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# Realignment and Recidivism in California

## Technical Appendix

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## Appendix A. Data, Methodology, and Findings

This study draws on data collected through the BSCC–PPIC Multi-County Study (MCS) to analyze the effects of California’s public safety realignment on the recidivism outcomes of two key groups of offenders who were the focus of the reform: individuals released from prison to county probation supervision instead of state parole (the PRCS group) and formerly prison-eligible offenders required to serve time in local jail rather than prison (the 1170(h) group). We use a pre-post realignment design to leverage the swift passage and implementation of this natural policy experiment to identify treatment effects. Drawing on a rich set of individual-level characteristics, including demographics and criminal histories, we use propensity score matching to construct a pre-realignment control group for each of the post-realignment treatment groups. We then use a regression model to adjust for any remaining differences in characteristics between the treatment and control groups and to estimate the effects of realignment on the recidivism rates over one- and two-year recidivism windows. We adjust rearrest and reconviction rates to account for changes in revocations to custody, which were frequently used to return individuals to prison in the pre-realignment period.

### Data

The MCS is an effort to collect, standardize, and integrate individual-level data for populations moving through county and state correctional systems. Currently, two state agencies—the California Department of Corrections and Rehabilitation (CDCR) and the California Department of Justice (DOJ)—have contributed data to this effort. CDCR has provided data on individuals released from the state prison system prior to and following realignment, and DOJ has provided statewide arrest and conviction records. In addition, we have partnered with 12 counties, which comprise three-fifths of the state population, to integrate local data for individuals moving through jail and probation systems. These partner counties include: Alameda, Contra Costa, Humboldt, Fresno, Kern, Los Angeles, Orange, Sacramento, San Bernardino, San Francisco, Shasta, and Stanislaus. This study evaluates recidivism outcomes for cohorts released from prison or jail during the first two years of realignment. The first-year cohort was released between October 2011 and September 2012 and the second-year cohort was released between October 2012 and September 2013.

### Recidivism: Rearrest and Reconviction Measures

Recidivism outcomes are constructed from DOJ criminal history data. We examine rearrest and reconviction rates, adjusted for revocations to prison or jail custody. These adjusted measures are particularly important when comparing recidivism outcomes of post-realignment groups to those of pre-realignment groups. Our goal is to capture changes in underlying offender behavior. However, realignment also changed the incentives faced by criminal justice systems. Prior to realignment, parolees could be taken into custody by parole agents for supervision violations and placed into a CDCR facility without registering a formal arrest. Parolees were also frequently returned to prison to serve a revocation term without a conviction for a new crime. After realignment, most individuals released from prison can only be returned to state custody if they are formally convicted of a prison-eligible felony. We construct these adjusted measures of rearrest and reconviction to account for systems’ shifts toward formal arrests and convictions in the post-realignment period. We also present findings using unadjusted rearrest and reconviction rates.

Given the window required to isolate jail revocations, we are only able to construct these adjusted measures for the first- and second-year post-realignment release cohorts.<sup>1</sup> In addition, we only observe jail revocations within the 12 MCS counties. While these counties represent three-fifths of the state's population and revocations are likely to occur within the same county as release, revocations that occur in other counties will not be captured by this measure.

We focus our analysis on realigned populations released from custody to or within the MCS counties. The treatment populations are described below. Table A1 shows the distribution of individuals in these groups across the MCS counties. Nearly one-half of the PRCS and 1170(h) groups are released to or within Los Angeles County. Statewide, Los Angeles County represents about one-third or more of the state's criminal justice population, depending on the measure used. Therefore, understanding how realignment is affecting recidivism outcomes in Los Angeles County is an important component to understanding the statewide effects of realignment on recidivism. However, Los Angeles County is also a unique. Considering the sheer number of offenders who were realigned, Los Angeles County also experienced the greatest impact of realignment. Like any county, Los Angeles may not represent the norm for the full MCS county group. But, unlike any county, recidivism outcomes in Los Angeles will have a highly disproportionate impact on the overall findings because offenders released to or within the county represent such a large portion of the MCS group. Therefore, we estimate findings for the PRCS and 1170(h) groups with and without offenders released to Los Angeles County.

## The PRCS Group

The post-release community supervision (PRCS) treatment group includes individuals released from prison custody to county probation supervision between October 2011 and September 2013, or during the first two years of realignment. Realignment legislation requires that for individuals to be released on PRCS rather than traditional parole, they must have current offenses that are non-violent and non-serious, as well as meet additional criteria.<sup>2</sup> CDCR identified those individuals in their system who were released on PRCS during the post-realignment period.<sup>3</sup> Using CDCR releases in the two years prior to realignment, we construct a pre-realignment comparison group that is similar in characteristics to the post-realignment PRCS group using a propensity score matching technique. While the pre- and post-realignment groups are not identical, their characteristics are very similar (see Table 2 and related discussion in the main body of the report).

## The 1170(h) Group

Realignment created a set of offenses – 1170(h) offenses – for which individuals could no longer be sentenced to prison, no matter how long their incarceration term. The 1170(h) treatment group includes individuals released from jail terms for 1170(h) offenses within the MCS counties during the first two years following the implementation of realignment. These individuals must have also been convicted during the realignment period (October 2011 or later) to be eligible to serve their sentences in local jail rather than state prison. Prior to realignment, individuals sentenced to more than one year in custody were generally sent to prison to serve those sentences. If individuals were sentenced to less than one year, they served their time in local jail.

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<sup>1</sup> We are able to construct one-year recidivism rates using the first- and second-year post-realignment release cohorts, but we are limited to the first-year release cohort when constructing two-year recidivism rates.

<sup>2</sup> In addition, offenders cannot be released to PRCS if: they are released from life terms or are three-strikes offenders; they are high-risk sex offenders or mentally disordered offenders; or they are offenders who on parole prior to the implementation of realignment. For more information, see: CDCR. 2011 Public Safety Realignment, *Fact Sheet*. December 2013: <http://www.cdcr.ca.gov/realignment/docs/realignment-fact-sheet.pdf>

<sup>3</sup> Given that we do not have access to the complete information CDCR used to determine eligibility for PRCS release, we defer to their indicator and do not attempt to construct the PRCS treatment group based on offender characteristics.

The construction of the 1170(h) treatment group is less straightforward than the construction of the PRCS group. To identify the effect of realignment on recidivism, we would like to isolate those individuals convicted for 1170(h)-eligible offenses and serving jail terms who would have otherwise gone to prison prior to realignment. Therefore, we have limited the 1170(h) treatment group to those who received a jail sentence of one year or more for an 1170(h) conviction, had a corresponding jail spell in an MCS county jail, and served at least 180 days in jail during that spell.<sup>4</sup> Good-time credits for jail inmates may allow offenders sentenced to one year in jail to be released after six months of time served.<sup>5</sup>

Given that our purpose in constructing these 1170(h) groups is to analyze recidivism, our estimates are not directly comparable to conviction or caseload counts for individuals receiving 1170(h) sentences over time. First, individuals enter our 1170(h) recidivism cohort when they are released from jail custody. Any subsequent 1170(h) convictions are counted as recidivism and, therefore, not included in our 1170(h) count. Second, we limited our 1170(h) groups to those who were convicted and released from custody within our two-year study window (releases from jail custody between October 2011 and September 2013). Third, we imposed sentence length and jail stay restrictions, as described above. Finally, we were not able to include 1170(h) convictions where jail sentences or probation terms were served outside the MCS counties. In addition, it is important to note that the data sources we worked with were sometimes incomplete or provided conflicting information. Where we had conflicting information, we erred on the side of excluding uncertain cases from the 1170(h) groups. Table 3 in the main body of the report summarizes the characteristics of the MCS 1170(h) treatment group and the matched pre-realignment control group.

### **1170(h) Split- vs. Straight-Sentenced**

We also construct control groups from the pre-realignment population and estimate regression-adjusted differences in recidivism outcomes separately for the 1170(h) split- and straight-sentenced populations. Tables A1 and A2 summarize the characteristics of these populations and their matched pre-realignment control groups. As is the case for the 1170(h) group as a whole, the straight- and split-sentenced groups represent demographic subsets of the pre-realignment prison-release group. The straight-sentenced group is less likely to be male, African American, or Native American, and more likely to be white or Asian American. The straight-sentenced group is also composed of less serious, but more frequent offenders. We use a propensity score match to limit the pre-realignment group to those who are most similar to the straight-sentenced group, resulting in a pre-realignment control group that has similar demographic and criminal history characteristics to the post-realignment treatment group.

The 1170(h) split-sentenced treatment group is small, including only 1,737 individuals, because split sentencing was less common in the early years of realignment, as well as because we restricted the treatment population to include only offenders who would have likely gone to prison prior to realignment. Prior to matching, the split-sentenced group – like the straight-sentenced group – more likely to be male, more likely to be white or Asian American, and less likely to be African American or Latino when compared to the broader pre-realignment group. The split-sentenced are also likely to have less serious but more frequent criminal justice contacts. We use the same propensity score matching process to construct a control group for the split-sentence population. We then use a traditional regression approach to adjust for differences in demographic and criminal history characteristics between the control and treatment groups.

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<sup>4</sup> An exception to the length of stay requirement was made for those released from jail due to capacity constraints.

<sup>5</sup> Note, using this methodology results in treatment groups that include a very small number of offenders with prior convictions for serious or violent charges.

## Methodology and Findings

To assess the effects of realignment on recidivism for each realignment group, we leverage the swift passage and implementation of realignment to identify the effects of this policy change on recidivism outcomes. We use a pre-post design, drawing on offender groups released from custody prior to and following realignment and followed for up to two years post-release. Given that our treatment groups represent subsets of the prison-release population, we need to adjust for differences in characteristics between the wider pre-realignment prison-release group and the post-realignment treatment groups examined here. In this analysis, we have a two-stage approach to making these adjustments. First, we use propensity score matching to identify those individuals from the pre-realignment population that were most similar, in terms of their likelihood of treatment given their characteristics, to those in each of the post-realignment groups. After matching, we then apply regression analysis to address any remaining differences between each realignment group and its corresponding control group. This strategy improves on the traditional approach by reducing reliance on the regression model to adjust for differences in observable characteristics. While we leverage the realignment policy experiment and draw on a rich set of individual-level characteristics, it is possible that there are unobserved differences between the treatment and control groups and that these differences could play a role in the estimated differences in recidivism outcomes.

The regression models are consistent in their structure across analyses. We estimate the effects of realignment on rearrest and reconviction rates over different recidivism windows and for the treatment groups. The models include an indicator for the treatment population, along with demographic and criminal history control characteristics (as described in Tables 1 and 2 in the main report and Tables A2 and A3 in this Technical Appendix). These control characteristics vary somewhat based on the observable characteristics available for each treatment group. Each model is tested with and without county fixed effects, and the estimates are very similar in all cases. The main findings are summarized in the body of the report. Here we present additional findings.

Table A4 presents estimates of the effects of realignment on recidivism, as presented in Figures 2 and 5, as well as in the discussion and footnotes in the main report. These estimates are based on recidivism measures that are adjusted for changes over time in the use of revocations.

Table A5 presents alternative estimates of the effects of realignment on recidivism, using only formal arrest and recidivism rates unadjusted for revocations. As discussed in the main report, these measures likely conflate changes in offender behavior with changes in criminal justice processes. As shown, the use of rearrest and reconviction measures that do not adjust for the shift from revocations to formal arrests and convictions would lead us to conclude that recidivism rates increased substantially under realignment.

**TABLE A1**

Distribution of realigned groups across MCS counties

	PRCS	1170(h)	Straight 1170(h)	Split 1170(h)
Alameda	2.17%	1.70%	1.87%	0.58%
Contra Costa	1.45%	1.16%	0.82%	3.68%
Fresno	6.03%	6.45%	5.76%	10.59%
Humboldt	0.72%	0.33%	0.19%	1.27%
Kern	6.88%	11.67%	11.97%	9.33%
Los Angeles	47.66%	47.71%	53.84%	11.05%
Orange	8.51%	6.87%	4.23%	23.37%
Sacramento	6.44%	3.83%	3.14%	8.87%
San Bernardino	14.31%	15.50%	14.75%	18.08%
San Francisco	1.18%	1.24%	1.33%	0.69%
Shasta	1.57%	0.53%	0.56%	0.23%
Stanislaus	3.07%	3.00%	1.56%	12.26%
<i>Number of observations</i>	<i>26,261</i>	<i>13,435</i>	<i>11,698</i>	<i>1,737</i>

SOURCES: Multi-County Study (MCS) data.

NOTES: The PRCS group is identified by CDCR. The 1170(h) group is constructed to capture only those felons sentenced locally that would likely have been sent to prison prior to realignment.

**TABLE A2**

Descriptive comparison for straight 1170(h) releases

	Pre-realignment releases	Matched pre-realignment control group	Straight 1170(h)
Age	36.15	34.64	34.54
Male	88.86%	83.84%	84.21%
White	23.28%	28.08%	28.30%
African American	28.37%	23.86%	23.58%
Latino	43.52%	43.92%	44.15%
Asian American	0.96%	1.67%	1.71%
Native American	0.62%	0.23%	0.19%
Other Race	3.25%	2.24%	2.08%
Number of prior serious convictions	0.23	0.11	0.10
Number of prior violent convictions	0.07	0.07	0.07
Length of stay in jail or prison	636.87	244.28	234.85
Age at first conviction	23.26	23.05	22.93
Number of past arrests	15.11	18.46	19.04
Number of past felony arrests	9.39	10.99	11.27
Number of past convictions	5.92	7.01	7.24
Number of past felony convictions	3.19	3.73	3.90
Crime against persons	27.84%	3.25%	2.68%
Burglary	11.30%	15.73%	16.19%
Grand Theft	3.60%	4.89%	4.83%
Petty Theft	4.23%	4.96%	4.72%
Vehicle Theft	4.38%	8.76%	8.64%
Other property offense	7.42%	15.25%	15.51%
Controlled substance sales, possession, manufacturing	26.44%	34.72%	35.95%
Marijuana substance sales, possession, manufacturing	2.19%	2.68%	2.74%
DUI	3.05%	3.46%	3.27%
Weapon possession	5.92%	3.41%	3.12%
Other offense	3.62%	2.88%	2.35%
<i>Number of observations</i>	<i>84,577</i>	<i>9,619</i>	<i>11,698</i>

SOURCES: BSCC–PPIC Multi-County Study data.

NOTES: We limit the analysis to first releases in the pre- and post-realignment periods. Therefore, these counts will not correspond perfectly with the number of prison releases in any period or the counts of 1170(h) convictions, as some individuals are incarcerated for multiple prison or jail spells. In addition, for the analysis of the effects of realignment on recidivism, we further limit the 1170(h) group to those likely to have been sent to prison if they had been convicted prior to realignment.

**TABLE A3**

Descriptive comparison for split 1170(h) releases

	Pre-realignment releases	Matched pre-realignment control group	Split 1170(h)
Age	36.15	34.74	34.78
Male	88.86%	82.65%	83.53%
White	23.28%	36.66%	39.26%
African American	28.37%	14.57%	14.22%
Latino	43.52%	42.33%	41.16%
Asian American	0.96%	3.22%	2.71%
Native American	0.62%	0.57%	0.40%
Other Race	3.25%	2.65%	2.25%
Number of prior serious convictions	0.23	0.07	0.07
Number of prior violent convictions	0.07	0.01	0.01
Length of stay in jail or prison	636.87	221.79	221.76
Age at first conviction	23.26	22.82	22.98
Number of past arrests	15.11	18.99	19.27
Number of past felony arrests	9.39	11.44	11.74
Number of past convictions	5.92	7.24	7.39
Number of past felony convictions	3.19	4.08	4.23
Crime against persons	27.84%	2.21%	1.78%
Burglary	11.30%	15.33%	14.85%
Grand Theft	3.60%	4.35%	3.97%
Petty Theft	4.23%	1.96%	1.73%
Vehicle Theft	4.38%	9.72%	8.98%
Other property offense	7.42%	20.00%	21.53%
Controlled substance sales, possession, manufacturing	26.44%	37.79%	37.59%
Marijuana substance sales, possession, manufacturing	2.19%	1.96%	2.36%
DUI	3.05%	2.71%	3.11%
Weapon possession	5.92%	2.52%	2.36%
Other offense	3.62%	1.45%	1.73%
<i>Number of observations</i>	<i>84,577</i>	<i>1,585</i>	<i>1,737</i>

SOURCES: BSCC–PPIC Multi-County Study data.

NOTES: We limit the analysis to first releases in the pre- and post-realignment periods. Therefore, these counts will not correspond perfectly with the number of prison releases in any period or the counts of 1170(h) convictions, as some individuals are incarcerated for multiple prison or jail spells. In addition, for the analysis of the effects of realignment on recidivism, we further limit the 1170(h) group to those likely to have been sent to prison if they had been convicted prior to realignment.

**TABLE A4**

Coefficient estimates of treatment effects for each post-realignment group, measures adjusted for revocations

	Rearrest, one-year	Rearrest, two-year	Reconviction, one-year	Reconviction, two-year
PRCS, including all MCS counties	5.2***	2.6***	1.8***	2.4***
PRCS, excluding Los Angeles county	5.4***	2.4***	-5.7***	-2.2***
1170(h), including all MCS counties	0.1	2.3***	-3.8***	-2.0***
1170(h), excluding Los Angeles county	-1.4***	-0.7	-10.1***	-7.6***
1170(h), only straight-sentenced	-1.4**	0.8	-4.1***	-3.0***
1170(h), only split-sentenced	7.2***	7.8***	-5.4***	-3.4

SOURCES: Multi-County Study: demographic characteristics and criminal history data were provided by the California Department of Corrections and Rehabilitation (CDCR), the California Department of Justice (DOJ), and the 12 MCS county sheriff and probation departments.

NOTES: These estimates are for rearrest and reconviction outcomes, adjusted for changes in revocations over time. Findings presented in the main report rely on these adjusted measures of recidivism. Each cell represents the coefficient estimate of the difference in recidivism outcomes for the referenced post-realignment treatment group when compared with the pre-realignment matched control group. In each case, we use a regression model to adjust for remaining, post-matching differences in the demographic and criminal history characteristics. Coefficient estimates should be interpreted as percentage point differences between the treatment and control group. \*\*\*p<.01, \*\*p<.05, \*p<.10.

**TABLE A5**

Coefficient estimates of treatment effects for each post-realignment group, measures not adjusted for revocations

	Rearrest, one-year	Rearrest, two-year	Reconviction, one-year	Reconviction, two-year
PRCS, including all MCS counties	7.1***	3.8***	5.7***	7.0***
PRCS, excluding Los Angeles county	8.6***	4.7***	6.9***	8.4***
1170(h), including all MCS counties	2.1***	3.5***	7.6***	7.1***
1170(h), excluding Los Angeles county	2.0**	1.2	7.2***	5.7***
1170(h), only straight-sentenced	0.5	2.1***	0.7***	6.3***
1170(h), only split-sentenced	9.8***	8.9***	9.6***	5.7**

SOURCES: Multi-County Study: demographic characteristics and criminal history data were provided by the California Department of Corrections and Rehabilitation (CDCR), the California Department of Justice (DOJ), and the 12 MCS county sheriff and probation departments.

NOTES: These estimates are for formal rearrest and reconviction outcomes, which are not adjusted for differences in the use of revocations over time. Each cell represents the coefficient estimate of the difference in recidivism outcomes for the referenced post-realignment treatment group when compared with the pre-realignment matched control group. In each case, we use a regression model to adjust for remaining, post-matching differences in the demographic and criminal history characteristics. Coefficient estimates should be interpreted as percentage point differences between the treatment and control group. \*\*\*p<.01, \*\*p<.05, \*p<.10.



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