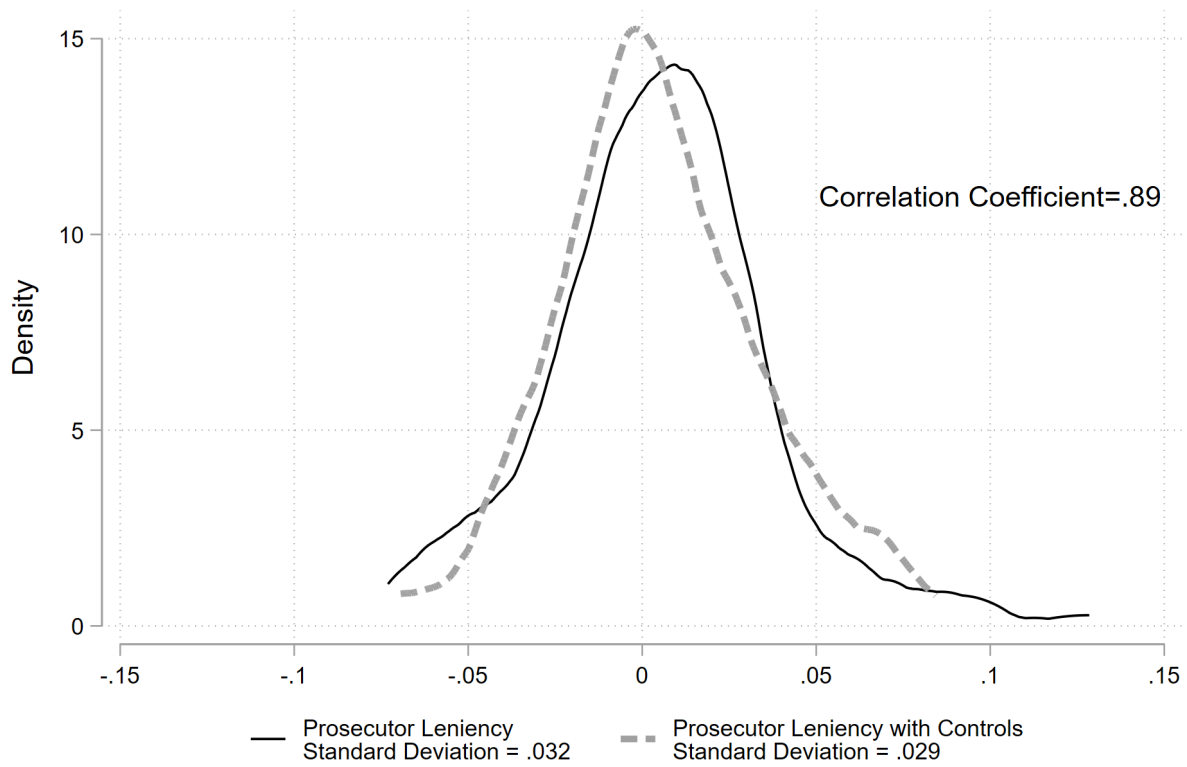

Notes: This figure shows the distribution of prosecutor leniency measured by estimating a random effects model with and without case and defendant controls.

Figure 4: Predicted Guilt and Prosecutor Leniency (Exogeniety Test)
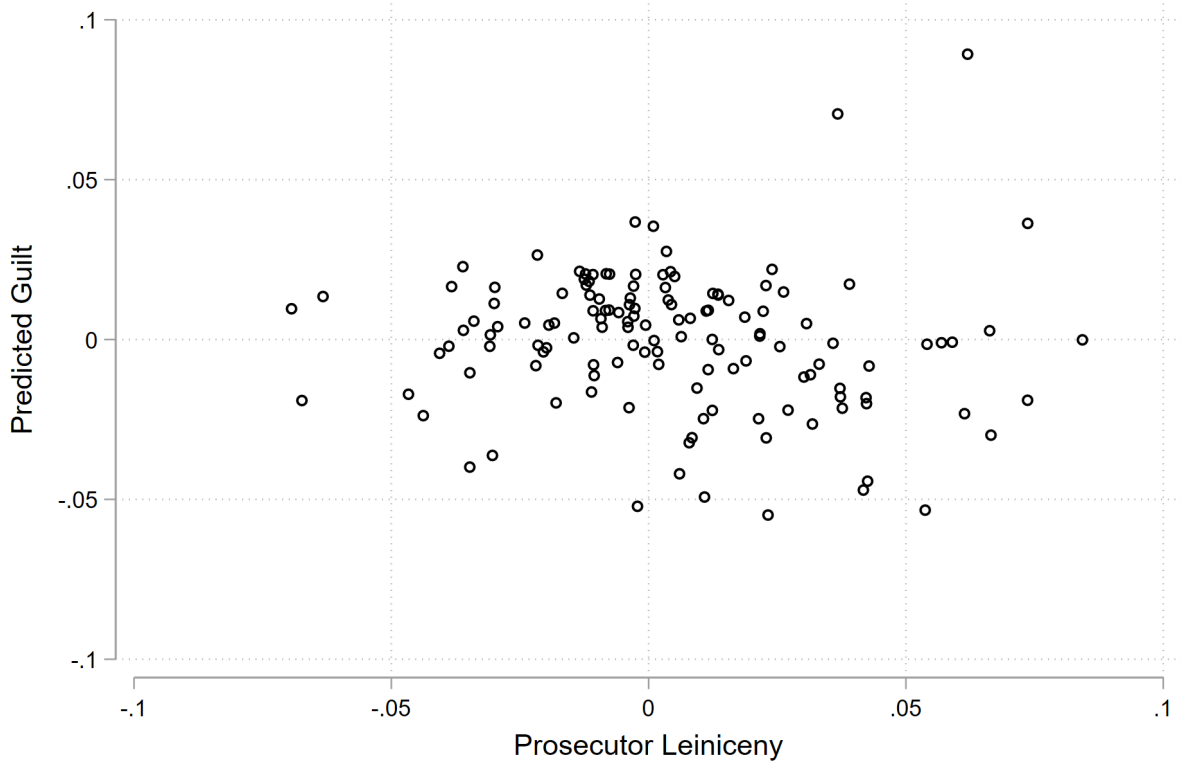
Notes: This figure plots the relationship between predicted guilt and prosecutor leniency measures (after removing screening date fixed effects) for each prosecutor in the sample. I predict *Guilty* using defendant gender, age, criminal history, as well as case type (drug, property, person), number of charges, type of misdemeanor (a or b) and characteristics of the other charges of the case after removing prosecutor leniency estimates. Then I collapse the predicted values to the prosecutor level.

Figure 5: Prosecutor Leniency by Prosecutor Gender and Race

(a) Random Effects by Prosecutor Gender

Female Prosecutors
Standard Deviation = .03

Male Prosecutors
Standard Deviation = .028
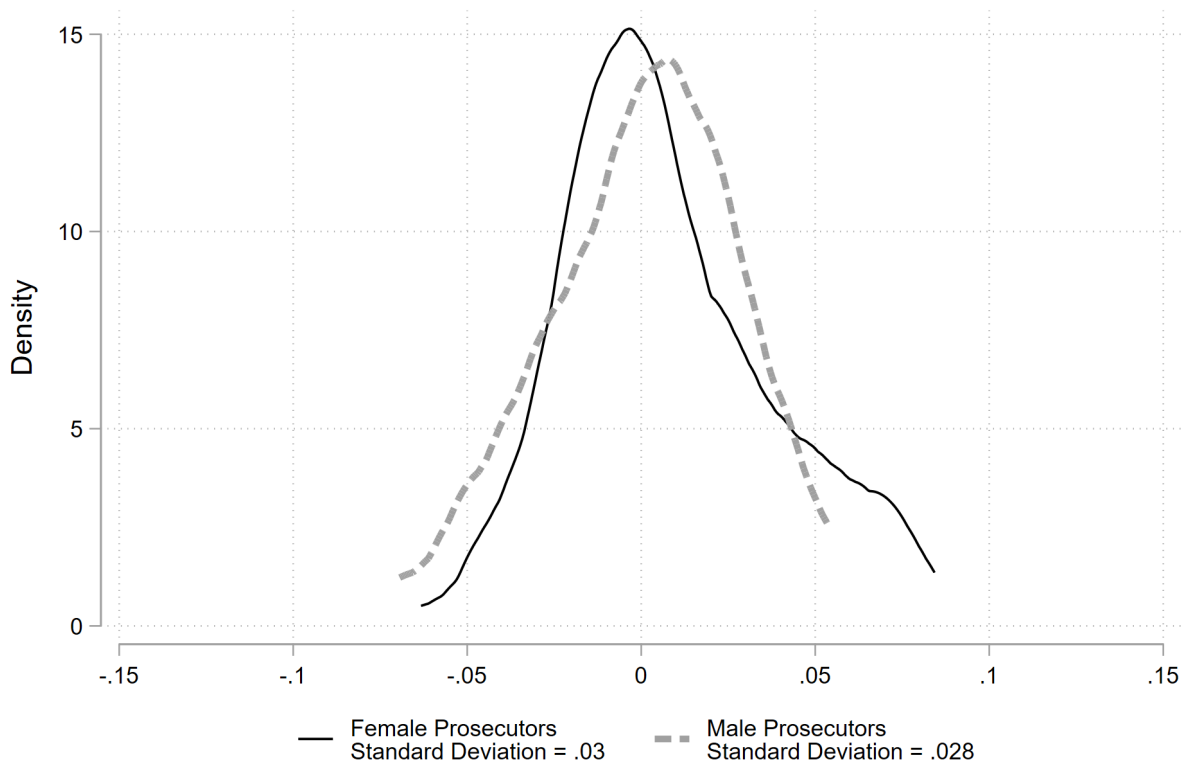
(b) Random Effects by Prosecutor Race

Non-White Prosecutors
Standard Deviation = .032

White Prosecutors
Standard Deviation = .028
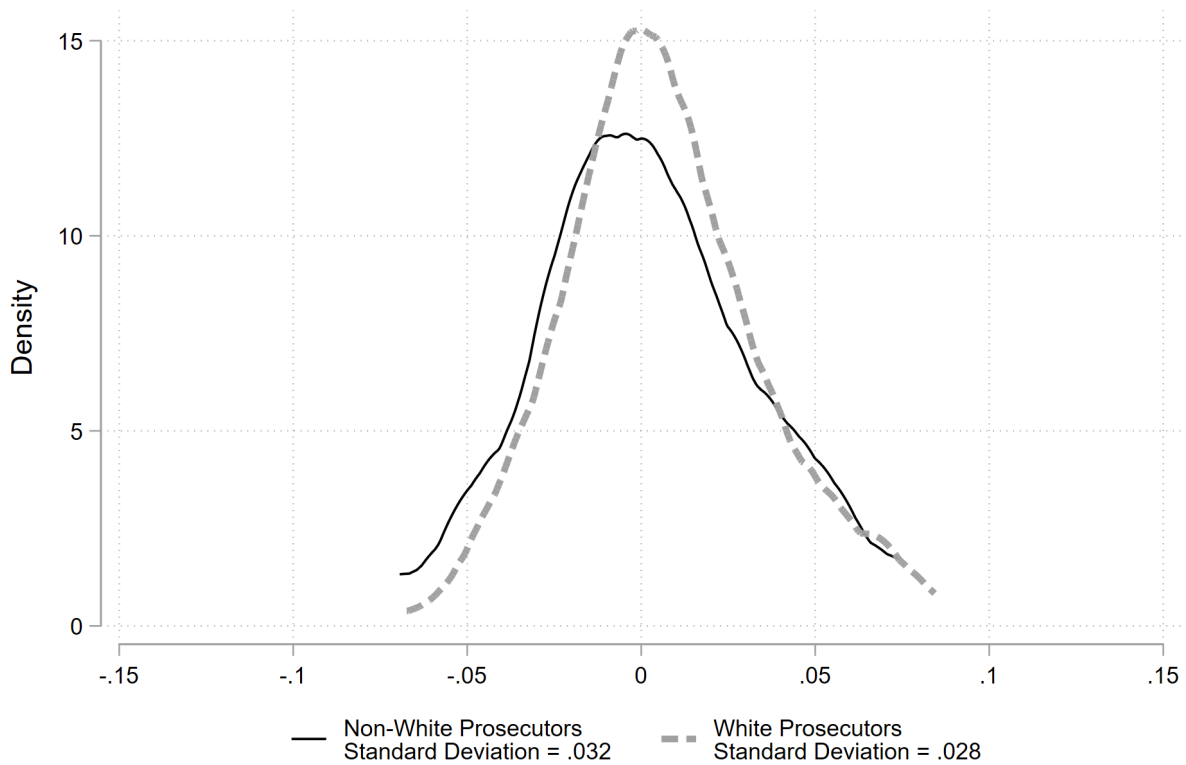
Notes: These figures show prosecutor leniency by prosecutor characteristics. Figure a shows male and female prosecutors and Figure b shows white and non-white prosecutors.

Figure 6: Prosecutor Leniency by Defendant Race

Black Defendants
Standard Deviation = .025

Hispanic Defendants
Standard Deviation = .027

White Defendants
Standard Deviation = .03
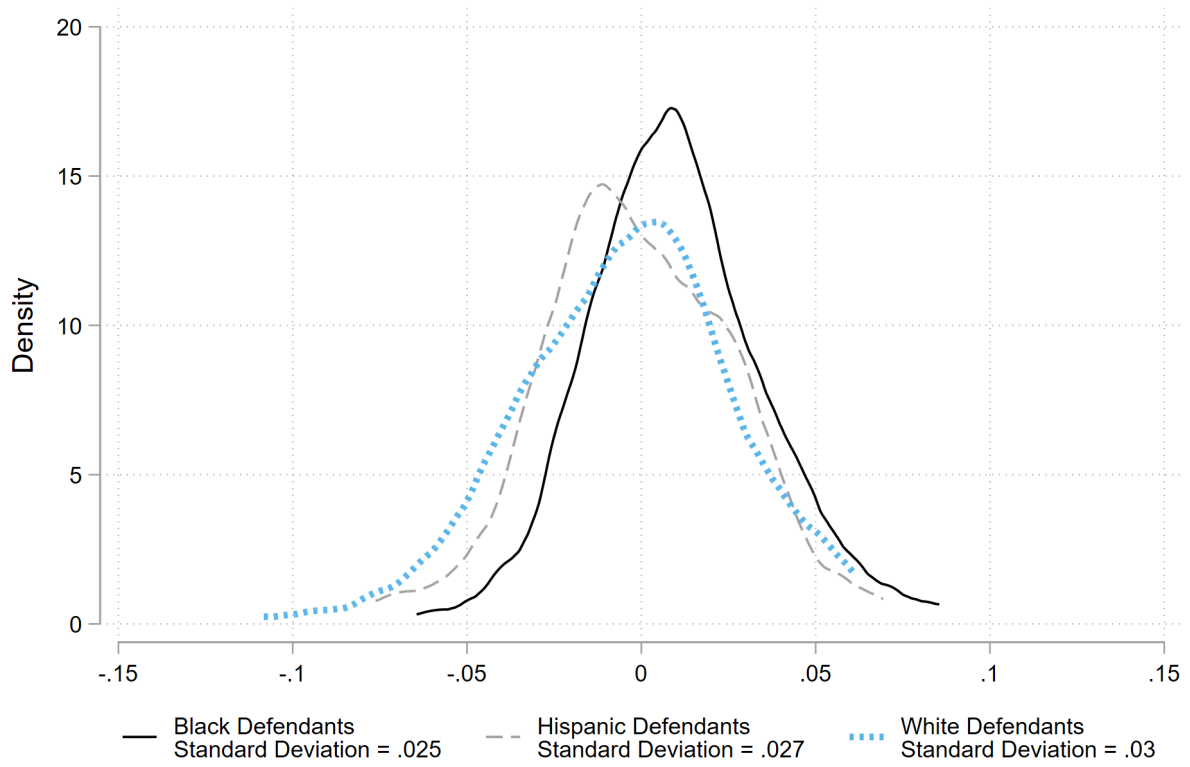
Notes: This figure shows prosecutor leniency for black, white, or Hispanic defendants.

Figure 7: Prosecutor Leniency by Plea Guideline Characteristics
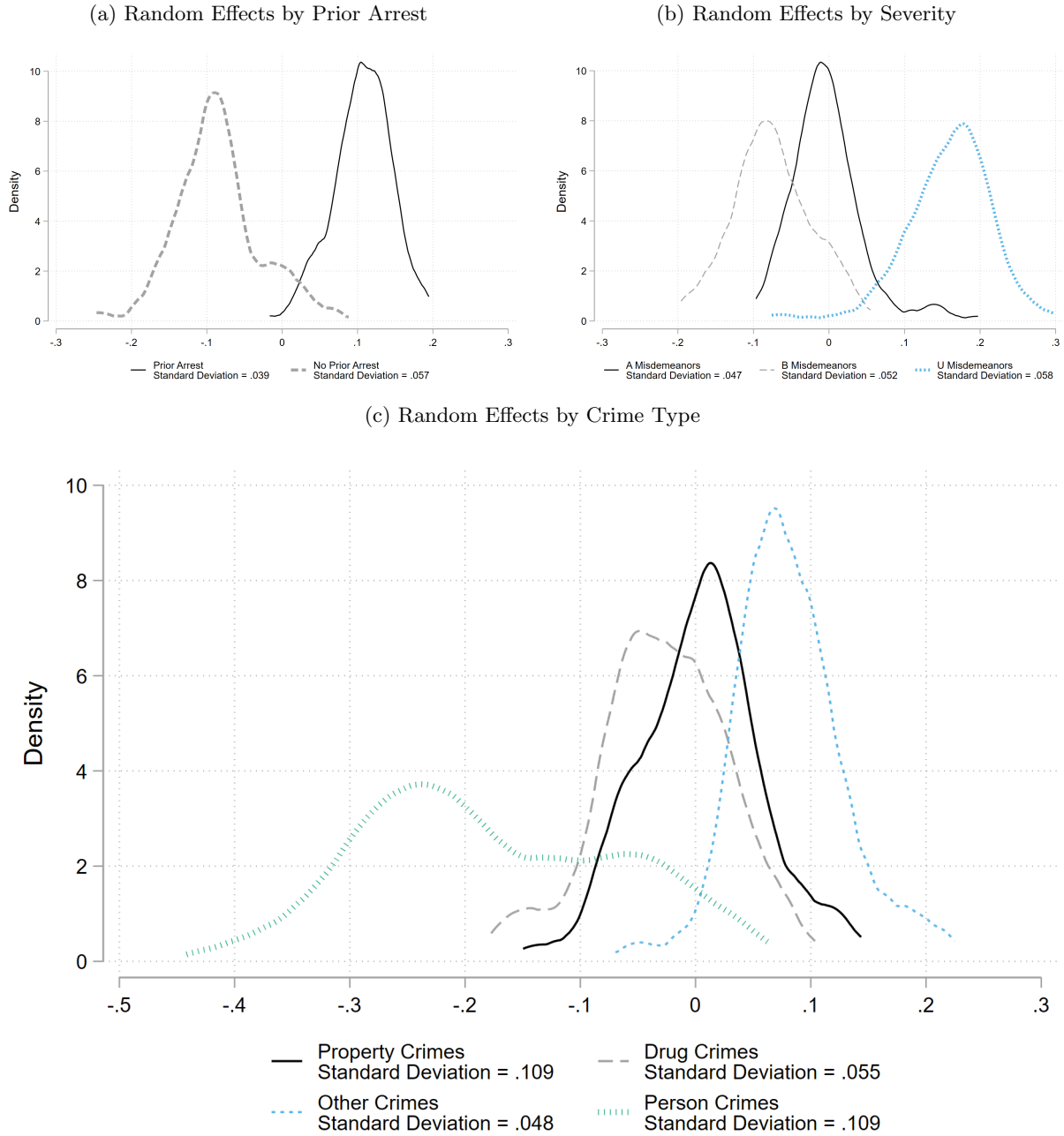
(a) Random Effects by Prior Arrest

(b) Random Effects by Severity

(c) Random Effects by Crime Type

Notes: These figures show prosecutor leniency for defendants with and without a prior arrest (Figure a), severity of arrest (Figure b), and crime type (Figure c).
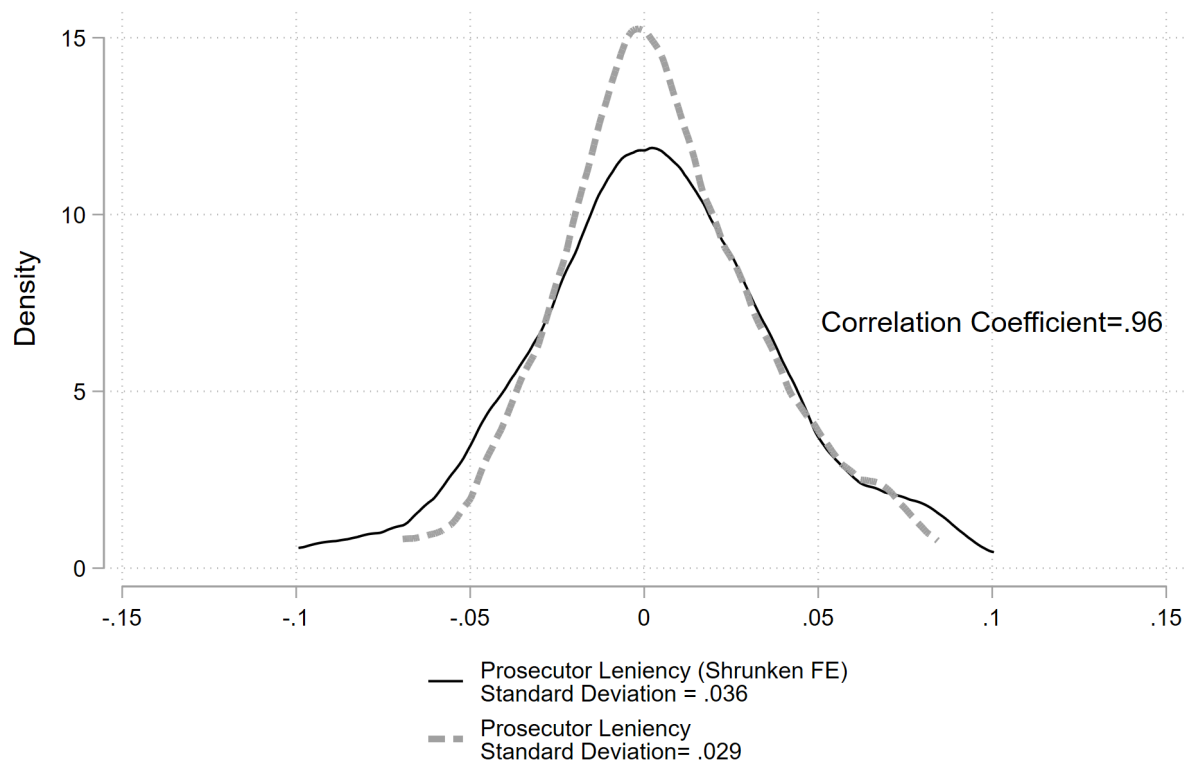
(a) Random Effects vs. Fixed Effects

Correlation Coefficient=.96

Density

Prosecutor Leniency (Shrunken FE)
Standard Deviation = .036

Prosecutor Leniency
Standard Deviation= .029

Table 1: Summary Statistics

	Mean	Standard Deviation
Panel A: Defendant Characteristics		
Male Defendant	0.816	0.388
Defendant Age	33.39	12.61
Black Defendant	0.464	0.499
White Defendant	0.151	0.358
Hispanic Defendant	0.336	0.472
Asian Defendant	0.0468	0.211
Prior Arrest	0.470	0.499
Prior Felony Arrest	0.258	0.438
Prior Conviction	0.411	0.492
Prior Felony Conviction	0.133	0.340
Panel B: Case Characteristics		
Drug Crime	0.233	0.423
Property Crime	0.387	0.487
Person Crime	0.0746	0.263
Other Crimes	0.305	0.460
Number of Counts	1.038	0.689
A Misdemeanor	0.615	0.487
B Misdemeanor	0.224	0.417
U Misdemeanor	0.161	0.368
Other Misdemeanor	0.378	0.485
Other Infraction	0.196	0.397
Number of Other Charges	0.671	0.783
Number of Other Counts	0.701	1.079
Panel C: Outcomes		
Guilty	0.573	0.495
Case Dismissed	0.215	0.411
Decline to Prosecute	0.00297	0.0544
ACD	0.208	0.406
Observations	125428	

mean coefficients; sd in parentheses

Table 2: Randomization Test

	Guilty	Prosecutor Leniency
Defendant Characteristics		
Prior Arrest	0.0739***	0.000204
	(0.00451)	(0.000353)
Prior Felony Arrest	0.00440	0.000171
	(0.00406)	(0.000274)
Prior Conviction	0.252***	0.000887*
	(0.00621)	(0.000460)
Prior Felony Conviction	0.0167***	-0.000152
	(0.00424)	(0.000289)
Male Defendant	0.0321***	0.000428
	(0.00424)	(0.000291)
Defendant Age	0.00514***	0.0000206**
	(0.000132)	(0.00000793)
Black Defendant	0.0490	-0.000320
	(0.0344)	(0.00193)
White Defendant	0.0135	-0.000411
	(0.0337)	(0.00195)
Hispanic Defendant	0.0185	-0.000275
	(0.0338)	(0.00197)
Asian Defendant	0.0232	-0.00110
	(0.0345)	(0.00188)
Case Characteristics		
Drug Crime	0.00141	0.000945
	(0.00826)	(0.000623)
Property Crime	0.0428***	0.000707
	(0.00646)	(0.000658)
Person Crime	-0.200***	-0.000251
	(0.00803)	(0.000527)
Number of Counts	0.00760***	-0.0000570
	(0.00221)	(0.000104)
A Misdemeanor	-0.226***	-0.000297
	(0.00683)	(0.000559)
B Misdemeanor	-0.299***	-0.000461
	(0.00867)	(0.000617)
Other Misdemeanor	-0.00378	0.000309
	(0.00746)	(0.000526)
Other Infraction	0.0432***	0.000653
	(0.00647)	(0.000469)
Number of Other Charges	0.0339***	-0.000524
	(0.00573)	(0.000376)
Number of Other Counts	0.000478	0.000167
	(0.00169)	(0.000111)
Observations	125428	125428
F-Statistic	790.520	1.617
P-Value	0.000	0.057
Adjusted R-Squared	0.213	0.002
Outcome Mean	0.573	-0.000
Outcome SD	0.495	0.027

Standard errors in parentheses
* $p < .1$, ** $p < .05$, *** $p < .01$

Notes: Standard errors are clustered at the officer level. Each column accounts for screening date fixed effects. The reported F-Statistic (p-value) is from a joint significance test of the covariates shown.