**“Looking at the Effect of Race on Sentence Length for Drug Trafficking Offenses”**

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**Abstract:**

With mass incarceration being a prevalent topic in recent years, studies concerning the impact of race on incarceration rates have increased. Sentencing, in particular drug sentencing, is recognized as a potential cause of the sentencing gap seen between Black Americans and White Americans. Recognition that harsher sentences given for crack cocaine increased this gap led to the passing of the Fair Sentencing Act in an attempt to close the gap. This paper seeks to determine if this sentencing gap is seen regardless of drug type, and if there is a difference in sentence length for powder cocaine and crack cocaine. An OLS regression using controls for drug type is applied to individual offenders in federal courts in fiscal year 2019. Results show that Black offenders do receive longer sentences than White offenders for drug trafficking offenses at the federal level. However, using a segmented OLS regression by race, results show that there is no significant difference seen in sentence length between powder and crack cocaine among any of the racial categories.

**Introduction/Background**

Mass incarceration has become an important issue in recent years due to a longstanding upward trend in incarceration rates. Mass incarceration refers to what is happening in the United States, where there are an estimated 2.3 million people currently incarcerated (Sawyer & Wagner, 2020). U.S. incarceration rates have increased dramatically since the 1970s and only recently has there been a decline in incineration rates (The Sentencing Project, 2021). Since 2008, there has been a continual decline in the incarceration rate (Gramlich, 2020). There has also been a noticeable decrease in the prison population. However, studies show that this decrease has not been seen equally among different genders and racial groups. Interestingly, it seems like incarceration rates for Black Americans are dropping, the incarceration rate is still much higher than for White Americans, especially men (Buchholz, 2021). Data shows that White women are the only group mentioned that have seen an increase in incarceration rates (Buchholz, 2021). In 2019 there were 2,203 Black males sentenced prisoners per 100,000, 979 Hispanic male prisoners per 100,000 Hispanic men, and only 385 White male prisoners per 100,000 White men (Buchholz, 2021). Meanwhile there were 83 Black female prisoners per 100,000 Black females in 2019, while there were 63 Hispanic female prisoners per 100,000 Hispanic females, and 48 White female prisoners per 100,000 White females (Buchholz, 2021). These numbers indicate that although the rate of incarceration is dropping for Black males, it is still largely out of proportion to incarceration rates for White males.

**Significance**

This study focuses on the effect of race on drug sentencing in recent years. We know from past research that Black Americans are incarcerated at a higher rate than White Americans for drug offenses. I analyze the difference in sentence length during these convictions to determine the effect of race on similar crimes to better understand the racial bias that is a part of the justice system. While many studies have look at how sentence length differs, I add to this by focusing exclusively on drug trafficking offenses and by controlling for drug type to better understand how sentence length differs among drug type.

This study seeks to focus specifically on federal incarceration due to federal guidelines that result in mandatory minimums. I focus on federal data due to my focus on drug trafficking charges, which is primarily charged at the federal level. Federal drug charges often carry longer mandatory minimums and so often results in harsher sentences. By focusing on federal cases I can see how sentence length differs at the most extreme level, getting a stronger comparison as sentences are often much longer to begin with. This study also seeks to look at 2019 in order to understand the differences seen in the most current year possible in order to determine how prevalent racial disparities currently are in regard to sentence length. In addition, much of the federal data sets have been recoded in recent years, making it so new variables and techniques were used only on recent data, allowing for stronger analysis only on the most recent years.

**Literature Review**

***Drug Law/Reform***

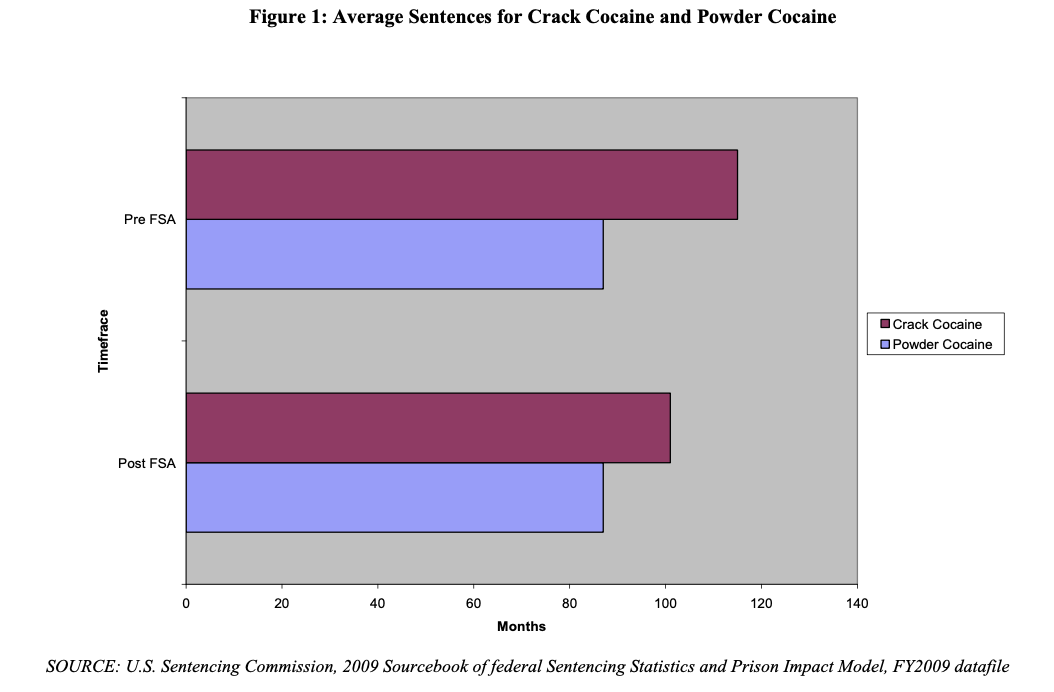
Drug-related convictions are a main reason why incarceration rates have increased so much since the 1970s. The ‘war on drugs’ that occurred starting in the 1970s played a huge role in changing policies regarding drug sentencing (History.com Editors, 2019). With Ronald and Nancy Reagan’s “Just Say No” campaign, higher penalties for drug related crimes were imposed (History.com Editors, 2019). In 1980, the number of people in state prisons for drug offenses was 19,000, that number grew to 183,900 by 2018 (The Sentencing Project, 2021). Federal Prison numbers grew from 4,700 to 76,000 (The Sentencing Project, 2021). Finally, jail numbers grew from 17,200 in 1980 to 182,400 in 2018 (The Sentencing Project, 2021). These numbers all show the huge growth seen throughout all prisons and jails, both state and federal, in incarceration numbers for drug offenses. It has only been in recent years that policies have begun to change, as many states have reformed their laws regarding drug offenses (Gramlich, 2020). This shift was also seen federally with the passing of the Fair Sentencing Act in 2010, which dealt with crack and powder cocaine. According to the Federal Bureau of Prisons, as of March 2021, 46.4% of inmates were imprisoned due to a drug offense (Federal Bureau of Prisons, 2021).

Currently, Black Americans are imprisoned at a much higher rate for drug offenses than White Americans, and crime rates do not account for these differences (Alexander, 2010, pp. 99). Studies such as those done by the National institute on Drug Abuse in 2000 show that white students are far more likely to use hard drugs such as cocaine, crack cocaine, and heroin (Alexander, 2010, pp. 99). It has been concluded through multiple studies that White youth are the most likely group to have sold illegal drugs, yet the sentencing numbers do not correlate, as Black Americans and Latinos have made up three-fourths of drug imprisonments (Alexander, 2010, pp. 98, 99).

In 1986, the Anti-Drug Abuse Act was passed, which established sentencing minimums (History.com Editors, 2019). In this act, it established new sentencing guidelines for powder and crack cocaine, in which the mandatory minimum was 10 years for 50g of crack cocaine and 5000g for powder cocaine (Tuttle, 2019). The United States Sentencing commission published numerous reports on the 100-to-1 powder to crack cocaine ratio, arguing that the harsher sentencing should be reduced, as the harm associated with the drug does not warrant it. The commission argued that a revision of this policy from a 100-to-1 ratio to a 20-to-1 ratio would help close the sentencing gap seen between Black Americans and White Americans. Despite these reports and research that backed it up, the law failed to be overturned in court since the Supreme Court stated that they must “be motivated by conscious racial bigotry” (Alexander, 2010, pp. 113).

Despite reports and recommendations from the U.S. sentencing Commission to reform the 100-to-1 ratio in 2004, this sentencing minimum was still not changed until 2010 with the passing of the Fair Sentencing Act. In this Act the 10-year minimum for crack cocaine was changed from 50g to 280g, which was slightly higher than the recommended threshold mentioned in the 2004 U.S. Sentencing Commission report. In 2011 the US Sentencing Commission sought to make this change retroactive. However, despite efforts of the Fair Sentencing Act, a report published on sentencing before and after the Fair Sentencing Act was passed shows not as much of an effect as anticipated. (Sentencing Project, 2010). Figure 1 shows the impact of the Fair Sentencing Act, in which sentences for crack cocaine charges still remined far longer than those from powder cocaine.

**Figure 1**



In 2018 the First Step Act was passed, which called for retroactive sentence reductions. These retroactive applications had benefited close to 2,000 people by 2018, and 91% of the people who benefited were Black Americans, in comparison to 4% White Americans and 4% Hispanic Americans and 1% other (Gotsch, 2019). The average sentence before the first step act was around 21 years, while the average sentence after the First Step act was 15 years (Gotsch, 2019). The fact that a majority of the sentence reductions were for Black Americans must be noted, and the question of if this might be because they received harsher sentences to begin with must be asked.

***Previous Studies***

There are several factors to consider when determining if race plays a role in drug-related convictions. The first is to look at the role of race in convictions, the second is to look at drug-related convictions specifically, and the third is to recognize the impact of mandatory minimums.

***Racial Disparities Seen in Sentencing***

We need to understand why incarceration rates began to increase so dramatically by looking at the potential underlying causes. Smith (2004) looks to political explanations for why incarceration rates have increased by looking at five different hypotheses. The first is the underclass hypothesis which states that there are social fault lines that result from both racial and class differences in order for the ruling class to maintain dominance, and by using variables regarding race, the Gini index, poverty, and unemployment, Smith finds that only race is significant, giving credit to the idea that race is a motivator in mass incarceration (Smith, 2004). In addition, Franklin (2017) mentions the importance of understanding and recognizing implicit bias within the justice system, emphasizing that race can still be a motivator even on an unconscious level.

Abrams et al. (2012) found that race does play a role in judicial sentencing, yet they found that it does not affect sentence length. While they could not determine if the difference is a result of discrimination against Black Americans, the history suggests that this is likely the case. However, Mitchell (2005) performed a meta-analysis of 80 eligible studies to determine if Black Americans received long sentences independent of factors such as offense seriousness and past offenses. He found evidence that Black Americans did receive harsher sentences independent of other contributing factors (Mitchell, 2005). Finding a clear link between race and sentence length is the first step in looking at the link between race and sentencing length regarding drugs.

The U.S. Sentencing Commission, in addition to providing data, also runs detailed analysis on this data. In 2017 then published an update to the 2012 Booker Report, looking at *Demographic Differences in Sentencing* in 5 report time periods ranging from 1998 to 2016. We look primarily at the Post-Report period, ranging from 2011-2016 (U.S. Sentencing Commission, 2017). They ran a multivariate regression analysis on all cases for each time period and showed that in the Post-Report period, ranging from 2011-2016, Black male offenders were sentenced 19.1 percent longer than White male offenders (U.S. Sentencing Commission, 2017). In fact, all report time periods indicted longer sentences for black male offenders (U.S. Sentencing Commission, 2017). For fiscal year 2016, the USSC was able to control for prior violence in male offenders using criminal history and compare a model for 2016 that did not control for prior violence with one that did (U.S. Sentencing Commission, 2017). In the model that did not control for prior violence, Black male offenders had a 20.7% longer sentence than White male offenders, while in the model that controlled for prior violence, they had a 20.3% longer sentence than White male offenders (U.S. Sentencing Commission, 2017). This indicated that prior violent crimes are not a major cause in sentence length discrepancies. Overall, past research supports the claim that sentence lengths differ by race.

***Drug Sentencing***

The U.S. Sentencing Commission found in their report of *Fifteen Years of Guideline Sentencing*, that federally, the number of minorities that are sentenced in federal courts from 1984 to 2001 grew substantially, with Black Americans serving much longer sentences. They argue there are three different explanations for the gap in sentence length: fair differentiation, discrimination, and unsupportable adverse impact. They found that while fair differentiation did account for a lot of the gap, so did unsupportable adverse impact, much of which can be attributed to sentencing laws regarding cocaine. Due to harsher penalties related to powder crack cocaine in relation to other drugs, a larger proportion of Black Americans were imprisoned, and the commission argued for a revisal of this policy from a 100 to 1 ratio to a 20 to 1 ratio, which they believed would lessen the sentencing gap by 9.2 months. However, closing of the gap in sentence length by changing the ratio is not necessarily what happened after the passing of the Fair Sentencing Act. Tuttle (2019) observed bunching around the 280g sentencing minimum, which Black American and Hispanics offenders more likely to be bunched above. This indicates that even with a revision to the mandatory minimum, there is still a racial gap in sentencing length surrounding crack cocaine sentencing.

Fellner (2009) showed that the rate of incarceration for Black Americans is not proportional to drug use among the population, that they are in fact far more likely to be arrested and charged for the same offense than a White American. Ward et al. (2016) did a causal mediation analysis on sentence length using 2008 federal narcotics data. They brought up the importance of looking at the different stages of the criminal justice process individually in order to discover where bias may be. It is not just one stage of the process that must be adjusted, their research shows that the decisions of both prosecutors and judges are important in this process, as race impacted the prosecutor’s decisions regarding granting departures and judges’ decisions on sentencing, with minority men less likely to be granted a departure and more likely to receive a longer sentence length (Ward et al., 2016).

Rosenberg et al. (2016) looked at non-violent drug offenders in Connecticut to compare sentencing between Black and White offenders. They found that Black offenders receive much longer sentences than White offenders and had more sentences that led to incarceration (Rosenberg et al., 2016). Their findings lead to the conclusion that there were significant differences by race (Rosenberg et al., 2016). This study provides a good background to disparities seen in state sentencing on a smaller scale and indicates that could be a larger issue seen throughout sentencing on the federal level as well.

***Mandatory Minimums***

Rehavi and Starr (2014) found that even when controlling for factors such as past criminal history, education level, and offense type, there was still a disparity found in sentence lengths of White and Black Americans, with Black Americans receiving sentences close to 10% longer. They also did extended analysis on the effect of mandatory minimums and found that Black offenders were 1.75 times more likely to be charged with an offense that had a mandatory minimum at sentencing when controlling for other factors (Rehavi & Starr, 2014). This analysis is important as many drug offenses carry mandatory minimums, so the effect of them on sentence length must be noted. Bjerk (2017) explored the impact of mandatory minimums specifically in relation to drug crimes, finding that in FY2011 and FY2012, 68% of defendants in drug cases were eligible for a mandatory minimum. Analyzing by drug type, Bjerk acknowledged that the mandatory minimum is harsher for crack cocaine, yet the harsher guidelines do not seem to be the reason behind the longer sentences seen in crack cocaine offenses, the reasons he cites being that penalties for crack are harsh enough without accounting for mandatory minimums, and fewer offenders and eligible for the mandatory minimum to begin with (Bjerk, 2017). This brings up interesting policy implications regarding the effectiveness of reforming mandatory minimums.

**Data**

The data is from The United States Sentencing Commission on individual offenders for Fiscal Year 2019. This data keeps track on original sentences that took place in the federal court system. Individuals who were acquitted, were corporate offenders, or re-sentenced were not included in the datafile (United States Sentencing Commission, 2020). Although they have data available from 2002 onward, many of the methods for collecting the data as well as the variables have changed over the years, so I will be limiting the data to only the most recent year available, particularly since many new variables were recoded to only include FY2018 and FY2019. I hope to only look at FY2019, in order to see if race does still play a role in drug sentencing regardless of drug in a more current year.

In the U.S. Sentencing Commission’s 2019 Sourcebook of Federal Sentencing Statistics, they provide information on federal offenders by type of crime using the FY2019 datafile. It is their analysis of the five major drugs methamphetamine, powder cocaine, crack cocaine, heroin, and marijuana as accounting for 89.1% of the primary drug type in federal drug cases that establishes these drugs as the primary focus in this paper (U.S. Sentencing Commission, 2020). Previous studies have also seen fit to primarily focus on the impact of these five major drugs (Ward et al.) Their analysis shows that a majority of the primary drug type is methamphetamine, 42.2% of cases to be exact (U.S. Sentencing Commission, 2020). Special attention will be paid to the sentencing outcomes of individuals being charged with powder cocaine and crack cocaine as the primary drug type due to the past disparities seen in regard to these drug types in particular.

**Figure 2**

Chart, pie chart

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Their research also looks at the sentence length by these five primary drug types. With the largest average sentence length belonging to methamphetamine, this is another reason for the extended focus on it in our analysis. From this analysis we see that while the median sentence for crack cocaine and powder cocaine is equal at 60 months (5 years), the average sentence for crack cocaine is still larger than that of powder cocaine, 78 months compared to 70. (U.S. Sentencing Commission, 2020). This may indicate the presence of outliers on the upper end of sentencing for crack cocaine.

**Figure 3**

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The Sentencing Commission also includes data on mandatory minimum penalties. In 2019, among the 19,757 drug sentencing cases, they found that 35.0% were sentenced with no mandatory minimum, 24.6% were sentenced with a 5-year drug mandatory minimum (60 months), and 40.4% were sentenced with a 10 year or more drug mandatory minimum (120 months) (U.S. Sentencing Commission, 2020). These values differ within drug type, with 45.0% of cases involving powder cocaine resulting in a 10 year or more drug mandatory minimum, while only 15.9% of cases involving crack cocaine resulted in a 10 year or more drug mandatory minimum (U.S. Sentencing Commission, 2020). Meanwhile, 26.0% of cases involving powder cocaine had no drug mandatory minimum applied, and 53.3% of cases involving crack cocaine had no drug mandatory minimum applied (U.S. Sentencing Commission, 2020).

When looking at mandatory minimum sentences, there must be an acknowledgement of the percentage of sentences that received relief from these minimums under the” safety valve”. The “safety valve” allows for offenders to be sentenced without having to adhere to mandatory minimum guidelines (U.S. Sentencing Commission, 2017). The safety valve can be applied when five conditions are meant; offenders can have no more than one criminal history point, no violence or weapon, no death or serious bodily injury, no leadership role adjustment, and full and truthful disclosure (U.S. Sentencing Commission, 2017, pp. 47-49). Mandatory minimums and exceptions to these minimums must be acknowledged when doing an analysis on sentence length. When looking at individual offender federal sentencing data in 2019, the U.S. The Sentencing Commission found that in 34.3% of cases there was no drug mandatory minimum penalty. They also established that of those cases where there was relief from mandatory minimum penalties, 31.6% of those cases were due to safety valves, and 9.2% were from both 5k1.1 (assistance to authorities) and safety valve (U.S. Sentencing Commission, 2020).

**Methodology**

In order to determine the effects of race on sentence length, we run multiple OLS regressions. Of the 20,393 cases involving drugs, only 563 were cases regarding possession, while the remaining 19,830 dealt with drug trafficking. In order to ensure offenders were being sentenced for the same offense type, I limited my study to only include drug trafficking cases in FY2019 only, limiting it to offenders where all information was available (N=18,964).

According to the U.S. Sentencing Commission 2019 Annual Report and Sourcebook:

“Drug Trafficking includes drug distribution/manufacture—conspiracy, continuing criminal enterprise, drug distribution—employee under 21, drug distribution near school, drug import/export, drug distribution to person under 21, establish/rent drug operation, endangering human life while manufacturing, and narco-terrorism. This category includes offenders sentenced under USSG §§2D1.1, 2D1.2, 2D1.5, 2D1.6, 2D1.8, 2D1.10, and 2D1.14 (pp.212).”

***Empirical Models***

Below are the models used in the analysis, I used several different models to look at the relationship between race and sentence length as well as drug type and race.

Model 1: Basic OLS regression

The dependent variable, , will be the log of sentence length, while our independent variables for Model 1 are our race variables, with White being our reference variable. Using the log transformed version of sentence length I am able to analyze the percentage difference in sentence length. If the coefficients on the race dummy variables are statistically significant from zero, it would indicate that the sentence lengths are not equal among different races.

Model 2: With Controls

The dependent variable, , will be the log of sentence length, while our independent variables are shown above and listed in Table 1. This model controls for factors other than race that may impact sentence length. If the coefficients on the race dummy variables are statistically significant from zero, it would indicate that the sentence lengths are not equal among different races all else being equal.

Model 3: With Control and District Fixed Effects

The dependent variable, , will be the log of sentence length, while our independent variables are shown above and listed in Table 1. This model controls for differences within the different judicial districts, with District 5 (which included Texas, Louisiana, and Mississippi) being our reference district. District 5 was picked as the reference category due to the fact that it is the largest category, meaning it had the largest number of offenders convicted (N=3,598).

Model 4: Segmented by Race with District Fixed Effects

I will also run OLS regressions after segmenting by race. I segment the population into White offenders (N=5,309), Black offenders (N=4,694), and Hispanic offenders (N=8,465). The dependent variable will continue to be log of sentence length, and our independent variables will remain the same except for the exclusion of racial categories. This will be done to look at the effect of drug sentencing within racial categories and will be done in place of interaction terms as it will allow for a more concise interpretation.

Probit Model:

(1)

Next, in order to look specifically at offenders charged with powder cocaine and crack cocaine offenses, we use probit models. Our first model is to explain whether an offender is charged with cocaine as their primary drug type during FY2019. Our second model is to explain whether an offender is charged with crack cocaine as their primary drug type during FY2019.

Powder cocaine and crack cocaine are the binary response variables, the other variables are those listed in the summary statistics. The null hypothesis for both models being that other factors equal, variables related to race have no effect on the probability of powder cocaine or crack cocaine as primary drug type in sentencing (Wooldridge, 2016) This will allow me to look at the predicted probability of an offender having their primary drug type be powder cocaine and crack cocaine.

In order to better interpret this model, I find the marginal probability of the race variables. As the race variables are binary, I use the above equation to estimate the predicted difference in the probability that primary offense type is crack or cocaine when Black=1 and Black=0 (Wooldridge, 2016). This allows for the estimation of differences in primary offense type probabilities for each person if they are Black or Hispanic versus White (Wooldridge, 2016).

***Dependent Variable***

The dependent variable is the sentence length. I look at the log of dependent variables in order to have a more reasonable interpretation due to the large variation found in sentence length, which ranges from 0.1 (indicating 1 day of imprisonment) to 469.99 (470 indicating life imprisonment).

***Independent Variables***

Previous studies have often controlled for related characteristics such as education level, criminal history, and age (Ward et al., Rehavi et al.) Ward et al. also included citizenship, while Rehavi et al. also included a variable for mandatory minimum, and Freiburger at el. included variables to account for guilty pleas.

The independent variables are split into four categories. The first is demographic information. This included information on an offender’s race, gender, age, and citizenship. Age is a dummy variable for whether the defender is younger than 21. Race is split into four categories for White, Black, Hispanic, and other race, with White being the reference category. In this study we use the term race to refer to ethnicity as well, therefore including Hispanic as a race category. The second category is education level. This is split into four level that include some high school, high school, some college, and college, with some high school being the reference variable.

The third category is drug type. Within the data set, prisoners are sentenced with a primary drug type. If there is more than one drug involved in a case, the primary drug type is recorded as the drug which has the highest converted drug weight as it will have the highest penalty (U.S. Sentencing Commission, 2020). The drug types are split into 6 categories: powder cocaine, crack, heroin, marijuana, methamphetamine, and other drugs, with powder cocaine being the reference variable. These categories were picked as they are the same categories used by the U.S. Sentencing Commission, as they are the 5 primary drug types, with all other drugs being included in the other category. These categories indicate the primary drug type in the drug trafficking offense of the offender.

The fourth category focuses on sentencing. Trial indicates if a defendant went to trial or took a plea deal, as a guilty plea is likely to impact sentencing. Due to the findings of the U.S. Sentencing commission for FY2019, we control for mandatory minimum, which represents the mandatory minimum associated with different drug types, as mandatory minimums vary for each drug type. In order to account for criminal history, criminal history points applied indicated if previous criminal history points were applied during the sentencing of the offender. The district variable includes the 11 different Judicial Districts at the federal level, as well as Washington D.C (which will be referred to as District 0). A map of the Judicial Districts can be seen in Figure 1 in the Appendix. The within range variable indicates if an offender is within the guideline range or not. This variable accounts for cases mentioned in the U.S. Sentencing commission report where there was relief from mandatory minimums for various reasons.

**Table 1**



**Results**

**Table 2**



Table 2 contains the results of the different ordinary least squares regression models predicting log of sentence length. Looking at the results from our basic model in which we just look at the effect of race on sentence length with no controls, we see that a Black Offender receives a sentence that is 9.7% longer than a White Offender. When we look at Model 2 in which we add in our control variables, we see that all else being equal, a Black offender receives a sentence that is 15.5% longer than White offender. Meanwhile, a Hispanic offender receives a sentence that is 13.3% longer than a White offender. Finally, an offender of another race receives a sentence that is 17.2% shorter than a White offender. All racial categories were significant, indicating that race does play a role in sentence length holding all else constant. It should also be noted that a male offender receives a sentence that is 100.4% longer than a female offender.

Regarding drug type, the regression indicates that an offender that is convicted for trafficking crack cocaine as their primary offense receives a sentence that is 15.0% shorter than an offender sentenced for powder cocaine. Regarding sentencing variables, findings indicate that offenders that had previous criminal history points applied receives a sentence that is 108.1% longer than an offender that has no previous criminal history points applied. Regarding education, we see that the effect of completing high school education on sentence length is not significantly different from only some high school education, offenders that had attended some college receives a sentence that is 15.6% shorter than an offender with only some high school education. Additionally, an offender that completed their college education receives a sentence that is 11.0% shorter than an offender with only some high school education.

Model 3 is the OLS regression after controlling for District Fixed Effects. Some important things to note regarding race from Model 3, is that all else being equal, a Black offender receives a sentence that is 10.6% longer than White offender. Meanwhile, a Hispanic offender receives a sentence that is 26.9% longer than a white offender. The coefficient on other race is not significant, meaning there is not a significant different in sentence length between white offenders and offenders of an other race. It should also be noted that a male offender receives a sentence that is 104.4% longer than a female offender. In Model 4 Black was put as the reference category, and all else being equal, a Hispanic Offender receives a sentence that is 14.7% longer than a Black offender.

Looking at Districts (a map shown in Figure 1), findings show that offenders in District 9, which covers much of the west coast, receive sentences that are 40.5% shorter that offenders in District 5. Likewise, offenders in District 10, which accounts for much of the Midwest, receive sentences that are 34.9% shorter for drug trafficking offenses compared to offenders in District 5. Offenders in District 1, which covers the upper northeast, receive sentences that are 30.6% shorter for drug trafficking offenses compared to offenders in District 5.

**Table 3**



Based on Table 3, there are some interesting findings regarding our models dealing with powder cocaine. These findings indicate that being a Black Offender increases the probability of being convicted with powder cocaine as their primary drug offense by 16.5% compared to being a White offender. It also shows that being a Hispanic offender increases the probability of being convicted with powder cocaine as their primary drug offense by 22.6% compared to being a White offender.

Looking at our models dealing with crack cocaine, these findings indicate that being a Black Offender increases the probability of being convicted with crack cocaine as their primary drug offense by 15.1% compared to being a White offender. It also shows that being a Hispanic offender also increases the probability of being convicted with powder cocaine as their primary drug offense by 2.9% compared to being a White offender.

**Table 4**



Table 4 shows our segmented OLS models, looking at sentence length by drug conviction within each racial category. It should be noted that our coefficient on crack cocaine for all racial categories is not significant at any level, indicating that sentence length does not vary significantly for crack cocaine in comparison to powder cocaine within each racial category. However, looking at other drug comparisons also gives some intriguing information. White offenders will receive a sentence that is 43.3% shorter for a marijuana charge than a powder cocaine charge while Black offenders will receive a sentence that is 53.3% shorter for a marijuana charge compared to a powder cocaine charge.

Looking at the role of gender, we see that white males will receive sentences that are 89.6% longer than white females on drug trafficking charges. Black men will receive sentences that are 184.6% longer than Black women for drug trafficking charges. Finally, Hispanic men will receive charges that are 89.3% longer than Hispanic females.

Looking at education levels, we see some interesting results. The coefficients on the education dummy variables for White offenders are not significant at any level, indicating that sentence length does not vary significantly for any education level in comparison to some high school education. However, a Black offender that has some college education will receive a sentence that is 15.8% shorter than a Black offender with only some high school education, and Hispanic offenders will receive a sentence that is 13.1% shorter than Hispanic offenders will only some high school education. Some college education and some high school education were the only education categories with significant difference in sentence lengths at the 1% level among all three race categories.

Looking at Districts, findings show that among White offenders, those in District 9, which covers much of the west coast, receive sentences that are 55.4% shorter than offenders in District 5. Among Black offenders, those in District 9 receive sentences that are 37.2% shorter than those in District 5. Finally, among Hispanic offenders, those in District 9 receive sentences that are 36.4% shorter than those in District 5. District 4 covers the upper south. Findings show that white offenders in District 4 receive sentences that are 29.1% shorter than those in District 5. Meanwhile, the coefficient on District 4 is not significant in the models for Black and Hispanic offenders, indicating that there is not a significant difference in sentence length between districts 4 and 5 for Black and Hispanic offenders.

**Discussion**

Finding indicates that race does have a significant impact on sentence length, with Black offenders receiving sentences longer than White offenders for drug trafficking offenses. These findings were expected based on past research that reached the same conclusion (Mitchell, 2005, Ward et al, 2016, Tuttle, 2019). Findings also indicated that there was no significant difference in the sentence lengths for crack cocaine and powder cocaine. This could indicate that the policy changes in 2010 that reduced the ratio from 100 to 1, to 18 to 1 in the Fair Sentencing Act did have a positive change over time. Findings did not indicate that offenders were more likely to receive a longer sentence with crack cocaine, which was the reason for the Fair Sentencing Act, indicating that the Act may have had some positive effects on differences in sentence length. Findings also show that White offenders have a smaller disparity between powder cocaine sentence lengths and marijuana sentence lengths in comparison to Black and Hispanic offenders. This could be another indicator that although there is not a significant difference in sentence length for crack and powder cocaine, sentence length for powder cocaine varies by race.

We see that adding District fixed effects in Table 2 changes the coefficients on our race variables. With the difference in sentence length between Black and White offenders decreasing. This could mean that some of the variability is accounted for through district differences. These district differences could be due to demographic differences as well as drug use differences. We also found some interesting findings by looking at judicial districts within our race categories, findings in our segmented OLS models in Table 4 show that sentence lengths differ by different amounts among the districts across the racial categories. With some districts having significant differences among 2 districts for one racial category but not for others. This could indicate that judicial districts may be biased, and sentencing is not being carried out in the same way in each judicial district. The U.S. Sentencing Commission has done a series of reports on looking at sentencing outcomes across districts, these reports occurred after U.S. v. Booker in order to measure sentencing disparities across federal districts (U.S Sentencing Commission, 2020). Their newest report found that sentencing outcomes are impacted by district, with the differences widening (U.S Sentencing Commission, 2020). They also found that the difference between the guideline minimum and the sentence outcomes widened (U.S Sentencing Commission, 2020). Failure to adhere to guideline minimums could explain some of the difference across districts.

**Limitations**

         In terms of limitations, my study only looked at federal cases, meaning these findings may not be true for sentencing in state prisons and jails. Cases on federal level work differently from state level, as many are “selected,” with drug trafficking being one of the most common offenses to be selected (Reedt et al., 2013). This study also only includes drug trafficking charges at the federal level, and state and federal charges are different for drug trafficking offenses. Most drug trafficking cases are charged at the federal level as many involving multiple state lines, so this study may not be applicable to state data. In terms of years, this study only looked at FY2019 which means this study may not be applicable to previous years. As mentioned in the significance, much of the federal data sets have been recoded in recent years, and while this allowed for better analysis in this study, it would have made it difficult to include past years. Finally, although this study mentioned difference by gender, it is important to note that the sample size for women is much smaller than for men, as men are imprisoned in far larger numbers. It may be more effective to look at state prison or jail datafiles to look at the sentencing disparities seen by gender.

While this study included district fixed effects as data was available for which district an offender was sentenced in, there was limited information on other district characteristics. So, while I was able to look how sentencing differed by district, further analysis regarding district differences would have to be done with another data source. The U.S. Sentencing Commission does analysis of each district using this data, with comparisons to national statistics (U.S. Sentencing Commission, 2020). But these analyses on the district level do not contain more information on each district or attempt to explain the reasons seen behind differences in sentence length.

The R-squared values seen in my models are not particularly large, which was not wholly unexpected due to the sheer number of factors and people that are involved in sentencing decisions. It must be acknowledged that the justice system is complicated, and although these models include many factors it is possible that omitted variable bias exists. For example, this data set did not include information on individual judges or courts, and as noted in our literature review, previous studies have indicated that race does have an impact on the sentencing decisions of judges’, and that it has an impact on sentence length (Abrams et. al.,2012, Ward et. al., 2016).

**Policy Implications/ Conclusions**

It is important to think of the policy implications of these findings and to consider possible changes that could be made. This is a complicated question because it involves dealing with the racial bias that is prevalent in the justice system, which is no easy task. In order to reduce the inequality seen by race in sentence length in the justice department, there have been several suggested policy solutions. Some suggestions aim at ending racial disparities within the criminal justice system overall. It is interesting to note that many policy suggestions aimed at the criminal justice system overall still center around reforming drug policies, indicating what an important first step this would be in reforming the criminal justice system.

One important suggestion is to use racial impact statements. Racial impact statements are similar to environmental or fiscal impact statement and are currently implemented in 7 states, with other states introducing legislation (Porter, 2021). Racial impact statements force lawmakers to look at the ramifications of new legislation. Many policies that appear to be race-neutral have a disproportionate affect. This includes policing policies such as those that allowed for stop and frisks, as well as sentencing policies such as the 1964 Anti-Drug Abuse Act. Although these policies are race-neutral, they often disproportionally affect Black Americans (Ghandnoosh, 2018). By using racial impact statements, this could help to determine if new racial-neutral policies will be helpful or harmful.

One policy that is often brought up in regard to drug policy is drug decriminalization. It is important to note that this policy is in regard to drug possession, not in regard to drug trafficking. While this policy is not aimed at ending the disparities seen in sentence length for drug trafficking offenses, it is a start to dealing with the racial disparities seen in sentencing related to drug offenses through drug possession charges (articles). Until very recently, drug decriminalization talk was concentrated around marijuana. However, studies have shown that decriminalization, while lessening arrests rates, has not changed the racial disparities seen (Ghandnoosh, 2018). In regard to other drugs, Oregon became the first state to decriminalize all drugs in 2020, so there is little data so far on what the decriminalization of all drugs would like in the U.S. But with the findings regarding marijuana decriminalization and legalization, drug decriminalization does not seem like an effective way to end racial disparities.

Overall, due to the complicated nature of the criminal justice system and its long history if discrimination, it is very unclear what policies would be best. Future research should be done on disparities seen in the justice department, as there is an indication that sentence length does vary by race. More research needs to be done about changes over time and effects of certain policy changes in order to better determine what has helped and what has not. Further research should also be done on possible policies, and as drug decimalization begins to occur studies should be done on the effectiveness of these policies on disparities by race in sentence length, particularly on the state level. We cannot hope to dismantle racial bias in the prison system if we do not fully understand its impact.

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**Appendix**

**Figure 1:**

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Source: U.S. Courts. U.S. Federal Courts Circuit Map. https://www.uscourts.gov/about-federal-courts/federal-courts-public/court-website-links

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