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July 11, 2019

Members of the Michigan Legislature:

The attached report is provided pursuant to Sec. 33a of Public Act 465 of 2014. The Criminal Justice Policy Commission was tasked with conducting a systematic review of Michigan's sentencing guidelines. Of particular interest is the ability of the sentencing guidelines to reduce sentencing disparities based on factors other than offense characteristics and offender characteristics, and to ensure that offenders with similar offense and offender characteristics receive substantially similar sentences. The Commission has focused its initial efforts on examining outcomes among "straddle cells" – that is, convictions for which the sentencing guidelines support either a prison or an intermediate sentence. Straddle cell sentencing was selected for examination because of the large amount of judicial discretion involved in these cases.

The Commission has released two prior reports<sup>1</sup> examining straddle cell sentencing for felony cases in the Class D (December 2018) and Class E (June 2019) grids. The current report, representing the third step of our review process, analyzes 2,960 selected felony cases in the Class B and C grids. As with the other felony classes we examined, findings from the B and C grids suggest that sentencing disparities exist based on multiple factors, as detailed in the accompanying report.

As part of its systematic review, the Commission will prepare a final report summarizing the findings of our three straddle cell analyses and offering specific recommendations to address sentencing disparities that exist across the four felony classes we studied. These straddle cell analyses, including the forthcoming final summary report, provide the foundation for the Commission's ongoing data analysis efforts. Building on this work, the Commission intends to next examine additional areas of interest to the legislature including sentence length and recidivism outcomes.

As Chair of the Commission, I am grateful for the opportunity to help provide rigorous, objective data that can be used to develop and guide evidence-based crime policy in Michigan. In this time of burgeoning and bipartisan support for criminal justice reform efforts, I hope the Commission's work will serve as a useful resource to assist members of the legislature in identifying ways to improve Michigan's criminal justice system. Thank you for your consideration of our report. Please do not hesitate to contact me should you have any questions.

Respectfully,

Amanda Burgess-Proctor, Ph.D.  
Chair, Criminal Justice Policy Commission

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<sup>1</sup> All reports from the CJPC's series on straddle cell sentencing are available online at: <https://council.legislature.mi.gov/CouncilAdministrator/cjpc>

CRIMINAL  
JUSTICE  
POLICY  
COMMISSION

# Evaluation of Straddle Cell Sentencing in Michigan

Class B & C Felonies



Final Report  
July 11, 2019

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## Executive Summary

Utilizing the past six years of felony sentencing data from across the state, the Criminal Justice Policy Commission (CJPC) has begun a systematic evaluation of straddle cell sentencing in Michigan. In 1998, the Michigan Legislature adopted sentencing guidelines to reduce disparities in sentencing for people convicted of felonies. In many cases, the guidelines provide judges with recommendations for an intermediate sentence (i.e., jail and/or probation) or a presumptive prison sentence. In other instances, the recommendations permit judges complete discretion to impose either an intermediate sanction or a prison term if the offense details and offender’s prior criminal record place them within a “straddle cell” for sentencing. As part of a series<sup>1</sup> on straddle cell sentencing decisions, this report addresses the following questions for offenders convicted of class B and C felonies:

**Research Question 1:** To what extent are prison sentences, relative to intermediate sanctions, imposed on offenders convicted of a **class B or C** felony and scoring within a straddle cell?

**Research Question 2:** For straddle cell offenders with similar offense and offender characteristics, are there disparities in the rate of prison sentences? If so, what factors or characteristics are contributing to such disparities?

We identified 2,960 cases, using Michigan Department of Corrections’ data, of individuals sentenced between 2012-2017 and scoring within a straddle cell for class B and C offenses, excluding habitual offenders and those with a special status<sup>2</sup> during the offense. Of these cases, 762 (25.7%) received prison sentences, 1,666 (56.3%) received a jail sentence or a combination of jail and probation, and 529 (17.9%) received probation only.

A logistic regression was used to evaluate whether there are disparities in the rate at which offenders are sentenced to prison as opposed to intermediate sanctions. Using this regression technique, we can consider multiple factors at the same time and estimate how each factor is associated with the probability that an offender receives a prison sentence, allowing for more suitable “apple to apple” comparisons. When reviewing results from this analysis, it is important to keep the following in mind. These results describe correlations between certain factors and the probability that an offender is sentenced to prison as opposed to jail and/or probation. These results should not be interpreted as causal (i.e., going to trial will make you more likely to receive a prison sentence) because there may be additional factors outside our model that provide a plausible explanation, such as plea bargains, for why a significant difference exists.

Ultimately, our analysis found that nine factors had statistically significant associations with the probability of being sentenced to prison for offenders convicted of a class B or class C felony and located in a straddle cell. In the presence of significant differences in sentencing outcomes for these offenders, we conclude that there are sentencing disparities across these factors:

- |  |   |
|--|---|
| • <b>Circuit Court where sentence is imposed</b>                       | • <b>Gender</b>                           |
| • <b>Type of Crime (Crime Group<sup>3</sup>)</b>                       | • <b>Race</b>                             |
| • <b>Conviction Method (Found Guilty at Trial vs. Pleading Guilty)</b> | • <b>Age</b>                              |
| • <b>Attorney Status (Retained vs. Appointed)</b>                      | • <b>Employment Status</b>                |
|  | • <b>Offender’s History of Drug Abuse</b> |

Further, we conclude that sentencing disparities were not found for offenders across these factors: Offense Group (Assaultive vs. Non-Assaultive), Hispanic Ethnicity, High School Diploma/GED, Alcohol Abuse History, and History of Mental Health Treatment.<sup>4</sup>

<sup>1</sup> The previous reports in this series are available online at the CJPC’s website: <http://council.legislature.mi.gov/CouncilAdministrator/cjpc>

<sup>2</sup> Special statuses include the following: HYTA, Probation, District Court Probation, Delay of Sentence, Parole, Jail, State Prisoner, Bond, Juvenile Court Supervision, Federal Probation, and Federal Parole.

<sup>3</sup> Felony offenses are classified into six groups: 1) Crimes against a person, 2) Crimes against property, 3) Crimes involving a controlled substance, 4) Crimes against public order, 5) Crimes against public safety, and 6) Crimes against public trust. The three most common offenses for each crime group are listed in Table 6 on page 14.

<sup>4</sup> Data collected by the MDOC regarding an offender’s history with drug and alcohol abuse, as well as prior mental health treatment, rely on self-reported information, which may be incomplete. Additionally, these data do not reflect clinical assessments and offenders may have differing conceptions of what constitutes substance abuse or mental health treatment.

Table E-1 summarizes the results from our regression analysis, indicating which factors were statistically significant and the direction of the relationship. For example, the row for gender shows that there was a statistically significant difference between female and male offenders. The third column indicates that female offenders were less likely on average to receive a prison sentence than male offenders with similar offense and offender characteristics. This difference considers or “controls for” the offense’s severity, the offender’s prior criminal record, the type of crime, the circuit court, and if there was a trial, as well as multiple demographic factors (e.g., gender, race, ethnicity, and age).

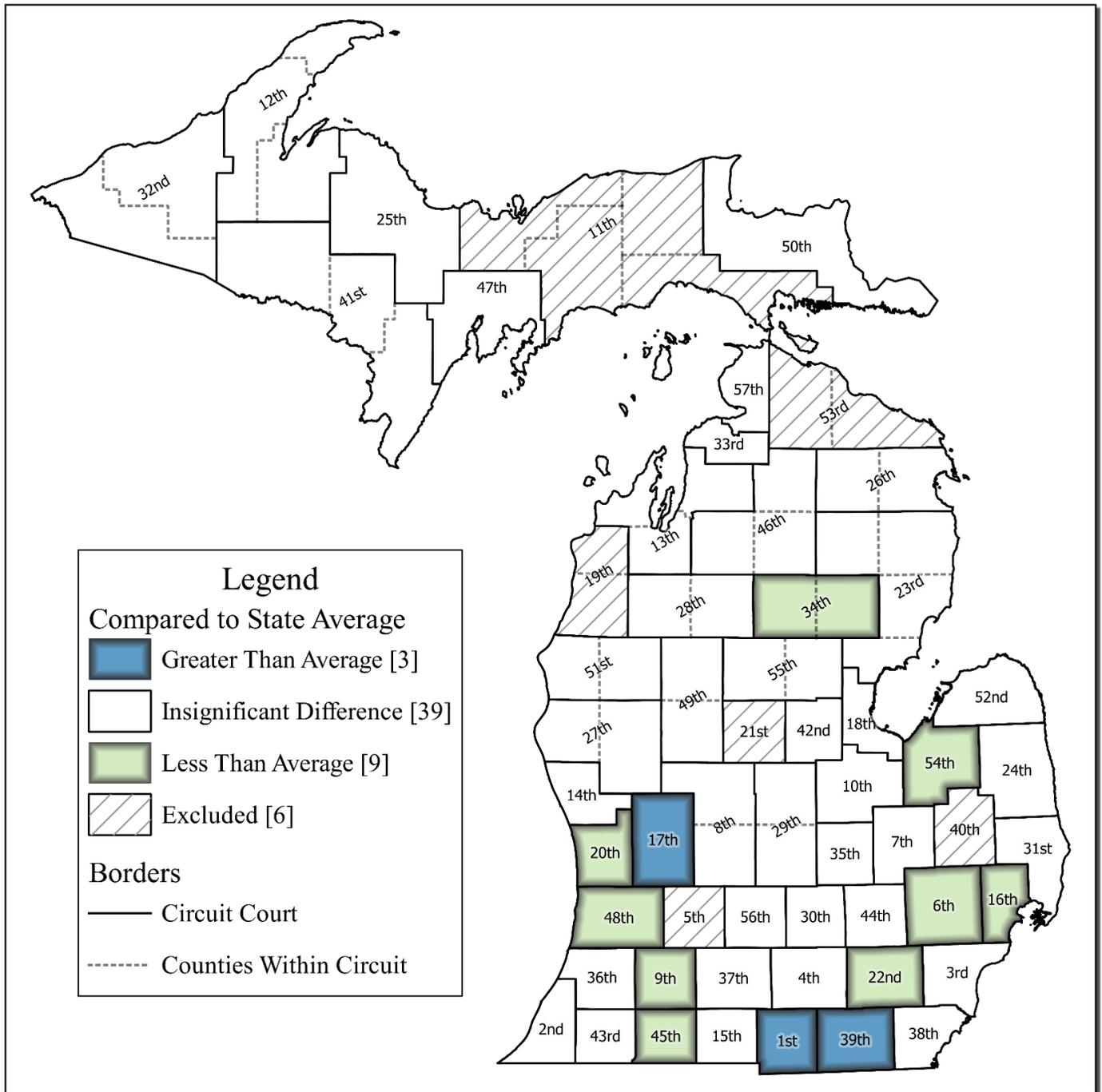
**Table E-1: Summary of Significant Findings<sup>5</sup>**

Variable	Statistically Significant	Average Relationship to Prison Sentence
<b>Conviction Method</b> (Found Guilty vs. Pled Guilty)	Yes	For offenders with appointed counsel, those found guilty at trial were <i>more</i> likely to receive a prison sentence than those who pled guilty. For offenders with retained attorneys, sentencing outcomes did not differ significantly between those found guilty at trial and those who pled guilty
<b>Attorney Status</b> (Retained vs. Appointed)	Yes	When found guilty at trial, those who retained their attorney were <i>less</i> likely to receive a prison sentence than offenders with appointed attorneys. For offenders who pled guilty, sentencing outcomes did not differ significantly between retained and appointed attorneys.
<b>Sentence Guideline Crime Group</b> <i>Criminal Sexual Conduct (2nd &amp; 3rd Degree CSC)</i> vs. <i>Other Crimes Against a Person (e.g., 2nd Degree Home Invasion, Unarmed Robbery)</i>	Yes	Convictions for Criminal Sexual Conduct (CSC) crimes were <i>more</i> likely to be sentenced to prison than the other "Crimes Against a Person." Sentencing outcomes for the remaining crime groups did not differ significantly from one another.
<b>Race</b> (Black or African American vs. White)	Yes	<ul style="list-style-type: none"> <li>• For individuals under 25 years old, we found that black offenders were <i>more</i> likely to receive a prison sentence than white offenders.</li> <li>• Between the ages of 25 and 35, sentencing outcomes for black and white offenders were not significantly different.</li> <li>• After age 35 we found that white offenders were <i>more</i> likely than black offenders to be sentenced to prison.</li> </ul>
<b>Age</b>	Yes	<ul style="list-style-type: none"> <li>• For black offenders, the probability of being sentenced to prison is the <i>highest</i> when they're young and then <i>decreases</i> with age.</li> <li>• For white offenders, the probability of being sentenced to prison is the <i>lowest</i> when they are young and then <i>increases</i> with age.</li> </ul>
<b>Gender</b> (Female vs. Male)	Yes	Female offenders were <i>less</i> likely to receive a prison sentence than male offenders.
<b>Employed</b>	Yes	Employed offenders were <i>less</i> likely to receive a prison sentence than unemployed offenders.
<b>Drug Abuse</b>	Yes	Offenders with a self-reported history of drug abuse were <i>more</i> likely to receive a prison sentence.
<b>Circuit Court</b>	Yes	Compared to the statewide average (30.5%): <ul style="list-style-type: none"> <li>• 3 Circuits were <i>more</i> likely</li> <li>• 9 Circuits were <i>less</i> likely</li> <li>• 39 Circuits didn't differ significantly</li> <li>• 6 Circuits were not included in this analysis</li> </ul>
<b>Offense Group</b> (Assaultive vs. Non-Assaultive)	No	
<b>Ethnicity</b>	No	No statistically significant relationship to the "In/Out" of prison sentencing decision.
<b>High School Diploma/GED</b>	No	
<b>Alcohol Abuse</b>	No	
<b>Mental Health Treatment</b>	No	

<sup>5</sup> The sample for these results included all individuals sentenced between 2012-2017 and scored within a straddle cell for class B and C offenses, excluding habitual offenders and those with a special status during the offense (see supra note 1).

The circuit court results included in Table E-1 identified whether courts sentenced offenders to prison significantly more often, less often, or approximately the same as the state average. Figure E-1 below maps the three above-average circuits in blue, 9 below-average circuits in green, and 39 circuits that did not differ significantly for the state average in white. Due to statistical limitations of the available data, the following 6 circuits were excluded from this analysis: 5<sup>th</sup>, 11<sup>th</sup>, 19<sup>th</sup>, 21<sup>st</sup>, 40<sup>th</sup>, and 53<sup>rd</sup>.

**Figure E-1: Probability of Receiving a Prison Sentence<sup>6</sup>  
Comparing Circuit Courts to the State Average (30.5%)**



<sup>6</sup> For each circuit court, the total number of cases, the percent sentenced to prison, and the differences from the statewide average (30.5%) are provided in Table 8 on page 19.

## I. Introduction

Among the responsibilities of the CJPC specified in PA 465 of 2014 is to conduct ongoing research regarding the effectiveness of the sentencing guidelines. The commission is further tasked with making recommendations to the legislature that accomplish a variety of goals, including reducing sentencing disparities based on factors other than offense and offender characteristics and ensuring that offenders with similar offense and offender characteristics receive substantially similar sentences. Given that charge, the commission has prepared this report to address the following research questions:

***Research Question 1:*** To what extent are prison sentences, relative to intermediate sanctions, imposed on offenders convicted of a **class B or C** felony and scoring within a straddle cell?

***Research Question 2:*** For straddle cell offenders with similar offense and offender characteristics, are there disparities in the rate of prison sentences? If so, what factors or characteristics are contributing to such disparities?

Before a determination can be made regarding whether disparities exist in sentencing, a measure of the sentencing outcome must be clearly defined. To this end, the sentencing outcome of interest for this report is whether an individual receives a prison sentence or an intermediate sanction (e.g., probation, jail, or combination of probation and jail). To best evaluate trends and disparities in the “in-or-out” of prison decision, this study’s sample has been narrowed to offenders for whom their guideline score places them within a straddle cell. This decision was made because the recommended ranges within straddle cells include both intermediate sanctions and prison sentences as appropriate. Furthermore, to ensure we are comparing “apples to apples”, our analysis excludes habitual offenders and those with a special status during the offense (HYTA, Probation, District Court Probation, Delay of Sentence, Parole, Jail, State Prisoner, Bond, Juvenile Court Supervision, Federal Probation, Federal Parole).

A couple important distinctions need to be made clear regarding the underlying data and analysis before proceeding. The first is that our data relies on the information gathered from pre-sentence investigation (PSI) reports, which are only prepared after an individual is convicted of a felony offense. Therefore, only cases resulting in a conviction, either by plea or trial, are included. Secondly, the focus of the research in this report is on sentencing outcomes, specifically whether individuals receive a prison sentence or an intermediate sanction (e.g., probation, jail, or combination of probation and jail). As such, the relationships explored in this report only pertain to the “in-or-out” of prison sentencing decision and do not reflect any possible correlation with other elements of the criminal justice system leading to and resulting in conviction, such as arrest and charging decisions. Furthermore, the length of the sentence imposed is not an outcome explicitly studied in this report.

The remainder of this report proceeds as follows. Section II outlines the basic structure of sentencing guidelines in Michigan. In section III, we describe our data and provide summary statistics to address the first research question. The empirical approach used to evaluate the straddle cell sentencing trends is described in section IV. Results from our analysis are reported and discussed in Section V. Finally, section VI summarizes this report, discusses limitations of the analysis, and details the benefit of continued research into this area.

## II. Sentencing Guidelines Overview

Michigan's sentencing guidelines provide guidance to judges in determining the minimum sentence for an individual convicted of a felony offense. The guidelines and suggested ranges are considered advisory only. However, the scoring of the guidelines is still required for sentencing. Broadly speaking, there are four factors that drive the determination of the applicable guideline range: 1) the offense's crime group, 2) the offense's crime class, 3) the severity of the offense, and 4) the offender's prior criminal record.

The crime group and crime class for each felony are specified within the statutory language defining the offense. There are six crime groups<sup>7</sup>: 1) Crimes against a person, 2) Crimes against property, 3) Crimes involving a controlled substance, 4) Crimes against public order, 5) Crimes against public safety, and 6) Crimes against public trust; and nine crime classes: A, B, C, D, E, F, G, H, and second-degree murder (M2).

The sentencing guidelines are presented in a series of nine grids, one for each crime class (M2, A-H). As a reference, the grid for class C felonies is included on the next page. The rows for each grid denote the offense variable (OV) score, which is based on multiple characteristics of the offense committed to determine its severity. The grid's columns indicate the prior record variable (PRV) score, which represents the extent of the offender's prior criminal involvement. The intersection of the OV and PRV levels is referred to as a cell. Within the guidelines, there are three cell classifications: prison, straddle, and intermediate. The definitions for each cell type, as presented in the sentencing guidelines manual (SGM),<sup>8</sup> are as follows:

**Prison cells** are those cells for which the minimum sentence recommended exceeds one year of imprisonment. Prison cells are those cells that are unmarked in the sentencing grids, i.e., not shaded (as are straddle cells) and not asterisked (as are intermediate sanction cells). When an offender's OV and PRV levels place him or her in a prison cell, a minimum sentence within the range indicated in the cell is an appropriate sentence.

**Straddle cells** are those cells in which the lower limit of the recommended range is one year or less and the upper limit of the recommended range is more than 18 months. MCL 769.34(4)(c). Straddle cells appear shaded in the sentencing grids. When an offender's OV and PRV levels place him or her in a straddle cell, a minimum sentence within the range indicated in the cell OR an intermediate sanction (which may include a jail term of not more than 12 months) is an appropriate sentence.

**Intermediate sanction cells** are those cells in which the upper limit recommended by the guidelines is 18 months or less. MCL 769.34(4)(a). These cells are marked with an asterisk in the sentencing grids. When an offender's OV and PRV levels place him or her in an intermediate sanction cell, an intermediate sanction (which may include a jail term of 0-12 months or the cell maximum, whichever is less) is an appropriate sentence.

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<sup>7</sup> Table 6 on page 14 lists the 3 most common felonies within our sample for each crime group.

<sup>8</sup> This section presents a brief overview of the Michigan Sentencing Guidelines Manual to provide basic background information regarding the guidelines structure. The full SGM is prepared by the Michigan Judicial Institute and contains an in-depth explanation of the guidelines. The SGM can be accessed online at: <https://mjieducation.mi.gov/benchbooks/sgm>.

**Figure 1: Sentencing Grid for Class C Offenses --- MCL 777.64**

*Includes Ranges Calculated for Habitual Offenders (MCL 777.21 (3)(a)-(c))*

PRV Level													
OV Level	A 0 Points		B 1-9 Points		C 10-24 Points		D 25-49 Points		E 50-74 Points		F 75+ Points		Offender Status
<b>I</b> 0-9 Points	0	11*	0	17*	10	19	12	24	19	38	29	57	
		13*		21		23		30		47		71	HO2
		16*		25		28		36		57		85	HO3
		22		34		38		48		76		114	HO4
<b>II</b> 10-24 Points	0	17*	5	17*	12	24	19	38	29	57	36	71	
		21		21		30		47		71		88	HO2
		25		25		36		57		85		106	HO3
		34		34		48		76		114		142	HO4
<b>III</b> 25-34 Points	10	19	12	24	19	38	29	57	36	71	43	86	
		23		30		47		71		88		107	HO2
		28		36		57		85		106		129	HO3
		38		48		76		114		142		172	HO4
<b>IV</b> 35-49 Points	12	24	19	38	29	57	36	71	43	86	50	100	
		30		47		71		88		107		125	HO2
		36		57		85		106		129		150	HO3
		48		76		114		142		172		200	HO4
<b>V</b> 50-74 Points	19	38	29	57	36	71	43	86	50	100	58	114	
		47		71		88		107		125		142	HO2
		57		85		106		129		150		171	HO3
		76		114		142		172		200		228	HO4
<b>VI</b> 75+ Points	29	57	36	71	43	86	50	100	58	114	62	114	
		71		88		107		125		142		142	HO2
		85		106		129		150		171		171	HO3
		114		142		172		200		228		228	HO4

Intermediate sanction cells are marked by asterisks, straddle cells are shaded, and prison cells are unmarked.

For the C grid, there are six offense variable levels (I-VI) and six prior record levels (A-F), totaling 36 cells. Intermediate cells are marked by asterisks, straddle cells are shaded grey, and prison cells are unmarked. In addition to the six straddle cells on the C grid, there are two straddle cells within the B grid<sup>9</sup>. Within each cell, the recommended minimum sentence length is expressed as a range of months. The number on the left side of the cell denotes the lower limit of this range. The four values on the right of each cell represent the upper limit of the minimum sentencing range for that cell, depending on whether an offender is being charged as a habitual offender. The number in the top right corner of each cell indicates the upper limit for a non-habitual offender. A series of three additional upper limits are included in each cell for sentencing second, third, and fourth habitual offenders (HO2, HO3, HO4). Because our analysis excludes habitual offenders, these additional upper limits shown are not relevant for our purposes. As an example, for class C felonies the recommended range for non-habitual offenders scoring in cell C-II (i.e., having a prior record level C and offense variable level II) would be 12-24 months.

<sup>9</sup> Figure A-1 in the appendix shows the sentencing guidelines grid for class B felonies.

### III. Data

The data utilized in this analysis was provided by the Michigan Department of Corrections (MDOC) and contains all felony convictions sentenced between January 1, 2012 through December 31, 2017. The datasets provided detail the specifics of the offender and offenses used to score his or her prior record and offense variable scores during the pre-sentence investigation (PSI) reports. In addition to these variables, demographic characteristics of the offender, such as gender, age, race, and education level are also included. Of the 9 sentencing grids within the guidelines, only 6 contain straddle cells: B, C, D, E, F, and G. For each of the nine sentencing grids, the statutory maximum associated with that crime class, the number of straddle cells within that grid, and the number of straddle cell observations in our dataset are included in Table 1 below.

**Table 1: Straddle Cells Across Sentencing Guideline Grids<sup>10</sup>**

Crime Class	Statutory Maximum Penalty <sup>11</sup>	Straddle Cells in Grid	Number of Obs.	Percent of Obs.
M2	Life	0	NA	NA
A	Life	0	NA	NA
<b>B</b>	<b>20 Years</b>	<b>2</b>	<b>642</b>	<b>2.68%</b>
<b>C</b>	<b>15 Years</b>	<b>6</b>	<b>2,318</b>	<b>9.68%</b>
D	10 years	11	4,823	20.14%
E	5 years	14	11,058	46.17%
F	4 years	9	4,074	17.01%
G	2 years	3	1,037	4.33%
H	Jail	0	NA	NA
<b>Total</b>		<b>45</b>	<b>23,952</b>	<b>100%</b>

In total, there are 2,960 observations for individuals sentenced between 2012-2017 and scoring within a straddle cell for class B or C offenses, excluding habitual offenders and those with a special status during the offense. Of these cases, 762 (25.79%) received prison sentences, 1,666 (56.3%) received a jail sentence or a combination of jail and probation, and 529 (17.9%) were sentenced to probation.

**Table 2: Straddle Cell Sentencing Outcomes for Class B and C Felony Convictions**

Sentence	Convictions	Percent
Prison	762	25.74%
Jail	325	10.98%
Jail & Probation	1,341	45.3%
Probation	529	17.87%
Other <sup>12</sup>	3	0.10%
<b>Total</b>	<b>2,960</b>	

<sup>10</sup> Previous reports in this series have indicated only 5 straddle cells within the C grid. However, while preparing this report a correction was made to the SGM to correctly identify the C-I cell as a straddle cell.

<sup>11</sup> According to the SGM, "In most cases, using the statutory maximum to divide the guidelines offenses into discrete crime classes resulted in categories of offenses that shared the same statutory maximum penalty. There are offenses that do not adhere to the standard."

<sup>12</sup> Other Sentences include: Community Service Only, FIA (DSS), and Fines/Costs/Restitution Only.

Below we present the sentencing outcomes for varying offenders' OV levels and PRV levels. Tables 3a and 3b show the number of convictions within each straddle cell on the B and C grids respectively. In addition, the number and percentage of convictions that received a prison sentence are listed for each cell. For example, in cell A-II on the B grid there are 378 convictions, of which 74 or 19.58% received a prison sentence. Similarly, for cell C-I on the C grid there are 619 convictions, of which 111 or 17.93% received a prison sentence.

**Table 3a: Class B Convictions and Prison Sentences by Offense Variable and Prior Record Levels**

OV Level	PRV Level					
	A 0 Points	B 1-9 Points	C 10-24 Points	D 25-49 Points	E 50-74 Points	F 75+ Points
<b>I</b> 0-9 Points		<b>262</b> Prison: 38 14.50%				
<b>II</b> 10-24 Points	<b>378</b> Prison: 74 19.58%					
<b>III</b> 25-34 Points						
<b>IV</b> 35-49 Points						
<b>V</b> 50-74 Points						
<b>VI</b> 75+ Points						

**Table 3b: Class C Convictions and Prison Sentences by Offense Variable and Prior Record Levels**

OV Level	PRV Level					
	A 0 Points	B 1-9 Points	C 10-24 Points	D 25-49 Points	E 50-74 Points	F 75+ Points
<b>I</b> 0-9 Points			<b>619</b> Prison: 111 17.93%	<b>258</b> Prison: 84 32.56%		
<b>II</b> 10-24 Points			<b>700</b> Prison: 203 29.00%			
<b>III</b> 25-34 Points	<b>239</b> Prison: 66 27.62%	<b>186</b> Prison: 61 32.80%				
<b>IV</b> 35-49 Points	<b>313</b> Prison: 120 38.34%					
<b>V</b> 50-74 Points						
<b>VI</b> 75+ Points						

The rate of prison sentences reported in Tables 3a and 3b ranges from a low of 14.5% of cases (B Grid, B-I) to a high of 38.34% (C Grid, A-IV). It is important to note that differences across these straddle cells do not imply sentencing disparities, but rather demonstrate an intended function of the guidelines. Consider offenders in adjacent cells C-I (17.93%) and C-II (29%) in Table 3b. These individuals have the same prior record level in both cells, while individuals in C-II were convicted of a higher severity offense. Given this, it is not surprising that individuals in cell C-II are more often sentenced to prison than cell C-I. The same analysis can be applied when comparing C-I (17.93%) to D-I (35.56%). In this scenario, offenders have committed similarly severe offenses, but those in cell D-I have more extensive prior criminal records. The data in Table 3b shows that this pattern of differences across adjacent cells is consistent for the C grid.

With an understanding of how often prison sentences and intermediate sanctions are imposed for each straddle cell in the B and C grids, the next question is: are there disparities in sentencing outcomes for offenders with similar PRV and OV scores? Thus, the next step in the evaluation is to look within cells to see if additional factors may be related to the sentencing outcome. In the following section the factors considered in our model are discussed in detail, along with any significant inferences or additions we made regarding the data.

## IV. Methodology

### A. Ethnicity and Race

A variety of sentencing factors and demographic variables were included in our analysis to account for the specifics of each sentencing decision. These control variables include: the sentencing cell (i.e., PRV and OV Levels), whether the offense was assaultive in nature, whether the conviction was the result of a trial, and the circuit court, as well as multiple demographic factors: gender, race, ethnicity, age, graduated high school/GED, employment status, drug and alcohol abuse history, and mental health treatment. Due to limitations of the dataset, some demographic variables of interest were unavailable. Most notably missing was a field indicating whether the offender identified as Hispanic.

Historically, the MDOC has used the six categories below to identify an offender's race:

- American Indian or Alaskan Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Island
- White
- Unknown

While an additional variable for ethnicity was available, in practice this field is seldom populated. To address this potential shortcoming in the data, we took the following steps to attempt to infer whether an offender was likely to identify as Hispanic.

Following the decennial census, the U.S. Census Bureau creates a list of the most common surnames reported<sup>13</sup>. In addition to the number of times each name was reported, the list includes basic demographic information, such as the percentage of individuals who self-identified as Hispanic or Latino. For example, the most common surname, SMITH, was reported 2,442,977 times in the 2010 census with 2.4% of those individuals identifying as Hispanic or Latino. Merging the MDOC and census data, we could see the percentage of people with the offender's last name that self-identified as Latino or Hispanic. Using 50% as the threshold, we then coded each offender as Hispanic if the majority of people with the same surname identified as Hispanic or Latino.

Limitations from this approach included being unable to match some rare (i.e., reported less than 100 times in the 2010 census) or hyphenated surnames with the census data, as well as being unable to account for the possibility of changes in surnames as a result of marriage. Of the 245,389 offenders in the full dataset<sup>14</sup>, 226,494 (92.3%) were matched to the census data, while the remaining 18,895 (7.7%) were unable to be matched. Ideally, the ethnicity of the offender would be collected within the original dataset of demographic characteristics. However, in the absence of this, using self-identified census data to infer Hispanic ethnicity provides a practical way of considering this factor.

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<sup>13</sup> The dataset available at [https://www.census.gov/topics/population/genealogy/data/2010\\_surnames.html](https://www.census.gov/topics/population/genealogy/data/2010_surnames.html) contains a list of all surnames reported 100 or more times for the 2010 census. The list includes 162,253 surnames which represent 265,667,228 people. Additionally, one row indicating "All Other Names" accounts for 29,312,001 individuals.

<sup>14</sup> Matching the census information with the MDOC data was performed before the sample was narrowed to the final sample of non-habitual or special status offenders scoring in a straddle cell for class B or C offenses. The number of offenders and matching percentage reported here reflect all offenders in our dataset across all grids, cell types, habitual status, and other special statuses.

Additional limitations were presented when including the offender's race in our analysis. In particular, issues arose from the small number of convictions for offenders identifying as American Indian or Alaskan Native, Asian, and Native Hawaiian or Other Pacific Island. Combined, these three racial categories only accounted for 34 convictions in our dataset. In contrast, there are 1,254 Black or African American offenders and 1,706 White offenders within our data. With so few cases, analyzing these three racial groups and drawing any meaningful conclusions would not be possible. As such the 34 cases were excluded from the final sample, and the analysis was limited to Black or African American offenders and White offenders only.

## B. Case-Specific and Offender Variables

Including the created measure of Hispanic ethnicity, there are nine offender-specific characteristics explored in our model: age, gender, race, ethnicity, high school diploma/GED, employment status, history of drug abuse, history of alcohol abuse, and prior mental health treatment. Data collected by the MDOC regarding an offender's history with drug and alcohol abuse, as well as prior mental health treatment, rely on self-reported information and offenders may have differing conceptions of what constitutes substance abuse or mental health treatment. In addition to the offender characteristics, eight case-specific factors are included in our model: sentencing cell (PRV, OV), crime group, trial or plea conviction, sentencing month, year of the sentence, if offense was assaultive in nature, whether their attorney was retained or appointed, and the circuit court.

Summary statistics for the offender characteristics and case factors are provided in Table 4 for the 2,960 observations included in this study's sample. Again, this analysis only includes individuals sentenced between 2012-2017 and scoring within a straddle cell for class B and C offenses, excluding habitual offenders and those with a special status during the offense (HYTA, Probation, District Court Probation, Delay of Sentence, Parole, Jail, State Prisoner, Bond, Juvenile Court Supervision, Federal Probation, Federal Parole).

**Table 4: Class B and C Felony Convictions and Prison Sentences  
by Case-Specific and Offender Demographic Variables**

Variable	All Convictions		Percent Sentenced to Prison	Variable	All Convictions		Percent Sentenced to Prison
	Percent	Number			Percent	Number	
<b>Cell (PRV, OV Level)</b>				<b>Attorney Status</b>			
A, II	12.8%	379	19.8%	Appointed	76.9%	2,275	26.2%
A, III	8.1%	240	27.9%	Retained	23.1%	685	24.2%
A, IV	10.6%	313	38.3%	<b>Gender</b>			
B, I	8.9%	263	14.8%	Female	16.8%	498	18.7%
B, III	6.3%	186	32.8%	Male	83.2%	2,462	27.2%
C, I	20.9%	619	17.9%	<b>Race</b>			
C, II	23.7%	702	29.2%	Black or African American	42.4%	1,254	25.8%
D, I	8.7%	258	32.6%	White	57.6%	1,706	25.7%
<b>Crime Group</b>				<b>Ethnicity</b>			
Person	86.3%	2,553	26.8%	Hispanic	4.5%	133	27.1%
Property	3.3%	97	20.6%	Non-Hispanic	95.5%	2,827	25.7%
Controlled Substance	7.8%	232	16.8%	<b>High School Diploma/GED</b>			
Public Order	0.2%	5	20.0%	Yes	52.8%	1,562	25.7%
Public Safety	2.0%	59	20.3%	No	47.2%	1,398	25.8%
Public Trust	0.5%	14	50.0%	<b>Employed</b>			
<b>Convicted By</b>				Yes	27.2%	806	19.2%
Bench	0.4%	13	61.5%	No	72.8%	2,154	28.2%
Jury	0.9%	27	48.1%	<b>Drug Abuse</b>			
Nolo Contendere	12.6%	373	29.0%	Yes	57.9%	1,714	25.4%
Plea	84.4%	2,497	25.3%	No	42.1%	1,246	26.2%
Plea Under Advisement	1.7%	50	4.0%	<b>Alcohol Abuse</b>			
<b>Sentencing Year</b>				Yes	28.8%	852	24.1%
2012	20.2%	598	23.1%	No	71.2%	2,108	26.4%
2013	19.0%	562	29.7%	<b>Drug or Alcohol Abuse</b>			
2014	16.8%	498	23.1%	Yes	63.2%	1,872	25.3%
2015	14.6%	432	29.4%	No	36.8%	1,088	26.5%
2016	15.5%	460	25.2%	<b>Mental Health Treatment</b>			
2017	13.9%	410	24.1%	Yes	33.1%	981	26.8%
<b>Offense Group 1 &amp; 2</b>				No	66.9%	1,979	25.2%
Group 1 (Assaultive)	87.6%	2,594	26.8%				
Group 2 (Non-Assaultive)	12.4%	366	18.6%				

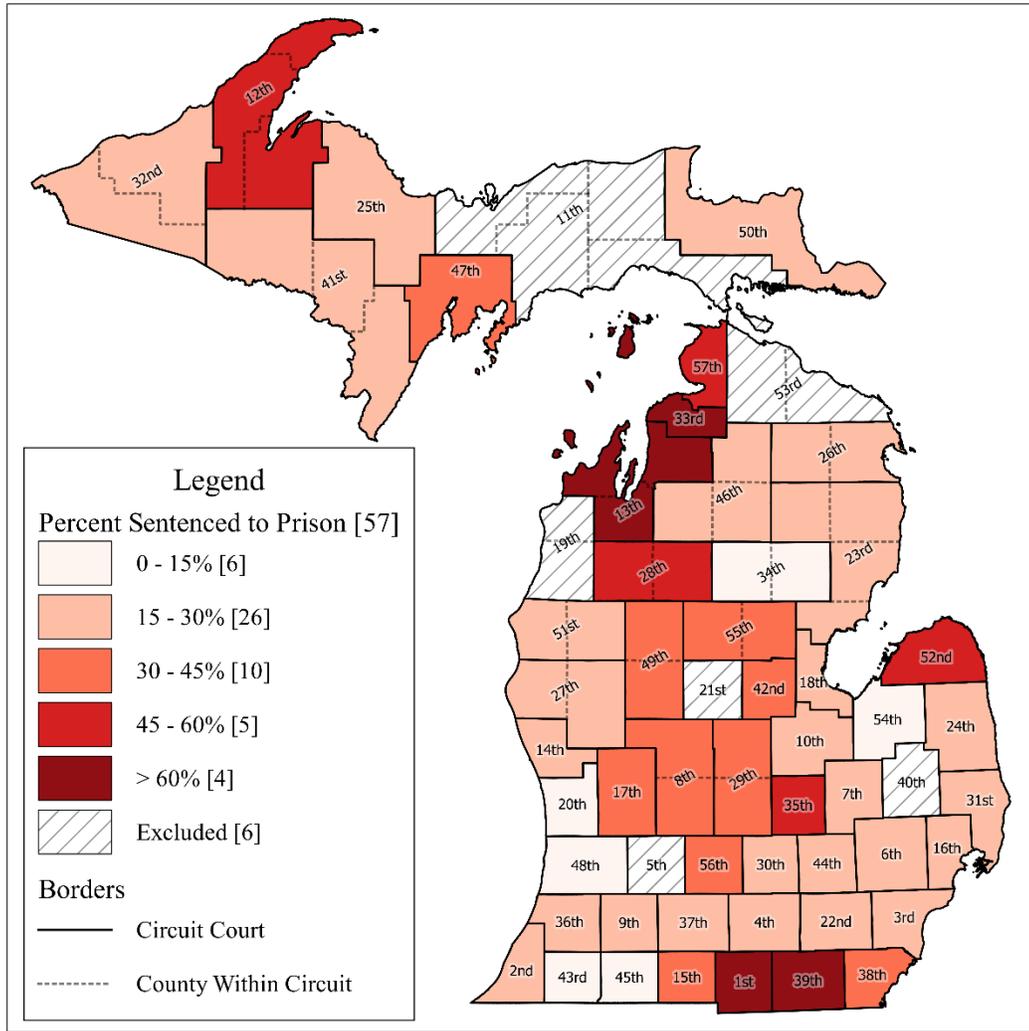
Table 4 offers a detailed breakdown of our dataset’s composition and the rates for imposing prison sentences. For example, crimes against a person was by far the most prevalent crime group, accounting for 2,553 or 86.3% of class B and C convictions. Of the 2,553 convictions, 26.2% received a prison sentence. Approximately 98.6% of the convictions were the result of a plea (Plea, Plea Under Advisement, or Nolo Contendere), compared to only 1.4% reached from either a bench or jury trial. Over the six-year period for our data, the number of convictions gradually fell from a high of 598 in 2012 to 410 in 2017. The only exception to the downward trend was in 2016.

Demographically, our data is 83% male, 53% have earned either a high school diploma or GED, and the racial composition of the data is split between Black or African American (42%) and White (58%) offenders. While 852 individuals reported a history of alcohol abuse, nearly twice as many reported having a history of drug abuse (1,714). When combined, there appears to be significant overlap between these two groups, with 1,872 reporting having a history of abusing alcohol or drugs. Again, it is important to note that drug and alcohol abuse information is self-reported to the MDOC.

### C. Circuit Court

Due to the number of circuit courts in Michigan, the descriptive statistics for circuit courts are presented geographically below, rather than including the information alongside Table 4. Figure 2 shows the percent of offenders who were sentenced to prison after being convicted of a class B or C felony and scoring within a straddle cell.

**Figure 2: Percent of Convictions Sentenced to Prison by Circuit Court<sup>15</sup>**



As the map indicates, six circuit courts sentenced less than 15% of these convictions to prison. Twenty-six courts sentenced between 15 and 30% to prison. Far fewer courts, ten, imposed prison sentences between 30 and 45% of the time, while only five circuits sentenced 45 to 60% to prison. Similarly, four courts sentenced more than 60% of straddle cell convictions to prison. Due to statistical limitations of the available data, the remaining 6 circuits were excluded from this analysis. The exact percentages and the number of cases for each circuit are presented alongside the results in Table 8 of the next section.

<sup>15</sup> Figure 2 shows the percent of offenders in each circuit court who were sentenced to prison after being convicted of a class B or C felony and scoring within a straddle cell. Habitual offenders and those with a special status during the offense (e.g., HYTA, Probation, Parole) are not included in these comparisons.

#### D. Crime Groups and Offender Demographics

In addition to considering each factor in Table 4 individually, our analysis sought to identify correlations among the type of crimes committed and an offender’s race, gender, and age. If significant correlations are present, then additional interaction terms would be needed to account for these interrelationships. To address whether offender demographics are systematically connected with certain types of crimes we explored two ways in which demographics and crime groups may be related:

- 1) Does one crime explain most of the convictions for a single demographic group?
- 2) Is one demographic group responsible for most of the convictions for a crime?

Table 5 addresses the first question by providing the three most frequent class B or C convictions for each demographic group or combination of race, gender, and age. In Table 5 each combination of race and gender is reported for three different age groups (20 and under, between 20 and 30, and 30 years or older) for a total of 12 demographic groups. For example, the first row of Table 5 shows that the most common conviction for black men 20 and under was for 2<sup>nd</sup> Degree Home Invasion. This crime accounts for 43.6% or “224 out of the 514” convictions for black men 20 and under. Furthermore, 25.9% of these convictions resulted in a prison sentence. The rightmost two columns show the circuit with the most convictions for this group and crime was the 3<sup>rd</sup> Circuit (Wayne County) with 85 convictions.

**Table 5: Three Most Common Class B and C Felony Convictions by Age, Race, and Gender**

Age (Count)	Race & Gender (Count)	PACC Code	Percent of Group	Number of Cases	% Sentenced to Prison	Offense Description	Crime Class	Crime Group	Most Freq. Circuit (County)	Cases in Circuit
Age ≤ 20 (962)	Black Men (514)	750.110A3	43.6%	224	25.9%	Home Invasion - 2nd	C	Person	3rd (Wayne)	85
		750.530	37.2%	191	37.7%	Robbery Unarm	C	Person	3rd (Wayne)	78
		750.110A2	9.3%	48	8.3%	Home Invasion - 1st	B	Person	3rd (Wayne)	34
	Black Women (45)	750.530	48.9%	22	13.6%	Robbery Unarm	C	Person	3rd (Wayne)	6
		750.110A3	20.0%	9	11.1%	Home Invasion - 2nd	C	Person	17th (Kent)	4
		750.110A2	8.9%	4	0.0%	Home Invasion - 1st	B	Person	3rd (Wayne)	2
	White Men (372)	750.110A3	44.9%	167	23.4%	Home Invasion - 2nd	C	Person	Multiple	18
		750.530	11.0%	41	24.4%	Robbery Unarm	C	Person	3rd (Wayne)	12
		750.520D1A	11.0%	41	14.6%	CSC 3rd-13 Thru 15	B	Person	27th (Oceana/Newaygo)	7
	White Women (31)	750.110A3	64.5%	20	10.0%	Home Invasion - 2nd	C	Person	16th (Macomb)	5
		750.530	12.9%	4	0.0%	Robbery Unarm	C	Person	Multiple	1
		750.520D1A	3.2%	1	0.0%	CSC 3rd-13 Thru 15	B	Person	15th (Branch)	1
20 < Age < 30 (1,118)	Black Men (420)	750.110A3	44.3%	186	24.7%	Home Invasion - 2nd	C	Person	3rd (Wayne)	86
		750.530	28.1%	118	33.1%	Robbery Unarm	C	Person	3rd (Wayne)	52
		750.110A2	9.8%	41	19.5%	Home Invasion - 1st	B	Person	3rd (Wayne)	24
	Black Women (68)	750.530	27.9%	19	5.3%	Robbery Unarm	C	Person	3rd (Wayne)	9
		750.110A3	23.5%	16	12.5%	Home Invasion - 2nd	C	Person	3rd (Wayne)	4
		750.136B3	14.7%	10	10.0%	Child Abuse, 2nd Deg	C	Person	3rd (Wayne)	6
	White Men (503)	750.110A3	46.9%	236	16.9%	Home Invasion - 2nd	C	Person	3rd (Wayne)	32
		750.530	9.3%	47	23.4%	Robbery Unarm	C	Person	3rd (Wayne)	20
		750.110A2	7.2%	36	16.7%	Home Invasion - 1st	B	Person	3rd (Wayne)	12
	White Women (127)	750.110A3	44.1%	56	23.2%	Home Invasion - 2nd	C	Person	Multiple	7
		333.7401C2F	12.6%	16	12.5%	Controlled Substance <sup>1</sup>	B	CS	9th (Kalamazoo)	4
		750.136B3	11.8%	15	26.7%	Child Abuse, 2nd Deg	C	Person	Multiple	2
30 ≤ Age (880)	Black Men (163)	750.110A3	32.5%	53	20.8%	Home Invasion - 2nd	C	Person	3rd (Wayne)	27
		750.530	14.7%	24	37.5%	Robbery Unarm	C	Person	3rd (Wayne)	10
		750.110A2	7.4%	12	8.3%	Home Invasion - 1st	B	Person	3rd (Wayne)	6
	Black Women (44)	750.110A3	29.5%	13	15.4%	Home Invasion - 2nd	C	Person	3rd (Wayne)	7
		750.530	18.2%	8	25.0%	Robbery Unarm	C	Person	7th (Genesee)	3
		750.136B3	9.1%	4	25.0%	Child Abuse, 2nd Deg	C	Person	6th (Oakland)	2
	White Men (490)	750.110A3	29.2%	143	32.2%	Home Invasion - 2nd	C	Person	3rd (Wayne)	28
		750.520C1A	11.8%	58	51.7%	CSC 2nd-Person < 13	C	Person	Multiple	6
		333.7401C2F	9.0%	44	6.8%	Controlled Substance <sup>1</sup>	B	CS	9th (Kalamazoo)	9
	White Women (183)	750.110A3	23.5%	43	18.6%	Home Invasion - 2nd	C	Person	6th (Oakland)	7
		333.7401C2F	16.9%	31	16.1%	Controlled Substance <sup>1</sup>	B	CS	9th (Kalamazoo)	12
		750.1747	15.3%	28	25.0%	Embezzlement <sup>2</sup>	B	Property	17th (Kent)	9

Controlled Substance<sup>1</sup> [MCL 333.7401c (2) (f)] - Operating or maintaining controlled substance laboratory involving methamphetamine

Embezzlement<sup>2</sup> [MCL 750.174 (7)] - Embezzlement by agent of \$100,000 or more

Table 5 makes clear that a small number of crimes, such as Home Invasion (1<sup>st</sup> or 2<sup>nd</sup>) and Unarmed Robbery, account for a large percentage of convictions for several demographic groups. This suggests offender demographics are not strongly correlated with specific class B or C felonies. While we know the most common convictions for each demographic group, it is also important to consider the most prevalent crimes overall and each demographic groups' share of these convictions. To this end, Table 6 lists the three most common class B and C felonies for each crime group. In addition, the columns on the right indicate the percent of convictions each demographic group is responsible for. The first row of Table 6 shows that 2<sup>nd</sup> Degree Home Invasion is the most common Crime Against a Person. 1,151 out of the 2,553 (45.1%) person crimes were for 2<sup>nd</sup> Degree Home Invasion and 23% of those convictions received a prison sentence. Of these 1,151 convictions, 19.2% were black men 20 years or younger and white men of the same age accounted for 14.3%.

**Table 6: Three Most Common Class B and C Felony Convictions by Crime Group  
- Percent of Convictions by Age, Race, and Gender -**

Crime Group (Count)	PACC Code	Offense Description	Number of Cases	Percent of Crime Group	Percent Sentenced to Prison	Age ≤ 20				20 < Age < 30				30 ≤ Age			
						Black Men	Black Women	White Men	White Women	Black Men	Black Women	White Men	White Women	Black Men	Black Women	White Men	White Women
Person (2,553)	750.110A3	Home Invasion - 2nd	1,151	45.1%	23.0%	19.2%	0.8%	14.3%	1.7%	16.0%	1.4%	20.2%	4.8%	4.6%	1.1%	12.3%	3.6%
	750.530	Robbery Unarm	513	20.1%	31.0%	36.8%	4.1%	7.8%	0.8%	22.2%	3.7%	9.2%	2.5%	4.7%	1.6%	4.5%	2.1%
	750.110A2	Home Invasion - 1st	197	7.7%	12.2%	23.9%	2.0%	15.2%	0.5%	20.8%	4.1%	18.3%	3.0%	6.1%	1.5%	3.6%	1.0%
Property (97)	750.1747	Embezzlement <sup>1</sup>	43	44.3%	23.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%	0.0%	30.2%	65.1%
	750.1746	Embezzlement <sup>2</sup>	23	23.7%	17.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	8.7%	39.1%	47.8%
	750.2185A	False Pretenses	14	14.4%	7.1%	0.0%	0.0%	0.0%	0.0%	14.3%	7.1%	35.7%	0.0%	21.4%	0.0%	14.3%	7.1%
Controlled Substance (232)	333.7401C2F	Controlled Substance <sup>3</sup>	126	54.3%	14.3%	0.8%	0.0%	4.0%	0.0%	2.4%	0.0%	20.6%	12.7%	0.0%	0.0%	34.9%	24.6%
	333.74012B1	Controlled Substance <sup>4</sup>	66	28.4%	16.7%	3.0%	0.0%	7.6%	1.5%	3.0%	0.0%	31.8%	9.1%	0.0%	0.0%	24.2%	19.7%
	333.74022E	Controlled Substance <sup>5</sup>	15	6.5%	26.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.7%	13.3%	0.0%	0.0%	20.0%	40.0%
Public Order (5)	750.543M	False Rep. Terrorism	4	80.0%	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%	50.0%	0.0%
	445.65B	Identity Theft 3rd	1	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Public Safety (59)	750.110A3	Home Invasion - 2nd <sup>6</sup>	15	25.4%	20.0%	20.0%	0.0%	13.3%	6.7%	13.3%	0.0%	20.0%	6.7%	0.0%	0.0%	13.3%	6.7%
	750.1591I	Criminal Enterprise	11	18.6%	9.1%	0.0%	0.0%	0.0%	9.1%	0.0%	18.2%	18.2%	0.0%	27.3%	0.0%	18.2%	9.1%
	750.530	Robbery Unarm <sup>7</sup>	10	16.9%	20.0%	20.0%	10.0%	10.0%	0.0%	40.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	10.0%
Public Trust (14)	750.422B	Perjury	5	35.7%	40.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	60.0%
	767A.91B	Subpoenas-Perjury	4	28.6%	25.0%	0.0%	0.0%	0.0%	0.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%
	767A.91A	Pros. Inv.-Perjury	3	21.4%	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	33.3%	0.0%

Embezzlement<sup>1</sup> [MCL 750.174 (7)] - Embezzlement by agent of \$100,000 or more (Class B)  
Embezzlement<sup>2</sup> [MCL 750.174 (6)] - Embezzlement by agent of \$50,000 to \$100,000 (Class C)  
Controlled Substance<sup>3</sup> [MCL 333.7401c (2) (f)] - Operating or maintaining controlled substance laboratory involving methamphetamine  
Controlled Substance<sup>4</sup> [MCL 333.7401 (2) (b) (i)] - Delivery or manufacture of methamphetamine or 3, 4-methylenedioxy-methamphetamine  
Controlled Substance<sup>5</sup> [MCL 333.7402 (2) (e)] - Delivery or manufacture of controlled substance analogue  
Home Invasion - 2nd<sup>6</sup> [MCL 750.157a (a)] Conspiracy to commit offense  
Robbery Unarm<sup>7</sup> [MCL 750.157a (a)] Conspiracy to commit offense

From Table 6 we see that crimes against a person accounted for the largest number of convictions (2,553), with the two most common convictions being Home Invasion 2<sup>nd</sup> (45.1%) and Unarmed Robbery (20.1%). Looking at the demographic breakdown for some crimes, we see that convictions are not equally distributed among the groups, but rather concentrated within a single demographic group. As an example, black men 20 and under account for 36.8% of all Unarmed Robbery convictions. Likewise, black men between 20 and 30 years old accounted for an additional 22% of all convictions for Unarmed Robbery. Given the instances of correlations show in Table 6, further statistical analysis was conducted to determine the need to include additional variables in our model. Ultimately, we were able to rule out the need for such variables as they did not improve the analysis in any significant way.

## E. Model Specification<sup>16</sup>

Summarizing data using totals and percentages, as above, is important for gaining a better understanding of the data and identifying correlations among variables of interest. However, this type of analysis alone will not allow for comparisons between offenders with similar offense and offender characteristics. Instead, a logistic regression was used to determine whether there are disparities in the in-or-out decision related to additional sentencing factors beyond the guideline scores or the demographic characteristics of the offender. Using this regression technique, we can consider multiple factors at the same time and estimate how each factor is associated with the probability that an offender receives a prison sentence, allowing for more suitable “apple to apple” comparisons. Finally, using this approach we can determine which variables have statistically significant associations with the probability that an offender receives a prison sentence. As used here, a statistically significant result would imply that there are substantial differences in the chance of receiving a prison sentence associated with a given factor. Conversely, insignificant results imply that the factor is not meaningfully related to the outcome.

In addition to the variables discussed in the previous section, interaction terms for the following sets of variables were included in the regression model to account for correlations between the variables:

- 1. Offender’s Race and Age**
- 2. Attorney Status and Conviction Method**

Because of these adjustments our model examines disparities in sentencing for combinations of these variables instead of considering each separately. This approach allows for the associated impact of race on prison sentencing to differ with age (i.e., possible disparities between young black and white offenders may be different than those for older black and white offenders). Additionally, the model also allows for the same type of variation when determining whether there are disparities in sentencing between appointed and retained attorneys (i.e., potential disparities from retaining counsel may be different depending on whether the offender pled guilty or was found guilty at trial).

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<sup>16</sup> For more detail on the model specification and estimates, tables showing the full regression output are included in the Appendix.

## V. Results

### A. Summary

The second question our analysis considered was: for offenders with similar offense and offender characteristics, are there disparities in the rate of prison sentences? With our logistic regression, each of the estimated relationships can be thought of as the expected change in the probability of receiving a prison sentence rather than an intermediate sanction, for that variable holding constant the other variables in the model. Table 7 provides a simplified summary of our significant findings regarding sentencing disparities in the in-or-out decision for class B and C felony convictions. Descriptions of the impact on prison sentencing are presented alongside each of the factors with significant sentencing disparities.

**Table 7: Summary of Logistic Regression Results<sup>17</sup>**

Variable	Statistically Significant	Average Relationship to Prison Sentence
<b>Conviction Method</b> (Found Guilty vs. Pled Guilty)	Yes	For offenders with appointed counsel, those found guilty at trial were <i>more</i> likely to receive a prison sentence than those who pled guilty. For offenders with retained attorneys, sentencing outcomes did not differ significantly between those found guilty at trial and those who pled guilty
<b>Attorney Status</b> (Retained vs. Appointed)	Yes	When found guilty at trial, those who retained their attorney were <i>less</i> likely to receive a prison sentence than offenders with appointed attorneys. For offenders who pled guilty, sentencing outcomes did not differ significantly between retained and appointed attorneys.
<b>Sentence Guideline Crime Group</b> <i>Criminal Sexual Conduct (2nd &amp; 3rd Degree CSC)</i> vs. <i>Other Crimes Against a Person (e.g., 2nd Degree Home Invasion, Unarmed Robbery)</i>	Yes	Convictions for Criminal Sexual Conduct (CSC) crimes were <i>more</i> likely to be sentenced to prison than the other "Crimes Against a Person." Sentencing outcomes for the remaining crime groups did not differ significantly from one another.
<b>Race</b> (Black or African American vs. White)	Yes	<ul style="list-style-type: none"> <li>For individuals under 25 years old, we found that black offenders were <i>more</i> likely to receive a prison sentence than white offenders.</li> <li>Between the ages of 25 and 35, sentencing outcomes for black and white offenders were not significantly different.</li> <li>After age 35 we found that white offenders were <i>more</i> likely than black offenders to be sentenced to prison.</li> </ul>
<b>Age</b>	Yes	<ul style="list-style-type: none"> <li>For black offenders, the probability of being sentenced to prison is the <i>highest</i> when they're young and then <i>decreases</i> with age.</li> <li>For white offenders, the probability of being sentenced to prison is the <i>lowest</i> when they are young and then <i>increases</i> with age.</li> </ul>
<b>Gender</b> (Female vs. Male)	Yes	Female offenders were <i>less</i> likely to receive a prison sentence than male offenders.
<b>Employed</b>	Yes	Employed offenders were <i>less</i> likely to receive a prison sentence than unemployed offenders.
<b>Drug Abuse</b>	Yes	Offenders with a self-reported history of drug abuse were <i>more</i> likely to receive a prison sentence.
<b>Circuit Court</b>	Yes	Compared to the statewide average (30.5%): <ul style="list-style-type: none"> <li>3 Circuits were <i>more</i> likely</li> <li>9 Circuits were <i>less</i> likely</li> <li>39 Circuits didn't differ significantly</li> <li>6 Circuits were not included in this analysis</li> </ul>
<b>Offense Group</b> (Assaultive vs. Non-Assaultive)	No	
<b>Ethnicity</b>	No	No statistically significant relationship to the "In/Out" of prison sentencing decision.
<b>High School Diploma/GED</b>	No	
<b>Alcohol Abuse</b>	No	
<b>Mental Health Treatment</b>	No	

<sup>17</sup> The sample for these results included individuals sentenced between 2012-2017 and scored within a straddle cell for class B or C offenses, excluding habitual offenders and those with a special status during the offense (HYTA, Probation, District Court Probation, Delay of Sentence, Parole, Jail, State Prisoner, Bond, Juvenile Court Supervision, Federal Probation, Federal Parole).

Our analysis found nine factors with statistically significant associations with the probability that someone is sentenced to prison. In the presence of significant differences in sentencing outcomes, we conclude that there are sentencing disparities across these factors: crime group, conviction method (found guilty at trial vs. pled guilty), attorney status (retained vs. appointed), gender, race, age, employment status, self-reported history of drug abuse, and the circuit court where the offender was sentenced. Offenders that were less likely to be sentenced to prison included female offenders and employed offenders. On the other hand, offenders convicted of criminal sexual conduct were associated with higher rates of prison sentences compared to those convicted of other crimes against a person. Similarly, offenders with a history of drug abuse were more likely to be sentenced to prison.

Whether an offender received a prison sentence differed significantly between black and white offenders, however the relationship between race and prison sentencing varied depending on the offender's age. Comparing sentencing outcomes among offenders under 25 years old, we found black offenders were more likely to receive a prison sentence than white offenders of the same age. The difference is largest when offenders are young and gradually decreases until age 25. Between ages 25 and 35 sentencing outcomes did not differ significantly across race. Beyond age 35, we found significant differences, however in the opposite direction as before, with white offenders being more likely to be sentenced to prison than black offenders.

Lastly, as Table 7 notes, we found statistically significant differences among circuit courts in the probability of being sentenced to prison. As with the summary statistics, the results for circuit court cannot be stated in as simple of terms as other factors in Table 7 because the results vary greatly across the 57 circuit courts<sup>18</sup>. Instead, we compared how likely each court was to impose a prison sentence to the state average. The results for each circuit court can be grouped into one of three categories: more likely to impose prison sentences, less likely to impose prison sentences, or no significant difference from the state average. The breakdown of circuit courts into these categories as well as the magnitudes of these relationships are presented in the next section, followed by further detailed discussion of the other significant variables.

## B. Circuit Courts

Unlike the factors with two categories (e.g., attorney status was either appointed or retained), where the results are interpreted as comparing one group with the other, circuit courts require a more sophisticated approach to evaluate the presence of sentencing disparities. First, the average estimated probability of receiving a prison sentence is calculated for each court, taking into consideration the case specifics and offender characteristics outlined above. The average from each court is then compared against the statewide average to determine if that circuit court differs significantly, either above or below, from the rest of the state. The statewide average from our data was 30.5%, meaning that the average probability of being sentenced to prison was approximately 30.5%. This statewide value was calculated by taking the average of the 51 circuit courts included in our analysis, giving equal weight to each court's average. Taking this approach, we found that the probability of being sentenced to prison was statistically greater than the state average in three circuit courts and statistically less than average in nine courts. The remaining 39 courts did not differ significantly from the statewide average.

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<sup>18</sup> Maps of the counties and circuit courts in Michigan are included in the appendix for reference.

Figure 3 maps out how each circuit court compares to the statewide average for imposing prison sentences. Circuits that are on average less likely to impose prison sentences than the statewide average are shaded green, while blue shaded circuits are more likely to impose prison sentences. Circuits without coloring indicate that the difference between that circuit court and the statewide average was not statistically significant. Again, the six circuit courts excluded from our analysis are indicated with diagonal lines.

**Figure 3: Probability of Receiving a Prison Sentence  
- Comparing Circuit Courts to the State Average (30.5%) -**

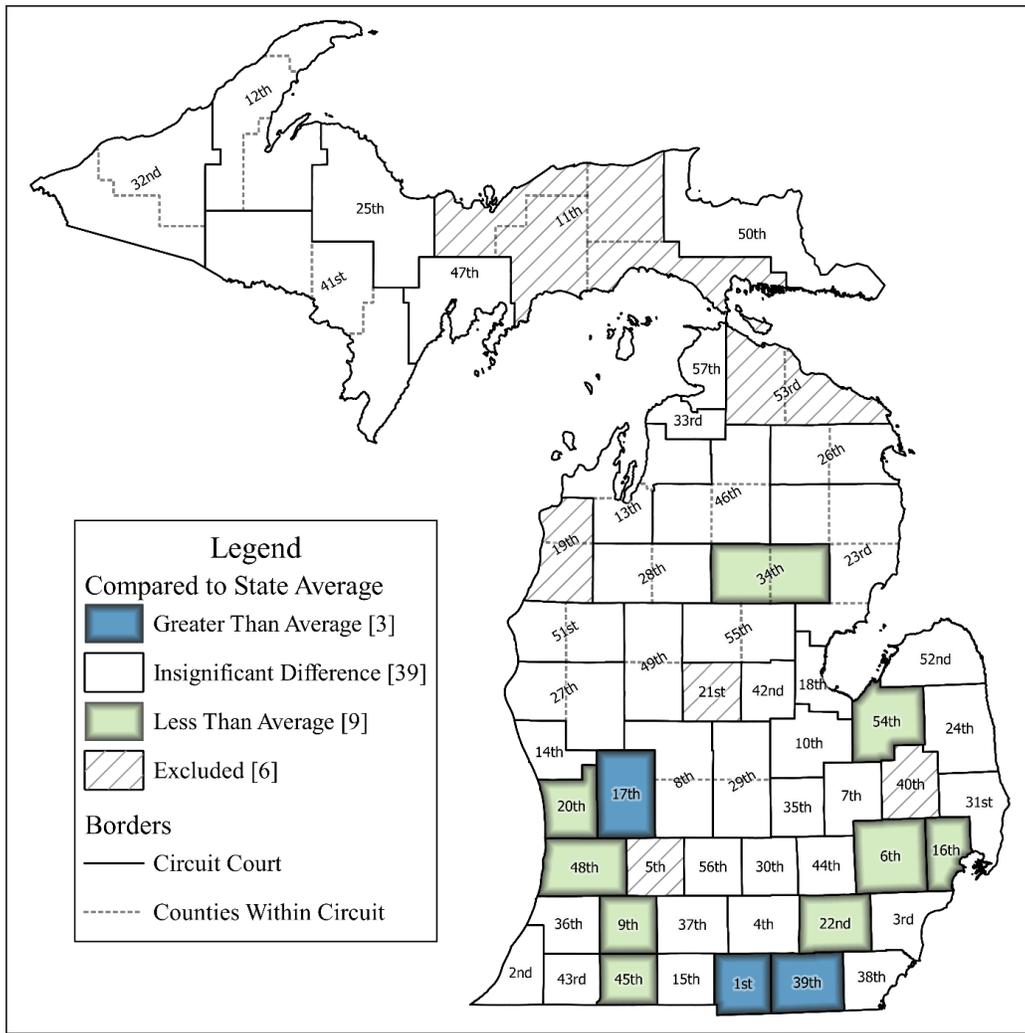


Table 8 combines the percentages shown in Figure 2 with the comparisons illustrated in Figure 3. For each circuit court, the total number of cases, the percent sentenced to prison, and the differences from the unweighted statewide average are provided. Differences marked with asterisks are statistically significant, with one, two, or three asterisks denoting 95%, 99%, and 99.9% confidence levels, respectively.

**Table 8: Probability of an Offender Receiving a Prison Sentence by Circuit Court Compared to the State Average (30.5%)**

Circuit	Number of Cases	Percent Sentenced to Prison	Difference from State Average		Counties
			Estimate	Std. Error	
1	9	0.667	0.362**	0.136	Hillsdale
2	63	0.286	-0.019	0.057	Berrien
3	749	0.266	-0.039	0.022	Wayne
4	45	0.267	-0.038	0.065	Jackson
5	<i>Excluded from Analysis</i>				Barry
6	305	0.213	-0.092***	0.028	Oakland
7	157	0.280	-0.024	0.038	Genesee
8	28	0.321	0.017	0.085	Montcalm and Ionia
9	143	0.161	-0.144***	0.033	Kalamazoo
10	87	0.218	-0.086	0.045	Saginaw
11	<i>Excluded from Analysis</i>				Luce, Mackinac, Schoolcraft, and Alger
12	4	0.500	0.195	0.222	Houghton, Baraga, and Keweenaw
13	8	0.625	0.32	0.164	Leelanau, Antrim, and Grand Traverse
14	83	0.289	-0.015	0.050	Muskegon
15	13	0.308	0.003	0.122	Branch
16	157	0.178	-0.126***	0.033	Macomb
17	190	0.389	0.085*	0.037	Kent
18	19	0.263	-0.041	0.096	Bay
19	<i>Excluded from Analysis</i>				Benzie and Manistee
20	53	0.113	-0.191***	0.044	Ottawa
21	<i>Excluded from Analysis</i>				Isabella
22	87	0.184	-0.121**	0.043	Washtenaw
23	23	0.174	-0.131	0.075	Iosco, Arenac, Alcona, and Oscoda
24	6	0.167	-0.138	0.143	Sanilac
25	12	0.250	-0.055	0.120	Marquette
26	17	0.235	-0.069	0.099	Alpena and Montmorency
27	47	0.298	-0.007	0.066	Oceana and Newaygo
28	6	0.500	0.195	0.192	Wexford and Missaukee
29	36	0.389	0.084	0.077	Gratiot and Clinton

Circuit	Number of Cases	Percent Sentenced to Prison	Difference from State Average		Counties
			Estimate	Std. Error	
30	111	0.243	-0.061	0.042	Ingham
31	59	0.237	-0.067	0.054	St. Clair
32	7	0.286	-0.019	0.139	Ontonagon and Gogebic
33	3	0.667	0.362	0.260	Charlevoix
34	16	0.063	-0.242***	0.061	Ogemaw and Roscommon
35	13	0.538	0.234	0.130	Shiawassee
36	55	0.218	-0.086	0.056	Van Buren
37	41	0.268	-0.036	0.066	Calhoun
38	42	0.357	0.053	0.072	Monroe
39	5	0.800	0.495**	0.172	Lenawee
40	<i>Excluded from Analysis</i>				Lapeer
41	11	0.273	-0.032	0.122	Iron, Dickinson, and Menominee
42	19	0.421	0.116	0.108	Midland
43	14	0.143	-0.162	0.092	Cass
44	25	0.200	-0.105	0.078	Livingston
45	32	0.125	-0.18**	0.059	St. Joseph
46	9	0.222	-0.082	0.129	Otsego, Crawford, and Kalkaska
47	6	0.333	0.029	0.182	Delta
48	24	0.125	-0.18**	0.066	Allegan
49	23	0.304	0	0.092	Osceola and Mecosta
50	4	0.250	-0.055	0.193	Chippewa
51	12	0.167	-0.138	0.106	Mason and Lake
52	8	0.500	0.195	0.167	Huron
53	<i>Excluded from Analysis</i>				Cheboygan and Presque Isle
54	13	0.077	-0.228**	0.074	Tuscola
55	32	0.344	0.039	0.080	Clare and Gladwin
56	27	0.333	0.029	0.087	Eaton
57	2	0.500	0.195	0.310	Emmet

Significance Levels: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

In addition to using the simple statewide average, the analysis was conducted again, instead comparing each circuit court to a weighted statewide average<sup>19</sup>. Unlike the simple average, where each circuit is represented equally, the weighted average calculation accounts for the number of cases from each court in our dataset, giving more importance to larger courts. The weighted statewide average from our data was 25.7%, meaning that the average probability of being sentenced to prison was 25.7%. When compared with the weighted statewide average, we found circuits largely remained in the same categories from the unweighted comparison. The only differences were the addition of the 13<sup>th</sup> and 35<sup>th</sup> circuit courts to the above-average group and the 22<sup>nd</sup> circuit was no longer statistically different from the average. In total, the probability of being sentenced to prison was statistically greater than the state average in 5 circuit courts and statistically less than average in 8 courts. The remaining 38 courts did not differ significantly from the statewide average.

Together, Figure 3 and Table 8 demonstrate that the probability of being sentenced to prison varies greatly depending on which circuit court sentences the straddle cell offender. These findings illustrate the correlations between circuit courts and how often prison sentences are imposed on straddle cell offenders. These results do not suggest that this relationship is causal (i.e., being sentenced in a given circuit court makes an offender more likely to go to prison). This distinction is important because correlations allow us to conclude that there are sentencing disparities between circuit courts. However, the underlying mechanism causing some circuit courts to sentence offenders more or less often to prison is not identified. Additional data beyond the scope of this report is needed to determine the true causal relationship.

<sup>19</sup> Figure A-4, in the appendix, maps the significant differences between circuit courts and the weighted state average (25.7%).

## C. Interpreting Statistically Significant Results<sup>20</sup>

### Odds and Odds Ratios

Whether an offender is sentenced to prison is a binary outcome. That is, an offender either receives or does not receive a prison sentence. Results from modeling this type of outcome using a logistic regression are often presented using odds ratios to allow for easier interpretation. In this section, we will define odds and odds ratios using examples to help illustrate these concepts.

The odds of an event happening, in our case being sentenced to prison, are defined as the probability of that event occurring divided by the probability that the event doesn't occur. As a simple example, say that the probability of Person A being sentenced to prison is .8 or 80%. That same person has .2 or 20% probability he or she is not sentenced to prison. The odds of being sentenced to prison in this example are  $.8/.2 = 4$  or 4 to 1.

An odds ratio is simply the odds for one group divided by the odds for another group. Consider another individual, Person B, who has a 75% chance of being sentenced to prison. The odds of a prison sentence for this person are  $.75/.25 = 3$  or 3 to 1. Comparing the odds for Person A (4) with Person B (3), we get an odds ratio of  $4/3 = 1.33$ . Interpreting this ratio, we can say that the odds of going to prison for Person A are 33% greater than Person B.

### Average Marginal Effect (AME)

Throughout the following discussion of results, the average marginal effects (AME) are included alongside of the odds ratios. Instead of comparing the odds of receiving a prison sentence for two groups, such as employed and unemployed offenders, AMEs compare the average difference in the probability of receiving a prison sentence for two groups. For example, to determine the AME of employed offenders, the estimated probability for each employed offender is compared to an otherwise identical unemployed offender. The AME is then calculated by taking the average of all these differences. Table 9 below provides the AME for the statistically significant factors without interaction terms. The AMEs for offender's race and age are presented later, in Table 10, along with attorney status and conviction method in Table 11.

**Table 9: Average Marginal Effects of Variables**

Variable	Statistically Significant	Average Marginal Effect (Percentage Points)
<b>Sentence Guideline Crime Group</b>		
<i>Criminal Sexual Conduct (2nd &amp; 3rd Degree CSC)</i> vs. <i>Other Crimes Against a Person (e.g., 2nd Degree Home Invasion, Unarmed Robbery)</i>	Convictions for Criminal Sexual Conduct (CSC) crimes were <b>more</b> likely to be sentenced to prison than the other "Crimes Against a Person." Sentencing outcomes for the remaining crime groups did not differ significantly from one another.	+9.9
<b>Gender (Female vs. Male)</b>	Female offenders were <b>less</b> likely to receive a prison sentence than male offenders.	-8.2
<b>Employed</b>	Employed offenders were <b>less</b> likely to receive a prison sentence than unemployed offenders.	-7.0
<b>Drug Abuse</b>	Offenders with a self-reported history of drug abuse were <b>more</b> likely to receive a prison sentence.	+4.9
<b>Offense Group (Assaultive vs. Non-Assaultive)</b>		
<b>Ethnicity</b>	No statistically significant relationship to the "In/Out" of prison sentencing decision.	
<b>High School Diploma/GED</b>		
<b>Alcohol Abuse</b>		
<b>Mental Health Treatment</b>		

<sup>20</sup> A table containing odds ratios and standard errors for our regression coefficients is included in Appendix.

#### D. Crime Group

Our results found significant relationships between the crime group and whether an individual receives a prison sentence. On average, offenders convicted of 2<sup>nd</sup> or 3<sup>rd</sup> degree criminal sexual conduct (CSC) were nearly 10 percentage points more likely to be sentenced to prison compared to other crimes against a person, such as unarmed robbery or 2<sup>nd</sup> degree home invasion. Comparing the odds of being sentenced to prison, those with CSC convictions had 71% greater odds of receiving a prison sentence. This difference considers or “controls for” the sentencing cell (i.e., PRV and OV levels), the circuit court, and if there was a trial, as well as multiple demographic factors (e.g., gender, race/ethnicity, age, graduated HS/ GED, employment status, drug and alcohol abuse history, and mental health treatment).

#### E. Gender

When comparing the likelihood of receiving a prison sentence between male and female offenders, we see a statistically and practically significant relationship. On average, female offenders are 8.2 percentage points less likely to receive a prison sentence than male offenders located in the same sentencing cell, controlling for specifics of the offense, the sentencing court, and demographic variables. Interpreting the estimated odds ratio for females, we found the odds of being sentenced to prison for female offenders is 40.3% less than otherwise similar male offenders.

#### F. Employment Status

For those who are employed at sentencing, we find a modest and statistically significant decrease in the likelihood of receiving a prison sentence compared to those who were unemployed. Controlling for the offender’s cell, crime type, circuit court, and demographic factors, offenders employed at sentencing are 7.0 percentage points less likely on average to receive a prison sentence than unemployed offenders. Expressed in terms of the odds ratio, the odds of being sentenced to prison for employed offenders are 34.6% less than otherwise similar unemployed offenders.

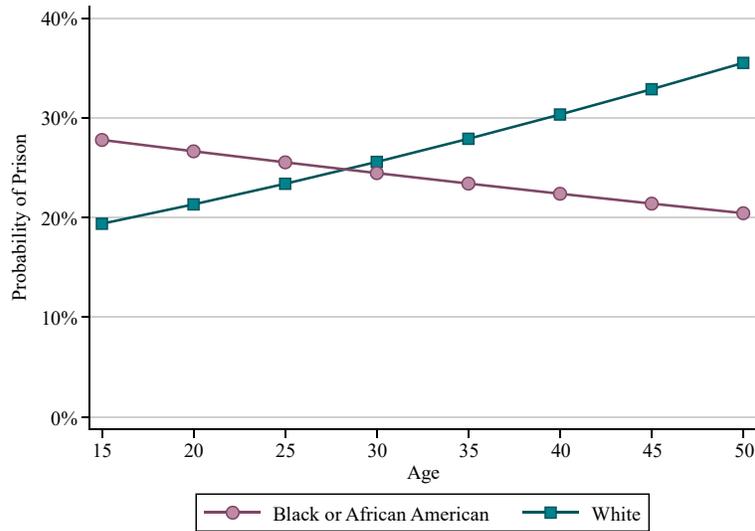
#### G. History of Drug Abuse

After accounting for the various case specifics and offender demographics, we found a modest and statistically significant relationship between offenders with self-reported drug abuse history and higher rates of prison sentences. On average, offenders with a history of drug abuse are 4.9 percentage points more likely to receive a prison sentence than comparable offenders without a history of drug abuse. For those with a history of drug abuse, this disparity reflects an increase of 33.9% in the odds of being sentenced to prison.

#### H. Race and Age

Whether an offender received a prison sentence differed significantly between black and white offenders, however the relationship between race and prison sentencing varied depending on the age of the offender. For black offenders, the likelihood of being sentenced to prison is greatest when they are young and steadily decreases with age. The opposite relationship was found for white offenders, with young white offenders having the lowest probability of being sentenced to prison, which then increases with age. To illustrate these trends, Figure 4 shows the average probability of being sentenced to prison for black offenders (purple circles) and white offenders (teal squares) at various ages.

**Figure 4: Probability of a Prison Sentence by Race and Age**



Comparing the two trends shown in Figure 4, we see that young black offenders have a greater probability of being sentenced to prison than young white offenders. For example, at age 20, the average probability of receiving a prison sentence is 26.6% for black offenders and 21.3% for white offenders, a difference of 5.3 percentage points. Table 10 below includes the values for each point in Figure 4, the difference between black and white offenders, and whether the difference is statistically significant.

**Table 10: Probability of a Prison Sentence by Race and Age**

Age	Probability of Prison		Difference	
	Black Offenders	White Offenders	Percentage Point	Statistically Significant
15	27.8%	19.4%	<b>+8.4</b>	<b>Yes</b>
20	26.6%	21.3%	<b>+5.3</b>	<b>Yes</b>
25	25.5%	23.4%	+2.2	<i>No</i>
30	24.5%	25.6%	-1.1	<i>No</i>
35	23.4%	27.9%	-4.5	<i>No</i>
40	22.4%	30.3%	<b>-7.9</b>	<b>Yes</b>
45	21.4%	32.9%	<b>-11.5</b>	<b>Yes</b>
50	20.4%	35.5%	<b>-15.1</b>	<b>Yes</b>

For individuals under 25 years old, we found that black offenders were more likely to receive a prison sentence than white offenders. Between the ages of 25 and 35, sentencing outcomes for black and white offenders were not significant different. After age 35 we found that white offenders were more likely than black offenders to be sentenced to prison.

## I. Attorney Status and Conviction Method

Table 11 provides the average probability of receiving a prison sentence for each combination of attorney status and conviction method, the differences across groups, and whether the differences are statistically significant. Significant differences between values in the same column denote disparities between offenders convicted at trial and those who pled guilty. Likewise, significant differences between values in the same row indicate sentencing disparities between offenders who retained their attorney and offenders with an appointed attorney.

**Table 11: Probability of a Prison Sentence by Conviction Method and Attorney Status**

	Retained Attorney	Appointed Attorney	Difference (Percentage Points)
Convicted at Trial	21.5%	62.4%	-41**
Pled Guilty	24.3%	25.8%	-1.5
Difference (Percentage Points)	-2.9	36.6***	-39.5**

Significance Levels: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Looking at the first column in Table 11 we see that the probability of being sentenced to prison did not differ significantly between those found guilty at trial (21.5%) and those who pled guilty (24.3%) when offenders had retained their own attorney. When comparing outcomes for offenders with appointed attorneys (second column) we found a large and statistically significant difference between those found guilty at trial (62.4%) and those who pled guilty (25.8%).

For offenders who pled guilty, the probability of receiving a prison sentence did not differ significantly between offenders who retained attorneys (24.3%) and those with appointed attorneys (25.8%). However, when offenders were found guilty at trial, those who retained their attorney were far less likely (21.5%) to receive a prison sentence than offenders with appointed attorneys (62.4%).

**Figure 5: Probability of a Prison Sentence by Conviction Method and Attorney Status**



## VI. Conclusion

### A. Summary

This report addresses two sets of questions regarding sentencing outcomes for non-habitual straddle cell offenders convicted of class B and C felonies:

**Research Question 1:** To what extent are prison sentences, relative to intermediate sanctions, imposed on offenders convicted of a **class B or C** felony and scoring within a straddle cell?

**Research Question 2:** For straddle cell offenders with similar offense and offender characteristics, are there disparities in the rate of prison sentences? If so, what factors or characteristics are contributing to such disparities?

Using the MDOC's data on felony sentencing from 2012-2017, we identified 2,960 cases for individuals sentenced between 2012-2017 and scoring within a straddle cell for class B and C offenses, excluding habitual offenders and those with a special status during the offense. Of these cases, 762 (25.7%) received prison sentences, 1,666 (56.3%) received a jail sentence or a combination of jail and probation, and 529 (17.9%) received probation only. Across straddle cells, the rate of prison sentences ranged from a low of 14.5% of cases (B Grid, B-I) to a high of 38.34% (C Grid, A-IV).

The second question our analysis considered was: for offenders with similar offense and offender characteristics, are there disparities in the rate of prison sentences? Our analysis found nine factors with statistically significant associations with the probability that someone is sentenced to prison: conviction method (Trial vs. Plea), attorney status (Retained vs. Appointed), employment status, offense crime group, gender, age, race, the circuit court where the offender was sentenced, and the offender's history of drug abuse.

Looking at the disparities associated with gender, we found that female offenders were generally less likely than male offenders to receive prison sentences. Likewise, employed offenders were less likely to receive a prison sentence than comparable unemployed offenders. Conversely, offenders with a self-reported history of drug abuse were more likely to be sentenced to prison. Individuals convicted of criminal sexual conduct were also more likely to be sentenced to prison. Furthermore, when convicted at trial, those who retained their attorney were less likely to receive a prison sentence than offenders with appointed attorneys. For offenders who pled guilty, sentencing outcomes did not differ significantly between retained and appointed attorneys.

Whether an offender received a prison sentence differed significantly between black and white offenders, however the relationship between race and prison sentencing varied depending on the age of the offender. For individuals under 25 years old, we found that black offenders were more likely to receive a prison sentence than white offenders. Between the ages of 25 and 35, sentencing outcomes for black and white offenders were not significant different. After age 35 we found that white offenders were more likely than black offenders to be sentenced to prison.

Statistically significant differences in the probability of being sentenced to prison were also found when comparing rates among the circuit courts. Each circuit court was categorized as one of three groups: more likely to impose prison sentences, less likely to impose prison sentences, or no significant difference from the state average. Comparing circuit courts to the unweighted state average (30.5%), we identified 3 circuit courts that were statistically above average, 9 courts below the average, and 39 courts that did not differ significantly from the statewide average. Similar results were found when courts were compared to the weighted state average (25.7%).

## B. Limitations and Additional Research Considerations

As stated throughout this report, our analysis focused on offenders scoring with a straddle cell for class B and C felonies and excluded habitual offenders and those with a special status during the offense. Due to the scope of our research, our findings may not be representative of the relationships found in other felony crime classes (i.e., M2, A-D, and F-H). For example, applying our model to the straddle cells in the F grid may identify different factors that are significantly related to the “in-or-out” decision. Through continued research on this topic, the CJPC intends to expand the study’s scope to include straddle cells from additional felony classes.

Another possible extension of this analysis would be to apply the same regression techniques to evaluate different metrics for sentencing outcomes. In particular, subsequent iterations of this report could address whether sentencing disparities are found in the length of prison sentence determination. Once again, if disparate outcomes are found, this analysis could be used to identify significant factors and estimate their impact.

Lastly, while this report identifies factors that contribute to the “in-or-out” decision, we are unable to look at how recidivism rates vary between those sentenced to prison and those sentenced to intermediate sanctions. Additional data, such as the release dates, are required to detect when an offender recidivates and to calculate cohort recidivism rates. Fortunately, through conversations with the MDOC, we have identified sources for much of the necessary data and are continuing to work with the department to gather the data.

## VII. Appendix - Additional Figures and Tables

Figure A-1: Sentencing Grid for Class B Offenses

Figure A-2: Counties of Michigan

Figure A-3: Circuit Courts of Michigan

Figure A-4: Probability of Receiving a Prison Sentence

- Comparing Circuit Courts with the Weighted State Average (25.9%) -

Table A-1: Logistic Regression Coefficients and Odds Ratios

Table A-2: Logistic Regression Output with Odds Ratios Reported

Figure A-1: Sentencing Grid for Class B Offenses - MCL 777.63

*Includes Ranges Calculated for Habitual Offenders (MCL 777.21 (3)(a)-(c))*

OV Level	PRV Level												Offender Status
	A 0 Points		B 1-9 Points		C 10-24 Points		D 25-49 Points		E 50-74 Points		F 75+ Points		
<b>I</b> 0-9 Points	0	18*	12	20	24	40	36	60	51	85	72	120	
		22		25		50		75		106		150	HO2
		27		30		60		90		127		180	HO3
		36		40		80		120		170		240	HO4
<b>II</b> 10-24 Points	12	20	15	25	30	50	51	85	72	120	78	130	
		25		31		62		106		150		162	HO2
		30		37		75		127		180		195	HO3
		40		50		100		170		240		260	HO4
<b>III</b> 25-34 Points	15	25	21	35	36	60	57	95	78	130	84	140	
		31		43		75		118		162		175	HO2
		37		52		90		142		195		210	HO3
		50		70		120		190		260		280	HO4
<b>IV</b> 35-49 Points	21	35	24	40	45	75	72	120	84	140	87	145	
		43		50		93		150		175		181	HO2
		52		60		112		180		210		217	HO3
		70		80		190		240		280		290	HO4
<b>V</b> 50-74 Points	24	40	36	60	51	85	78	130	87	145	99	160	
		50		75		106		162		181		200	HO2
		60		90		127		195		217		240	HO3
		80		120		170		260		290		320	HO4
<b>VI</b> 75+ Points	36	60	45	75	57	95	84	140	99	160	117	160	
		75		93		118		175		200		200	HO2
		90		112		142		210		240		240	HO3
		120		190		190		280		320		320	HO4

Intermediate sanction cells are marked by asterisks, straddle cells are shaded, and prison cells are unmarked.

The statutory percentage increases for habitual offenders are rounded down to the nearest whole month. The cell range may be less than the maximum possible minimum sentence by a fraction of a month.

Figure A-2: Counties of Michigan

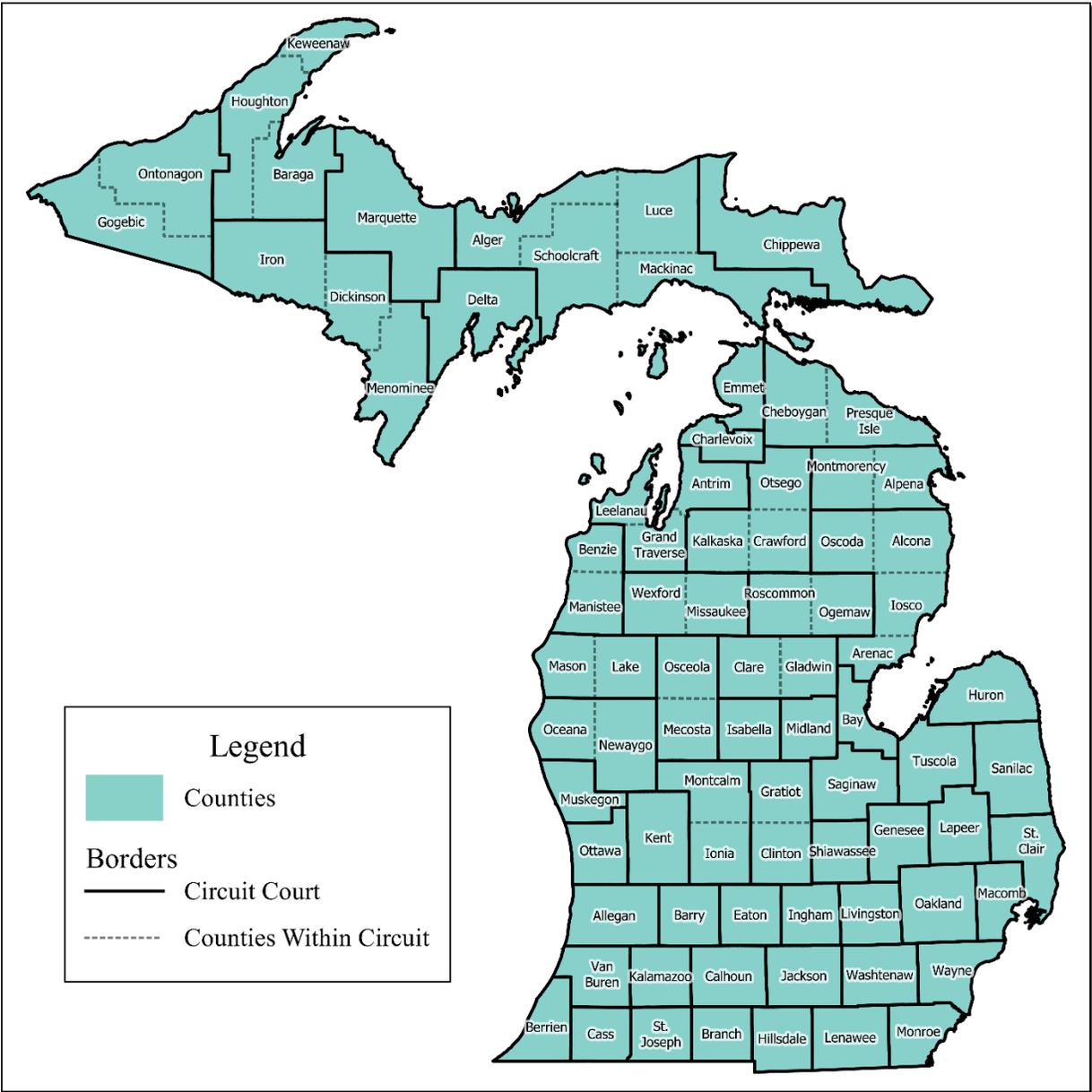


Figure A-3: Circuit Courts of Michigan

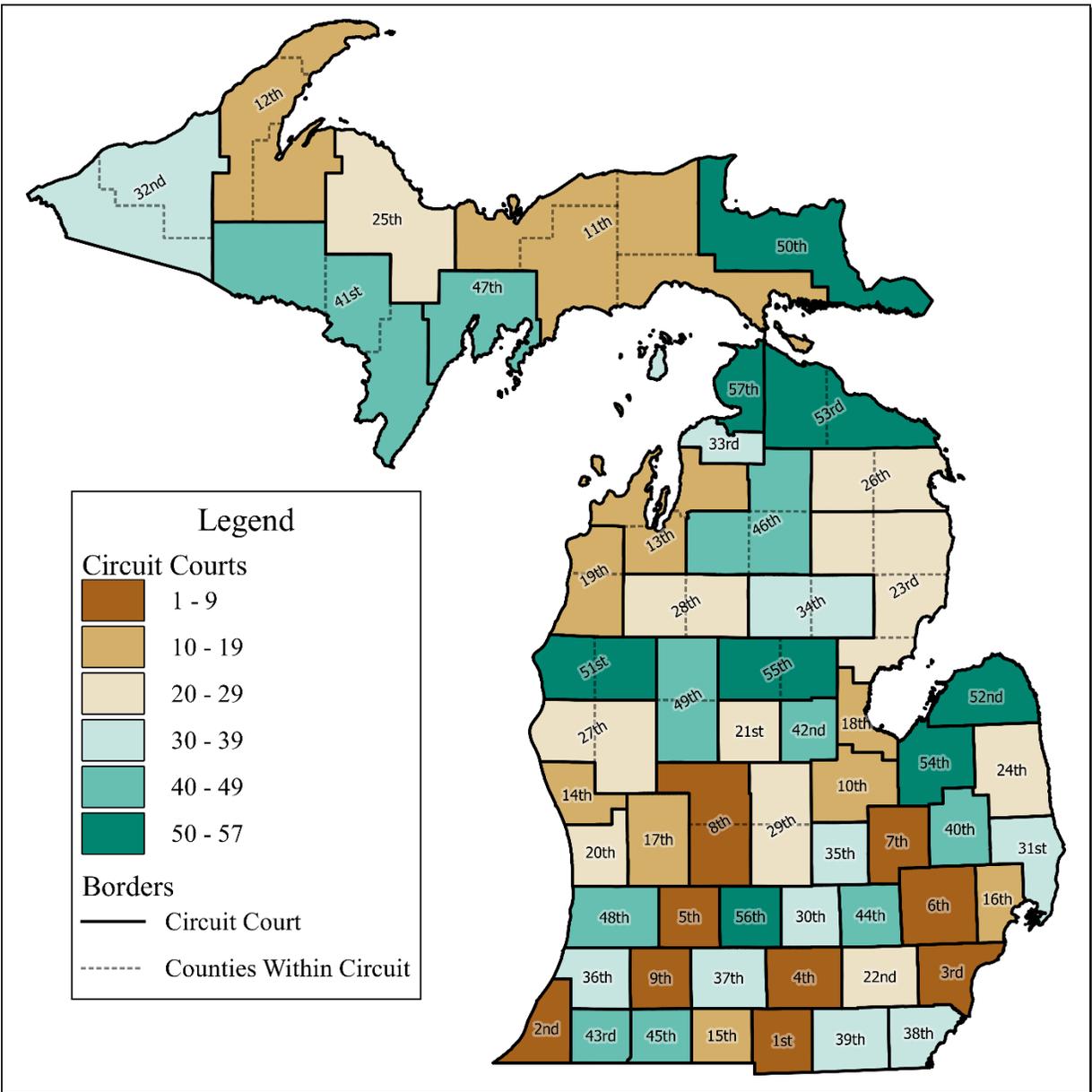
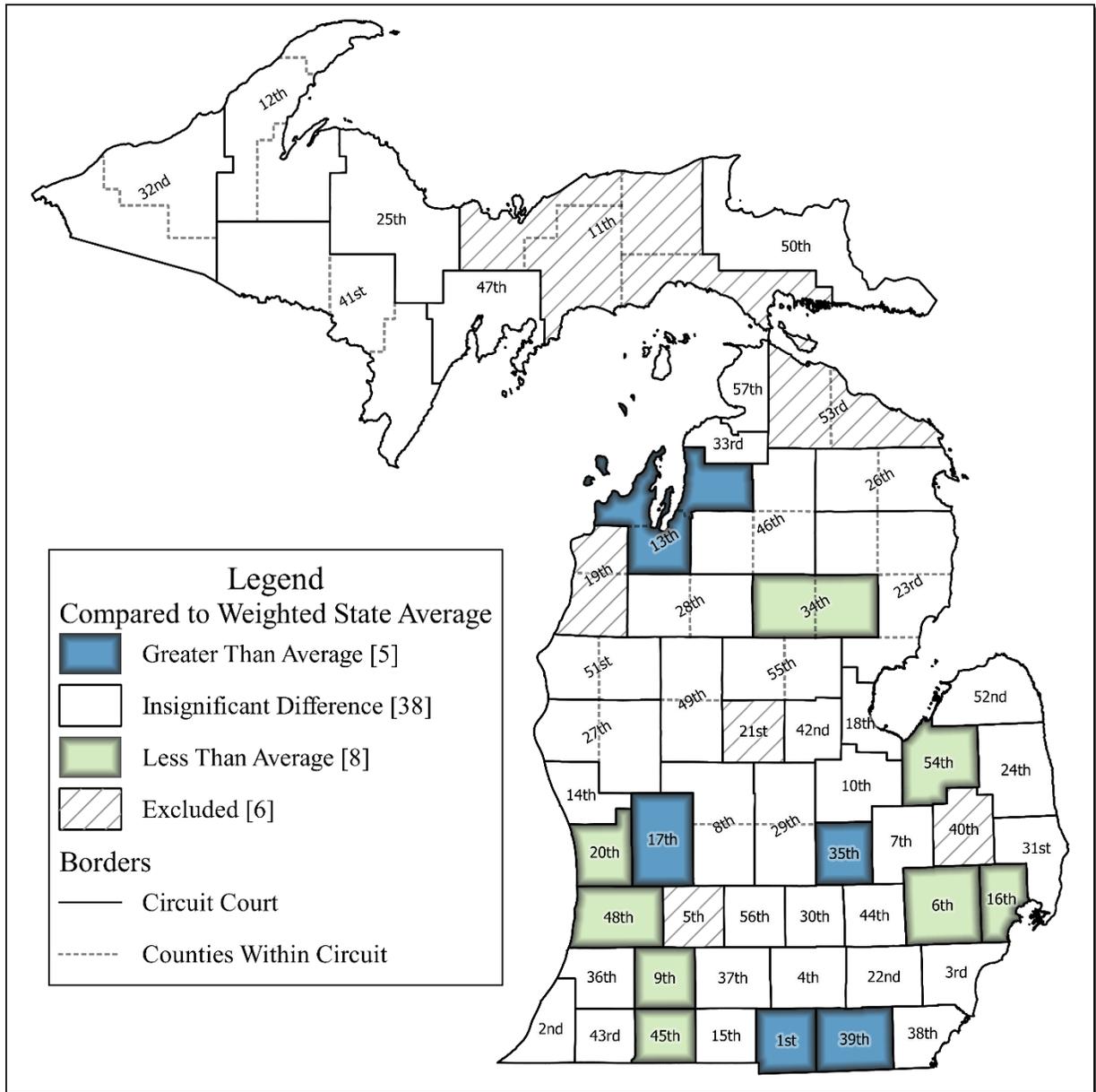


Figure A-4: Probability of Receiving a Prison Sentence  
 - Comparing Circuit Courts with the Weighted State Average (25.7%)<sup>21</sup>-



<sup>21</sup> Figure A-4 shows how each circuit court compares to the weighted statewide average for imposing prison sentences on offenders convicted of class B or C felonies and scoring within a straddle cell. Habitual offenders and those with a special status during the offense (e.g., HYTA, Probation, Parole) are not included in these comparisons.

Table A-5: Logistic Regression Coefficients and Odds Ratios<sup>22</sup>

VARIABLES	(1)	(2)
	Logit <i>Coefficients</i>	Logit <i>Odds Ratio</i>
<b>Female</b>	-0.515*** (-3.65)	0.597*** (-3.65)
<b>Age</b>	0.0262*** (4.92)	1.027*** (4.92)
<b>Race</b>	1.103***	3.015***
Black or African American	(4.10)	(4.10)
<b>Race*Age</b>	-0.0390*** (-4.13)	0.962*** (-4.13)
<b>Hispanic</b>	0.0536 (0.24)	1.055 (0.24)
<b>Conviction Method</b> (Trial vs Pled Guilty)	1.765*** (3.73)	5.840*** (3.73)
<b>Attorney Status</b> (Retained vs Appointed)	-0.0873 (-0.73)	0.916 (-0.73)
<b>Conviction Method*Attorney Status</b>	-1.945* (-2.49)	0.143* (-2.49)
<b>Employed</b>	-0.425*** (-3.78)	0.654*** (-3.78)
<b>High School Diploma/GED</b>	-0.0307 (-0.31)	0.970 (-0.31)
<b>History of Drug Abuse</b>	0.292** (2.76)	1.339** (2.76)
<b>History of Alcohol Abuse</b>	-0.159 (-1.46)	0.853 (-1.46)
<b>Mental Health Treatment</b>	0.119 (1.19)	1.126 (1.19)
<b>Crime Group</b>		
Person		Reference Group
Property	-0.00479 (-0.02)	0.995 (-0.02)
Controlled Substance	0.0659 (0.25)	1.068 (0.25)
Public Order	0.353 (0.30)	1.424 (0.30)
Public Safety	-0.0488 (-0.13)	0.952 (-0.13)
Public Trust	1.100 (1.85)	3.003 (1.85)
CSC Offenses	0.536*** (3.57)	1.709*** (3.57)
<b>Constant</b>	-1.507*** (-4.67)	0.222*** (-4.67)

- Output continued on next page -

<sup>22</sup> Significance Levels: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001; T statistics reported below in parentheses

Logistic Regression Coefficients and Odds Ratios <sup>23</sup>

VARIABLES	(1)	(2)	VARIABLES	(1)	(2)
	Logit <i>Coefficients</i>	Logit <i>Odds Ratio</i>		Coefficients	Logit <i>Odds Ratio</i>
<b>Circuit Court</b>			29th Circuit Court	0.421 (1.09)	1.523 (1.09)
1st Circuit Court	1.071 (1.30)	2.919 (1.30)	30th Circuit Court	-0.241 (-0.97)	0.786 (-0.97)
2nd Circuit Court	0.0592 (0.19)	1.061 (0.19)	31st Circuit Court	-0.224 (-0.65)	0.799 (-0.65)
3rd Circuit Court	Reference Group		32nd Circuit Court	0.112 (0.11)	1.118 (0.11)
4th Circuit Court	0.162 (0.44)	1.176 (0.44)	33rd Circuit Court	0.861 (0.68)	2.367 (0.68)
5th Circuit Court	Omitted		34th Circuit Court	-1.764 (-1.67)	0.171 (-1.67)
6th Circuit Court	-0.319 (-1.82)	0.727 (-1.82)	35th Circuit Court	1.544* (2.55)	4.683* (2.55)
7th Circuit Court	-0.0490 (-0.24)	0.952 (-0.24)	36th Circuit Court	-0.180 (-0.50)	0.835 (-0.50)
8th Circuit Court	0.230 (0.52)	1.258 (0.52)	37th Circuit Court	-0.138 (-0.35)	0.871 (-0.35)
9th Circuit Court	-0.485 (-1.88)	0.616 (-1.88)	38th Circuit Court	0.584 (1.65)	1.794 (1.65)
10th Circuit Court	-0.430 (-1.49)	0.650 (-1.49)	39th Circuit Court	2.716* (2.34)	15.13* (2.34)
11th Circuit Court	Omitted		40th Circuit Court	Omitted	
12th Circuit Court	0.764 (0.68)	2.148 (0.68)	41st Circuit Court	0.0857 (0.11)	1.089 (0.11)
13th Circuit Court	1.563* (2.03)	4.774* (2.03)	42nd Circuit Court	0.476 (0.95)	1.610 (0.95)
14th Circuit Court	0.213 (0.78)	1.237 (0.78)	43rd Circuit Court	-0.692 (-0.88)	0.501 (-0.88)
15th Circuit Court	0.0571 (0.09)	1.059 (0.09)	44th Circuit Court	-0.422 (-0.79)	0.656 (-0.79)
16th Circuit Court	-0.543* (-2.24)	0.581* (-2.24)	45th Circuit Court	-0.875 (-1.56)	0.417 (-1.56)
17th Circuit Court	0.593** (3.22)	1.810** (3.22)	46th Circuit Court	-0.395 (-0.46)	0.674 (-0.46)
18th Circuit Court	-0.253 (-0.45)	0.776 (-0.45)	47th Circuit Court	0.385 (0.42)	1.469 (0.42)
19th Circuit Court	Omitted		48th Circuit Court	-1.212 (-1.85)	0.298 (-1.85)
20th Circuit Court	-1.118* (-2.40)	0.327* (-2.40)	49th Circuit Court	0.150 (0.31)	1.162 (0.31)
21st Circuit Court	Omitted		50th Circuit Court	-0.0684 (-0.05)	0.934 (-0.05)
22nd Circuit Court	-0.560 (-1.84)	0.571 (-1.84)	51st Circuit Court	-0.620 (-0.78)	0.538 (-0.78)
23rd Circuit Court	-0.826 (-1.38)	0.438 (-1.38)	52nd Circuit Court	1.203 (1.59)	3.331 (1.59)
24th Circuit Court	-1.009 (-0.87)	0.364 (-0.87)	53rd Circuit Court	Omitted	
25th Circuit Court	0.0143 (0.02)	1.014 (0.02)	54th Circuit Court	-1.598 (-1.50)	0.202 (-1.50)
26th Circuit Court	-0.347 (-0.57)	0.707 (-0.57)	55th Circuit Court	0.317 (0.77)	1.373 (0.77)
27th Circuit Court	0.342 (0.96)	1.407 (0.96)	56th Circuit Court	0.462 (1.03)	1.587 (1.03)
28th Circuit Court	0.517 (0.59)	1.677 (0.59)	57th Circuit Court	0.466 (0.29)	1.594 (0.29)

- Output continued on next page -

<sup>23</sup> Significance Levels: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001; T statistics reported below in parentheses

Logistic Regression Coefficients and Odds Ratios <sup>24</sup>

VARIABLES	(1)	(2)	VARIABLES	(1)	(2)
	Logit	Logit		Coefficients	Logit
	<i>Coefficients</i>	<i>Odds Ratio</i>			
<b>Month (Jan. - Dec.)</b>			<b>Cell (PRV, OVL)</b>		
January	Reference Group		A, II	-0.670** (-2.98)	0.512** (-2.98)
February	-0.107 (-0.51)	0.898 (-0.51)	A, III	-0.187 (-0.82)	0.830 (-0.82)
March	-0.267 (-1.26)	0.766 (-1.26)	A, IV	0.109 (0.50)	1.115 (0.50)
April	-0.131 (-0.62)	0.878 (-0.62)	B, I	-1.054*** (-3.68)	0.349*** (-3.68)
May	-0.151 (-0.73)	0.860 (-0.73)	B, III	Reference Group	
June	-0.315 (-1.47)	0.730 (-1.47)	C, I	-0.737*** (-3.66)	0.478*** (-3.66)
July	-0.0338 (-0.16)	0.967 (-0.16)	C, II	-0.0842 (-0.45)	0.919 (-0.45)
August	-0.225 (-1.04)	0.798 (-1.04)	D, I	0.0340 (0.15)	1.035 (0.15)
September	-0.407 (-1.83)	0.666 (-1.83)			
October	-0.334 (-1.58)	0.716 (-1.58)			
November	0.0711 (0.33)	1.074 (0.33)			
December	-0.0671 (-0.30)	0.935 (-0.30)			
<b>Year (2012-2017)</b>					
2012	Reference Group				
2013	0.342* (2.40)	1.408* (2.40)			
2014	0.00728 (0.05)	1.007 (0.05)			
2015	0.253 (1.63)	1.288 (1.63)			
2016	0.0932 (0.60)	1.098 (0.60)			
2017	0.0367 (0.22)	1.037 (0.22)			

<sup>24</sup> Significance Levels: \* p<0.05, \*\* p<0.01, \*\*\* p<0.001; T statistics reported below in parentheses

Table A-6: Logistic Regression Output with Odds Ratios Reported

```

> logit prison i.(hisp hs drug alcohol mental_h) i.group7 i.employed i.female
> i.race3 c.age i.race3#c.age i.trial i.retain i.retain#i.trial
> i.(cell disp_month disp_year) i.circuit, or;

note: 5.circuit != 0 predicts failure perfectly
      5.circuit dropped and 20 obs not used

note: 11.circuit != 0 predicts failure perfectly
      11.circuit dropped and 8 obs not used

note: 21.circuit != 0 predicts failure perfectly
      21.circuit dropped and 7 obs not used

note: 40.circuit != 0 predicts failure perfectly
      40.circuit dropped and 9 obs not used

note: 53.circuit != 0 predicts failure perfectly
      53.circuit dropped and 1 obs not used

Iteration 0:  log likelihood = -1688.2483
Iteration 1:  log likelihood = -1536.5499
Iteration 2:  log likelihood = -1530.7617
Iteration 3:  log likelihood = -1530.7234
Iteration 4:  log likelihood = -1530.7234

Logistic regression              Number of obs   =       2,960
                                LR chi2(92)       =       315.05
                                Prob > chi2        =       0.0000
Log likelihood = -1530.7234      Pseudo R2      =       0.0933

```

prison	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
1.hisp	1.055013	.2378451	0.24	0.812	.6782045 1.641176
1.hs	.9697948	.0951436	-0.31	0.755	.8001494 1.175408
1.drug	1.338675	.1414098	2.76	0.006	1.088326 1.646611
1.alcohol	.8532767	.0924955	-1.46	0.143	.6899527 1.055262
1.mental_h	1.12622	.112714	1.19	0.235	.9256213 1.370291
group7					
Property	.9952225	.3052894	-0.02	0.988	.5455191 1.815643
CS	1.068069	.2784464	0.25	0.801	.6407525 1.780361
Pub Order	1.423575	1.651723	0.30	0.761	.1464744 13.83563
Pub Safety	.9523334	.3588973	-0.13	0.897	.4549927 1.993305
Pub Trust	3.00287	1.788322	1.85	0.065	.9345741 9.648486
CSC Offen..	1.709015	.2569055	3.57	0.000	1.272888 2.294572
1.employed	.6535554	.0734425	-3.78	0.000	.5243601 .8145826
female					
Female	.5972595	.0842555	-3.65	0.000	.4529851 .7874847
race3					
Black AA	3.014611	.8119835	4.10	0.000	1.778119 5.110953
age	1.026597	.0054795	4.92	0.000	1.015913 1.037393
race3#c.age					
Black AA	.9617602	.0090855	-4.13	0.000	.9441169 .9797333
1.trial	5.839734	2.764454	3.73	0.000	2.309114 14.76865
1.retain	.9163599	.1095296	-0.73	0.465	.7249777 1.158264
retain#trial					
1 1	.1430096	.1117723	-2.49	0.013	.0309094 .6616681
cell					
A2	.511521	.1151566	-2.98	0.003	.3290305 .7952265
A3	.8297609	.188293	-0.82	0.411	.5318566 1.294528
A4	1.114732	.2411073	0.50	0.616	.7295627 1.70325
B1	.348591	.0997078	-3.68	0.000	.1989968 .6106414
C1	.4784872	.0962558	-3.66	0.000	.3225794 .7097477
C2	.9192238	.1733421	-0.45	0.655	.6351941 1.330259
D1	1.034607	.2275437	0.15	0.877	.6723083 1.592144

- Output continued on next page -

disp_month						
2	.8983365	.1906758	-0.51	0.613	.5926085	1.36179
3	.7659527	.161512	-1.26	0.206	.506657	1.15795
4	.8775941	.1846132	-0.62	0.535	.5810754	1.325424
5	.8599084	.1774103	-0.73	0.464	.5739027	1.288446
6	.7297912	.1561634	-1.47	0.141	.4797946	1.110048
7	.9667565	.2096713	-0.16	0.876	.6319861	1.478859
8	.798356	.1736299	-1.04	0.300	.521283	1.222699
9	.6659218	.1475692	-1.83	0.067	.4313162	1.028136
10	.7162083	.1510751	-1.58	0.114	.4736845	1.082903
11	1.07368	.2304013	0.33	0.740	.7050426	1.635063
12	.9351148	.208814	-0.30	0.764	.6036553	1.448575
disp_year						
2013	1.407953	.2003536	2.40	0.016	1.065273	1.860866
2014	1.007305	.15586	0.05	0.962	.7437979	1.364166
2015	1.287601	.1993943	1.63	0.103	.9505319	1.744199
2016	1.097714	.1709056	0.60	0.549	.8090285	1.489412
2017	1.037359	.1699071	0.22	0.823	.75251	1.430032
circuit						
1	2.919386	2.406283	1.30	0.194	.5803563	14.68548
2	1.060993	.3234382	0.19	0.846	.583752	1.928399
4	1.175999	.429059	0.44	0.657	.5752403	2.404168
5	1	(empty)				
6	.7265349	.1278077	-1.82	0.069	.5146574	1.025639
7	.9521499	.196259	-0.24	0.812	.6357027	1.426122
8	1.258218	.5552238	0.52	0.603	.5298333	2.987943
9	.6156028	.1588429	-1.88	0.060	.3712501	1.020786
10	.6503051	.1874666	-1.49	0.136	.3696045	1.144187
11	1	(empty)				
12	2.147525	2.419809	0.68	0.498	.2359461	19.54626
13	4.774128	3.667618	2.03	0.042	1.059198	21.51844
14	1.237483	.3389208	0.78	0.437	.7234576	2.116731
15	1.058813	.6816334	0.09	0.929	.2998057	3.73937
16	.5809297	.1410847	-2.24	0.025	.3609114	.9350753
17	1.810068	.3336704	3.22	0.001	1.261198	2.597805
18	.7760833	.4356789	-0.45	0.652	.2582614	2.332154
20	.3267972	.1520909	-2.40	0.016	.1312595	.8136284
21	1	(empty)				
22	.571439	.1742234	-1.84	0.066	.3143771	1.038697
23	.4376126	.2626727	-1.38	0.169	.1349473	1.419108
24	.3644713	.4232821	-0.87	0.385	.0374207	3.549884
25	1.01443	.7101248	0.02	0.984	.2572534	4.000213
26	.7070822	.4333237	-0.57	0.572	.2127282	2.350254
27	1.407329	.4983811	0.96	0.335	.7030036	2.817305
28	1.676819	1.4651	0.59	0.554	.3025238	9.294223
29	1.523184	.5869676	1.09	0.275	.7157098	3.241662
30	.7858514	.1959233	-0.97	0.334	.482086	1.281021
31	.7989235	.2774338	-0.65	0.518	.404499	1.577949
32	1.118371	1.149342	0.11	0.913	.1492148	8.382234
33	2.366528	3.019704	0.68	0.500	.1940766	28.85692
34	.1714223	.1811715	-1.67	0.095	.0216001	1.360438
35	4.682966	2.831457	2.55	0.011	1.431726	15.3173
36	.8349228	.2995845	-0.50	0.615	.4132574	1.686832
37	.8713132	.3435041	-0.35	0.727	.4023454	1.886903
38	1.793589	.6349966	1.65	0.099	.8961198	3.589878
39	15.12611	17.59252	2.34	0.020	1.547859	147.8165
40	1	(empty)				
41	1.089477	.8253947	0.11	0.910	.2467984	4.809432
42	1.610306	.8058059	0.95	0.341	.6038964	4.293924
43	.5005993	.3923186	-0.88	0.377	.107747	2.325815
44	.655849	.3490937	-0.79	0.428	.2310619	1.86157
45	.4169619	.2343327	-1.56	0.120	.1385865	1.254504
46	.6740018	.5837192	-0.46	0.649	.1234463	3.679968
47	1.468893	1.356091	0.42	0.677	.2405225	8.970667
48	.2976236	.1951632	-1.85	0.065	.0823193	1.076051
49	1.162207	.570974	0.31	0.760	.4437125	3.044145
50	.9338983	1.20157	-0.05	0.958	.0750117	11.62706
51	.5379446	.426505	-0.78	0.434	.1137285	2.544519
52	3.331481	2.515962	1.59	0.111	.7582338	14.63766
53	1	(empty)				
54	.2023298	.2152464	-1.50	0.133	.0251489	1.627801
55	1.372884	.5659367	0.77	0.442	.6119947	3.079783
56	1.587289	.70926	1.03	0.301	.6611613	3.810699
57	1.594095	2.592143	0.29	0.774	.0658239	38.60513
_cons						
	.2215572	.0714637	-4.67	0.000	.1177414	.4169102