

ABSTRACT

Title of Thesis: FEDERAL PROBATION OFFICERS AND SENTENCING DISPARITY: EXAMINING THE ROLE OF EXTRALEGAL FACTORS IN GUIDELINES CALCULATIONS

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Over the years, the relationship between extralegal factors and federal sentencing disparity has attracted a significant amount of research attention. Much of this work, however, has focused on judicial and prosecutorial decision-making, largely ignoring other influential actors. One such actor is the federal probation officer. Using data from the U.S. Sentencing Commission, this study explores the relationship between extralegal factors and federal probation officer's guidelines calculations. This study uses a theoretical framework that combines focal concerns and causal attributions to argue that federal probation officers attribute the causes of criminal activity differently across demographic groups, shaping their perception of the defendant's blameworthiness and dangerousness and ultimately resulting in differing guidelines calculations. Findings showed mixed support for the hypotheses in this study. After discussing the results and limitations of the current study, I provide direction for future study of federal probation officers and their influence on federal sentencing outcomes.

FEDERAL PROBATION OFFICERS AND SENTENCING DISPARITY:
EXAMINING THE ROLE OF EXTRALEGAL FACTORS IN GUIDELINES
CALCULATIONS

by

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Chapter 1: Introduction

Court processes and criminal sentencing are topics that have attracted significant research in the field of criminology, both historically and today. Much of this research, especially over the past couple of decades, has focused on how extralegal factors (such as race, ethnicity, gender, and age) play a role in disparate sentencing outcomes for different demographic groups. This area of research, however, has mostly focused on judicial and prosecutorial decision-making, leaving other legal professionals largely out of the conversation. Probation officers are one such group. Probation officers can have a significant impact on sentencing outcomes, but limited research has been conducted on the role that extralegal factors play in probation officer decision-making as it relates to sentencing. The current project aims to study whether extralegal factors play a role in federal probation officer decision-making by examining whether there is disparity in the guidelines calculations of different demographic groups.

The legal system in the United States is made up of both state and federal systems. In many ways, the federal criminal legal system is unique. It covers diverse types of criminal cases across a broad range of geographical and sociopolitical contexts. Judges in the federal system are appointed by the President, whereas many judges in state systems are elected. Additionally, federal judges enforce federal law across the entire United States and its territories, and have authority to prosecute certain types of crimes, such as federal tax fraud, immigration crimes, or crimes that cross state lines. Punishment in the federal legal system is determinate, meaning that

judges cannot sentence a defendant to a range of months, which often occurs in state courts. Because of this, sentences in the federal system are often more severe than in state systems.

Certain key decision-makers are common to both state and federal courts. For example, prosecutors have significant discretion in deciding how cases proceed and often exert significant influence over final punishment determinations (Shermer & Johnson, 2010). Similarly, judges are key actors in shaping criminal punishment (Ulmer & Johnson, 2004). Both actors have been the focus of considerable research, much of which examines the effects of extralegal factors and finds defendant characteristics are influential, often resulting in harsher sentences for defendants who are young, male, and Black or Hispanic (Albonetti, 1997; Doerner & DeMuth, 2010; Kutateladze et al., 2016; Mitchell, 2005; Spohn et al., 1987; Steffensmeier & DeMuth, 2000; Steffensmeier & Painter-Davis, 2017).

Like prosecutors and judges, probation officers also play a major role within the legal system, especially in the federal system. Federal probation officers use the federal sentencing guidelines¹ to calculate a defendant's guidelines range, which is the sentencing recommendation that is passed along to the judge. However, unlike prosecutors and judges, they have received far less research attention, specifically in terms of how extralegal factors influence their sentencing recommendations. While limited, the extant research has produced mixed results regarding extralegal factors

¹ The federal sentencing guidelines are comprised of a sentencing table created by the United States Sentencing Commission that aim to ensure uniformity and reduce disparity in sentencing. Federal probation officers make a series of consequential decisions about various details of a criminal case to determine a guideline range, which is the range of months that is then provided to the judge as a sentencing recommendation. This is discussed in detail later in this paper.

and probation officer decision-making, with some studies finding that most extralegal factors do not influence probation officer decision-making (Leiber et al, 2011; Leifker and Sample, 2011), and others finding that probation officers do consider extralegal factors, often leading to disparate sentencing recommendations (Bridges & Steen, 1998; Freiburger & Hilinski, 2011; Kautt, 2009).

Much of the research examining extralegal factors in prosecutorial, judicial, and probation officer decision-making has used a focal concerns perspective (Steffensmeier et al., 1998) to understand these decisions. Focal concerns theory is rooted in the notion that court actors have limited time and resources, and therefore lean on their perceptions of the defendant's culpability, the need to protect the community, practical constraints, and their perception of the defendant's suitability for future rehabilitation (Steffensmeier et al., 1998; Galvin & Ulmer, 2022).

The large amount of research conducted on extralegal factors and focal concerns theory has significantly deepened our understanding of disparities between demographic groups in sentencing. Unfortunately, only a small portion of this work has focused on the probation officer and how that role may be covertly introducing disparity into the legal system. Of the studies that examine probation officer decision-making, most use data from state legal systems (Bridges & Steen, 1998; Freiburger & Hilinski, 2011; Leiber et al., 2011; Leifker & Sample, 2011), with very few using federal data (Kautt, 2002; Kautt, 2009). The studies that do use federal data use data from before the *Booker*² decision, which fundamentally changed federal sentencing

² *United States v. Booker* is a Supreme Court case that significantly changed the federal sentencing landscape. It is discussed in greater detail later in this paper, but to summarize, the *Booker* decision states that sentencing guidelines cannot be mandatory and had to be advisory.

practices. As a result, little is known about how extralegal factors influence federal probation officer's sentencing recommendations in a post-*Booker* era. This is concerning because, although limited research examines probation officers, they play a key role in shaping sentencing outcomes in federal court. Addressing this limitation can assist in more fully understanding the extent to which extralegal factors impact sentencing outcomes within the U.S. legal system.

Specifically, this thesis uses federal sentencing data to examine how race, ethnicity, and gender impact probation officer's calculations of the defendant's final offense level.³ It uses a multi-method approach of OLS regression and Mahalanobis distance matching to compare how probation officers increase and decrease base offense levels for different demographic groups in an effort to determine whether they apply these calculations differently based on race, ethnicity, or gender. Ultimately, this project sought to answer the following research questions:

1. Are increases and decreases to the base offense level that the probation officer calculates applied differently for different racial and ethnic groups?
2. Are increases and decreases to the offense level that the probation officer calculates applied differently for different genders?

By researching the above questions, this study adds to the field's understanding of disparity in the legal system while filling the specific knowledge gap regarding federal probation officers. This project also sheds light on whether the

³ Offense levels are a key part of the calculations that federal probation officers use to determine what sentence they will recommend that the judge impose on a defendant. This will be discussed in detail at a later point in this paper.

goal of the federal sentencing guidelines (uniformity in sentencing and limiting disparity) is truly accomplished via the current guidelines system.

Chapter 2: Overview of Federal Sentencing and Discussion of Prior Research

History of Federal Sentencing

Overview of Federal Sentencing

In the United States, the criminal legal system is generally split into two systems – one at the state level and one at the federal level. While both systems are important, the focus of this thesis is the federal system. The federal legal system is unique from the state system in a multitude of ways. First, the two systems differ in the types of crimes that they prosecute. State courts have “general jurisdiction” whereas federal courts have “limited jurisdiction,” meaning that federal courts can only hear certain types of cases. In practice, this means that state courts prosecute most criminal cases, whereas federal courts prosecute a much more selective set of crime types. Federal courts hear cases that fall under federal law, such as crimes committed across state lines, certain firearms offenses, immigration offenses, bank robbery, and certain drug offenses. Additionally, federal courts hear cases where a crime was committed in a “special jurisdiction” such as on federal property (a military base or national park for example), crimes committed while at sea, or certain crimes committed on Native land. Of the 64,142 cases reported to the US Sentencing Commission in 2022, 31.5% were drug offenses, 27.5% were immigration offenses, 14.5% were firearms offenses, and 8.6% were fraud related offenses (United States Sentencing Commission, 2022). This means that immigration and drug crimes account for more than half of all federal cases.

Another difference between the two systems is the severity of punishment. Federal sentences tend to be harsher than state sentences and are more determinate. One reason is because recommended sentences under the federal guidelines are typically more severe than state guidelines systems. Another reason is there is no indeterminate sentencing in the federal system. Indeterminate sentencing is where the defendant is sentenced to a broad range of months rather than a specific number of months. Relatedly, there is no parole in the federal system and a defendant can only get up to 15% of their sentenced reduced due to “good time” credits, whereas many states still have parole and also allow for a larger reduction in sentence for good behavior in prison. This means that not only are federal defendants sentenced more harshly, but they also have less opportunity to be released early as compared to a defendant in the state system (United States Sentencing Commission, 2021).

Another way that the federal system is unique is the sentencing guidelines. While many state systems also use a sentencing guideline scheme, they are not all uniform nor does every state require a judge to consult the guidelines before sentencing a defendant. Sentencing guidelines, however, are an integral part of the federal legal system. For nearly the first two decades that the federal sentencing guidelines existed, they were mandatory. However, in 2005 the federal guidelines became advisory as a result of a Supreme Court decision (discussed in detail below). Nonetheless, in their opinion, the Court noted that the guidelines remained important and were a central aspect of federal sentencing, and therefore should still be consulted for every felony case in the federal system (*United States v. Booker*, 2005). Although

the guidelines are no longer mandatory today, federal judges are required to consider them before imposing a sentence.

The U.S. Sentencing Guidelines

In 1984, Congress passed the Sentencing Reform Act (SRA). Prior to the passage of this act, federal judges had a wide range of discretion in sentencing and were able to give indeterminate sentences, which ultimately allowed the U.S. Parole Commission to decide when a defendant should be released from prison. Congress was concerned with the amount of discretion afforded to judges and the disparity between the sentences of similarly situated defendants. The main goal of the SRA was to reduce those disparities and provide a more structured sentencing process by narrowing the wide discretion that sentencing judges had in the federal system (United States Sentencing Commission, 2020b).

As a part of the SRA, Congress created the United States Sentencing Commission (USSC). The USSC is an independent and bipartisan agency housed within the federal judiciary. There are 7 voting commissioners that are nominated by the President and confirmed by Congress, as well as 2 ex officio commissioners – one representing the U.S. Parole Commission and one representing the Attorney General/Department of Justice. The USSC also employs about 100 staff members that support the Commission in its work. The SRA required two main objectives of the USSC. First, that it make and amend federal sentencing guidelines. Second, that it provide Congress with information regarding sentencing and recommendations for changes in federal legislation. Additionally, it was decided that the USSC should be a hub for federal sentencing research and training. The USSC's first commissioners

were appointed in 1985, and these commissioners began the work of creating the first set of federal sentencing guidelines (United States Sentencing Commission, 2020b).

The USSC published its first guidelines manual in November of 1987. The guidelines manual contained a formula for calculating a defendant's sentencing guideline range – a range of months narrower than the statutory range set by Congress. In creating this formula, commissioners attempted to create a system that considered the specific conduct of the offense as well as the criminal history of the defendant. These guidelines were binding on the sentencing judge, meaning that once a guideline range was determined, a judge was required to impose a sentence within that range. The guidelines manual recognized that occasionally there may be extenuating circumstances that warrant a sentence outside of the calculated range and provided an avenue for judges to sentence outside of the range via a “departure.” Departures are specific and narrowly tailored, meaning that judges could only apply them in a limited set of circumstances. There was little recourse for a judge who wanted to sentence outside of the range for reasons that were not included in the departure options. The USSC and Congress thought that by limiting the ability to sentence outside of the guidelines range, they would maintain their goal of reducing sentencing disparity among similarly situated defendants (United States Sentencing Commission, 2020b).

However, not everyone agreed that this method was the most effective way to reduce sentencing disparities. Some argued that, in reducing judicial discretion, it simply transfers the point in the system where the disparity occurs (Stith and Cabranes, 1998; Tonry, 2015). This could mean that it gives the prosecutors more

unchecked discretion, or potentially allows the probation officers who calculate the sentencing guidelines to have more discretion and impact. While there is a formula for calculating the guidelines, there is less oversight for how that formula is applied in individual cases, which could lead to enhancements being applied for some defendants and not others.

Booker and Fanfan Supreme Court Decisions

When Congress passed the SRA, they determined that the sentencing guideline range should be binding on federal judges when imposing a sentence on defendants. This meant that once the guideline range was determined, the judge had to sentence the defendant within that range or apply a departure (if the defendant met the narrow circumstances that allowed for a departure). This changed, however, in 2005 with the Supreme Court decision in *United States v. Booker*. This Supreme Court case was a consolidation of two different cases – *United States v. Booker* and *United States v. Fanfan*. Booker was a defendant in a federal drug case who was convicted by a jury of possession with intent to distribute cocaine base. At the sentencing hearing, the judge determined by a preponderance of the evidence that Booker had distributed significantly more cocaine base than the amount that had been determined by the jury. These findings increased the sentencing guideline range to a minimum of 30 years in prison, and the judge sentenced him to that 30-year minimum. Booker then appealed the sentence based on a violation of his sixth amendment rights as the judge had found facts beyond the findings of the jury that determined his sentence (*United States v. Booker*, 2005).

A similar case was taking place around the same time, and this case was *United States v. Fanfan*. Fanfan was also convicted by a jury of possession with intent to distribute cocaine, and at his sentencing hearing the judge found, by preponderance of the evidence, that Fanfan had significantly more cocaine than was found by the jury. These findings increased the sentencing guidelines range above what the jury had determined, but judge in Fanfan’s case did not sentence him to the increased penalties, basing this on *Blakely v. Washington* – a Supreme Court case which held that, in a state legal system with mandatory sentencing guidelines, judges cannot increase criminal sentences based on facts that were not admitted by the defendant or found by a jury. The government appealed this case and the Supreme Court decided to consolidate and hear both the *Booker* and the *Fanfan* cases during the October 2004 term (*United States v. Booker*, 2005).

The Supreme Court decided that the mandatory guideline system was a sixth amendment violation because it permitted judges to use a preponderance of evidence standard to increase sentences based on information that was not presented to the jury nor proven beyond a reasonable doubt. To resolve this violation, the Court removed the language that required the guidelines to be mandatory, making the guidelines “advisory” and no longer binding on sentencing judges. It did, however, still require that judges consider the sentencing guideline range when imposing a sentence (*United States v. Booker*, 2005).⁴ This meant that the federal sentencing guidelines were no longer mandatory, and the federal judiciary adjusted accordingly.

⁴ Additionally, a later Supreme Court case reinforced the Booker decision by determining that judges cannot presume that a sentence is unreasonable if the judge imposes a sentence outside of the guideline range (*Gall v. United States*, 2007).

The Supreme Court decisions made in *Booker* and upheld in *Gall* were incredibly consequential for federal sentencing, as they changed how the federal sentencing guidelines were used. The USSC notes that after *Booker*, judges began following a three-step process for sentencing. The first two steps remained the same as before *Booker* was decided – (1) correctly calculating the guideline range and (2) determining if there are any grounds to depart from that range (departures being limited and specific reasons why a court may sentence outside of the guideline range). The *Booker* decision added the additional step of considering all the factors laid out in 18 USC 3553(a)⁵. This third step allows the court to consider a much wider range of circumstances when determining a sentence. If a judge determines that, after consideration of the factors in 18 USC 3553(a), an out-of-range sentence is best, the court can apply a “variance” – a tool for explaining the reasoning behind the out-of-range sentence. Although the guidelines are no longer mandatory post-*Booker*, judges are still required to justify an out-of-range sentence, and variances (which will be discussed more later) provide the judge with an avenue to do so. The Supreme Court noted that these changes allow judges to fashion sentences that best fit the needs of each individual case as well as maintain the SRA’s original intent of reducing disparity among similarly situated defendants (United States Sentencing Commission, 2020b; United States Sentencing Commission, 2023).

⁵ 18 USC 3553(a) factors include (1) the nature and circumstance of the offense and the history and characteristics of the defendant; (2) the need for the sentence imposed to reflect the four primary purposes of sentencing (i.e. retribution, deterrence, incapacitation, and rehabilitation); (3) the kinds of sentences available; (4) the sentencing range established by applying the sentencing guidelines and the types of sentences available under the guidelines; (5) any pertinent policy statement issued by the USSC that is in effect on the date the defendant is sentenced; (6) the need to avoid unwarranted sentence disparities among similarly situated defendants; and (7) the need to provide restitution to any victims of the offense

The Current Status of the U.S. Federal Sentencing Process

Today, the sentencing guidelines continue to be a central part of the federal sentencing process. They are still advisory, and judges are still required to consider them when making sentencing decisions. Over 1.9 million defendants have been sentenced under the federal sentencing guidelines. Although they have been adjusted and changed over the years, the sentencing guidelines continue to have significant impact on federal sentencing and defendants within the federal system, even over 35 years after they were enacted (United States Sentencing Commission, 2020b). However, in the wake of recent Supreme Court decisions, federal judges have gained additional discretion in federal sentencing. In fiscal year (FY) 2020, for instance, only 50.4% of federal sentences were within the guidelines range (United States Sentencing Commission, 2020a).

The Federal Sentencing Process

General Timeline and Process

There are four general phases that lead to sentencing in the federal legal system. As represented in Figure 1 in the Tables and Figures section, these phases are indictment/charging, guilt, presentencing, and the sentencing itself (United States Sentencing Commission, 2020b). First, a defendant is charged, often via indictment. They are sometimes charged via criminal complaint or waive indictment and are charged via an information, but no matter the type of charging document, this begins the legal process. Following the charging phase, the defendant goes through the guilt phase. This is where guilt is determined, and the defendant is either convicted or

acquitted. An acquittal stops the defendant from moving further in the sentencing process, as guilt must be found before moving onto the presentencing phase. If the defendant is convicted, either by plea or trial, they will move onto the next phase – the presentencing phase.

There are typically several weeks to months between conviction and sentencing, and these months are considered the presentencing phase. During this phase, a federal probation officer (PO) compiles a presentencing report (PSR) that will be used by the judge as a primer for sentencing. The PO creates this report by reviewing information regarding the charge(s) and conviction(s), offense conduct, the defendant's criminal history, the defendant's background, conducting a presentence interview with the defendant, requesting victim impact statements from victims, and verifying defendants' personal information with a family member or friend (United States Sentencing Commission, 2020b; United States Probation Office, n.d.). Once the probation officer completes the report, it is provided to the attorneys who can submit corrections and/or objections to the content of the PSR. At this point, the PO will either amend the PSR to incorporate the changes or state why they feel that the initial PSR is accurate. When the latter occurs, the Court will rule on those issues during the sentencing hearing (United States Sentencing Commission, 2021). The content of the pre-sentencing report can be very consequential for the defendant and will be detailed further in the following subsection.

The last phase of the federal sentencing process is the sentencing hearing itself. This is the part of the process where the judge ultimately hands down a sentence. While every judge may structure their sentencing hearings slightly

differently, there are several things that happen during each sentencing hearing. To start, the court hears from the attorneys regarding any outstanding guidelines disagreements or unresolved issues with the PSR. The judge then resolves those issues and hears arguments from the attorneys regarding their recommendations for the sentence. The judge will also often allow the defendant and victims or witnesses to speak at the sentencing hearing. At the end of the hearing, the judge makes remarks and hands down the sentence, while also noting any departures and/or variances that they apply (D’Anca, 2001; United States Sentencing Commission, 2021).

Departures and Variances

Departures and variances are avenues for the judge to sentence the defendant outside of the guideline range. While the Court is not required to impose a sentence within the guideline range since the Supreme Court decision in *US v. Booker (United States v. Booker, 2005)*, they are required to explain why the sentence is not within the range, and they do that by using departures and variances. Departures are a pre-*Booker* method of sentencing outside of the guideline range that continues to be used today. They are narrowly tailored and specific, meaning the judge can only apply departures if the defendant or offense conduct fits within a specific set of reasons as specifically laid out in the guidelines manual. Variances, on the other hand, can be applied in a much wider range of circumstances, including ones not specifically addressed by the guideline manual. Unlike departures, a judge can also apply a variance for various reasons in order to achieve an appropriate sentence, even when those reasons are not specifically laid out in the guidelines manual. Common departure and variance reasons include concerns with the defendant’s criminal

history, special circumstances related to mental or physical health, family ties and responsibilities, and age (United States Sentencing Commission, 2020b).⁶

In FY2020, judges applied departures in 24.4% of cases and variances in 26.3% of cases. Departures and variances play a significant role in federal sentencing, as nearly half of sentences are outside of the prescribed guidelines range. (United States Sentencing Commission, 2020a; United States Sentencing Commission, 2020b; United States Sentencing Commission, 2021).

The Federal Presentencing Report

One of the key components in determining whether a departure or variance is warranted is the presentencing report (PSR). This report is prepared by the federal probation officer to aid the judge in determining the sentence in a criminal case. Post-sentencing, the U.S. Bureau of Prisons also uses the PSR to aid in deciding correctional placement. To create the PSR, the probation officer conducts an independent investigation regarding the details of the offense and conducts a presentence interview with the defendant. The PO compiles the findings of their independent investigation in the presentencing report. This report contains a wide range of information related to the offense itself as well as the defendant's personal background and criminal history. For example, it contains the defendant's demographic information, basic court and attorney contact information, and the statutes of conviction. (United States Sentencing Commission, 2020b; United States

⁶ Two of the most common departure reasons involve 5K1.1 departures for providing "Substantial Assistance" in the prosecution of another federal case (Johnson et al. 2008) and 5K3.1 departures for "Early Disposition Programs" which are typically applied in border districts to help alleviate heavy immigration caseloads (Hartley & Tillyer, 2012).

Probation Office, n.d.). Defendant information includes personal and family data, medical history and mental and emotional health, substance abuse history, educational and vocational skills, employment and financial circumstances, and other individual considerations that might be relevant to sentencing.

The PSR also contains more detailed information about the offense and other relevant offense conduct factors, including data on charges and convictions, custody status, offense conduct, victim impact, obstruction of justice, acceptance of responsibility, offense level computations, and offense behavior not part of relevant conduct. Information is also available on the initial statutes the defendant was charged under, whether there were superseding indictments filed, whether the defendant pleaded guilty or proceeded to trial, and whether there was a plea agreement. The PSR also includes the dates of these events, providing a chronological detailing of the process through conviction. Finally, it also reports when and where the defendant was held in pretrial custody, whether they were released on bond, and how the defendant has performed on pre-trial release (United States Probation Office, n.d.).

In addition, the PSR reports detailed information about the offense in narrative form. The PO compiles this section using information from the charging document and plea agreements, evidence presented at trial, discussions with the attorneys on the case, an interview with the defendant, and any other relevant sources. This section notes when the offense began, who was involved, the role of the defendant, how the offense was committed, and specifically what criminal activity occurred, including relevant conduct and other information that is allowed to be considered for sentencing

purposes. Information on victim impact is also included in the PSR, including whether there are identifiable victims and if so, the type and level of harm they endured. If there is restitution requested, it is often listed here. Detailed victim impact statements may also be appended for the judge to consider at sentencing (United States Probation Office, n.d.). The PSR also contains information on adjustments for “obstruction of justice” and “acceptance of responsibility,” noting whether the defendant attempted to obstruct justice at any point and whether they have accepted responsibility for the offense. The federal sentencing guidelines allow for the PO to increase or decrease the severity of the sentencing recommendation based on whether the defendant obstructed justice and/or accepted responsibility for the offense, and this section of the PSR is what details the PO’s decision on those matters. Often pleading guilty is enough for the PO to note that the defendant has accepted responsibility, but the PO maintains discretion over this decision. Both types of adjustments can directly impact the calculation of the final offense level, which is also clearly detailed in the PSR, along with the defendant’s criminal history calculations. These include juvenile adjudications, adult criminal convictions, criminal history computations, and any other criminal conduct, arrests, or pending charges. Finally, the PO includes their sentencing recommendations to the judge along with statutory sentencing requirements, plea agreement details, and other factors the PO wants to highlight that may warrant a sentence outside of the calculated guideline range.

Upon completion of the PSR, the PO provides a copy to the attorneys working the case, who can submit objections and requests for corrections. Sometimes these are

factual corrections such as correcting a defendant's education level or number of dependents, but the attorneys often object to how the PO calculated the offense level or criminal history category. Once the PO receives these corrections and objections, they will either make the requested changes or will mark it as unresolved and leave it up to the Court to decide at sentencing. For unresolved issues, the PO writes a response to each objection and explains why they disagree. This is included when submitted to the judge for consideration prior to sentencing, and the judge rules on those issues at the sentencing hearing (United States Sentencing Commission, 2020b).

U.S. Federal Guidelines Calculations

At the core, there are two parts to calculating the guideline range – the total offense level (TOL) and the criminal history category. The USSC guidelines manual provides a formula for calculating a defendant's TOL. Each type of offense has a different calculation, but they all follow the same general formula – a base offense level, increases or decreases based on the characteristics of that specific offense, and increases or decreases based on victim impact, defendant role, and whether the defendant obstructed justice and/or accepted responsibility. Base offense levels and adjustments based on characteristics of that specific offense (known as “specific offense characteristics” or “SOCs”) are detailed in Chapter 2 of the USSC guidelines manual. Adjustments based on victim impact, defendant role, and obstruction of justice are found in Chapter 3 of the USSC guidelines manual. Chapter 2 contains information that is applicable to a specific type of offense, whereas Chapter 3 describes conduct that could be applicable to any offense. The information in both Chapter 2 and 3 is used to determine the defendant's TOL.

There are 5 steps that go into determining a defendant's total offense level (TOL) (See Tables and Figures section, Figure 2 for a visual example). The first step is determining the guideline that is most closely aligned with the statutes of conviction and offense conduct. For most offenses, matching the statute of conviction to a guideline is relatively straightforward. In the guideline manual, the USSC provides an extensive list of statutes along with the most appropriate guideline for each statute (United States Sentencing Commission, 2021). In most cases, the PO determines the applicable guideline based on this list. The second step is determining the base offense level (BOL). The base offense levels are set by the USSC and are based on the core of the offense conduct. The more serious the offense, the higher the BOL (up to Level 43). While some guidelines have only one base offense level, others have multiple BOL options. For example, in a drug trafficking case, the BOL is usually determined based on drug type and quantity. Or, in a firearms offense, the type of firearm and the number of prior convictions for violent crimes are considered when determining the BOL.

The third step in calculating the total offense level is applying specific offense characteristics (SOCs). These are adjustments in the offense level that account for aggravating and mitigating circumstances that relate to that offense. They are added to or subtracted from the BOL. SOCs are specific to the type of offense. For example, in a firearms case, the PO can add levels based on the number of firearms possessed or whether the firearm was used in another felony. If the PO applies any SOCs, those levels are added to the BOL.

Next, Chapter 3 adjustments are applied. Unlike SOCs, which are specific to an offense type, Chapter 3 adjustments can apply to any case. They include victim-related adjustments, role adjustments, and obstruction adjustments. Some examples include using a minor to commit a crime, abuse of a special skill, mitigating or aggravating roles, reckless endangerment during flight, obstructing justice, and more. For example, a PO could apply the “using a minor to commit a crime” adjustment in an illegal border crossing case where the defendant had a child in the car because they thought it would increase their chance of success in illegally crossing the border. That same adjustment – using a minor to commit a crime – could also be applied in a drug trafficking case where a defendant was directing a 15-year-old to sell drugs. If there are any Chapter 3 adjustments, they are added to the current offense level.

The last step⁷ in determining the final offense level is deciding whether the defendant receives a reduction for “acceptance of responsibility.” Federal defendants can get a 2 or 3-level decrease in their offense level if it is determined that they accepted responsibility for their criminal actions. This may reflect whether the defendant was honest in their admissions related to the offense, whether they ceased criminal activity post-arrest, their conduct on pre-trial release, and most importantly, whether they pleaded guilty (Johnson, 2019). In most cases where the defendant pleads guilty, the PO applies the acceptance of responsibility reduction. If the PO determines that the defendant has “clearly demonstrated acceptance of responsibility

⁷ As of November 2023, a new guidelines manual has been implemented. The new guidelines manual includes an additional step after determining “acceptance of responsibility.” This new final step is related to criminal history – if a defendant has 0 criminal history points, then 2 levels are removed from the offense level calculation. Since the data in this paper are from 2018-2020 and data from the new 2023 manual are not available yet, this additional reduction is not discussed above.

for his offense” (United States Sentencing Commission, 2021), he or she can subtract 2 levels from the defendants’ offense level, or 3 levels if the offense level is above 16. This completes the offense calculations, which are then combined with the criminal history category in the USSC Sentencing Table to determine the guidelines range recommended to the Court (See Table 1).

--Insert Table 1 About Here--

Probation Officer Role and Discretion

Clearly, the role that probation officers occupy within the federal sentencing process can have a significant impact on the outcome of a defendant’s case. The probation officers calculate the guideline range, and about 50% of defendants are sentenced within that guideline range. The remaining half of defendants who receive out of range sentences are still impacted by the probation officer’s decisions in calculating the guideline range as many judges use the PO calculated guidelines range as a starting point when deciding departures or variances (Leifker and Sample, 2011; Leiber et al., 2011; Rush & Robertson, 1987). In calculating the guidelines, the probation officer makes numerous consequential decisions based on their own discretion and interpretation of the case. For example, POs make decisions regarding how a firearm was used, distinguish if the firearm was discharged, brandished/ possessed, or “otherwise used”, with each scenario resulting in a different offense level. Similarly, they make judgements about whether a victim sustained bodily injury, with differing levels of enhancement for bodily injury, serious bodily injury, permanent or life-threatening bodily injury, or injury that falls in between those categories. POs also determine whether adjustments are applied for obstruction or

acceptance of responsibility, and they make highly impactful sentencing recommendations to judges (Leiber et al., 2018).

While the USSC strives to account for and define the most common scenarios, the guidelines manual must allow probation officers some level of discretion when calculating the guideline range as no two cases are the same. While the impacts of discretion in the legal system have been widely studied, it has mostly come in the form of prosecutorial and judicial discretion. The probation officer and their guideline calculations are an understudied area of the federal sentencing process in which discretion is routinely applied to a series of substantial decisions, thus making it a potential introduction point for unrecognized disparity amongst defendants.

Prior Research on Sentencing

Racial and Ethnic Disparities in Federal Sentencing

Racial and ethnic disparities in the legal system have been a subject of substantial research over the past few decades. Much of this work has focused on disparity in prosecution (Albonetti, 1992; Baumer, Messner, and Felson, 2000; Shermer and Johnson, 2010; Spohn and Holleran, 2000; Wooldredge and Thistlethwaite, 2004), judicial decision-making, and sentencing outcomes (Johnson, 2003; Mitchell, 2005; Peterson and Hagan, 1984; Steffensmeier and Demuth, 2000; Zatz, 2000). Generally, prior work has found that while legally relevant factors are most impactful to a sentence, Black and Hispanic defendants receive harsher sentencing outcomes than their white counterparts after legally relevant factors are considered (Mitchell, 2005; Spohn and Holleran, 2000).

However, research on prosecutorial discretion and racial/ethnic disparity has produced mixed results. Some studies have found that while prosecutorial charging discretion plays an important role in the final sentencing outcome, it is not systematically based on race or ethnicity (Albonetti, 1987; Shermer and Johnson, 2010). Studies have also found that motivations and racial disparity behind charging decisions vary by case type (Kutatledaze et al, 2016; Spears and Spohn, 1997; Shermer and Johnson, 2010). For example, Shermer and Johnson (2010) used federal sentencing data to study reductions of the statutory severity of final charges and found that, other than gender, the results do not support the idea that prosecutors systematically rely on the defendant's extralegal characteristics when deciding on charge reductions. They also found that there are important differences in case processing based on the type of offense. Spears and Spohn (1997) studied sexual assault arrests in Detroit in 1989 and found that victim characteristics and confidence in ability to convict were largely influential in prosecutors charging decision. They also noted that charging decisions in sexual assault cases are likely motivated by different factors than other types of cases, lending credence to the notion that prosecutorial decisions and motivations vary based on offense type. Additionally, Kutatledaze et al. (2016) reviewed misdemeanor marijuana cases that resulted in a guilty plea in New York City between years 2010-2011 and found that Black and Latino defendants were less likely to receive a plea offer and when they did, they were more likely to be offered a plea involving incarceration than their white counterparts. These findings support both the notion that when prosecutorial discretion is allowed, racial/ethnic disparities will exist, and that prosecutorial

discretion (and therefore racial/ethnic disparities) vary based on case type. Since the misdemeanor marijuana cases studied by Kutatledaze et al. were less serious charges, the prosecutors were afforded more discretion, which resulted in more disparity between white, Black, and Hispanic defendants.

In addition to findings of disparity within prosecutorial decision-making, disparity in sentencing due to judicial discretion has also been widely studied. Mitchell (2005) conducted a meta-analysis and found that Black defendants are generally sentenced more harshly than white defendants, although the disparity was usually small. This analysis bolstered the notion that racial disparity in sentencing decisions was greatest in instances where there was more discretion afforded. Additionally, the analysis revealed that the influence of race varies by offense type, which is consistent with the findings in the studies mentioned above regarding prosecutorial discretion.

Mitchell (2005) noted that in sentencing schemes that limit judicial discretion (such as a structured sentencing or guideline scheme), there were less race effects on the sentencing outcome. Perhaps the most well-known and wide-reaching guideline scheme is the federal sentencing guidelines, so it is important to understand how it is impacted by race and extra-legal factors. Albonetti (1997) reviewed data from the USSC containing information on federal drug convictions between 1991-1992 and found that Black and Hispanic defendants receive more severe sentences than white defendants. Steffensmeier & DeMuth (2000) expand on Albonetti's work on disparities in sentencing outcomes in the federal system by using more data and including information regarding departures. Using data from the U.S. Sentencing

Commission from years 1993-1996, they found that ethnicity influences sentencing outcomes (incarceration vs. non-incarceration and length of prison sentence) that favors white defendants and penalizes Hispanic defendants, with Black defendants falling in-between the two. Additionally, they found that a major point of sentencing disparity as it relates to ethnicity comes from departures as Hispanic defendants received smaller sentence reductions than their non-Hispanic counterparts (Steffensmeier & DeMuth, 2000).

Ulmer et al. (2016) studied the disproportional punishment of Black and Hispanic men in both federal and Pennsylvania state courts. They found that, for both federal and state defendants, much of the sentencing disparities between Black and Hispanic defendants and their white counterparts was explained by legally relevant factors and mandatory minimums. However, they also found that their results strongly suggested that much of the racial disproportionality in the federal system is determined by processes prior to the ultimate sentencing decision, warranting further study of these areas (Ulmer et al., 2016).

While research into how judicial decision-making and prosecutorial discretion influence racial/ethnic disparity in sentencing is incredibly important (as evidenced by the wealth of research conducted in those areas), this research often only looks at one point within the sentencing process. Some researchers noticed that looking at a single decision point within the process excludes the possibility of multiple earlier processes having an impact on racial disparity. Not only that, but they noted that different decision points may have an impact on other decision points, thus impacting

racial disparity in sentencing cumulatively. This would mean that focusing on a specific decision point, while insightful, is not where the research should end.

Kutateladze et al (2014) found that disparity exists across multiple decision points in the criminal process, resulting in more severe cumulative outcomes for Black and Hispanic defendants. Using 20 months of state-level data from New York, they reviewed 5 different decision points throughout the legal process for disparity – case acceptance, pretrial detention, case dismissal, receiving a custodial plea offer, and receiving an incarceration sentence. They found that there was disparity that disadvantages Black and Hispanic defendants in all but one of these decision points (finding that white defendants were disadvantaged for case dismissals). Further, a similar study using federal-level data from 2009 had similar results (Wooldredge et al., 2015). In examining pretrial detention, bail amount, charge reductions, type of sentence, and length of prison sentence, Wooldredge and colleagues found that there were significant direct effects of race/ethnicity on bond amounts, pretrial detention, and prison sentences as well as indirect effects of race/ethnicity on pretrial detention and prison sentences via type of attorney, criminal history, and bond amount. The focus on multiple decision points beyond just the ultimate sentencing decision reveals how race/ethnicity can still disadvantage a defendant even if there are no race/ethnicity effects found in other decision points (Wooldredge et al., 2015).

Sentencing disparity studies, while not lacking in quantity, do have some general limitations. The studies focused on prosecutorial discretion are often conducted using small samples and are mostly conducted using state-level data. Additionally, they tend to focus on specific crime types. The combination of these

factors makes it difficult to generalize to different types of scenarios (such as bigger jurisdictions, multiple offense types, and federal level data or even other states). Additionally, one major factor that is limited in the sentencing research is the ability to account for socioeconomic status and how that impacts sentencing outcomes. While there are proxies that can be used to attempt to measure socio economic status (imposition of fines, type of attorney, employment, education, etc.), it is difficult to have a true measure of socioeconomic status in sentencing research. Since class interacts with other factors such as race/ethnicity, class bias may account for some race/ethnicity effects (Spohn and Holleran, 2000). Lastly, one of the major limitations of existing sentencing disparity literature is the focus on one decision point within the legal system. While this in and of itself is not a limitation, it becomes a general limitation on the field of research when there are only a handful of studies that consider multiple decision points and how the cumulative effect of these decisions in the legal process may impact racial/ethnic disparity (Kutateladze et al, 2014; Wooldredge et al., 2015). However, even the studies that do consider multiple decision points within the criminal-legal process are limited in that they tend to focus on decision points made by the judge and the prosecutor. Judicial and prosecutorial discretion are well-studied and, while a very important area of research, it leaves out other less obvious actors within the criminal-legal system that still play a big role in the process, albeit more behind the scenes than prosecutors and judges. Because of this, even the studies that do look at multiple decision points are leaving out potentially crucial information, meaning there may be unrealized disparity coming

from those non-judicial and non-prosecutorial decision points that are being attributed to judges and prosecutors.

Role of Probation Officers

When it comes to sentencing, the judge ultimately makes the sentencing decision. However, other court actors have the potential to heavily influence the sentence. As previously discussed, there has been significant research regarding the impact of judicial and prosecutorial discretion on sentencing outcomes (Albonetti, 1992; Baumer, Messner, and Felson, 2000; Kutateladze et al., 2014; Shermer and Johnson, 2010; Spohn and Holleran, 2000; Wooldredge et al., 2015; Wooldredge and Thistlethwaite, 2004), but other courtroom actors have largely been left out of this discussion (Freiberger and Hilinski, 2011). One of the courtroom actors that has attracted limited research is the probation officer. As discussed above, the probation officer has a sizeable role in the presentencing process and has the potential to influence the sentence that the defendant receives based on the information they include in the PSR and how they calculate the sentencing guidelines.

Despite attracting limited research, surveys have found that members of the courtroom workgroup perceive the PSR and PO recommendations as being influential and that most court actors are in favor of keeping the PSR as a resource for sentencing (Leifker and Sample, 2010; Norman and Wadman, 2000b). In 2008, Leifker and Sample interviewed members of the courtroom workgroup in a small California jurisdiction about their perception of presentencing reports and probation officer recommendations. This group was made up of 15 respondents – 1 judge, 5

prosecutors, 1 private attorney, 1 public defender, and 7 probation officers. While most respondents concede that other actors (such as prosecutors) are heavily influential in determining the sentence received, many respondents also agreed that the probation officers and their supervisors are influential in the eventual sentencing outcome. Most of these respondents also stated that they believed that judges followed the recommendations in the PSR more often than not (Leifker and Sample, 2010). Similarly, survey research conducted by Norman and Wadman (2000b) found a high percentage of the courtroom workgroup felt that PO recommendations are influential in sentencing outcomes. They sent surveys to 378 courtroom workgroup members throughout the Utah State Department of Corrections regarding their opinions on POs and the presentencing report. Of the 378 surveys sent, 227 individuals responded. Judges made up 22% of the respondents, POs were 40%, prosecutors accounted for 34%, and public defenders made up only 4% of the respondents. Examining the responses, Norman and Wadman found that 74% of respondents felt judges followed sentencing recommendations, and 86% of respondents disagreed with the notion of removing the sentencing recommendations from the PSR (Norman and Wadman, 2000b).

While there is evidence that members of the courtroom workgroup perceive the PO and the PSR as being influential, it is necessary to determine whether this perception is reality. This seems to be the case, as investigations into the role of federal probation officers suggest there has historically been a high percentage of agreement between their sentence recommendations and the sentence that a defendant receives (Carter and Wilkins, 1967; Norman and Wadman, 2000b; Rush and

Robertson, 1987; Stinchcomb & Hippensteel, 2001). Recent work suggests that level of agreement continues to be high (Leifker and Sample, 2010).

In addition to the survey research conducted by Norman and Wadman mentioned above, they also took it one step further and pulled 101 cases from two Northern Utah state-level districts to determine whether there was actual (and not just perceived) agreement between the PO recommendations and the sentence imposed. They found that of these 101 cases (60 felony cases and 41 misdemeanor cases), the Court imposed sentences that aligned with the PO recommendations in 93 cases, meaning there was a 92% agreement between the PO sentencing recommendation and the final sentencing outcome (Norman and Wadman, 2000a).

Similarly, Leifker and Sample (2010) expanded on their survey research mentioned above by determining how often the sentencing outcomes in the small California county where they surveyed the courtroom workgroup aligned with probation officer recommendations. They used a chi-square analysis to examine 500 non-prison cases between 2004-2006 and found that 79% of cases were in agreement between recommendations and final sentencing outcomes (Leifker and Sample, 2010).

These findings are consistent with earlier work from Campbell, McCoy, and Osigweh (1990) who found that, using data from a state-level judicial district in Iowa, judges were more likely than not to sentence according to the probation officer's recommendation. This study focused on the type of sentence (incarceration, probation, deferred, fine, etc.) recommended and found that 56% of defendants who were recommended for incarceration were indeed sentenced to incarceration.

Campbell et al. noted that, although the ultimate sentence did align with the probation officer's recommendation more often than not, 56% is not substantially more than 50%. In discussing why there was only a slight majority of cases that followed the PO recommendation, they considered that probation officers may have a different view of punishment than judges and are less likely to recommend probation for defendants who have prior criminal records. Although the authors found that judges do sentence in agreement with probation officer's recommendations more than half of the time, this discussion underlines the need for research focusing on probation officer recommendations as they have a unique perspective within the legal system (Campbell et al., 1990).

However, agreement between the sentence imposed and the PO recommendations does not necessarily mean that the Court sentenced the defendant differently than they would have had there been no recommendation from the PO. In researching this question, Rush and Robertson (1987) found that there was a 77% agreement between the PO's recommendation and the sentence received. About half of these cases (35%) were determined to have been influenced by the PO recommendations in the PSR. These researchers had access to the sentence that the judge intended to impose before receiving the PSR as well as after receiving the PSR and found that 35% of the initial sentences were changed by the time the final sentence was imposed. They also found that, even in cases where the sentence imposed did not match the recommendation, the recommendation was still influential in determining a sentence. In these cases, the sentence imposed shifted closer to the sentence recommended than the judge had originally planned in almost all the

remining 23% of cases (Rush and Robertson, 1987). Therefore, about 58% of sentences were influenced in some way by the PO's recommendations, whether that was by bringing the eventual sentence imposed into the recommended sentencing range or by shifting the eventual sentence imposed closer to the recommendations despite remaining outside of the range. While this study was completed using New Zealand data, it does still suggest that the US system may have a similar outcome as the legal systems in the two countries are alike.

Not only is there a strong perception amongst the courtroom workgroup that the PO and their sentencing recommendations are influential, but there is also evidence of high agreement between PO recommendations and judges sentencing decisions (Campbell et al, 1990; Leifker and Sample, 2010; Norman and Wadman, 2000a). Additionally, there is evidence that, in cases where there is not agreement between PO recommendations and judges sentencing decisions, the PO recommendations may still impact judges sentencing decisions while not fully bringing the decision into agreement with the PO recommendation (Rush and Robertson, 1987). This information underlines the importance of examining how the PO determines the sentencing recommendation and whether there are any extralegal factors that may be influencing that calculation.

Despite recognition that probation officer's sentencing recommendations are influential, there is limited research on how extralegal factors impact the sentencing recommendations that the probation officers provide to the court. As discussed earlier, in the federal system, the probation officer calculates a recommended sentencing range based on an offense level and criminal history category. While there

is a set formula for calculating the offense level, there are still some aspects that are subjective and may be influenced by the probation officers' perceptions of the defendant. Most of the existing literature that focuses specifically on this area of the sentencing process uses data from small jurisdictions in a state-level legal system (Bridges and Steen, 1998; Freiburger & Hilinski, 2011; Leiber et al, 2011; Leifker & Sample, 2011) or a pre-*Booker* federal sentencing scheme (Kautt, 2002; Kautt, 2008; Kautt, 2009). Nevertheless, these studies do provide important insight into how extralegal factors may impact probation officer's calculations and sentencing recommendations.

The studies that have been conducted regarding extralegal factors and probation officer recommendations have found mixed results. Some studies found that race does not have a direct impact on probation officer recommendations and that while other extralegal factors (such as education) may influence probation officer decision-making, race and ethnicity were not directly related to sentencing recommendations (Leiber et al, 2011; Leifker and Sample, 2011; Rosecrance, 1987). Other studies found that race does have a direct impact on probation officer's sentencing recommendations, noting that probation officers attribute the causes of crime differently to Black versus white defendants, and that Black defendants were more likely to receive harsher sentencing recommendations from probation officers (Bridges and Steen, 1998; Freiburger and Hilinski, 2011; Kautt, 2002; Kautt, 2008; Kautt, 2009).

Rosecrance (1987) surveyed 65 probation officers from multiple states and jurisdictions on their view of whether extralegal factors such as race influence their

decisions regarding contents of the presentencing report and sentencing recommendations. They overwhelmingly agreed that legal factors had the most impact on their sentencing recommendations and that extralegal factors were only used to confirm the decisions that they had already made using legal factors. While there are glaring limitations regarding this study in that the respondents had a self-interest in not admitting that extralegal factors impact their decisions, recently there have been other studies that support this conclusion as well (Leiber et al, 2011; Leifker and Sample, 2011).

Using data from a small California jurisdiction, Leifker and Sample (2011) analyzed how extralegal factors, such as defendant's demographics, influenced probation officer sentencing recommendations. They randomly selected 500 cases from the California county between the years 2004-2006 and only included cases where the PO did not recommend a prison sentence, as the number of defendants who were recommended for prison time was too few to provide meaningful insight. The authors considered the defendant's gender, race, ethnicity, age, education level, employment status, and whether they were a parent and found that the only demographic characteristic that impacted recommendations was the defendant's employment status. Probation officers were more likely to recommend a longer jail sentence for defendants who were unemployed (Leifker and Sample, 2011).

Leiber et al. (2011) assessed whether Black defendants received harsher sentencing recommendations than white defendants in a non-federal jurisdiction in Iowa. They found that, while race was influential in sentencing outcomes, it was not influential in probation officer sentencing recommendations. This finding is

consistent with the above study which also found that race did not directly impact probation officer sentencing recommendations.

Alternatively, Freiburger and Hilinski (2011) found that race does have an effect on probation officer recommendations. They examined 2,115 felony cases from 2006 in an urban county in Michigan to determine how legal and extralegal factors impact probation officer's sentencing recommendations. When looking only at sentencing outcomes without controlling for probation officer recommendations, they found that Black defendants were 21% less likely to receive probation sentence than white defendants. Once they controlled for probation officer recommendations, they found that the relationship between race and receiving a probation sentence was no longer statistically significant, meaning that the sentencing disparity regarding race and probation sentences could be a result of the probation officer's recommendations and not the sentencing judge. Additionally, they found that white defendants with a high school education were 76% more likely than white defendants without a high school education to receive a recommendation of probation rather than jail. For Black defendants, however, higher education levels did not increase the chance that the probation officer would recommend a probation sentence over incarceration (Freiburger & Hilinski, 2011).

Freiburger and Hilinski's findings are consistent with earlier work by Bridges and Steen (1998) who found that probation officers assess Black juvenile defendants differently than white juvenile defendants and that this difference in assessment impacts their sentencing recommendations. Their study used 233 narrative reports written by probation officers during the processing of juvenile court cases in the years

1990-1991. These narratives were based on interviews conducted with the defendant and their family members and contained information regarding the juvenile defendant's social history, school information, risk of reoffending, and sentencing recommendations. Bridges and Steen reviewed the narrative reports to determine how they may differ between Black and white youths regarding attribution of criminal behavior, causes of the crime, risk assessments, and the sentencing recommendation. They found that probation officers referred to Black and white juvenile defendants differently, attributing the cause of their crimes to Black youths' personality and, conversely, to white youths' environment. Additionally, probation officers attributed a higher risk of reoffending to Black juvenile defendants than to white juvenile defendants. The differences in these narratives also led to harsher sentencing recommendations for Black defendants than for white defendants (Bridges & Steen, 1998).

These findings by Freiburger and Hilinski (2011) and Bridges and Steen (1998) are consistent with the limited research that has been conducted using federal data. Kautt (2009) studied probation officer recommendations in federal drug cases and found that extralegal factors do have influence in the writing of a probation officer's presentencing report and the offense calculations. Using data from federal drug cases from 1999-2002, she found that the total offense level computations conducted by probation officers as part of the guideline calculations may be a source of disparity based on extralegal factors among defendants, as the total offense level significantly differed based on race. This disparity persisted even when accounting for the specific probation office that compiled the PSR (Kautt, 2009). This is

consistent with her earlier work using the same dataset, which found that legally relevant factors had the most impact on the total offense level but that race and ethnicity also had a statistically significant influence over the total offense level. This study also found that the influence of the legally relevant factors did not cover-up the impact of the extralegal factors, meaning that the impact of the disparate offense level computations likely had an impact on the sentencing outcome since, as mentioned above, judges tend to sentence within range or use the guidelines range as a baseline when calculating a variance (Kautt, 2008).

However, the existing research regarding probation officer roles is limited in scope and size. Much of the existing work focuses on whether judges use probation officer recommendations or how PO's fit into the sentencing landscape (Campbell et al., 1990; Leifker & Sample, 2010; Norman and Wadman, 2000b; Rush and Robertson, 1987). Additionally, most of the studies that looked at the impact of extralegal factors in calculating sentencing recommendation use small sample sizes, many of which were from jurisdictions where there was limited diversity in race/ethnicity (Leiber et al., 2011; Leifker & Sample, 2011). Many of these studies only examined specific case types as well. For example, one study only reviewed non-prison cases (Leifker & Sample, 2011), one study only reviewed juvenile cases (Bridges and Steen, 1998), and one study only reviewed drug offenses that did not go to trial (Kautt, 2009).

Another issue is that much of the extant research uses data from non-federal legal systems. Federal probation officers and state probation officers often have different levels of involvement in the presentencing process, and some state

jurisdictions do not involve the probation officer in determining sentencing recommendations at all. Federal probation officers are very involved in the presentencing process and are the party that calculates the sentencing guidelines that federal judges are mandated to consider. Because of the level of influence that the federal probation officer has on the presentencing process, it is important to study the role of the probation officer in the federal system separately from state-level systems where they do not have as much influence. In the federal system, the Supreme Court has said that the sentencing judge is required to consider the sentencing range calculated by the probation officer and, should they impose a sentence outside of that range, they must explain that decision. Because of this, the federal probation officer can have a more significant impact on the defendant's sentence, making it necessary to expand the research specifically on federal probation officers and sentencing recommendations.

Additionally, the studies that do use federal-level data were conducted using pre-*Booker* data (Kautt, 2002; Kautt, 2008; Kautt, 2009). While these studies are still insightful in a post-*Booker* sentencing scheme, the *Booker* decision had such a huge impact on how the federal sentencing guidelines are applied that it is worth examining if/how PO sentencing recommendations have changed since the guidelines became advisory.

Since one of the main purposes of the Sentencing Reform Act of 1984 was to reduce disparity in sentencing, it is important to examine whether the federal sentencing guidelines scheme is truly reducing disparity as intended. Much of the existing work related to sentencing and disparity focuses on sentencing outcomes or

prosecutorial influence but leaves out other aspects of the criminal-legal process where disparity may be covertly introduced. One such aspect is the probation officer's calculation of the sentencing guidelines. The relatively few studies that have examined disparity in probation officer calculation of guideline range tend to be either state-level studies conducted using data from small jurisdictions or federal studies that were conducted prior to the *Booker* decision in 2005. This has left a gap in the research regarding post-*Booker* examinations of federal guideline calculations and extralegal disparity that the current study hopes to fill.

Chapter 3: Theory and Hypotheses

Much prior research on racial and ethnic disparity in the legal system has used a focal concerns framework (Steffensmeier et al., 1998) as a vehicle for understanding why and how disparity exists. Focal concerns theory uses three “focal concerns” to explain the decision-making process of the courtroom workgroup and how those decisions are informed by their perception of the defendant. Focusing on the three focal concerns alone, however, is not enough to provide a firm understanding about why sentencing disparity may occur. Steffensmeier et al. (1998) recognized this and incorporated the idea of a “perceptual shorthand” which is partially based in causal attribution theory (Hawkins, 1981). Examining sentencing disparity through the lens of both focal concerns theory and causal attribution theory allows for a more robust theoretical understanding of racial and ethnic disparity in the legal system.

Focal Concerns

Focal concerns theory is an oft-used theory in sentencing research. Developed by Steffensmeier, Kramer, and Ulmer (1998), focal concerns theory created a framework that can be used to understand why racial and ethnic disparity persists within the legal system. Originally used to explain judicial decision-making, Steffensmeier et al. noted three categories (or “concerns”) that may influence a judge’s decision regarding sentencing. Those three categories are (1) blameworthiness, (2) community protection, and (3) practical constraints. Blameworthiness, rooted in the notion that punishment should fit the crime, accounts

for victim impact, offense severity, defendant's role, and the defendant's individual responsibility as it relates to the crime. Community protection focuses on deterrence (both general and specific) and risk of recidivism. Specific deterrence, including incapacitation through incarceration, would be considered under the community protection focal concern as it is much more difficult for a defendant to further harm the community while incarcerated. A judge would also weigh the risk of future recidivism under the community protection prong of focal concerns, as they hope to fashion a sentence that will prevent future criminal acts by the defendant. In doing so, judges focus on the defendant's characteristics (education level, employment, substance use, etc.), criminal history, perceived dangerousness of the defendant, and perceived likelihood of rehabilitation. The last prong of focal concerns focuses on practical constraints of both the defendant and the legal system. Examples of the practical constraints related to a defendant could include the defendant's health and medical conditions or the defendant's family situation, whereas the practical constraints related to the legal system may include the relationships between the judge and other court actors, cost of incarceration, or capacity/staffing levels at local jails/prisons (Steffensmeier et al., 1998). Steffensmeier et al. argue that because judges are limited in time and resources when sentencing a defendant (Albonetti, 1991), they rely on these focal concerns to guide their decision-making process.

Recent work from Galvin and Ulmer (2022) includes a fourth focal concern – salvageability. Salvageability focuses on the rehabilitation aspect of sentencing. Galvin and Ulmer argue that, while the original three focal concerns do consider the likelihood of defendant's rehabilitation, it is only in the context of those three

concerns and not in the context of the defendant himself. For example, rehabilitation may be considered under the community protection concern, but only to the extent that the defendant is rehabilitated enough to not harm the community in the future. Salvageability takes a more defendant-centric approach in determining how a defendant may be best rehabilitated than the original three focal concerns. This focal concern is especially helpful in understanding decision-making as it relates to imposition of alternative sentences such as problem-solving courts (i.e. drug court, mental health court, veterans court), community confinement (i.e. halfway houses, sober houses, home detention), and boot camps (Galvin and Ulmer, 2022).

These four focal concerns provide a frame for understanding how racial and ethnic disparities are introduced into the legal system, but another crucial aspect of Steffensmeier et al.'s focal concerns theory is the notion of a "perceptual shorthand." Perceptual shorthands are beliefs that are used as a shortcut for understanding the behavior of others and are often used when making decisions with limited time or resources. Steffensmeier et al. argue that judges rely on perceptual shorthands in sentencing a defendant due to heavy caseloads and limited time/resources (Steffensmeier et al., 1998). An individual's perceptual shorthand is developed, in part, via causal attributions tied to societal stereotypes. Exploring causal attribution theory provides a deeper understanding of how racial and ethnic disparities are introduced into the legal system via focal concerns.

Causal Attribution Theory

Causal attribution theory is useful for understanding how perceptual shorthands are developed and applied in sentencing and related punishment decisions.

Originating in the field of psychology, causal attribution is a process by which individuals perceive and attempt to explain the causes of another's behavior (Heider, 1958; Shaver, 1975). These causal attributions are then used to inform future perceptions and interactions with that individual or group. Shaver (1975) used causal attribution theory to explain that an individual's perception of the cause of another's behavior can generally fall into one of two categories – either the behavior is caused by external factors or internal factors (Hawkins, 1981; Heider, 1958; Shaver, 1975). For example, in the case of a defendant accused of assault during a bar fight, one might attribute the cause of his actions (assaulting another bar patron) to being provoked by the other patron and/or being under the influence of alcohol. This would be an example of external causal attribution. An example of internal causal attribution, however, would be if the cause of the defendant's actions is attributed to him being an aggressive person or having a predisposition to violence. These differences in perception can lead to bias within the legal system. They may cause the legal actor (judge, prosecutor, etc.) to differently assess effective punishment, risk to the community, and a defendant's propensity for successful rehabilitation. Using the example of the defendant involved in a bar fight, a judge who attributes the crime to an external cause may feel that if the defendant hadn't been provoked, he would not have committed the assault. This may make the judge more inclined to impose a lenient sentence that is targeted to ensuring that the defendant avoids situations where he may be provoked in the future (i.e. prohibiting him from patronizing an establishment that sells alcohol). However, if the judge attributes the cause of the bar fight to internal factors (such as an aggressive personality), the judge may impose a

harsher sentence because of the perception that the man may be difficult to rehabilitate as he has an internalized propensity for violence and would continue to pose a risk to the community.

The utility of causal attributions theory in criminology has been demonstrated by a handful of prior work (Albonetti, 1991; Berryessa, 2023; Bridges & Steen, 1998; Galvin & Ulmer, 2022; Harris, 2009; Hawkins, 1981; Koons-Witt, 2002). Hawkins (1981) explored causal attributions and how they impact severity of punishment. Surveying university students, he found that when the students attributed the cause of a defendant's crime to external factors, they prescribed a more lenient punishment. When students attributed the defendant's crime to internal factors, however, they prescribed a more severe punishment (Hawkins, 1981).

Albonetti further developed the use of causal attributions theory in criminology in her 1991 study of how judges manage uncertainty when assessing a defendant's likelihood of recidivation. Using this theoretical framework, she found that Black defendants received harsher sentences than white defendants, supporting her hypothesis that causal attribution allows judges to ascribe a higher risk of recidivism to Black defendants than to white defendants (Albonetti, 1991).

Additionally, the recent addition of the fourth focal concern is also based in causal attribution theory (Galvin & Ulmer, 2022). Referencing Shaver (1975), Hawkins (1981), and Albonetti (1991), Galvin and Ulmer (2022) argue that judges attempt to predict the likelihood of rehabilitation (Albonetti, 1991) by categorizing the cause of criminal activity as either internal or external (Shaver, 1975), leading to an assessment of whether the defendant is able to be rehabilitated and basing a

sentence off of that conclusion (Hawkins, 1981). They use this framework to study how extralegal factors impact likelihood of referral to a rehabilitative program in place of criminal prosecution, finding that Black defendants are less likely to be referred to a rehabilitative program than their white counterparts (Galvin & Ulmer, 2022).

Focal Concerns, Causal Attributions, and the Probation Officer

Despite originally being formulated to explain judicial decision-making, Steffensmeier et al.'s focal concerns theory has been applied to many other members of the legal system. This includes prosecutors (Kutateladze et al., 2014; Shermer & Johnson, 2010; Spohn et al., 2001; Vance et al., 2019), police (Crow and Adrion, 2011; Gau et al., 2010; Morgan et al., 2020), and occasionally probation officers (Berryessa, 2023; Freiburger & Hilinski, 2011; Harris, 2009). Because judges often do not have the time or resources to make a wholly informed sentencing decision (Albonetti, 1991), one resource they may use to reduce uncertainty is the presentencing report (PSR), which is written by the probation officer. While this may be a helpful method for judges to reduce their reliance on their own perceptual shorthand (Hagan et al, 1979; Leiber et al., 2018), it does not account for the fact that probation officers also are limited on time and have heavy workloads, leading them to lean on their perceptual shorthand in writing the PSR. Prior work has shown that probation officers do follow a similar framework of focal concerns and perceptual shorthands when writing PSRs and making sentencing recommendations (Berryessa, 2023; Bridges & Steen, 1998; Harris, 2009; Freiburger & Hilinski, 2011; Leiber et al., 2018; Leifker & Sample, 2011), making it important to understand how a probation

officer's perceptual shorthand is formed and how it impacts their sentencing recommendations.

Causal attributions play a part in developing a probation officer's perceptual shorthand, specifically by providing an avenue for the PO to determine whether the defendant's actions were caused by internal or external factors. For example, after reviewing probation officer narratives written for PSRs in juvenile cases, Bridges and Steen (1998) found that POs were more likely to attribute the cause of crime to an internal source (personality traits, etc.) for Black youth and more likely to attribute the cause of a white youth's crime to external sources. This difference in causal attributions for Black and white juvenile defendants has the potential to influence decision-making under both the blameworthiness and community protection prongs of focal concerns. For example, there is inherently more culpability (or blameworthiness) identified for an individual whose actions are attributed to personal, internal characteristics than for an individual whose actions are attributed to external sources. This means that, based on the work of Bridges and Steen (1998), there is more blameworthiness placed on Black defendants than white defendants. Additionally, this distinction between internal and external causes of criminal actions has implications under the community protection prong of focal concerns. If the motivation for a defendant's criminal actions is seen as internal, a probation officer may feel as though that defendant is a higher risk to the community, whereas if the motivation for criminal activity is viewed as external, the PO may feel that the defendant is only a risk to the community if that external factor still exists. This could lead to more lenient sentencing recommendations as the PO may view the defendant

as needing less rehabilitation (and simply mitigation regarding the external cause) in order to not be a danger to the community.

More recently, Berryessa (2023) uses a combination of focal concerns theory and causal attributions to study how a PO's perception of a defendant's remorsefulness impacts sentencing recommendations. She found that the perception of a defendant's remorse does influence their sentencing recommendations and the way they write about the defendant in the PSR as it relates to the blameworthiness and community protection focal concerns. She also found that POs place a large focus on the situation and external context of the criminal activity, noting that POs often used external context as a reason for a more lenient sentencing recommendation. This bolsters the notion that probation officers use causal attribution (specifically internal versus external attributions) to make decisions regarding blameworthiness and community protection that influence their final sentencing recommendation (Berryessa, 2023).

While focal concerns is the dominant framework used in extralegal disparity and sentencing research, it is not without fault. Lynch (2019) provides an in-depth critique of how focal concerns is used in sentencing research today. In part, she criticizes the fact that it is rarely directly tested, instead being tested through proxies such as race. Her critique focuses on sentencing outcomes and judicial decision-making (rightfully so, as most of the focal concerns literature is based on judicial decision-making), in which much of the prior research was conducted using proxies for judge's perception of the defendant (Lynch, 2019). However, much of the research focusing on probation officers and focal concerns looks at the narratives

written by probation officers or is derived from interviews of probation officers themselves (Bridges and Steen, 1998; Harris, 2008, 2009; Berryessa, 2023). This solves the proxy problem that Lynch describes, as probation officer narratives and interviews provide the data necessary to understand the probation officer's actual decision-making process. Additionally, these studies concluded that probation officers do make causal attributions that fall under the focal concerns of blameworthiness and community protection which influence their sentencing recommendations. These findings caution against a wholesale movement away from focal concerns theory, instead providing support for its utility in circumstances where it can be directly tested. The problem is that the data containing the information necessary to directly test the focal concerns framework in the context of probation officer decision-making does exist but is often very restricted and requires special permission and access from government agencies in order to access it. This thesis does not include that restricted data, instead using proxies (race, ethnicity, and gender) to assess probation officer's decision-making regarding the four focal concerns and causal attributions. Despite its use of proxies, this study lays the groundwork for arguing the importance of access to restricted PO-related data to the agencies that control the access, hopefully allowing for more robust and direct testing of the focal concerns framework and federal probation officer decision-making in the future.

Hypotheses

The aim of this paper is to determine if disparity based on extralegal factors is introduced into the federal legal system via the probation officer and their sentencing

guidelines calculations. The current study examines the application of SOCs in the offense level calculation to determine whether there is a difference in application of SOCs between different demographic groups. Prior theorizing notes that POs are more likely to attribute causes of crime to internal factors for Black defendants and external factors for white defendants (Bridges and Steen, 1998; Harris, 2008, 2009; Berryessa, 2023). Theoretically, the same social attribution processes may apply to other key aspects of PO decision making such as subjective decisions on whether to apply certain SOCs during offense level computations. Additionally, prior work has used a focal concerns framework to show that age, gender, and ethnicity are also areas where disparity is introduced into the legal process. These studies found that young, male, minority defendants were given harsher sentences than their counterparts (Doerner & Demuth, 2010; Franklin, 2015; Freiburger & Hilinski, 2013; Kramer & Ulmer, 2009; Spohn & Holleran, 2000; Steffensmeier, 1998; Steffensmeier & Painter-Davis, 2017). These studies focus on judicial decision-making, but since focal concerns and causal attribution theories can be applied to the probation officer as well, it stands to reason that POs use the same social attribution process as judges regarding extralegal factors such as race, ethnicity, gender, and age. In line with these arguments, the following is expected:

Hypothesis 1: Probation officers will calculate Black defendants' offense levels more harshly than similarly situated white defendants.

Hypothesis 2: Probation officers will calculate Hispanic defendants' offense levels more harshly than similarly situated white defendants.

Hypothesis 3: Probation officers will calculate male defendant's offense levels more harshly than similarly situated female defendants.

Chapter 4: Data and Methods

To test its hypotheses, this project uses federal sentencing data from the U.S. Sentencing Commission's Individual Offender datafiles. These datafiles contain defendant and case information for federal felony and class A misdemeanor convictions. While the USSC has made datasets publicly available dating back to FY2002, this project uses data from FY2019 - March 1, 2020.⁸ The guidelines were last amended in 2018,⁹ so these years are consistent with each other as there were no changes to the guideline manual during those years. Due to the onset of the COVID-19 pandemic in March of 2020 and the subsequent court disruptions, the FY2020 data used in this project only goes up to March 1, 2020.

To start, this dataset contained information on 91,152 cases. The final dataset after data cleaning contains information on 71,189 cases.¹⁰ Cases were dropped for several reasons, including the guideline manual that was used. This project specifically uses cases sentenced under the 2018 guidelines manual, as it is the most recent and allows for an examination across multiple years. Cases that were missing data on guideline manual year or did not use the 2018 guidelines manual were dropped from analysis.¹¹ The default is to use the guidelines manual that is currently in effect at sentencing, but if the guideline manual in effect at the time of the offense

⁸ FY2019 begins on October 1, 2018, and goes through September 30, 2019.

⁹ The guidelines were most recently amended in November 2023 but data including these amendments are not yet available as we are only halfway through FY2024.

¹⁰ Of these cases, 99% are felonies and 1% are class A misdemeanors.

¹¹ Of the 91,152 cases in the original dataset, 80,590 used the 2018 guidelines manual. 6,329 cases were dropped due to not using the 2018 guidelines manual and 6,268 cases were dropped due to missing information regarding which guidelines manual was used. Most of these cases were instances where the PSR was waived, which occurs often in misdemeanor or immigration cases for quick processing.

is more beneficial to the defendant, then that guideline manual must be used (see *Peugh v. United States*, 2013). Because the focus of the current study is on guidelines adjustments, and these can change under different guidelines manuals, it is necessary to restrict the analysis to a single guidelines manual. This has the added benefit of removing cases where the PSR was waived or the case involved missing offense level computations, which is appropriate because cases without offense level computations cannot be analyzed.¹²

Additionally, cases where the judge made a Chapter 2 change at sentencing were dropped from the analysis.¹³ When judges make Chapter 2 changes at sentencing, they change the way the offense level is calculated. Because this project is looking at disparity introduced by the probation officer, it is appropriate to drop any cases where the judge changed the probation officer's offense level calculations. Unfortunately, the PO's original calculations are not retained in the dataset in cases where a judge makes a change to those calculations. Because of this, it is appropriate to drop these cases as including them would introduce judicial decision-making into a project focused on probation officer decision-making.

Lastly, cases with missing data on race, ethnicity, or gender were dropped from the analysis.¹⁴ It is important to note that while collection of demographic data is generally consistent across districts, there are a couple of districts that do not

¹² There were 116 observations dropped due to missing offense level calculations, 74% of which were 18 USC 924(c) convictions and 25% of which were 18 USC 1028A convictions, both of which have a statutorily required sentence and do not receive offense level calculations.

¹³ There were 4,886 cases with a chapter 2 change.

¹⁴ Of the cases in the dataset, 0.9% were missing information on race, 2.08% were missing information on ethnicity, and 0.05% were missing information on gender.

consistently capture race and ethnicity,¹⁵ meaning that a higher percentage of cases out of these districts were dropped. After these changes, there are 71,189 cases available to examine the role of extralegal factors in federal probation officer's guideline calculations.

Dependent Variables

For this project, the dependent variable is the number of levels that were increased/decreased by the probation officer in calculating the defendant's offense level. Specifically, the dependent variable is the change in offense level from the base offense level to the offense level that is calculated after the Chapter 2 adjustments (SOCs) have been applied. The base offense level (BOL) is the starting point for all offense level calculations. This is coded as a continuous variable.

Although SOCs are key elements of the final offense level calculations, they do not usually equate to the final offense severity in the case. In addition to the Chapter 2 SOCs, the final offense level also reflects Chapter 3 adjustments for general offense-level considerations, such as one's role in the offense, obstruction of justice, or acceptance of responsibility, as well as Chapter 4 adjustments for factors related to prior criminal history. In addition to investigating the unique impact of Chapter 2 adjustments, supplemental analyses were also conducted to examine total differences between base and final offense levels.

¹⁵ These "problem districts" are the District of Nebraska (16.58% of cases are missing ethnicity and 21.13% of cases are missing race) and the Western District of Missouri (67.58% of cases are missing ethnicity). Few districts had cases missing gender and those that were missing gender data were missing it in less than 1% of cases.

Independent Variables

The independent variables used in this project are race, ethnicity, and gender. Race and ethnicity are measured using binary variables that capture non-Hispanic white defendants as 0 and Black defendants as 1, and non-Hispanic white defendants as 0 and Hispanic defendants as 1. Gender is also measured as a binary variable with male defendants coded as 0 and female defendants coded as 1. It is worth noting that male and female are the only options available for reporting gender. These race, ethnicity, and gender variables capture how the defendant self-reported their race, ethnicity, and gender to the probation officer.

Covariates

This project also makes use of several covariates. The covariates included in this project are age, offense type, base offense level, pretrial detention status, education level, citizenship status, number of dependents, criminal history category, and plea status.¹⁶ Additionally, the matching models include race, ethnicity and gender as covariates in the models where they are not the primary independent variable (i.e., when race/ethnicity is the independent variable, gender becomes a matching variable).

Age is one of the relevant covariates for this project. Prior work has shown that defendants in different age groups are subjected to differing severity of punishment (Freiburger, Jordan, & Hilinski-Rosick, 2019; Steffensmeier et al., 1995).

¹⁶ Additionally, the effects of district of conviction were absorbed in the OLS models, meaning that the effects of individual districts were accounted for. Districts have different racial/ethnic makeups and by including the districts in the analysis, it mitigates the influence that the differing racial makeup of each district may have on the race and ethnicity results.

This variable is coded as a continuous variable reflecting the age of the defendant at sentencing.

The analysis also includes controls for general offense type categories. This is important because different offense types have different guidelines, and some have few applicable SOCs, whereas others have many. For example, the guideline for murder contains no SOCs, whereas the guideline for drug trafficking contains 18 potential SOCs. Additionally, controlling for offense type helps account for the fact that some race/ethnicity and gender groups may be overrepresented in certain offense types. There are 30 different offense types contained in this dataset (see Table 2). For the OLS regressions, these 30 offense types were sorted into one of eight general categories, which were then coded as binary variables with 0 for cases that were not in that offense category and 1 for cases that were in that offense category.¹⁷ For the parts of the analysis that utilize matching, groups were matched on the underlying guidelines used for drug trafficking cases and firearms offenses as they are the two largest offense type categories other than immigration, and therefore provide the largest sample size. For drug offenses, cases using the 2D1.1 guideline (Unlawful Manufacturing, Importing, Exporting, or Trafficking Controlled Substances) will be analyzed. For firearms offenses, the 2K2.1 guideline (Unlawful Receipt, Possession, or Transportation of Firearms or Ammunition) were used to match the groups. Matching groups on specific guidelines ensures that the offense type does not skew the results, as the PO could apply the same SOCs for both sets of defendants.

¹⁷ The offense type categories are white collar/fraud, drugs, violent, sex abuse/pornography, property, firearms, immigration, and court violation/public order.

Additionally, the defendant's base offense level is included as a covariate to account for any influence that the BOL may have on the way that SOCs are applied.

Prior work has shown that pretrial detention decisions can be a source of disparity in sentencing outcomes (Demuth, 2003; Schlesinger, 2005), so a variable is also included to capture pretrial detention decisions. This pretrial detention variable is coded as a 0 for defendants who were released and 1 for defendants who were held in custody. Furthermore, some prior work suggests it is important to capture educational attainment when examining racial disparities in federal sentencing (Franklin, 2017). Education level is included as a numerical value reflecting the number of years of education. Cases where the education level was listed as a G.E.D. were coded as 12 in keeping with USSC best practices.

Similarly, prior work suggests that defendants who are not U.S. citizens may be perceived as more dangerous and more blameworthy, leading to harsher sentencing (Hartley & Armendariz, 2011; Koo et al., 2022; Light et al., 2014; Wu & DeLone, 2012). Alternatively, in the case of defendants who are likely to be deported after sentencing, it is possible that the probation officer may be more lenient due to the collateral consequence of deportation. Because of these two reasons, it is important to account for citizenship status. This is captured with a binary variable coded 0 for U.S. citizens and 1 for non-citizens. Some prior work also suggests that the impact of financial dependents is linked to race and gender disparity in federal court (Bickle & Peterson, 1991; Doerner and Demuth, 2014; Farrell, 2004; Leonard and Sample, 2001; Stacey & Spohn, 2006; Testa and Hartley, 2021). In line with this, the number of dependents is included in the analysis as a continuous variable.

Another key variable is the defendant's criminal history category, which is determined by assigning points to prior convictions based on the sentence severity and recency of each criminal history event. While this is a separate part of the guidelines calculation than the offense level, it may have some influence on how the probation officer perceives the defendant, and therefore is appropriate to include as a matching and control variable. Additionally, criminal history may be inextricably linked to race if non-white defendants are more likely to receive harsher sentences and criminal history points are calculated in part by using prior sentencing severity. There are six criminal history categories (I-VI), so the criminal history variable is a categorical variable coded 1 through 6 corresponding with the criminal history category the probation officer has assigned to the defendant.

Lastly, the analyses control for the mode of conviction in the case, with defendants who pleaded guilty coded 1 and those who went to trial coded 0. This accounts for key differences in disposition types and is important because some types of guidelines adjustments, like acceptance of responsibility, are closely tied to whether or not a defendant pleads guilty. To examine multicollinearity, VIF analysis was conducted for the variables included in the study. The results are provided in Table 3. The mean VIF is 1.70, with all individual VIFs falling below 3.5. All variables have VIFs in an acceptable range and are not a cause for concern for multicollinearity (Wooldridge, 2016).

Analytic Strategy/Methods

This project uses OLS regression and Mahalanobis distance matching analysis to examine whether federal probation officers apply SOCs to defendants differently

based on race, ethnicity, and gender. Although the focus of the primary analysis is on the application of SOCs associated with Chapter 2 adjustments, supplemental analyses were also conducted to investigate total differences in base and final offense level scores. The same models run in the primary analysis were also run for secondary analysis, however the dependent variable was the difference between the BOL and the FOL for the supplemental analysis.

The first model consists of an Ordinary Least Squares (OLS) regression, using the difference between the base and Chapter 2 adjusted offense levels as the dependent variable. This allows for a basic understanding of whether there is disparity between race, ethnicity, and gender in how Chapter 2 SOCs are applied. Age, base offense level, offense type, pretrial detention status, education level, citizenship status, number of dependents, criminal history category, and plea status are utilized as covariates. Additionally, these models were run once including immigration offenses, and once without. Because immigration offenses make up a large number of federal cases and ethnicity is inextricably linked to these cases (as Hispanic defendants made up 97% of the immigration cases in this dataset), it is important to examine the data both with and without these offenses.

The second set of statistical models consists of a series of Mahalanobis distance matching models. Prior sentencing research has demonstrated the utility of matching methods in sentencing research (Bales & Piquero, 2012; Franklin, 2015; Paternoster & Brame, 2008; Ridgeway, 2006). Much of this prior work uses propensity score matching, however recent work by King and Nielson (2019) suggests that propensity score matching (while popular) can create a more

imbalanced model and often should not be used, instead encouraging use of other matching methods. One of these methods is Mahalanobis distance matching (MDM), which is the method used in this project.¹⁸

Because demographic groups differ on several characteristics that have also been shown to influence sentencing, matching can be an effective method for ensuring that results of the model are related to the extralegal factors tested and not the other characteristics in which the groups differ. Mahalanobis distance matching achieves that by first determining which group is the “control” group and which group is the “treatment” group. Units in the treatment group and control groups are then matched using a Mahalanobis distance, which is calculated based on how alike their covariates are. For example, the Mahalanobis distance would be 0 for two units that have the exact same covariate values, and the more different the covariate values are, the larger the Mahalanobis distance. Then, the difference in the outcome variable between those matched observations is calculated, resulting in the average difference of the outcome variable between the treatment and control groups. For example, one of the extralegal factors in this project is the defendant’s race. Using Mahalanobis distance matching, non-Hispanic white defendants are grouped together as the “control” group, and Black defendants are grouped together as the “treatment” group. Then, white and Black defendants were matched based on how similar their covariate values were (age, base offense level, citizenship status, etc.), and the difference between the Chapter 2 change in offense levels was calculated for each pair of

¹⁸ Both PSM and MDM models were run to examine which method achieved better balance between the covariates. The MDM models achieved better balance and were therefore used for this project.

matched observations. Then, those differences were averaged across the whole sample, resulting in the average difference in the Chapter 2 offense level calculations between non-Hispanic white and Black defendants.

The use of Mahalanobis distance matching (MDM) provides important advantages for this project. First, it is easy to determine how effective the model is at balancing the covariates and creating comparable matches between the treatment and control groups. This is done by examining the standardized mean difference before and after matching (Rosenbaum & Rubin, 1985). This enables the researcher to assess how effective the model is at comparing the two groups, allowing for increased confidence in the results of the model. Additionally, this method addresses the research question from a counterfactual perspective. This is a helpful perspective for this project, as it examines how the offense level calculations may be different if defendants had different extralegal characteristics (race, ethnicity, or gender). A counterfactual framework is also important for causal inference; however, it is important to note that this study cannot determine causality due to the fact that the extralegal characteristics examined (race, ethnicity, and gender) are unable to be manipulated. For example, the control and treatment groups in this project are based on static defendant characteristics that cannot be manipulated to allow for direct causal tests of their influence. Despite the inability of this analysis to determine causality, it is still a useful tool in examining average differences in offense level calculations between demographic groups. Additionally, prior work has argued that, although true causality cannot be determined, this type of analysis allows for “careful

causal thinking” due to the creation of balanced treatment and control groups (Franklin, 2015; Paternoster & Brame, 2008).

Multiple MDM models were run to examine race, ethnicity, and gender. First, a model was run comparing non-Hispanic white and Black defendants across all offense types and then all offense types excluding immigration offenses. It was then run two more times after matching within two specific guidelines offenses, once for drug trafficking offenses and once for firearms offenses. This process was then repeated for ethnicity, comparing non-Hispanic white defendants to Hispanic defendants across all offense types (with and without the inclusion of immigration offenses), drug trafficking offenses, and then firearms offenses. Lastly, these models were also run to compare male and female defendants across the same offense types.

Another aspect of MDM is the matching method used to determine how observations from the treatment and control groups are matched to each other. This project uses kernel matching with replacement. Kernel matching assigns weights to the observations in the control group based on how similar the covariates are between matches.¹⁹ This analysis was conducted with replacement, meaning that an observation in the control group may be matched to multiple treatment observations. This allowed for better matches between the two groups. The results of these analyses as well as descriptive statistics are detailed in the next chapter.

¹⁹ A Epanechnikov distribution, which has a parabolic distribution, was used for this project. Other kernel types were tested, but the Epanechnikov kernel model resulted in the most balanced model.

Chapter 5: Results

Descriptive Statistics

This project investigates how race, ethnicity, and gender are related to Chapter 2 offense guidelines calculations. Descriptive statistics for the full analytic sample are provided in Table 4, along with separate values for the subsets of cases involving drug trafficking and firearms offenses. There are 71,189 cases in the dataset. Overall, 19% of defendants were non-Hispanic white, 20% were Black, and 61% were Hispanic. Additionally, 89% of defendants are male. For drug offenses, 30% of defendants were Black, 44% were Hispanic, and 27% were non-Hispanic white defendants, and 85% were male. For firearms offenses, however, 55% of defendants were Black, 19% were Hispanic, and 26% were non-Hispanic white. Only 4% of the firearms cases had female defendants.

--Insert Table 4 about here--

Also reported in Table 4 are the average base offense levels, Chapter 2 adjusted offense level, and the final offense level (although the final offense level is only used for supplemental analysis in this project). The average offense levels differed between the full sample, the drug sample, and the firearms sample. This is expected, as each offense type has different prescribed base offense levels and Chapter 2 adjustments/SOCs. Overall, the average base offense level was 15.51 and the average offense level after Chapter 2 adjustments was 18.48, meaning there was almost a 3-level increase due to the Chapter 2 adjustments. However, the difference between the base offense level and the Chapter 2 adjusted offense level for drug offenses is notably smaller than the full sample and the firearms sample. This is

interesting, as drug offenses have the highest number of SOCs in Chapter 2, so one would expect to see a larger difference between the two levels. However, this may be in part due to the application of the statutory safety valve provision,²⁰ which was written into the guidelines calculations as a Chapter 2 adjustment that decreases a defendant's offense level by 2 levels. The safety valve adjustment is one of the most applied drug trafficking SOCs, so it is possible that it may be influencing the average change between the base offense level and the Chapter 2 adjusted offense level. The average offense levels for firearms offenses, however, were similar to the full sample, with a 2.76-level increase from base offense level to Chapter 2 adjusted offense level.

Most covariates had similar values across the different offense-type samples. Notable differences were found for age, citizenship status, and criminal history category. Defendants convicted of firearms offenses were, on average, about 3 years younger than defendants in the full sample or the drug sample. For citizenship status, 48% of all defendants were non-U.S. citizens, as compared to 21% for drug trafficking and 5% for firearms offenses. This is unsurprising, as about half of convictions in the federal legal system are for immigration related offenses, which are included in the full sample. Finally, the criminal history category for firearms offenses is notably higher than for the full sample or the drug trafficking sample. This

²⁰ The Safety Valve provision allows federal courts to sentence under the mandatory minimum in drug trafficking cases if defendants meet certain criteria. The First Step Act of 2018 broadened the statutory provision to allow more defendants to meet the required criteria. However, since the USSC did not have a voting quorum of commissioners at that time, the guidelines manual could not be amended to reflect the new and broader criteria. Because of this, the guidelines manual used in this project reflects the pre-First Step Act criteria for the 2-level reduction, which require that (1) the defendant have no more than 1 criminal history point, (2) the defendant did not possess a weapon or use/threaten violence in the offense, (3) the offense did not result in bodily injury or death, (4) the defendant did not play an aggravating role in the offense, and (5) the defendant was truthful with the government regarding offense details.

is unsurprising, as most firearms offenses prosecuted in the federal system consist of defendants who were prohibited from possessing a firearm due to prior criminal history. Because of this, it is expected that defendants convicted of firearms offenses would have higher criminal history scores.

Table 5 describes the dependent variables and covariates by race, ethnicity, and gender. The dependent variable in this project is the difference between the defendant's base offense level and the offense level after Chapter 2 adjustments (SOCs) have been applied. The mean Chapter 2 adjusted offense level was higher than the mean base offense level for all groups (Black, Hispanic, white, male, and female). The mean increase in levels for Black and Hispanic defendants were 2.67 and 2.66 levels respectively. Contrary to what was hypothesized in this project, the mean increase for non-Hispanic white defendants was 4.26 levels, which is about 1.6 levels higher than for Black and Hispanic defendants.²¹ However, this trend does not hold when examining specific types of offenses. For drug trafficking offenses, Black and non-Hispanic white defendants saw a mean increase in offense level, whereas Hispanic defendants saw a mean decrease in offense level. Additionally, although Black and white defendants both saw a mean increase once the Chapter 2 adjustments were applied, the mean difference for Black defendants was an increase of 0.57

²¹ This suggests that non-Hispanic white defendants may be overrepresented in certain offense types that have the potential for a large change between BOL and Chapter 2 offense levels. A brief examination found that fraud (2B1.1) and child pornography (2G2.2) offenses have the largest increase in offense levels and that white defendants make up 42% and 81% of fraud and child pornography offenses respectively. Additionally, an SOC for fraud is based on the amount of money involved in the scheme so a brief analysis was conducted to examine who was receiving the highest offense level increase for fraud cases. Non-Hispanic white defendants made up 64% of fraud cases that received an increase of 25 or more levels. These results suggest that non-Hispanic white defendants are overrepresented in the offense types that can generate the highest increase in offense levels during the application of Chapter 2 SOCs.

levels, which is 0.21 levels higher than the 0.36 level increase for white defendants. It is important to note that substantively speaking, these changes are relatively small.

--Insert Table 5 About Here--

The trend for firearms offenses is similar to the trend for the full sample. Black, Hispanic, and white defendants all had higher average Chapter 2 adjusted offense levels than average base offense levels. Like the means for the whole sample, white defendants saw the largest increase from base offense level to Chapter 2 offense level.

The mean base offense level and Chapter 2 adjusted offense levels for gender are also reported in Table 5. Generally, male defendants saw a larger increase in levels than female defendants when Chapter 2 adjustments were applied. This also occurred when looking specifically at drug offenses. Conversely, female defendants in firearms offenses saw a larger increase in levels on average than male defendants convicted of firearms offenses. However, male defendants also had higher base offense levels, so their final offense levels remained higher than for female defendants.

Additionally, some notable differences were found when comparing covariate values across demographic groups. One notable pattern was that non-Hispanic white defendants were consistently older on average than Black and Hispanic defendants. When considering all offense types, non-Hispanic white defendants were, on average, 6 years older than Black and Hispanic defendants. This trend persisted when considering only drug trafficking offenses and firearms offenses, although the age gap narrowed.

Black defendants also consistently have the highest average criminal history category, with non-Hispanic white defendants in the middle, and Hispanic defendants averaging the lowest criminal history category. This may be explained, in part, by prior work that suggests that Black defendants receive harsher sentences, and therefore have higher criminal history categories as part of the calculation for criminal history points relied on sentence severity of prior convictions. It may also reflect structural inequalities in society that contribute to higher rates of serious offending for Black individuals (LaFree et al., 2010). Additionally, male defendants consistently had a higher average criminal history category than female defendants.

The percentage of defendants who pleaded guilty also showed an interesting pattern when broken down by demographic group. Without accounting for demographic differences, 98% of defendants pleaded guilty. Overall, 99% of Hispanic defendants and 97% of non-Hispanic white defendants pleaded guilty whereas 95% of Black defendants pleaded guilty. This trend persists for drug trafficking and firearms offenses, suggesting Black defendants proceed to trial more than other racial and ethnic groups. This is consistent with prior research that suggests lower guilty plea rates for Black defendants may be tied to lower levels of trust in the legal system, higher levels of legal cynicism, and/or less favorable plea offers (Testa & Johnson, 2020).

Additionally, the rate of pretrial detention for Hispanic defendants (91%) is significantly higher than for Black (75%) and non-Hispanic white (64%) defendants. This is likely due to the inclusion of immigration offenses in the sample, because immigration defendants are nearly always detained through sentencing due to the

nature of the offense. This is supported by the fact that the rates of pretrial detention in drug trafficking and firearms cases do not follow the same pattern as the overall sample. While Hispanic defendants are still detained more often than non-Hispanic white defendants and Black defendants, the rates of detention between demographic groups are much closer. It is also worth noting that 46% of Hispanic defendants in this sample who are convicted of a drug trafficking offense are non-U.S. citizens as compared to 2.5% of Black defendants and 1.5% of non-Hispanic white defendants. This may explain why Hispanic defendants are also subjected to higher pretrial detention rates for drug offenses. For firearms offenses, however, Black defendants experience the highest percentage of pretrial detention at 83%, compared to 81% for Hispanic defendants and 78% for non-Hispanic white defendants. Consistent with prior work, male defendants are also consistently detained more often than female defendants across offense types.

Additionally, because this project examines drug offenses, a breakdown of drug types and weights attributed to each demographic group is also provided in Table 5. The most common primary drug type for Black defendants was crack cocaine, followed by methamphetamine and then heroin. The most common drug for Hispanic defendants was methamphetamine, followed by cocaine and marijuana. Lastly, the most common drug for non-Hispanic white defendants was methamphetamine, with “other” drugs (including fentanyl) and heroin at a distant second and third. Both male and female defendants had methamphetamine as the most common drug type. These distributions are important to keep in mind when discussing base offense levels for defendants convicted of drug trafficking offenses,

as drug type can impact the severity of the base offense level calculations. Average converted drug weights by demographic group are also provided in Table 5.

Converted drug weight accounts for drug types and drug amounts present in a case and provides a standardized weight for determining the base offense level. Hispanic defendants had the highest average drug weight, and Black defendants had the lowest. This is possibly because Hispanic defendants have higher rates of importation than Black and non-Hispanic white defendants, and importation often involves significant quantities of drugs.

Because a major focus of this project is on the drug trafficking and firearms SOCs, the breakdown of how specific SOCs were applied differently for different demographic groups was also analyzed. Table 6 describes the percentage of defendants in each demographic group that received the most three common SOCs for drug trafficking and firearms offenses.²² When examining drug trafficking offenses, there are some SOCs that are rarely, if ever, applied. For example, no defendants in this sample received the SOC for using an express entry lane or accelerated inspection program to import controlled substances into the U.S. (2D1.1(b)(6)). Additionally, the SOC for distributing an anabolic steroid and masking agent was not applied to any defendants in this sample, and the SOC for distributing an anabolic steroid to an athlete was only applied to one defendant in this sample (a white male). The only other drug trafficking SOC that was not applied to anyone in

²² Percentages for all drug trafficking and firearms offense SOCs are reported in the appendix at Tables 10 and 11.

this sample was the adjustment for using the internet to distribute the “date rape” drug (2D1.1(b)(10)).

--Insert Table 6 About Here--

On the contrary, there are other SOC's that are widely applied. The three SOC's that are applied most often are the 2-level decrease for safety valve (2D1.1(b)(18)), possessing a weapon (2D1.1(b)(1)), and maintaining a premises for drug distribution/manufacturing (2D1.1(b)(12)). However, these percentage of Black, Hispanic, and non-Hispanic white defendants who received these adjustments differ. Starting with the 2-level decrease for safety valve, 44% of Hispanic defendants received the adjustment as compared to 17% of non-Hispanic white defendants and 10% of Black defendants. This may be due to the safety valve criteria which requires that a defendant not have more than 1 criminal history point and did not possess a firearm. As previously discussed, Hispanic defendants have higher rates of non-U.S. citizenship. Because of this, it is more difficult to establish a full criminal history score as it requires coordination with law enforcement agencies in other countries, which is often not feasible. Also, foreign convictions receive 0 criminal history points, meaning that while they can be considered, they cannot increase the criminal history category. This may lead to lower criminal history categories for non-U.S. citizens, meaning a higher likelihood of qualifying for the safety valve SOC. Additionally, to receive the safety valve SOC a defendant must not have possessed a firearm. Hispanic defendants receive the weapons possession SOC at a rate about 10% lower than Black and non-Hispanic white defendants, suggesting that they are

more often eligible to receive the safety valve SOC than Black and non-Hispanic white defendants.

The second most common SOC is the weapons possession SOC. Black and non-Hispanic white defendants have a similar rate of receiving this SOC, with about 22% of each group receiving this adjustment. However, only 11% of Hispanic defendants receive this SOC. This may be due to the probation officer's perception of whether the defendant truly possessed a weapon during the offense or, more likely, that there are more Hispanic defendants importing controlled substances than Black and non-Hispanic white defendants, and firearms are possessed less often during importation as opposed to trafficking within the U.S.

The third most common SOC is the adjustment for maintaining premises for drug distribution or manufacturing (or trap houses). This is applied most often to Black defendants, with 11% of Black defendants convicted of drug trafficking receiving this SOC as compared to 8% of non-Hispanic white defendants and 4% of Hispanic defendants. The low percentage for Hispanic defendants can likely be explained by the same reasoning as above – that Hispanic defendants make up a larger proportion of importation offenses and therefore are less likely to have a premises dedicated to distribution or manufacturing drugs. The difference between Black defendants and non-Hispanic white defendants, however, is harder to explain. It could be that Black defendants genuinely operate more “trap houses” than non-Hispanic white defendants, or it could be the result of probation officer decision-making. For example, if a defendant's family lives on the premises, a probation officer may conclude that the house was primary a family home that was also used for

drug trafficking purposes, and therefore the SOC does not apply. On the other hand, the probation officer may feel that even though the defendant's family lived in the home, the house was primarily a drug trafficking location, and the SOC applies. It is possible that the probation officer's perceptions of blameworthiness influence this decision-making, leading to a higher usage of this SOC for Black defendants than for non-Hispanic white defendants.²³

There are also some notable differences in SOC application between male and female defendants. The SOCs for possession of a weapon and use/threatening violence were applied at a higher rate for male defendants than for female defendants. This could be due to actual offense characteristics, or possibly due to probation officer's perceptions that male defendants are more dangerous or blameworthy. Similarly, the SOC for maintaining a premises for drug activities is applied at a much higher rate for male defendants than for female defendants. This may also be due to actual differences in the frequency of trap houses or, as discussed above, due to PO perceptions of gender differences in family homes used for drug activities. Additionally, 43% of female defendants receive the safety valve SOC reduction as compared to 24% of male defendants. This is likely due to the lower firearm use and lower criminal history categories for female defendants, as well as possible gender differences in PO perceptions of the culpability, dangerousness, or redeemability of female defendants.

²³ Other SOCs for drugs revealed interesting racial patterns, including the SOC for the use of an aircraft, submersible, or other vessel, which was most commonly applied to Hispanic defendants. This is consistent with the notion that this group is most likely to be involved in importation offenses, as is the fact that Hispanic defendants also received the SOC for importation of methamphetamine more often than Black and non-Hispanic white defendants.

For firearms offenses, the three most used SOCs are for the number of firearms (2K2.1(b)(1)), a stolen firearm or obliterated serial number (2K2.1(b)(4)), and attempting to remove the firearm from the U.S. or possessing the firearm in connection with another felony (2K2.1(b)(6)). Non-Hispanic white defendants have the highest application rate for the SOC that accounts for the number of firearms possessed, with 30% of non-Hispanic white defendants receiving the adjustment. For Black defendants, this SOC was applied at about half of the rate for white defendants (15%). Regarding the other two most popular SOCs, Black and non-Hispanic white defendants had similar rates of application, but Hispanic defendants consistently had a lower rate of SOC application. In fact, the only SOC that was applied at a higher rate for Hispanic defendants than for Black and non-Hispanic white defendants was the SOC for trafficking firearms (not reported). Interestingly, non-Hispanic white defendants had the highest rate of application of the SOC that decreases the offense level if the firearms were possessed solely for collecting or for sporting, with Black defendants receiving that reduction at the lowest rate.

Another interesting pattern emerges when examining the firearms offense SOCs by gender. Female defendants generally had a higher application rate of SOCs related to firearms trafficking and number of firearms. This is possibly due to an overrepresentation of female defendants who purchase or transport firearms for individuals (often family members or romantic partners) who cannot legally do that themselves. Additionally, any differences in attribution of dangerousness and blameworthiness may be moderated by the fact that the offense of conviction is a firearms offense, which often invokes a sense of dangerousness regardless of the

circumstances. Moreover, the use of firearms by female defendants may violate traditional gender norms, thereby removing the chivalric benefits for these crimes.

OLS Regression

To further investigate the relationships between race, ethnicity, gender, and probation officer Chapter 2 adjustments, OLS regressions were performed that account for differences in covariates across groups. The results of the OLS regressions show mixed support for the hypotheses. These results are reported in Table 7. In the model with all offense types, the Chapter 2 changes in offense level resulted in a smaller increase for both Black and Hispanic defendants than for non-Hispanic white defendants. This means that during the Chapter 2 adjustment calculations, offense levels increased by 0.84 levels more for non-Hispanic white defendants over Black defendants. Similarly, the offense levels increased by 0.58 levels more on average for non-Hispanic white defendants than for Hispanic defendants. These results do not support hypothesis 1 or 2, which hypothesized that Black and Hispanic defendants would be subject to harsher offense calculations than non-Hispanic white defendants. The results of this model, however, did support hypothesis 3, which hypothesized that male defendants would be subject to harsher offense level calculations than female defendants. Specifically, the Chapter 2 offense level calculations resulted in an average increase of 0.44 levels more than female defendants.

--Insert Table 7 About Here--

When this model was rerun without immigration offenses, the nature of the relationships remained (non-Hispanic white defendants and male defendants received

a higher increase in offense level than Black or Hispanic defendants and female defendants), but the average change in offense levels differed, though not by much. The difference in change in offense level between non-Hispanic white defendants and Black defendants narrowed from 0.84 levels to 0.79 levels. The difference between non-Hispanic white defendants and Hispanic defendants, however, widened from 0.58 levels to 0.61 levels. Similarly, the difference widened from 0.44 levels to 0.67 levels between male and female defendants. Ultimately, the results of the immigration-excluded model found the same support for the hypotheses as the model including immigration offenses.

In the drug trafficking regression, the results for gender and ethnicity were similar to the all-offenses regression. Non-Hispanic white defendants received a higher increase in Chapter 2 offense levels than Hispanic defendants, and male defendants received a higher increase in offense levels than female defendants. The differences in the change in offense level between these groups continue to support hypothesis 3 and not hypothesis 2. The results of this model for race, however, were opposite that of the all-offense regressions. This regression found that, on average, Black defendants are subject to a higher increase in offense levels during Chapter 2 adjustments than non-Hispanic white defendants. The magnitude of this effect, however, is substantively small ($b=0.09$). Still, this lends some support to hypothesis 1 for drug offenses, while also suggesting that race may influence offense level calculations differently for across offense types.

The suggestion that race may influence offense level calculations differently across offense types is also supported by the results of the firearms offenses

regression. Unlike the results of the drug trafficking regression, non-Hispanic white defendants received a higher average increase in offense level than Black defendants. This also was consistent with the prior regressions for ethnicity, with non-Hispanic white defendants receiving a higher average increase in offense level than Hispanic defendants. Interestingly, female defendants received a higher change in offense level than male defendants for firearms offenses, suggesting that perceptions of female defendants as “less dangerous” may be moderated for weapons offenses.

Overall, the series of OLS regressions provided limited support for hypothesis 1, suggesting that probation officers may calculate offense levels for Black defendants more harshly than non-Hispanic white defendants. Non-Hispanic white defendants were generally disadvantaged over Black defendants, except for drug trafficking cases. This difference suggests that support for hypothesis 1 is limited overall, but may depend on offense type. As for ethnicity, the results of these models did not support hypothesis 2. Non-Hispanic white defendants were disadvantaged over Hispanic defendants in all the OLS regressions. This may be related to the number of Hispanic defendants in the federal legal system who are non-U.S. citizens and are subject to deportation, as probation officer may calculate offense levels more leniently when they believe the defendant is likely to be deported. This idea is tested further in the next set of statistical models. Lastly, there was consistent support for hypothesis 3, with almost all results of the OLS regressions finding that male defendants are disadvantaged over female defendants in Chapter 2 offense calculations. The notable exception was for firearms offenses, which suggests gender leniency may depend on offense type. This is consistent with the “evil woman”

hypothesis, which suggests women who commit male-centric offenses, like gun crimes, may actually be punished more severely in these cases (Chesney-Lind, 1987).

Additionally, this model also tested several covariates. The full results are listed in Table 7, with a select few discussed here. First, the pretrial detention variable showed an interesting pattern. In the full regression, pretrial detention was associated with a lower increase in offense levels than those who were released. This is inconsistent with prior work that has found that pretrial detention increases the severity of sentencing outcomes. However, when looking at the results of the three OLS regressions that did not include immigration offenses, pretrial detention was associated with an increase in offense level over those who were released. This indicates that the inclusion of immigration offenses in the model may be associated with a higher number of defendants who are detained, as non-U.S. citizens are typically detained throughout the course of their federal case. Relatedly, the variable for non-U.S. citizenship also showed an interesting pattern. In the full model, non-U.S. citizenship was associated with a higher increase in offense level than for defendants who were U.S. citizens. For the three regressions that excluded immigration offenses, however, being a non-U.S. citizen was associated with a lower increase in offense level than defendants who were U.S. citizens. This pattern suggests two main points. First, that offense levels may be calculated more leniently for non-U.S. citizens than for U.S. citizens (excluding immigration cases). This may be due to probation officers' understanding that a non-citizen defendant is likely to be deported upon completion of their sentence, thus reducing the need to consider the community protection prong of focal concerns theory. Additionally, this pattern

exemplifies why it is important to examine specific offense types when studying offense guideline calculations at this level. Different offense types have different guidelines, which have different Chapter 2 adjustments. The most common immigration offense guideline allows for significant increases in offense level (of up to 24 levels), and these increases are often applied. Therefore, it is likely that the reason the non-citizen variable is associated with a harsher offense level calculation in the all-offenses model and not the immigration-excluded models is because of the large number of immigration cases in the sample and the fact that the guidelines calculations for immigration offenses can be particularly harsh.

Mahalanobis Distance Matching

Matching models can provide important advantages in analyses of different demographic groups. Because this project compared the offense level calculations across race, ethnicity, and gender, Mahalanobis distance matching analysis was conducted in addition to the OLS regression models discussed above. The Mahalanobis distance matching analysis includes models for all offenses,²⁴ drug trafficking offenses,²⁵ and firearms offenses. Race is examined by comparing non-Hispanic white defendants to Black defendants, ethnicity is examined by comparing non-Hispanic white defendants to Hispanic defendants, and gender is examined by comparing male defendants to female defendants. The results of these models are

²⁴ The all-offense model was run once including immigration offenses and once without. The results are provided in Table 8 but not discussed in depth due to the similarity of results between the two models.

²⁵ The drug trafficking offense model was run with and without matching on drug type. Only the results of the model excluding drug type are discussed as the results for both models were almost identical but the model excluding drug type achieved better balance among matching covariates, however both results are provided in Table 8.

provided in Table 8.²⁶ These results are consistent with the results of the OLS regression models, however, because the MDM model allows for balance checking, it can be argued that more confidence can be placed in the coefficients in the MDM models when they differ from the OLS regressions.

--Insert Table 8 About Here--

In testing hypothesis 1, the MDM models for all offenses and firearms offenses showed that Chapter 2 offense levels increased more for non-Hispanic white defendants than for Black defendants. The full model reflected a difference of 0.86 levels, and the difference for the firearms model was 0.55 levels. These models did not lend support for hypothesis 1, instead suggesting that non-Hispanic white defendants are disadvantaged in offense level calculations. In drug trafficking offenses, however, the Chapter 2 offense level was increased by 0.11 levels more for Black defendants than for non-Hispanic white defendants. While this provides support for hypothesis 1, it is important to note that this difference is substantively small and limited to drug offenses, providing only limited support for hypothesis 1. This highlights the need for future work examining racial disparity in probation officer calculations for other individual statutory guideline offenses. Ultimately, these results suggest that probation officers may calculate offense levels more harshly for Black defendants for some specific types of offenses, but overall, the pattern of results does not suggest systematic disadvantages for Black defendants compared to non-Hispanic white defendants in these calculations.

²⁶ Results including information regarding the number of cases in the control and treatment groups that were matched are provided in the appendix at Table 12 for the primary analysis and Table 13 for the supplemental analysis. Additionally, covariate balance tables are available for the primary analyses at Tables 14-17.

To test hypothesis 2, the MDM models were run again to compare non-Hispanic white defendants and Hispanic defendants. Consistent with earlier results, the increase in Chapter 2 offense levels was lower for Hispanic defendants than for non-Hispanic white defendants across all models.²⁷ Additionally, to investigate whether this was related to citizenship status, the MDM model for ethnicity was run again, this time excluding non-U.S. citizens. The citizen-only model still resulted in a smaller increase in offense levels for Hispanic defendants than for non-Hispanic white defendants, consistent with the models including non-U.S. citizens. These results consistently lend no support to hypothesis 2, instead suggesting that probation officers may calculate Hispanic defendant's offense levels more leniently than non-Hispanic white defendants, regardless of citizenship status.

The last extralegal factor examined was gender. The MDM models compared the change in Chapter 2 offense levels for male and female defendants for all offenses, drug trafficking offenses, and firearms offenses. Hypothesis 3 was supported across all these models except the firearms model. Like the OLS regression results, the change in Chapter 2 offense level was higher for female defendants than for male defendants. However, this result was not statistically significant. This may partially be the result of the relatively small number of cases involving female firearms defendants (n=304) as well as the limited common support in this sample (See Table 12). Still, there is general support for hypothesis 3 in the other MDM models, suggesting that probation officers may calculate offense levels for male defendants more harshly than for female defendants in other cases.

²⁷ However, the result for the firearms offense model was not statistically significant.

Supplemental Analysis

While the primary focus of this thesis is the relationship between extralegal factors and the probation officer's calculation of Chapter 2 guidelines, some supplemental analysis including the other guidelines adjustments may also be insightful. Utilizing the same MDM models as in the primary analysis, the supplemental analysis was conducted by examining the increase in the whole offense level calculations from base offense level to final offense level. These results are provided in Table 9. Ultimately, the results were very similar to the primary analysis, although a couple of interesting differences emerged related to gender. First, the difference in offense levels added for male versus female defendants widened, suggesting that offense levels continue to be calculated more harshly for male defendants over female defendants in Chapter 3 adjustments.²⁸ Additionally, while not statistically significant, total offense level changes for female defendants convicted of firearms offenses became negative after accounting for subsequent guidelines adjustments. This may suggest that subsequent adjustments actually benefit female defendants in these cases, and to some degree may offset the negative effect observed for Chapter 2 adjustments; however, future research is needed to further examine specifically how Chapter 2 and Chapter 3 or other adjustments are

²⁸ Chapter 4 adjustments are not included in this analysis as they primarily involve criminal history calculations. There are some aspects of Chapter 4 that can impact offense level calculations, such as career offender, but these enhancements often prescribe an offense level based on the statutory maximum sentence for the crime of conviction and are therefore related to prosecutorial decision-making in which statute to charge the defendant with. Because this thesis focuses on probation officer decision-making, the Chapter 4 offense level enhancements are not included. The defendants who ultimately received these Chapter 4 enhancements are not excluded from the study, however, as the dataset still contains information on their Chapter 2 and 3 enhancements, which are the focus of this thesis and the supplemental analysis.

applied differently across gender. Overall, the results examining total changes in guidelines scores from base to final offense levels closely resemble the patterns of results reported in early analysis.

Chapter 6: Discussion

The relationship between extralegal factors and sentencing has attracted a significant amount of research attention, finding that, while legally relevant factors are most influential in sentencing outcomes, extralegal factors can influence judicial outcomes as well. However, much of this work has focused on prosecutorial and judicial decision-making, leaving out other potentially influential actors within the legal system. One such actor is the federal probation officer.

The current study examined the relationship between extralegal factors and federal probation officer's guidelines calculations. Using a theoretical framework that combines focal concerns and causal attribution, this project examined the relationships between race, ethnicity, and gender and federal probation officers sentencing guidelines calculations, specifically as to Chapter 2 of the guidelines manual. To do so, this project used the U.S. Sentencing Commission's Individual Offender Datasets from FY2019 and FY2020. The hypotheses were that (1) offense levels would be calculated more harshly for Black defendants (2) offense levels would be calculated more harshly for Hispanic defendants, and (3) offense levels would be calculated more harshly for male defendants. This project tested those hypotheses via two different analytical strategies – OLS regression and Mahalanobis distance matching. Using these methods, analysis was conducted for all offense types, drug trafficking offenses, and firearms offenses. The dependent variable was the change in offense levels after the Chapter 2 adjustments were applied. Additionally, a supplemental analysis was conducted using the same methods, but with the total change in offense level as the dependent variable. Overall, the results of this project

suggested mixed support for hypothesis 1, no support for hypothesis 2, and partial support for hypothesis 3.

This study provided limited support for hypothesis 1 (H1), with most of the results suggesting that offense levels are actually calculated more leniently for Black defendants than for non-Hispanic white defendants. However, support for hypothesis 1 was found when examining drug trafficking offenses specifically. This suggests that the relationship between race and offense level calculations may differ based on offense type. In this study, drug trafficking offenses and firearms offenses yielded different relationships with race, with a positive relationship for drug trafficking (which supports H1) and a negative relationship for firearms offenses (which does not support H1). It is possible that, to probation officers, the risk to the community that defendants convicted of firearms offenses pose outweighs or balances out perceived dangerousness based on race.

This project found no support for hypothesis 2 (H2), which theorized that probation officers would calculate offense levels for Hispanic defendants more harshly than for non-Hispanic white defendants. The results of every model showed that the change in offense level was lower for Hispanic defendants than non-Hispanic white defendants suggesting that, contrary to H2, Hispanic defendants may be subject to leniency in offense level calculations. One potential reason for this may be that Hispanic defendants make up a higher percentage of the non-citizen defendants as compared to Black and non-Hispanic white defendants,²⁹ and probation officers may

²⁹ In the U.S. federal system, Hispanic defendants have the highest percentage of non-citizen defendants as compared to other races/ethnicities. For example, in FY2019, 45% of Hispanic defendants convicted of drug trafficking offenses were non-U.S. citizens. In contrast, 3% of Black

be less worried about the risk to the public if they know that the defendant is likely to be deported. However, the matching models that only included U.S. citizens still resulted in a lower change in offense level for Hispanic defendants. This suggests that the likelihood of deportation as it relates to the community protection prong of focal concerns cannot fully explain the negative relationship for Hispanic defendants. One possibility is that probation officers may not differentiate effectively between non-citizen and citizen Hispanic defendants when it comes to the focal concern of risk to community, with the result that offense levels for all Hispanic defendants benefit from that lack of distinction. Additional research is clearly needed, however, to validate this possibility.

Additionally, disparate treatment in earlier stages of the legal process may explain why limited support was found for H1 and no support was found for H2. Because this project does not have access to the offense conduct narratives, it makes it difficult to directly compare defendants who committed similar offenses. Additionally, it may be that Black and Hispanic defendants are represented at a higher rate in earlier stages of the process (arrest, plea agreement terms, conviction) than non-Hispanic white defendants. This would mean that, by the time the PO is calculating the offense level, Black and Hispanic defendants have less serious offense characteristics than non-Hispanic white defendants, leading to a lower increase in offense level during the Chapter 2 adjustment phase. Put differently, it may be that non-Hispanic white defendants have to commit more serious offenses before they are

defendants and 2% of non-Hispanic white defendants convicted of drug trafficking offenses were non-U.S. citizens.

arrested, convicted, etc. than Black or Hispanic defendants, leading to a more serious offense level calculation for non-Hispanic white defendants.

Hypothesis 3, which predicted that offense levels for male defendants would be calculated more harshly than for female defendants garnered stronger support. Statistically significant results favoring female defendants were found across all models, with the notable exception of firearms offenses. The general pattern of leniency for women is consistent with prior work (Spohn & Holleran, 2000; Steffensmeier & Demuth, 2006; Steffensmeier et al., 1998), and may suggest that female defendants experience leniency due to perceptions of decreased blameworthiness and/or dangerousness. However, it is notable that the gender advantage does not hold for firearms offenses. In fact, female defendants benefitted less than male defendants from Chapter 2 adjustments in these cases. One possibility is that firearms offenses are particularly gendered, meaning that women who violate these gender norms are singled out for harsher punishment (Chesney-Lind, 1987), though again, more research is needed to fully understand this finding.

Lastly, it is important to discuss the practical effect of these findings. Many of these differences were substantively small, with most amounting to less than a 1-unit difference in adjusted offense levels between groups. This means that, while there is support for the notion that extralegal factors influence probation officer guidelines calculations, the practical weight of that influence appears to be relatively small in magnitude. In many cases, the observed results were small enough that the difference between demographic groups would not have changed their offense level, especially

for models examining specific offense types. Moreover, when assessing the practical implications of the study findings, it is also important to consider key limitations.

Limitations and Future Study

The main limitation in this study is related to the lack of access to full details regarding individual offense conduct. Because of this, it is difficult to account for differences in detailed offense characteristics between defendants that lead to the increases and decreases of offense levels, as this is only available in the narrative “Offense Characteristics” section of the PSR and is not available to the public. This makes it difficult to differentiate between cases where an SOC could be applied but a probation officer chose not to apply it from cases where a PO had no discretion in the application of SOCs. This study attempts to mitigate the effects of this limitation by matching defendants, but the only way to fully address this limitation is by accessing the narratives describing the detailed offense conduct, which is not possible for this project. If granted access, future research incorporating information contained in the Offense Conduct section could prove useful in further understanding the relationship between extralegal factors and offense level calculations.

Additionally, the results of this project provided some interesting opportunities for future study. First, this thesis examined race, ethnicity, and gender independently. Future study should examine how the combination of multiple extralegal factors influences probation officer decision-making to see if the interaction between those factors exacerbates or mitigates disparities in offense level calculations. Second, the results of this project suggested that federal probation officers may calculate offense levels more harshly based on race for certain offense

types and not others. Future study should be conducted to further explore this finding by comparing racial differences across multiple offense types beyond drug trafficking and firearms offenses. Additionally, future study should examine gender for multiple other offense types as well. Expanding this inquiry to include other offense types could provide greater insight into which offense types are associated with gendered norms that mitigate or exacerbate perception of dangerousness or blameworthiness when applied to female defendants. Of the offenses tested in this project, firearms offenses were the only type of cases that resulted in female defendants having a higher increase in Chapter 2 offense level than male defendants. Notably, this result was not significant, which may reflect the small number of firearms offenses that involved a female defendant. Future research should further explore this possibility using a larger dataset that covers more years of federal sentencing. For example, because the 2018 guidelines manual was in effect all the way through November 1, 2023, future analyses could analyze up to 5 years of federal sentencing data under this manual.³⁰ Although researchers would have to account for the COVID-19 pandemic (and the fact that some offense types may have seen a shift in offense conduct, such as fraudulent Paycheck Protection Program (PPP) loans that did not exist before 2020), this extended dataset would allow for better research on demographic groups that may not typically have had enough observations for meaningful study in previous amendment years due to their small numbers. Additionally, this extended dataset

³⁰ A new guidelines manual was released in 2021, but no guidelines had been amended due to the lack of a voting quorum. The new manual was released to provide updated statutory provisions, but the guidelines as amended in 2018 remained in place.

would also allow for the comparison of racial differences for offense types that typically have fewer defendants, such as fraud, sex offenses, or other violent crimes.

Lastly, there were theoretical limitations in this study, as it was unable to directly test the focal concerns framework (Lynch, 2019), instead using proxies for probation officer's decision-making and perceptions of blameworthiness, dangerousness, and salvageability. However, prior work directly testing focal concerns and probation officer decision-making found that racial disparity exists in the narratives written by probation officers, and one can assume that would likely be the case in this study as well, although it cannot be tested directly. If given access to the full presentencing reports, future study could more directly test the focal concerns framework as it relates to federal probation officers by examining their narratives in the Offense Conduct section, Acceptance of Responsibility section, and their narratives explaining their ultimate sentencing recommendations to the judge.

Despite these limitations, this study fills an important gap in the area of extralegal factors and sentencing. There is limited recent work studying federal probation officer's guideline calculations and extralegal disparity, and very little prior work that examines PO calculations as granular as this project. This study lays the groundwork for future studies to examine federal PO calculations, ideally with access to the "Offense Conduct" section of the PSR, as that would eliminate the main limitation of this study. Nevertheless, this thesis provides a framework to further understand extralegal disparities in sentencing and their origins.

Conclusion

This thesis contributes to the existing sentencing research by using a focal concerns and causal attributions framework to expand understanding of the relationship between extralegal factors and federal probation officers' decision-making during offense level calculations. This study found mixed results, with limited support for H1, no support for H2, and partial support for H3. This study and its findings provide a foundation for future research into federal probation officers as a point of entry for extralegal disparity in the legal system. For example, limited support was found for the notion that federal probation officers calculate offense levels for Black defendants more harshly than for non-Hispanic white defendants (H1). Support for this hypothesis was only found in the model that examined drug trafficking offenses, suggesting that probation officers may perceive the blameworthiness and dangerousness of Black defendants differently based on the offense of conviction, though not necessarily based on offense severity, as this was not the case for firearms offenses. Additionally, although no support was found for the notion that federal probation officers calculate offense levels more harshly for Hispanic defendants than for non-Hispanic white defendants (H2), future research with access to probation officer narratives may be able to examine more closely why the offense levels for Hispanic defendants (both U.S. citizens and non-U.S. citizens) are consistently calculated more leniently than the offense levels for non-Hispanic white defendants. Finally, more consistent support was found for hypothesis 3, suggesting that probation officers calculate offense levels more harshly for male defendants than for female defendants. The exception to this was in firearms cases,

although the results were not statistically significant, which may reflect the small number of female defendants convicted of firearms offenses. These findings lay a basis for future study into how federal probation officers perceive the blameworthiness and dangerousness of female defendants in more serious offenses, such as firearms offenses.

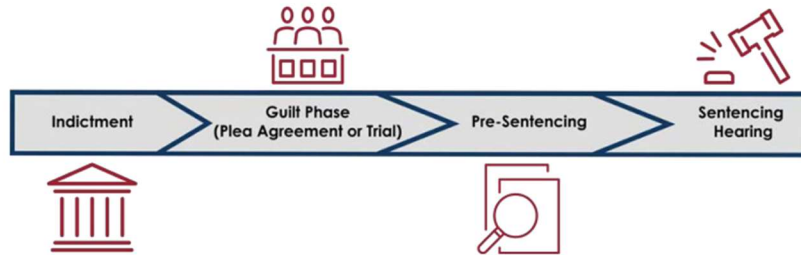
Ultimately, the results of this study are consistent with prior research on extralegal factors and sentencing suggesting that disparities in legal outcomes based on race and gender may differ across offense types (Shermer and Johnson, 2010) and that female defendants generally are treated more leniently than male defendants in the legal system (Spohn, 1999). These results support the theoretical framework of this study suggesting that the probation officer's perception of defendants' blameworthiness and dangerousness based on race or gender exist but may vary based on the offense of conviction. Additionally, these results show the need for future study with access to the full presentencing report, as that would provide a more comprehensive assessment of the relationship between extralegal characteristics and federal probation officer decision-making. These results show that federal probation officers may be a source of racial, ethnic, and gender disparity in the legal system, though not always in anticipated ways. Despite attracting limited research, it is important to examine the legal system for points of potential extralegal disparity beyond prosecutorial and judicial decision-making. This study provides a starting point for future research into federal probation officers and their decision-making as well as identifies areas of interest for future research, furthering the understanding of

federal probation officer decision-making and how it contributes to disparate outcomes in federal sentencing.

Chapter 7: Tables and Figures

Figures

Figure 1: Phases of the Federal Sentencing Process



Source: United States Sentencing Commission, 2020b

Figure 2: Offense Level Calculation Example

Guideline	Description	Offense Level
2K2.1(a)(7)	Base offense level	12
SOC (1)	Number of firearms: (a) 3-7 firearms: +2 (b) 8-24 firearms: +4 (c) 25-99 firearms: +6 (d) 100-199 firearms: +8 (e) 200+ firearms: +10	+2
SOC (2)	if the defendant possessed the firearm(s) for sporting or collection purposes and did not use them unlawfully, decrease offense level to level 6	-
SOC (3)	if the offense involved: (a) rocket or missile: +15 (b) destructive device other than a rocket or missile: +2	-
SOC (4)	if the firearm: (a) was stolen: +2 (b) had an altered/obliterated serial number: +4	+4
SOC (5)	if the defendant engaged in trafficking of firearms: +4	-
SOC (6)	if the defendant: (a) attempted to leave the US with the firearm or transferred it knowing it would leave the US: +4 (b) used/possessed the firearm in connection with another felony: +4	+4
SOC (7)	if a record keeping offense reflected an effort to conceal a substantive offense involving firearms, increase to the offense level of that offense	-
3A1.1	if the: (a) offense was a hate crime: +3 (b) victim was considered a vulnerable victim: +2	-
3A1.2	if: (a) the victim was a gov employee and was victimized because of that status: +3 (b) section (a) applies and the offense of conviction was a offense against the person: +6 (c) if the defendant assaulted an officer: +6	-
3A1.3	if the victim was physically restrained: +2	-
3B1.1	if the defendant was a: (a) organizer/leader in the offense: +4 (b) manager/supervisor in the offense: +3 (c) leader in any other way than described in (a) or (b): +2	+2
3B1.2	if the defendant was a: (a) minimal participant: -4 (b) minor participant: -2 (c) level of participant between minimal and minor: +3	-
3C1.1	if the defendant obstructed justice: +2	-
3C1.2	if the defendant created a risk of bodily injury or death while fleeing from law enforcement: +2	+2
3E1.1(a)	if the defendant demonstrates acceptance of responsibility for his offense: -2	-2
3E1.1(b)	if the defendant qualifies for 3E1.1(a), the offense level was above 16 before the application of 3E1.1, and the prosecution makes a motion stating that the defendant notified them of his intent to plead guilty early enough in the process to save prosecutorial time and resources: -1	-1
TOTAL OFFENSE LEVEL		23

The base offense level for 2K2.1 does have different options, but since the focus of this paper is the SOCs, a BOL was pre-selected for this visual aid.

These are the potential SOCs that a PO can apply in a 2K2.1 case. In this example, the PO has determined that the defendant had between 3-7 firearms, at least one of which had an altered or obliterated serial number, and that the firearm was used in connection with another felony. The PO determined that the defendant did NOT possess the firearms for purposes of sport/collection, did not possess a destructive device or rocket missile, did not engage in firearm trafficking, and was not involved in a record keeping offense related to firearms.

These are potential chapter 3 adjustments that can be applied to the offense level. While the SOCs above are specific to 2K2.1 cases, these chapter 3 adjustments can be applied to any offense no matter the guideline. In this example, the PO determined that the defendant was some sort of leader in the offense, but his participation did not rise to the level of an organizer, leader, manager, or supervisor. Additionally, this PO found that the defendant created a risk of injury or death while fleeing law enforcement. This example does not contain every chapter 3 adjustment available in order to save space.

This is where the PO can reduce levels for acceptance of responsibility. In this case, the PO determined that the defendant clearly demonstrated acceptance of responsibility. Additionally, since the defendant's offense level was over 16 and the prosecution made a motion saying that the defendant gave timely notice of intent to plead guilty, the PO reduced the offense level by an additional point.

Color Key:
 - Yellow: Base offense level
 - Green: Specific offense Characteristics
 - Blue: Chapter 3 adjustments
 - Orange: Acceptance of responsibility
 - Pink: total offense level

Tables

Table 1. USSC Sentencing Table

		SENTENCING TABLE (in months of imprisonment)					
		Criminal History Category (Criminal History Points)					
Offense Level		I (0 or 1)	II (2 or 3)	III (4, 5, 6)	IV (7, 8, 9)	V (10, 11, 12)	VI (13 or more)
Zone A	1	0-6	0-6	0-6	0-6	0-6	0-6
	2	0-6	0-6	0-6	0-6	0-6	1-7
	3	0-6	0-6	0-6	0-6	2-8	3-9
	4	0-6	0-6	0-6	2-8	4-10	6-12
	5	0-6	0-6	1-7	4-10	6-12	9-15
	6	0-6	1-7	2-8	6-12	9-15	12-18
	7	0-6	2-8	4-10	8-14	12-18	15-21
	8	0-6	4-10	6-12	10-16	15-21	18-24
Zone B	9	4-10	6-12	8-14	12-18	18-24	21-27
	10	6-12	8-14	10-16	15-21	21-27	24-30
	11	8-14	10-16	12-18	18-24	24-30	27-33
Zone C	12	10-16	12-18	15-21	21-27	27-33	30-37
	13	12-18	15-21	18-24	24-30	30-37	33-41
	14	15-21	18-24	21-27	27-33	33-41	37-46
Zone D	15	18-24	21-27	24-30	30-37	37-46	41-51
	16	21-27	24-30	27-33	33-41	41-51	46-57
	17	24-30	27-33	30-37	37-46	46-57	51-63
	18	27-33	30-37	33-41	41-51	51-63	57-71
	19	30-37	33-41	37-46	46-57	57-71	63-78
	20	33-41	37-46	41-51	51-63	63-78	70-87
	21	37-46	41-51	46-57	57-71	70-87	77-96
	22	41-51	46-57	51-63	63-78	77-96	84-105
	23	46-57	51-63	57-71	70-87	84-105	92-115
	24	51-63	57-71	63-78	77-96	92-115	100-125
	25	57-71	63-78	70-87	84-105	100-125	110-137
	26	63-78	70-87	78-97	92-115	110-137	120-150
	27	70-87	78-97	87-108	100-125	120-150	130-162
	28	78-97	87-108	97-121	110-137	130-162	140-175
	29	87-108	97-121	108-135	121-151	140-175	151-188
	30	97-121	108-135	121-151	135-168	151-188	168-210
	31	108-135	121-151	135-168	151-188	168-210	188-235
	32	121-151	135-168	151-188	168-210	188-235	210-262
	33	135-168	151-188	168-210	188-235	210-262	235-293
	34	151-188	168-210	188-235	210-262	235-293	262-327
	35	168-210	188-235	210-262	235-293	262-327	292-365
	36	188-235	210-262	235-293	262-327	292-365	324-405
	37	210-262	235-293	262-327	292-365	324-405	360-life
	38	235-293	262-327	292-365	324-405	360-life	360-life
	39	262-327	292-365	324-405	360-life	360-life	360-life
	40	292-365	324-405	360-life	360-life	360-life	360-life
	41	324-405	360-life	360-life	360-life	360-life	360-life
	42	360-life	360-life	360-life	360-life	360-life	360-life
	43	life	life	life	life	life	life

Source: United States Sentencing Commission, 2021

Table 2. Breakdown of Offense Types

Offense Type	% of Total Cases
Administration of Justice	0.88%
Antitrust	0.03%
Arson	0.07%
Assault	0.92%
Bribery/Corruption	0.40%
Burglary/Trespass	0.08%
Child Pornography	1.68%
Commercialized Vice	0.10%
Drug Possession	0.24%
Drug Trafficking	24.69%
Environmental	0.19%
Extortion/Racketeering	0.19%
Firearms	11.30%
Food and Drug	0.05%
Forgery/Counterfeit/Copyright	0.36%
Fraud/Theft/Embezzlement	7.49%
Immigration	42.43%
Individual Rights	0.09%
Kidnapping	0.12%
Manslaughter	0.09%
Money Laundering	1.30%
Murder	0.51%
National Defense	0.26%
Obscenity/Other Sex Offenses	0.54%
Prison Offenses	0.77%
Robbery	2.27%
Sex Abuse	1.55%
Stalking/Harassing	0.33%
Tax	0.66%
Other	0.41%
Total	100%

Table 3. Variation Inflation Factors

Variable	Full Sample VIF	Immigration Excluded VIF
Black	1.84	1.56
Hispanic	3.10	1.88
Female	1.14	1.12
Citizenship	3.38	1.56
Education	1.58	1.22
Pretrial Detention	1.60	1.53
Base Offense Level	1.47	2.14
Criminal History Category	1.37	1.52
Age	1.13	1.17
Number of Dependents	1.08	1.06
Pleaded Guilty	1.04	1.03
Mean VIF	1.70	1.44

NOTE: The binary variables that capture offense types are not reported in this table as they expectedly resulted in high VIFs due to the nature of capturing a categorical variable as multiple binary variables.

Table 4. Descriptive Statistics

VARIABLES	Mean/%	SD	Mean/%	SD	Mean/%	SD
	<i>All Offenses</i>		<i>Drug Offenses</i>		<i>Firearms Offenses</i>	
Dependent Variables						
Base Offense Level	15.51	9.53	27.47	7.19	18.01	3.94
Chapter 2 Adjusted Offense Level	18.48	9.38	27.56	7.41	20.77	5.03
Final Offense Level	16.17	9.29	24.66	7.65	18.23	4.97
Independent Variables						
Black	20%	0.40	30%	0.46	55%	0.50
Hispanic	61%	0.49	44%	0.50	19%	0.40
White	19%	0.39	27%	0.44	26%	0.44
Female	11%	0.32	15%	0.36	4%	0.20
Covariates						
Age	36.31	10.77	36.52	10.38	33.56	9.31
Pretrial Detention	82%	0.38	82%	0.39	82%	0.39
Education Level	10.03	3.85	11.13	3.05	11.30	2.46
Non-U.S. Citizen	48%	0.50	21%	0.41	5%	0.21
Dependents	1.68	1.79	1.55	1.77	1.57	1.80
Criminal History Category	2.40	1.60	2.63	1.73	3.64	1.70
Pleaded Guilty	98%	0.14	98%	0.15	98%	0.15
	<i>n=71,189</i>		<i>n=17,350</i>		<i>n=7,967</i>	

Table 5. Description of Variables by Extralegal Factors

VARIABLES	Mean/ %	SD	Mean/%	SD	Mean/%	SD	Mean/%	SD	Mean/%	SD
	<i>Black</i>		<i>Hispanic</i>		<i>White</i>		<i>Female</i>		<i>Male</i>	
All Offenses										
<i>Dependent Variables</i>										
Base Offense Level	19.50	8.33	12.95	8.94	19.47	9.74	16.38	10.19	15.48	9.43
Chpt 2 Offense Level	22.17	7.85	15.61	8.68	23.73	9.38	19.12	9.24	18.51	9.40
Δ BOL and Chpt 2	2.67	4.09	2.66	4.10	4.26	6.00	2.74	4.84	3.03	4.51
<i>Covariates</i>										
Age	35.30	10.40	35.05	9.87	41.36	12.34	37.32	11.73	36.24	10.70
Pretrial Detention	75.0%	0.43	91.0%	0.29	64.0%	0.48	56.0%	0.50	85.0%	0.35
Education Level	11.72	2.50	8.51	3.88	12.65	2.60	11.74	3.23	9.09	3.87
Non-U.S. Citizen	3.4%	0.18	77.2%	0.42	3.9%	0.19	23.4%	0.42	50.2%	0.50
Dependents	1.65	1.93	1.93	1.81	0.97	1.33	1.35	1.57	1.71	1.81
Criminal History	3.25	1.74	2.07	1.35	2.59	1.80	1.76	1.30	2.48	1.62
Pleaded Guilty	95.4%	0.21	99.2%	0.09	97.0%	0.17	98.1%	0.14	97.9%	0.14
Drug Offenses										
<i>Dependent Variables</i>										
Base Offense Level	24.46	7.30	29.15	6.72	28.07	6.77	27.71	6.97	27.40	7.22
Chpt 2 Offense Level	25.03	7.57	28.76	7.06	28.43	7.09	27.33	7.26	27.58	7.44
Δ BOL and Chpt 2	0.57	1.49	-0.39	1.67	0.36	1.55	-0.38	1.64	0.18	1.63

<i>Covariates</i>										
Age	36.75	9.77	34.71	10.20	39.28	10.70	35.68	10.20	36.72	10.41
Pretrial Detention	80.0%	0.40	84.6%	0.36	78.2%	0.41	68.7%	0.46	83.6%	0.37
Education Level	11.60	2.41	10.18	3.51	12.15	2.36	11.82	2.68	11.03	3.09
Non-U.S. Citizen	2.5%	0.16	45.6%	0.50	1.5%	0.12	12.2%	0.33	22.4%	0.42
Dependents	1.90	2.10	1.66	1.69	1.00	1.34	1.30	1.54	1.59	1.81
Criminal History	3.27	1.69	1.91	1.43	3.09	1.81	2.02	1.46	2.74	1.76
Pleaded Guilty	96.2%	0.19	98.3%	0.13	98.5%	0.12	98.6%	0.12	97.6%	0.15
<i>Primary Drug Type</i>										
Cocaine	17.7%		26.0%		4.9%		11.5%		18.6%	
Crack Cocaine	22.5%		3.0%		1.6%		3.9%		9.4%	
Heroin	17.5%		12.6%		7.2%		10.6%		12.8%	
Marijuana	6.4%		13.5%		5.0%		6.4%		9.6%	
Methamphetamine	19.60%		37.8%		65.0%		52.7%		37.6%	
Other	16.3%		7.1%		16.4%		15.0%		12.0%	
Drug Wgt (KG)	8,694.4	57,200	245,000	3,780,000	23,100	141,000	40,300	138,000	76,900	2,690,000
Firearms Offenses										
<i>Dependent Variables</i>										
Base Offense Level	18.68	3.97	17.10	3.88	17.26	3.65	15.20	3.44	18.11	3.91
Chpt 2 Offense Level	21.25	4.84	19.92	5.18	20.37	5.19	18.50	5.07	20.83	4.99
Δ BOL and Chpt 2	2.57	2.90	2.82	3.56	3.11	3.53	3.30	3.83	2.72	3.18
<i>Covariates</i>										

Age	32.53	8.58	32.21	9.00	36.82	10.23	32.98	9.24	33.63	9.33
Pretrial Detention	83.4%	0.37	81.4%	0.39	78.3%	0.41	53.3%	0.50	82.9%	0.38
Education Level	11.23	2.37	10.71	2.81	11.88	2.24	11.97	2.36	11.27	2.48
Non-U.S. Citizen	0.59%	0.08	21.5%	0.41	1.03%	0.10	2.06%	0.14	4.96%	0.22
Dependents	1.79	1.95	1.56	1.72	1.09	1.37	1.23	1.43	1.58	1.81
Criminal History	3.91	1.51	2.91	1.82	3.63	1.81	2.33	1.60	3.70	1.68
Pleaded Guilty	97.2%	0.16	98.6%	0.12	98%	0.14	98.5%	0.12	97.7%	0.15

Table 6. SOC Distribution for Drug Trafficking and Firearms Offenses (Most Common)

SOCs	Brief Description	Black	Hispanic	White	Male	Female
Drug Trafficking						
2D1.1(b)(1)	Weapon possessed	22.19%	11.11%	21.50%	18.12%	12.14%
2D1.1(b)(12)	Maintain premises for drug dist. or manufacturing	10.97%	4.45%	8.21%	7.62%	0.21%
2D1.1(b)(18)	Safety Valve (-2 decrease)	9.65%	44.33%	17.48%	24.08%	43.39%
Firearms Offenses						
2K2.1(b)(1)	Number of firearms	15.42%	24.06%	30.40%	20.18%	38.05%
2K2.1(b)(4)	Stolen firearm or obliterated serial number	32.88%	25.55%	32.02%	31.20%	24.48%
2K2.1(b)(6)	Firearm leaving U.S. or possessed in connection w/other felony	31.60%	28.27%	31.97%	31.14%	25.07%

Table 7. OLS Regression Results – Chapter 2 Adjustments

VARIABLES	β	SE	β	SE	β	SE	β	SE
	<i>All Offenses</i>		<i>Immigration Excluded</i>		<i>Drug Trafficking</i>		<i>Firearms</i>	
Independent Variables								
Black	-0.84***	0.05	-0.79***	0.05	0.09*	0.03	-0.48***	0.09
Hispanic	-0.58***	0.06	-0.61***	0.06	-0.25***	0.04	-0.05	0.13
Female	-0.44***	0.05	-0.67***	0.06	-0.37***	0.03	0.27	0.19
Covariates								
Age	0.03***	0.00	0.02***	0.00	0.00*	0.00	-0.01	0.00
Base Offense Level	-0.09***	0.00	-0.09***	0.00	0.02***	0.00	0.01	0.01
Pretrial Detention	-0.08	0.05	0.64***	0.05	0.39***	0.03	0.61***	0.10
Education Level	0.08***	0.00	0.10***	0.01	-0.01***	0.00	0.04*	0.01
Non-U.S. Citizen	0.37***	0.05	-0.49***	0.07	-0.61***	0.04	-0.81***	0.20
Dependents	-0.01	0.01	0.03*	0.01	0.01*	0.01	0.00	0.02
Criminal History	0.46***	0.01	-0.11***	0.01	0.20***	0.01	-0.21***	0.03
Pleaded Guilty	-0.81***	0.10	-0.84***	0.11	-0.65***	0.08	-0.09	0.24
White Collar/Fraud	6.76***	0.16	6.70***	0.16				
Drug Offense	0.60**	0.16	0.75***	0.16				
Violent Offense	3.94***	0.18	4.10***	0.18				
Sex Abuse or Pornography	8.76***	0.17	8.32***	0.18				
Property Offense	2.92***	0.31	2.85***	0.32				
Firearms Offense	2.15***	0.16	2.59***	0.17				
Immigration Offense	2.80***	0.16	-	-				
Court Violation/Public Order	-0.57**	0.19	-0.22	0.19				
	<i>n=65,436</i>		<i>n=39,096</i>		<i>n=16,941</i>		<i>n=7,871</i>	

***p<0.001, **p<0.01, *p<0.05

Table 8. Mahalanobis Distance Matching Results – Chapter 2 Adjustments

VARIABLES	Δ	SE
All Offenses		
Black	-0.86***	0.07
Hispanic	-2.55***	0.35
<i>U.S. Citizens Only</i>	-1.22***	0.08
Female	-0.91***	0.08
All Offenses Excluding Immigration		
Black	-0.87***	0.07
Hispanic	-2.15***	0.16
<i>U.S. Citizens Only</i>	-1.40***	0.08
Female	-1.17***	0.09
Drug Trafficking Offenses (2D1.1)		
Black	0.11***	0.03
Hispanic	-0.73***	0.07
<i>U.S. Citizens Only</i>	-0.37***	0.04
Female	-0.39***	0.04
Drug Trafficking (Including Drug Types)		
Black	0.20***	0.06
Hispanic	-0.79***	0.05
<i>U.S. Citizens Only</i>	-0.35***	0.06
Female	-0.41***	0.04
Firearms Offenses (2K2.1)		
Black	-0.55***	0.10
Hispanic	-0.10	0.21
<i>U.S. Citizens Only</i>	-0.37*	0.15
Female	0.17	0.25

***p<0.001, **p<0.01, *p<0.05 NOTE: Δ represents the change between the Base Offense Level and the offense level after adding Chapter 2 SOC adjustments. SE=standard error.

Table 9. Mahalanobis Distance Matching (BOL to FOL) Supplemental Results

VARIABLES	Δ'	SE
All Offenses		
Black	-0.81***	0.07
Hispanic	-2.74***	0.36
<i>U.S. Citizens Only</i>	-1.44***	0.08
Female	-1.09***	0.08
All Offenses Excluding Immigration		
Black	-0.82***	0.07
Hispanic	-2.59***	0.19
<i>U.S. Citizens Only</i>	-1.63***	0.09
Female	-1.41***	0.11
Drug Trafficking Offenses (2D1.1)		
Black	0.23***	0.06
Hispanic	-1.10***	0.12
<i>U.S. Citizens Only</i>	-0.54***	0.07
Female	-0.80***	0.06
Drug Trafficking (Including Drug Type)		
Black	0.37***	0.08
Hispanic	-1.19***	0.07
<i>U.S. Citizens Only</i>	-0.55***	0.09
Female	-0.77***	0.06
Firearms Offenses (2K2.1)		
Black	-0.51***	0.11
Hispanic	-0.12	0.20
<i>U.S. Citizens Only</i>	-0.40**	0.15
Female	-0.05	0.24

***p<0.001, **p<0.01, *p<0.05 NOTE: Δ represents the change between the Base Offense Level and the Final Offense Level after adding all guidelines adjustments. SE=standard error.

Appendix

Table 10. SOC Distribution for Drug Trafficking Offenses – Full Table

SOCs	Brief Description	Black	Hispanic	White	Male	Female
2D1.1(b)(1)	Weapon possessed	22.2%	11.1%	21.5%	18.1%	12.1%
2D1.1(b)(2)	Use/threat violence	1.6%	1.1%	1.0%	1.3%	0.5%
2D1.1(b)(3)	Use aircraft or submersible	0.1%	1.6%	0.1%	0.9%	0.0%
2D1.1(b)(4)	Distribute in correctional facility	0.6%	0.7%	0.8%	0.6%	1.0%
2D1.1(b)(5)	Import meth and not minor role	1.2%	5.1%	2.1%	2.9%	4.2%
2D1.1(b)(6)	Convicted under 21 USC 865	0.0%	0.0%	0.0%	0.0%	0.0%
2D1.1(b)(7)	Mass marketing via computer	0.2%	0.1%	0.7%	0.3%	0.1%
2D1.1(b)(8)	Anabolic steroid + masking agent	0.0%	0.0%	0.0%	0.0%	0.0%
2D1.1(b)(9)	Anabolic steroid to athlete	0.0%	0.0%	0.02%	0.01%	0.0%
2D1.1(b)(10)	Convicted of 21 USC 841(g)(1)(A)	0.0%	0.0%	0.0%	0.0%	0.0%
2D1.1(b)(11)	Bribe law enforcement	0.04%	0.01%	0.2%	0.1%	0.0%
2D1.1(b)(12)	Maintain premises for drug dist. or manufacturing	11.0%	4.5%	8.2%	7.6%	0.2%
2D1.1(b)(13)	Knowingly misrepresent fentanyl	0.2%	0.03%	0.1%	0.1%	0.04%
2D1.1(b)(14)	Hazardous waste or minor present or risk of injury/death to minor	0.1%	0.1%	0.4%	0.2%	0.3%
2D1.1(b)(15)	Grow marijuana on federal land or trespassing on tribal/private land + aggravating role	0.0%	0.01%	0.0%	0.01%	0.0%
2D1.1(b)(16)	- Use fear/friendship, etc. to involve individual - Sold to/involved vulnerable person in offense - Directly involved in importation of drug - Obstructed justice - Pattern of criminal conduct/livelihood	1.0%	0.7%	0.8%	0.9%	4.3%

2D1.1(b)(17)	Decrease if: - motivated by relationship or threats - No monetary compensation - Minimal knowledge of scope of enterprise	0.3%	0.3%	0.3%	0.1%	1.2%
2D1.1(b)(18)	Safety Valve (-2 decrease)	9.7%	44.3%	17.5%	24.1%	43.4%
<i>n = 17,350</i>						

Table 11. SOC Distribution for Firearms Offenses – Full Table

SOCs	Brief Description	Black	Hispanic	White	Male	Female
2K2.1(b)(1)	# Firearms	15.4%	24.1%	30.4%	20.2%	38.1%
2K2.1(b)(2)	Decrease if possessed for collecting or sporting	0.1%	0.5%	0.8%	0.3%	0.3%
2K2.1(b)(3)	Destructive device or Rocket/missile/launcher	0.2%	1.0%	3.8%	1.3%	0.9%
2K2.1(b)(4)	Stolen firearm or obliterated serial number	32.9%	25.6%	32.0%	31.2%	24.5%
2K2.1(b)(5)	Trafficking firearms	2.9%	7.7%	3.9%	3.7%	11.2%
2K2.1(b)(6)	Firearm leaving U.S. or possessed in connection with another felony	31.6%	28.3%	32.0%	31.1%	25.1%
2K2.1(b)(7)	Recordkeeping concealed firearm related offense	0.0%	0.0%	0.0%	0.0%	0.0%
<i>n = 7,967</i>						

Table 12. MDM Results with Matching Information– Chapter 2 Adjustments

VARIABLES	Δ	SE	n Treatment Matched (Unmatched)	n Control Used (Unmatched)
All Offenses				
Black	-0.86***	0.07	13,705 (377)	13,051 (257)
Hispanic	-2.55***	0.35	37,290 (756)	13,263 (45)
<i>U.S. Citizens Only</i>	-1.22***	0.08	9,280 (225)	12,558 (253)
Female	-0.91***	0.08	7,334 (129)	52,244 (5,729)
All Offenses Excluding Immigration				
Black	-0.87***	0.07	13,465 (367)	12,672 (249)
Hispanic	-2.15***	0.16	12,084 (263)	12,885 (36)
<i>U.S. Citizens Only</i>	-1.40***	0.08	7,236 (174)	12,218 (302)
Female	-1.17***	0.09	5,555 (114)	28,845 (4,586)
Drug Trafficking Offenses (2D1.1)				
Black	0.11***	0.03	4,967 (123)	4,471 (65)
Hispanic	-0.73***	0.07	7,233 (82)	4,526 (10)
<i>U.S. Citizens Only</i>	-0.37***	0.04	3,885 (107)	4,372 (98)
Female	-0.39***	0.04	2,518 (74)	12,065 (2,284)
Drug Trafficking (Including Drug Types)				
Black	0.20***	0.06	4,947 (143)	4,510 (26)
Hispanic	-0.79***	0.05	7,276 (39)	4,533 (3)
<i>U.S. Citizens Only</i>	-0.35***	0.06	3,900 (92)	4,424 (46)
Female	-0.41***	0.04	2,531 (61)	11,995 (2,254)
Firearms Offenses (2K2.1)				
Black	-0.55***	0.10	4,210 (124)	1,968 (50)
Hispanic	-0.10	0.21	1,474 (45)	2,006 (12)
<i>U.S. Citizens Only</i>	-0.37*	0.15	1,163 (35)	1,898 (99)
Female	0.17	0.25	304 (9)	4,780 (2,778)

***p<0.001, **p<0.01, *p<0.05 NOTE: Δ represents the change between the Base Offense Level and the offense level after adding Chapter 2 SOC adjustments. SE=standard error.

Table 13. MDM Supplemental Results (BOL to FOL) with Matching Information

VARIABLES	Δ'	SE	n Treatment Matched (Unmatched)	n Control Used (Unmatched)
All Offenses				
Black	-0.81***	0.07	13,184 (368)	12,557 (253)
Hispanic	-2.74***	0.36	35,649 (691)	12,768 (42)
<i>U.S. Citizens Only</i>	-1.44***	0.08	8,688 (208)	12,077 (254)
Female	-1.09***	0.08	6,931 (124)	50,152 (5,495)
All Offenses Excluding Immigration				
Black	-0.82***	0.07	12,961 (353)	12,200 (245)
Hispanic	-2.59***	0.19	11,372 (245)	12,411 (34)
<i>U.S. Citizens Only</i>	-1.63***	0.09	6,823 (169)	11,760 (300)
Female	-1.41***	0.11	5,261 (113)	27,601 (4,401)
Drug Trafficking Offenses (2D1.1)				
Black	0.23***	0.06	4,760 (119)	4,292 (64)
Hispanic	-1.10***	0.12	6,755 (83)	4,346 (10)
<i>U.S. Citizens Only</i>	-0.54***	0.07	3,640 (98)	4,195 (97)
Female	-0.80***	0.06	2,352 (75)	11,406 (2,240)
Drug Trafficking (Including Drug Type)				
Black	0.37***	0.08	4,744 (135)	4,330 (26)
Hispanic	-1.19***	0.07	6,799 (39)	4,352 (4)
<i>U.S. Citizens Only</i>	-0.55***	0.09	3,647 (91)	4,242 (50)
Female	-0.77***	0.06	2,368 (59)	11,471 (2,175)
Firearms Offenses (2K2.1)				
Black	-0.51***	0.11	4,084 (120)	1,915 (45)
Hispanic	-0.12	0.20	1,402 (44)	1,948 (12)
<i>U.S. Citizens Only</i>	-0.40	0.15	1,103 (35)	1,839 (101)
Female	-0.05	0.24	296 (9)	4,541 (2,764)

***p<0.001, **p<0.01, *p<0.05 NOTE: Δ' represents the change between the Base Offense Level and the Final Offense Level after including all guidelines adjustments. SE=standard error

Table 14. MDM Balance Table – Full Sample

VARIABLES	<u>Before Matching</u>			<u>After Matching</u>		
	Treated	Untreated	Standard Difference	Treated	Untreated	Standard Difference
Race						
Age	35.26	41.35	-0.53	35.16	36.05	-0.08
Base Offense Level	19.54	19.52	0.00	19.49	19.50	-0.00
Pretrial Detention	0.75	0.63	0.24	0.75	0.75	0.00
Education Level	11.72	12.65	-0.37	11.76	11.93	-0.07
Non-U.S. Citizen	0.03	0.04	-0.03	0.03	0.03	-0.00
Dependents	1.65	0.97	0.41	1.56	1.40	0.10
Criminal History	3.26	2.58	0.38	3.26	3.21	0.03
Pleaded Guilty	0.95	0.97	-0.8	0.96	0.96	-0.00
Female	0.10	0.20	-0.27	0.10	0.10	0.00
Ethnicity						
Age	35.15	41.35	-0.55	35.01	35.52	-0.05
Base Offense Level	13.43	19.52	-0.64	13.39	13.11	0.03
Pretrial Detention	0.90	0.63	0.67	0.90	0.90	0.00
Education Level	8.50	12.65	-1.26	8.56	9.38	-0.25
Non-U.S. Citizen	0.75	0.04	2.13	0.75	0.75	0.00
Dependents	1.96	0.97	0.63	1.90	1.64	0.17
Criminal History	2.13	2.58	-0.28	2.12	1.95	0.11
Pleaded Guilty	0.99	0.97	0.15	0.99	0.99	0.00
Female	0.09	0.20	-0.31	0.09	0.09	0.00
Ethnicity (U.S. Citiz.)						
Age	33.83	41.43	-0.66	33.69	34.75	-0.09
Base Offense Level	20.50	19.72	0.08	20.43	20.21	0.02
Pretrial Detention	0.68	0.63	0.11	0.68	0.68	0.00
Education Level	11.30	12.68	-0.52	11.41	11.69	-0.11
Dependents	1.45	0.96	0.33	1.39	1.26	0.09
Criminal History	2.37	2.63	-0.15	2.37	2.39	-0.01
Pleaded Guilty	0.98	0.97	0.05	0.98	0.98	0.00
Female	0.20	0.20	0.00	0.20	0.20	0.00
Gender						
Age	37.21	36.34	0.08	37.13	37.11	0.00

Base Offense Level	16.66	15.90	0.08	16.62	16.60	0.00
Pretrial Detention	0.55	0.85	-0.70	0.55	0.55	0.00
Education Level	11.69	9.82	0.52	11.75	11.75	0.00
Non-U.S. Citizen	0.21	0.48	-0.59	0.21	0.21	0.00
Dependents	1.34	1.74	-0.23	1.32	1.28	0.02
Criminal History	1.78	2.56	-0.53	1.77	1.78	-0.01
Pleaded Guilty	0.98	0.98	0.02	0.99	0.99	0.00
Race/Ethnicity	2.10	2.41	-0.37	2.10	2.10	0.00

Table 15. MDM Balance Table – Excluding Immigration

VARIABLES	<u>Before Matching</u>			<u>After Matching</u>		
	Treated	Untreated	Standard Difference	Treated	Untreated	Standard Difference
Race						
Age	35.20	41.42	-0.55	35.11	36.03	-0.08
Base Offense Level	19.71	19.77	-0.01	19.65	19.69	-0.00
Pretrial Detention	0.75	0.63	0.25	0.75	0.75	0.00
Education Level	11.72	12.69	-0.38	11.77	11.94	-0.07
Non-U.S. Citizen	0.02	0.03	-0.04	0.02	0.02	0.00
Dependents	1.66	0.96	0.42	1.57	1.40	0.10
Criminal History	3.28	2.60	0.39	3.28	3.23	0.03
Pleaded Guilty	0.95	0.97	-0.08	0.96	0.96	0.00
Female	0.10	0.20	-0.27	0.10	0.10	0.00
Ethnicity						
Age	34.98	41.42	-0.56	34.82	36.48	-0.15
Base Offense Level	23.69	19.77	0.40	23.63	22.26	0.14
Pretrial Detention	0.79	0.63	0.35	0.79	0.79	0.00
Education Level	10.53	12.69	-0.71	10.64	11.36	-0.24
Non-U.S. Citizen	0.40	0.03	1.00	0.39	0.39	0.00
Dependents	1.55	0.96	0.39	1.49	1.23	0.17
Criminal History	2.03	2.60	-0.34	2.03	2.04	-0.01
Pleaded Guilty	0.98	0.97	0.05	0.98	0.98	0.00
Female	0.14	0.20	-0.14	0.14	0.14	0.00
Ethnicity (U.S. Citiz.)						

Age	34.53	41.48	-0.61	34.41	35.42	-0.09
Base Offense Level	22.91	19.91	0.31	22.82	22.41	0.04
Pretrial Detention	0.70	0.63	0.15	0.70	0.70	0.00
Education Level	11.41	12.69	-0.49	11.52	11.79	-0.10
Dependents	1.42	0.96	0.31	1.36	1.24	0.09
Criminal History	2.45	2.64	-0.11	2.45	2.47	-0.01
Pleaded Guilty	0.98	0.97	0.03	0.98	0.98	0.00
Female	0.17	0.20	-0.08	0.16	0.16	0.00
Gender						
Age	38.18	37.02	0.10	38.10	38.14	-0.00
Base Offense Level	18.72	21.37	-0.26	18.75	18.78	-0.00
Pretrial Detention	0.49	0.76	-0.60	0.49	0.49	0.00
Education Level	12.35	11.55	0.27	12.43	12.41	0.01
Non-U.S. Citizen	0.10	0.15	-0.15	0.10	0.10	0.00
Dependents	1.22	1.42	-0.13	1.18	1.14	0.03
Criminal History	1.84	2.80	-0.60	1.83	1.84	-0.01
Pleaded Guilty	0.98	0.97	0.07	0.98	0.98	0.00
Race/Ethnicity	1.86	2.01	-0.17	1.86	1.86	0.00

Table 16. MDM Balance Table – Drug Trafficking

VARIABLES	<u>Before Matching</u>			<u>After Matching</u>			<u>After Matching (Inc. Drug Type)</u>		
	Treated	Untreated	Std. Diff.	Treated	Untreated	Std. Diff.	Treated	Untreated	Std. Diff.
Race									
Age	36.73	39.28	-0.25	36.66	37.22	-0.05	36.72	37.84	-0.11
Base Offense Level	24.46	28.04	-0.51	24.50	25.65	-0.16	24.46	25.41	-0.13
Pretrial Detention	0.80	0.78	0.05	0.80	0.80	0.00	0.80	0.81	-0.02
Education Level	11.60	12.15	-0.23	11.63	11.81	-0.08	11.67	11.95	-0.12
Non-U.S. Citizen	0.03	0.01	0.08	0.02	0.02	0.00	0.02	0.02	0.00
Dependents	1.88	1.00	0.50	1.80	1.52	0.16	1.81	1.11	0.40
Criminal History	3.27	3.09	0.10	3.28	3.27	0.00	3.27	3.08	0.11
Pleaded Guilty	0.96	0.99	-0.15	0.97	0.97	0.00	0.97	0.97	0.00
Female	0.08	0.26	-0.48	0.08	0.08	0.00	0.08	0.09	-0.01
Cocaine	0.18	0.04	0.44				0.18	0.18	0.00
Crack	0.22	0.02	0.68				0.22	0.22	0.00
Heroin	0.18	0.07	0.34				0.18	0.18	0.00
Marijuana	0.04	0.04	0.00				0.04	0.04	0.00
Methamphetamine	0.21	0.69	-1.09				0.22	0.22	-0.00
Other Drug	0.16	0.14	0.06				0.16	0.16	0.00
Ethnicity									
Age	34.74	39.29	-0.44	34.64	36.68	-0.19	34.07	36.86	-0.21

Base Offense Level	29.08	28.04	0.15	29.11	29.06	0.01	29.10	27.74	0.20
Pretrial Detention	0.84	0.78	0.16	0.84	0.84	-0.00	0.84	0.84	0.01
Education Level	10.17	12.15	-0.66	10.24	11.38	-0.38	10.20	11.80	-0.54
Non-U.S. Citizen	0.45	0.01	1.21	0.45	0.23	0.60	0.45	0.06	1.07
Dependents	1.66	1.00	0.43	1.63	1.20	0.28	1.65	1.06	0.38
Criminal History	1.91	3.09	-0.72	1.91	2.51	-0.36	1.91	2.76	-0.52
Pleaded Guilty	0.98	0.99	-0.01	0.99	0.99	0.00	0.99	0.99	0.00
Female	0.14	0.26	-0.30	0.14	0.14	0.00	0.14	0.14	0.01
Cocaine	0.25	0.04	0.60				0.25	0.13	0.35
Crack	0.03	0.02	0.08				0.03	0.03	-0.00
Heroin	0.13	0.07	0.21				0.13	0.12	0.03
Marijuana	0.14	0.04	0.33				0.14	0.13	0.01
Methamphetamine	0.39	0.69	-0.64				0.39	0.52	-0.28
Other Drug	0.07	0.14	-0.22				0.07	0.07	0.00
Ethnicity (U.S. Citiz.)									
Age	33.97	39.38	-0.51	33.85	34.97	-0.11	33.85	35.89	-0.20
Base Offense Level	28.19	28.01	0.03	28.21	28.18	0.00	28.20	27.44	0.11
Pretrial Detention	0.76	0.78	-0.06	0.76	0.76	0.00	0.75	0.75	-0.00
Education Level	11.14	12.15	-0.40	11.28	11.60	-0.13	11.26	11.87	-0.24
Dependents	1.49	1.00	0.33	1.44	1.30	0.10	1.45	1.14	0.21
Criminal History	2.37	3.11	-0.43	2.39	2.51	-0.07	2.37	2.60	-0.13
Pleaded Guilty	0.98	0.99	-0.02	0.99	0.99	-0.00	0.99	0.99	-0.00
Female	0.18	0.26	-0.20	0.17	0.17	0.00	0.18	0.17	0.00

Cocaine	0.21	0.04	0.53				0.21	0.21	0.00
Crack	0.04	0.02	0.16				0.04	0.04	0.00
Heroin	0.14	0.07	0.23				0.14	0.14	0.00
Marijuana	0.10	0.04	0.21				0.10	0.10	0.00
Methamphetamine	0.43	0.70	-0.57				0.43	0.43	-0.00
Other Drug	0.08	0.14	-0.17				0.08	0.08	0.00
Gender									
Age	35.68	36.71	-0.10	35.52	35.66	-0.01	35.61	35.75	-0.01
Base Offense Level	27.70	27.36	0.05	27.84	27.87	-0.00	27.77	28.01	-0.03
Pretrial Detention	0.68	0.84	-0.37	0.69	0.69	0.00	0.69	0.69	-0.00
Education Level	11.81	11.00	0.28	11.89	11.82	0.03	11.88	11.76	0.04
Non-U.S. Citizen	0.12	0.22	-0.26	0.12	0.12	0.00	0.12	0.12	-0.00
Dependents	1.28	1.60	-0.19	1.24	1.21	0.02	1.25	1.20	0.03
Criminal History	2.01	2.74	-0.46	2.02	2.06	-0.03	2.02	2.13	-0.07
Pleaded Guilty	0.99	0.98	0.07	0.99	0.99	0.00	0.99	0.99	0.00
Race/Ethnicity	1.94	2.20	-0.31	1.94	1.94	0.00	1.94	1.96	-0.01
Cocaine	0.12	0.18	-0.18				0.12	0.12	0.00
Crack	0.04	0.09	-0.22				0.12	0.12	0.00
Heroin	0.12	0.13	-0.05				0.11	0.11	0.00
Marijuana	0.06	0.09	-0.09				0.06	0.06	0.00
Methamphetamine	0.54	0.39	0.29				0.55	0.55	-0.00
Other Drug	0.13	0.11	0.05				0.12	0.12	0.00

Table 17. MDM Balance Table – Firearms Offenses

VARIABLES	<u>Before Matching</u>			<u>After Matching</u>		
	Treated	Untreated	Standard Difference	Treated	Untreated	Standard Difference
Race						
Age	32.53	36.78	-0.45	32.43	33.42	-0.10
Base Offense Level	18.67	17.26	0.37	18.64	18.31	0.09
Pretrial Detention	0.83	0.78	0.13	0.84	0.84	0.00
Education Level	11.23	11.87	-0.28	11.28	11.50	-0.10
Non-U.S. Citizen	0.01	0.01	-0.05	0.00	0.00	0.00
Dependents	1.79	1.09	0.42	1.67	1.41	0.15
Criminal History	3.91	3.63	0.17	3.91	3.90	0.00
Pleaded Guilty	0.97	0.98	-0.05	0.98	0.98	0.00
Female	0.02	0.07	-0.24	0.02	0.02	0.00
Ethnicity						
Age	32.24	36.78	-0.47	32.00	33.75	-0.18
Base Offense Level	17.10	17.26	-0.04	17.14	17.03	0.03
Pretrial Detention	0.81	0.78	0.07	0.81	0.82	-0.03
Education Level	10.71	11.87	-0.46	10.92	11.64	-0.28
Non-U.S. Citizen	0.21	0.01	0.68	0.19	0.19	0.00
Dependents	1.56	1.09	0.30	1.53	1.23	0.20
Criminal History	2.91	3.63	-0.40	2.96	3.16	-0.11
Pleaded Guilty	0.99	0.98	0.05	0.99	0.99	0.00
Female	0.04	0.07	-0.13	0.04	0.04	0.00
Ethnicity (U.S. Citiz.)						
Age	31.89	36.81	-0.51	31.80	32.73	-0.10
Base Offense Level	17.59	17.28	0.08	17.57	17.53	0.01
Pretrial Detention	0.77	0.78	-0.02	0.78	0.78	0.00
Education Level	11.24	11.87	-0.28	11.31	11.52	-0.09
Dependents	1.53	1.09	0.28	1.45	1.29	0.10
Criminal History	3.29	3.65	-0.20	3.30	3.42	-0.06
Pleaded Guilty	0.98	0.98	0.01	0.99	0.99	0.00
Female	0.05	0.07	-0.10	0.05	0.05	0.00
Gender						
Age	33.23	33.58	-0.04	33.13	32.94	0.02

Base Offense Level	15.24	18.12	0.78	15.24	15.31	-0.02
Pretrial Detention	0.52	0.83	-0.70	0.53	0.53	0.00
Education Level	12.02	11.27	0.32	12.10	12.00	0.04
Non-U.S. Citizen	0.02	0.05	-0.16	0.02	0.02	0.00
Dependents	1.21	1.58	-0.23	1.16	1.14	0.02
Criminal History	2.29	3.07	-0.86	2.32	2.41	-0.05
Pleaded Guilty	0.99	0.98	0.08	1.00	1.00	0.00
Race/Ethnicity	1.73	1.95	-0.29	1.73	1.73	0.00

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