

Is there racial discrimination in determining the length of incarceration for non-violent drug crimes?

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1 Introduction

My research question is important in addressing the accusations of racial discrimination in the modern United States' justice system. Although there is obvious correlation between race and incarceration length of non-violent drug crimes, correlation is not causation. Thus, my study will attempt to integrate other variables of interest that would affect incarceration length of non-violent drug offenses, and will hopefully illuminate a more accurate level of discrimination (or the lack thereof) concerning non-violent drug offenses. My research question also has the potential to enlighten us on the effects of mandatory minimum sentences, which I will explain more in the next section.

1.1 General Background Information

In the U.S., "drug control policies bear the primary responsibility for the quadrupling of the national prison population since 1980," currently making the U.S. the country with the highest documented incarceration rate in the world (Human Rights Watch, 2013; The Sentencing Project, 2007). Although blacks make up 12%-13% of the United States population, black males alone represent 40.1% of the incarcerated population in the United States (Human Rights Watch, 2013).

Some of these drug control policies have been purported as institutional discrimination, such as the Anti-Drug Abuse Act of 1986 which, among other provisions, enacted new mandatory minimum sentences for drugs, such as a 100:1 sentencing disparity between crack and powder cocaine (Elsner, 2004). Powder cocaine is more popular in white, suburban areas while crack cocaine is more popular in black, urban areas, and under this act, possessing 5 grams of crack cocaine and 500 grams of powder cocaine would both receive a minimum mandatory sentence of five years (Elsner, 2004). However, the Fair Sentencing Act of 2010 recently reduced the disparity to 18:1, and an offender would have to possess 28 grams or more of crack cocaine to

receive the five-year mandatory sentence (Washington Post, 2010). The 18:1 ratio is supposed to reflect the more immediate addictive effect and higher levels of violent crime associated with crack cocaine (Washington Post, 2010).

Furthermore, the Sentencing Reform Act of 1984 abolished federal parole, and made the United States Sentencing Commission, whose job is to meet, “the purposes of sentencing,” avoid, “unwarranted sentencing disparities among defendants with similar records,” and to “reflect...knowledge of human behavior as it relates to the criminal justice process” (Johnson, 2013). Although this act was supposed to reduce sentencing disparities, one study suggests that prosecutors are, “*ceteris paribus*, twice as likely to charge [charges carrying mandatory minimum sentencing] against blacks” than against whites, thus maintaining racial disparities in sentencing of time served incarcerated (Rehavi & Starr, 2012).

In other words, mandatory minimum sentencing was supposed to standardize incarceration length for various crimes, giving prosecutors less leeway in determining sentence length. However, now prosecutors are faced with the decision of charging a defendant (with a mandatory minimum sentence) or not, resulting in a potentially higher disparities in incarceration lengths. Because drug crimes typically have mandatory minimum sentences attached to them, if there was racism in sentencing for non-violent drug crimes (which make up about half of all current inmate-crimes), we would expect to see a relatively large disparity in months (at least a few months, rather than fractions of a month) between blacks and whites.

These are just some of examples of the discussion surrounding the debate of the effect of the War on Drugs on sentencing disparities. In particular, these discussions directly address and debate the racial disparities of time served incarcerated, the focus of my study.

1.2 Variables Defined and Hypothesis

My causal variable of interest is race, black or white, and my dependent variable is total months of incarceration for non-violent drug offenses, including illicit drug use or possession, and selling or trafficking of an illicit drug. However, I interacted gender and race to capture the full combined effects; thus, through interpretation, my causal variables of interest are these race-gender interaction terms. It is important to note that the sentencing disparity between crack and powder cocaine will not be interpretable in my study, as the data I use only specifies use/possession and selling/trafficking of illicit drugs, and only differentiates between marijuana and hard drugs, including both crack and powder cocaine. Control variables are detailed below in section 3.2.

Based on economic theory (section 3.1) and previous studies (section 2), my hypothesis for the relationship between racial discrimination and the length of incarceration for non-violent drug crimes is positive, meaning that being black is a factor in longer sentencing lengths than *ceteris paribus* with being white.

The ideal experiment to test my hypothesis would be to have incarceration-length decisions be made without the judge knowing the race of the non-violent drug offender as a control group.

To test my hypothesis in practice, I will be working with the U.S. Department of Labor's Bureau of Labor Statistics NLSY97 data, which surveys youth born in the years 1980-1984. The data is a national sample, with the first survey taken in 1997 when the 9,000 youths were between 12 and 16 years old. Although a few variables, such as the total time spent incarcerated, are from data collected in total from 1997 to 2009, many of the variables in my model are summed dummies across years to capture necessary background on individuals (e.g. if the respondent has ever been in a gang), as well as variables that are just from 2009 (e.g. highest level of education as of 2009). The youths were between 24 and 28 years old in 2009 in my data sample.

2 Literature Review

The studies discussed here include studies done with research questions similar to my own that give me knowledge to better understand what observed and unobserved variables are needed to answer my question.

One study similar to mine discerns the, “contribution of prosecutors’ initial charging decisions to large observed black-white disparities in sentence length,” concluding that pre-charge characteristics can explain about 80% of disparities, and that blacks on average receive, “almost 10% longer sentences than comparable whites arrested for the same crimes,” which the author attributes to the, “filing of charges carrying mandatory minimum sentences,” and that prosecutors, “*ceteris paribus*, [are] almost twice as likely to file such charges against blacks” (Rehavi & Starr, 2012). This empirical study was done with U.S. federal data, although it judges criminal charging in general rather than only non-violent drug data, the focus of my study. Because the data focuses on federal charges only, state-level charges are not addressed in this study. The NLSY97 data for 2009 does not differentiate between federal and state-level charges; rather, it only specifies if one was arrested, charged, convicted, or had gone to court, and how many times for each since the DLI, or date of last interview, which occurs annually. Thus, this lack of specificity could represent a shortcoming in my study.

There are other studies that do focus on local-level disparities in sentencing concerning race. One of these studies criticizes others before it for using data from different time periods, and using inconsistent methodologies. The study concludes that although, “discrimination is directed against blacks and is manifested in incarceration rates,” that, “the exact source of discrimination is not identical in all cities,” and claims that for some cities, “whites get better plea bargains than blacks” (Welch, Spohn, & Gruhl, 2006). This highlights the importance of local-level customs and laws, which are not recorded variables in my study.

However, the NLSY97 data does include a region variable, which specifies whether one lives in the Northeast, North Central, the South, or the West. I created a chart (see Appendix A) showing for each state: if there are mandatory minimum sentences, if the state has a sentencing commission, if there are sentencing guidelines, if these guidelines are mandatory, if there are specific drug courts, and if there are any safety valves, defined as, “one of the only ways out of a mandatory minimum sentence” (FAMM, 2013). The chart also shows population data that I calculated to find the probability percentage of each of those factors for each state, which is then combined into the four NLSY97 regions. This shows how likely it is for any random person in each region to be in a state that has a minimum mandatory sentence, a sentencing commission, mandatory guidelines, drug courts, and safety valves. It is important to

note here the probabilities for mandatory minimum sentences and safety valves: the Northeast is 64.77%; 27.89%, North Central 71.42%; 42.48%, South 49.18%; 29.98%, and West 33.62%; 13.40%. To clarify, for example, if one is convicted in North Central, one is much more likely to face a mandatory minimum sentence than if one is convicted in the West. However, if one is convicted in North Central, there is a higher probability that one is in a state where there is a possibility to avoid the mandatory minimum sentence (42.48%) than in the West (13.40%). Although these numbers are not directly used in my regression, they will be useful in interpreting the NLSY97 region coefficients in the regression.

Another study from the state level concluded that, “both black and Hispanic defendants tend to receive harsher sentences than white defendants,” and that, “ethnicity effects are the largest in the sentencing of drug offenders.” (Demuth, Stephen, & Steffensmeier, 2004) Thus, this study demonstrates that failure to determine ethnicity in comparing black and white sentencing outcomes is likely to result in misinterpretation of black and white sentencing outcomes. It also suggests that the consideration of race in some places may be more prominent than others. This is highly relevant to my study, as well as the previously mentioned studies that focus on race and incarceration. However, my data set only includes an ethnicity variable for Hispanics, and thus is irrelevant for my study. Therefore, my study will only be observing race—the color of one’s skin—rather than ethnicity—the culture one comes from—which, according to this study, may skew my results and interpretation.

Other studies emphasize the importance of interacting variables, such as race, gender, and age, to fully capture sentencing disparities, insisting that looking at these variables separately underestimates the interacted effect in reality. One study explains that many past studies, “oversimplify the role of race, gender, and age in judicial decision making,” concluding that, “young, black males are sentenced more harshly than any other group, race is the most influential in the sentencing of younger rather than older males, the influence of offender’s age on sentencing is greater among males than females, and the main effects of race, gender, and age are more modest compared to the very large differences in sentencing outcomes across certain age-race-gender combinations” (Steffensmeier, Ulmer, & Kramer, 1998). Studies such as this one highlight the importance of partialling out variables that have correlation, as the joint effects of race, gender, and age must be considered and taken into account. The ‘Y’ in NLSY97 stands for ‘youth,’ and thus my sample does not vary much in age (24 to 28 years old in 2009). However, I am able to interact race and gender, which is included in my model to account for such disparities.

Other studies concentrated on certain parts of the justice system, such as one that specifically focused on the final stage of the criminal justice process, focusing on time

served and found that, “no racial differences were found in the actual amount of time served, but a significantly higher percentage of whites than blacks were granted parole” (Elion & Megargee, 1979). However, this study was done before parole was banned on the federal level under the Sentencing Reform Act of 1984, cited previously. However, the study did find no correlation between race and time served, a conclusion that has seemed to be drawn less often from the research I have been doing, as can be seen above. Although there is no data on parole, there is data on probation, which I can use in my regression. Furthermore, this study looked at the final stage of the criminal justice process, which, based on the addition of the U.S. Sentencing Commission in 1984, would be different process today than when this study was done. Thus, it is important that I be careful comparing methodology and data from different time periods. It is also important that I be aware of additional sentencing laws.

One of the reasons why I chose to work with 2009 data and not the more recent 2010 data is because the Fair Sentencing Act was passed in August, 2010 (Washington Post, 2010). Some of the effects of this act are summarized in Section 1.1. Thus, I used the 2009 data in order to avoid the potential disparity in incarceration length time *and* the effects it could have on race by changing the mandatory minimum sentences guidelines. A follow-up study using the 2011 data when it comes out would potentially be able to partially measure the changes from this act, if any. Unfortunately, it is not within the scope of this project or in the data to interpret local justice systems, as one study discussed above insisted.

Furthermore, it is obvious that having a thorough understanding of the real effects of federal and state-level sentencing commissions on judges’ discretion and options is necessary to more accurately interpret my findings. This effect can be partially understood by looking at the chart I calculated in Appendix A in order to fit some state-level data to the NLSY97 region variable data. The chart includes information on if each state (and calculated region) has a sentencing commission, has sentencing guidelines, and importantly, if it does have guidelines, if these guidelines are mandatory or voluntary. The chart also includes, “safety valve” information; if a state has a safety valve, this means that there is a possible way to get out of the mandatory minimum sentencing. The probabilities for mandatory minimum sentencing and safety valves are: Northeast 65% and 28%, North Central 71% and 43%, South 49% and 30%, and West 34% and 13%. We can see that the area with the highest probability of facing mandatory minimum sentencing—the North Central—is also the area with the highest probability of having a safety valve. Likewise, the West has both the lowest possibility of facing mandatory minimum sentencing and the lowest possibility of a safety valve. However, these numbers also show that many states, in all four areas, lack safety valves. The probabilities for mandatory guidelines are: Northeast 0%, North

Central 21.08%, South 24.08%, and West 14.54%. Thus, overall, there is a low chance of one being in a court with absolutely mandatory guidelines, meaning that one is likely to be in a court where the judge has a high level of discretion on the state level. If one is in the Northeast specifically, there are no states that have mandatory guidelines. These statistics show potential complications when considering the possibility of racial discrimination. For instance, the safety valve could be more often used for one race or another. Similarly, if guidelines are not mandatory in some states, this gives the prosecutor a wider range of decision-making in the length of incarceration rates, which could have racial implications.

3 Methodology

3.1 Underlying Economic Theory

Based on economic theory, race and income in the U.S. are negatively correlated on average. Furthermore, it is important to realize the positive correlation between income and education, and the negative correlation between income and crime. Erik Wright's "Race, Class, and Income Inequality" addresses these correlations, concluding that, "the differences in returns to education between black and white males largely disappear when the regression equations are run within class positions," affirming the perspective that returns to education is a consequence of, "the distribution of racial groups into class categories" (Wright, 1978). Thus, these related variables of income and education—among others—are important in determining my hypothesis since it is possible these factors can have a real effect of the quality of defense one receives in the courtroom. This theory that blacks are more likely to be economically disadvantaged compared to whites (in correlation with the other factors as well) leads me to hypothesize that blacks on average will receive less quality defense in the courtroom, and thus longer incarceration sentences. There is also psychological theory that isolates race, which states that there may be unconscious calculation in discriminatory behavior against minorities that are present from our society's influence and messages, which also leads me to hypothesize that blacks could receive longer incarceration sentences for this reason.

I interacted race and gender to capture the potentially greater differences between the four groups (black males, black females, white males, and white females) than there would be just comparing race and gender. However, the ethnicity data was not sufficient to apply to this model in a similar way, as the data focused on Hispanic ethnicity, which is not relevant to this study. I included factors related to months spent incarcerated, such as number of arrests and number of times incarcerated. Characteristics such as hard drug use and being a gang member make the person more likely to spend relatively longer time incarcerated. Finally, characteristics such as income and education were also included.

3.2 Econometric Model

My econometric model is:

$$\begin{aligned} \text{incar_totmonths} = & \beta_0 + \delta_1 \text{BM} + \delta_2 \text{BF} + \delta_3 \text{WF} + \beta_1 \text{incar_totnum} \\ & + \beta_2 \text{conv_pu_9709} + \beta_3 \text{conv_st_9709} + \beta_4 \text{arrest_totnum} + \beta_5 \text{arrest_totnum2} \\ & + \beta_6 \text{mj_sklwk_num_09} + \beta_7 \text{coc_sklwk_num_09} + \beta_8 \text{coc_usenum_09} \\ & + \delta_4 \text{sell_mj_09} + \delta_5 \text{sell_coc_09} + \beta_9 \text{gang_9705} + \beta_{10} \text{homeless_9708} \\ & + \beta_{11} \text{ltot_income_09} + \delta_6 \text{hh_parents_12} + \delta_7 \text{marr_09} + \beta_{12} \text{hh_jail_9709} \\ & + \delta_8 \text{lrnemot_prob} + \delta_9 \text{bio_child_hh_09} + \delta_{10} \text{relg_08} + \delta_{11} \text{educ_09} \end{aligned}$$

where the dependent variable is total months incarcerated. BM, BF, and WF stand for interacted terms black male, black female, and white female, with white male as the base group. I split the rest of the variables into three categories: Justice System Variables, Drug Variables, and Lifestyle Variables. The Justice System variables are present in the model to generally explain factors related to incarcerations and arrests that could contribute to incarceration length. The Drug variables are to generally explain a respondent's usage and/or selling of drugs in their life, regardless if they were ever arrested or incarcerated for any of these activities. The Lifestyle variables explain factors that typically should be factored in, such as income and education, but also include background factors such as gang activity and whether one was ever homeless, which could factor into whether or not one is involved in drug crimes in the first place.

Justice System Variables:

The total number of incarcerations (*incar_totnum*) is included, which will be highly useful to interpret in the later Chow Test to see the difference across groups. If a respondent was convicted of possession or use (*conv_pu_9709*), or sale or trafficking (*conv_st_9709*) of illegal drugs between 1997 and 2009 is included to see if non-violent drug crimes significantly affect incarceration length. These variables were originally dummy variables for each year with a "1" for a conviction; thus, these variables are summed dummy variables from 1997 to 2009. Respondents were asked if they were incarcerated for possession or use, or sale or trafficking, each time they were incarcerated, thus capturing all non-violent drug offense incarcerations between 1997 and 2009. The total number of arrests (*arrest_totnum*) was a given summary variable, which I squared (*arrest_totnum2*) as one would expect diminishing marginal returns to incarceration length.

Drug Variables:

Respondents were asked how many times in 2009 they ingested marijuana (*mj_sklwk_num_09*) or cocaine/hard drugs (*coc_sklwk_num_09*) before going to school or work, with "1" meaning "yes." Respondents were also asked how many times they used cocaine/hard drugs in total in 2009 (*coc_use_num_09*). They were asked if they had ever sold, or helped to sell marijuana (*sell_mj_09*) or cocaine/hard drugs (*sell_coc_09*) in 2009, making these variables dummy variables with "1" for "yes."

Lifestyle Variables:

If a respondent was in a gang or not between 1997 and 2005 (`gang_9705`) was asked with "1" being "yes." This is another summed variable of individual dummy variables across years; unfortunately, this question was not asked after 2005. Every two years, respondents were asked if they were ever homeless for two or more nights in the past two years (`homeless_9708`) with "1" for "yes." Again, this is a summed dummy variable across years. I included the logged form of total income for 2009 (`ltot_income_09`), and whether or not the respondent lived with both biological parents or not at age twelve (`hh_parents_12`) with "1" for "yes." If the respondent was married in 2009 (`marr_09`), "1" is "yes." Another summed dummy variable is whether or not a household member was in jail between 1997 and 2009 with "1" for "yes" (`hh_jail_9709`), which was asked inconsistently in the survey, but still covered all years between 1997 and 2009. The parents of the respondents were asked if the respondent had learning or emotional problems that inhibited schoolwork (`lrnemot_prob`) at 12 years of age, which is a dummy variable with "1" for "yes." The respondent was asked in 2009 if they had a biological child in the household (`bio_child_hh_09`) which is another dummy variable with "1" for "yes." They were also asked in 2008 (this question was not asked any other year) if they felt religion was important in their daily lives (`relg_08`), which was not a consistent question in the survey, with a "1" for "important" or "very important," and a "0" for "somewhat important," "not very important," or "not important at all." Finally, respondents were asked their highest level of education in 2009, a dummy variable where "1" stands for "associate's degree or higher" and where "0" stands for "high school diploma or lower."

Model Limitations:

My model is limited for not including ethnicity, which, according to one study, had a significant effect in drug-related sentencing, and suggested that racial disparity will likely be inaccurate without controlling for ethnicity. My model is also weak in the area of controlling for locality and for determining state versus federal incarceration. Although there is a regional variable, discussed previously in section 2, this variable does not create a good estimator as it has a constant high p-value, and only divides the U.S. into four fairly arbitrary sections concerning this study. My model is also limited as it is only one snapshot in time, and may in reality include factors that are hard to control for, such as how a judge determines the minimum sentencing charge or not, which was cited as a way judges discriminated against blacks in section 2. Sociological and psychological theory might suggest that there are unconscious calculations taking effect during the determination of sentencing. Thus, it can be difficult to discern the

effects (and in what proportions) race has on incarceration time. Factors leading to the incarceration itself also must be taken into account, which I attempted to control for with the Drug Variables and some of the Lifestyle Variables.

The large sample size of the NLYS97 should give me a fairly equal distribution. However, the Gauss-Markov assumptions must be held true for the OLS to be BLUE. Assumptions 1 (linear in parameters), 2 (random sampling), 3 (explanatory variable variation), and 4 (zero conditional mean) are all fairly straightforward and safe to assume, given the model parameters, data collection, and data size. However, assumption 5, homoscedasticity, seems to be a large assumption to make; but this problem is mitigated through a robust regression, resulting in robust standard errors.

4 Empirical Application

The source for my data is the U.S. Department of Justice, Bureau of Justice Statistics: National Longitudinal Survey of Youth (NLS-Y) data from 1997 (NLSY97). All of the variables in my regression are from this annual survey.

Variable	Obs	Mean	Std. Dev.	Min	Max
incarc_totmonths	7700	1.401948	8.369697	0	235
BM	7700	0.1555844	0.3624844	0	1
BF	7700	0.1555844	0.3614943	0	1
WF	7700	0.3285714	0.4697243	0	1
incarc_totnum	7700	0.1324675	0.5609822	0	7
conv_pu_9709	7700	0.0720779	0.3876581	0	7
conv_st_9709	7700	0.0258442	0.2290323	0	6
arrest_totnum	7700	1.147662	3.195112	0	63
arrest_totnum2	7700	11.52455	111.1224	0	3969
mj_sklwk_num_09	7700	0.3653247	2.94164	0	30
coc_sklwk_num_09	7700	0.0338961	0.7102823	0	30
coc_usenum_09	7700	0.9967532	16.51617	0	500
sell_mj_09	7700	0.0092208	0.0955874	0	1
sell_coc_09	7700	0.0049351	0.070081	0	1
gang_9705	7700	0.118961	0.50366	0	7
homeless_9708	7700	0.0796104	0.2892629	0	3
ltot_income_09	4822	10.01731	0.9547386	2.995732	11.71172
hh_parents_12	7700	0.074026	0.2618302	0	1
1marr_09	7700	0.2602597	0.4388048	0	1
hh_jail_9707	7700	0.0954545	0.3151871	0	2
lrnemot_prob	7700	0.0963636	0.3151871	0	1
bio_child_hh_09	7700	0.6116883	1.010848	0	8
relg_08	7700	0.4002597	0.4899827	0	1
educ_09	7700	0.2612987	0.4393709	0	1

The large sample size, consistency, random sampling, and abundance of variables are strengths of the NLS-Y97 data. However, because there are many variables, the process of deciding which variables should be included in the model was difficult. For example, the data has (per individual) the total number of arrests over his or her lifetime, the total number of arrests in every year, the specific charge for the first four arrests, and monthly arrest status as well as a dummy variable asking whether the respondent has been arrested in the past year. The same data is available for charges and convictions as well. In this way, one has to be careful putting in data in order to not cause multicollinearity. However, vif, or variance inflation factor, test results show that multicollinearity in my model is very low. The ovtest, or RESET test, checking for model specification suggests that there is some misspecification, which could be from a number of things. I would not be surprised if omitted variables bias was the cause, as there are more variables across time that could affect incarceration length, such as non-drug related incarceration variables.

Although not a part of my descriptive statistics from my regression, it was important to include this second table, which are descriptive statistics for only those who were incarcerated for the variables showing total number of times incarcerated and total number of months incarcerated:

Variable	Obs	Mean	st. dev.	min	max
incar_totnum	577	1.768	1.145	1	7
incar_totmon	577	18.709	24.738	1	235

This shows that there were 577 total incarcerations for this sample, that the highest number of incarcerations anyone in the sample has received is 7, and that the highest number of total months spent incarcerated is 235.

What will be highly important when later interpreting the Chow Test in Part 6 across the four groups, BM, BF, WF, WM, is the average expected number of months per incarceration:

$$18.709 / 1.768 = \mathbf{10.583} \text{ average incarceration length per incarceration}$$

5 Analysis

5.1 Regression

$$\begin{aligned} \text{incar_totmonths} = & \beta_0 + \delta_1 \text{BM} + \delta_2 \text{BF} + \delta_3 \text{WF} + \beta_1 \text{incar_totnum} \\ & + \beta_2 \text{conv_pu_9709} + \beta_3 \text{conv_st_9709} + \beta_4 \text{arrest_totnum} + \beta_5 \text{arrest_totnum2} \\ & + \beta_6 \text{mj_sklwk_num_09} + \beta_7 \text{coc_sklwk_num_09} + \beta_8 \text{coc_usenum_09} \\ & + \delta_4 \text{sell_mj_09} + \delta_5 \text{sell_coc_09} + \beta_9 \text{gang_9705} + \beta_{10} \text{homeless_9708} \\ & + \beta_{11} \text{ltot_income_09} + \delta_6 \text{hh_parents_12} + \delta_7 \text{marr_09} + \beta_{12} \text{hh_jail_9709} \\ & + \delta_8 \text{lrnemot_prob} + \delta_9 \text{bio_child_hh_09} + \delta_{10} \text{relg_08} + \delta_{11} \text{educ_09} \end{aligned}$$

Number of obs	= 4822
F (23, 4798)	= 9.61
Prob > F	= 0.0000
R-squared	= 0.4726
Root MSE	= 3.2792

incar_totmonths	Coeff.	Std. Err.	t	P> t	95% Conf.	Interval
BM	0.6134576	0.271	2.26	0.024	- 0.0820823	1.144833
BF	0.3822163	0.143	2.67	0.008	0.1018973	0.6625354
WF	0.0402948	0.087	0.47	0.642	- 0.1293911	0.2099807
incar_totnum	6.228748	0.658	9.47	0.000	4.939706	7.517791
conv_pu_9709	- 0.7982326	0.512	- 1.56	0.119	-1.802307	0.2058414
conv_st_9709	5.283432	1.177	4.49	0.000	2.976203	7.590661
arrest_totnum	0.1051601	0.074	1.42	0.155	- 0.0397237	0.2500439
arrest_totnum2	-0.0022653	0.001	- 1.81	0.071	- 0.0047253	0.0001947
mj_sklwk_num_09	-0.0103226	0.030	- 0.34	0.731	- 0.0691119	0.0484668
coc_sklwk_num_09	- 0.0926746	0.086	- 1.08	0.281	- 0.2611267	0.0757774
coc_usenum_09	0.0027599	0.007	0.40	0.690	- 0.0108171	0.163369
sell_mj_09	- 0.1309206	0.820	- 0.16	0.873	- 1.739181	1.477339
sell_coc_09	- 3.016714	1.592	- 1.90	0.058	- 6.136913	0.1034856
gang_9705	0.2356419	0.273	0.86	0.388	- 0.2998092	0.771093
homeless_9708	- 0.0702217	0.275	- 0.26	0.799	- 0.6100731	0.4696297
ltot_income_09	- 0.212044	0.109	- 1.95	0.052	- 0.4257273	0.0016392
hh_parents_12	0.1338725	0.160	0.84	0.403	- 0.1801775	0.4479224
marr_09	0.1448373	0.105	1.38	0.168	- 0.0612033	0.350878
hh_jail_9707	- 0.5868516	0.229	- 2.56	0.010	- 1.03597	- 0.1377329
lrnemot_prob	0.5384229	0.331	1.73	0.084	- 0.0721286	1.148974
bio_child_hh_09	- 0.0670609	0.044	- 1.51	0.132	- 0.1542693	0.0201476
relg_08	- 0.2818238	0.113	- 2.48	0.013	- 0.5042093	- 0.0594383
educ_09	0.0987515	0.069	1.43	0.152	- 0.0365339	0.2340368
_cons	1.992364	1.110	1.80	0.073	- 0.1835093	4.168238

The number of observations was reduced to 4,822, dropping all respondents that were neither black nor white. The regression is statistically significant, and the R^2 is fairly high at 0.4726. The regression includes robust standard errors.

For our purposes here, I will interpret interesting coefficients at the 10% significance level. However, I will also interpret coefficients that are close to significant, and coefficients that have corresponding confidence intervals that are both the same sign (in which case, we can interpret the sign of the coefficient, but not necessarily the weight).

We can see from the regression table above that BF is statistically significant. This means that, if the respondent was a black female, we would expect her to spend 0.382 more months incarcerated than whites, *ceteris paribus*. My other interacted terms were not statistically significant.

Justice System Variables:

One of two significant variables in this section is `incar_totnum`, or total number of incarcerations, which we would expect to be significant. This suggests that, across all four groups—BM, BF, WF, WM—that the expected sentence length is 6.229 months. This variable will be more interesting to look at in the Chow Test to see the differences in expected sentence lengths across groups.

The other significant variable is `conv_st_9709`, meaning the total number of times a person was convicted for the sale or trafficking of drugs between 1997 and 2009. A coefficient of 5.283 means that if the respondent was convicted for the sale or trafficking of drugs, we would expect that person to have spent 5.283 more months incarcerated than if the person was not convicted of the sale or trafficking of drugs. Because the `conv_pu_9709` coefficient is not significant, this shows that being convicted for the selling or trafficking of drugs—the more serious of the two crimes—will definitely add to one's sentence length while possession or use may not, leaving the length of incarceration up to other factors in the latter case. None of my other variables were statistically significant.

Drug Variables:

None of these coefficients were statistically significant. However, this fact is prominent in that using drugs before school or work in 2009, the total number of times one has used cocaine in 2009, and selling drugs in 2009 does not factor into incarceration length. These coefficients may be interpreted more accurately through a panel regression so that more than just 2009 are taken into account.

Lifestyle Variables:

We can see that `hh_jail_9707`, or whether a respondent has had a household member in jail between 1997 and 2007, is barely statistically significant at the 10% significance level. If a respondent has a household member in jail, we would expect the respondent to spend about a half a month, or 0.587, less time in prison. However, it is difficult to say when this coefficient plays in; for example, we do not know if it should be interpreted as before the arrest (e.g. respondents are more careful to not get incarcerated when another member of their household is already in jail), or after the arrest, or during prosecution (e.g. the prosecutor sees that the respondent has a household member in jail and decides to give a slightly shorter sentence). Because it is only a half month difference, it is hard to judge the theoretical effect.

Although not statistically significant, `relg_08`, or whether a respondent finds religion to be important in their daily lives or not, has confidence intervals of the same sign. This means that we can interpret the coefficient sign, a negative sign, but not the magnitude. This means that we would expect a person who strongly or very strongly finds religion important in their daily lives is likely to have spent fewer months in jail than if the respondent finds religion only somewhat or not important in their daily lives. This suggests religion may have an impact on crime, or that if a person is religious that the prosecutor factors this into account positively when sentencing.

5.2 Chow Test

Here, I have a reduced Chow Test table for easy comparison of coefficients across groups, with their respective R^2 in the last row. I have included the full tables for each of the four Chow Tests in Appendix B. It is important to note here that the BM, WF, and WM models were all statistically significant; however, it is unclear whether the BF model is significant or not from the regression, which is interesting given that BF was the only statistically significant group in the original regression. It is also important to note the differences in the number of observations and R^2 values: BM had 645 observations, and has a high R^2 of 0.5010, BF has 706 observations and a relatively low R^2 of 0.2929, WM has 1,849 observations and the highest R^2 at 0.5766, and WF has 1575 observations, and a very high R^2 of 0.5619. Again, I will be interpreting coefficients' significance at the 10% level, and will be interpreting the sign of those with the both confidence intervals of the same sign. Each regression has robust standard errors.

incar_totmonths	BM coeff.	BM p-value	BF coeff.	BF p-value	WM coeff.	WM p-value	WF coeff	WF p-value
incar_totnum	9.521	0.000	8.016	0.046	5.692	0.000	2.377	0.000
conv_pu_9709	-1.215	0.463	0.491	0.665	-0.648	0.261	-0.545	0.012
conv_st_9709	4.553	0.070	-1.422	0.517	5.614	0.000	0.027	0.836
arrest_totnum	0.159	0.470	0.006	0.979	0.105	0.184	0.134	0.059
arrest_totnum2	-0.007	0.272	-0.0003	0.923	-0.003	0.161	-0.010	0.089
mj_sklwk_num_09	0.020	0.896	-0.007	0.679	-0.012	0.471	-0.005	0.399
coc_sklwk_num_09	0.501	0.362	-1.007	0.196	-0.343	0.196	0.005	0.304
coc_usenum_09	0.031	0.944	-0.002	0.300	0.012	0.541	-0.001	0.147
sell_mj_09	-0.800	0.796	0.407	0.605	-0.078	0.934	-0.212	0.332
sell_coc_09	-6.107	0.284	2.300	0.476	-2.099	0.235	0.137	0.725
gang_9705	-0.162	0.795	-0.085	0.443	0.420	0.110	0.007	0.932
homeless_9708	-1.004	0.368	-0.143	0.429	0.368	0.447	-0.031	0.215
ltot_income_09	0.011	0.979	-0.478	0.213	-0.208	0.054	-0.075	0.223
hh_parents_12	0.662	0.601	0.005	0.951	-0.069	0.676	0.087	0.252
marr_09	-0.198	0.761	0.086	0.373	0.308	0.145	0.043	0.304
hh_jail_9707	-2.139	0.006	0.622	0.382	-0.730	0.049	-0.069	0.265
lnmemot_prob	2.984	0.042	-0.444	0.288	0.155	0.629	-0.065	0.149
bio_child_hh_09	0.016	0.945	-0.124	0.337	-0.102	0.196	-0.035	0.236
relg_08	-1.093	0.049	0.170	0.140	-0.247	0.057	-0.021	0.478
educ_09	-.102	0.741	0.133	0.206	0.129	0.164	0.001	0.944
_cons	0.576	0.892	4.636	0.223	1.971	0.065	0.747	0.228
R ²	0.5010		0.2928		0.5766		0.5619	

This CHOW test shows that, for each time a black male respondent is incarcerated (inarc_totnum), we would expect his gender and race to factor in as an increase his incarceration length by 9.521 months, which is highly statistically significant. Likewise, for each time a white male respondent is incarcerated, we would expect his gender and race to factor in as an increase his incarceration length by 5.692 months, also statistically significant. Each time a white female respondent is incarcerated, we would expect her gender and race to factor in as an increase her incarceration length by 2.377 months. Again, we cannot interpret the black female Chow Test regression because of its unknown significance as a model; however, if the model is significant, we can see that the signs on the confidence interval for black females is the same, meaning that the positive coefficient sign can be taken into account, which is what we would expect as the other three regressions also had positive signs for their gender-race coefficients.

Justice System Variables:

For white males, conv_st_9709, or being convicted of sale/trafficking of drugs, is highly significant. For a white male, we would expect this charge to increase the total number of months incarcerated by 5.614 months. This could mean that if a white male was convicted with sale/trafficking of drugs, it matters more to the prosecutor than if the defendant was a black male or a white female (again, black female is unknown; but if the regression is significant, this factor would be insignificant as it is for black males and white females). In other words, if a white male was charged with sale/trafficking of drugs, this is expected to add 5.614 months onto this sentence length whereas with the other groups, this expectation is nonexistent for this conviction. Because the coefficient reflects 5 months, a substantial number, this may have to do with mandatory minimum sentencing, and could mean that this conviction matters for sentencing length for a white male while only other factors matter for all other groups.

For white females, it statistically significant at the 12% level (and thus close to the 10% level) that a conviction of possession/use of drugs, or conv_pu_9709, would actually decrease sentence length by about half a month at 0.545 months. This is unexpected, and perhaps shows that prosecutors are slightly lenient; however, because this is only half a month (thus this is not telling under the assumption of mandatory minimum sentencing) and because it is not highly significant, we cannot put too much weight or interpretation on this coefficient.

Drug Variables:

None of the Drug variables' coefficients are statistically significant, or have the same sign in the confidence interval. This is slightly surprising as it suggests that one's background with drugs outside the justice system does not significantly affect one's conviction. However, again, these variables are only from 2009, and may be more enlightening in a panel regression. Likewise, there could be other reasons for convictions that are not drug related that may be significant that are not in this model, even though we know that half of inmates today are in prison for drug related offenses.

Lifestyle Variables:

For black males, it is statistically significant that having a household member in jail, `hh_jail_9707`, would decrease their incarceration lengths by about two months, or 2.139 months. This could mean that black males are more careful when other household members are in jail, either because the reality of being in jail became apparent, or because the household needs to be supported by an income from somebody. The income theory would make sense given that black males are likely to have lower incomes than whites. Because the coefficient implies about two months, and not more such as five or ten which would be more common under mandatory minimum sentences, that it is possible that black males may end up being more careful, and then are charged with a lesser offense (e.g. possession) rather than a more serious offense (e.g. sale) which would help to explain the in-between number of months. This variable's coefficient for white males has a confidence interval with the same signs, indicating that white males would also receive lesser months incarcerated when a household member was in jail, perhaps for similar reasons listed previously.

For black males, learning or emotional problems that affected schoolwork as a child, `lrnemot_prob`, was not significant, but the confidence intervals did have the same sign. This suggests that black males are expected to have more months incarcerated if they had learning and emotional problems as a child. This makes sense intuitively, especially for black males who are more likely to be raised by a family with lower income, and potentially in a less quality school district than whites.

For black males, the importance of religion in daily life was not significant, but the confidence intervals were of the same sign, suggesting that finding religion important would decrease one's time spent incarcerated. This is also intuitive, as it could be supposed that more religious people would attempt to stay out of crime than those who do not, although I am unsure as to how strong this theory is.

6 Conclusion

From the original regression, we found that *black females spend significantly more time in prison than white males by about 0.3 months*. This is not highly interpretable as far as minimum incarceration sentences go, as a fraction of a month is not calculable with mandatory minimums, which are either all months, or none. However, this suggests that black females are in prison slightly longer than white males, perhaps for offenses that do not include mandatory minimums.

The Chow Test was more revealing; if we remember the average number of months spent incarcerated per incarceration from Part 4 as well as the controversy and understanding of mandatory minimum sentences, we can interpret and compare these coefficients with meaning. The average number of months spent incarcerated per incarceration is 10.583, or about 10.6 months. Taking into consideration that prosecutors have less leeway as to how many months they will charge under mandatory minimum sentencing, and thus only have control over whether to charge the defendant or not, these coefficients are highly enlightening. Again, black males receive about 9.5 months, white males about 5.7 months, and white females about 2.4 months. This shows that for about every full sentence a black man receives, a white man receives about half of that sentence, and a white female receives about a quarter of a sentence. *In other words, with the knowledge of mandatory minimum sentencing, black men are almost twice as likely to be charged charges carrying mandatory minimum sentences than white men, ceteris paribus. Likewise, prosecutors are four times as likely to charge black men as white females, ceteris paribus.* Although this is not specific to drug crimes through observing the model, we do know that about half of the current incarcerated population is incarcerated for some kind of non-violent drug crime. Thus, this almost certainly applies to non-violent drug crimes, but may also apply to other types of crimes.

When the NLSY97 2011 (and further years into the future) data is available, it would be interesting to do a similar study to see if the Fair Sentencing Act—passed in August of 2010—had an effect on this significant causation. Furthermore, a panel regression would be more enlightening for this specific question.

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Appendix A:

Mandatory Minimum Sentencing, Commission, Guidelines, and Safety Valves for Each State:

FAMM INFO	Mandatory Minimum Sentences?	Sentencing Commission?	Sentencing Guidelines?	Are Guidelines Mandatory?	D C ?	Safety Valve?
NORTHEAST 54.572	(8) (64.77%)	(4) (50.43%)	(1) (22.73%)	(0) (0%)	(9) (100%)	(5) (27.89%)
CT	Y (3.504)	N	N	-	Y	Y
ME	Y (1.317)	N	N	-	Y	Y
MA	Y (6.417)	Y	N	-	Y/N	N
NH	Y (1.300)	N	N	-	Y	N
NJ	Y (8.699)	Y	N	-	Y	Y
NY	-(19.227)	Y	N	-	Y	-
PA	Y (12.406)	Y	Y	N	Y	N
RI	Y (1.081)	N	N	-	Y	Y
VT	Y (.621)	N	N	-	Y	Y
N. CENTRAL 60.943	(9) (71.42%)	(5) (54.05%)	(5) (49.78%)	(2) (21.08%)	(12) (100%)	(6) (42.48%)
IL	-(12.714)	Y	N	-	Y	-
IN	Y (6.238)	N	N	-	Y	Y
IA	-(2.954)	N	N	-	Y	-
KS	Y (2.736)	Y	Y	Y/N	Y	Y
MI	Y (10.113)	N	Y	Y/N	Y	Y
MN	Y (5.101)	Y	Y	N	Y	Y
MO	Y (.927)	Y	Y	N	Y	Y
NE	-(1.747)	N	N	-	Y	-
ND	Y (.674)	N	N	-	Y	N
OH	Y (11.459)	Y	Y	N	Y	-
SD	Y (.771)	N	N	-	Y	Y
WI	Y (5.509)	N	N	-	Y	N
SOUTH 107.699	(8) (49.18%)	(8) (36.42%)	(8) (50.82%)	(2) (24.08%)	(16) (99.49%)	(4) (29.98%)
AL	Y (4.530)	Y	Y	N	Y	Y
AR	Y (5.744)	N	N	-	Y	-
DE	Y (0.830)	Y	Y	N	Y	N
DC	- (.554)	-	-	-	-	-
FL	Y (17.397)	N	Y	Y	Y	Y
GA	-(8.829)	N	N	-	Y	-
KY	-(4.146)	N	N	-	Y	-
LA	-(4.516)	Y	Y	N	Y	-
MD	Y (5.558)	Y	Y	N	Y	N
MS	Y (2.903)	N	N	-	Y	Y
NC	Y (8.541)	Y	Y	Y	Y	N
OK	-(3.595)	Y	N	-	Y	-
SC	-(4.198)	Y	N	-	Y	-
TN	-(5.901)	N	Y	N	Y	-
TX	-(22.490)	N	N	-	Y	-
VA	Y (7.460)	Y	Y	N	Y	Y
WV	-(.507)	N	N	-	Y	-
WEST 67.41	(9) (33.62%)	(5) (27.73%)	(4) (19.05%)	(2) (14.54%)	(13) (100%)	(3) (13.40%)
AK	-(.655)	N	Y	N	Y	-
AZ	Y (5.744)	N	N	-	Y	-

CA	-(35.894)	N	N	-	Y	-
CO	-(4.601)	Y	N	-	Y	-
HI	Y (1.263)	N	N	-	Y	-
ID	Y (1.393)	N	N	-	Y	N
MT	Y (.927)	N	N	-	Y	Y
NV	Y (2.335)	N	N	-	Y	N
NM	Y (1.903)	Y	N	-	Y	Y
OR	-(3.595)	Y	Y	Y	Y	-
UT	Y (2.389)	Y	Y	N	Y	N
WA	Y (6.204)	Y	Y	Y/N	Y	Y
WY	Y (.507)	N	N	-	Y	N

APPENDIX B:

Chow Tests

For black males:

Number of obs	= 645
F (20, 624)	= 3.13
Prob > F	= 0.0000
R-squared	= 0.5010
Root MSE	= 6.374

incar_totmonths	Coeff.	Std. Err.	t	P> t	95% Conf.	Interval
incar_totnum	9.520688	1.75456	5.43	0.000	6.07513	12.96625
conv_pu_9709	-1.215282	1.655034	-0.73	0.463	-4.465393	2.034829
conv_st_9709	4.552687	2.508356	1.82	0.070	-0.3731549	9.47853
arrest_totnum	0.1588968	0.219727	0.72	0.470	-0.2725972	0.5903908
arrest_totnum2	-0.0074792	0.0067987	-1.10	0.272	-0.0208304	0.5903908
mj_sklwk_num_09	0.0204633	0.1564531	0.13	0.896	-0.02867751	0.005872
coc_sklwk_num_09	0.5005869	0.5486245	0.91	0.362	-0.5767872	1.577961
coc_usenum_09	0.031028	0.4427782	0.07	0.944	-0.8384879	0.900544
sell_mj_09	-0.8002221	3.089601	-0.26	0.796	-6.867498	5.267053
sell_coc_09	-6.107004	5.691526	-1.07	0.284	-17.28387	5.06986
gang_9705	-0.1617235	0.621599	-0.26	0.795	-1.382403	1.058956
homeless_9708	-1.004493	1.114246	-0.90	0.368	-3.19262	1.183634
ltot_income_09	0.01065	0.4080128	0.03	0.979	-0.7905946	0.8118945
hh_parents_12	0.6622317	1.265968	0.52	0.601	-1.823841	3.148305
marr_09	-0.197655	0.6496335	-0.30	0.761	-1.473388	1.078078
hh_jail_9707	-2.138895	0.7683481	-2.78	0.006	-3.647757	-0.6300342
lnemot_prob	2.9835	1.463321	2.04	0.042	0.1098704	5.85713
bio_child_hh_09	0.0157462	0.2296929	0.07	0.945	-0.4353186	0.466811
relg_08	-1.093011	0.5553127	-1.97	0.049	-2.183519	-0.0025026
educ_09	-0.1020772	0.3081675	-0.33	0.741	-0.7072482	0.5030938
_cons	0.5759782	4.246993	0.14	0.892	-7.764153	8.916109

For black females:

Number of obs	= 706
F (20, 624)	= .
Prob > F	= .
R-squared	= 0.2928
Root MSE	= 2.4423

incar_totmonths	Coeff.	Std. Err.	t	P> t 	95% Conf.	Interval
incar_totnum	8.015605	4.01674	2.00	0.046	0.1290045	15.9022
conv_pu_9709	0.4913223	1.135078	0.43	0.665	-1.737327	2.719972
conv_st_9709	-1.422472	2.1939	-0.65	0.517	-5.730047	2.885104
arrest_totnum	0.0062076	0.2367523	0.03	0.979	-0.4586397	0.471055
arrest_totnum2	-0.0003881	0.0040151	-0.10	0.923	-0.0082714	0.0074953
mj_sklwk_num_09	-0.0066796	0.0161418	-0.41	0.679	-0.038373	0.0250137
coc_sklwk_num_09	-1.007122	0.7776022	-1.30	0.196	-2.533892	0.5196482
coc_usenum_09	-0.0018373	0.0017711	-1.04	0.300	-0.0053149	0.0016402
sell_mj_09	0.4070595	0.7859642	0.52	0.605	-1.136129	1.950248
sell_coc_09	2.300334	3.227534	0.71	0.476	-4.036713	8.637381
gang_9705	-0.0846952	0.1102491	-0.77	0.443	-0.3011619	0.1317714
homeless_9708	-0.1433829	0.1811451	-0.79	0.429	-0.4990493	0.2122834
ltot_income_09	-0.477737	0.3831083	-1.25	0.213	-1.229945	0.2744705
hh_parents_12	0.0052905	0.0852703	0.06	0.951	-0.1621321	0.1727131
marr_09	0.0855695	0.0959435	0.89	0.373	-0.1028092	0.2739482
hh_jail_9707	0.6215219	0.7100362	0.88	0.382	-0.7725868	2.015631
lnemot_prob	-0.4441673	0.4178436	-1.06	0.288	-1.264575	0.3762406
bio_child_hh_09	-0.1237032	0.1287397	-0.96	0.337	-0.3764751	0.1290687
relg_08	0.1698638	0.1149925	1.48	0.140	-0.0559163	0.3956439
educ_09	0.132643	0.1048933	1.26	0.206	-0.0733081	0.338594
_cons	4.636369	3.800069	1.22	0.223	-2.824812	12.09755

For white males:

Number of obs	= 1849
F (20, 624)	= 9.78
Prob > F	= 0.0000
R-squared	= 0.5766
Root MSE	= 2.9821

incarceration	Coeff.	Std. Err.	t	P> t 	95% Conf.	Interval
incarceration	5.69247	0.6478553	8.79	0.000	4.421856	6.963084
conviction_9709	-0.6484257	0.576425	-1.12	0.261	-1.778947	0.4820952
conviction_start_9709	5.614374	1.471782	3.81	0.000	2.727824	8.500925
arrest_totnum	0.1053328	0.0792872	1.33	0.184	-0.0501702	0.2608358
arrest_totnum2	-0.0026099	0.001863	-1.40	0.161	-0.0062637	0.0010439
mj_sklwk_num_09	-0.0116854	0.0162116	-0.72	0.471	-0.0434807	0.0201099
coc_sklwk_num_09	-0.3430598	0.2649237	-1.29	0.196	-0.8626447	0.1765252
coc_usenum_09	0.0119952	0.0196153	0.61	0.541	-0.0264755	0.0504659
sell_mj_09	-0.0777707	0.9434264	-0.08	0.934	-1.928078	1.772536
sell_coc_09	-2.098705	1.766633	-1.19	0.235	-5.563536	1.366126
gang_9705	0.4197471	0.262507	1.60	0.110	-0.0950981	0.9345923
homeless_9708	0.368179	0.484025	0.76	0.447	-0.5811212	1.317479
ltot_income_09	-0.2082073	0.1081291	-1.93	0.054	-0.4202768	0.0038622
hh_parents_12	-0.0689648	0.1650005	-0.42	0.676	-0.3925742	0.2546446
marr_09	0.3075585	0.2108076	1.46	0.145	-0.1058905	0.7210076
hh_jail_9707	-0.7296302	0.3703786	-1.97	0.049	-1.45604	-0.0032206
lnemot_prob	0.1550864	0.3208867	0.48	0.629	-0.4742567	0.7844295
bio_child_hh_09	-0.10241	0.0792068	-1.29	0.196	-0.2577554	0.0529354
relg_08	-0.2465562	0.1296734	-1.90	0.057	-0.5008797	0.0077673
educ_09	0.1290229	0.0927033	1.39	0.164	-0.0527927	0.3108385
_cons	1.970685	1.069138	1.84	0.065	-0.1261758	4.067546

For white females:

Number of obs	= 1575
F (20, 624)	= 7.80
Prob > F	= 0.0000
R-squared	= 0.5619
Root MSE	= 0.55507

incarc_totmonths	Coeff.	Std. Err.	t	P> t	95% Conf.	Interval
incarc_totnum	2.376922	0.3954839	6.01	0.000	1.601184	3.152661
conv_pu_9709	-0.5454328	0.2161471	-2.52	0.012	-0.9694035	-0.1214622
conv_st_9709	0.0272149	0.1316604	0.21	0.836	-0.2310358	0.2854657
arrest_totnum	0.1342761	0.0709591	1.89	0.059	-0.0049096	0.2734618
arrest_totnum2	-0.0100199	0.0058896	-1.70	0.089	-0.0215723	0.0015325
mj_sklwk_num_09	-0.0051958	0.0061536	-0.84	0.399	-0.0172661	0.0068745
coc_sklwk_num_09	0.0046051	0.0044819	1.03	0.304	-0.004186	0.0133962
coc_usenum_09	-0.0008574	0.000591	-1.45	0.147	-0.0020167	0.0003019
sell_mj_09	-0.2124844	0.2189775	-0.97	0.332	-0.6420068	0.2170381
sell_coc_09	0.1372452	0.3896552	0.35	0.725	-0.6270602	0.9015507
gang_9705	0.0071279	0.0840462	0.08	0.932	-0.1577279	0.1719838
homeless_9708	-0.0306379	0.0247156	-1.24	0.215	-0.0791173	0.0178416
ltot_income_09	-0.0750315	0.0615765	-1.22	0.223	-0.1958133	0.0457502
hh_parents_12	0.0865093	0.0754168	1.15	0.252	-0.0614202	0.2344387
marr_09	0.0433476	0.0421468	1.03	0.304	-0.0393229	0.1260181
hh_jail_9707	-0.0692473	0.062123	-1.11	0.265	-0.1911011	0.0526065
lnnemot_prob	-0.0942914	0.0653297	-1.44	0.149	-0.2224352	0.0338523
bio_child_hh_09	-0.034937	0.0294651	-1.19	0.236	-0.0927325	0.0228584
relg_08	-0.0205219	0.0289328	-0.71	0.478	-0.0772734	0.0362296
educ_09	0.0013049	0.0186117	0.07	0.944	-0.0352018	0.0378115
_cons	0.7465116	0.6188137	1.21	0.228	-0.4672863	1.96031