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Prosecutorial Guidelines and Courtroom Workgroups

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ABSTRACT

Prosecutor discretion significantly influences criminal case outcomes through charging decisions, plea bargaining, and sentencing recommendations. However, criminal case outcomes are also shaped by the interactions between judges and defense attorneys, who exercise their own discretion. Our study examines how internal prosecutorial guidelines that constrain discretion affect sentencing outcomes and case resolution types. We consider two distinct guidelines adopted in Philadelphia, which vary in terms of transparency and specificity: one offers broad guidance and the other imposes stricter targets. Using a difference-in-differences approach, we find that both policies resulted in reduced sentences. The more predictable plea terms encouraged the defense to opt for judge sentencing over negotiated pleas, leading to shorter sentences. These findings suggest that defense attorneys respond strategically to shifts in prosecutorial behavior, weighing sentencing expectations across legal actors. As a result, the effects of prosecutorial guidelines on outcomes are shaped by how other courtroom participants adapt and interact within the broader legal environment.

Introduction

Prosecutors wield significant discretion at multiple decision points, shaping the trajectory and outcomes of criminal cases. They decide whether and how to file charges, make bail recommendations, divert cases, negotiate plea deals, and recommend sentences for convicted individuals. In recent years, prosecutorial policies have gained attention as instruments for advancing criminal justice reform (Barkow, 2009; Bazelon, 2020; Pfaff, 2017a). Internal guidelines, in particular, offer one mechanism for regulating discretion and potentially reducing the criminal justice system's footprint. Yet, because multiple actors jointly produce sentencing outcomes, the effects of such policies depend in part on how judges, defense attorneys, and others respond to them. This article presents empirical analyses of the impact of internal prosecutorial sentencing guidelines on sentence length and case resolution.

Legal scholars contend that internal guidelines can shape "office cultures, norms, and ideals that value more than maximizing conviction" (Bibas, 2009). These guidelines

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could control the flow of cases into the court system, set parameters on plea offers and negotiations, and influence sentencing outcomes. Line prosecutors operate under policies set by head prosecutors. Prosecutorial guidelines can promote consistency, provide training for new prosecutors, and help set priorities within the office (Eisenstein et al., 1998; Maleng, 1987; Mayers, 1996). At a broader level, guidelines could communicate the district attorney's decision-making process and goals to the public and other legal actors (Mayers, 1996). Different offices have implemented internal guidelines to raise the threshold for filing charges, specify the type of charges that should be filed, and reduce the extent of plea bargaining (Eisenstein et al., 1998; Kutateladze et al., 2016; Wright & Miller, 2002). However, few studies have evaluated the impact of prosecutorial guidelines, especially for guidelines that focus on sentencing rather than charging decisions.

Critically, prosecutors operate within a system of constraints shaped by interactions with other legal actors. The police's ability to collect evidence and testify influences case outcomes down the line (Abel, 2017; Graef et al., 2023). Legislators can pass laws expanding criminal codes, creating sentencing guidelines, or setting rules for criminal procedures (Wright & Engen, 2006). Judges can reject the terms of negotiated plea offers that they believe are too lenient or provide an alternative sentencing option through an open plea. The aim of these policies, whether they seek to change the severity of sanctions or how cases are processed, may lead to varying levels of resistance that depend on each actor's goals. The goal of our article is to determine whether internal policies can alter case outcomes and local norms.

Literature Review and Theoretical Framework

How Do Prosecutors Affect Sentencing Outcomes?

After initial charging, prosecutors influence sentencing outcomes through several mechanisms: charge bargaining, sentence bargaining, and providing sentence recommendations.[1] Charge bargaining typically involves dismissing more serious charges in exchange for a guilty plea. Charge bargaining can substantially reduce sentences, especially in jurisdictions with narrow presumptive sentencing guidelines (Piehl & Bushway, 2007). The decision to modify charges depends on the strength of the evidence (Kutateladze et al., 2016), the type of offense (Shermer & Johnson, 2010), or prior convictions (Albonetti, 1992). Prosecutors can use substantial assistance departures to reduce sentence length (Hartley et al., 2007; Spohn & Fornango, 2009). Conversely, prosecutors can apply mandatory minimums to increase sentence severity (Rehavi & Starr, 2014; Starr & Rehavi, 2013; Ulmer et al., 2007).

Prosecutors can also engage in sentence bargaining, and if the terms of a plea offer are rejected, they can offer recommendations to the judge. In jurisdictions where the recommended sentence ranges are large or overlap across offense grades, the

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[1]While our article focuses on sentencing, we note that there is also a small but growing body of literature that examines the effects of prosecutor-driven criminal justice reform on defendants, courts, and communities, considering other decision-points, such as charging, diversion or bail setting (Agan et al., 2021; Amaral et al., 2024; Amaral et al., 2025; Goldrosen, 2022; MacDonald & Raphael, 2020; Mitchell et al., 2022; Nguyen, 2022; Owusu, 2022; Petersen et al., 2024; Shaffer & Harrington, 2022; Sloan, 2019; Tuttle, 2019).

impact of sentence bargaining and recommendations on final sentences may be greater (Wright & Engen, 2006). Charge and sentence bargaining jointly shape outcomes, making their distinct effects difficult to disentangle, as since the final sentence is a product of charge bargaining, sentence bargaining, prosecutors' sentence recommendations, and judicial discretion.

Empirical studies show that sentencing outcomes reflect both the discretion prosecutors exercise and the institutional environments in which they operate. For example, research in New York City finds that charge and sentence offers respond differently to legal and extralegal factors, such as attorney type (Kutateladze et al., 2015, 2016). Defendants' willingness to accept plea offers may hinge on their perceived value (Metcalfe & Chiricos, 2018) or uncertainty around trial outcomes (Testa & Johnson, 2020).

Importantly, prosecutorial discretion is shaped by office norms, supervision practices, and formal policies. Prosecutors are responsive to organizational rules and aware of how their conduct may be assessed throughout the course of case's lifespan; for instance, when prosecutors' promotion criteria are tied to conviction rates, they will decline cases with discrepancies in the arrest report or where they perceive low credibility among the victim and witnesses (Frohmann, 1991). Some offices adopt internal guidelines to regulate how line prosecutors screen and negotiate cases. Comparing the policies and external constraints of ten urban jurisdictions, Mellon et al. (1981) identified four types of prosecutorial policy: legal sufficiency checks, quick disposition incentives, rehabilitative goals, and trial-worthiness standards. Where official policies are vague, unit supervisors can fill the gap (Stemen & Frederick, 2013). In the federal system, line prosecutors changed their use of departures and mandatory minimums in response to Attorney General memos and shifts in leadership priorities (Lynch et al., 2021). These findings suggest that internal policies can meaningfully structure prosecutorial behavior, but their implementation depends on local organizational context (Kutateladze et al., 2016; Wright & Miller, 2002).

Prosecutorial Policies within Courtroom Dynamics

Our empirical work examines how prosecutorial guidelines shape courtroom dynamics. To contextualize these findings, we review three key theoretical frameworks: courtroom workgroups, courts as communities, and inhabited institutions.

The courtroom workgroup model highlights the cooperative relationships among prosecutors, defense attorneys, judges, and other legal personnel who work together to resolve – rather than simply litigate – criminal cases (Eisenstein & Jacob, 1977). These actors often pursue shared goals such as reducing uncertainty, managing caseloads, and preserving professional cohesion (Heumann et al., 2021). Over time, stability and repeated interactions build mutual understanding, enabling prosecutors and judges to anticipate each other's preferences. Taking Florida as a case study, Metcalfe (2016) finds that higher levels of familiarity and similarity between judges and prosecutors are associated with increases in plea rates and reduced time to dispositions.

The courts as communities perspective further develops this idea by emphasizing how local legal cultures shape behavior. Courtroom actors develop shared attitudes and informal norms, and in particular, "going rates" for charges and sentences that

promote consistency and efficiency (Albonetti, 1987; Dixon, 1995; Eisenstein et al., 1998). These norms are shaped by routine interaction and localized expectations rather than top-down mandates. Empirically, there is wide variation in practices across jurisdictions. For instance, in Pennsylvania, sentencing practices varied across counties by local factors, such as the level of correctional resources or caseload pressures (Ulmer & Johnson, 2004). In the federal context, some U.S. district courts reduce charges in fewer than 5% of cases, while others do so for over one-third of defendants (Johnson, 2018). Jurisdictions with more bureaucratic structures tend to exhibit higher charge bargaining rates. Kim et al. (2015) measured the degree to which inter-judge-prosecutor disparities contributed to sentencing differences at the federal level and found that pairing of judges and prosecutors explained more of the variation than just judges or prosecutors alone. Shifts in mid-level actors can also alter norms; the appointment of mid-level organizational actors under Attorney General Sessions played a key role in increasing the use of binding mandatory minimums and incarceration rates (Lynch et al., 2021).

The inhabited institutions perspective views criminal courts as spaces shaped by the actions and interactions of courtroom actors who exercise discretion while navigating both formal rules and informal norms (Rubin et al., 2024; Ulmer, 2019). Organizational culture and policy implementation emerge from these dynamics, as actors interpret and adapt reforms based on local norms and leadership priorities (Ulmer et al., 2025). Line prosecutors often have personal motivations – like public service, trial experience, or work-life balance – that may not align with office-wide policy goals (Wright & Levine, 2018). With experience, they gain flexibility to respond to situational demands and exercise greater independence (Wright & Levine, 2014). These internal tensions play out in courtroom interactions. Empirical research at both the state and federal levels suggests that resistance from courtroom actors – whether prosecutors or judges – can constrain the implementation of policy reforms (Chen et al., 2024; Didwania, 2024). These examples underscore how courtroom culture and discretionary agency mediate the effects of formal prosecutorial policy.

Together, these perspectives underscore that courtroom dynamics are central to understanding how prosecutorial guidelines may be received and influence case outcomes. Policy change is not simply a function of what is written, but how legal actors interpret and enact those policies within their professional communities; case outcomes can be more comprehensively understood if they are examined as a product of joint discretion between legal actors (Lynch, 2019). We note that prosecutorial studies often incorporate the focal concerns perspective, and this is a helpful framework for understanding prosecutorial discretion and sentencing outcomes. However, as this study examines how multiple legal actors respond to policies, particularly the role of defense attorneys who may have different concerns that do not align with the blameworthiness of defendants or protection of the community, we focus on perspectives that seek to understand courtroom dynamics and shifts in dynamics.

Prosecutorial Guidelines

Several scholars argue that prosecutor offices lack the institutional safeguards that constrain discretion in other government agencies, and that internal policies can play

a key role in structuring how line prosecutors operate (Barkow, 2009; Bibas, 2009; Bubany & Skillern, 1975; Pfaff, 2017b; Wright et al., 2021). Miller and Wright (2008) suggest that such policies foster internal norms, with legal training and a shared commitment to consistency and group identity making them effective tools for informal regulation. When one actor adopts a new policy, others may adjust their expectations and "going rates" depending on their own discretion and ability to coordinate. In this way, policies initiated by head prosecutors can reshape courtroom dynamics. Unlike judges or defense attorneys, line prosecutors are subject to top-down directives and may face stronger compliance expectations, especially in offices with hierarchical structures, specialized units, or regular onboarding of new attorneys (Levine & Wright, 2013).

Many of these factors suggest that internal prosecutorial guidelines are more likely to deliver their intended effect. Yet, deviations from policies can be driven by different stakeholders and their adaptations to policies. Prosecutorial guidelines that shift the "going rate" for sentences downward and increase safeguards for taking a case to trial in a very public manner impose formal rules on line prosecutors and induce normative changes to courtroom communities. But the final effect of the policy will depend on how workgroup members adapt. Internal memos that regulate prosecutorial discretion could lead to hydraulic displacement such that the constraint on prosecutors' discretion simply shifts it to other parties (Miethe, 1987; Starr & Rehavi, 2013).

The Current Research

We explore the effects of two policy changes that introduced different kinds of prosecutorial guidelines. The first one asked line prosecutors to request less punitive sentences, but it did not include specific sentencing targets; the second established specific targets that capped recommended sentence lengths, which remained applicable even if the prosecutor's offer was turned down. Both policies were made public, thereby reducing information asymmetries across legal actors. We use a difference-in-differences approach, comparing criminal case outcomes in Philadelphia County to those in other Pennsylvania counties before and after the policies' adoption.

We examine three sets of outcomes. First, we analyze sentence length to assess whether introducing prosecutorial guidelines that encourage more lenient sentencing recommendations leads to shorter sentences. Second, we consider disposition type, focusing on the distinction between negotiated guilty pleas – cases in which the defendant both admits guilt and accepts the prosecutor's recommended sentence – and all other case outcomes, including trial convictions and open pleas, where sentencing is determined by a judge. Negotiated guilty pleas can thus be interpreted as reflecting greater prosecutorial bargaining power. Third, we consider the phase in which a case resolves. In Philadelphia, felony cases move through a two-stage negotiation system. If a case is resolved earlier, the defendant foregoes the chance of acquittal or dismissal but doing so preserves court resources and may support collaborative relationships among courtroom actors – factors that may shape defense strategies beyond sentencing considerations alone. These three sets of outcomes therefore allow us to assess how the policies affected both the overall severity of sentencing and the dynamics of plea bargaining in the courtroom.

Our study contributes to the literature in two main ways. First, we exploit two natural experiments to estimate the effects of prosecutorial guidelines on sentences. Because sentencing outcomes often reflect both prosecutor and judge decisions, prior work has largely focused on decisions solely within prosecutors' control, such as charging or declinations (Johnson et al., 2016). Second, we use variation in the memos' designs to examine how courtroom workgroups adapt to increased policy certainty and leniency. Most studies of prosecutorial discretion and courtroom dynamics rely on cross-jurisdictional comparisons and mixed methods. We complement prior studies by using a quasi-experimental design to test the impact of internal guidelines on courtroom workgroups. Our analysis builds on prior theoretical work on plea bargaining dynamics and the notion that negotiations occur in the overlapping "shadows" of both trial outcomes and judicial sentencing tendencies (Bibas, 2004; Bushway et al., 2014). By considering the defense's strategic behavior, we aim to contribute empirical evidence on how courtroom actors respond to procedural uncertainty. As such, our analyses explore the extent to which prosecutorial guidelines can change courtroom practices, and they provide guidance for designing internal policies.

Policy Context

Sentencing in Pennsylvania

Similar to numerous other states, Pennsylvania employs sentencing guidelines to guide judicial decisions. These guidelines provide a recommended range of minimal carceral time, determined by the offense gravity score (OGS) and the defendant's prior record score (PRS). The OGS, spanning from 1 to 15, is computed based on factors such as the nature of the offense, extent of harm, and characteristics of the victim. The PRS typically ranges from 0 to 5 points and is derived from the defendant's previous convictions with more serious offenses accruing higher point values. Additionally, the offense grade sets the statutory maximum penalty, representing the highest level of punishment permissible under the law.

The state sentencing guidelines offer guidance but allow for a broad spectrum of sentencing options. Carceral sentences are structured within a range, consisting of a minimum and maximum duration. Defendants are required to serve at least the minimum sentence, with the remaining time – up to the maximum sentence – spent either in custody or on parole if they are released early. The maximum sentence is required to be at least double the minimum sentence. Sentences deviating from the recommendations can fall within a mitigated or aggravated range, and larger deviations beyond the mitigated or aggravated range represent downward or upward departures.

The guidelines do not provide specific recommendations for probation or supervision length. Probation can be imposed either alongside a carceral sentence (colloquially referred to as a "probation tail") or as an alternative to incarceration. This guideline design tends to lead to extended supervision periods, between potential parole time for individuals released before completing their minimum sentence and additional probation sentences. Only the offense grade and its associated statutory maximum place a limit on supervision length. In 2017, Pennsylvania ranked as the

fourth highest state in the number of adults under community supervision, with 2875 per 100,000 (Kaeble & Alper, 2020).

Case Dispositions

Convictions can be obtained through jury trials, where lay jurors determine guilt; bench trials, where the judge renders a decision after hearing arguments; and pleas, which can be negotiated or open.[2] These case resolution types capture different layers of prosecutorial power. In negotiated pleas, the defense accepts both the conviction and the sentence proposed by prosecutors. In open pleas, the defense pleads guilty without agreeing to the sentence, leaving that decision to the judge. If no plea agreement is reached but both sides seek a guilty plea, the defense will pursue an open plea. The prosecutor then recommends a sentence to the judge, but the judge makes the final decision. At 82%, pleas are the most common form of felony conviction in Philadelphia.[3] While both open pleas and trials leave sentencing to the judge, they can differ in how judges and other courtroom actors interpret the defendant's behavior. Open pleas may be seen as cooperative or treated as a mitigating factor even when they reject the prosecutor's specific offer, potentially leading to more favorable outcomes than at trial, where guilt is not directly recognized and the proceedings are shorter.

In Philadelphia, felony cases can be resolved in one of two phases. First, there is the "SMART room phase."[4] If a case passes the preliminary evidence hearing, it is usually assigned to a prosecutor who works on crafting an initial plea offer (Abrams et al., 2025). SMART room resolutions involve a distinct set of judges and prosecutors who are generally considered more predictable and lenient compared to those in the trial phase. If the defense and prosecutor fail to negotiate a deal in the SMART room phase, the case then moves to the trial phase, which is handled by a different set of judges and prosecutors. At this stage, the case can end in conviction (through plea or trial), dismissal, or acquittal.

Philadelphia's Prosecutorial Guideline Policies

Lawrence Krasner was elected as Philadelphia's District Attorney on November 7th, 2017, with a reformist agenda. His platform included goals like decreasing reliance on cash bail, reducing pretrial detention, and minimizing supervision. Specific details and timing of these reforms were not disclosed in advance. Appendix Figure A.1 provides a timeline of adoption of the policies that we study, which we use to define the different study periods for our empirical analyses.

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[2]Cases can also be dismissed by a judge, withdrawn by a prosecutor, or result in acquittal at trial.

[3]We note that this rate is lower than the average 95% rate in the USA (Reaves, 2013). This difference is partly due to Philadelphia's higher use of bench trials (Feeley, 1986; Schulhofer, 1983). Moreover, Ouziel (2023) highlights significant variation in bench trial rates across jurisdictions, suggesting that our setting may not be an outlier, but rather one model among a constellation of practices.

[4]SMART stands for Strategic Management Advance Review and Consolidation, Readiness, and Trial.

On February 15th, 2018, the Philadelphia District Attorney's Office released a policy detailing presumptive guidelines for reducing sentence length and severity ("Broad Policy").[5] In an effort to reduce the scale of penal supervision, this first policy advised prosecutors to make plea offers that target the mitigated range of the sentencing guidelines for non-violent and non-serious offenses, and to request shorter or no probation tails, shorter probation sentences where no incarceration is sought, and shorter sentences for supervision violations.[6]

One year later, on March 21st, 2019, the office released a second policy building upon the presumptive guidelines of the first policy with an explicit focus on reducing supervision time ("Constrained Policy").[7] That is, relative to the first policy, it included concrete targets for sentence recommendations. For felonies, the goal was to achieve an office-wide average of 18 months or less, with a maximum supervision period of 3 years. Additionally, the period of parole was not to exceed the minimum carceral sentence, and all sentences were to be served concurrently. Furthermore, sentencing targets and rules applied to all offers and sentence recommendations, regardless of whether the case was resolved at trial or through an open guilty plea.

While both policies aimed to reduce the scale of supervision conditional on conviction, the second policy was more precise. It provided concrete sentence targets and specifies that these targets hold across disposition types, which has two implications. First, internally, prosecutors had more defined benchmarks. Second, externally, since both policies were publicly released and relayed by local news, the concrete targets became common knowledge, in particular for judges and the defense. Thus, the second policy constrained prosecutors' actions more directly.

To gain insights into practices before then, we spoke with prosecutors who served before 2018, including some who remained employed at the Philadelphia District Attorney's Office and some who had moved on. Before 2018, no explicit policies or publicly known guidelines were in place. Line prosecutors relied on informal guidance provided by their unit managers. Over time, as they gained experience, they operated with increasing autonomy, though their managers continued to offer advice, particularly in complex cases. This decentralized approach meant that while some experienced defense attorneys may have made assumptions based on past interactions, there were no clear, standardized expectations for other legal actors to use as a reference point.

The two policies could influence court outcomes by reshaping workgroup norms and practices. The 2018 memo emphasized that excessive incarceration undermines rehabilitation and noted that most probation violations occur within the first year, making extended supervision largely unnecessary. It offered a loose template for plea negotiations. In contrast, the 2019 memo introduced concrete sentencing targets and required line prosecutors to justify deviations, subject to supervisor review and

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[5]The full policy texts are publicly available online; links to the full documents are included in the bibliography (DAO, 2018, 2019).

[6]Technical violations should not be sentenced to more than 6–12 months of incarceration and direct violations (i.e. new crimes while under supervision) should not add more than 2–4 years of incarceration on top of the new offense.

[7]Both policies required line prosecutors to seek supervisor approval for practices not in compliance. Approvals for non-compliant decisions need to be written on the case file with the date and the identity of the requesting line prosecutor and the corresponding supervisor.

documentation. These changes aimed to enhance compliance and reduce uncertainty in sentencing recommendations.

From a courtroom workgroup perspective, the memos promoted more lenient bargaining by establishing transparent "going rates", even for cases that proceed to trial or involve open pleas. This increased predictability could help re-align expectations across legal actors. From the courts-as-communities perspective, the guidelines aimed to shift shared norms by emphasizing the harms of excessive supervision. However, how judges and defense attorneys respond is an empirical question – some may adjust their strategies, while others may maintain prior practices.

The specificity of the 2019 memo may have allowed defense attorneys to better assess plea offers, potentially encouraging more open pleas or trials if they anticipate a more favorable sentence from a judge. Still, these choices depend on perceived trial penalties, workload burdens, and reputational costs. In this sense, the implementation of prosecutorial policy is mediated through repeated interactions within the courtroom workgroup. The inhabited institutions perspective helps explain how such policies are interpreted, adapted, or resisted by various actors, ultimately shaping their effect on courtroom behavior.

Data and Empirical Approach

Data Source

We use administrative data from the Administrative Office of Pennsylvania Courts (AOPC), which includes information for cases disposed or sentenced in Pennsylvania between February 15th, 2017 and February 15th, 2020.[8] These data include information on offenses, offense grades, disposition/sentence date, method of disposition (e.g. negotiated plea, open plea, guilty verdict in a jury trial), sentences, and county. The unit of analysis is a docket or consolidated dockets grouped together by the unique defendant identifier and disposition date or sentence date (henceforth, described as a case).[9]

Our main outcomes of interest are sentences and disposition type. Sentences can reflect convictions for multiple crimes. Since we do not have consistent data on the order in which the judge asks people to serve sentences when they are convicted for multiple charges, we assume that all carceral sentences run concurrently and all probation sentences run concurrently. If both carceral and probation sentences are imposed, we assume that all probation sentences follow consecutively after the carceral sentences. If prosecutors were more likely to advocate for sentences to be served concurrently after the policies were adopted, this would likely lead us to understate the effect of the policy. However, the use of concurrent sentences was already a common practice even before the guidelines reform; so while this could have been a margin along which exposure to punishment decreased, it is likely not the main

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[8]Note that we do not have information for cases that were expunged. However, this is rare for the felony cases, which is the focus of our study.

[9]This choice is based on two reasons. First, it accounts for county variations in docket organization, as some counties combine related incidents into a single docket, while others issue multiple dockets for each incident. Second, consolidating cases benefits the defense by reducing court hearings and ensuring that cases disposed of on the same date count only once for future criminal history calculations.

driver. Indeed, using data from the Pennsylvania Sentencing Commission, we find that before 2018, in 84% of cases, probation sentences ran concurrently to one another, and in 92% of cases, carceral sentences ran concurrently to one another.[10]

We use the most serious offense based on the OGS to represent the offense for that case and produce multiple measures that summarize the composition of offenses within a case. We create an indicator variable for cases that contain violent or serious offenses; the Broad Policy discouraged plea offers in the mitigated range for these offenses.[11] We calculate PRS based on prior convictions in the past 10 years. We exclude revocations and cases consolidated with revocations as these cases are not resolved through the traditional methods of disposition, and sentence length is a function of the prior offenses.

Sample Choice

Our goal is to understand the impact of prosecutorial guidelines on case outcomes. However, multiple policies were adopted in Philadelphia around the same time period – for example, Ouss and Stevenson (2023) study contemporaneous cash bail policy changes – and we want to isolate the effects of the changes in sentencing recommendations. To do so, we isolate cases that are plausibly not affected by other contemporaneous changes.

First, we exclude cases targeted by other policies over the same time period. We exclude misdemeanor cases and felony cases containing offenses for possession and possession with intent to deliver (PWID), as these were subject to policies promoting greater use of declination and diversion, which could impact case resolution beyond the effects of sentencing policies.[12] Offenses in our sample are, therefore, limited to cases charged as non-PWID felonies.

Second, our main specification limits our sample to experienced prosecutors in Philadelphia. Indeed, even after having excluded misdemeanor and PWID cases, Appendix Figure A.2, Panel A, shows that there was an increase in dismissals and withdrawals in Philadelphia, especially starting in June 2018. While there were no policies directly recommending changes in dismissals for this sample of more serious cases, this increase was possibly driven by personnel changes in the office. Appendix Figure A.3 shows a decline in the experience level of prosecutors handling non-drug felony cases between 2017 and 2020. These less experienced prosecutors are more likely to see their cases end in dismissals. When we limit ourselves to felony cases handled by experienced prosecutors (defined as two or more years of experience

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[10]We note that information is reported on a voluntary basis to the Pennsylvania Commission on Sentencing, so while helpful to provide some insights when data is otherwise lacking, we do not generally rely on this source for our main analyses.

[11]Violent and serious offenses are homicides, violent crimes, sexual assault crimes, felon in possession of a weapon, economic crimes with a loss of $50,000 or more, or cases involving attacks on the integrity of the judicial process (e.g. false reports to police, perjury, obstruction of the administration of justice, witness intimidation, etc.). For violent crimes, we use the list of offenses defined under "crimes of violence" in Title 18 Section 5702.

[12]We also exclude cases for violations in registering as a sex offender as Philadelphia experienced a spike in dismissals for these cases in early 2018.

with felony cases), we can see that the fraction of convictions stays constant in Appendix Figure A.2, Panel B.

Our main specification uses a 2-year threshold for experience, based on how line prosecutors progress through the organization and are promoted. In their first year, line prosecutors are typically placed in the municipal court unit, which handles misdemeanor cases and preliminary hearings for felony cases. Following the first year, line prosecutors are promoted to different units, with the majority of attorneys moving to the trial division unit. In their second year, prosecutors will typically have handled felony cases for 1 year and had another year handling misdemeanor cases. We also note that all attorneys marked as "experienced" will have worked felony cases prior to the first policy being adopted. Accordingly, this gives a more precise estimate on the effect of the guidelines on case outcomes as opposed to the selection of newer attorneys who may have preexisting sentencing preferences that align with the guidelines. Our results however are not sensitive to this 2-year cutoff.

Appendix Table A.1 shows how observable case characteristics change as we restrict the sample. The largest changes occur when limiting to felonies and excluding PWID cases: offense severity rises, with higher OGS and more violent charges, and defendants have more serious priors. Restricting to experienced prosecutors has smaller effects on case attributes but dispositions are different, with fewer dismissals, more pleas, and longer sentences. Demographics remain fairly stable across samples though the share of male defendants is slightly larger in our sample.

We apply the same crime-based restrictions to the rest of Pennsylvania as those outlined for Philadelphia, but beyond this, we keep all cases, regardless of who the handling prosecutor was. We cannot apply the prosecutor experience restrictions to other counties since we only have information on the prosecutor handling the case for Philadelphia. However, we did not find any public reports about notable turnover outside of Philadelphia, suggesting this is not an issue. We empirically do not observe changes in dismissals outside of Philadelphia (Appendix Figure A.4).

Our main sample has a total of 45,338 cases. Table 1 presents descriptive statistics for our sample. Columns 1–3 are for Philadelphia and Columns 4–6 are for the rest of Pennsylvania. Within each geography, the first column represents cases disposed between February 15th, 2017 and February 14th, 2018 ("Pre-Period"); the second column is from February 15th, 2018 to March 20th, 2019 ("Broad Policy"); and the third column is from March 21st, 2019 to February 14th, 2020 ("Constrained Policy"). Philadelphia differs systematically from the rest of Pennsylvania, likely because Philadelphia is the most urban county in the state. For example, there are more violent and serious crimes and fewer property crimes. This table also suggests that supervision time remained unchanged in non-Philadelphia counties and decreased in Philadelphia. The following subsection describes our empirical approach to test this more directly.

Main Variables

We consider two sets of outcomes: sentencing outcomes and procedural outcomes. For sentencing outcomes, our main variables are: (1) supervision length, defined as the sum of the carceral sentence and any probation sentences; (2) the probability of receiving a prison sentence, which is a carceral sentence greater than 2 years, which

Table 1. Descriptive statistics by jurisdiction and time period.

	Philadelphia			Other Pennsylvania counties		
	Pre-period	Broad Policy	Constrained Policy	Pre-period	Broad Policy	Constrained Policy
	(1)	(2)	(3)	(4)	(5)	(6)
Demographics						
Black	67.0	71.2	68.5	29.4	29.3	29.6
Male	86.8	87.4	87.7	82.0	80.3	80.1
Age 18–30	46.4	42.8	41.7	44.4	43.3	39.6
Case attributes						
OGS	8.2	8.7	8.8	6.6	6.6	6.5
Prior score 0	53.5	55.9	56.2	57.5	57.6	57.1
Prior sore 1–3	33.7	30.2	27.6	31.5	32.3	33.0
Prior score >3	12.8	14.0	16.2	11.0	10.2	9.9
Property	22.8	16.9	18.6	39.1	37.1	34.2
Violent and serious	59.9	66.9	64.9	36.0	36.4	35.3
Case outcomes						
Dismissed	26.9	28.3	28.9	13.7	14.8	15.8
Negotiated plea	41.0	42.9	34.3	70.2	68.4	67.0
Open plea or trial (guilty/ acquittal)	31.8	28.8	35.9	8.9	9.1	9.4
Sentence outcomes						
Supervision months	55.2	49.8	46.1	37.7	36.1	35.8
Sample size	2,544	2,198	1,224	12,890	14,256	12,226

This table displays descriptive statistics for convicted, acquitted, and dismissed cases. Philadelphia cases are restricted to cases handled by prosecutors with at least 2 years of experience. Data source: court dockets from the Pennsylvania Unified Judicial System.

would be served in a state prison rather than a local jail; and (3) incarceration length. These variables are defined using sentencing information from AOPC. We define sentences at the defendant-disposition date level: we consider the maximum carceral sentence and the maximum probation sentence imposed in cases disposed on a given date for a given defendant.

For procedural outcomes, our primary variable is whether the case was resolved *via* a negotiated guilty plea, that is, when the defendant pleads guilty and accepts the sentence offered by the prosecution. These disposition types appear in AOPC. We focus on this metric because negotiated guilty pleas represent one of the most direct channels through which prosecutors shape sentencing outcomes. A secondary procedural outcome we examine is the phase at which a case resolves (whether it is settled early through a plea or proceeds to the trial phase) which provides insight into how courtroom workgroup members adapt to the memos. While increased predictability in prosecutorial behavior may lead defense attorneys to seek more favorable venues for resolution, their decisions remain constrained by workload, reputational concerns, and uncertainty about whether judges will follow prosecutorial recommendations.

Our empirical strategy relies on a difference-in-differences framework. The treatment group consists of cases handled in Philadelphia, while the control group includes cases from other counties in Pennsylvania. The "post" periods capture cases disposed after the Broad Policy and after the Constrained Policy were adopted, respectively.

Finally, we include a set of covariates in many of our specifications to account for observable differences in case and defendant characteristics, which we draw from

AOPC data. These controls include: a categorical variable for felony grade that can be ungraded or ranges from the first to third degree; a categorical variable for OGS that ranges from 1 to 15; offense category (e.g. assault, drugs, property); a categorical variable for PRS that ranges from 0 to 5 or is a repeat violent/felony offender as defined by the sentencing guidelines; the number of charges disaggregated by grade (e.g. a case is sentenced for one first-degree felony and two third-degree felonies); total number of offenses; and defendant demographics, including race (as reported by the courts), sex, and age, and the month of disposition.

Empirical Approach

To assess the effect of the policies on sentencing outcomes and how cases are resolved, we use a difference-in-differences design, comparing outcomes of cases disposed in Philadelphia (Treatment group) to outcomes of cases disposed in the rest of Pennsylvania (Comparison group), before and after the two policies were adopted. Using the rest of Pennsylvania as a comparison group allows us to account for temporal differences that affect both groups in the same way and time-invariant differences between the two groups, such as differences in socioeconomic factors or statewide criminal legislation. By using a sample that includes all disposition types, both pleas and trials, the unobserved features of cases should be similar across the three policy periods. Conversely, if we were to restrict our sample to specific dispositions, this would give us biased samples with different unobserved features across the policy periods where the incentives for certain disposition types change. Our primary specification is shown in Equation (1):

$$
\begin{aligned}
Y_i = \beta_0 &+ \beta_1 Broad_i + \beta_2 Constrained_i + \beta_3 Philadelphia_i \\
&+ \beta_4 Broad_i * Philadelphia_i + \beta_5 Constrained_i * Philadelphia_i + X_i\gamma + \epsilon_i
\end{aligned}
\tag{1}
$$

Y_i captures the sentences and dispositions, where i represents the case. *Broad* is a dummy set to 1 if cases are sentenced during the 2018 policy period between 15 February 2018, and 20 March 2019. *Constrained* is a dummy set to 1 if cases are sentenced on or after 21 March 2019. *Philadelphia* is equal to 1 if the case is sentenced in Philadelphia and 0 for remaining Pennsylvania counties. X_i is a vector of case-level control variables defined in the previous subsection. β_4 and β_5, the main coefficients of interest, capture, respectively, the effect of the Broad and Constrained policies.

The main assumption for the study design to yield unbiased estimates is that the difference in case outcomes between the treatment and comparison groups would be constant over time in the absence of the two policies. We cannot fully test the assumption, but we can test for changes in observable characteristics. To do so, in Appendix Table A.2, we estimate Equation (1), with case attributes (offense and socio-demographic characteristics) as outcomes. We find that people are similar on socio-demographics, but there are some differences in offenses; cases in the Philadelphia sample appear to have become more serious, as reflected in the higher OGS and with the increase in the number of violent and serious cases. How may this affect our estimated effects of the various policies? First, we note that we control for these

observable case characteristics in all of our estimates. One may worry that there are still differences in unobservable case characteristics. Conditional on legal factors like the OGS and PRS, if these are stronger cases in terms of evidence, witnesses, and police collaboration, prosecutors should be less inclined to give lenient plea offers. In turn, this will most likely bias the estimates on sentence reductions toward 0. Similarly, if prosecutors are handling stronger cases, the defense has greater incentive to resolve their case with a negotiated plea where they face less uncertainty compared to a judge. Our estimates for disposition type would, therefore, also represent the lower bound effect of the policies.

Lastly, and importantly, we consider *changes* to the OGS, which captures charge bargaining to dismiss offenses. We measure this in two ways: (1) average changes in OGS; and (2) probability that OGS would go from 10 or under to above 10. People who have an OGS of 9 or 10 have an average sentence of 55 months, compared to 99 months for an OGS of 11 or 12 – a 44-month increase. We find no differential changes here. This suggests that any changes in sentences will likely occur through sentence bargaining which is the direct target of the guidelines.

The Effect of Internal Policies on Sentencing Outcomes

In this section, we first examine whether internal guidelines changed the magnitude and distribution of sentences. Although the policies may have shaped expectations within the office, prosecutors retained discretion in crafting plea offers, particularly under the Broad Policy, which was vague. Moreover, judges ultimately determine sentences, even for convictions resulting from pleas and are not bound by prosecutorial recommendations. As a result, both prosecutors' flexibility and judicial autonomy could limit the guidelines' impact on sentencing outcomes.

Average Sentence Outcomes

Table 2 reports the β_4 and β_5 coefficients from Equation (1), estimating the effect of the Broad and the Constrained policies on case outcomes. The Broad Policy reduced average supervision length – which is the sum of the carceral sentence and the probation sentence – by roughly 7.1 months. These sentence reductions reflect a 13% decrease relative to the average pre-period supervision sentence in Philadelphia, which was 55 months long. Incarceration length dropped by 4 months (10% reduction). The probability of getting a prison sentence was reduced by 4 percentage points.[13]

After the Constrained Policy, sentence length fell further. Supervision length fell by 12.7 months (23% reduction), incarceration length fell by 8.4 months (20% reduction), and the probability of getting a prison sentence decreased by 6% points. With the concrete targets, sentence length decreased almost two-fold compared to the Broad Policy's sentence reductions. The Constrained Policy's requirement that the potential parole time is no longer than the period of incarceration shifts the maximum carceral

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[13]In Pennsylvania, any carceral sentence longer than two years requires the sentence to be served in state prison rather than county jail.

Table 2. Difference-in-differences estimates of the effect of prosecutorial guidelines on sentences and disposition types.

	Sentence			Disposition		
	Supervision	Incarceration length	Prison	Dismissed	Negotiated plea	Open plea or trial verdict
	(1)	(2)	(3)	(4)	(5)	(6)
Broad Policy × Philadelphia	−7.13***	−4.01*	−0.04**	−0.003	0.06***	−0.05***
	(1.41)	(1.85)	(0.01)	(0.01)	(0.01)	(0.01)
Constrained Policy × Philadelphia	−12.70***	−8.43***	−0.06***	−0.01	−0.004	0.02
	(1.68)	(2.26)	(0.01)	(0.02)	(0.02)	(0.02)
Mean (DV)	55.21	42.02	0.24	0.27	0.41	0.32
Num.Obs.	45,338	45,338	45,338	45,338	45,338	45,338

$+p < 0.1$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

This table presents the β_4 and β_5 coefficients from Equation (1), estimating the effect of the Broad and Constrained policies on case outcomes and disposition type. The treatment group is Philadelphia cases and the control group is non-Philadelphia, Pennsylvania cases. Supervision is the maximum carceral sentence + any probation time. Incarceration length is the carceral sentence. Prison is an indicator set to 1 if the carceral max is greater than or equal to 2 years. Data source: court dockets from the Pennsylvania Unified Judicial System.

sentence downward. The swift and sizeable decreases in sentence length underscore the impact that prosecutorial guidelines can have on sentences. In other words, line prosecutors respond to the guidelines' design. In a subtle way, the guidelines mitigate the issue of hidden plea bargaining and keep prosecutors accountable by focusing on sentence outcomes which are open records and reflect prosecutorial conduct.

Figure 1 presents event-study coefficient plots. Each graph shows coefficients on lead/lag dummy variables interacted with a dummy for being sentenced in Philadelphia. The lead/lag dummy variables each correspond to one quarter of disposition: 3 quarters before (the last quarter in the "Pre-Period" being the reference) and 4 quarters after each policy. Specifically, we estimate the following equation:

$$Y_i = \beta_0 + \beta_1 Philadelphia_i + \sum_{\substack{g=-4 \\ g \neq -1}}^{7} \alpha_g Quarter_g + \sum_{\substack{g=-4 \\ g \neq -1}}^{7} \delta_g Quarter_g * Philadelphia_i + X_i \gamma + \epsilon_i \quad (2)$$

The parallel trends assumption implies that the coefficients δ_g for the pre-policy quarters ($g = -4$ to $g = -2$) should be statistically indistinguishable from zero. Subfigures in the top panel of Figure 1 show that sentencing trends were similar in Philadelphia and the rest of Pennsylvania before the Broad Policy. Consistent with Table 2, we see that in the post period, the estimated difference drops in a staggered pattern that closely corresponds to the announcement of the policies.

We conduct a series of robustness tests, presented in Appendix Table A.3, and find that our results are not sensitive to specification choices. In Panel A, we subset to cases that were sentenced (that is, dropping dismissals).[14] In Panel B, we drop violent and serious cases, whose prevalence differentially changed most between Philadelphia and the rest of Pennsylvania. In Panel C, we keep all prosecutors who have at least

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[14]Our preferred estimates include dismissals for which we set sentences to be equal to 0. This is because we do not want to be selecting on the dependent variable – which could happen if the policies caused change in dismissals. We note that dismissed cases are not technically sentenced.
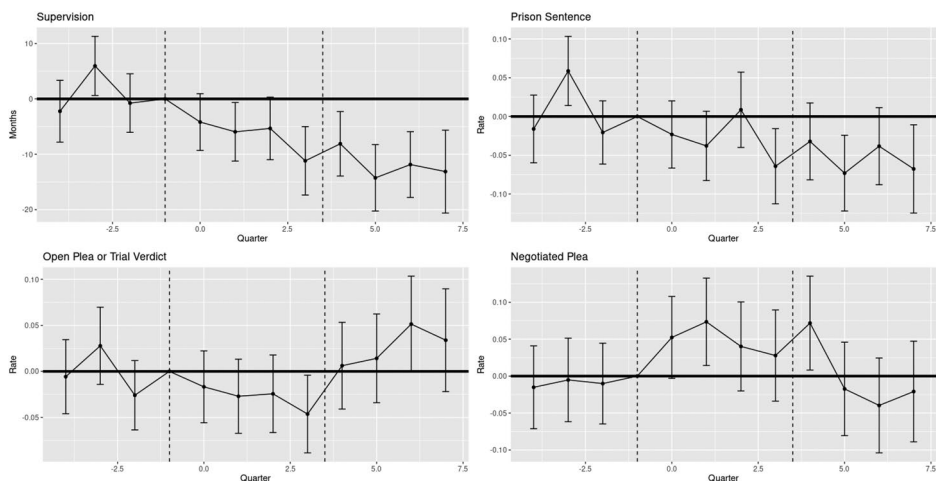
Figure 1. Difference-in-differences estimates with leads and lags for the plea policies. This figure plots the difference-in-differences coefficients obtained from estimating a single equation with quarterly leads and lags interacted with a Philadelphia indicator (Equation 2), with the 95% confidence interval of the coefficient estimate. Controls include offense grade, OGS, offense category, PRS, number of offenses (by grade), number of consolidated dockets, race, sex, and age group. Dashed lines indicate policy adoption quarters. "Prison sentence" is an indicator set to 1 if the maximum carceral sentence is greater than or equal to 2 years. "Negotiated plea" means that the defense accepts the prosecutor's offer. "Open pleas/Trial verdict" includes both open pleas and trial outcomes (guilty or acquittal). Source: Pennsylvania Unified Judicial System.

1 year of experience, instead of 2 years as in our main sample. In Panel D, we control for the most serious offense at disposition, regardless of whether it resulted in a conviction or not, rather than controlling for the most serious offense that led to a conviction in our main specification. Across all specifications, we find results that are similar in magnitude. For Panel A, since sentence lengths for dismissals are set to be equal to zero in our main specifications, excluding them increases average sentence lengths. As a result, the estimated decrease in sentences is larger. For example, we find that the first policy reduced supervision time by 11 months instead of 7 months, and the second by 18 months instead of 13 months. Note that the percent changes are the same (13% reduction in sentence length, relative to average sentences in Philadelphia in the pre-period), but removing dismissals (which happen in roughly a quarter of cases and did not change with the policy) increases the estimated change in months of supervision and carceral time.

Changes in Sentencing Disparities

A long-standing driver of criminal justice reform is that discretion generates inequities. This was a primary motivator for the development of sentencing guidelines (Frankel, 1973), which generally resulted in decreases in racial disparities in sentencing (Anderson et al., 1999; Yang, 2015). In this subsection, we ask whether internal guidelines changed the sentencing gap. We consider different sociodemographic groups and the distribution in sentences.
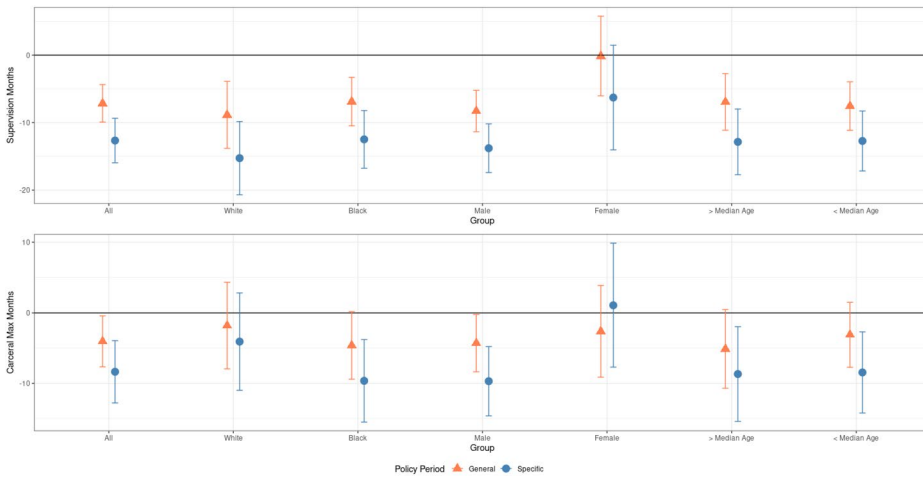
Figure 2. Heterogeneity analysis for different demographic groups. This figure plots the β_4 (orange triangles) and β_5 (blue circles), coefficients from Equation (1), estimating the effect of the Broad and Constrained policies on case outcomes, with the 95% confidence interval of the coefficient estimate. The treatment group is Philadelphia cases and the control group is non-Philadelphia, Pennsylvania cases. Equation (1) is run for each subgroup described below the figure. The top panel presents estimates for supervision time, which is potential parole time plus probation time. The bottom panel presents estimates for whether or not the case received a prison sentence. Data source: court dockets from the Pennsylvania Unified Judicial System.

Figure 2 presents the estimated effects of both policies on sentence lengths across various sociodemographic subgroups. The policies yielded similar reductions across groups with no statistically significant differences in estimated effects. One notable exception in point estimates is for females, whose sentences were already shorter on average, limiting the scope for further reductions – though even this difference is not statistically significant. The policy, at least evaluated among those offenses whose effects we can isolate from other contemporaneous changes, does not seem to have particularly benefited any racial, sex, or age group. Prosecutorial guidelines could have had differential effects for other offenses like drug cases; however, given other contemporaneous changes, we cannot isolate the effect of sentencing guidelines for these offenses within our research context.[15]

We then ask how the Broad and Constrained policies affected the distribution of sentences for the cases that we consider. Is the top of the sentencing distribution likely to decrease since the policies focused on reducing long supervision terms? Appendix Figure A.5 goes beyond average sentence changes and asks how the policy affected the distribution of supervision in Philadelphia. The left-hand-side subfigure plots the 25th, 50th, and 75th percentiles of sentencing over time. The right-hand-side subfigure plots the overall distribution of sentences of each policy period separately – pre-period, Broad Policy period, and Constrained Policy period. Both figures

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[15]We note that research studying changes in sentencing that do not account for other contemporaneous policies finds a reduction in sentencing disparities (DAO, 2021), particularly across racial groups. This could be because of the cumulative effect of different policies or differential treatment effects, with greater changes for the offenses we exclude for methodological purposes.

tell a similar story: the whole distribution of sentences shifted, and sentencing gaps did not diminish or increase with the different policies.

Taken together, these analyses show that these policies seem to have equally benefited defendants across various sociodemographic groups and expected sentences. One explanation for this shift in sentences across all points of the distribution is the constraints of external policies and the preference of individual actors. Sentencing is still constrained by the state's sentencing guidelines and its ranking of offense severity. Another reason is that prosecutors and judges might want to stay consistent in how offenses of different severity translate into sentences to preserve the ranking of offense severity. These preferences and the interactions that unfold between different legal actors can influence how cases are resolved in conjunction with the final sentencing outcome. We turn to these interactions in the next section.

Courtroom Workgroup Interactions

In the first part of our analysis, we showed that the internal policies effectively reduced supervision time. We now examine how the defense integrated these changes in expected sentences into their case resolution strategies. These analyses speak directly to our broader research question about how courtroom actors adjust their behavior in response to institutional reforms which directly affect only one legal actor. We first consider the types of resolutions chosen, then we turn to the phase of the penal process when a case is closed.

Resolution Type

Given the overall decrease in expected punishment, one could reasonably expect an increase in negotiated plea rates (as a reminder, these are pleas where the defense not only pleads guilty but also accepts the prosecution's offered sentence) and a corresponding decline in trial rates. However, if defendants anticipate and adapt to the likely responses of other courtroom actors, the resulting dynamics may be more complex.

Columns 3–5 of Table 2 present overall results, showing the difference-in-differences estimates for disposition type. There is no significant change in the dismissal rate, but other disposition types vary across policies. During the Broad Policy period, the defense could see that prosecutors were being more lenient. We indeed find that negotiated plea rates increased by 6% points for all cases at this time. These estimates align with our expectations due to less severe sanctions.[16]

One might expect the Constrained Policy to increase negotiated plea rates further since the prosecutors were instructed to make even more lenient sentence recommendations. But, we observe no further change in non-negotiated dispositions. Why might this be the case despite lower sentences? We argue that, in addition to lowering

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[16]Columns 3–5 of Appendix Table A.3 show that our results are not sensitive to specification choices, and the bottom panels of Figure 1 show that, as with sentencing outcomes, trends in resolution types were similar in Philadelphia and the rest of Pennsylvania before the Broad Policy, but negotiated plea rates increased after the Broad policy and open pleas and trials increase after the Constrained Policy.

expected sentences, the Constrained Policy reset the courtroom norms by further decreasing the *uncertainty* surrounding prosecutor discretion.

Indeed, the defense faces the following choice: accept a negotiated plea from the prosecutor or reject it, thereby leaving the determination of sentences to the judge, who takes into account the sentence recommendation presented by the prosecutor during the sentencing proceedings. The guidelines can modify the defense's decision-making process in the following way:

- In the pre-period, prosecutors have full discretion in making offers and recommending sentences to the judge.
- During the Broad Policy period, prosecutors are asked to present lower offers, but the guidelines have no benchmarks. They retain flexibility in recommending sentences to the judge if their plea offer is rejected.
- During the Constrained Policy period, prosecutors have specific targets for offers, and they are expected to adhere to these targets in their (potential) sentencing recommendations to the judge even if the offer is rejected.

These features might influence the defense's decision to accept negotiated offers in the following ways. Under the Broad Policy, compared to the pre-period, the defense observes a shift toward more lenient offers due to internal guidelines. However, uncertainty persists regarding expected sentences for cases where the offer is rejected in the absence of guidance to prosecutors for making sentencing recommendations to judges. Consequently, the defense may exhibit greater willingness to accept negotiated pleas under the Broad Policy, driven both by the perceived leniency of offers and uncertainty surrounding subsequent prosecutor actions following rejection.

Conversely, the Constrained Policy introduces two key elements that could reshape courtroom dynamics. Specific sentence targets establish clearer sentencing parameters and build common understanding among courtroom actors. In addition, the requirement for prosecutors to adhere to sentencing targets even in the event of an open plea or trial conviction reduces uncertainty around a potential trial penalty. These elements give the defense information regarding expected prosecutor behavior post-rejection, reducing the likelihood of upward deviations in sentencing recommendations. Since judges consider prosecutor recommendations at sentencing, this potentially reduces expected sentences following trial conviction or open plea. Therefore, the defense can better evaluate potential outcomes and mitigate uncertainty regarding sentencing under a trial/open plea leading to negotiated pleas being rejected more often, even in the face of more beneficial offers. Of course, judges may continue to impose trial penalties and ignore the prosecutor's sentencing recommendations.

Resolution Phase

We next turn to the phase at which a criminal case is resolved – that is, whether a plea is accepted early in the SMART room phase or if the case proceeds to the trial phase. These analyses offer further insight into how the defense responds to changes in expected sentencing and prosecutorial behavior.

We note that these analyses are more exploratory, since we only have data on the resolution phase in Philadelphia; therefore, for this analysis, we consider changes in disposition phases for that sample after each policy was adopted, relative to cases resolved between February 2017 and February 2018, but we have no comparison group outside of Philadelphia. We present the results in Table 3. The outcome in the first column is the probability that a case will be resolved in the trial phase. In Columns 2–4, we analyze resolution types within the SMART room phase, while Columns 5–8 focus on the trial phase.

If the defense's sole objective was to minimize expected sentence length and they believed that the Constrained Policy had fully eliminated the trial penalty, we would expect an increase in trial resolutions. Yet, as shown in Table 3, the probability of a case being resolved in the trial phase actually declined by 2% points after the Broad Policy and 7% points after the Constrained Policy, relative to the pre-policy period. This suggests that other considerations shape defense decision-making. Defense attorneys may remain uncertain about whether prosecutors will fully implement the guidelines or whether judges – who retain broad sentencing discretion, particularly in open pleas and trials – will follow prosecutorial recommendations. These dynamics are further reflected in resolution types: the increase in negotiated pleas after the Broad Policy and in open pleas after the Constrained Policy is concentrated in the SMART room phase. Notably, trial verdicts decreased under both policies, reinforcing the idea that courtroom actors adapt not only to sentence expectations but also to procedural risks and institutional constraints.

These patterns suggest that even under more lenient and transparent guidelines, the defense did not fully abandon the expectation of trial penalties or the influence of judicial discretion. They are also consistent with models of plea bargaining under uncertainty (Bjerk, 2007, 2021), which show that changes in the distribution of expected sentences – rather than just average severity – can shift defendants' willingness to go to trial or accept pleas. In our setting, the policies likely altered defendants' beliefs about prosecutorial follow-through and judicial discretion, leading to different strategic choices across resolution types. This may help explain differential changes in open pleas and trial rates, even though both involve judge sentencing. Institutional constraints may also matter. All courtroom actors operate within the

Table 3. Prosecutorial guidelines and case resolution phase.

	Resolution phase	Resolution type, SMART room phase			Resolution type, trial phase			
	Trial	Negotiated plea	Open plea	Dismissed	Negotiated plea	Open plea	Trial verdict	Dismissed
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Broad Policy	−0.02*	0.02*	−0.004	0.01*	0.02	−0.02*	−0.03**	0.003
	(0.01)	(0.01)	(0.006)	(0.005)	(0.01)	(0.009)	(0.01)	(0.01)
Constrained Policy	−0.07***	−0.02	0.04***	0.01*	−0.02	0.002	−0.03*	−0.02
	(0.02)	(0.01)	(0.009)	(0.006)	(0.01)	(0.01)	(0.01)	(0.01
Mean(DV)	0.64	0.17	0.05	0.02	0.24	0.10	0.15	0.14
Num.Obs.	5966	5966	5966	5966	5966	5966	5966	5966

+$p < 0.1$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
This table shows how case resolution phase and type in Philadelphia changed after the Broad and the Constrained policies. The outcome in Column 1 is the likelihood of resolution in the trial phase. The outcomes in Columns 2–4 are resolution types within the SMART room phase; the outcomes in Columns 5–8 are resolution types in the trial phase. Source: Court dockets from the Pennsylvania Unified Judicial System.

bounds of limited resources, and trials are more burdensome than early plea deals. Additionally, reputational dynamics may deter defense attorneys from pushing weaker cases to trial, as doing so may strain both credibility and courtroom relationships. Rather than purely seeking the most lenient outcomes, the defense appears to balance sentence expectations with risk, workload, and courtroom norms.

Discussion

Our article provides empirical evidence that head prosecutors can regulate prosecutorial conduct through internal policies, but that courtroom dynamics limit that scope. Building on prior research, we show how guidelines can shift sentencing practices, and how other actors – particularly the defense – can mediate the policy's effects. As such, our results provide empirical evidence on the pertinence of the different perspectives on courtroom dynamics. Because of this interplay, prosecutorial policy may be most effective when it anticipates how judges and defense attorneys will adapt. To make larger-scale changes, local policymakers and organization leaders may need to consider likely responses of their counterparts in the courtroom.

We note several limitations to the study. First, in terms of internal validity, the composition of cases included in our sample changed somewhat in the post-policy periods. While we cannot determine the precise causes of this change, we expect that stronger and more serious cases were more likely to proceed to sentencing. Conditional on legal factors such as the OGS and PRS, stronger cases – those with better evidence, more cooperative witnesses, or stronger police work – could make prosecutors less willing to offer lenient plea deals, in which case our estimates would be capturing a lower bound of the policy effect. We also face limitations due to measurement. For example, we cannot observe whether sentences are served concurrently or consecutively. The 2019 memo instructed prosecutors to recommend concurrent sentences when a defendant is convicted on several charges; if the use of consecutive sentencing declined during our study period, we may underestimate effective sentence reductions.

There are also limitations regarding external validity. Our study does not include misdemeanor cases, more serious offenses such as homicide or sexual assault, or cases handled by less experienced prosecutors. As a result, our findings primarily apply to medium-severity felonies handled by seasoned attorneys. The effects of guidelines could differ for other offense types. For instance, courtroom actors may be less willing to depart from norms in higher-severity cases. In misdemeanor cases, where sentences are already shorter, sentence caps may have limited marginal effect. In practice, instead of guidelines, other policies targeted many cases excluded from our sample, such as presumptive declinations and expanded diversion for lower-level offenses (Amaral et al., 2024, 2025). We also note that junior prosecutors, who consistently operated under the new guidelines, might have followed them more strictly, leading to greater reductions in average sentences compared to their more experienced counterparts (Yang, 2015). Additionally, excluding drug crimes may restrict our ability to detect heterogeneity in treatment effects, particularly across racial groups, given the racial disparities in drug-related arrests (Mitchell & Caudy, 2015).

Our findings may also not generalize to jurisdictions with different institutional environments. The policies we study were implemented under District Attorney Larry

Krasner, a uniquely high-profile head prosecutor who ran explicitly on a reformist platform. This context likely influenced both the internal culture of the prosecutor's office and the behavior of other courtroom actors. As such, the effects we estimate may reflect either upper or lower bounds. In jurisdictions with less reform-oriented leadership, more hierarchical office structures, or more punitive local norms, similar policies might generate weaker or slower effects, in which case our estimates could be an upper bound. Alternatively, if judges in Philadelphia responded strategically to perceived reductions in prosecutorial severity by imposing relatively longer sentences in open pleas or trials, this could attenuate the effects of the guidelines, making our estimates a lower bound.

Lastly, our study is limited to examining the effects of internal policies on sentencing outcomes. We do not assess whether changes in sentencing practices had downstream effects on public safety, either through specific deterrence (i.e. for individuals sentenced under the new policies) or general deterrence (i.e. broader behavioral responses to the reforms). Evaluating these broader impacts remains an important area for future research.

With these caveats in mind, our findings have several policy implications. First, internal prosecutorial guidelines can meaningfully reduce sentence lengths and alter courtroom dynamics, particularly when they are transparent, specific, and consistently enforced. In our context, lenient guidelines helped align defense and prosecutorial preferences. The transition from vague recommendations to concrete sentencing targets in Philadelphia was associated with larger reductions in supervision length, underscoring the importance of design and implementation. Offices seeking to reduce incarceration should consider adopting formal guidelines that apply across all resolution types, including cases where offers are rejected. Monitoring mechanisms such as supervisor approval and documentation requirements for deviations may also increase compliance.

Our findings also suggest that internal reforms may affect not only line prosecutors but the broader dynamics of courtroom negotiation. While guidelines may shape prosecutorial behavior, their ultimate impact depends on how other courtroom actors – such as judges and defense attorneys – adapt in response. Persistent norms or preferences among these actors may limit the extent to which reforms alter outcomes. Efforts to change sentencing practices, therefore, may require broader institutional adjustments, including shifts in judicial expectations or strategies that foster coordination across courtroom roles. These findings underscore the importance of understanding existing practices and interdependencies when designing and implementing reforms in legal settings.

Finally, our results highlight two design elements that appear to shape the effectiveness of prosecutorial guidelines: transparency and constraints on discretion. Both elements can reduce uncertainty for defense attorneys and other courtroom actors, while compliance mechanisms – such as mandated documentation and supervisor sign-off – may support more consistent implementation. By altering the structure of plea negotiations and reallocating some sentencing discretion to judges, these tools can shift the dynamics of courtroom decision-making. Although the design and enforcement of internal guidelines is complex, our findings indicate that head prosecutors can influence outcomes by shaping the institutional environment in which line prosecutors operate.

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Appendix A

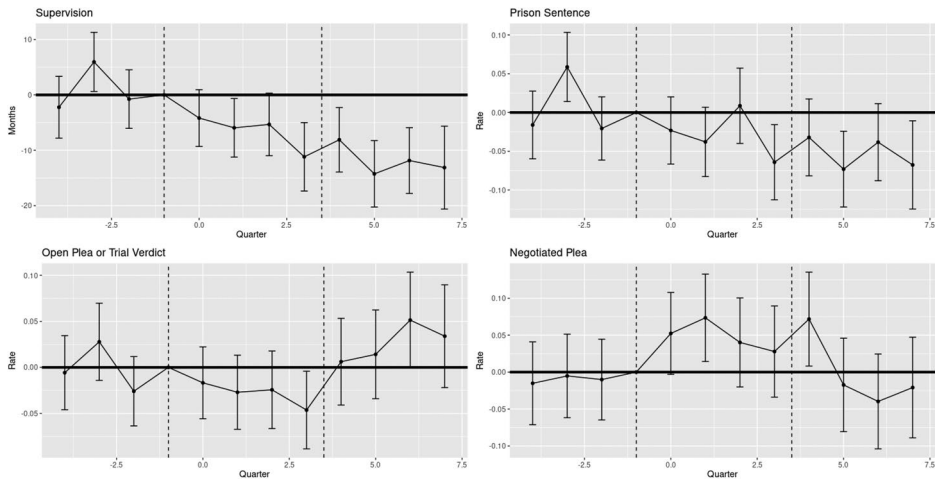## *Additional figures and tables*

Figure A.1. Timeline of policy adoptions. This figure presents a timeline for when the two policies were adopted in Philadelphia and displays how we define our analysis periods. Cases disposed of between February 15th, 2017 and February 14th, 2018 are considered as belonging to the "Pre-Period"; cases disposed of between 15 February 2018 and 20 March 2019 are in the "Broad Policy" period and cases disposed of between March 21st, 2019 and February 14th, 2020 are in the "Constrained Policy" period.
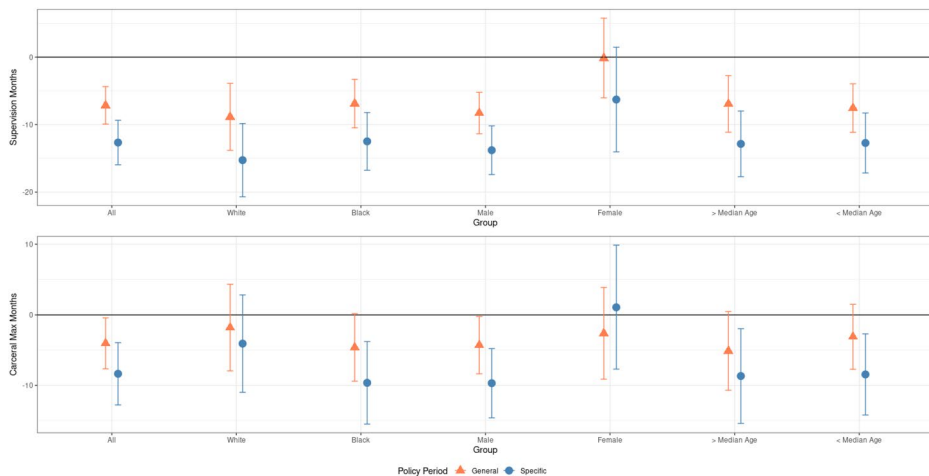

Figure A.2. Philadelphia case dispositions for different samples of cases. This figure presents trends in disposition type for non-drug felony cases in Panel A (that is, for all cases in Philadelphia, excluding misdemeanors and PWID cases); and for non-drug felony cases that were handled by line prosecutors with at least two prior years of experience in Panel B. The dashed lines represent the dates for the Broad and the Constrained policy adoptions. Data source: court dockets from the Pennsylvania Unified Judicial System.
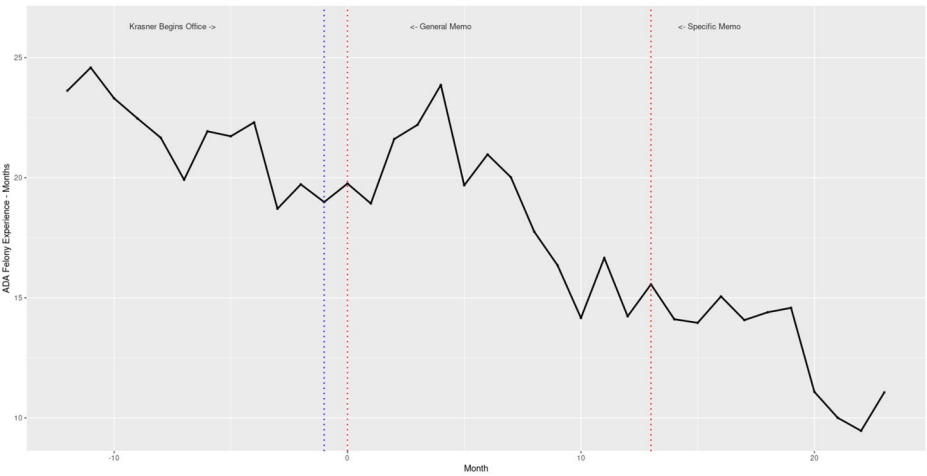
Figure A.3. Average prosecutor experience working on felony cases. This figure plots the average experience over time of prosecutors handling felony cases. Their experience is calculated based on the difference in their disposition date and the first felony sentence. The blue line indicates when the Krasner administration started. The first red line indicates the announcement of the Broad Policy, and the second red line indicates the announcement of the Constrained Policy. Source: Philadelphia court dockets from the Pennsylvania Unified Judicial System.
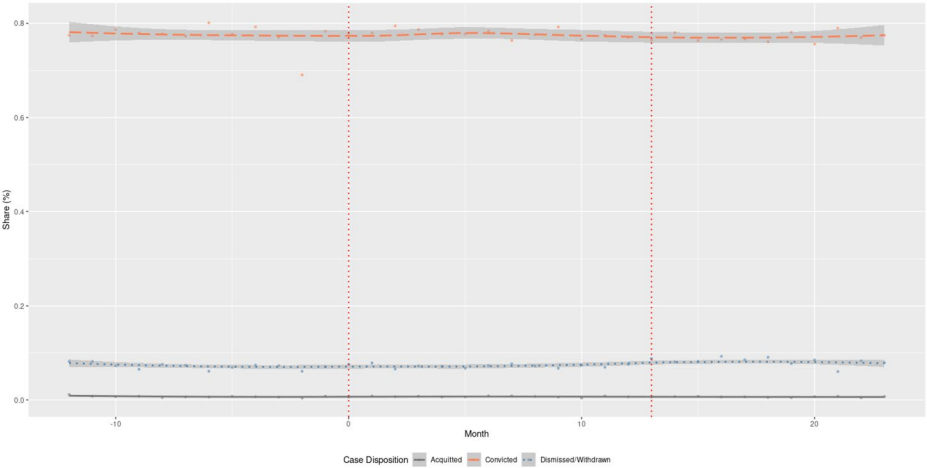

Figure A.4. Case dispositions outside of Philadelphia. This figure presents trends in disposition type for non-drug felony cases in non-Philadelphia Pennsylvania jurisdictions. Data source: court dockets from the Pennsylvania Unified Judicial System.
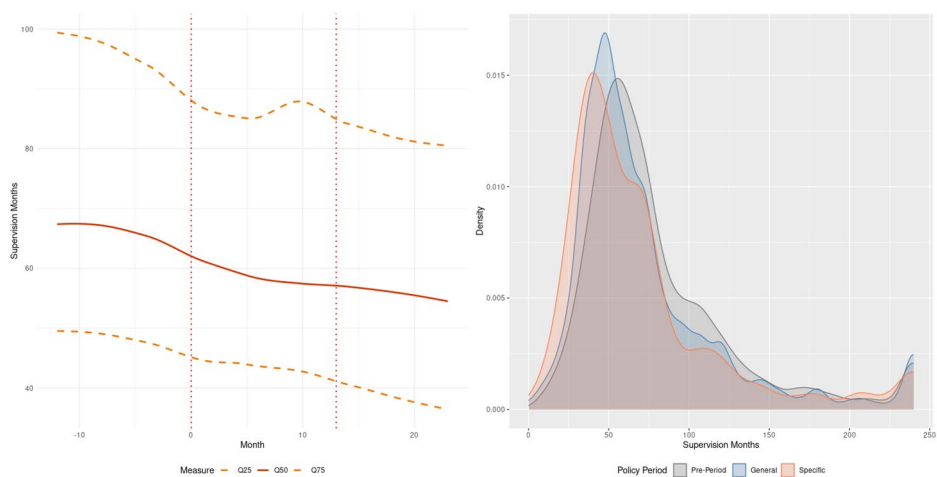
Figure A.5. Changes in sentence distribution. The left-hand panel shows the distribution of supervision length by quantile across the study period in Philadelphia. The first vertical dashed line indicates the announcement of the Broad Policy on February 15th, 2018; the second dashed line indicates the announcement of the Constrained Policy, on March 21st, 2019. The right-hand panel is a density plot showing the supervision length for the three different policy periods. Sentences in the right-hand panel are capped at 10 years for readability.

Table A.1. Sample restrictions and changes in case characteristics in Philadelphia.

	All cases	All felonies	Non-PWID felonies	Experienced ADAs (analysis sample)
	(1)	(2)	(3)	(4)
Demographics				
Black	59.9	66.5	67.0	67.0
Male	83.8	87.4	84.2	86.8
Age 18–30	46.6	53.1	46.6	46.5
Case attributes				
OGS	4.6	6.6	8.0	8.2
Prior score 0	46.1	56.8	55.4	53.5
Prior score 1–3	36.5	30.3	32.4	33.7
Prior score >3	17.4	12.9	12.3	12.8
Violent and serious	13.7	32.9	57.9	59.9
Drugs	32.6	25.5	0.5	0.6
Property	9.5	9.6	15.9	13.4
Case outcomes				
Dismissed	32.0	48.4	53.9	26.9
Negotiated plea	25.0	26.5	23.7	41.0
Open plea/guilty/ acquittal	39.3	24.0	21.4	31.8
Sentence outcomes				
Supervision months	24.2	31.7	32.6	55.2
Carceral max months	11.4	20.0	23.8	42.0
Sample size	27,747	9,568	5,391	2,544

This table shows how case characteristics change across progressively stricter sample restrictions, using pre-policy data. The first column includes all cases. The second column limits the sample to felonies. The third column drops possession with intent to deliver (PWID) cases. The final column limits the sample to cases handled by experienced prosecutors, which is our final analysis sample. Data source: court dockets from the Pennsylvania Unified Judicial System.

Table A.2. Testing for changes in case attributes at time of the reforms.

	Male	Black	Age 18–30	PRS 0	Violent and serious	OGS	Average OGS change	OGS level jump
Broad Policy × Philadelphia	0.01	0.03*	−0.03+	0.02+	0.06***	0.37***	−0.06	−0.004
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.08)	(0.05)	(0.009)
Constrained Policy × Philadelphia	0.0	0.001	−0.005	0.03*	0.05***	0.5***	−0.11*	−0.0006
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.07)	(0.01)
Philadelphia Mean (DV)	0.87	0.67	0.46	0.53	0.60	8.23	−0.69	0.07
Num.Obs.	45,338	45,338	45,338	45,338	45,338	45,338	33,766	33,766

$^+p < 0.1$, $^* p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

This table presents the β_4 and β_5 coefficients from Equation (1), the outcomes being different case attributes. OGS represents the offense gravity score. The outcomes are indicators for the demographics, criminal history (a PRS of zero), a property offense, and a violent/weapon offense. The last two columns display the difference in OGS from charging to sentencing for convicted cases. The "Average OGS change" column represents the difference in point values themselves, while "OGS level jump" is an indicator for having an OGS score increase from 10 or less at charging to more than 10 at sentencing. Going from an OGS of 9 or 10 to an OGS of 11 or 12 translates into a large jump in average sentence (from 55 to 99 months on average, a 44 month increase). The treatment group is Philadelphia cases and the control group is non-Philadelphia, Pennsylvania cases. Data source: court dockets from the Pennsylvania Unified Judicial System.

Table A.3. Robustness tests.

	Supervision	Incarceration length	Prison	Dismissed	Negotiated plea	Open plea or trial verdict
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Conditional on conviction						
Broad policy × Philadelphia	−11.38***	−5.76**	−0.05***	–	0.06***	−0.06***
	(1.29)	(2.13)	(0.01)	–	(0.02)	(0.02)
Constrained policy × Philadelphia	−18.34***	−11.21***	−0.09***	–	−0.04	0.04
	(1.60)	(2.55)	(0.02)	–	(0.02)	(0.02)
Mean (DV)	81.76	62.22	0.35	–	0.61	0.39
Num.Obs.	33,766	33,766	33,766	–	33,766	33,766
Panel B: Dropping violent and serious cases						
Broad policy × Philadelphia	−9.26***	−5.48+	−0.04*	0.01	0.06**	−0.06**
	(2.15)	(3.00)	(0.02)	(0.02)	(0.02)	(0.02)
Constrained policy × Philadelphia	−14.27***	−10.82**	−0.08***	−0.03	0.01	0.02
	(2.55)	(3.64)	(0.02)	(0.02)	(0.02)	(0.02)
Mean (DV)	63.77	60.76	0.35	0.30	0.31	0.39
Num.Obs.	17,932	17,932	17,932	17,932	17,932	17,932
Panel C: ADAs with 1 year of experience						
Broad policy × Philadelphia	−7.51***	−4.09**	−0.03***	0.02*	0.04**	−0.06***
	(1.25)	(1.56)	(0.01)	(0.01)	(0.01)	(0.01)
Constrained policy × Philadelphia	−15.60***	−10.09***	−0.06***	0.04**	−0.02	−0.01
	(1.41)	(1.83)	(0.01)	(0.01)	(0.01)	(0.01)
Mean(DV)	51.92	38.43	0.22	0.29	0.39	0.32
Num.Obs.	46 909	46 909	46 909	46 909	46 909	46 909
Panel D: Offense at disposition						
Broad policy × Philadelphia	−7.09***	−3.82*	−0.03**	0.004	0.06***	−0.05***
	(1.40)	(1.82)	(0.01)	(0.01)	(0.01)	(0.01)
Constrained Policy × Philadelphia	−12.41***	−7.90***	−0.05***	−0.01	−0.002	0.02
	(1.67)	(2.22)	(0.01)	(0.02)	(0.02)	(0.02)
Mean (DV)	55.21	42.02	0.24	0.27	0.41	0.32
Num.Obs.	45,338	45,338	45,338	45,338	45,338	45,338

This table presents the β_4 and β_5 coefficients from Equation (1), estimating the effect of the Broad and of the Constrained policies on case outcomes, the outcomes being different sentence lengths and disposition types, specified at the top of each column. In Panel A, we drop cases that did not end in a conviction. In Panel B, we drop violent and serious cases. In Panel C, we include all prosecutors who have at least one year of experience (instead of 2 years, as in our main specifications). In Panel D, we control for the most serious offenses at disposition rather than the most serious convicted offense. Our other sample restrictions for Panel D are also based on all offenses disposed of rather than convicted offenses (e.g., excluding possession with intent to deliver cases which are targeted by policies). The treatment group is Philadelphia cases and the control group is non-Philadelphia, Pennsylvania cases. Data source: court dockets from the Pennsylvania Unified Judicial System.