Project Title:
Effect of Prison Length of Stay in Oregon

Submitted to:
Oregon Criminal Justice Commission

Investigators:
Mark Leymon (Harmon), Ph.D.
Christopher Campbell, Ph.D.
Kris Henning, Ph.D.
Brian Renauer, Ph.D.

Department of Criminology and Criminal Justice
Portland State University
506 SW Mill St., P.O. Box 751
Portland, OR 97207-0751
(503) 725-8070
mleymon@pdx.edu

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Do Longer Prison Sentences Improve Public Safety?

Our Research:

Oregon's Justice Reinvestment Initiative (JRI), "is an approach to spending resources more effectively with the goals of reducing recidivism, decreasing prison use, protecting the public and holding offenders accountable (Oregon Criminal Justice Commission, 2019)." To maximize the effectiveness of Justice Reinvestment programs, policy makers need to understand the relationship between imprisonment, particularly length of stay (LOS), and recidivism. Subsequently, the Oregon Criminal Justice Commission (CJC) sought to conduct a LOS study in Oregon similar to a study completed by Snodgrass et al (2011). The goal of Portland State University's (PSU) analysis is to provide useful information for Oregon's JRI effort on the effectiveness and efficiency of incarceration. Specifically, PSU was charged with assessing the impact of length of prison stay on Oregon's three official measures of recidivism - rearrest, reconviction, and reincarceration.

Analyzing police, courts, and corrections records, PSU examined the influence of LOS in prison on recidivism outcomes on data from more than 12,000 Oregon inmates. It is important to note that all of the inmates were convicted of a JRI-eligible offense (e.g., property, driving, and drug offenses). Thus, we are not talking about inmates convicted of serious violent offenses (e.g., homicide, rape, robbery).

Our Research Questions and How We Answered Each:

1. What's the impact of LOS of Recidivism?

- *Quasi-RCT* – Through a statistical procedure we identified groups of offenders that were statistically similar except for their LOS. In essence the analysis creates a series of comparable groups made-up of individuals that have statistical twins in the other groups. By doing this we could see how LOS influences recidivism beyond other factors like age, crime type, and criminal history.

- *LOS Groups* – Since the groups were similar in every other way, we were able to separate out the LOS effects by monthly categories compared to other influences of recidivism.

- *Likelihood to Recidivate* – We estimated the likelihood of recidivating for each group and presented them as a percent.

2. Does LOS's impact on recidivism vary by JRI offense types?

- *Crime Subtype Analysis* – The measures of recidivism were assessed on LOS for:

  - *Driving Offenses*
  - *Drug Possession*
  - *Drug Distribution/Manufacturing*
  - *Property Crimes*

3. What is the sentence length that maximizes public safety?

- *Inflection Points* – Across all of the models, we looked for times when there were meaningful (statistically significant) increases or decreases in the likelihood of recidivism. Such points demonstrate how much prison is enough to reduce (or not increase) the likelihood to recidivate

Background

From 1994 to 2015, imprisonment rates increased 122% in Oregon while crime rates have decreased. In 2013, the growth in imprisonment was recognized to be no longer financially and logistically sustainable, so lawmakers passed HB 3194. This bill, known as the Justice Reinvestment Initiative, targeted nonviolent crimes and established the specific goals of reducing prison use, reducing recidivism, maintaining public safety, and increasing offender accountability. The Oregon Criminal Justice Commission (CJC) is a state agency whose mission is to increase the effectiveness, efficiency, and legitimacy of the criminal justice system and was tasked with implementing JRI.

As part of JRI, the CJC is interested in exploring the impact length of stay has on recidivism in Oregon. After examining prior studies, it was apparent that there have been few rigorous research studies on this topic. Additionally, the few completed studies in other jurisdictions have produced varying and conflicting results. In 2011, Snodgrass et al. published a study examining data from the Netherlands on how length of prison stay impacted recidivism, accounting for criminal history, criminal trajectory, severity of current crime, and relevant demographics. They found no consistent and significant relationship between LOS and re-offending.

It is possible longer prison sentences can reduce recidivism through different modes, such as rehabilitation, incapacitation, or deterrence. It is equally possible that longer prison sentences can increase recidivism, via promoting antisocial bonding between criminals, creating reintegration barriers, and degrading pro-social ties (e.g., family). Furthermore, it is possible that length of prison stay has no relationship to recidivism at all. Given these mixed potential findings, it is clear that exploring the impact of length of stay on recidivism will help provide a foundation for JRI related approaches to be more effective at improving public safety and reducing cost for Oregon counties.

PSU was tasked with conducting a quasi-experimental study examining the connection between length of prison stay and recidivism in the State of Oregon. The analysis had the following **project goals**:
- Provide insight about the relationship between prison and public safety in the Oregon criminal justice system context.
- Incorporate public safety officials as project develops to utilize their practical insights to facilitate practical impacts on policy.
- Produce high-quality research that broadcasts the advanced policy research done in Oregon, enhancing our reputation as national leaders in criminal justice

Our analysis includes an assessment of the influence of LOS for all JRI offenders as well as the four major JRI offender categories list on the right in Table 1. The table reports the count and percent of the total offenses for each of the five crime types. as well as totals for all JRI offenses.

Table 1: Distribution of Offenses		
Offense Type	Count	Percent
Drug Possession	403	3.2%
Driving Offenses	931	7.5%
Drug Manu./Dist.	3,192	25.5%
Property Offenses	7,965	63.7%
All JRI Offenses	12,497	100%

As requested, PSU's models incorporate three primary measures of recidivism consistent with the official recidivism measures as defined by Oregon state statute. The analysis also includes

additional rearrest types for specific offenses. In all, between the five crime types, the all JRI offenses, and the 8 recidivism types we assess 45 total crime by recidivism combinations. The breakdown of the recidivism types is listed below

- Rearrest within 3 years
  - Any Offense
  - Any JRI Offense
  - Violent Crimes
  - Property Crimes
  - Driving Offenses
  - Drug Manufacturing and Distribution
  - Drug Possession
- Reconviction within 3 years
- Reincarceration within 3 years

Analysis Approach

Ideally, to measure the influence of length of stay (LOS) on recidivism we would conduct a Randomized Controlled Trial (RCT). However, an RCT in this context is infeasible and unethical in many ways. Instead, we use a quasi-experimental design through a process called propensity score modeling (PSM). The PSM approach simulates an RCT by creating "statistical twins" or in this case a series of LOS groups where we are able to isolate differences in recidivism due to LOS.

The RCT-like comparable LOS groups were created by (1) "matching" on offender characteristics that influence sentencing and (2) accounting for characteristics that influence recidivism.

The sentencing factors we match on:
- Criminal history (within the past five years)
- Age at first arrest
- Race
- JRI crime severity (a retrospective DOC measure)
- The number of offenses for:
  - Driving
  - Drug possession
  - Drug manufacturing and distribution
  - Property
- Prior revocations of community supervision
- LS/CMI domain scores for:
  - Criminal associations/friends
  - Drug/alcohol problem history
  - Education/employment history
  - Family/marital history
  - Recreation/leisure activities
  - Pro-criminal attitude
  - Antisocial patterns in behavior

Why Use LOS Groups?

- Allows us to estimate the impact of LOS the likelihood of recidivism.

- Identifies "statistical twins" who received different sentence lengths and makes them comparable.

- Controls for factors that are used in determining sentence length (e.g., offense type and criminal history).

- Used in multiple studies assessing the impact of LOS in other jurisdictions (e.g., Loughran, Wilson, Nagin, & Piquero, 2015).

The influences on likelihood of recidivism that we account for include:

- Most serious JRI offense committed
- Age at release
- Sex
- Race

- Risk to reoffend - Public Safety Checklist
- Number/count of minor and major infractions committed while in prison
- Post-release LS/CMI domain scores

After controlling for demographics, criminal history, and behavioral characteristics of offenders *and* accounting for factors that influence recidivism, we are able to provide direct comparisons across LOS and to conclude if different LOS can impact recidivism outcomes.

We assess the impact of LOS on different measure of recidivism two ways:

- We assess for differences the occurrence of recidivism within 3-years. The results of this analysis are presented in the various figures below. Table 2 outlines where in the report these specific analyses are located.

- We also conducted an analysis to see if there were any differences in how long it took for someone to recidivate within 3-years between the LOS groups. The results of these analyses are discussed throughout this report, but for details of these findings are not included in the report. A selection of the results is presented in Appendix B.

- More details on data construction and methods employed can be found in Appendix C, which is available upon request.

Table 2: PSM Analyses Included in Report

Recidivism Type		Offense Type				
		All JRI Offenses	Driving Offenses	Drug Possession	Drug Manu/Dist	Property Offenses
Reincarceration		Appears in Main Report				
Reconviction						
Rearrest	Any Offense					
	JRI Offense	Appears in Appendix A (Available Upon Request)				
	Violent					
	Property					
	Driving					
	Drug Manu.					
	Possession					

Study Findings

In all, we conduct 90 separate analyses. This includes the ALL JRI offense analyses and the four crime-type analyses on each of the three main measures of recidivism (rearrest, reconviction, and reincarceration) and a series of analyses breaking rearrest down into a series of crime-specific types. Half the models assess the impact of LOS on any recidivism within 3-years regardless of

when it occurred. The other half assess the same 45 analyses listed in Table 2 on the impact of LOS on the time to recidivate, meaning how long someone was in the community before they recidivated. Some of the results appear in the main document of this report and some appear in Appendix A and Appendix B.

The two tables below outline the 90 models. The top table summarizes the findings of the 45 any recidivism analysis, while the bottom outlines the findings from the 45 time in the community before recidivism analysis.

Table 3a: Did LOS Influence Recidivism at Any Time with Three Years?		All JRI Offenses	Driving Offenses	Drug Possession	Drug Manu/Dist	Property Offenses
Crime Type (of inmate incarceration)		All JRI Offenses	Driving Offenses	Drug Possession	Drug Manu/Dist	Property Offenses
Reincarceration		X	Mixed	X	X	X
Reconviction		X	X	X	Decrease	X
Rearrest	Any Offense	Mixed	X	X	X	X
	JRI Offense	X	X	X	X	X
	Violent	X	X	X	X	X
	Property	X	X	X	X	X
	Driving	X	X	X	X	X
	Drug Manu	X	X	X	X	Mixed
	Possession	Decrease	X	X	X	X
Table 3b: Did LOS Influence the When Someone Recidivates?		All JRI Offenses	Driving Offenses	Drug Possession	Drug Manu/Dist	Property Offenses
Crime Type (of inmate incarceration)		All JRI Offenses	Driving Offenses	Drug Possession	Drug Manu/Dist	Property Offenses
Reincarceration		X	X	X	X	X
Reconviction		X	X	X	X	X
Rearrest	Any Offense	Increase	X	X	X	X
	JRI Offense	X	X	X	X	X
	Violent	X	X	X	X	X
	Property	X	X	X	X	X
	Driving	X	X	X	X	X
	Drug Manu	X	X	X	X	X
	Possession	X	X	X	X	X

X	No Impact on Recidivism	Decrease	Some Points of Decreased Recidivism	Increase	Some Points of Increased Recidivism	Mixed	Points of Increased & Decreased

Table 3 above summarize the results of the 90 analyses. Each box represents whether there was a significant increase or decrease in recidivism between at least two LOS timeframes, or whether there was not impact. We measure both the influence of LOS on both recidivism within 3 years (3a) and whether LOS impacts the time it takes to recidivate (3b). One analysis indicates a mixed finding with both increases and decreases in LOS over time.

Do longer prison stays impact recidivism?

In summary, there is **little to no effect** of longer prison stays on the likelihood to recidivate across almost all analyses, regardless of offense and recidivism type. In 84 out of the 90 analyses (93% of the analyses) we found no statistically significant effect of LOS. In only three analyses are there significant trends (difference between significant trends and significant differences discussed below in *How to understand the results?)*. In other words, the likelihood of recidivating remains stable and flat regardless of LOS in almost all cases. For more exhaustive results see the detailed analyses below.

There are some LOS groups with lower recidivism and some with higher recidivism. However, these are rarely scientifically significant, and in almost all cases no discernable trend is present. Thus, it seems apparent that there is no ideal LOS for a specific offense that maximizes public safety. In other words, regardless of LOS, the likelihood of recidivating remains basically the same. In the detailed analysis below we display the results as a series of graphs. The lack of a trend can be seen in most models in the relatively flat results below. Given the results across all analyses, in most cases, LOS longer than 24 months does not appreciably impact rearrest, reconviction, or reincarceration and suggests that a general shortening of sentence length is not likely to decrease public safety.

Overall, effect of prison LOS on likelihood of…

Rearrest

- *Higher and Lower Differences* – in recidivism between some LOS grouping
- *No Impact* – on how long released people are in the community without rearrest.

Reincarceration

- *No General Differences* – between LOS grouping
- *No Impact*– on how long released people are in the community without being reincarcerated.

Reconviction

- *No General Differences* – between LOS grouping
- *Minimal decrease* – for the 37 month+ compared to less the 36 month.
- *No Impact* – on how long released people are in the community without being reconvicted.
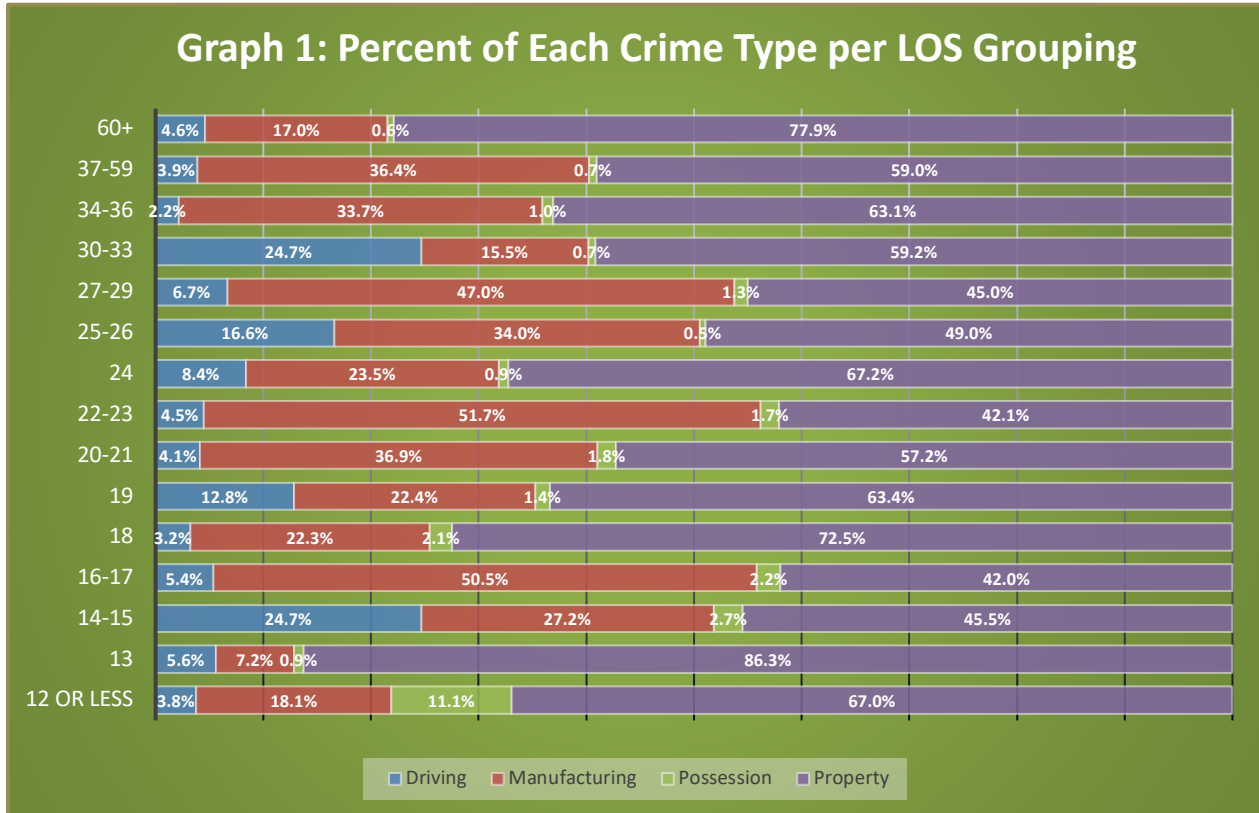
It should be noted that being sentenced to prison impacts some people more than others. In some cases, longer LOS will likely reduce recidivism for a specific individual and increase it for others. Because our analysis focuses on average impacts of LOS across different LOS groups, it is difficult to say specifically for whom LOS changes behavior more without further analyses. That being said, the results clearly indicate that LOS, on average, has little impact on recidivism.

How to understand the results?

To assess the impact of LOS on recidivism, we created a series of statistical similar individuals that differed by their length of prion stay. We then placed these individuals into groups of similar LOS. The composition and the number of the groups depends on the analysis. For example, there are 15 LOS groups in the all JRI offenses analysis. The first group includes individuals with a LOS of 12 months or less in prison (see Graph 1). Because more individuals with a JRI offense have shorter than longer LOS, the groups consist of one or two months up through month 26.

After the 25-26 group, the number of months in each group increases. The final group is made-up of individuals with a LOS of 60 months or more. The differing number of months was done to balance the number of individuals in each group, which makes the analysis more statistically sound.

There are a few important observations regarding the distribution of the individuals within the 15

Graph 1: Percent of Each Crime Type per LOS Grouping

LOS Group	Driving	Manufacturing	Possession	Property
60+	4.6%	17.0%	0.6%	77.9%
37-59	3.9%	36.4%	0.7%	59.0%
34-36	2.2%	33.7%	1.0%	63.1%
30-33	24.7%	15.5%	0.7%	59.2%
27-29	6.7%	47.0%	1.3%	45.0%
25-26	16.6%	34.0%	0.5%	49.0%
24	8.4%	23.5%	0.9%	67.2%
22-23	4.5%	51.7%	1.7%	42.1%
20-21	4.1%	36.9%	1.8%	57.2%
19	12.8%	22.4%	1.4%	63.4%
18	3.2%	22.3%	2.1%	72.5%
16-17	5.4%	50.5%	2.2%	42.0%
14-15	24.7%	27.2%	2.7%	45.5%
13	5.6%	7.2%	0.9%	86.3%
12 OR LESS	3.8%	18.1%	11.1%	67.0%

LOS groups for the all JRI offenses analysis presented in Graph 1. First, drug possession offenses make-up the smallest portion of every group except 12 months or less. This indicates that drug possession offenders generally get relatively short sentences and are not likely to be significant contributors to the recidivism to LOS longer than 12 months. Second, driving offenses make-up less than 10% in each group, but more than 10% for the 14-15, 9, 25-26, and 30-33 groups. This indicates that driving offenders are clustering into certain LOS groups and not distributed uniformly. Third, property crimes make-up the largest percent of every grouping except 22-23. In the 22-23 group drug manufacturing and distribution is over 50% of the group. This is the only group with drug manufacturing and distribution makes up the largest portion of offenders in the group. Finally, the group with the highest percent of property crimes is the 60 months or more grouping. These observations are important considerations when interpreting the results.

For each of the 90 models, we use the predicted recidivism rate for the first LOS group as a baseline to compare all subsequent groups. In most cases this is a group consisting of individuals with a LOS of 12 months or less. The figures below indicate the baseline LOS for each of the analyses. We then compare each subsequent group to the baseline to determine if there are any statistically different rates of recidivism across LOS. If significant differences are present, we

then assess if there are any trends in the results. That is, was there a trend up or a trend down in the recidivism rates. We begin our analysis with the all JRI offenses analysis.

All JRI Offenses Analysis

How to Understand the Graphs:

The blue dots are the **average** recidivism for each of the LOS groups.

The blue "T" shows the **primary range** for that LOS group.

The solid red line is the **average** for the first LOS grouping (i.e. the baseline).

The red dotted line shows the **primary range** for the first LOS grouping (i.e. the baseline) for easy reference.

Figure 1: Rearrest for All JRI Offenders
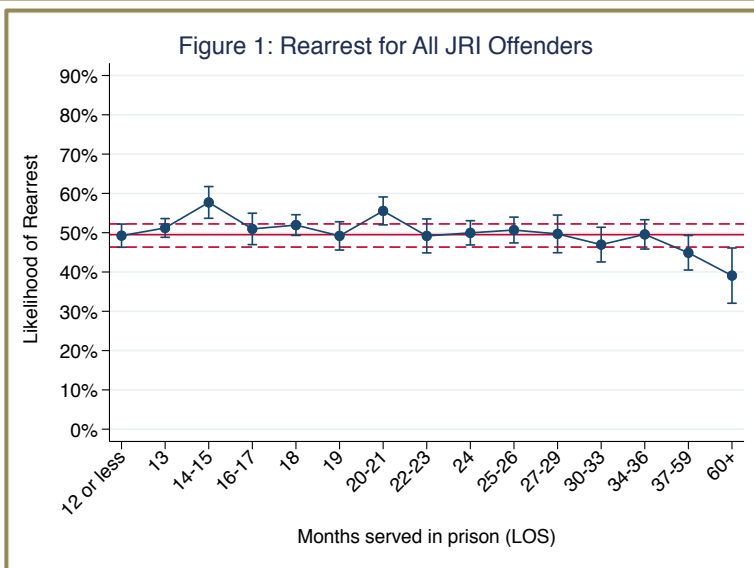
The analyses of the impact of LOS for all JRI offenses (Figures 1, 2, and 3) indicate that there is little change in any of the three measures of recidivism (rearrest, reconviction, and reincarceration) when comparing to those who serve 12 months or less to all other LOS groups. The overall likelihood to recidivate in the first three years after release generally hovers between a 40% and 60% chance of being rearrested, 20-25% chance of being reincarcerated, and a 40-50% chance of being reconvicted, regardless of the number of months served.

We begin our analysis with an assessment of recidivism for all JRI offenders. In following sections, we assess sub-crime analysis of driving, property, drug possession, and drug manufacturing and distribution offenders separately.

Rearrest.

There are *both higher and lower* **LOS groups with significant differences in the likelihood of rearrest.**[1] Figure 1 shows that the likelihood of rearrested after serving 12 months or less is about 50%. From this point there are three groups where there are meaningful changes in the likelihood to recidivate. There is an 8% statistically significant increase for those sentenced from 14-15 months. After leveling back out at 50% between 16-19 months, there is another 5% rise at 20-21 months (not statistically significant), only to flatten out again through 36 months. Finally, after 36 months in prison, the average likelihood decreases from the baseline by a statistically significant 11% at a LOS of 60 or more months.

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[1] The likelihood to recidivate is very different from recidivism rates.

While there are some points of statistically different results, *in general the likelihood of rearrest stayed relatively flat.* While there are places of significant change, there is both increases and decreases. This suggests that there is no clear trend in the impact of LOS on all JRI offenses.

It is important to note that the results in this section represents rearrest for any offense regardless if it is a JRI offense or not. Appendix A presents results of rearrest for specific crime subtypes that included drug manufacturing and distribution, drug possession, driving offenses, property crime offenses, and violent crime offenses. In these rearrest subtypes, LOS continued to have a largely flat impact, indicating no real meaningful impact of LOS on the likelihood of rearrest for specific crime subtypes. In only the analysis of rearrest for drug possession was there a significant effect. In this one analysis, the 60 or more LOS group rearrest rate is significantly lower than the 12 month or less baseline, dropping to 16.4% from 24.6%. In all other cases, while there is some variation up or down across the groups, the differences are not significant.

In our analysis of how long people can remain in the community before they are rearrested indicates that LOS had minimal bearing on rearrest for all JRI offenders for any offense or crime-specific rearrest. This was assessed using a survival analysis with the results appearing in appendix B. Among the 11,980 cases, 28.9% were rearrested in the first 12 months, 44.1% in the first two years, and by the end of the third-year post-release, over half of the sample (51.2%) were rearrested. After controlling for other factors that might influence the likelihood to recidivate, prison LOS had no appreciable impact on individual's ability to stay in the community with one small exception with 14-15 months group being slightly more likely to recidivate than the 12 months or less group. Taken as a whole across all analyses of the impact of LOS on time in the community before recidivism, LOS is not a substantial influence.

Reconviction.

LOS is *not association* with the likelihood of being reconvicted upon release. Those people held for 12 months or less are 48.4% likely to be reconvicted for a new crime upon release. Similar to reincarceration and rearrest, there are a couple of places where there are some distinct changes, most noticeable in the 14-15-month group and the 34-36-month group, but these are not significant. The largest difference is between 14-15-months (51.2%) and 60 months or more (39.4%). The difference is

Figure 2: Reconviction for All JRI Offenders

about 9% for the 60 months or more group from the baseline. Additionally, there was an 8% reduction between 36 and 60-months, but again these are within the bounds of the baseline (red dotted lines in Figure 2) and not significant.
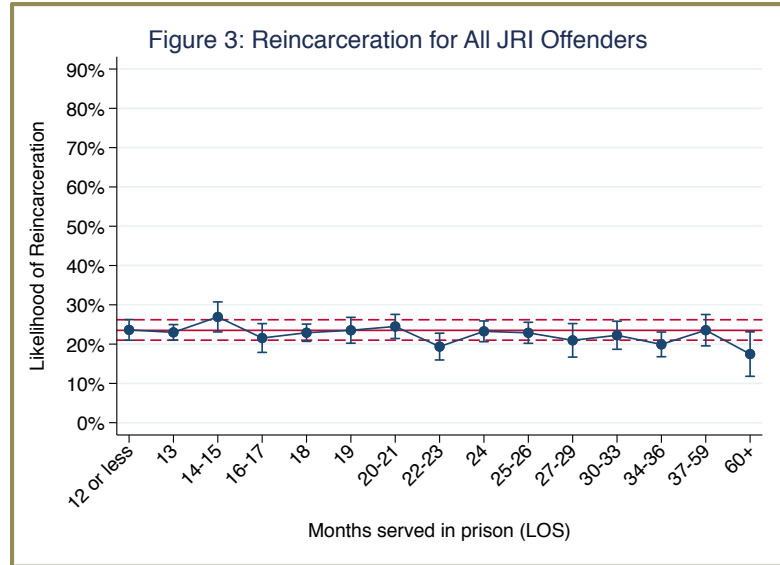
LOS has *no impact* on how long people can remain in the community before they are reconvicted. Reconviction was 22.8% in the first 12 months, 38.7% in the first two years, and by the end of the third-year post-release 47.6% were reconvicted, but these rates are consistent across the LOS groups.

Reincarceration.

LOS has *no effect* on the likelihood to be reincarcerated. The findings for reincarceration for all JRI offenders were similar to the findings for rearrest. On average, people serving 12 months or less in prison possess a 23.6% likelihood to be reincarcerated. From here, there is no meaningful change in this likelihood of reincarceration as it hovers between 18% and 26%.

The assessment of the influence of LOS on the month-to-month stay in the community before recidivism found *no effect* **on how long people can remain before they are reincarcerated.** The reincarceration rate is 8% in the first 12 months, 17.5% in 24 months, and 23.6% by the end of the third-year post-release.

Figure 3: Reincarceration for All JRI Offenders

[Chart: Likelihood of Reincarceration (y-axis, 0%–90%) vs. Months served in prison (LOS) (x-axis: 12 or less, 13, 14-15, 16-17, 18, 19, 20-21, 22-23, 24, 25-26, 27-29, 30-33, 34-36, 37-59, 60+)]

How does LOS impact recidivism for different crime types?

Next, we look more closely at the impact of LOS for each of the four JRI crime categories: property, driving, drug manufacturing and distribution, and drug possession. These "offense types" are for the most serious and most recent offense for which they were sentenced to prison.

Property Crime Offenses[2]
- **There is *no general influence* of LOS on the likelihood to recidivate for *property offenders* across all recidivism types.**
- **There is *no effect* on how long property offenders can remain in the community before they recidivate.**

Rearrest.

LOS had no general influence on the likelihood of rearrest for property offenders. The likelihood of a convicted person to be rearrested after serving six months or less (baseline for this analysis) is about 57.7%. From this point there is one notable deviation from the norm and that is for those serving 31-35 months. During this time, the average likelihood of rearrest drops by 12% to 44.3% from 56.2% for the 25-26 months group, only to abruptly increases to 62.4% for the 35 months

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[2] Those sentenced to prison for property crimes as their most serious offense consisted of 7,710 individuals (after trimming the data for common statistical support).

Figure 4: Property Offenders Rearrested for Any Offense

group. While neither of these changes are significantly different from serving six months or less, the 18.1% increase from 31-35 months and 36 months is statistically significant and represents a notable and abrupt deviation from the relatively flat trend present.

Like the analysis for any new offense, LOS had no effect on the arrests for subsequent violent crimes, driving crimes, drug possession, property crimes, or JRI specific offenses (see Appendix A). Conversely, there was some fluctuation in the likelihood to be rearrested for drug manufacturing and distribution. The baseline for rearrest was 7.3% for six months or less, while those spending 19 months in prison possessed only a 3.3% chance of being rearrested. This 4% difference is significantly lower and lower than any other LOS grouping. After 19 months, the likelihood of rearrest increases back to about 10% until 31-35 months, when it increases to 15.7%. In all, the likelihood of a property crime offender being rearrested for drug manufacturing fluctuated significantly. This is one of the small handful of the 90 total analyses that a significant trend is observed.

Figure 5: Property Offenders Reconvicted for Any Offense
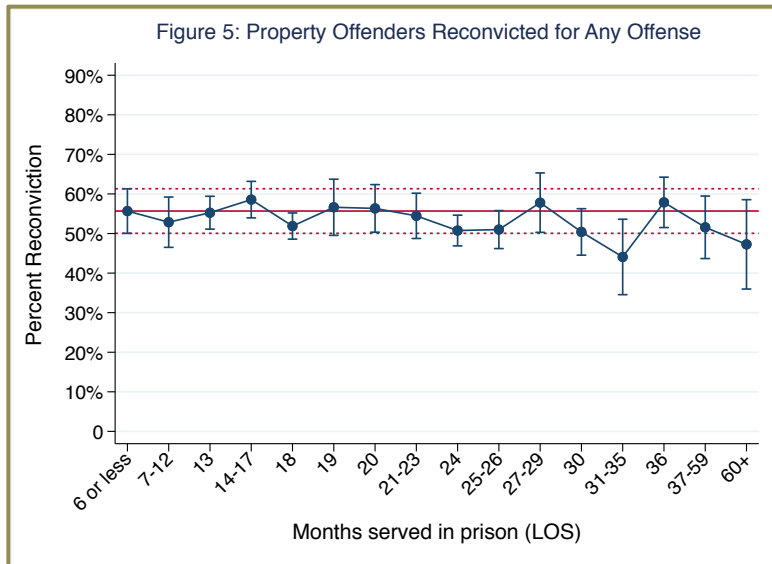
As with all remaining analysis, length of time in the community before someone recidivates is not associated with LOS for property offenders.

Reconviction.
Property offenders are neither associated with a change in the likelihood of being reconvicted upon release, nor any change time in the community before conviction. The only notable fluctuation in reconviction is for the 31-35 months served grouping who had a rate of 44.1%, which is 11% lower than the baseline. Though this difference is not significant.

Effect of LOS by most serious JRI conviction

Property Offenses

- *No effect* – on the likelihood to reoffend.

- *No Impact* – on how long released people are in the community without being reconvicted.

Driving Offenses

- *No effect* – on the likelihood to reoffend.

- *No Impact* – on how long released people are in the community without being reconvicted.

Drug Manufacturing / Dist

- *Marginal decrease* – long prison stays are associated with a decrease in the likelihood to reoffend for some LOS groups.

- *No Impact* – on how long released people are in the community without being reconvicted.

Drug Possession

- *No effect* – on the likelihood to reoffend.

- *No Impact* – on how long released people are in the community without being reconvicted.

Figure 6: Property Offenders Reincarcerated for Any Offense
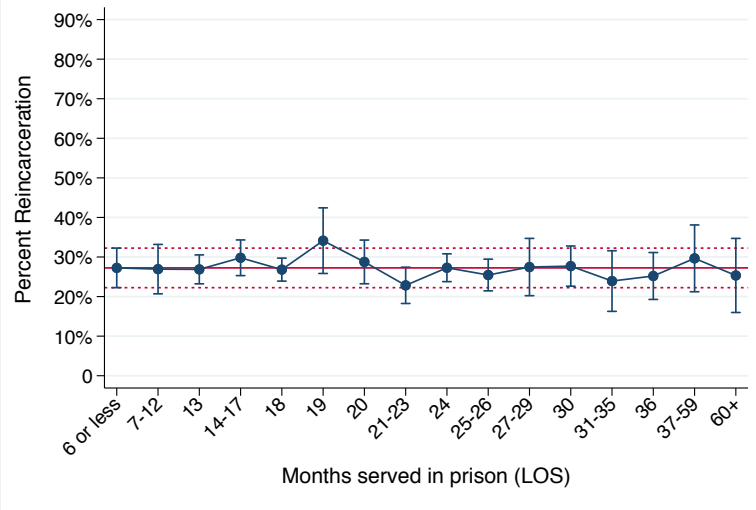
Reincarceration.

Longer prison sentences have no effect on the likelihood of property offenders to be reincarcerated within three years of release. The findings for reincarceration are similar to the rearrest findings. On average, people serving six months or less in prison possess a likelihood to be reincarcerated of 27.3%. From here, every additional month of incarceration beyond adds little to no additional increase or decrease in the likelihood of reincarceration. The likelihood fluctuates between 22.8% and 34.1%. Like the results for rearrest, the length of time served also had no impact on how long property offenders can remain in the community before they are reincarcerated.

Driving Offenses[3]

- **For driving offenders, the duration of time served in prison has *no general influence* on the likelihood to recidivate.**

- **Longer prison sentences have *no effect* on how long driving offenders remain in the community before recidivating.**

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[3]Driving Offenses consisted of 867 individuals. LOS groups for driving offenders is broken into 10 groups, ranging from 12 months or less to 31 months or more. The groups reflect the clustering of offenders with a relatively even proportion across each grouping
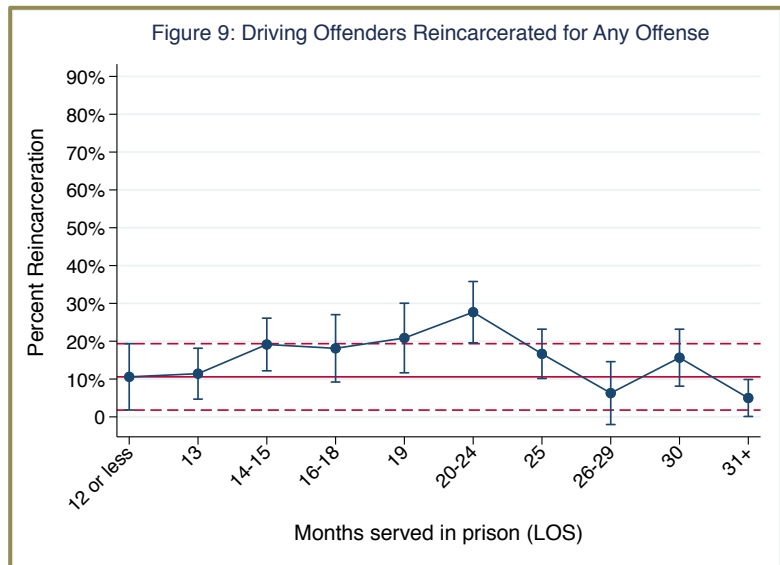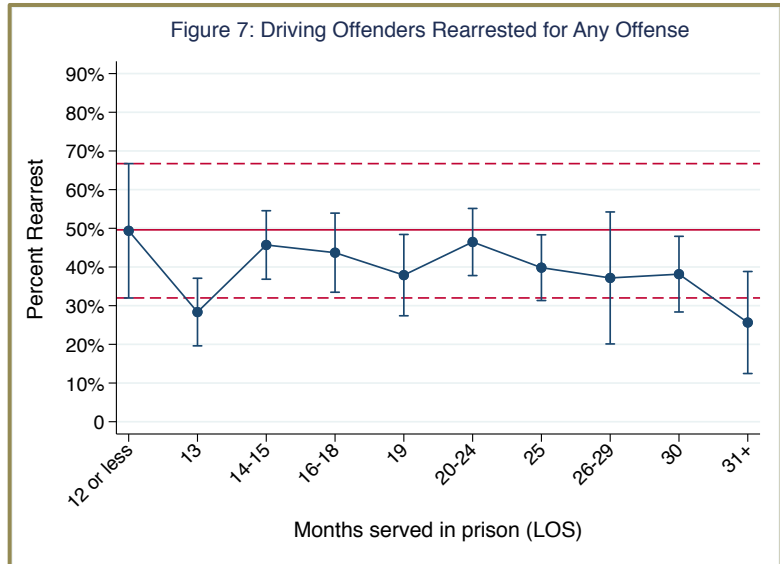
Rearrest.

Results indicate that the 12 or less group's rate of recidivism is 49.4%. There is considerable variation in this analysis with our projected band of recidivism being rather large and ranging between 32% and 67% for the baseline. While those serving 13 months had a distinctly lower 28.4% likelihood of rearrest, due to the high level of variability in rearrest within the groups this large difference for diving offenses was not significant. No effects were detected for specific rearrest types presented in Appendix A.

Reconviction.

The analyses reveal that holding all else constant, longer prison sentences have no effect on the likelihood of driving offenders being reconvicted in the first three years after release. Comparing between LOS categories, however, the results suggest that there is a sizable increase between 13 months and 16-18 months served. While those who serve 13 months in prison have approximately a 23% chance of being reconvicted, this likelihood increases to 36.6% for 14-15 months and then rises to a high of 41.4% for 16-18 months. While these changes were not significant due to high levels of variation, they represent relatively large changes.

Reincarceration.

Our findings reveal that LOS for driving offenses increases significantly between the 12 months and less group and the 20-24 group. The baseline likelihood of reincarceration for driving

Figure 7: Driving Offenders Rearrested for Any Offense

Figure 8: Driving Offenders Reconvicted for Any Offense

Figure 9: Driving Offenders Reincarcerated for Any Offense

offenders at 12 months or less is 10.6%. There is a steady rise in the likelihood of reincarceration that increases gradually over time with a final significant increase to 27.7% at 20-24 months. After two years in prison, the likelihood decreases back to around 10%. This in one of the few analyses with a clear trend. In this case it first trends up and then trends back down.

Drug Manufacturing and Distribution Offenses[4]

- **For drug manufacturing and distribution, the duration of time served in prison is associated with a *small decrease* in the likelihood of reconviction, but not arrest (including any subtype) or reincarceration.**
- **Longer prison sentences have *no effect* on how long drug manufacturing and distribution offenders remain in the community before recidivating.**

Figure 10: Drug Dist. Offenders Rearrested for Any Offense
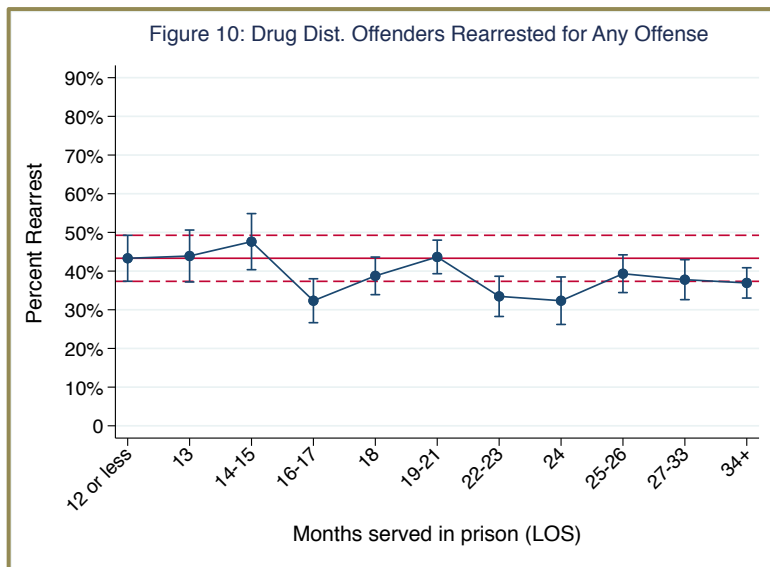
Rearrest.
Among the 3,036 individuals who were sentenced to prison for drug manufacturing and distribution offense, the average rearrested rate within three years was 39.1%. Results indicated that longer prison sentences were associated with a *small downward trend* in the likelihood of rearrest, though this effect was not significant. This small trend occurs between 14-15 months and 34 or more months. The likelihood of rearrest for any offense among drug manufacturing and distribution offenders at 12 months or less is 43.3%. This likelihood increases slightly to 47.6% at 14-15 months served, then drops to an average of 32.3% at 16-17 months where it hovers between 44% (19-21 months) and 32% (24 months) over the rest of the LOS groups. While no subsequent group is significantly different than the baseline, the small decrease between 14-15 months and 34 or more months groups is significant, though considerable fluctuation in the intervening groups.

While there is no significant effect across arrest types presented in Appendix A, there were two exceptions worth noting. First, the likelihood of drug manufacturing and distribution offenders committing another drug manufacturing and distribution related crime is rather minimal, averaging only 14%. The chance increases to 21% at 19-21 months but returns to the 14% thereafter. Second, and in contrast, the average likelihood of being rearrested for any JRI offense is approximately 36% for most LOS prior to 22 months. At two years served, this likelihood decreases to 25.5% before returning to around 30% and above thereafter.

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[4] Those sentenced to prison for drug manufacturing and distribution related crimes as their most serious offense consisted of 3,036 individuals (after trimming the data for common statistical support). LOS for drug manufacturing and distribution offenders is broken into 11 groups, ranging from 12 months or less to 34 months or more. The groups reflect the clustering of individuals with relatively even proportion across the groups.

Figure 11: Drug Dist. Offenders Reconvicted for Any Offense
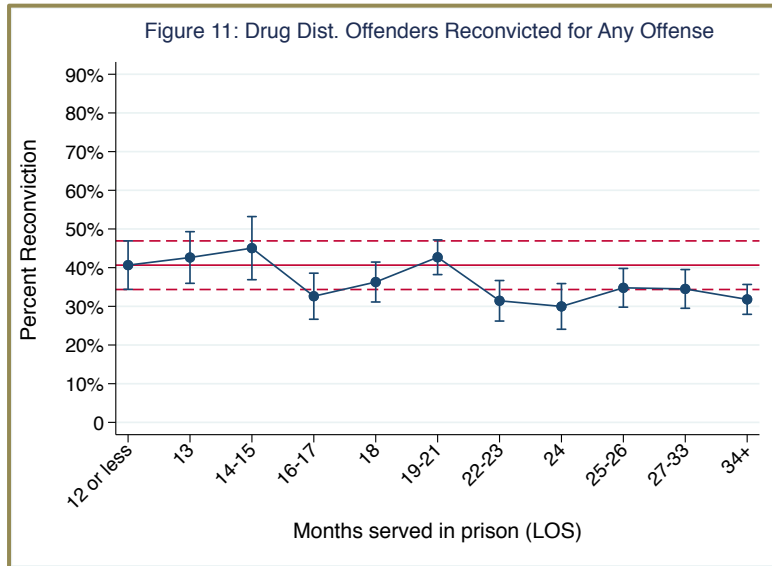
Reconviction.

By the end of the first three years after release, 42.6% of drug manufacturing and distribution offenders were reconvicted. Results indicated that the chance of reconviction had a small downward trend beginning in the 14-15 LOS grouping that was quite similar to the results for rearrest. While those who serve 14-15 months possessed the highest likelihood of reconvicted at 45%, the likelihood fluctuated, but generally trended downward to near 30% at 22-24 months served. From there the chance of reconviction remained relatively flat. This downward trend was not significant and did not significantly deviate from the baseline. Additionally, there was no impact on a time someone was in the community before being reconvicted.

Figure 12: Drug Dist. Offenders Reincarcerated for Any Offense
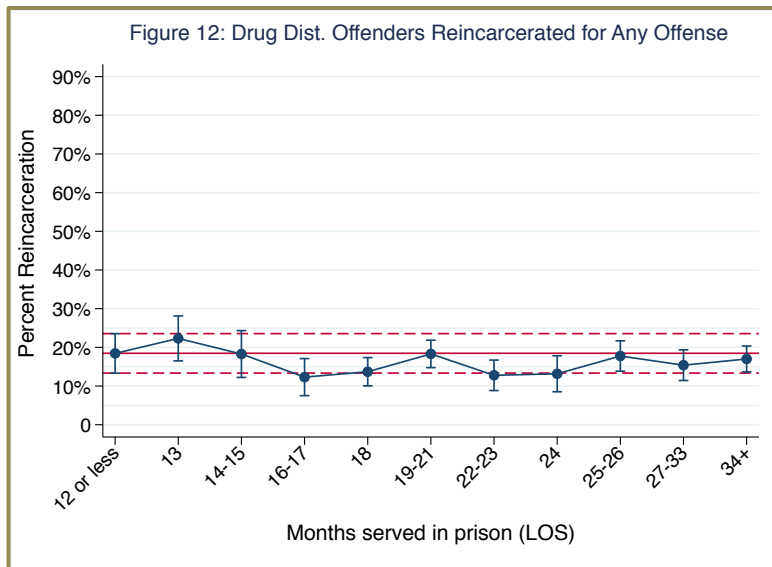
Reincarceration.

Our findings reveal that longer prison sentences have no effect on whether drug manufacturing and distribution offenders are reincarcerated. The likelihood of reincarceration at 12 months or less is 18.4%, and over the remaining LOS groups the likelihood hovers between 22.3% (13 months) and 12.3% (16-17 months), with no significant differences from 12 months or less baseline.

Drug Possession Offenses[5]

- **For offenders sentenced for possession, the duration of time served in prison has *no effect* on the likelihood to recidivate, generally.**
- **Longer prison sentences have *no effect* on how long drug possession offenders remain in the community before recidivating.**

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[5] Those sentenced to prison for drug possession as their most serious JRI offense consisted of 377 individuals (after trimming the data for common statistical support). Possession offenders is broken into four groups due to the limited range in LOS, ranging from six months or less to 24 months or more. Again, categories reflect the clustering of people under certain LOS and disperses a relatively even proportion across each category.

Figure 13: Drug Possession Offenders Rearrested for Any Offense
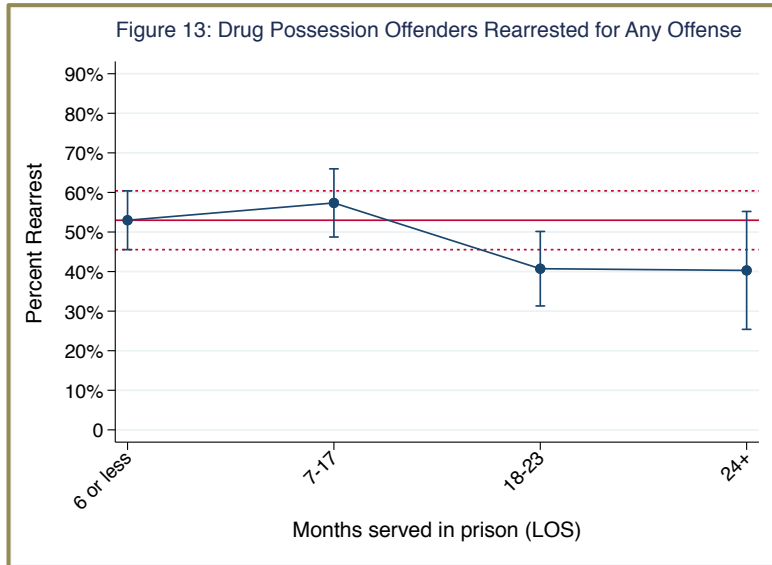
Rearrest.
Among the 377 individuals who were sentenced to prison for possession, 57.9% were rearrested within three years. The results indicated that LOS had no effect on overall likelihood or time in the community before rearrest. The baseline likelihood of rearrest for six months or less is 53%. It increases slightly to 57.3% at 7-17 months served, then drops to an average of 40% for sentences of 18 months or more. Both the rise and drop of likelihood is not significantly different from those serving six months or less, but the 17.3% drop between 7-17 and 18-23 months is rather large.

While there is no significant effect of LOS detected across the rearrest subtypes (see Appendix A), there were a few fluctuations worth noting. Lengths of stay of 7-17 months yielded an increase in the likelihood (26.6% chance) for rearrest on a property crime compared to those serving six months or less (15.7%). Similarly, serving 7-17 months increased the likelihood of rearrest for a new possession charge, from 25.6% (serving six months or less) to 38.4%. In contrast, those serving 24 months or more appears to decrease the likelihood of a possession rearrest by 11.5% and rearrest for any JRI crime by 16.5%, compared to six months or less. In all, analysis of rearrest indicates that there are rather mixed findings with both increases and decreases across LOS, but none of these are significant and no clear trends appear.

Figure 14: Drug Possession Offenders Reconvicted for Any Offense
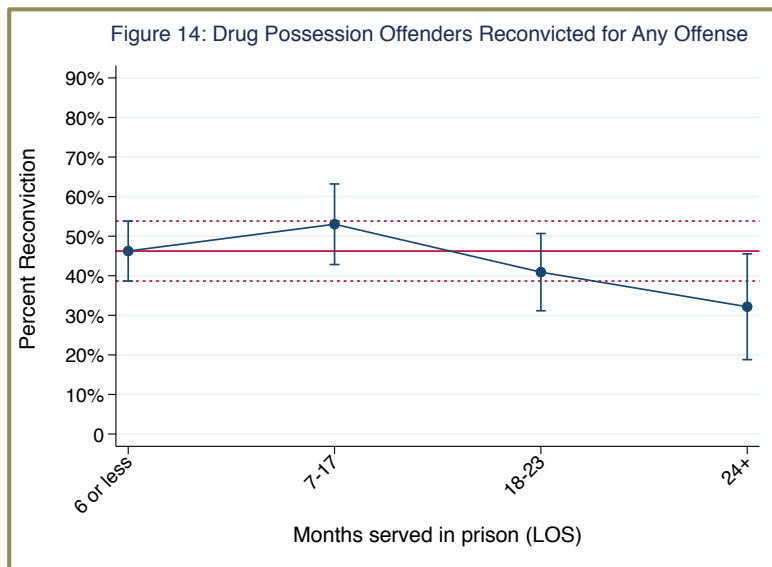
Reconviction.
By the end of the first three years after release, 54%% of possession offenders were reconvicted, though LOS has no significant impact on the general likelihood of reconviction. LOS also has no impact on how long someone can stay in the community before being reconvicted. The chance of reconviction does at first increases and then it trends down from a high of 53% (7-17 months) to a low 32% (24 months or more). While none of these are significantly different from serving six months or less or from each other, the 21% reduction is large. The non-significant results are likely the result of the fact that there is a lot of variation within the LOS groups (wide "Ts").

Figure 15: Drug Possession Offenders Reincarcerated for Any Offense
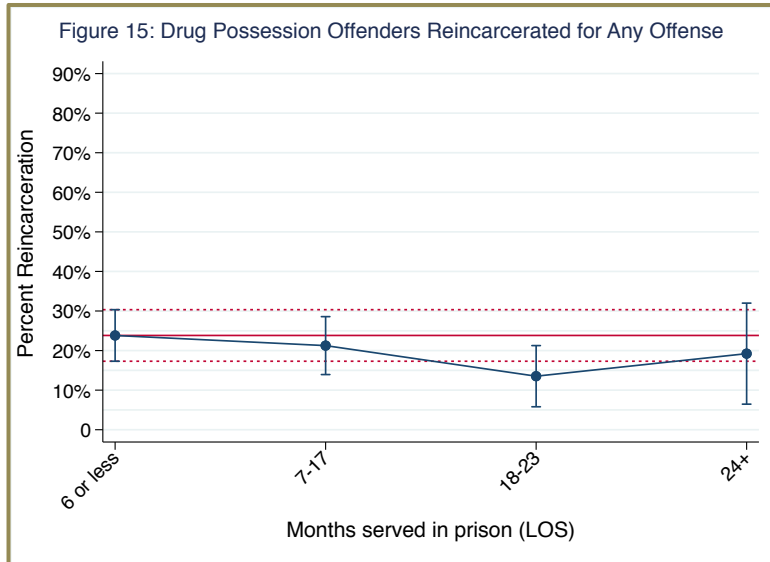
Reincarceration.
The rate of reincarceration is 25.5% within the first three years of release. Our findings reveal that longer prison sentences for those serving time for possession have no effect on the likelihood of reincarceration within three years. The average likelihood of reincarceration for those serving six months or less is 23.8%, and over the time served, the likelihood does not fluctuate significantly, remaining near 20%.

What is the sentence length that maximizes public safety and cost-effectiveness?

Balancing public safety, behavior change, and cost must consider…

- Prison stays longer than 12 months do not generally influence the likelihood of recidivism.

- At *best*, longer stays can *slightly* reduce the likelihood of some types of recidivism in select cases.

- Rarely, if ever, is there a benefit to imprisoning an offender for more than 24 months.

- 24 months appears to be a general point of diminishing returns for LOS.

- Cost effectiveness beyond 24 months is yet to be determined, although it is unlikely to achieve better outcomes than using probation or post-prison supervision focusing on effective reintegration programs.

Our analyses provide insight into areas where the state may focus sentencing practices to (1) maximize public safety, (2) maximize the impact of the punishment to change offender behavior, and (3) minimize the cost to state taxpayers.

Each of our analyses examines the impact of LOS in relation to the shortest LOS observed. In other words, the impact of LOS on recidivism is gauged by how the likelihood fluctuates compared to imprisonment in most cases of a year or less (some analyses used even shorter stays as the baseline). If the results show no differences from the shortest LOS, it suggests that the likelihood of recidivism would not change if the person were sentenced to longer stays. LOS groups that are significantly higher or lower can be compared between time-served intervals (e.g., 14-17 months compared to 18 months) to help identify points of good practice in sentencing. In some cases, we see some significant results between groups other than from the baseline, but these cases are the exception to the rule as LOS generally did not significantly vary enough over time to generate differences large enough to make statistical conclusions.

Ultimately, **regardless of the focus (overall analysis or breakdown by JRI crime type), on average, prison stays longer than 12 months do not influence the likelihood of recidivism across almost all measures of recidivism.** At best, LOS can *marginally* reduce the likelihood of some types of recidivism, typically a small reduction that is limited in length after a specific LOS for small number of crime types. The critical points to highlight for state officials are where the likelihood of recidivism deviates from the baseline (shortest stay) enough to warrant a recommendation. This section discusses the notable deviations worthy of consideration and are highlighted below:

➢ Points of shifting recidivism appear to occur within shorter stays than in longer stays. The commonly observed increases included 14-15 months, 24-25 months, and 35-36 months as opposed to changing occurring between 36 to 60 months.

➢ Shifts in the likelihood to recidivate tend to range between 8% and 15%, and often follow a slight to moderate decrease back close to original recidivism rates.

➢ Most fluctuations up or down are not significant, suggesting that they are not fluctuations we should put heavy consideration into.

➢ Although the fluctuations were typically rather small and not statistically significant, the overall size of the effect is important to consider. For instance, property offenders who served 31-35 months in prison possessed the lowest likelihood to recidivate at 44.3%. However, this is immediately followed by an increase to 62.4% for 36 months. Although, 62.4% is not statistically higher, the fact that the likelihood increased by 18% makes this a noteworthy point, particularly if the goal is to maintain public safety. In this case, the increase suggests a longer stay is detrimental. With more data, the model would be more powerful resulting in a likely decrease in the variation, and possibly a better estimate of the likelihood of recidivism. Thus, a more power model could and quite likely make this 18% difference significant.

➢ There were three LOS groups in which the likelihood to recidivate commonly *decreased* the most in our analyses. These are at 16-17 months, 22-23 months, and at 36 months. It is worth repeating that these decreases were most often small and not significant and not consistently present from analysis to analysis.

➢ Decreases in the likelihood to recidivate typically held one of two trends. It either followed a "spike effect" where the rate change sharply in a LOS group, but then returned to a percentage close to the baseline. The second observed outcome were "trend effects", where recidivism trended either up or down for a few groups to then flatten. For instance, in the overall analysis, the likelihood to be rearrested for any offense increased from approximately 50% (12 months or less) to 58% (14-15 months), only to drop again to 50% between 16-19 months. This pattern was repeated near the 22-23-month point. After remaining centered on the 12 month or less average for several months, nearing the 37-month point the likelihood begins to dip again below the average and trended down slightly for the remainder of the LOS groups. This represents one of the few models were both a "spike effect" and "trend effect" is present.

➢ Recidivism among driving offenses tends to reduce after 24 months. These drops were not significant, but for both rearrest and reincarceration the drop was rather large in both cases, at 22% and 18% respectively. The non-significant change was likely the result of large variation in the chance of recidivism within the LOS groups. Again, a more powerful model with more data would likely indicate significant results.

➢ Recidivism among drug possession also trended down for rearrest and reconviction, at 17% and 21% respectively, but not reincarceration. In both cases the trend is not significant. This was the crime group with the least number of individuals, and this may have contributed to the non-significant results.

Some Limitations of the Analysis

With all studies there are limitations and caveats that are important to recognize and consider. Below we outline a few of the most important limitations. While these limitations certainly place the analysis within a specific context and place some constraints on how impactful the conclusions can be, we believe the results are sound and have substantial policy impacts regardless of these limitations.

➢ One of the most important limitation is that the analysis focuses on individuals released from prison having been convicted of *only* (i.e. highest offenses is a JRI offense) JRI offenses. These are predominately non-violent and non-sex crimes. The findings in the report should not be generalized to offenders convicted of a non-JRI offense.

➢ The analysis *only* assesses individuals who had served time in an ODOC facility. We are not able to assess recidivism for JRI offenders who are diverted from ODOC altogether. For example, JRI programs like MCJRP in Multnomah County aims to divert individuals from custody altogether. These individuals would then not be part of our sample.

➢ Our analysis was limited to recidivism with a 3-year follow-up. Recidivism rates are likely to be different if the results were extended beyond three years.

➢ While the propensity score system allows us to simulate an RCT when we would otherwise be unable to conduct a true RCT, it is not a perfect analogy. We utilize data over an extended period. Important changes in programing and laws may impact individual recidivism. While are models are matching individuals at a high rate between 75% to 85% across the different models, there is some level of imperfection that creates a small amount of uncertainty in the models. It is our opinion that this uncertainty is well within the acceptable levels common in social science research and does not undermine the analysis.

Implications of the Analysis

Considerations from Overall Findings.
Findings from our analysis show that the length of time in prison for JRI offenses, accounting for several other influences, has little to no effect on the likelihood to recidivate across most models. Specifically, in 84 of the 90 models we could find no significantly discernable impact. These

findings are consistent with that found in the literature on sentencing and the effectiveness of prison to control crime (Austin & Fabelo, 2004; Loughran et al., 2009; Meade et al., 2013; Rydberg & Clark, 2016; Stenius, 2005; Zimring & Hawkins, 1997). Below we will discuss some impacts and considerations of our findings on public policy. While considering these policies, it is impotent to view all recommendations within the following two considerations.

> ➢ First, being sentenced to prison impacts some people more than others, both positively and negatively. Due to the fact that these analyses incorporate everyone in the data (e.g., overall) or only focuses on the most recent and serious offense for which the person was sentenced (i.e., property versus drug offenders), it is difficult to say for whom it changes behavior more, without further analyses.

> ➢ Second, all increased deviations are points of caution for which prison can increase the likelihood for someone to reoffend. Similarly, any points of decreased likelihood are a sign of possible promise in reducing recidivism. These patterns of deviation often returned to the average indicating a lack of a true identifiable trend in most cases. Any change to the current LOS should be further analyzed to test if the changes do indeed have little impact on public safety as theorized in this report.

For the state to balance public safety, offender reintegration, and cost within the Justice Reinvestment Initiative, policymakers should consider six points supported by our results.

1) Rarely, if ever, is there benefit to imprisoning an JRI offenders for more than 24 months.

2) The returns on LOS increasingly diminish after two years (24 months).

3) Although there is some decrease in the likelihood to reoffend for longer LOS, especially among driving and possession offenders, there is no evidence to suggest this is a better outcome than would be achieved using probation or post-prison supervision, especially considering the cost of incarceration.

4) The current sentencing system is producing largely flat recidivism. This does suggest that Oregon's LOS for JRI offenses is not increasing recidivism or producing negative outcomes and thus appreciably reducing public safety.

5) On the other hand, the system is largely not reducing recidivism or the time in the community before additional contact with the system. In this case, Oregon's system is not producing positive reductions for longer LOS.

6) Overall the analysis suggests that shortening length of stay either through shorter initial sentences or some form of early release would not likely result in higher recidivism.

Policy Implications.
The PSU team was tasked with assessing the impacts of LOS on recidivism with the analysis that would help *maximizes public safety and cost-effectiveness,* which are core tenants of JRI. With that in mind, we have included a few policy recommendations that the research team sees as evident from the results.

> ➢ It appears that a reduction in time-served, either through shorter sentences, earned time, early release, or other means would not appreciably increase recidivism and would likely benefit the State of Oregon, particularly financially, while maintaining public safety at close to current levels.

> ➢ While most JRI programs focus on diverting individuals from prison altogether or by providing some transitional services, the results indicate that shorter prison stays would likely maximize public safety while still reducing costs if it is coupled with targeted, evidence-based expansion in JRI programs.

> ➢ Cost savings from the reduction in the use of prisons could be substantial and the state should look to redirect those savings into community corrections. Community corrections efforts should focus on the Principles of Effective Intervention, which states that individuals with the highest risk to recidivate are supplied with the greatest degree of evidence-based services (e.g., cognitive behavioral treatment) and supervision (e.g., random drug tests when applicable, and frequent check-ins).

> ➢ Research consistently shows that the reentry process is fraught with barriers. Offender services (e.g., job/vocational training, childcare, continued programming targeting criminogenic attitudes, drug relapse prevention, and mentorship, to name a few) should be available for those who opt-in (e.g., the transition center in Clackamas County), and for those who are mandated.

> ➢ Redirect resources and cost savings to reduce the crime rates in general, beyond just reducing recidivism. This is foundational point of justice reinvestment across the nation. A focus on reinvesting savings from reduced incarceration into protective or preventive factors in the community, such as strengthening public education, increasing the number (and pay) of low-skilled jobs available, and/or addressing the causes and consequences of homelessness, drug addiction, severe mental health problems, and dual diagnoses could reduce the need for prisons.

Recommended Future Research.
> ➢ The analysis reveals that more than 50% offenders will be rearrested within three years of release. Extending the analysis beyond three years indicates that recidivism increases even more with substantial points of drop-off. We recommend looking into longer assessments of recidivism.

> ➢ An analysis that also includes those diverted to prison and assessment of the impact of post-release services or other resources that decrease contact with the justice system would maximize the ability to identify the best possible evidence-based practices.

> ➢ We further recommend that this analysis be extended to identify a series of offender typologies connected to differential recidivism within similar LOS. It is likely length of stay varies across different types of offenders. Effectively and consistently identifying the types can help JRI programs create targeted solutions that can maximize public safety.

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