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THE IMPACTS OF PAROLE SUPERVISION

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ABSTRACT

We study a reform to parole supervision that reduced supervision terms for some Illinois parolees from 12 to 6 months. Using difference-in-differences, we find that the reform reduced prison re-entry rates. Sharp drops in technical revocation rates drove these reductions. Rates of prison re-admissions linked to new crimes were unchanged. Cook County court records confirm these findings. The reform reduced parole costs without creating measurable harms to public safety. We develop a conceptual framework that shows how shorter terms of supervision could reduce rates of criminal activity, and we show how this framework informs on-going debates about parole supervision policies.

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At the end of 2021, roughly 1 in 69 adults in the US were under some form of community supervision. Almost three million persons were on probation, and just over 800,000 were on parole.[1] Convicted offenders assigned to terms of probation or parole serve all or part of their prison sentences in the community under the supervision of probation or parole officers. Probation supervision often serves as an alternative to incarceration. Parole supervision shortens the time that sentenced offenders spend in prison by allowing them to serve the remaining portions of their sentences in their communities.

Carson and Kluckow (2022) report that, in 2022, more than 112,000 sentenced prisoners entered a state or federal prison directly from some form of community supervision.[2] However, more than half of persons who enter prison from parole and just under half of those who enter prison from probation have not been charged with a new crime. Existing research indicates that more than 60,000 of the 112,000 persons who entered prison in 2022 from community supervision had not committed a crime while under supervision but instead had violated a rule that governed the conditions of their supervision.[3]

These types of prison admissions are known as technical revocations of parole or probation, and they occur for many reasons. Persons under community supervision face the possibility of revocation when they fail to pay fines, fail to secure suitable housing, fail to complete rehabilitation programs, or fail to comply with any number of conditions that the state imposes on their supervision.

We study a recent reform to the supervision of released prisoners in Illinois. Sentences in Illinois are determinate. The length of each prisoner's incarceration term is almost completely determined by the details of his sentence, and no parole board has the power to release a prisoner early based on his prospects for rehabilitation or good behavior. Further, each prisoner must serve a term of Mandatory Supervised Release (MSR) when he leaves prison, and the length of each prisoner's MSR term is determined by the class of the crime he committed. Legally, MSR terms are not parole terms because MSR begins when a prisoner has completed serving a determinate sentence. However, for ease of exposition, we will use the term parolees when discussing persons under MSR supervision.

In Illinois, felony crimes fall into one of five classes: X, 1, 2, 3, and 4. Class X is the most serious. Class 4 is the least serious. In 2021, Illinois implemented the SAFE-T Act, which halved the length of supervision terms for most released prisoners. Here, we study the impacts of an amendment to this reform that targeted only class 3 and 4 prisoners. Before December 6, 2022, the state assigned almost all class 3 and 4

[1] See Kaeble (2023), Table 1 and Table 4.

[2] See Table 8 in Carson and Kluckow (2022). The term "sentenced prisoner" refers to a person who is entering prison or entered prison before being paroled because a court sentenced him to at least 1 year in prison.

[3] Bushway et al. (2025) estimate that roughly 87 percent of parole revocations are technical. The 2019 report *Confined and Costly*, released by the Council of State Governments, reports that just less than two-thirds of parole revocations are technical and just less than one-half of probation revocations are technical.

prisoners who left prison to 1 year of supervision, but from this day forward, the state assigned similar prisoners to 6 months of supervision. In contrast, during the 6 month periods before and after December 6, 2022, the state assigned many class 1 and 2 prisoners who left prison to 1 year of supervision.

We study the impacts of this amendment to the SAFE-T Act on post-release outcomes among class 3 and 4 prisoners using a standard difference-in-differences design that employs class 1 and 2 prisoners as our control group. Among prisoners released between June 6, 2022 and June 5, 2023, we study the first return to prison that we observe for each parolee, and we code each initial return to prison as either a technical revocation or new-crime admission to prison.

Among class 3 and 4 parolees, the December 6, 2022 amendment reduced typical terms of MSR supervision from 12 months to 6 months, and this change reduced prison re-entry rates. Over horizons of 11 to 15 months, the reform reduced reincarceration rates by at least 10 percentage points or 45 percent of the 1-year return rate at baseline. Reductions in technical revocation rates drove these results. The reform had little impact on the incidence of new-crime admissions to prison.

We also analyze a subsample of released offenders from Cook County. For these persons, we are able to see both their court records and their prison records. This allows us to find cases where the court convicted a recently released offender but sentenced the offender to probation and did not return him to prison. In this sample, we again find that the reform generated large reductions in rates of prison re-entry primarily because the reform produced sharp drops in technical revocation rates. Further, we find no evidence that the reform increased crime rates among parolees.

Given our estimates of the impacts of the SAFE-T Act amendment on cumulative revocations and cumulative recidivism among returning citizens, we present a conceptual framework that traces out how the arrival rates of not only revocations but also new criminal charges should vary as a function of the difference between the length of scheduled parole supervision and the time since a returning citizen left prison. We then present results from a competing risks model that provide support for key implications of this framework. We also use these competing risk results to simulate the impacts of setting supervision term lengths to 12, 6, or 3 months, and we conclude that IL could likely reduce the length of MSR terms further without harming public safety.

After we present results our empirical results, we discuss an important principle derived from our conceptual framework. Policies that make technical revocations more likely undermine incentives for parolees to desist from criminal activity. A parolee who believes that he is more likely to head back to prison on technical grounds also believes that he has less to gain from avoiding a new criminal charge.

This principle shapes how we interpret our empirical results, and it also informs on-going policy debates concerning the use of technical revocations. Holding constant the rules that govern technical revocations, longer terms of supervision make re-incarceration on technical grounds more likely and thus reduce the expected gains from avoiding new criminal charges. Likewise, holding the length of supervision constant, policies that make technical revocations more likely also reduce the expected benefits from avoiding new charges.

In section 8, we discuss reform efforts that seek to restrict the use of prison time as a punishment for technical violations of parole conditions. These reforms limit the ability of parole officials to preemptively incapacitate offenders that they deem risky, but as we discuss in the next section, several evaluations of previous reform efforts find that recidivism rates change little when new policies reduce the number of technical revocations. Our conceptual framework and our empirical results highlight the possibility that limiting the risk of technical revocation also enhances incentives for returning citizens to desist from criminal activity.

The next section reviews related research on parole supervision. In sections 2 and 3, we detail the implementation of the SAFE-T ACT and describe our main data set. Sections 4 through 7 present our main empirical results and the conceptual framework we use to understand their implications. In section 8, we discuss how our results may inform on-going debates over policies and practices that govern parole supervision in other jurisdictions. In our concluding section, we discuss the potential public savings that further reforms to parole supervision could generate.

1 Related Work

Unlike Illinois, most states in the US operate discretionary parole systems, and many existing studies examine the impacts of variation in time served in prison versus time served under parole supervision among sets of offenders who receive comparable initial prison sentences. See Arbour and Marchand (2025), Kuziemko (2013), Macdonald (2024), Meier et al. (2025), and Zapryanova (2020). These studies exploit rules that assign judges to cases, rules that assign parole board members to hearings, and the details of hearing and sentencing rules to isolate plausibly exogenous variation in the fraction of sentences that are served in prison versus on parole.[4]

As we note above, Illinois operates a determinate sentencing system with fixed terms of post-release supervision both before and after the reform we study. Thus, our paper contributes more directly to

[4] Lee (2023) examines the tradeoff between time in halfway houses versus standard parole supervision.

existing work that holds time served in prison constant and explores the consequences of policies that alter released prisoners' exposure to the risk of returning to prison as punishment for violations of supervision conditions.

Lofstrom and Raphael (2016) analyze a 2011 reform to parole supervision in California that was part of a broader effort to reduce prison overcrowding. The reform greatly restricted the ability of parole officials to send parolees back to prison as punishment for technical violations of parole rules[5] and also assigned low-level released offenders to local probation supervision rather than the state parole system. Following the reform, prison populations declined sharply in less than 1 year, but Lofstrom and Raphael (2016) find little evidence that crime rates increased.[6] The reform also generated differences among counties in their relative exposure to larger populations of released offenders, but Lofstrom and Raphael (2016) show that this variation predicts almost none of the contemporaneous county-level changes in crime rates.[7]

Sakoda (2023) analyzes a reform in Kansas that eliminated post-release supervision for persons convicted of minor offenses who had entered prison because they violated a technical condition of their probation supervision. He constructs a control group of persons convicted of similar low-level offenses who were not affected by the reform and finds that eliminating post-release supervision for the treated offenders substantially reduced overall rates of prison re-entry. Further, Sakoda (2023) concludes that the reform did not increase returns to prison associated with a new conviction. Finally, the reform significantly reduced racial disparities in rates of return to prison following release.

The results in Banan and Macdonald (2025) are most closely related to our work. The authors examine a 2011 reform in NC that required 9 months of parole supervision for a group of lower level prisoners who would have been released without any post-release supervision if they had been initially arrested and charged prior to the reform. Using a regression discontinuity design, they conclude that the introduction of supervision for these released offenders created a 15 percentage-point increase in the 1-year rate of prison re-entry. Technical revocations drive this outcome. The reform had both modest and mixed impacts on various measures of recidivism.[8]

A large literature examines the impact of various forms of Intensive Supervision for persons under either parole or probation supervision.[9] These papers consistently find that requiring probation or parole officers

[5] Parole officials did retain the capacity to seek short terms in county jail as punishment for technical violations.

[6] Rose (2020) studies a reform in North Carolina that restricted the ability of probation officials to send persons under their supervision to prison as punishment for violating technical conditions of their supervision. He finds that the reform generated large reductions in the rate of technical revocations and small increases in arrest rates.

[7] Motor vehicle thefts appear to jump as a result of the reform, but Lofstrom and Raphael (2016) report no impacts for other crime categories.

[8] They also find that the introduction of post-release supervision creates higher rates of technical revocations among Black offenders versus white offenders. However, the impacts of supervision on overall rates of return to prison vary little by race.

[9] See LaForest-Tucker (2024), Hyatt and Barnes (2017), Georgiou (2014), Boyle et al. (2013), Turner and Petersilia (1992),

to provide more frequent and intense supervision of the persons they supervise does not reduce recidivism but does increase rates of prison entry associated with technical violations. Our results concerning the impacts of changing the length of supervision mirror results from previous evaluations of policies that held the term of supervision fixed while increasing the intensity of supervision. In section 8, we comment on common mechanisms that may drive both sets of results.

2 The SAFE-T Act

On February 22, 2021, Illinois passed the SAFE-T Act. The law went into effect on July 1, 2021. The act contained numerous changes to criminal justice laws. We study the impacts of changes to the parole system in Illinois.

Since 1978, Illinois has employed a determinate sentencing system. The state abolished the Parole Board and replaced it with the Prisoner Review Board (PRB). The determinate sentencing approach grants the PRB little discretion over when inmates leave prison. Inmates complete their sentences in prison before release, and as a result, released inmates are not technically on parole. They are serving a term of Mandatory Supervised Release (MSR).[10] Nonetheless, for ease of exposition, we refer to persons under post-release supervision as parolees.

Before the SAFE-T Act, the PRB had almost no discretion over the length of MSR terms. The class of the offense committed by an inmate almost always determined the length of his MSR term. Over the years, a small number of parolees have received shorter MSR terms, most likely because they served part of their MSR term in prison while trying to arrange approved housing. Further, among those convicted of crimes in a few designated categories, e.g. certain sex crimes, the law has always mandated longer MSR terms.

The SAFE-T Act shortened baseline MSR terms for many parolees and also granted the PRB limited discretion over the MSR terms assigned to some parolees. The SAFE-T Act reduced the standard MSR term from 2 years to 1 year for the vast majority of prisoners sentenced to prison for class 1 and 2 crimes after July 1, 2021. At the start of 2021, almost all class 3 and 4 prisoners faced 1-year MSR terms, but the SAFE-T Act stated that, when class 3 and 4 inmates sentenced after July 1, 2022 completed their prison time, the PRB could assign them any MSR term between zero days and 1 year.

After July 1, 2022, the PRB rarely used its discretion over MSR terms for class 3 and 4 parolees. As a rule,

and Turner et al. (1992).

[10] If the PRB revokes MSR and sends a released inmate back to prison, decisions about the length of his stay in prison are tied to the remaining time on his MSR term. See https://icjia.illinois.gov/ for more information.

the PRB continued to assign 1-year MSR terms to all class 3 and 4 parolees regardless of their sentencing date. Then, on December 6, 2022, the state amended the SAFE-T Act. The amendment did not change MSR terms for class 1 and class 2 offenders, but the amendment fixed the standard MSR term for class 3 and 4 offenders at 6 months.[11]

The provisions in the amendment differed from those in the original bill in two important ways. First, the amendment mandated that the new class 3 and 4 MSR rules were to be applied to class 3 and 4 prisoners released on or after the enactment of the new law regardless of their sentencing date. Second, these new rules took effect immediately, i.e. on December 6, 2022. As a result, the default MSR term for all class 3 and 4 inmates released after December 6, 2022 became 6 months.

We discuss MSR rules in more detail below, but the key observation is that, during the period we study, maximum MSR terms served as default MSR terms. On December 6, 2022, the default MSR terms for released inmates convicted of class 3 or 4 crimes dropped from 12 months to 6 months. However, among all class 1 and 2 inmates sentenced after July 1, 2021, the standard MSR term stood at 12 months whether the returning citizen left prison before or after December 6, 2022. This contrast is the key to our research design. We have studied the SAFE-T Act and other related legislation, and we found no other changes in policy during our sample period that impact post-release supervision. In the next section, we explain how we construct a control group from class 1 and 2 inmates that allows us to produce difference-in-differences estimates of the impacts of the change in MSR terms for class 3 and 4 offenders created by the December 6, 2022 amendment.

When researchers study reforms to one part of the criminal justice system, they often explore ways that actors in other parts of the system respond. Some readers may conjecture that prosecutors changed how aggressively they charged lower-level offenders when they learned on December 6, 2022 that class 3 and 4 prisoners would no longer serve a full year of MSR after leaving prison. However, even if prosecutors did respond in this way, these responses should not impact our results. Our sample includes prisoners released from prison between June 6, 2022 and June 5, 2023. The minimum possible prison sentence for a felony in Illinois is 1 year, and the rules that govern credits for time-served in jail or prison imply that it should typically take 6 months or more for someone to be arrested, convicted, sentenced to prison, and released to MSR. Thus, any person arrested and charged after December 6, 2022 is not likely to appear in our sample. In fact, among the almost 1,800 persons in our sample whom we are able to match to Cook County court

[11]The amendment also required that, 45 days after a class 3 or 4 inmate leaves prison, the PRB must review and may alter the length of his MSR term, but IDOC does not post information about these review hearings. Further, our FOIA requests to the PRB for information about individual hearings have been denied. We have found no patterns in the stock files we possess that suggest such modifications were common.

records, we found only 6 who were charged after December 6, 2022.

3 Data

We describe two different data sources. We describe files posted by the Illinois Department of Corrections (IDOC) that characterize prison populations in Illinois, and we then describe a subset of these data that we are able to link to sentencing records from criminal courts in Cook County, Illinois. This matched data set allows us to view court cases brought against released offenders in the months after they exit prison.

3.1 IDOC Data

Appendix C.1 discusses how we clean and use the files that IDOC posts concerning admissions to prison, exits from prison, current inmate status, and current parole status.[12]

We employ data posted by IDOC since the beginning of 2014 when the exit records begin. The admission records begin in 2018. We combine these records with the MSR and IDOC stock reports to build IDOC histories for each person who was in an IDOC prison in 2014 or has entered an IDOC prison since 2014. These histories allow us to create summary measures of each inmate's history of imprisonment and MSR experiences.

We build our main analysis sample in several steps. To begin, we use the 2022 and 2023 exit files to create a sample of prisoners released to MSR from prison between June 6, 2022 and June 5, 2023. Next, we drop all class X prisoners and all those convicted of offenses not covered by the SAFE-T Act amendment.[13] We then drop all class 1 and 2 prisoners sentenced before July 1, 2021, and we also drop class 1 and 2 prisoners sentenced after July 1, 2021 who were sentenced to less than 2 years or more than four years in prison. The minimum statutory sentence for class 2 offenders is 3 years, and sentences shorter than 2 years are quite rare among class 1 and 2 offenders. While judges have some discretion, a class 1 or class 2 sentence shorter than 2 years may be a signal that the offense class in the IDOC record is incorrect. We do not include class 1 and 2 offenders sentenced to more than four years, because we want a sample of inmates who could have reasonably expected to be released in our observation window when they entered prison.[14]

[12] See https://idoc.illinois.gov/reportsandstatistics/populationdatasets.html.

[13] For example, the amendment did not reduce MSR terms for persons serving time for many sex crimes.

[14] Given the standard day-for-day time-served credits granted for jail time as well as standard credits for satisfactory time-served while in prison, the vast majority of class 1 and 2 offenders sentenced after July 1, 2021 to more than four years in prison should not have expected to be released until after June 05, 2023. As a robustness check, we have estimated our main difference-in-differences models, see section 4.2 below, using the full sample of class 1 and 2 offenders sentenced after July 1, 2021, and the results are quite consistent with the results we present below. Here, the reductions in returns to prison generated

Finally, we drop all exiting prisoners who received MSR terms that exceed 400 days. Given our sample selection rules, no class 1 through 4 prisoner in our sample should receive more than 1 year of MSR. However, we see a small number of cases where such prisoners receive 2, 3, and even 4 years of MSR. When these prisoners are sentenced in Cook County, Illinois, we are often able to examine their case records, and we have found that these prisoners are typically supposed to receive 2, 3, or 4 years of MSR because they were convicted of both a Class X offense and a less serious offense, but IDOC recorded the class for the less serious offense. In addition, others receive multiple-year MSR terms because they were sentenced for a particular type of crime, e.g. certain sex offenses, that the state exempts from the standard MSR term schedule and designates for longer MSR terms.

In the end, we have a sample of exits to MSR among class 1 and 2 prisoners whom we expect to receive 12-month MSR terms and, in practice, IDOC data report that they almost always do. Further, we have a sample of class 3 and 4 prisoners who, in the vast majority of cases, receive 12-month MSR terms if they exit before December 6, 2022 but receive 6-month terms if they exit after December 31, 2022.

There is no simple way to characterize the MSR terms of those class 3 and 4 offenders who exit between December 6, 2022 and December 31, 2022. The 2022 IDOC exit files and the 2023 March MSR stock files indicate that the state assigned these prisoners 1 year of MSR supervision, which appears to be in violation of the December 6, 2022 amendment to the SAFE-T Act. However, these same prisoners are not present in the June 30, 2023 MSR files, and this indicates that they were not required to serve more than 6 months of MSR. Given this pattern, we have no way of knowing when these parolees or their supervisors learned that they were not required to serve 12 months on MSR. Since horizon effects may impact how parolees respond to supervision, these parolees are partially but not fully treated. Therefore, we do not include them in our estimation sample.

We employ IDOC data posted through September 30, 2025. Since the last prison release in our sample occurs in early June of 2023, we are able to measure post-release custody outcomes for roughly 28 months or more for all prisoners released in our sample. We do not attempt to measure post-release outcomes over horizons beyond 15 months after exiting prison. Our empirical models require that we distinguish between returns to prison that result from convictions that produce new prison sentences and returns to prison that result from technical violations of supervision conditions.[15] Each admission record contains an admission

by the amendment to the SAFE-T Act are slightly larger than those we report in our main results, and we still see no increase in new-crime returns to prison.

[15]Our IDOC data do not contain the dates of final revocation hearings or the rulings in these hearings. Thus, some of the parolees who return to prison in the category of technical revocation leave prison when the PRB holds a hearing and decides not to revoke their supervision. Based on information we can piece together from viewing revocation hearings, studying hearing schedules, and examining exit records, we feel certain that vast majority of persons in this category still spend at least 2 weeks in prison waiting for their hearing.

type. For most returns to prison in our sample, the type is technical revocation. For a smaller set, the type is new-sentence admission. However, we learn with a lag that many of the admissions marked technical revocation are associated with new court cases. The following scenario illustrates this point: Parolee A is arrested for a new crime, and the local sheriff reports the arrest to IDOC. IDOC then transports Parolee A from the county jail to an IDOC facility, and IDOC records A's return to prison as a technical revocation of supervision. The PRB then holds a hearing and revokes Parolee A's supervision. In the coming months, IDOC transports A back and forth to the local courthouse for his trial, and eventually, the local court convicts Parolee A and sentences him to a new prison term. At this point, IDOC records the new sentencing date in the prison population files, and we are able to determine that a new court case likely created the admission that IDOC originally recorded as technical revocation. The roughly 13-month interval between the end of our 15-month outcome window and the end of our almost 28-month observation window helps us to code these cases correctly. We use the term "new-crime admission" to denote all admissions that IDOC marks as a new-sentence admission plus all technical revocations that we are able to link to a court case.

3.2 Cook County Court Records

We employ docket data from the Cook County Circuit Court. These data cover cases filed between the start of 2010 and September 2025. These records include charging and sentencing information for each misdemeanor and felony case brought before the court. They also include fingerprint numbers that allow us to track unique defendants across multiple cases.

We match our IDOC data to the Cook County court data using names and the sentencing dates associated with the prison sentence that created the period of incarceration that ended with a release to MSR during our sample window: June 6, 2022 through December 6, 2022 plus January 1, 2023 through June 5, 2023. We declare a match if we find records that satisfy two criteria. Both first and last names in the IDOC and court data must match, and the sentencing dates in the two records must differ by no more than 7 days. We found matches for 94 percent of the IDOC prison spells that both end as release events in our IDOC sample and begin as prison admissions from Cook County.[16]

Once we have identified the defendants in these matched records, we search court records during the months following each defendant's release from prison for new cases brought against each defendant. We restrict attention to court cases that begin within 15 months of the defendant's release from prison. If

[16] We allow either first or last name to only match phonetically by soundex but not both. If we require letter-perfect matches on first name and last name and an exact match on sentencing date, our match rate falls to 87 percent.

there are multiple court cases, we keep the one with the most serious outcome.[17] We then place each defendant in one of five categories: No Case, Misdemeanor, Felony with No Conviction, Felony Conviction but no prison sentence, and Felony Conviction with a prison sentence.[18]

4 IDOC Results

We present results from several different models that employ our sample of IDOC records for the entire state of Illinois. We then present complimentary results derived from the sample of IDOC parolees that we match to sentencing records in the Cook County court records.

4.1 Descriptive Statistics

Table 1 presents descriptive statistics for four samples of offenders. Panel A describes the outcomes we analyze. Panel B provides information on the characteristics of released inmates. The far left column presents results for the sample of class 1 and 2 offenders released between June 6, 2022 and December 5, 2022. The next column presents results for class 3 and 4 offenders released in the same period. The final two columns present parallel results for offenders released between January 1, 2023 and June 5, 2023. In all samples, the releases that we examine are the first releases from prison for a given offender in the period June 6, 2022 to June 5, 2023.[19]

The rows of Panel A present mean custody outcomes for each sample of releases. We construct three sets of indicator variables. Each marks a different type of return to prison, and we measure each type of return over fixed observation windows that follow an offender's release from prison. The first indicator is Any Return to Prison. The second is Technical Revocation, which equals one if the first return to prison results from a technical revocation of supervision. New-Crime Admission equals one if the first return to prison is linked to a new sentence for a new crime.

Several patterns in Panel A are noteworthy. Among our class 1 and 2 offenders, 20.6 percent of those released before December 6, 2022 return to prison within 12 months, and 22.4 percent of those released in

[17] If we see more than one outcome in the most serious category, we code the first event.

[18] We do not attempt to distinguish between misdemeanor acquittals and convictions because misdemeanor defendants in Cook County commonly have their cases stricken in return for adhering to certain conditions. There is no reliable way to know whether these stricken cases are functionally dropped charges or plea bargains that require the defendant to tolerate supervision, perform community service, etc.

[19] Almost five thousand sentenced prisoners exit Illinois prisons during our sample period whom we do not include in our sample. Roughly 90 percent completed sentences for Class X offenses, sentences linked to crimes not covered by the MSR reforms, or sentences that began before the original implementation of the SAFE-T Act. These parolees face 15-month re-entry rates that are roughly 3 percentage points higher than the rates in our sample because they face higher revocation rates.

2023 return to prison within 12 months. Among class 3 and 4 prisoners, 22.2 percent of those released before December 6, 2022 return to prison within 1 year, but here the corresponding rate among those released in 2023 is only 15.2 percent. This drop in the rate of returns to prison is statistically significant, and it is driven almost entirely by a corresponding drop in the rate of returns to prison that result from technical revocations of MSR. This 1-year rate drops from 14.8 percent to 8.4 percent, and this change is also significant. Among class 1 and 2 offenders, the 1-year rate of technical revocation among those released in 2023 is just over 3 percentage points higher than the rate between June 6, 2022 and December 5, 2022. However, this change is not statistically significant. The patterns we observe at the 15-month horizon are quite similar.

In the sections that follow, we demonstrate that the December 6, 2022 amendment to the SAFE-T Act drove the sharp 2023 drop in total returns to prison among class 3 and 4 prisoners. We also show that the reform had minor impacts on returns to prison associated with new criminal charges. The amendment reduced prison re-entry rates because it reduced technical revocation rates.

Panel B of Table 1 presents demographic characteristics of these released defendants in each sample. Few differences are noteworthy. Class 1 and 2 parolees have about one additional prior admission for a conviction linked to a crime in class X, 1, or 2. This is not surprising given that their last admission resulted from either a class 1 or class 2 conviction. The class 3 and 4 sample is just over 50 percent Black, while the class 1 and 2 sample is roughly 55 percent Black. On other dimensions, the prisoners in these four samples are quite comparable.

In the next section, we present results from three different types of empirical models. Our main specification is a difference-in-difference model of the impacts of the change in maximum MSR terms among class 3 and 4 prisoners using class 1 and 2 prisoners as a control group. We also present instrumental variables estimates of the changes in outcomes associated with a 6-month increase in the length of MSR terms. We then present results from a simple pre-post regression model that employs only data on class 3 and 4 prisoners.

4.2 Difference-in-Differences Models

Let $Y(M)$ denote a potential, post-release outcome for a released prisoner who exits under a prison regime where M is the maximum MSR term that prisoners may receive, $M \in \{6, 12\}$. In our context, maximum terms are also default terms.

Our main empirical models provide estimates of $E(Y(6) - Y(12))$ for 42 different potential outcomes. We

estimate effects on our three outcome indicators: Any Return to Prison, Technical Revocation, and New-Crime Admission. Further, we measure these outcomes over 14 different monthly horizons, starting at 2 months and running through 15 months following release from prison.

We use the admission type information in the admission files to classify returns to prison as either the result of a technical violation or the result of a new criminal case. As we note above, we use admission information as well as sentencing information in the stock files to recode some admissions that were originally recorded as technical revocations but later linked to new court cases. We also use custody dates in the admission records to mark the date that released offenders who were re-admitted to prison for new crimes were taken into either IDOC custody or the custody of a local sheriff. We store these dates as the beginning of offenders' re-incarceration spells.

For each of our three outcome types, we estimate 14 regression models that take the following form

$$y_{is} = [\text{treat*post}]_i \theta_s + \sum_c c_i \alpha_{cs} + \sum_t t_i \gamma_{ts} + X_i \beta_s + e_{is} \tag{1}$$

where

- y_{is} is an indicator variable for the observation of a specific type of event, e.g. a return to prison associated with a technical revocation, during a period of $s \in \{2, 3, ..., 15\}$ months following prisoner i's exit from prison to MSR.
- $[\text{treat*post}]_i$ equals one if prisoner i is a class 3 or 4 prisoner who leaves prison in 2023. These prisoners face a maximum MSR term of 6 months. All other prisoners in our sample face a maximum MSR term of 12 months.
- c_i is an indicator that equals one if prisoner i belongs to class $c \in \{1, 2, 3, 4\}$.
- t_i is an indicator that equals one if prisoner i exits prison in period $t \in \{1, 2, .., 6, 8, 9, .., 12\}$.
- X_i is a vector of demographic and criminal history variables that characterize prisoner i. See Panel B of Table 1.
- e_{is} captures unobserved factors that influence an outcome for prisoner i.

We assume that $E(e_{is}|X_i, c_i, t_i) = 0 \ \forall i$. This implies that $E(Y_s(6) - Y_s(12)|X, c, t) = \theta_s$ for each type of outcome measured at all horizons s.

We present results for three sets of indicator variables that mark the observation of a specific type of event, e.g. a return to prison due to a technical revocation, over a set of different monthly observation windows, e.g. 12 months following release from prison.

We define the periods that date release from prison, t, using calendar months. We divide the June 6, 2022 to December 5, 2022 period into 6 one-month periods. Period 7 is the period from December 6, 2022 to December 31, 2022. We explain in the previous section that we omit prisoners released during this period from our main analyses because their treatment status is uncertain. Periods 8 through 11 are monthly periods that mark the first 4 months of 2023. Period 12 is May 1, 2023 to June 5, 2023.

Since maximum MSR terms are determined by the intersection of class and time, and our specification contains a full set of class and time indicators, $\hat{\theta}_s$ is a difference-in-differences estimator of the impact of reducing maximum MSR terms from 12 to 6 months among class 3 and 4 offenders. Our model uses class 1 and 2 offenders as a control group for these class 3 and 4 offenders. By assuming that $E(e_{is}|X_i, c_i, t_i) = 0 \, \forall i$, we impose a standard parallel trends assumption. Given other observed prisoner characteristics, expected outcomes among prisoners released in the same month who are convicted of crimes in different classes differ by the constants, α_{cs}. The time effects, γ_{ts}, are common to prisoners from all classes.

To test the assumption of parallel trends, we estimate versions of equation 1 that contain a full set of interactions between release-time and treatment eligibility rather than a single set of time effects. Figure 1 plots the estimated coefficients on these interaction terms from these regression models. Each panel presents results for a specific outcome measured over the 12-month window following release from prison. We present standard F-tests for the null hypotheses that the interaction terms in each panel are zero during periods 1 through 6, i.e. the 6 months before December 6, 2022.

Panels A, B, and C present the results for Any Return to Prison, Technical Revocation, and New-Crime Admission. In all three cases, the figures offer no evidence of differences in pre-trends between our treatment sample of class 3 and 4 offenders and our control sample of class 1 and 2 prisoners. The p-values on the three F-tests are all greater than .81.[20]

We now turn to our estimates of θ_s for each of our three outcomes measured at different horizons s. Figure 2 presents these results. Each dot on these graphs is an estimate of θ_s from one of our regressions. For each outcome, we plot $\hat{\theta}_s$, where $s = 2, 3, .., 15$ is the number of months in the observation window that follows a prisoner's release from prison. We plot 95-percent confidence intervals around these estimates.

[20] We construct 95-percent confidence intervals using Huber-White standard errors.

As before, Panel A presents results for Any Return to Prison. Panel B presents the Technical Revocation results, and Panel C presents the New-Crime Admission results.

Panel A shows no statistically significant impact on returns to prison within observation windows less than 6 months following release from prison. However, by 6 months, we see that the reform lowers the rate of return to prison by 5.3 percentage points, and the sizes of the estimated reductions in rates of return to prison grow steadily as we move from the 6-month observation window to the 11-month horizon. At 11 months, our results imply that the reform reduced the rate of return to prison by 10 percentage points, and the top of the 95-percent confidence interval is associated with a 5 percentage point reduction in the rate of prison re-entry. For the horizons of 12, 13, 14, and 15 months, our estimates of the impacts of the reform on returns to prison imply reductions in return rates that range from 10 to just over 11 percentage points. Table 1 reports that the 15-month return rate among class 3 and 4 parolees released in the 6 months before the SAFE-T Act amendment is 24.3 percent.

Panel B shows that the results in Panel A are primarily driven by the impact of the reform on returns to prison associated with technical revocations of MSR. For horizons of 9 to 11 months, the implied reductions in returns to prison resulting from technical revocations of MSR are quite close to the corresponding reduction in total returns to prison. For horizons of 12 months or more, the reductions in returns to prison for technical violations are slightly larger in magnitude than the corresponding reductions in total returns to prison, but the largest difference is 0.6 percentage points. In sum, Panels A and B present impact estimates that are quite similar.

Some readers may wonder why the impact of the reform on technical revocations is roughly 1 percentage-point larger at the 13-month horizon compared to the 12-month horizon. No parolee in our sample is assigned a supervision term greater than 12 months, so these parolees should not be under supervision in month 13. However, parolees may be held in custody by local authorities while they are on MSR, either due to arrest or because there is a warrant from IDOC alleging that they violated the conditions of their supervision. Since these parolees do not receive MSR credit for the time they spend in local custody, some return to prison on technical revocations after the date of their expected exit from MSR.

Panel C shows that the reform had no statistically significant impacts on rates of return to prison associated with new crimes. At horizons of 4 to 8 months, our point estimates imply a reduction of roughly 1 percentage point in the rate of new-crime admissions. At months 13 and 14, the figure reports an increase of roughly one-half of 1 percentage point, and the estimates of impacts at other horizons are quite

close to zero. All of these estimates of horizon-specific treatment effects are statistically insignificant, and at longer horizons, the magnitudes of these treatment effects are trivial relative to the width of the confidence intervals around them. Here, and in additional results we present below, our point estimates almost always imply that the reform had small and statistically insignificant impacts on long-term measures of cumulative recidivism, but the corresponding confidence intervals typically admit both the possibility that the reform generated noteworthy increases in recidivism and the possibility that the reform created a significant reduction in recidivism.

The reform reduced the 1-year rate of return to prison for technical violations by more than 10 percentage points. If the reform had no impact on returning citizens' behavior, this reduction in the number of incapacitated parolees would necessarily increase overall offending rates. However, in sections 6 and 7, we demonstrate that the impacts of the reform on incapacitation rates should have only a small impact on 15-month new-crime admission rates. Further, we explain that there are reasons to believe that shorter terms of supervision may reduce rates of criminal activity among returning citizens.[21]

4.3 Instrumental Variables

In Figure 2, we report the average impacts of releasing prisoners under a regime that limits MSR terms to 6 months instead of 12 months. Here, we use this change in maximum MSR terms as an instrument for the change in assigned MSR terms at the individual level. For the standard instrument monotonicity condition to hold in our setting, we must assume that lowering the maximum allowed MSR term never increases the assigned MSR term. When assessing this condition, readers may recall from section 2 that, before December 6, 2022, existing law gave the PRB the option to assign any MSR term less than 1 year to class 3 and 4 prisoners sentenced after July 1, 2022 and released before December 6, 2022. If the PRB had ever used this discretion to assign MSR terms of less than 6 months to these offenders, they would have assigned a term shorter than the 6-month term required by law after December 6, 2022. However, we find no case that fits this description. The December 6, 2022 reform not only lowered the maximum MSR term for all class 3 and 4 offenders, it lowered the assigned MSR term for all class 3 and 4 offenders who entered MSR.[22]

We estimate three sets of 2SLS models. The outcome equations in these models are just like equation 1

[21] As a robustness exercise, we created Panels A, B, and C of Figure 2 using only class 3 parolees as the treatment group and only class 2 parolees as the control group. The results for all three outcomes are quite similar. We see a significant long-term reduction in returns to prison of roughly 10 percentage points, and drops in technical revocations drive this result.

[22] There is one case with an assigned MSR term of 24 days, but this is likely to reflect credit for time-served in prison waiting for a suitable housing placement.

above except we replace post*treat$_i$ with m_i, the number of days of MSR supervision assigned to prisoner i, and we employ post*treat$_i$ as an instrument for m_i.

Figure 3 presents the results. Each panel presents estimates of the impacts of increasing assigned MSR terms from 6 months to 12 months. As a result, they are opposite in sign when compared to the corresponding difference-in-differences results in Figure 2.

Nonetheless, the results in Figure 3 are quite comparable in magnitude to the corresponding results in Figure 2. For example, at horizons of 12 months or more, Panel A reports that increasing supervision terms from 6 to 12 months increases total returns to prison, on average, by just over 11 percentage points. By comparison, Panel A of Figure 2 reports that, over the same horizons, the average impact of reducing the maximum MSR term from 12 months to 6 months is an absolute reduction in total returns to prison of just less than 10.7 percentage points.

In our sample period, the PRB assigns the maximum possible MSR term to over 98 percent of released prisoners, so the strong correlation between the absolute magnitudes of the estimates in Figures 2 and 3 is expected. We see the same strong correlations in Panels B and C, which present results for impacts on technical revocations and returns to prison resulting from new charges.

4.4 Pre-Post Comparisons

We also estimate simple pre-post regressions that take the form

$$y_{is} = \text{post}_i\theta_s + \sum_{c\in\{3,4\}} \text{c}_i\alpha_{cs} + X_i\beta_s + e_{is} \tag{2}$$

Here, we identify each θ_s using differences in mean outcomes in the post-reform versus pre-reform period among class 3 and 4 offenders only. We condition on crime class and our vector of observed case and offender characteristics, X_i, but the results are quite similar if we just take raw differences in means. Figure 4 presents these results. Qualitatively, they follow the same patterns we see in Figure 2. However, the absolute magnitudes of the implied reduction in total returns to prison and returns associated with technical revocations are typically 3.5 to 5 percentage points smaller in magnitude at longer horizons.

Appendix Figure 1 presents results from a similar model that includes a linear trend in date of release from prison. The standard errors on our estimates of the reform impacts are larger given the time-trend control. Nonetheless, at longer horizons, the reductions in total returns to prison and returns due to technical

revocations remain noteworthy and statistically significant. Further, at horizons greater than 10 months, reductions in technical revocations attributable to the reform are 2 to 3 percentage points larger than the corresponding impacts reported in Figure 4.

4.5 Results By Race

Table 2 explores the possibility that the reform had heterogeneous impacts among different populations of parolees. We present separate DND results for parolees who are: Black vs non-Black, younger vs older than 35, convicted of violent vs non-violent crimes, and convicted of drug vs non-drug crimes. We present estimates of the impacts of reducing default MSR terms from 12 months to 6 months on total returns to prison, technical revocations, and new-crime admissions at horizons of 12 and 15 months following release from prison.

We find no evidence that treatment effects are heterogeneous with respect to these four parolee characteristics. The results facilitate 24 tests of the null that a particular treatment effect is constant among two samples, e.g. the effect of the reform on total returns to prison at the 15 month horizon is the same for Black and non-Black parolees. We fail to reject the constant treatment null in all 24 cases. In all subsamples, our estimates of the impacts of the reform on new-crime admissions are close to zero and only fractions of their corresponding standard errors. We see no evidence in any subsample that the reform had an impact on new-crime admissions at either horizon. The declines in technical revocations attributable to the reform are roughly four percentage points smaller among drug offenders, but the sample of drug offenders is small, and the treatments effects for this sample are imprecisely estimated.

5 Results from Matched IDOC-Court Records

IDOC records indicate that the SAFE-T Act amendment created a sharp reduction in returns to prison associated with technical revocations of supervision without creating an increase in prison admissions linked to new criminal charges. However, our IDOC data do not provide a complete record of all court cases brought against the parolees in our sample. Here, we describe results that we produce by matching IDOC parolees with their court records from Cook County. These results provide a more complete accounting of how the SAFE-T Act amendment affected recidivism. We begin by describing the relevant information in these records.

We know from work on this project and previous work with Cook County Court records[23] that there are cases where a parolee faces a technical revocation around the time a felony case against him appears in court, and then sometime later, the court convicts the parolee and hands down a new prison sentence.[24] We have searched our IDOC records for these events, and we code returns to prison as new-crime admissions when we find such cases. However, if IDOC has not updated all technical revocation admissions that are later associated with a new sentence or if we have not found all the relevant revisions to IDOC records, our new-crime admission measure may miss some felony convictions that produced new prison sentences. Court records allow us to better measure these convictions.

Further, some parolees face charges that lead to felony convictions but not returns to prison. These offenders receive probation sentences and also avoid technical revocations. Our IDOC data provide no information about these recidivism events, but our court data allow us to identify them.[25]

Section 3.2 above describes how we create a sample of parolees released to Cook County and then match these offenders to their court records. For these offenders, we see all of their IDOC records, and we see the following court records: (i) the prison sentence that led to the prison spell that ended during our sample period and (ii) any new cases, new convictions, and new prison sentences that follow each parolee's release from prison.

Our IDOC data contain 1,896 parolees from Cook County. We are able to match 94 percent of these parolees to Court records in Cook County. Appendix C.2 provides more details about these data and how we construct variables that describe court outcomes. Appendix Table 1 compares the characteristics of our matched sample and the 6 percent of Cook parolees that we are not able to match. The 112 parolees that we do not match are less likely to be Black (.63 vs .76) and more likely to be class 1 parolees (.07 vs .03), but they are similar on other dimensions.

Table 3 describes the outcomes we observe for the sample of 1,784 released prisoners that we match to Cook County court records. The rows describe the most serious outcome we observe in the court data. The columns describe the outcomes we observe in IDOC data. Each cell contains the count of persons in the cell and the row percentage. For example, 1,240 persons or 70 percent of our sample are not present in the Cook County court records during the first 15 months following their release. However, 87 persons or 7 percent of this group nonetheless enter prison as new-crime admissions. This outcome is not shocking because parolees released to Cook County may be arrested, convicted, and sentenced to prison in any

[23] See Jordan et al. (2025).

[24] These defendants are often held in IDOC facilities while their cases proceed through court, and IDOC transports them back and forth between the prison and court for hearings.

[25] This outcome occurs for less than 2 percent of our Cook County parolees. We have no way to measure these events in other counties.

county in the state, and many urban areas surround Cook County.[26]

Given these data, we define a new recidivism indicator. Any New Crime equals one if the court reports a felony conviction for the parolee or IDOC records a new-crime prison admission. This recidivism measure captures all felony convictions in Cook County and all felony convictions in other counties that result in a new-crime admission.

We estimate two versions of our standard difference-in-differences model using the matched Court-IDOC sample. First, we use just the IDOC records for parolees in this sample to create estimates of the impacts of the SAFE-T Act amendment on our standard measure of new-crime admissions to IDOC. Panel C of Figure 2 above presents these results for our full IDOC sample. Panel A of Figure 5 presents parallel results for our Cook County sample. In both figures, we see small and positive impact estimates at horizons greater than 12 months. However, none of these effects are statistically significant. Appendix Figure 2 presents difference-in-differences estimates of the impacts of the reform on total prison re-admissions and technical revocation rates among Cook County parolees, and these results are also similar to the full sample results presented in panels A and B of Figure 2.[27]

Panel B of Figure 5 presents parallel results for Cook County that employ Any New Crime as the recidivism outcome. The SAFE-T Act amendment has no significant impacts on this measure of recidivism either. Here, the point estimates imply that, at longer horizons, the SAFE-T Act amendment generated a small reduction in recidivism rates. Nonetheless, at each horizon, the estimated treatment effects in both Panels A and B of Figure 5 are not statistically significant, and at every horizon of 6 months or greater, our estimates of the impacts of the reform on Any New Crime are slightly more negative than the corresponding impacts on new-crime admissions to prison.[28]

For several reasons, we do not treat the one-half of all felony cases that fail to produce a conviction as recidivism events. Many patterns in the court data are consistent with the view that a non-trivial number of felony cases are weak.[29] Further, existing research shows that, conditional on facing a felony charge,

[26] DuPage, Kane, McHenry, Lake, and Will are the most populous Illinois counties other than Cook, and they all border Cook.

[27] Here, the impact estimates imply long-term reductions in revocation rates and overall prison re-entry rates that are slightly larger.

[28] Let us assume that some prosecutors are willing to accept plea deals that result in probation sentences, if they know that the PRB has already returned the defendant to prison as a technical violator. After the reform, some class 3 and 4 parolees charged with new-crimes in month 7 and beyond may no longer receive these plea offers because they have finished their term of supervision and are no longer eligible for revocation. For these parolees, new court sentences are the only path back to prison, and for this reason, our results in Panel C of Figure 2 may overstate crime rates among treated offenders in the post-period relative to the pre-period.

[29] When police file non-drug charges, the charges do not become a felony case unless they survive an initial review by prosecutors. However, even given this initial review, only 65 percent of cases produce a conviction, in large part, because prosecutors drop or the court dismisses many cases without a trial. Drug cases do not require an initial review by prosecutors, and here, only 21 percent of felony cases generate a conviction. See (Jordan, 2024) for more details.

receiving a felony conviction has additional negative consequences for the defendant.[30]

However, to give readers an exhaustive understanding of the patterns in our data, we present parallel results for a more comprehensive recidivism indicator. Any New Charge equals one if Any New Crime equals one or if a felony charge is brought against the defendant that does not result in a conviction. Appendix Figure 3 presents difference-in-differences estimates of the impact of the reform on this outcome. The results are similar to those for Any New Crime in Panel B of Figure 5. The point estimates imply that the felony charge rate falls by 5 percentage points at the 1-year horizon and by 1 percentage point at the 15-month horizon, but neither of these results or any of the impact estimates at other horizons are statistically significant.

We do not count misdemeanor charges as recidivism events for several reasons. First, Cook County courts frequently drop or dismiss the charges. Further, it is often difficult to determine whether cases that end with minor supervision requirements are effectively dropped charges or plea bargains.[31] In addition, Appendix Table 2 provides the information in Table 3 for four subsamples defined by treatment status and pre vs post reform release dates, and the four panels of this table show that the reform did not change the rate of misdemeanor filings among treated or control parolees. In both the treatment and control samples, the pre-post difference in the rate of misdemeanor filings is less than 1 percentage point and neither difference is close to statistically significant.[32]

The results from our matched IDOC-Court Sample provide no evidence that the SAFE-T Act amendment harmed public safety. We note above that our matched sample is not a random sample of Cook County parolees, but it is crucial to note that we do match 94 percent of this target sample. In potential outcomes notation, our difference-in-differences estimate of the impact of the SAFE-T Act amendment on new crime events among Cook County parolees at horizon s is a consistent estimator for $E\big[Y_s(6) - Y_s(12)|C = 1\big]$. Here, $C = 1$ means that we are able to match the parolee's records to court records, and $Y_s(M)$ is our indicator for Any New Crime measured over the first s months following release from prison in a policy regime where the maximum MSR term is M months. Given our 94 percent match rate, the following holds for the population of Cook County parolees:

$$E\big[Y_s(6) - Y_s(12)\big] = E\big[Y_s(6) - Y_s(12)|C = 1\big] * .94 \; + \; E\big[Y_s(6) - Y_s(12)|C = 0\big] * .06$$

[30] Felony convictions lead to both formal collateral consequences, such as exclusion from certain professions and loss of access to public benefits, and informal difficulties finding employment (Pager, 2003; Uggen et al., 2014).

[31] Prosecutors in Cook County often make non-conviction a part of misdemeanor plea deals (Jordan, 2025).

[32] Among the four samples defined by the intersection of indicators for treatment and the post period, the rate of misdemeanor filings ranges from 9.8 to 10.8 percent.

Figure 5 reports that when $s = 15$ months and Y is our indicator for Any New Crime, $\hat{E}\big[Y_s(6) - Y_s(12)|C = 1\big] = -.018$. If we substitute this sample moment into the equation above, we conclude that as long as $E\big[Y_s(6) - Y_s(12)|C = 0\big] \leq .28$, we have the population result $E\big[Y_s(6) - Y_s(12)\big] \leq 0$ for $s = 15$. Since the mean of Any New Crime is just over .11 in our matched sample, an increase of .28 seems unlikely. In sum, we view our results as strong evidence that, among Cook County parolees, the SAFE-T Act did not increase crime rates during the first 15 months following release from prison.

6 Framework for Understanding Impacts on Crime Rates

Results from our DND models establish that, by reducing MSR terms from 12 months to 6 months, the SAFE-T Act amendment reduced rates of prison re-entry among class 3 and 4 prisoners. This reduction in returns to prison is driven by a large drop in technical revocations, but we see no increase in any measure of criminal recidivism.

In this section and the next, we explore the impacts of the reform on new-crime failures in more detail. Appendix B presents a model of parolee behavior that provides a conceptual framework for our explorations. Here, we discuss insights from this framework concerning different mechanisms that could mediate the impacts of the SAFE-T Act amendment on crime rates. In the next section, we provide empirical results that speak to the relative importance of these different mechanisms.

In our model, parolees exit prison facing t periods of supervision, and they allocate their energies among three types of effort: good (g), bad (b), and compliance (c). Good effort includes job search, working for pay, participating in education or training activities, etc. Bad effort includes not only crime but also attempts to secure opportunities for criminal action. Compliance effort includes the mental focus and effort required to comply with conditions of supervision. Appendix D lists the standard conditions that govern MSR supervision. Parolees in Illinois face restrictions on where they live, where they work, and whom they visit. They must meet regularly with their parole officers and are also subject to searches of their person and property without warning.

All types of effort are costly. Compliance effort produces no direct payoffs but does reduce the likelihood of technical revocations. Both good and bad effort produce positive gross payoffs. Bad effort also increases the probability that a parolee returns to prison for a new crime and may influence the likelihood of technical revocations. Once supervision ends, returning citizens no longer face the threat of revocation, and

they no longer suffer any direct costs associated with presence of supervision.

In our model, there are three ways that changing the length of parole supervision may impact crime rates among returning citizens. First, the length of scheduled supervision terms should impact the behavior of returning citizens while they are under parole supervision. Consider two comparable parolees who exit prison at the same time. The first, whom we label "short", faces t months of supervision. The second, whom we label "long", faces $t + \Delta > t$ months of supervision. There are good reasons to expect that the short parolee will choose a lower rate of bad effort, b, during the first t months after prison release. If both parolees survive t periods without a technical revocation or a new-charge, the short parolee exits supervision and no longer faces the on-going risk of technical revocation or the costs of complying with supervision conditions. In contrast, the long parolee faces these challenges for another Δ periods. Thus, the short parolee stands to gain more if he avoids new criminal charges in the near term.[33]

Second, the length of the original supervision term, t, determines when a returning citizen may exit supervision. Let us suppose both parolees survive to the end of period t following release. From this point forward, the short parolee is no longer supervised but the long parolee faces Δ additional periods of supervision. We know that, in the period t, the short parolee chooses a lower level of b than the long parolee. After the short parolee exits supervision, will he continue to choose a lower level of b than the long parolee?

Once his supervision ends, the short parolee may choose a higher or lower level of b than the long parolee, in part, because two forces push his desired level of b in opposite directions. To begin, life is better without supervision. The short parolee no longer faces the risk of technical revocation or the costs imposed by supervision, and as a result, he will suffer a greater loss if he faces a criminal charge and returns to prison. For this reason, the short parolee may choose lower b after his supervision ends. On the other hand, the short parolee exits supervision knowing that he no longer has a parole officer looking for evidence that he is still engaged in criminal behavior, and given this reduction in monitoring, the short parolee may choose higher b after his supervision ends.[34]

Finally, it is obvious that returning citizens who face a shorter term of supervision face less exposure to the risk of technical revocation, and as a result, less risk of incapacitation. Therefore, if the length of supervision and the presence of supervision were to have no impact on the rate of arrival of new criminal charges, i.e. the first two factors we discuss above do not matter, then shorter terms of supervision could

[33] The same logic implies that this first parolee should also choose higher levels of compliance effort, c.

[34] Note that the larger Δ, the more likely it is that the short parolee chooses lower b than the long parolee. A longer remaining term of supervision, Δ, implies greater expected compliance burdens and a greater risk of returning to prison for technical reasons, even in the absence of new criminal charges. Thus, greater Δ means that the long parolee has less to gain in the near-term from avoiding new criminal charges.

only increase the average rate of new-crime admissions because shorter terms of supervision limit the state's ability to incapacitate returning citizens for technical reasons.

In the next section, we explore these issues by estimating a survival model that treats technical revocations and new-crime admissions as competing risks. We conclude that the arrival rate of new-crime failures is lower when parolees face fewer remaining days of scheduled supervision. We also find that rates of new-crime failures are lower after terms of scheduled supervision end than during the initial months of parole supervision. Finally, we conclude that the expected change in incapacitation associated with reducing supervision terms from 12 months to 6 months should have small impacts on total new-crime admissions.

Some may argue that our framework misses an important benefit of supervision. Advocates of standard parole supervision practices contend that parolees develop habits and skills that help them avoid recidivism if they follow the rules that govern their supervision, and the threat of revocation is a tool for encouraging parolees to follow these rules.[35] However, we find no support in the literature for the proposition that adherence to common conditions of parole supervision changes the character or capacity of parolees in ways that reduce recidivism. As a result, our conceptual framework focuses on how parole policies shape incentives, i.e. the gains and losses that returning citizens anticipate from engagement in criminal activity.[36]

After we present our competing risks results, we return to the literature on reforms to community supervision and discuss ways that policy makers may apply the insights from our conceptual framework to on-going debates about policies that govern parole supervision.

7 Competing Risks Analysis

In this section, we estimate a competing-risks model. We model both the risk of technical revocation and the risk of new-crime admissions. The model highlights how the arrival rates of both revocations and

[35] For example, the Illinois Prisoner Review Board states that a purpose of parole conditions is to assist parolees in "leading a law-abiding life." See https://prb.illinois.gov/. The California Parole Board states that parole supervision is "critical to successful reintegration into society and to positive citizenship." See https://www.cdcr.ca.gov/bph/divisions/early-parole-discharge-review/.

[36] No studies have designs that allow researchers to identify the causal relationship between compliance and future willingness to engage in crime. However, a significant literature does show that when parole officers interact more frequently with parolees, presumably to ensure better compliance with supervision conditions, technical violations and sometimes technical revocations increase, but recidivism rates do not decline. See Turner et al. (1992), Turner and Petersilia (1992), Barnes et al. (2012), Georgiou (2014), and Hyatt and Barnes (2017). Further, Boyle et al. (2013) reports results from an experiment that assigned some parolees to regular parole and others to a program that required parolees to attend Day Reporting Centers each weekday and participate in rehabilitation programming and regular drug testing. The constant monitoring provided by the program did reduce parole violations, but forcing participants to follow the rules did not reduce arrest rates or convictions.

new-crime failures change as parolees near the end of their scheduled term of supervision and then exit supervision. In the estimation sample for our DND results, more than 98 percent of the sample receive scheduled MSR terms that are within 15 days of exactly 6 months or exactly 1 year. We use these records for our competing risks analyses. Our simulation results highlight differences in simulated outcomes for parolees assigned to 6 versus 12 months of supervision, and this restricted sample contains only persons assigned to roughly 6 or 12 months of supervision.[37]

Given ideal data, we would estimate a competing risks model that explores how the presence of active parole supervision impacts the arrival rates of both technical revocations and new-crime failures. However, IDOC data provide scheduled but not realized dates of exit from supervision, and IDOC denies FOIA requests for this information. Therefore, we focus on how these arrival rates change as a function of whether a parolee should be under supervision given his assigned term of supervision, and if so, how much time is remaining in his term of scheduled supervision.

As we note above, we know that some parolees are still under supervision several weeks after their scheduled supervision ends, and we know that several scenarios contribute to their extension.[38] First, the PRB may extend periods of supervision as punishment for rules violations. Also, certain events "stop the clock." For example, if a parolee fails to respond to his parole officer, the state may declare the parolee Absent Without Leave, AWOL, and the parolee does not receive credit for days under supervision that are covered by an AWOL designation. Further, if local police arrest a parolee and hold him in jail before transferring him to IDOC custody, the time spent in jail does not count as time under supervision.

While scheduled supervision time is not a perfect measure of actual supervision time, we still find that the length of scheduled supervision, relative to the amount of time since a returning citizen left prison, helps predict the hazard rates of both technical revocations and new-crime admissions. Next, we explain how we estimate these hazard rates.

We model the arrival of the first failure event, which is either a prison admission due to a technical revocation or a re-incarceration due to a new crime. We maximize the following likelihood function

[37] The PRB is exempt from FOIA requests concerning the details of hearings that determine adjustments to supervision terms, releases from supervision, or revocations. Thus, we have no way to know why a small set of parolee records contain non-standard supervision terms, and we cannot rule out the possibility that some of the cases result from data entry errors.

[38] We are thankful for the assistance of Sharon Shipinski, the manager of Planning and Research for IDOC. She answered numerous questions about the rules that govern supervision and how IDOC records events.

$$L = \Pi_i \, [\, [(F_{rv}(\tau_i + 1|\tilde{X}_i) - F_{rv}(\tau_i|\tilde{X}_i)] * [1 - F_{nc}(\tau_i|\tilde{X}_i)] \,]^{rv_i*(1-R_i)} \; * \\ [\, [(F_{nc}(\tau_i + 1|\tilde{X}_i) - F_{nc}(\tau_i|\tilde{X}_i)] * [1 - F_{rv}(\tau_i|\tilde{X}_i)] \,]^{nc_i*(1-R_i)} \; * \\ [\, [1 - F_{rv}(\tau_i|\tilde{X}_i)] * [1 - F_{nc}(\tau_i|\tilde{X}_i)] \,]^{R_i} \tag{3}$$

As before, i indexes individuals. We adopt the following notation:

- τ_i is the observed survival time for i.
- $\tilde{X}_i = \{X_i, c_i, t_i, \Delta(m_i, s_i)\}$ – we define X_i, c_i, t_i, m_i, and s_i as in section 4.
- $\Delta(m_i, s_i)$ is a vector of indicators. Each term provides information concerning $\delta(m_i, s_i) = m_i - s_i$, where $m_i \in \{6, 12\}$ is parolee i's scheduled term of supervision in months, and s_i is the time in months that has elapsed since parolee i exited prison. The omitted category is $\delta(m_i, s_i) > 2$ The vector contains indicators for the following three categories
  1. $0 \leq \delta(m_i, s_i) < 2$, i.e. less than 2 months of scheduled supervision remaining
  2. $-1 \leq \delta(m_i, s_i) < 0$, i.e. 1 month or less after the end of scheduled supervision
  3. $\delta(m_i, s_i) < -1$, i.e. more than 1 month after the end of scheduled supervision
- rv_i – is an indicator that equals one if the first failure for i is a return to prison due to revocation.
- nc_i – is an indicator that equals one if the first failure for i is a return to prison associated with a new crime.
- $F_{rv}(\cdot|\tilde{X}_i)$ – is the conditional distribution of arrival times for technical revocation events.
- $F_{nc}(\cdot|\tilde{X}_i)$ – is the conditional distribution of arrival times for returns to prison linked to new criminal charges.
- R_i – is an indicator for whether the post-release spell for prisoner i is right-censored.

Conditional on $\tilde{X}_i$, we treat the two types of failures as independent events, and we treat both failure events as draws from continuous-time distributions, but we record failure events at 15-day intervals.[39] The

[39] We place each day after release into a 15-day period by (i) subtracting 7 days, (ii) dividing by 15, and (iii) rounding up to the nearest integer. Thus, day 184 is in period 12, i.e. ceiling$[(184 - 7)/15]$

first term in the likelihood is the probability of observing a revocation failure after τ_i but before $\tau_i + 1$. The second term is the analogous expression for new crime failures between τ_i and $\tau_i + 1$. The final term is the probability that neither event occurs between the date that offender i is released and fifteen months following this release date.

We estimate the model using a proportional hazards specification. In both hazard rates, we control for duration dependence using a step function in months since release from prison.[40] Thus, the coefficients on the three indicator variables in $\Delta(m_i, s_i)$ measure departures from these baseline hazard functions that are associated with $\delta(m_i, s_i)$, the difference between the time since exit from prison, s_i, and the length of scheduled parole supervision, m_i.

Table 4 presents our estimates of the impacts of various elements of $\tilde{X}$ on the hazard rates of revocations and returns to prison associated with new crimes. Persons with more prior prison admissions face higher risks of both technical revocation and new criminal sentences to prison. Male parolees and young parolees are also more likely to experience both failures. The revocation rate for Black parolees is 29 percent greater than the revocation rate for comparable parolees who are neither Black nor Hispanic.

Next, we turn to the impacts of the scheduled duration of parole supervision. The set of indicators in $\Delta(m_i, s_i)$ captures the effects of time measured relative to the date that a parolee is scheduled to exit supervision.

We do not see a significant drop in revocation rates in the 2 months prior to the end of scheduled supervision, even though our conceptual framework implies that parolees have more to gain from being compliant as they near the end of their terms of supervision. Instead, we see a modest but statistically insignificant increase in revocation rates in the final two months of supervision. However, this effect is imprecisely estimated, and the DND results we present in Panel B of Figure 2 show that, at both the 5 and 6-month horizons, cumulative revocation rates are slightly lower in the 6-month versus 12-month MSR regime. Only the latter gap is statistically significant.

The risk of technical revocation does fall sharply in the month after scheduled supervision ends,[41] and beyond this point, it falls to only 6 percent of the baseline risk. The rate does not fall to zero because a small number of persons are revoked many weeks after the end of their scheduled term of supervision.[42]

[40] Appendix Table 3 provides estimates of the parameters of this step function.

[41] We cannot measure the realized date of release for MSR for any parolee. However, by studying the frequency of persons who remain in the MSR stock files after their scheduled exit from MSR, we estimate that roughly five percent of parolees remain under supervision in the month after their schedule discharge date.

[42] We see 45 revocations that occur after the scheduled date for release from supervision. Roughly half occur within 1 month of scheduled release. Only 15 occur more than 2 months after scheduled release and most of these occur in the third month. From correspondence with IDOC, we have concluded that most of these late revocations are AWOL events, and some of these parolees spent time in local jails before returning to IDOC. In our simulations below, we set the risk of revocation to zero for

We also find that the indicators in $\Delta(m_i, s_i)$ have noteworthy predictive power for new-crime failure rates. In the 2 months before scheduled supervision ends, the arrival rate of new-crime failures falls by just over 40 percent. In the month after supervision ends, new-crime failure rates are 65 percent below baseline, and after this point, these failure rates remain almost forty percent below baseline. The p-values for these three estimated impacts are .06, .01, and .12 respectively.

Our conceptual framework helps us make sense of these results. New-crime failure rates should fall as parolees near the end of supervision. As parolees near the end of their term of scheduled supervision, they know they can earn their freedom if they can just avoid both revocations and new criminal charges for a few more weeks.[43] Further, once parolees exit supervision, life is better, and they have more to lose from facing a new criminal charge and a potential return to prison. If this force is stronger than any deterrence created by active supervision, rates of new-crime failures should remain depressed after supervision ends. We note above that a large set of studies find that more intense forms of supervision do not reduce recidivism. Given the robustness of this finding, it may not be surprising that the elimination of monitoring associated with the end of scheduled supervision is not associated with an increase in new-crime failure rates.[44]

Some may argue that new-crime failures fall after supervision ends because, given any level of criminal activity, police are more likely to learn about the activity if a returning citizen is under parole supervision. We know of no data source that would allow us to investigate this hypothesis.[45] Further, we note that the reduction in rates of new-crime admissions that we observe during the final months of supervision implies that, among a group of returning citizens who are all under supervision, new-crime failure rates are lower among those who are near the end of scheduled supervision, and as a result, face lower future risk of revocation. In this case, both groups are under parole supervision.

We also note above that the reduction of revocation rates created by shorter supervision terms should impact new-crime failure rates indirectly by increasing the number of parolees who are not in prison and therefore at risk of recidivism. We return to this issue below and provide direct evidence that this impact on new-crime rates should be small.

The panels of Figure 6 present results from three simulations. We use the estimated coefficients from our model to simulate failure events for the set of Class 3 and 4 offenders in our sample given supervision terms of 3 months, 6 months, or 12 months. For each date following release from prison, we simulate the expected

periods more than 3 months after the end of scheduled supervision.

[43] We experimented with a more flexible specification that allows these anticipation effects to show up in the third and 4th month prior to release, but we find no evidence that these effects exist before the final 2 months of scheduled supervision. We also found that simulated data from this more parsimonious version more closely matched our data.

[44] See Turner et al. (1992), Turner and Petersilia (1992), Barnes et al. (2012), Georgiou (2014), and Hyatt and Barnes (2017).

[45] We are comparing changes in recidivism rates among different groups of offenders who live in the same state at the same time. No data on victimization rates or reported crimes provides any information about the characteristics of unknown offenders.

fractions of the sample that have returned to prison for any reason, returned due to revocation, and returned due to new crimes. We then place confidence intervals around these results by drawing parameter vectors from a multivariate normal distribution with our estimated variance-covariance matrix. For each of 5,000 independent draws, we repeat the simulations, and then mark the 95th and 5th percentile results at each monthly horizon. The estimated changes in new-crime failure rates are often small relative to these confidence bands. So, we present the new-crime failure rates in two separate figures: 6 months vs 12 months and 3 months vs 6 months of supervision.

We believe that outcome comparisons given 3 versus 6 months of supervision are of particular interest for policy makers. Eliminating post-release supervision may be politically infeasible in many jurisdictions. However, proposals that recommend short 90-day periods of transitional supervision for low-level offenders may attract more interest from policy advocates and legislators.

Panel A of Figure 6 demonstrates that shorter MSR terms dramatically reduce expected rates of prison re-entry. The 15-month re-entry rates are 10.6, 15.6, and 24.4 percent.[46] Our results indicate that reducing default MSR terms from 12 months to 3 months would reduce the fraction of parolees who return to prison within 15 months by just less than 14 percentage points or almost 57 percent. As a point of comparison, Banan and Macdonald (2025) report that introducing 9 months of parole supervision for low-level offenders in North Carolina increased 15-month prison re-entry rates by just under 15 percentage points.

Panel B of Figure 6 demonstrates that reductions in technical revocations drive the results in Panel A. The patterns in the figure are what we expect given the results in Table 3. In both the 3-month and 6-month simulations, total revocations fall below the 12-month baseline after the final month of scheduled supervision. Failure rates given 12 months of supervision continue to grow months after those assigned to 3 or 6 months of supervision are no longer at risk of revocation. As a result, the 15-month technical revocation rates are 3.1, 7.8, and 15.7 percent respectively, given the 3-month, 6-month, and 12-month supervision regimes. At horizons of 1 year or more, these simulations produce absolute differences between the revocation rates, given 6 vs 12-month terms, that are roughly 3 percentage points smaller than the corresponding differences we estimate using our DND model. See Panel B of Figure 2. However, implied revocation gaps in Panel B of Figure 6 remain well within the corresponding confidence intervals in Panel B of Figure 2.

Panels C and D of Figure 6 demonstrate that expected rates of prison re-entry due to new criminal charges are slightly smaller given shorter MSR terms. We use two separate graphs to make the confidence bands

[46] At horizons beyond one year, the 12 vs 6-month MSR results in Panel A of Figure 6 imply absolute gaps in rates of return to prison that are roughly 2 percentage points smaller than the corresponding gaps in Panel A of Figure 2, but the implied gaps in Panel A of Figure 6 are well within the corresponding confidence intervals in Panel A of Figure 2.

more legible. Panel C presents simulated new-crime failure rates at different horizons given 6 versus 12 months of supervision. As expected, the new-crime rates for those assigned to 6 months of supervision fall below the 12-month baseline during the final months of their scheduled supervision, and the cumulative gap in new-crime failure rates grows until month 10.[47] At this point, the hazard rate of new-crime failures among those assigned to 12-months of supervision falls as they near the end of their scheduled supervision terms, and the two cumulative failure rates start to converge. After month 13, the hazard rate of new-crime failures is the same in both simulations, so the remaining gap in cumulative new-crime failures narrows slightly during the final 2 months. The end result is that the 15-month new-crime admission rates are 7.8 percent given 6 months of supervision and 8.7 percent given 12 months of supervision.

The results in Panel C follow the same pattern we see in our DND results. See Panel C of Figure 2. In fact, for horizons less than 12 months, the results are similar in both sign and magnitude. At horizons of 1-year or longer, the DND results imply that reducing default MSR terms from 12 months to 6 months creates a small increase in total new-crime admissions while the simulations from our competing risks model imply that this reduction in scheduled supervision creates a small decrease in crime rates. However, the treatment impacts implied by these simulations are always well within the relevant confidence intervals reported in Panel C of Figure 2.

While we do find that the duration of remaining scheduled supervision and the presence of scheduled supervision have noteworthy impacts on the hazard rates of new-crime failures, it is not surprising that assigning 6 months of supervision instead of 12 months of supervision does not have large or statistically significant impacts on cumulative new-crime failure rates. In these simulations, both groups of parolees exit supervision well before our 15-month horizon ends. So, for both groups, new-crime failure rates fall relative to baseline in the final months of supervision and then remain below baseline after supervision ends, and as a result, we see a small gap in cumulative failure rates open up after month 4, grow until month 10, and then gradually diminish over time.

We note above that the reduction in revocation rates associated with 6 versus 12 months of supervision should increase new-crime failures by reducing the number of persons who are incapacitated by technical revocations. To examine the magnitude of this incapacitation effect, we simulated new-crime failure rates for 6-month versus 12-month supervision terms under the assumption that the presence of supervision has no impact on the hazard rate of new-crime failures, i.e. all of the indicators in $\Delta(m_i, s_i)$ have no impact on the arrival rate of new-crime admissions. The results from this simulation show that, at 15 months after

[47] At 10 months, the absolute gap reaches a maximum value of 1.7 percentage points. This gap is slightly larger in absolute value than the corresponding gap in our DND results. See Figure 2.C. However, it is well within the corresponding confidence interval.

release, total new-crime admissions are only 3-tenths of 1 percentage point higher given 6 months of supervision instead of 12 months.[48] To gain intuition for why this effect is small, consider the set of persons who are revoked under 12-months of supervision but would not have been revoked under 6-months of supervision. This group represents only about ten percent of the sample, and the average person in this group faced less than 6 months of additional recidivism risk during our 15-month observation window.

Given our data, we cannot reliably measure recidivism beyond 15 months after release, but the magnitude of this incapacitation effect would mechanically be greater at longer horizons. On the other hand, a full analysis of the impacts of revocations on recidivism at longer horizons would also have to account for the fact that some parolees, who are revoked under 12 months of supervision but would not be revoked given 6 months, exit prison again in the following year and then commit new crimes.

Panel D of Figure 6 presents parallel results given 3 versus 6 months of supervision. Here, the gap between the cumulative new-crime failure rates opens earlier and also begins to narrow earlier. After 15 months, the two rates are almost identical. The 3-month rate is .3 percentage points lower than the 7.8 percentage points rate given 6 months of supervision.

Our competing risks results imply that assigning returning citizens to shorter terms of supervision generates two offsetting effects on recidivism rates. To begin, shorter terms of supervision reduce the number of parolees who are incapacitated by technical revocations. However, our results also imply that recidivism rates among returning citizens fall as they transition out of supervision, and shorter supervision terms create an earlier transition. In our simulations, the second effect is more important than the first, but both are small in absolute value, and both are small relative to the confidence intervals that we place around our DND estimates of the impact of the SAFE-T Act amendment on cumulative rates of new-crime admissions. See Panel C of Figure 2.

The empirical model that produces the results in Figure 6 does not incorporate unobserved determinants of failure risks. However, the two risks are correlated because the variables in $\tilde{X}$ impact both risks. Given the correlations among the X variables, the correlation between the two baseline hazards is .749. We have also estimated a version of this model that incorporates unobserved heterogeneity and further employs previous MSR spells for parolees in our sample period who were also released to MSR between 2014 and 2018. We chose this period because the policies that governed prison admissions and exits changed dramatically

[48] A back of the envelope calculation yields a similar conclusion. In Panel B of Figure 6, the absolute gap in technical revocation rates between those facing 12 versus 6 months of supervision is roughly zero at 6 months and grows to 8 percentage points after 15 months. Thus, those who are not revoked in a 6-month regime but would have been revoked in a 12-month regime face from a few weeks to 9 months of additional exposure to the risk of a new-crime failure, which implies about 5 months of additional risk on average. In our pre-period sample of class 3 and 4 parolees, the 5-month new-crime admission rate is 3.8 percent. If we multiply this rate times the total fraction revoked under 12-months of supervision who would not be revoked given 6 months, we get .038*.08=.003, or three-tenths of 1 percentage point.

during the COVID pandemic. We estimate this model using the semi-parametric method developed in Heckman and Singer (1984). We were able to observe a prior MSR spell for roughly 20 percent of our sample. We tried several different specifications for the mixing distribution, but none of the models produced precise estimates of the mixing parameters. Further, the results are quite similar to those presented in Figure 6.

8 Implications for Policy

Our empirical work address the impacts of a reform that reduced scheduled terms of parole supervision by six months. However, these results and the conceptual framework we use to interpret them may inform on-going debates about other aspects of parole policy.

In our data, parolees assigned to 6 months of supervision begin the 5th month after release from prison knowing that if they can avoid violations and new criminal charges for just 2 more months, they will be free. Those assigned to 12 months of supervision know that even if they avoid trouble for the next 2 months, they face another half-year of supervision burdens and technical revocation risk. Our empirical results document a lower hazard rate of new-crime failures among the former group than the latter. Further, our results show that after scheduled supervision ends, the hazard rate of new crime failures remains at or below baseline.

Viewed through the lens of our conceptual framework, both results provide support for a simple principle. When a returning citizen expects better life outcomes, the prospect of returning to prison represents a greater loss, and the citizen therefore has greater incentive to avoid new criminal charges. This principle implies that a returning citizen who faces a low risk of technical revocation – either because he is serving a short term of supervision or because the rules that govern his supervision limit the use of technical revocations – has more incentive to avoid new criminal charges than a returning citizen who faces a long term of supervision under policies that make technical revocation likely.[49] In this section, we discuss how this principle provides new ways to understand existing results in the literature and how it speaks to on-going debates about the policies that govern parole supervision.

As we note in section 1, Sakoda (2023) reports that, in Kansas, a reform that prevented the use of technical revocations for a particular set of parolees did not generate an increase in recidivism rates. Rose (2020) studies a reform to probation in North Carolina that limited the use of technical revocations for a

[49] For formal presentations of these arguments, see Appendix sections B.2 - B.5.

group of persons on probation, and he finds, especially among Black probationers, that the reform greatly reduced revocations without generating large increases in recidivism.

The reform that likely represents the largest scale effort to reduce the number of parolees who enter prison as punishment for technical violations is California's 2011 Public Safety Realignment Act. The act involved many reforms, but one of the most consequential was the elimination of prison time as punishment for technical revocations. After October 1, 2011, parole officers with reasonable suspicion that one of their parolees was engaged in criminal activity could still begin revocation proceedings in a local court, ask the court to confine the parolee to county jail for up to 180 days, and simultaneously work with prosecutors to build a case that could send the parolee back to prison.[50] However, under the new law, parole supervision involved less risk and lower expected sanctions for parolees. To begin, local courts, not parole officials, decided whether parolees were in violation of the conditions of their supervision. In addition, courts assigned punishments to violators. Finally, the law did not allow any court to send a parolee back to prison as punishment for violating a technical condition of his supervision.[51]

Over the next year, the prison population dropped sharply, and although jail populations increased slightly, the Lofstrom and Raphael (2016) results indicate that between October 2011 and October 2012 the new restrictions on revocations reduced the number of incarcerated persons in California by roughly 20,000 persons or 12 percent of the initial prison population in October 2011. The authors exploit cross-county variation in the impact of the reform on stocks of incarcerated persons to estimate how reducing stocks of prisoners impacts crime rates. They find no evidence that smaller prison populations had an impact on violent crime rates, and with the exception of a noteworthy jump in motor vehicle theft, they find no evidence that removing technical violators from the prison population increased property crime.

In both levels and percentage terms, California's Public Safety Realignment Act had a much larger impact on the number of incapacitated parolees than the Illinois SAFE-T Act amendment that we study.[52] Nonetheless, there is limited evidence that the California reform harmed public safety. How did the reform generate such a large reduction in the number of parolees who return to prison for technical reasons without harming public safety? We cannot provide a definitive answer to this question, but our conceptual framework highlights the possibility that, by lowering the expected risks associated with technical violations, California's Public Safety Realignment Act gave parolees more incentive to avoid criminal

[50] The standard for revocation is a preponderance of the evidence standard that is lower than the standard for a new criminal conviction.

[51] The reform took decisions on revocation charges away from the parole board and gave them to local courts. The reform listed 180 days in county jail as the maximum possible punishment for a violation.

[52] In section 9, we consider an even more aggressive reduction of MSR terms in IL than the one imposed by the reform we study, and we conclude that even this more ambitious reform would only reduce the steady-state prison population by 3 percent.

activity.[53] Appendix section B.5 proves that, holding other aspects of supervision constant, restrictions on technical revocations improve expected life outcomes under supervision, and as a result, reduce expected levels of criminal activity among parolees. Parolees who do not believe that parole officials are going to "find a way" to return them to prison on technical grounds have greater incentive to avoid criminal charges that would allow courts to return them to prison.

We highlight this argument, in part, because the wisdom of sending parolees to prison as punishment for technical violations is a topic of on-going debate. The California legislature recently debated a proposal to further limit the capacity of parole officers to sanction California parolees for technical violations,[54] and New Jersey is also debating a bill that would limit the use of incarceration as a punishment for technical violations of parole.[55] Finally, in a recent policy brief, Staudt and Sanders (2025) recommend that all states prohibit the revocation of parole on technical grounds.

In September 2021, New York passed the *Less Is More: Community Supervision Revocation Reform Act (S.1144A/A.5576A)*. The reform prevented New York from sending parolees back to prison for certain technical violations. This reform is noteworthy because it specifically bans the use of incarceration as a punishment for failures to pay fines and fees. Many states require parolees to pay past court fees and fines, and some require parolees to pay for the costs of their supervision. In addition, Appendix E explains that 30 states allow parole authorities to return parolees to prison as punishment for non-payment of required fees and fines.[56]

The case for eliminating technical revocations that result from non-payment of fines and fees may be particularly strong. If a parolee knows that he has no assets, no access to resources from friends or family, and meager earnings prospects, he may conclude that, even if he avoids new charges, sooner or later he will return to prison because he is not able to make required payments, and this belief clearly undermines the parolee's incentives to avoid criminal activity.

Any reform that restricts the use of technical revocations will inevitably reduce the number of parolees who are incapacitated for technical reasons. However, our conceptual framework implies that restrictions on the use of technical revocations may also reduce levels of criminal activity among returning citizens, and our empirical results are consistent with the hypothesis that these reductions in criminality can fully offset the

[53] The reform maintained deterrence by maintaining the capacity of parole officers to act on credible evidence of new criminal activity and begin a process that could lead both to a short jail spell and a new term in prison. However, after the reform, parolees knew that they would not face long prison spells simply because they broke a rule and that they could stay out of prison by avoiding new criminal charges

[54] Bill AB-1483 limits the ability of parole officials to use jail time as a sanction for technical violations. However, it also makes clear that the changes would apply only to a "violation of a person's conditions of supervision that is not a new misdemeanor or felony." See https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202520260AB1483.

[55] See *Substance Abuse Recovery and Accountability Act (A5311/S4492)*

[56] Illinois does not impose financial conditions of supervision.

public safety costs of incapacitating fewer parolees through technical revocations. When parolees believe they face a serious risk of returning to prison for technical reasons, whether they face new criminal charges or not, they have less incentive to desist from crime.

The SAFE-T Act amendment we study reduced terms of parole supervision for low level offenders. Other parts of the SAFE-T Act reduced terms of supervision for more serious offenders. Future research is needed to evaluate the impacts of these reforms, and some policy makers may be reluctant to assign short supervision terms to serious offenders because short terms reduce not only revocations but the period of monitoring the state provides for parolees. However, states can always hold the length of supervision terms constant while limiting technical revocations. Limits on technical revocations trade reduced incapacitation for better parolee incentives, but the level of monitoring remains constant.

9 Conclusion

The reduction in MSR terms mandated by the December 6, 2022 amendment to the SAFE-T Act sharply reduced rates of prison re-entry among class 3 and 4 parolees. Sharp drops in rates of technical revocation drove this result, and we find no evidence that affected parolees were convicted of more crimes following the reform. Further, the simulations from our competing risks models indicate that further reductions in MSR term lengths would likely further reduce rates of prison re-entry during parole without creating harms to public safety.

The standard MSR term for class 3 and 4 offenders is now 6 months, and the standard term for class 1 and 2 offenders is 1 year. The policy simulations in Panel B of Figure 6 suggest that reducing terms from 12 to 6 months cuts revocation rates by more than one-half, and reducing terms from 6 to 3 months again cuts revocation rates by more than one-half.

Let us suppose that we could halve revocation rates by reducing the MSR term for class 3 and 4 prisoners to 3 months and reducing the term for class 1 and 2 prisoners to 6 months. How much money would Illinois taxpayers save? Roughly 70 percent of the existing stock of persons on MSR are class 1-4 parolees, and the state spends 43.36 million dollars on parole services. If class 1-4 parolees spend half as long on MSR, the state could save roughly 35 percent of 43.36 million dollars, or roughly 15 million dollars.

However, the more important savings would come from reduced incarceration costs. On September 30, 2025, IDOC housed 1,819 class 1 to 4 prisoners whose last admission was associated with a technical revocation of supervision. This total represents 6 percent of the prison population. If we assume that

cutting revocation rates in half would lead to a new steady-state population of technically revoked prisoners that is half as large,[57] the new steady-state prison population would shrink by just over 900 persons or just over 3 percent of the state prison population. The state corrections budget for 2025-2026 is 2.19 billion dollars.[58] Three percent of this budget is more than 65 million dollars. Since prison systems involve fixed costs, we also consider the cost savings associated with closing one prison. Jacksonville Correctional Center houses just under 900 prisoners, and the state spends 50 million dollars per year to operate this facility.

These are back of the envelope calculations, but if the state cuts existing class 1-4 MSR terms in half, the state could expect to save at least 15 million dollars in MSR costs and another 50 million dollars in incarceration cost, which implies total savings of 65 million dollars. Further, this figure includes no benefits that parolees enjoy because they are incarcerated less. The minimum wage in Illinois is $15 per hour, and there are 8,760 hours in a year. If we price the time that parolees spend incarcerated at the minimum wage, a steady-state reduction of 900 prisoners equals a 118.3 million dollar per-year reduction in lost parolee time.

If we sum the savings for taxpayers and our estimate of the value of the time returned to parolees, we conclude that reducing current class 1-4 MSR terms by half would likely create more than 180 million dollars in annual benefits. In addition, our results imply that this reduction in MSR supervision terms would not harm public safety.

Further, our conceptual framework, our empirical results, and results in related studies suggest that, holding the length of supervision terms constant, optimal supervision policies likely place strict limits on the capacity of parole officers to impose burdensome supervision conditions or return parolees to prison as punishment for technical violations. A parolee who believes that life under supervision is not much better than life in prison or that he is likely headed to prison for technical reasons has little incentive to desist from criminal behavior. This reasoning poses a clear challenge to the practice of sending parolees back to prison as punishment for failures to pay fines or fees. Given such policies, parolees who are most disadvantaged face the weakest incentives to avoid recidivism since their lack of financial capacity may make their return to prison unavoidable.

Future research should address other aspects of the optimal design of supervision policies and procedures. Parole officers always face the possibility of public shame or work discipline if one of their parolees commits a serious crime. Should parole officers receive bonus pay or public recognition linked to metrics of parolee

[57] Since our results imply that the fraction of parolees who return to prison with new sentences does not change, this should be a conservative rule of thumb. A formal steady-state simulation must account for the fact that reductions in initial technical revocations also reduce the flow of revoked inmates back to MSR supervision, which should then reduce the incidence of multiple technical revocations within a single MSR term.

[58] See IL HB3898: introduced on February 25, 2025. Spending on parole services is detailed here as well.

success, e.g. what fraction of parolees remain employed and in stable housing for N years following release? We have found no parole systems that use these types of incentives for parole officers, but our conceptual framework argues that any reforms that make supervision more helpful and less burdensome enhance incentives for parolees to avoid criminal actions that could end supervision and begin a new term in prison.[59]

[59] We have found evidence that some states are experimenting with systems that allow parole officers to not only punish rules violations but also reward parolees for good compliance. See https://www.ncsl.org/civil-and-criminal-justice/incentives-for-supervision-compliance. When designing systems that reward parole officers for good parolee outcomes, policy makers should avoid performance measurement systems that parole officers can easily manipulate.

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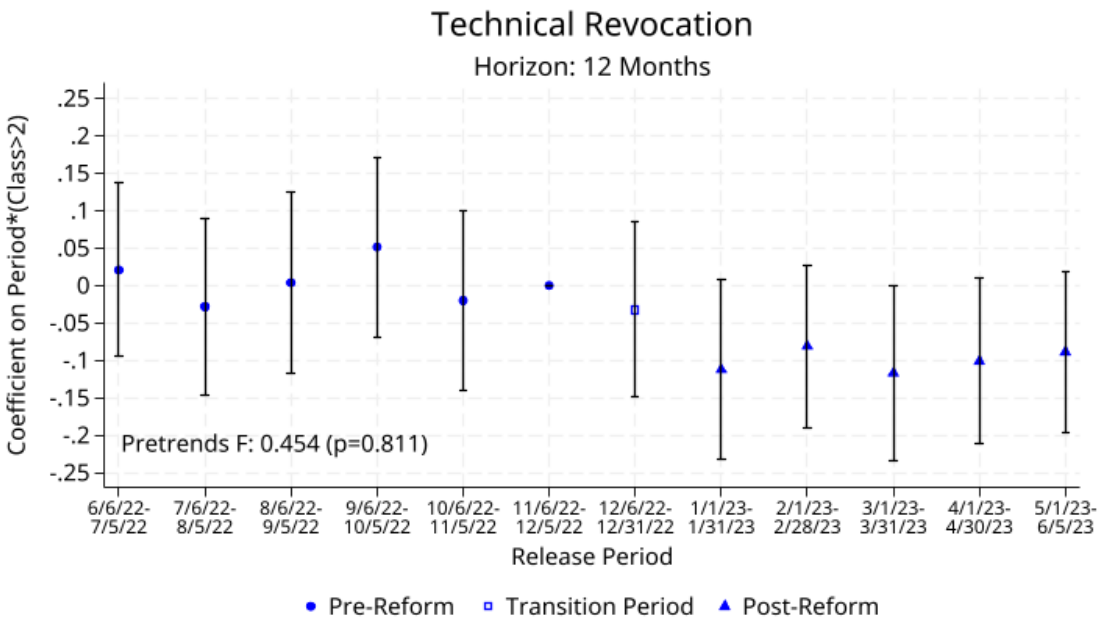
10 Figures

Figure 1 - Pre-Trends Tests

Panel A

Panel B

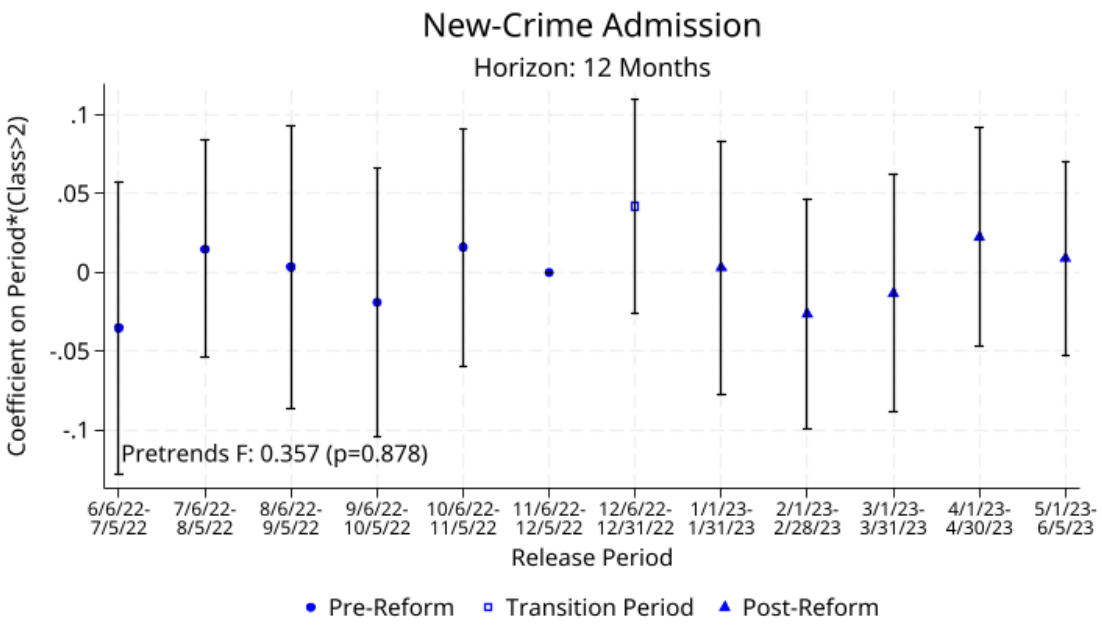


See notes below Panel C.

Figure 1 continued

Pre-Trends Tests

Panel C

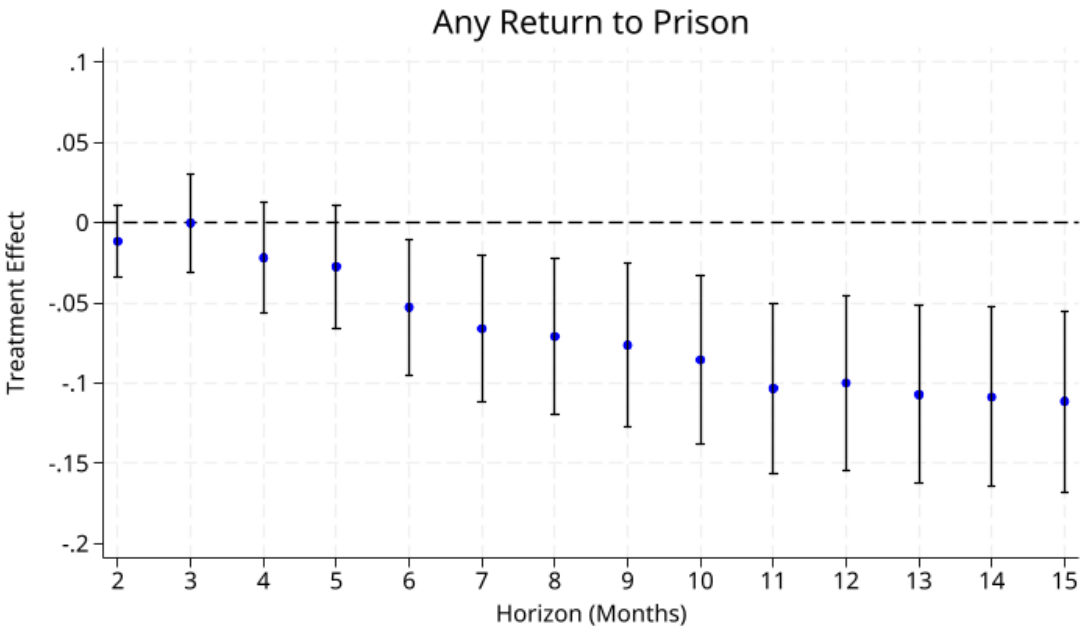


Note: These figures present the results of tests for parallel trends. We start with the model presented in equation 1 and fully interact period of release with treatment. The omitted release period is month 6, or November 6, 2022 to December 5, 2022. We test the null that all interaction terms for months 1 through 5 are zero. The figures include 95-percent confidence intervals for each interaction term. We use Huber-White standard errors. The sample includes only persons who were initially released from a spell of prison that began as an admission associated with a criminal sentence. Here, we present tests for outcomes measured at the 12-month horizon, but we conduct the same F-tests for models that measure outcomes at horizons of 3, 6, 9, and 15 months. We also conduct these tests for the five different DND models that we estimate using a sample of IDOC records than we match to the Cook County Court records. See section 5. Among the 40 pre-trends tests we conduct, one p-value of .03 is less than .05, and the rest range from .1 to .99.

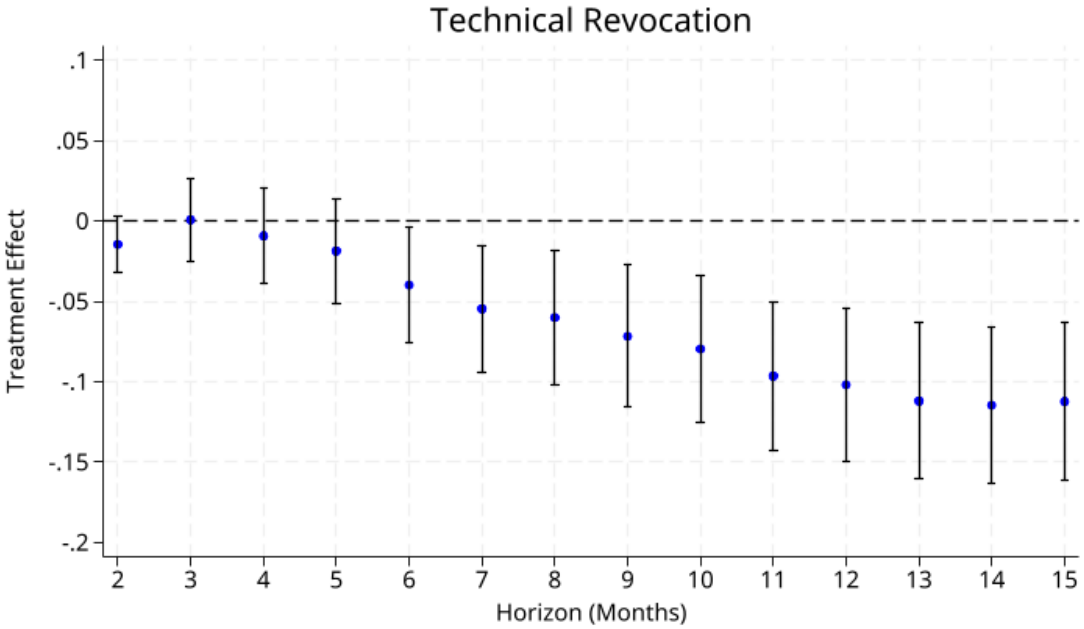
Figure 2

Diff-in-Diff Impacts

Panel A



Panel B

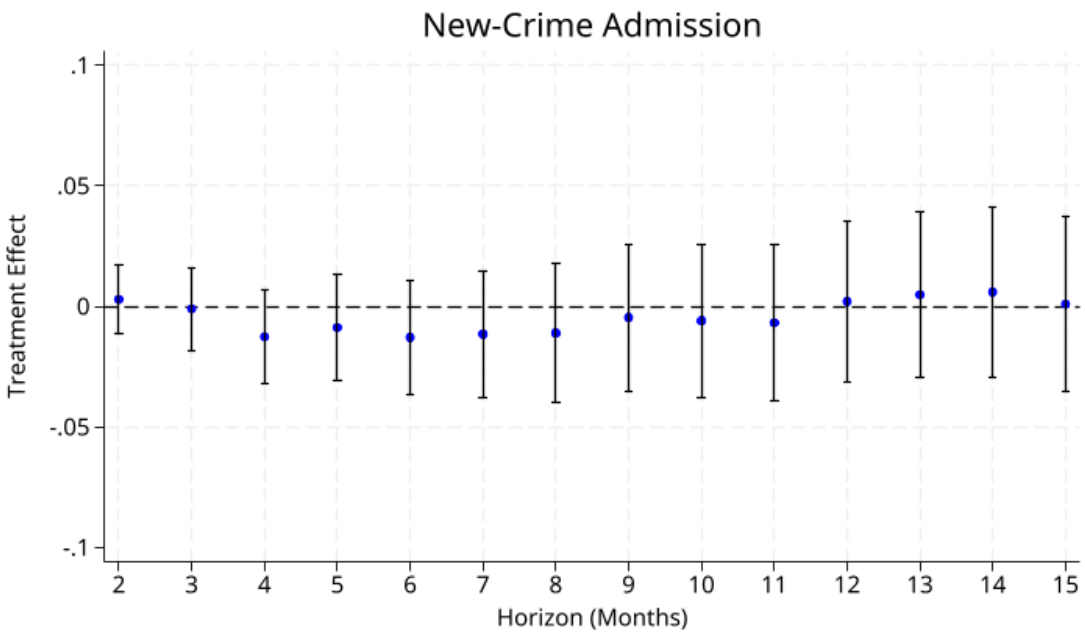


See notes below Panel C.

Figure 2 continued

Diff-in-Diff Impacts

Panel C

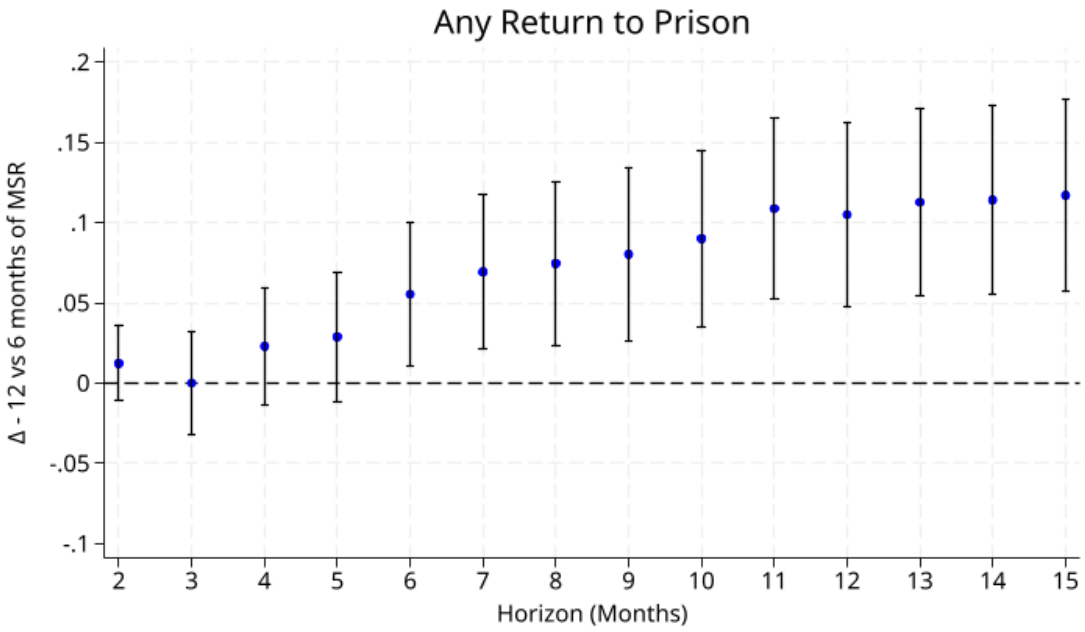


Note: These figures present the results from our main difference-in-differences model. See equation 1 and the discussion in section 4.2. The outcome variables are indicators for specific types of prison re-admission events. Panel A presents results for the outcome Any Return to Prison. Panel B presents results for the outcome Technical Revocation, and Panel C presents results for New-Crime Admission. The figures present results for horizons of 2 to 15 months following initial release from prison. The figures include 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors. The sample includes only persons who were initially released from a spell of prison that began as an admission associated with a criminal sentence.

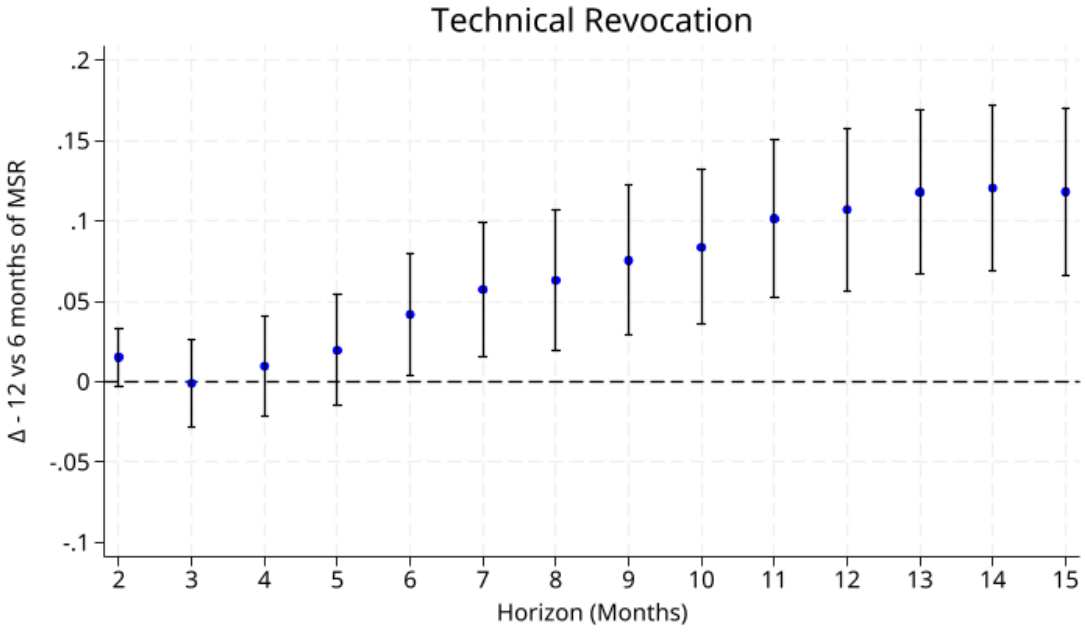
Figure 3

IV Estimates of Impact of MSR Duration

Panel A



Panel B

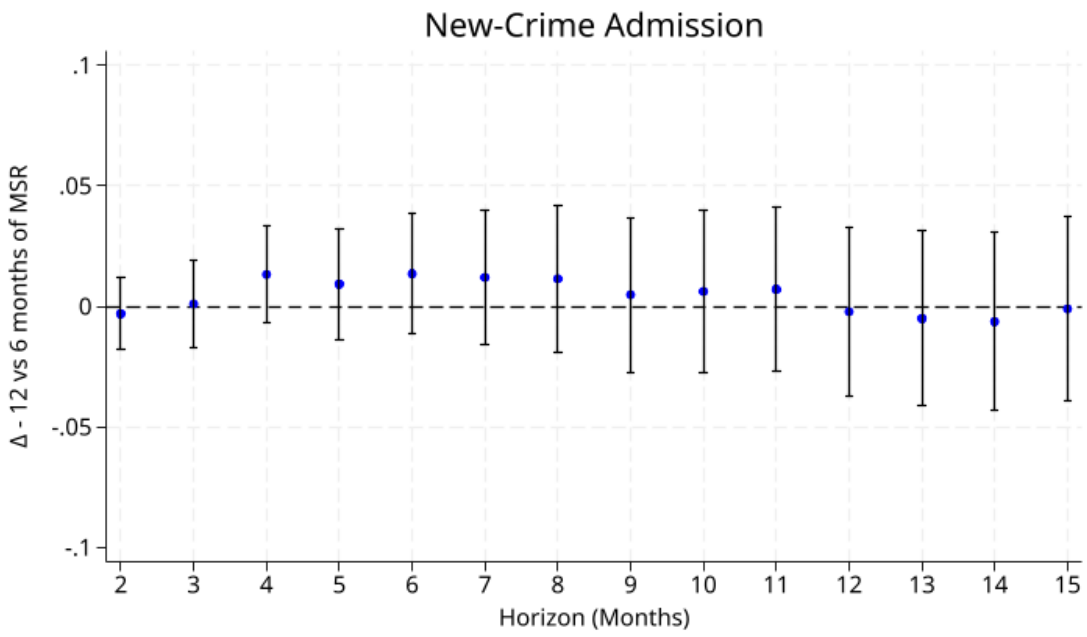


See notes below Panel C.

Figure 3 continued

IV Estimates of Impact of MSR Duration

Panel C

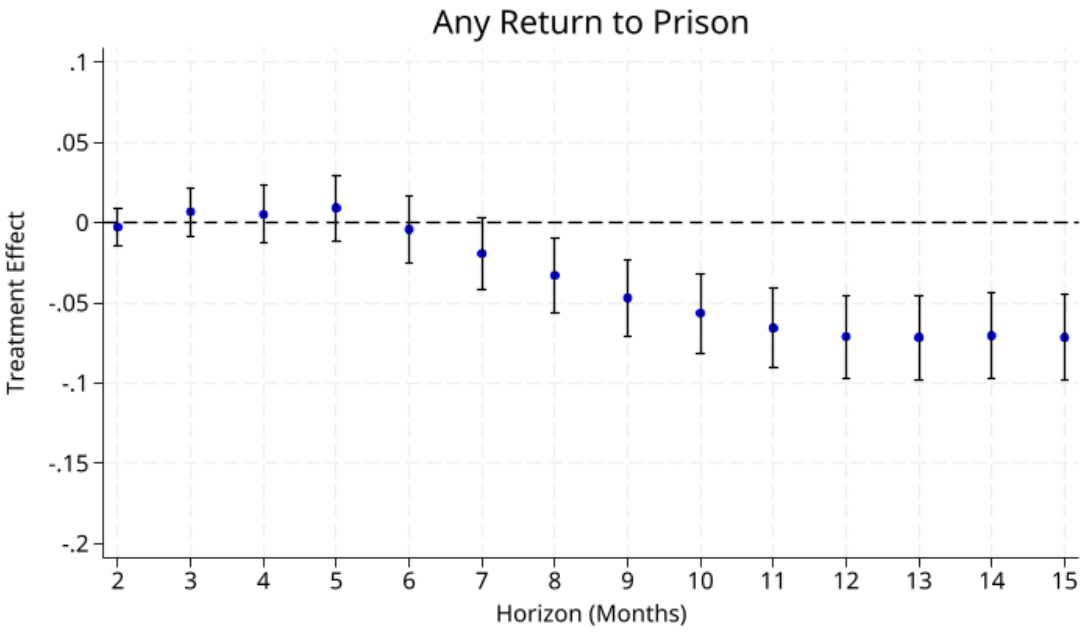


Note: These figures present the results from instrumental variable regressions that estimate changes in custody outcomes associated with an increase in MSR terms from 6 months to 12 months. See the discussion in section 4.3. The outcome variables are indicators for specific types of prison re-admission events. Panel A presents results for the outcome Any Return to Prison. Panel B presents results for the outcome Technical Revocation, and Panel C presents results for New-Crime Admission. The figures present results for horizons of 2 to 15 months following initial release from prison. The figures include 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors. The sample includes only persons who were initially released from a spell of prison that began as an admission associated with a criminal sentence. Since each reported impact is the change in the outcome associated with *increasing* the length of MSR supervision from 6 months to 12 months, the impacts have the opposite sign of the impacts reported in Figure 2.

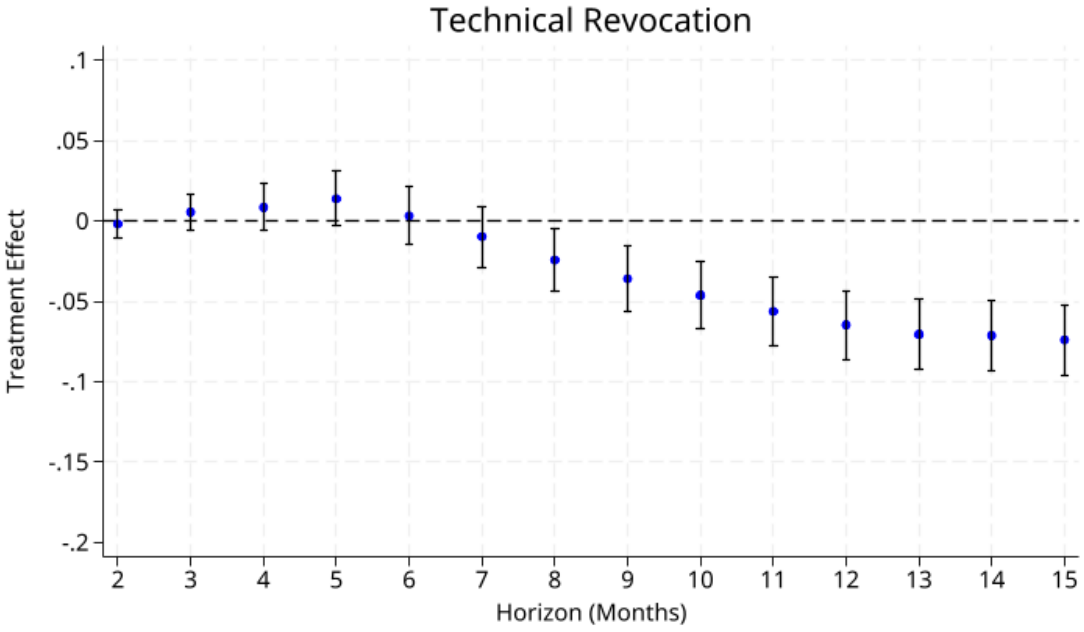
Figure 4

Post vs Pre Impacts

Panel A



Panel B

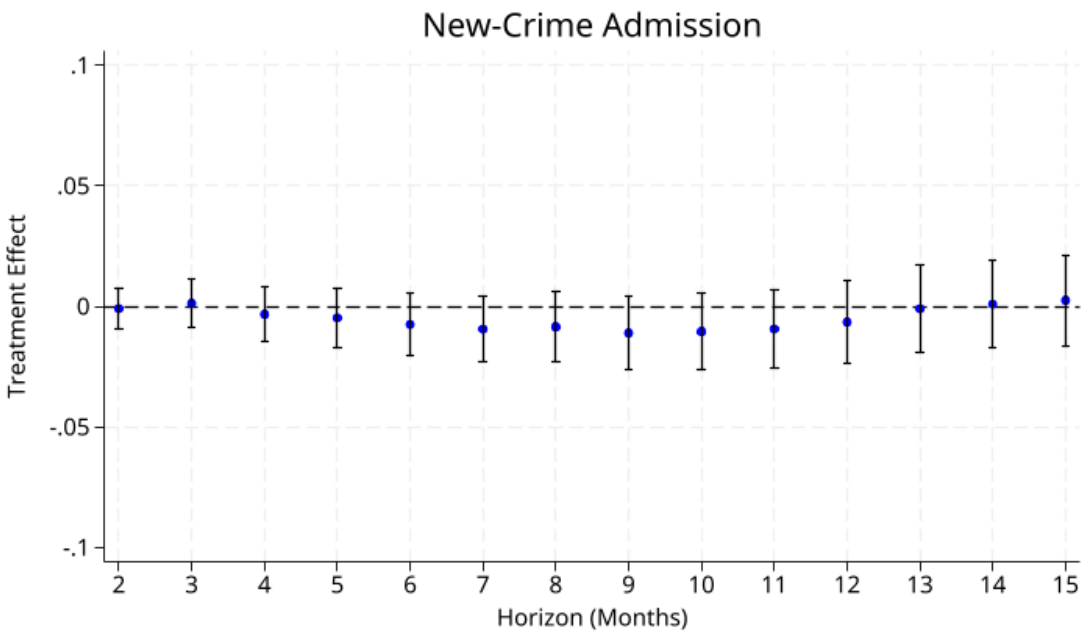


See notes below Panel C.

Figure 4 continued

Post v Pre Impacts

Panel C

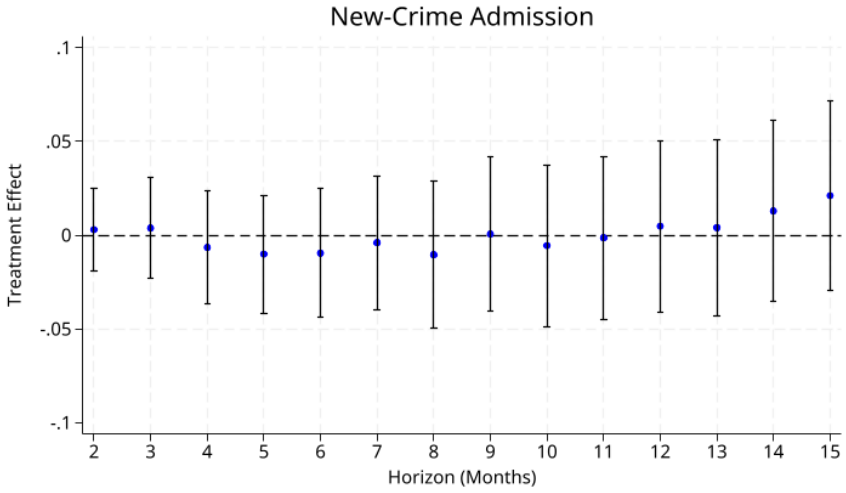


Note: These figures present the results from basic regressions that exploit pre versus post-reform variation in custody outcomes among class 3 and 4 offenders. See equation 2 and the discussion in section 4.4. The outcome variables are indicators for specific types of prison re-admission events. Panel A presents results for the outcome Any Return to Prison. Panel B presents results for the outcome Technical Revocation, and Panel C presents results for New-Crime Admission. The figures present results for horizons of 2 to 15 months following initial release from prison. The figures include 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors. The sample includes only persons who were initially released from a spell of prison that began as an admission associated with a criminal sentence. We have also estimated versions of these models that contain linear time trends, and we get similar results. However, the reductions in technical revocations associated with the reform are slightly larger given controls for linear time trends. See Appendix Figure 1.

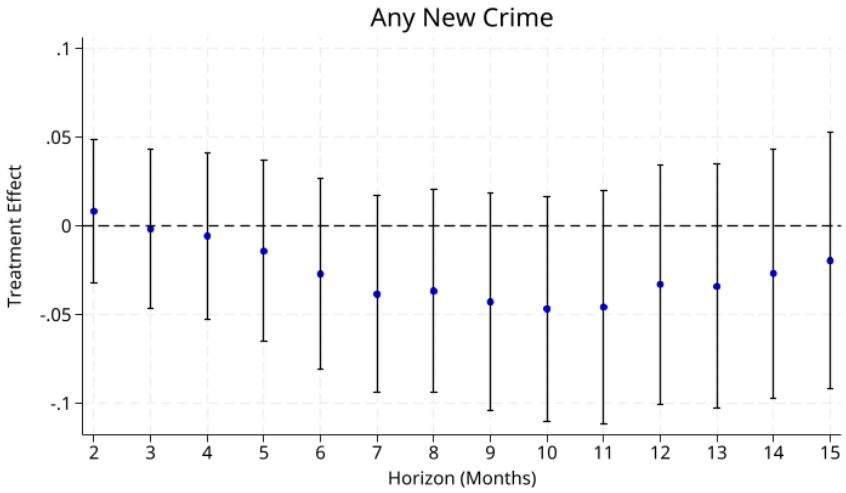
Figure 5

Diff-in-Diff Impacts In Matched Court-IDOC Sample

Panel A



Panel B



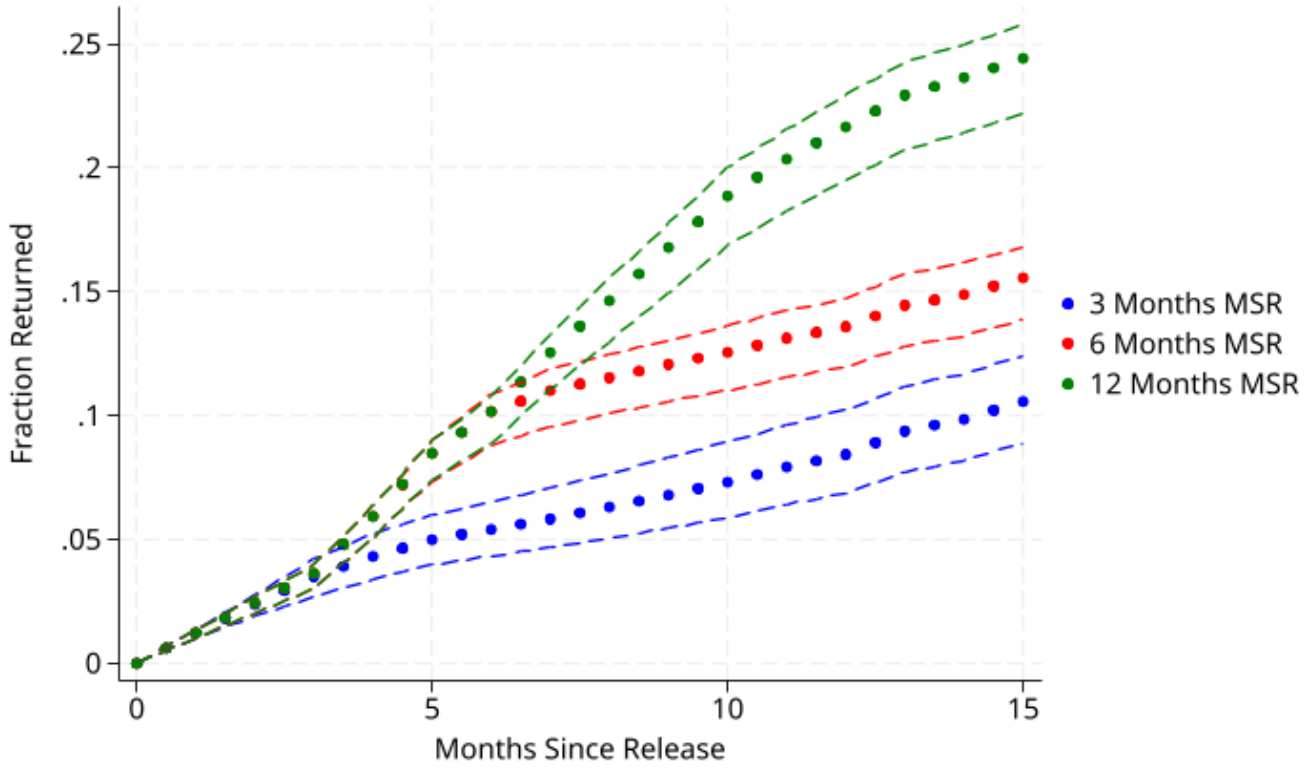
Note: These figures present the results of two difference-in-differences models. See equation 1 and the discussion in section 4.2. The sample is the set of parolees that we are able to match to Cook County court records. See Table 3. Panel A presents results for the outcome New-Crime Admission. See Panel C of Figure 2 for parallel results for the full-sample of parolees. Panel B presents results for the indicator Any New Crime which equals one if New-Crime Admission equals one or the parolee receives a felony conviction. The two figures present results for horizons of 2 to 15 months following initial release from prison. The figures include 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors.

Figure 6

Simulated Impact of MSR-term length on Cumulative Failures

Panel A

Any Return to Prison

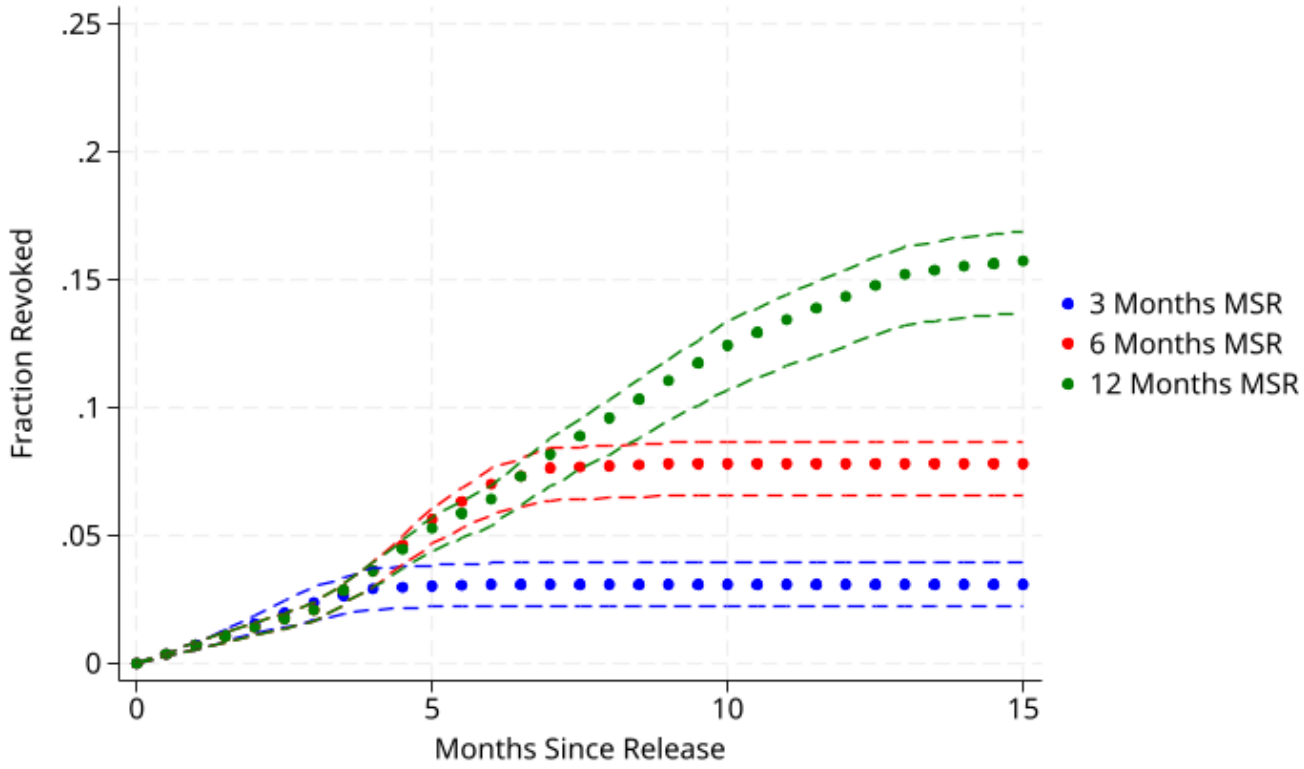


See notes below Panel D.

Figure 6 continued

Panel B

Technical Revocations



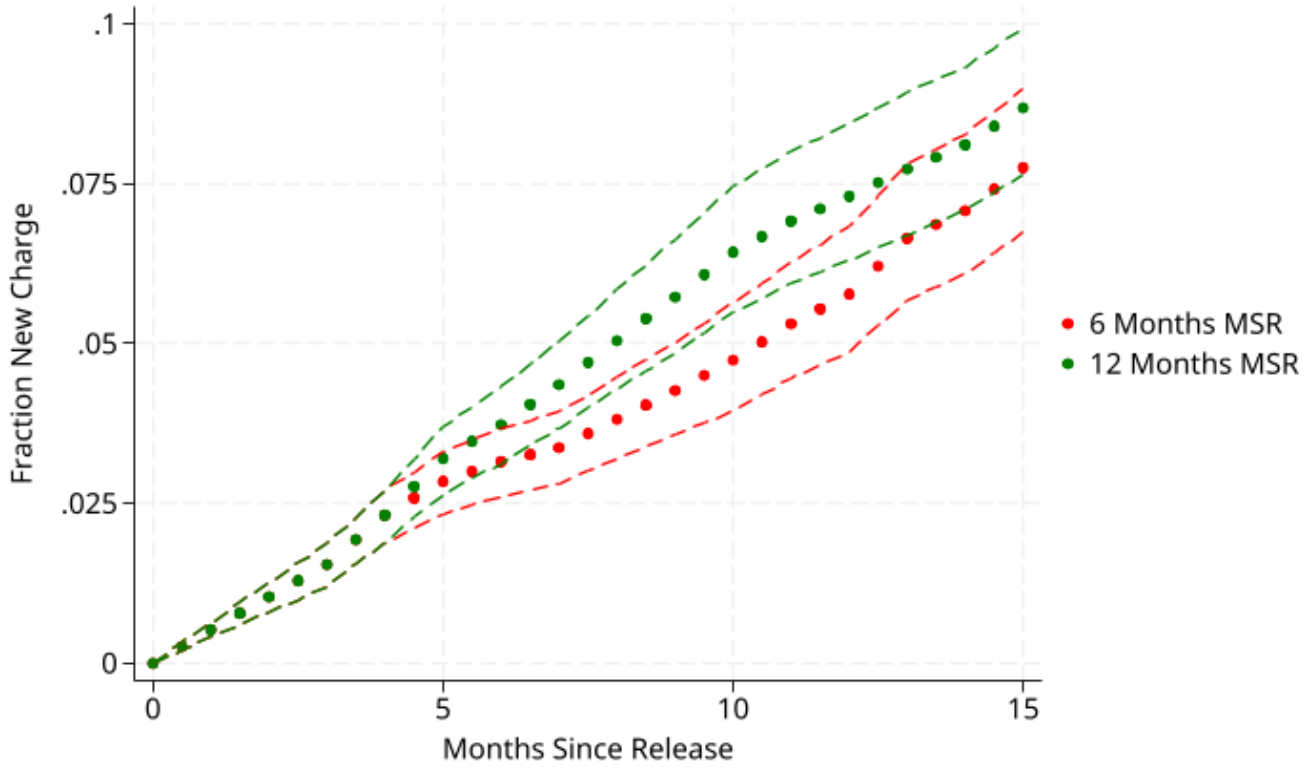
See notes below Panel D.

Figure 6 continued

Panel C

New-Crime Admission

6 vs 12 Month Terms

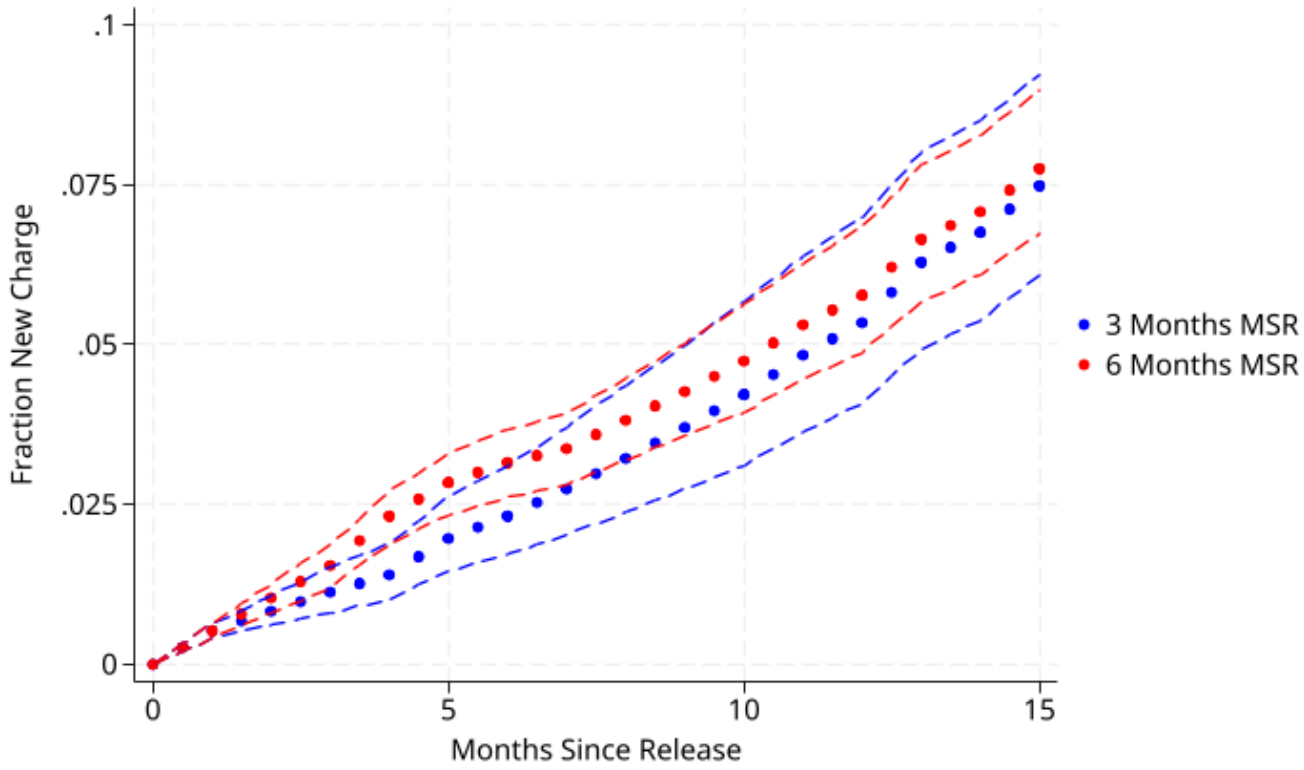


See notes below Panel D.

Panel D

New-Crime Admission

3 vs 6 Month Terms



Note: These figures present the results of three simulation exercises. For all class 3 and 4 inmates in our estimation sample, we use the estimated coefficients from the competing risks model presented in equation 3 to simulate the fractions of parolees who experience any return to prison, a return to prison due to a technical revocation, and a return to prison due to a new criminal sentence. Again, we plot results over 15 months following release. This version of the model treats the latent risks of a New-Crime Admission and Technical Revocation as independent events, given the observed characteristics of offenders. However, the risks are correlated through the controls in our model. See Table 1. The correlation between the 2 baseline hazards is .749.

11 Tables

Table 1

Panel A

Descriptive Statistics: Outcomes

	Pre-Control	Pre-Treat	Post-Control	Post-Treat	Overall
Any Return to Prison - 6m	.082	.115	.123*	.111	.112
Any Return to Prison - 12m	.206	.222	.224	.152*	.197
Any Return to Prison - 15m	.221	.243	.251	.173*	.219
Any Return to Prison - Total	.273	.291	.302	.220*	.267
Technical Revocation - 6m	.056	.072	.094*	.076	.075
Technical Revocation - 12m	.141	.148	.172	.084*	.130
Technical Revocation - 15m	.150	.160	.182	.087*	.138
Technical Revocation - Total	.152	.164	.185	.089*	.141
New-Crime Admission - 6m	.026	.043	.029	.036	.037
New-Crime Admission - 12m	.065	.074	.052	.068	.068
New-Crime Admission - 15m	.072	.083	.069	.086	.081
New-Crime Admission - Total	.121	.127	.116	.131	.126
Survival Time (days)	897.2	880.0	724.2*	781.1*	828.1
Spell Length (completed spells)	315.3	282.3	272.8	268.6	280.7
N	461	1,877	593	1,435	4,366

Note: This table provides descriptive statistics for key outcomes. A * indicates that the value in the post period, for either the treatment or control sample, is statistically different from the corresponding value for the pre-period given a significance level of .05. The data describe outcomes for persons released from an IDOC prison between June 6, 2022 and June 5, 2023. See section 3 for more details.

Table 1

Panel B

Descriptive Statistics: Parolee Characteristics

	Pre-Control	Pre-Treat	Post-Control	Post-Treat	Overall
Prior Admissions	1.68	1.68	1.70	1.72	1.70
Serious Prior Admissions	1.24	.238	1.28	.293*	.504
Prior Violations	.304	.300	.293	.298	.299
Long Sentence	.358	.140	.388	.121	.190
Black	.555	.508	.540	.504	.516
Hispanic	.113	.095	.079	.098	.096
Male	.872	.878	.890	.873	.877
Age	35.1	36.3	36.0	36.5	36.2
Class 1	.156	0	.153	0	.037
Class 2	.844	0	.847	0	.204
Class 3	0	.425	0	.459	.333
Class 4	0	.575	0	.541	.425
Violent Crime	.354	.355	.352	.363	.357
Drug Crime	.187	.249	.218	.251	.239
Property Crime	.354	.355	.352	.363	.357
N	461	1,877	593	1,435	4,366

Note: This table provides descriptive statistics for the offender characteristics we employ in our empirical models. A * indicates that the value in the post period, for either the treatment or control sample, is statistically different from the corresponding value for the pre-period given a significance level of .05. The data describe outcomes for persons released from an IDOC prison between June 6, 2022 and June 5, 2023. See section 3 for more details.

Table 2

Heterogeneous Impacts

Sample	N	Any Return (12)	Technical (12)	New-Crime (12)	Any Return (15)	Technical (15)	New-Crime (15)
Black	2253	-0.104	-0.096	-0.007	-0.118	-0.107	-0.011
		(0.039)	(0.035)	(0.024)	(0.040)	(0.036)	(0.025)
Non-Black	2113	-0.092	-0.109	0.016	-0.101	-0.119	0.017
		(0.039)	(0.033)	(0.025)	(0.041)	(0.034)	(0.028)
Age $\leq$ 35	2339	-0.110	-0.115	0.005	-0.117	-0.119	0.002
		(0.039)	(0.035)	(0.024)	(0.040)	(0.035)	(0.026)
Age $>$ 35	2027	-0.091	-0.090	-0.002	-0.106	-0.106	0.000
		(0.038)	(0.033)	(0.024)	(0.041)	(0.035)	(0.026)
Violent	1559	-0.084	-0.086	0.002	-0.093	-0.087	-0.005
		(0.048)	(0.043)	(0.026)	(0.049)	(0.045)	(0.029)
Non-Violent	2807	-0.107	-0.113	0.005	-0.122	-0.129	0.006
		(0.034)	(0.029)	(0.022)	(0.035)	(0.030)	(0.024)
Drug	1042	-0.060	-0.068	0.008	-0.083	-0.070	-0.012
		(0.057)	(0.049)	(0.036)	(0.059)	(0.050)	(0.040)
Non-Drug	3324	-0.109	-0.111	0.002	-0.119	-0.124	0.005
		(0.032)	(0.028)	(0.019)	(0.033)	(0.029)	(0.021)

Note: This table provides results from our DND estimator. For eight different subsamples of our data, we present DND estimates of the impact of the SAFE-T Act amendment on our three key outcomes at horizons for 12 months and 15 months following release. The entries below the treatment effects, in parentheses, are Huber-White standard errors. We divide race categories into Black versus non-Black. We divide age based on whether the released prisoner is older than 35 at the time of release. We also split the sample according to whether a released prisoner had been serving time for a violent versus non-violent-crime, and a drug versus non-drug crime.

Table 3

Outcomes In Matched Court-IDOC Records

	IDOC Outcome			
	No Failure	Technical	New Crime	Total
Court Outcome				
No Court Case				
Frequency	1,096	57	87	1,240
Percent	88.39	4.60	7.02	100.00
Misdemeanor				
Frequency	115	66	15	196
Percent	58.67	33.67	7.65	100.00
Felony - No Conv				
Frequency	90	71	13	174
Percent	51.72	40.80	7.47	100.00
Felony Conv - No IDOC				
Frequency	28	10	2	40
Percent	70.00	25.00	5.00	100.00
Felony Conv - IDOC				
Frequency	12	67	55	134
Percent	8.96	50.00	41.04	100.00
Total				
Frequency	1,341	271	172	1,784
Percent	75.17	15.19	9.64	100.00

Note: This table describes the outcomes we observe in the sample of parolees that we match to Cook County Court records. Each of these parolees was released after serving a term in prison that resulted from a prison sentence announced in a Cook County Court. The 1,784 parolees in the sample are 94 percent of the Cook County parolees in our full IDOC sample. Section 3.2 and Appendix C.2 describe our matching procedures and the structure of the court data. The five rows are five outcomes we create using court records. We measure outcomes that occur during the first 15 months following release from prison. If we see more than one of these events, we code the most serious outcome. The columns describe the outcomes we observe in IDOC data. Technical denotes technical revocation of supervision. New Crime denotes New-Crime admissions to prison. The percentage entries are row percentage, e.g. 50 percent of the 133 parolees sentenced to prison in Cook County during the first 15-months after their release from prison entered prison as technical violators.

Table 4

Proportional Hazard Results

Competing Risks: Technical Revocation vs New-Crime Admission

	Revocation	p-value	New Crime	p-value
Black	1.29	0.01	0.94	0.63
Hispanic	1.10	0.58	0.80	0.30
Male	1.44	0.03	2.30	0.00
Total Prior Admissions	1.31	0.00	1.24	0.02
Total Prior Class X-2 Admissions	0.93	0.24	0.98	0.86
Total Prior MSR Violations	1.10	0.35	1.15	0.33
Age 20-22	0.66	0.31	0.61	0.18
Age 23-25	0.58	0.19	0.20	0.00
Age 26-30	0.39	0.02	0.19	0.00
Age 31-35	0.38	0.02	0.12	0.00
Age 36-40	0.40	0.02	0.15	0.00
Age 40+	0.29	0.00	0.11	0.00
Violent	1.12	0.45	0.80	0.22
Drug	1.21	0.20	1.19	0.35
Property	1.54	0.00	1.13	0.52
2 Months or Less Before MSR Ends	1.21	0.37	0.59	0.06
1 Month After MSR Ends	0.35	0.01	0.35	0.01
2+ Months After MSR Ends	0.06	0.00	0.62	0.12

Note: This table presents results from a proportional hazards version of the competing risks model expressed in equation 3. The results are presented as hazard ratios, e.g. all else equal, the hazard rate of revocations for technical violations is 29 percent higher among Black parolees than among non-Black parolees. The omitted age category is "less than 20". The model also includes indicators for crime class and month of release. The final three rows report impacts – on both hazard rates – of three indicators that capture the difference between current time since release and scheduled supervision time. We restrict the sample to parolees who leave prison with scheduled supervision terms that are within 15 days of either 6 months or 12 months. We retain more than 98 percent of the sample we employ in our main DND results, see section 2. The sample size is 4,282.

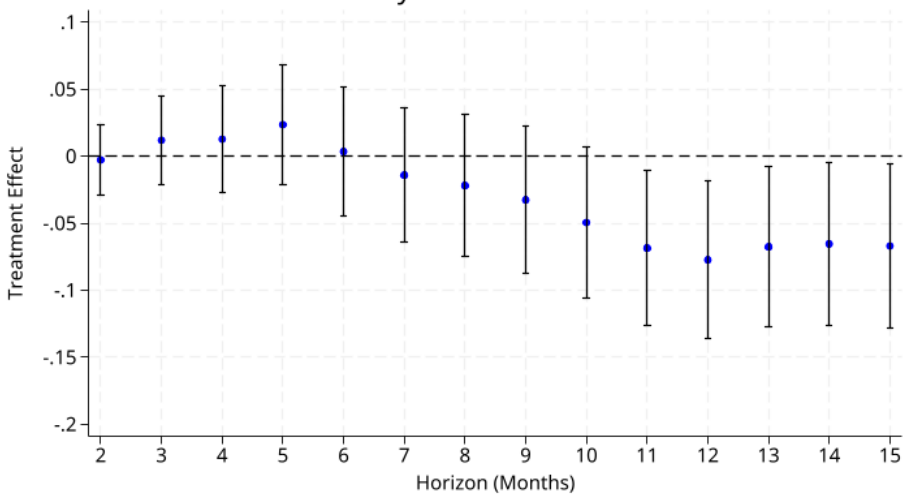
APPENDIX FIGURES

Appendix Figure 1

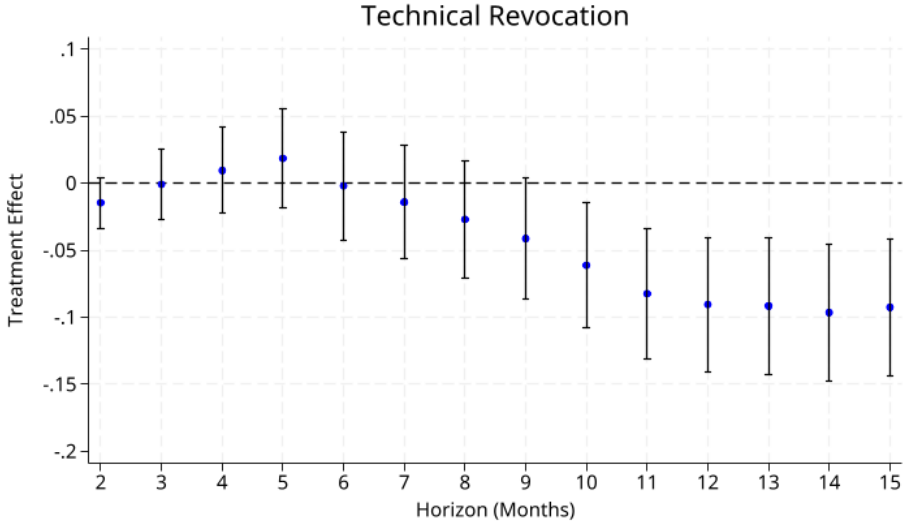
Post vs Pre Impacts

w/ Linear Trend in Release Date

Panel A



Panel B

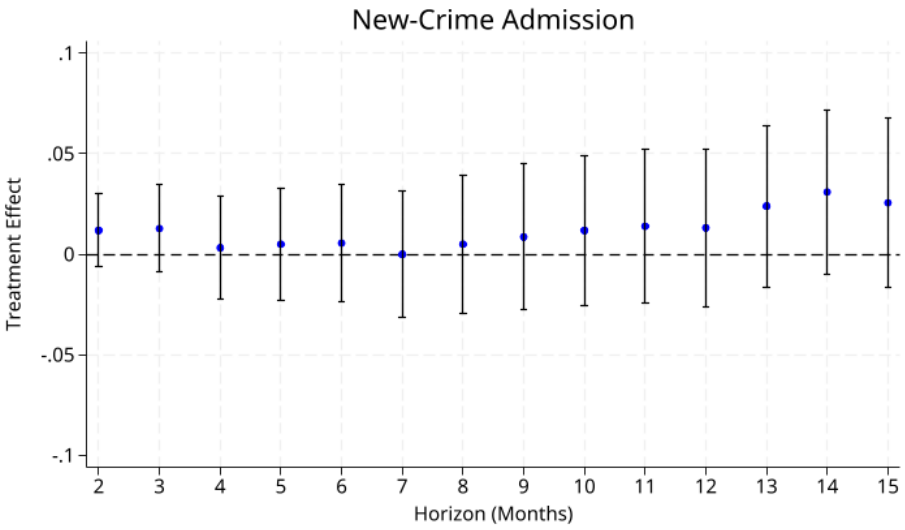


See notes below Panel C.

Appendix Figure 1 continued

Post v Pre Impacts

Panel C

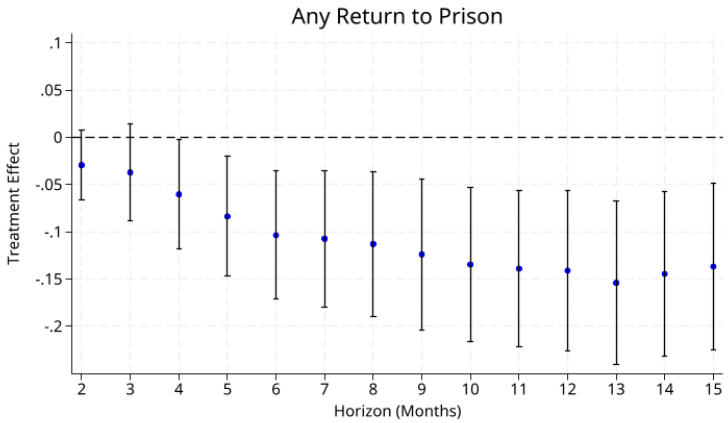


Note: These results employ only the sample of class 3 and 4 parolees. The results come from simple pre-post regressions like the ones that produce the results presented in Figure 4. See section 4.4, but here each model includes a linear trend in date of release from prison. See notes below Panel C of Figure 4 for more details.

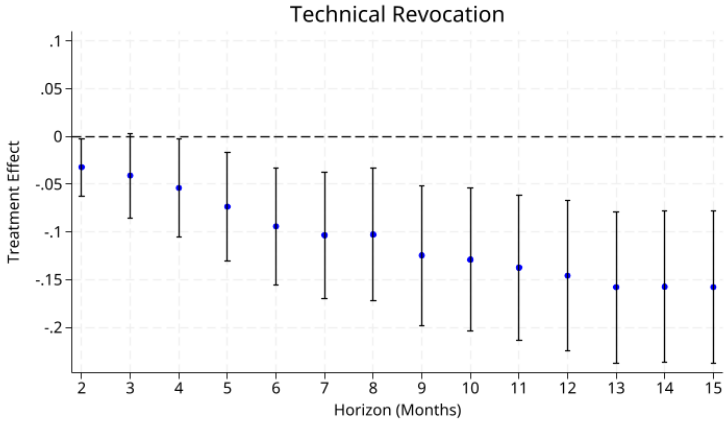
Appendix Figure 2

DND Results - Matched Sample of IDOC-Court Records

Panel A



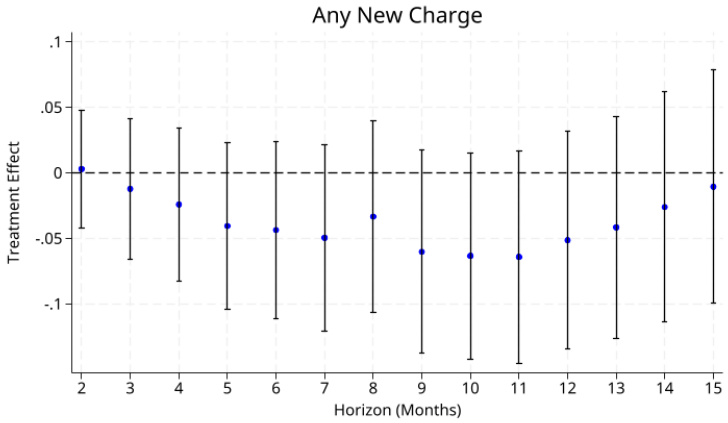
Panel B



Note: These figures present the results of two difference-in-differences models. See equation 1 and the discussion in section 4.2. The sample is the set of parolees that we are able to match to Cook County court records. See Table 3. Panel A presents results for the outcome Any Return to Prison. Panel B presents results for the indicator Technical Revocation. See Panels A and B of Figure 2 for parallel results for the full-sample of parolees. The two figures present results for horizons of 2 to 15 months following initial release from prison. The figures include 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors.

Appendix Figure 3

DND Results - Matched Sample of IDOC-Court Records



Note: This figure presents results from a difference-in-differences model. See equation 1 and the discussion in section 4.2. The sample is the set of parolees that we are able to match to Cook County court records. See Table 3. The outcome variable is Any New Charge. This indicator equals one if the parolee experiences a New-Crime Admission or faces a felony charge in court, i.e. this indicator equals one even if the charge does not produce a conviction. The figure present results for horizons of 2 to 15 months following initial release from prison. The figure includes 95-percent confidence intervals for each estimated treatment effect. We use Huber-White standard errors.

A Appendix Tables

Appendix Table 1

Characteristics of Matched vs Not-Matched Samples

IDOC - Cook Court Records

	Match to Court		
	Match = No	Match = Yes	Total
Frequency	112	1784	1896
Mean			
Prior Admissions	1.804	1.813	1.813
Serious Prior Admissions	0.554	0.589	0.586
Prior Violations	0.366	0.356	0.357
Long Sentence	0.161	0.154	0.155
Black	0.634	0.758**	0.751
Hispanic	0.170	0.135	0.137
Male	0.929	0.940	0.939
Age	37.062	35.071	35.189
Class 1	0.071	0.026**	0.029
Class 2	0.179	0.235	0.232
Class 3	0.223	0.237	0.236
Class 4	0.527	0.501	0.503

Note: This table presents descriptive statistics for two samples. According to IDOC, all of the parolees in both samples were released after serving a term in prison that resulted from a prison sentence announced in a Cook County Court. The first sample contains the 112 Cook County parolees that we are not able to match to Cook County Court records. The second sample contains the 1,784 that we are able to match. A * indicates that the two sample means are statistically different given a .05 significance level. A ** indicates that the two sample means are different given a .01 significance level.

Appendix Table 2

Panel A: Control Sample Outcomes for Matched Cook-IDOC Sample

Pre-Period

	IDOC Outcome			
	No Failure	Technical	New Crime	Total
Court Outcome				
No Court Case				
Frequency	143	7	11	161
Percent	88.82	4.35	6.83	100.00
Misdemeanor				
Frequency	17	8	1	26
Percent	65.38	30.77	3.85	100.00
Felony - No Conv				
Frequency	12	11	1	24
Percent	50.00	45.83	4.17	100.00
Felony Conv - No IDOC				
Frequency	1	2	1	4
Percent	25.00	50.00	25.00	100.00
Felony Conv - IDOC				
Frequency	1	7	3	11
Percent	9.09	63.64	27.27	100.00
Total				
Frequency	174	35	17	226
Percent	76.99	15.49	7.52	100.00

Post-Period

	IDOC Outcome			
	No Failure	Technical	New Crime	Total
Court Outcome				
No Court Case				
Frequency	140	5	11	156
Percent	89.74	3.21	7.05	100.00
Misdemeanor				
Frequency	15	10	1	26
Percent	57.69	38.46	3.85	100.00
Felony - No Conv				
Frequency	11	17	3	31
Percent	35.48	54.84	9.68	100.00
Felony Conv - No IDOC				
Frequency	1	2		3
Percent	33.33	66.67		100.00
Felony Conv - IDOC				
Frequency	2	18	5	25
Percent	8.00	72.00	20.00	100.00
Total				
Frequency	169	52	20	241
Percent	70.12	21.58	8.30	100.00

See notes below Panel B.

Panel B: Treated Sample Outcomes for Matched Cook-IDOC Sample

Pre-Period

	IDOC Outcome			
	No Failure	Technical	New Crime	Total
Court Outcome				
No Court Case				
Frequency	480	39	35	554
Percent	86.64	7.04	6.32	100.00
Misdemeanor				
Frequency	38	35	9	82
Percent	46.34	42.68	10.98	100.00
Felony - No Conv				
Frequency	28	31	4	63
Percent	44.44	49.21	6.35	100.00
Felony Conv - No IDOC				
Frequency	8	4		12
Percent	66.67	33.33		100.00
Felony Conv - IDOC				
Frequency	5	33	20	58
Percent	8.62	56.90	34.48	100.00
Total				
Frequency	559	142	68	769
Percent	72.69	18.47	8.84	100.00

Post-Period

	IDOC Outcome			
	No Failure	Technical	New Crime	Total
Court Outcome				
No Court Case				
Frequency	333	6	30	369
Percent	90.24	1.63	8.13	100.00
Misdemeanor				
Frequency	45	13	4	62
Percent	72.58	20.97	6.45	100.00
Felony - No Conv				
Frequency	39	12	5	56
Percent	69.64	21.43	8.93	100.00
Felony Conv - No IDOC				
Frequency	18	2	1	21
Percent	85.71	9.52	4.76	100.00
Felony Conv - IDOC				
Frequency	4	9	27	40
Percent	10.00	22.50	67.50	100.00
Total				
Frequency	439	42	67	548
Percent	80.11	7.66	12.23	100.00

Note: The four tables in Panels A and B describe the outcomes we observe in the sample of parolees that we match to Cook County Court records. Each table presents results for a subsample defined by the intersection of an indicator for class 3 and 4 (treatment) and an indicator for release after December 6, 2022 (post). Each of these parolees were released after serving a term in prison that resulted from a prison sentence announced in a Cook County Court. Section 3.2 and Appendix C.2 describe our matching procedures and the structure of the court data. In each table, the five rows are five outcomes we create using Court records. We measure outcomes that occur during the first 15 months following release from prison. If we see more than one of these events, we code the most serious outcome. The columns describe the outcomes we observe in IDOC data. Technical denotes technical revocation of supervision. New Crime denotes New-Crime admissions to prison. The percentage entries are row percentages.

Appendix Table 3

Baseline Hazards And Month of Release Effects from Competing Risks Model

	Revocation	p-value	New Crime	p-value
Months 1-3 After Release	1.00		1.00	
Month 4 After Release	2.30	0.00	1.57	0.05
Month 5 After Release	2.60	0.00	1.87	0.01
Month 6 After Release	1.84	0.00	1.15	0.62
Month 7 After Release	2.92	0.00	1.41	0.24
Month 8 After Release	2.43	0.00	1.61	0.07
Month 9 After Release	2.61	0.00	1.65	0.07
Month 10 After Release	2.52	0.00	1.76	0.03
Month 11 After Release	1.58	0.13	2.12	0.04
Month 12 After Release	1.45	0.25	1.76	0.13
Month 13 After Release	4.85	0.00	3.33	0.00
Month 14 After Release	11.41	0.00	1.68	0.20
Month 15 After Release	7.01	0.00	2.62	0.02
Cell 2	1.01	0.94	0.68	0.12
Cell 3	0.89	0.56	0.90	0.66
Cell 4	1.02	0.90	0.83	0.46
Cell 5	1.17	0.40	0.79	0.35
Cell 6	1.00	0.99	0.56	0.06
Cell 8	1.01	0.95	1.08	0.79
Cell 9	0.89	0.61	0.77	0.35
Cell 10	1.29	0.25	1.09	0.74
Cell 11	0.96	0.85	0.85	0.57
Cell 12	1.15	0.51	0.72	0.23

Note: This table contains estimates of the baseline hazard parameters for both the risk of revocation and the risk of new-crime admissions. Months 1-3 after the release are the omitted category, and we create a monthly step function in duration for months 4 through 15. We also include indicators for the time of release. June 6, 2022 to July 5, 2022 is the omitted category. Cell 12 is May 1, 2023 to June 5, 2023.

B Model of Returning Citizen Behavior

Our empirical results imply that shorter terms of parole supervision do not increase recidivism rates. We argue in sections 6 - 8 that a possible explanation for this result is that shorter terms of parole supervision reduce exposure to the risks of technical revocation and the burdens of supervision. Here, we present a model of parolee behavior that formalizes this intuition.

We begin by stating the model in general terms. We then work with a special case of the model and show explicitly how longer terms of supervision may increase rates of criminal activity. The key insight is the following: other factors may influence recidivism, but the expected loss associated with returning to prison always shapes the benefit that a returning citizen expects from choosing to desist from criminal activity. Since the threat of technical revocation and the burdens of supervision make expected life outcomes worse for parolees, they reduce the cost associated with returning to prison. Thus, reforms that limit the threat of revocation or lessen the burdens of supervision may reduce criminal behavior.

B.1 Setup

A returning citizen faces t periods of scheduled supervision. At each instant, he chooses the intensity of three activities: g, b, c.

- g is the effort he devotes to good activities. These include productive employment, education, etc.
- b is effort devoted to bad activities. This is a composite measure of all efforts to acquire opportunities for criminal activity as well as effort devoted to committing specific crimes.
- c is compliance effort. It includes all physical and mental effort that a returning citizen invests in complying with the rules that govern the terms of his parole supervision, e.g. participation in required programs, exerting the discipline required to refrain from visiting certain friends and family, exerting the discipline required to forgo leisure opportunities that involve travel, etc. These efforts have no value after a returning citizen completes his required term of parole supervision, but while he is under supervision, these efforts reduce his risk of technical revocation.

The returning citizen incurs effort costs $k[g, b, c]$. At all effort levels, we impose, $k_j(.) > 0,\ \ k_{jj}(.) > \epsilon > 0$ where $j \in \{g, b, c\}$.

A returning citizen earns an instantaneous return m_g from g. m_b is the return to bad effort, b. He earns nothing directly from c, but c may impact his risk of facing a technical parole revocation.

While under supervision, a parolee faces an instantaneous risk of revocation, $\phi[c, b]$. For all levels of c, we assume: $\phi_c < 0, \phi_{cc} > 0\ \ , \phi_b \geq 0, \phi_{bb} \geq 0,\ \ \phi_{bc} \leq 0,\ \ \phi[\infty, 0] = \bar{r} > 0$, i.e. compliance effort reduces revocation risk, bad effort weakly increases revocation risk, and a parolee cannot reduce his risk of revocation below $\bar{r}$. This assumption reflects the fact that some parole violations result from the actions of persons other than the parolee.[60]

Whether a returning citizen is supervised or not, sanctions for new-crimes arrive at rate $\theta[b]$. We assume $\theta_b \geq 0$, $\theta_{bb} > 0\ \forall\, 0 \leq b$. Combined with our other assumptions, these assumptions imply that the full costs of bad activities are increasing and convex for all $b \geq 0$.

$V(t)$ is the value of being a returning citizen who faces a remaining term, t, of scheduled parole supervision. V_r is the value of entering prison as a technical violator, and V_c is the value of being re-incarcerated for a crime. Here, we normalize

[60] For example, a family member who brings a weapon into the residence may put an IL parolee in violation of his supervision conditions, or if a member of a known gang visits the parolee's residence, this may place the parolee in violation even if he did not invite the guest.

$V_c = V_r = 0$,[61] and we restrict attention to model parameters such that $V(0) > 0$, i.e. each person would rather live outside prison without supervision than live in prison.

Here, t is not calendar time, and t moves in the opposite direction of calendar time. A returning citizen who begins a term of parole supervision of length $t = t_0$ at age $a = a_0$ and completes a supervision period of length s successfully will now be age $a = a_0 + s$ and have $t = t_0 - s$ remaining on his term of supervision.

If a returning citizen discounts the future at rate ρ, the following Bellman equations describe his post-release effort allocation problem.

$$\rho V(t) = \max_{g,b,c} \; m_g g + m_b b - k[g,b,c] - \theta[b]V(t) - \phi[c,b]V(t) - \dot{V}(t) \quad 0 < t \tag{4}$$

$$\rho V(0) = \max_{g,b,c} \; m_g g + m_b b - k[g,b,c] - \theta[b]V(0) \quad t = 0 \tag{5}$$

If $t > 0$, the first order conditions for an interior solution are

$$-\phi_c[c(t), b(t)]V(t) = k_c[g(t), b(t), c(t)]$$

$$m_g = k_g[g(t), b(t), c(t)]$$

$$m_b = k_b[g(t), b(t), c(t)] + \Big[\theta_b[b(t)] + \phi_b[c(t), b(t)]\Big]V(t)$$

For $t = 0$, we have a stationary problem. The solution for $t = 0$ gives the boundary conditions. Given interior solutions, we have

$$c(0, b(0)) = 0$$

$$m_g = k_g[g(0), b(0), 0]$$

$$m_b = k_b[g(0), b(0), 0] + \theta_b[b(0)]V(0)$$

In all 6 of the first order conditions above, the left-hand side is the marginal gain from a type of effort, and the right-hand side is the expected marginal cost of the same effort.

[61] Our results do not require that these two values are identical but rather that they are sufficiently close relative to the difference between $V(0)$ and $\max(V_c, V_r)$. Setting these values to zero simplifies the presentation of our results.

The full solution to this system of differential equations, $[V(s), g(s), b(s), c(s)] \quad \forall\ 0 \leq s \leq t$, hinges on details concerning the functional forms of $k[g, b, c], \theta[b]$, and $\phi[c, b]$. Here, we do not attempt to characterize the general solution. Rather, we work with a tractable special case that allows us to clearly demonstrate the principles that we discuss in sections 6 - 8 where we discuss our results and related results in the literature on parole supervision.

B.2 Solutions for A Special Case

Consider the following restricted version of the model:

- $k[g, b, c] = h[g + b] + q[c]$
- $h_b(0) = 0, \ \ h_b[\cdot] > 0, \ \ h_{bb}[\cdot] > 0, \ \ \forall (g + b) \geq 0$
- $q_c(0) = 0 \ \ \text{if} \ \ t = 0, \ \ q_c(0) = \bar{q} \ \ \forall\, t > 0, \ \ q_c > 0, \ \ q_{cc} > 0, \ \ \forall c \geq 0$
- $\phi_{cb} = 0$

Here, effort devoted to compliance with supervision rules is separable from other effort. The choice of c does not impact the marginal costs or returns associated with g or b. This separability assumption makes the model more tractable, and we also contend that it is a reasonable restriction. In section 6, we discuss the significant literature on experiments that vary the intensity of supervision practices for parolees, which in some cases involve efforts to force parolees to adopt certain compliance behaviors. These studies almost always find that efforts to induce greater compliance do not reduce arrest or conviction rates for new crimes. Further, we know of no evidence that greater compliance with supervision conditions improves labor market outcomes.

If a returning citizen is under supervision, $t > 0$, he pays a hassle cost $\bar{q}$ even if he devotes no specific effort, c, to compliance. Hassle costs can be important because parole agents in Illinois have the power to limit the mobility of parolees, search parolees, and require parolees to allow them to search their homes. See Appendix section D for more details.

Efforts devoted to good versus bad (criminal) activities are perfect substitutes with respect to their impact on total effort costs. This assumption also simplifies our calculations. We place no additional restrictions on $\theta(b)$ or $\phi(c, b)$.

Given these assumptions, the first order conditions for $t > 0$, given an interior solution,[62] are

$$-\phi_c[c(t), b(t)]V(t) = q_c[c(t)]$$

$$m_g = h_b[g(t) + b(t)]$$

$$m_b = h_b[g(t) + b(t)] + \left[\theta_b[b(t)] + \phi_b[b(t)]\right] V(t)$$

For $t = 0$, we have

$$c = 0$$

[62] Interior solutions require $g(t) > 0, b(t) > 0$, and $c(t) > 0$.

$$m_g = h_b[g + b]$$

$$m_b = h_b[g + b] + \theta_b[b]V(0)$$

The results we now derive hinge on the fact that $\dot{V}(t) < 0$ for $t \geq 0$. We prove this result in section B.3 below.

For $t > 0$, we can combine the second two first-order conditions, and we have a two equation system

$$-\phi_c[c(t)]V(t) = q_c[c(t)] \tag{6}$$

$$m_g = m_b - \big[\theta_b[b(t)] + \phi_b[c(t), b(t)]\big]V(t) \tag{7}$$

Equation 7 points immediately to two conclusions. First, if $m_g > m_b$, we will not have an interior solution. Returning citizens who have better options in the legal labor market choose to avoid bad behaviors entirely because these behaviors earn lower gross rewards and also involve the risk of imprisonment.

Second, if $m_b > m_g$, it is straightforward to show that $\dot{b}(t) > 0$, given $\dot{V}(t) < 0$ (section B.4 provides a proof). The additional marginal cost associated with bad effort, $b(t)$, is the increase in the likelihood of imprisonment or the marginal increase in the expected capital loss, $\big[\theta_b[b(t)] + \phi_b[c(t), b(t)]\big]V(t)$. $\dot{V}(t) < 0$ means that as the parolee's term of supervision proceeds, $t \to 0$, the value of the parolee's state improves. This is intuitive because less remaining scheduled supervision time, t, implies less exposure to the risk of returning to prison for technical reasons.[63] Thus, the optimal choice, $b(t)$, declines as $t \to 0$. So, among returning citizens with $m_b > m_g$, we expect more criminal behavior among those who leave prison facing longer periods of mandatory supervision, i.e. larger t, than among those facing shorter periods.

Section B.4 also demonstrates that $\dot{c}(t) < 0$, i.e. parolees are less compliant when they face longer remaining periods of supervision, and the logic is the same as before. Since $\dot{V}(t) < 0$, the loss associated with moving from parole supervision to incarceration for technical reasons is greater for parolees who are closer to the end of their term of supervision, i.e. smaller t.

Next, we consider the relationship between $b(0)$ and $b(t)$ for $t > 0$. The key here is that, given $t = 0$, interior solutions for g and b satisfy

$$m_g = m_b - \theta_b[b]V(0)$$

but given $t > 0$, we have

$$m_g = m_b - \big[\theta_b[b(t)] + \phi_b[b(t)]\big]V(t) \tag{8}$$

The two key differences between these conditions are immediate. To begin, the loss associated with imprisonment is $V(0)$ in the first and $V(t)$ in the second. Further, the marginal change in the risk of imprisonment is $\theta_b[b]$ in the first and

[63] A shorter period of exposure to revocation risk is valuable because compliance is costly and, given $\bar{r} > 0$, there is an unavoidable risk of returning to prison that grows with t.

$\theta_b[b] + \phi_b[b(t)]$ in the second. When considering the relationship between $b(0)$ and $b(t)$, these two differences work in opposite directions.

Let us consider the first difference. The next section proves that $V(0) > V(t)$ for all $t > 0$, so parolees who have finished their supervision have more to lose from engaging in bad behavior, $b(0)$. This result is intuitive because the end of supervision implies the end of technical revocation risk and the end of the costs associated with compliance activities. Further, there are also good reasons to conjecture that m_g is higher for a given individual after supervision ends. Supervision conditions place severe constraints on the mobility of returning citizens and the capacity of returning citizens to control their own schedule. These constraints may well lower the return to job search and work effort. Supervision may make it harder to find a good job and harder to keep one.

Now, we turn to the second difference. When $t = 0$, b only impacts the likelihood of returning to prison through $\theta(b)$, the risk of a new-crime imprisonment. However, when $t > 0$, marginal increases in b create imprisonment risk on two margins. Since parole officers may seek technical revocations of parole based on allegations of criminal activity that would never support a conviction in court, the costs of higher levels of b for a parolee include a higher risk of both technical revocation and new-crime admission. For this reason, we may expect returning citizens to increase their levels of bad effort, b, when they exit supervision.

In general, our model implies that when returning citizens exit supervision, they may increase or decrease b. Further, if we consider two different levels of remaining supervision, (t^{small}, t^{large}), we may have $b(0) < b(t^{large})$ but $b(0) > b(t^{small})$, i.e. a parolee may choose less bad effort after supervision ends than he chose when supervision began but more bad effort than he chose during the final days of his supervision. This possibility follows from the fact that $V(0) > V(t^{small}) > V(t^{large})$.

Finally, note that any reform that improves $V(t)$, e.g. restrictions on the use of technical revocations, should reduce $b(t)$ if the reforms do not diminish ϕ_b. Put differently, reforms that reduce the capacity of parole officers to reincarcerate parolees for purely technical reasons while maintaining the capacity of parole officers to effectively monitor criminal activity among parolees and pursue incarceration as a punishment for criminal activity can only reduce criminality among parolees.

B.3 Key result: $\dot{V}(t) < 0$

Here, we establish the key result that we employ repeatedly in the previous section: $\dot{V}(t) < 0, \ \forall t \geq 0$. To simplify the calculations, we reformulate the problem. Consider a returning citizen who just left prison and faces no supervision. He faces a stationary problem. So, we can write the value of his position as

$$V(0) = \max_{g,b,c} E\left[\int_0^\infty (\ m_g g + m_b b - h[g+b] - q[c]\ )\ \beta(s)\Theta[b,s]\, ds\right]$$

where $\beta(s) = \exp[-\rho s]$, $\Theta[b(\cdot), s] = \exp[\int_0^s -\theta[b(x)]\ \ dx]$. Next, consider a returning citizen who exits prison facing t periods of scheduled supervision. This problem is not stationary. So, our notation captures the fact that he is choosing optimal policies that vary with time.

$$V(t) = \max_{g(\cdot),b(\cdot),c(\cdot)} E\left[\int_0^t \left[m_g g(s) + m_b b(s) - h[g(s)+b(s)] - q[c(s)]\right]\ \beta(s)\Theta[b(\cdot),s]\Phi[c(\cdot),b(\cdot),s]\, ds \right.$$
$$\left. +\ \beta(t)\Theta[b(\cdot),t]\Phi[c(\cdot),b(\cdot),t]V(0)\right] \tag{9}$$

where $\Phi[c(\cdot), b(\cdot), s] = \exp[\int_0^s -\phi[c(x), b(x)]\, dx]$. Next, note that we can re-write $V(0)$ as

$$V(0) = \max_{g,b,c} E\Bigg[\int_0^t \big[m_g g + m_b b - h[g+b] - q[c]\big]\, \beta(s)\Theta[b,s]\, ds \quad + \\ \int_t^\infty \big[m_g g + m_b b - h[g+b] - q[c]\big]\, \beta(s)\Theta[b,s]\, ds \Bigg]$$

or

$$V(0) = \max_{g,b,c} E\Bigg[\int_0^t \big[m_g g + m_b b - h[g+b] - q[c]\big]\, \beta(s)\Theta[b,s]\, ds \quad + \\ \beta(t)\Theta[b,t] \int_t^\infty \big[m_g g + m_b b - h[g+b] - q[c]\big]\ \ \beta(s-t)\Theta(b,s-t)\, ds \Bigg]$$

or

$$V(0) = \max_{g,b,c} E\Bigg[\int_0^t \big[m_g g + m_b b - h[g+b] - q[c]\big]\, \beta(s)\Theta[b,s]\, ds \ \ + \ \ \beta(t)\Theta[b,t]V(0) \Bigg] \tag{10}$$

Now, if we compare equations 9 and 10, we see that each term in the latter – both under the integral and outside it – can be formed by taking a matching term in the former and multiplying by $\frac{1}{\Phi[c(\cdot),b(\cdot),s]} > 1$ for $0 < s \leq t$.

So, if we let $g(\cdot)$, $b(\cdot)$, and $c(\cdot)$, denote the optimal policies that define $V(t)$, we can write

$$\hat{V}_t(0) = E\Bigg[\int_0^t \big[m_g g(s) + m_b b(s) - h[g(s)+b(s)]\big]\, \beta(s)\Theta(b(\cdot),s)\, ds \ \ + \ \ \beta(t)\Theta(b(\cdot),t)V(0) \Bigg] \tag{11}$$

where we replace $q(c(.))$ with 0. The thought experiment here is to let a parolee facing no supervision choose g and b as if he were facing t periods of supervision, but still set $c = 0$ since he faces no revocation risk and set $q(c) = 0$ since no supervision implies no hassle cost $\bar{q}$. Note that $V(0) \geq \hat{V}_t(0) > V(t)$. The first inequality holds by the definition of $V(0)$. The second holds because (i) $m_g g(s) + m_b b(s) - h[g(s)+b(s)] > 0$ for all $s \geq 0$, (ii) $m_g g(s) + m_b b(s)$ - $h[g(s)+b(s)]$ $\geq m_g g(s) + m_b b(s) - h[g(s)+b(s)] - q[c(s)]$, and (iii) $\frac{1}{\Phi[c(\cdot),b(\cdot),s]} > 1$ for $0 < s \leq t$. Every term under the integral is positive and larger than the corresponding term under the integral that defines $V(t)$. And, the term outside the integral is greater because $\frac{1}{\Phi[c(\cdot),b(\cdot),t]} > 1$.

A similar and immediate argument implies that $\forall\ \Delta > 0, V(t-\Delta) \geq \hat{V}_t(t-\Delta) > V(t)$. Since this is true for all $0 < \Delta \leq t$, our two results together imply that $\dot{V}(t) < 0$ for $t \geq 0$.

B.4 Details of Comparative Statics for $t > 0$

Total differentiation of equations 6 and 7 with respect to time yields

$$0 = \big[\theta_{bb} + \phi_{bb}\big]\dot{b}V(t) + \big[\theta_b + \phi_b\big]\dot{V}$$

$$-q_{cc}\dot{c} = \phi_{cc}\dot{c}V(t) + \phi_c\dot{V}$$

When we solve these equations for $\dot{b}$ and $\dot{c}$ given $t > 0$, we find that the sign of $\dot{b}$ equals the sign of this expression

$$\big[q_{cc} + \phi_{cc}\big]V(t)\big[-\theta_b - \phi_b\big]\dot{V}$$

Further, the sign of $\dot{c}$ matches the sign of this expression

$$\big[\theta_{bb} + \phi_{bb}\big]V(t)[-\phi_c\dot{V}]$$

Thus, given our standard assumptions on the curvature of our cost and risk functions, $\dot{b} > 0$ and $\dot{c} < 0$. Both results are quite intuitive. The greater t, the less the parolee has to lose from an incarceration event since longer terms of parole involve longer periods of exposure to revocation risk. Thus, as they near the end of their term of supervision, i.e. as $t \to 0$, parolees behave more cautiously, i.e. they comply with supervision rules more and engage in less criminal activity.

B.5 Restrictions on Revocations

Policies that improve expected life outcomes for parolees raise the cost of returning to prison on new criminal charges. Therefore, parolees respond to reforms to parole policies that increase $V(t)$ by choosing weakly lower levels of criminal activity, $b(t)$.[64]

In section 8, we use this insight to argue that restrictions on the use of technical revocations should lower levels of $b(t)$ for all $t > 0$. The first step in the argument is to note that, while there are numerous ways to parameterize reforms that limit technical revocations, as long as the likelihood of revocation falls given some combinations of $(c(t), b(t))$ and never increases for others, $V(t)$ improves given limits on the use of incarceration as a punishment for technical violations.

The logic is similar to arguments we make above. Define $V(t)$ as the value of facing t periods of supervision given baseline policies. Define $\hat{V}(t)$ as the value of facing t periods of supervision, given a new regime with lower risk of technical revocation, but given the assumption that the parolee adopts the same decision rules $[g(t), b(t), c(t)]$ he chose given baseline policies. We know $\hat{V}(t) > V(t)$ because the risk of technical revocation is lower.[65] The true $V(t)$ given the new restrictions on technical revocation must be weakly greater than $\hat{V}(t)$, so equation 8 implies that $b(t)$ is lower under the new policies among all parolees who choose positive $b(t)$ under baseline policies. Those who choose $b(t) = 0$ under baseline policies also choose $b(t) = 0$ given new restrictions on technical revocations.

A similar argument shows that policies that lower the hassle costs of supervision, $\bar{q}$, also improve $V(t)$ and weakly reduce $b(t)$ for all $t > 0$.

[64] This conclusion follows from equation 8. Some parolees may choose $b(t) = 0$ given both policy regimes.
[65] See equation 9

C Data Appendix

This appendix describes how we construct our data sets. We first describe data from the Illinois Department of Corrections (IDOC). We then describe data from the Circuit Court of Cook County and the process we employ for merging court and IDOC records.

C.1 IDOC Data

We construct our dataset from public records posted on IDOC's website.[66] Our sample combines four distinct types of data: quarterly snapshots of all prison inmates, quarterly snapshots of parolees who are participating in Mandatory Supervised Release (MSR), biannual reports that record all prison admissions during the last 12 months, and biannual reports that record all exits from prison during the past 12 months.

First, we read in the raw files. The prison stock files begin in 2006. From 2006 through 2017, IDOC created these files in June and December. From 2018 forward, IDOC posted stock files each quarter. The MSR stock files begin in 2016. The exit files begin in 2014, and the admission files begin in 2018. The admission and exit files are posted twice each year. On December 31, IDOC posts records for the past calendar year. On June 30, IDOC posts records for the past fiscal year. For this paper, we only use data from files posted in 2014 and future years.[67]

Inmates who exit prison typically transition from prison to MSR. However, for numerous reasons, some inmates spend no time on MSR and leave prison under no supervision. When inmates transition to MSR, we say that they are released from prison. When they exit with no supervision, we say they are discharged from prison. When parolees finish their term of MSR, we say they are discharged from supervision.

We append all the records into a single dataset and harmonize the formats for event dates. IDOC formats dates differently in different data series, and IDOC date formats may also vary within a given data series. Each record contains the name of the relevant prisoner or parolee and an internal identification number, the **docnbr** for the parolee. We use an individual's docnbr to link his records among different data sets. We also create an event date for each record. For admission and exit records, the event date is the date a prisoner entered or left the IDOC system.

Next, we clean the data. We top-code sentence length to a maximum of 99 years. We fill in missing records, e.g. birth dates, by gathering information from records in other files that share the same docnbr. We clean sets of records that are duplicates, and we adjust records that appear to occur in the wrong chronological order. For example, suppose IDOC records specify that John Doe entered IDOC on June 1, 2022, resided in an IDOC prison on June 30, 2022, is absent from the prison stock records on September 30, 2022, and again resides in an IDOC prison on December 31, 2022. We code John Doe as in prison on September 30, 2022 - as long as no exit record provides evidence to the contrary. We consulted IDOC staff and policy researchers who work with these data to formulate our cleaning rules.

Two types of events require special attention in our cleaning procedures. First, an auto-revocation of MSR occurs when a prisoner is scheduled to leave prison and enter MSR but stays in prison. These events typically arise because the inmate in question has not secured MSR-approved housing. Second, in-out events occur when a defendant is sentenced to prison but

[66] See https://idoc.illinois.gov/reportsandstatistics/populationdatasets.html.

[67] The September 2019 MSR stock files are corrupt. Thousands of records are obviously wrong. We do not use the records.

enjoys days of credit for time-served in jail that are greater than his prison sentence. Such persons typically check in at an IDOC facility, receive an MSR assignment, and leave as parolees.[68]

When we observe two admissions and an exit that occur on a single day, we assume that the individual received a prison sentence shorter than his days of credit for jail time, but he cannot leave the IDOC facility because he has not secured MSR-approved housing. In these cases, we preserve one admission record and delete the other two records.

We also observe discharges from the IDOC system that occur just before the same defendant is released to MSR from a different institution. In such cases, we drop the first event. In addition, we observe cases of two releases that are close in time, with the admission date on the later release record matching the release date of the earlier one. Here, the first instance represents an auto-revocation, and we drop it and back-date the admission date on the second record to match the information from before the auto-revocation. When we observe both a release from IDOC and a discharge from IDOC on the same day, we drop the release. Finally, we observe some instances of near-duplicate exit records with differing admission dates. Here, we keep the record with the earlier admission date.

Next, we impute admissions from before 2018. All of the records in our dataset include an associated admission date, regardless of the record's type. We privilege exit records as the source of imputed admissions.

We also impute missing records in the MSR stock files. If we observe a parolee on MSR on June 30th of given year and December 31st of the same year but not on September 30th of that year, we assume that the parolee remained on MSR on September 30th - as long as no information from other files contradicts this assumption. We also impute MSR discharge dates using the expected discharge dates in MSR files and exit files.

Given the cleaning steps described so far, we still have some days where two different types of records exist for the same docnbr. First, we may see an admission and exit on the same day. These records may represent auto-revocations or in-out events. If the most recent record before the date in question marks the docnbr as free or on MSR, we assume the date contains an in-out event. If the prior and following events involve prison stock records, we assume an auto-revocation occurred. Second, when a prison stock record falls on the same date as an admission or exit record, we shift it by a day, either backward or forward in time. When we see an MSR stock record and free record on the same day, we drop the MSR record because these pairings only occur when the parolee's MSR discharge date is the same day. When we see prison and MSR stock records on the same day, we keep the one that makes sense given the preceding record (e.g. if the last record is an exit, we keep the MSR record).

We fix the remaining 1,266 instances of multi-record days based off of manual inspection.[69] Some occur because we have imputed records and original records for the same event on a given day. Some follow patterns similar to the auto-revocation and in-out events described above, but include an extra record type (e.g. when we see an admission, an exit, and an MSR stock file on the same day, we consider it an in-out to MSR event).

The following chart describes the data that remain.

Event Counts in 1/2014 to 9/2025 Sample

[68] In rare cases, the sentenced defendant has accumulated so much credit for jail-time that IDOC discharges him, and he avoids MSR completely.

[69] This may seem like a large number, but our final sample contains over 10 million records.

	Count
Imputed Prison Stock	5,810
Imputed Exit	86,973
Admission	115,341
Exit	230,313
MSR Stock	716,051
Prison Stock	1,358,151
Free (MSR Stock Available)	7,198,511
Free (No MSR Stock Available)	874,453
In-Out Event	15,879
Auto-Revocation	7,582
Imputed Discharge from MSR	85,432
Imputed Prison Stock (pre-Admission Files)	4,617

Section 3 describes our sample selection rules and how we construct key variables. In most cases, the process is straightforward, but one variable-coding task deserves special attention. We must distinguish between MSR violations that are technical in nature versus revocations for new criminal charges. The admission and stock files contain fields that record the reason for an admission. However, court cases are often resolved after a parolee returns to prison as a technical violator. We identify such cases in two ways. First, if future exit or stock files claim that the same prison spell has an admission type involving a new sentence, we recode the admission from a technical revocation to a new-sentence admission. Second, if we see changes in the sentencing dates in the IDOC stock files that indicate that a new sentence followed a technical revocation, we also recode the admission to a new-sentence admission.

C.2 Cook County Court Data

We use docket data from the Circuit Court of Cook County. These data cover January 1, 2010 to September 19, 2025. Criminal cases can be divided into two broad categories: misdemeanors and felonies. Misdemeanors are offenses that are punishable by less than 1 year in the local jail. Felonies are punishable by 1 year or more in state prison. Misdemeanor cases in Cook County are handled entirely in municipal courts spread over the city. Felony cases begin in a municipal court and are transferred to a criminal court after the prosecutor shows probable cause and the case is arraigned.

Formal convictions in misdemeanor cases are rare. In the sample of cases we match to IDOC data, 85% of subsequent misdemeanor cases have no formal sentence attached. This is because when prosecutors in Cook County plea bargain with misdemeanor defendants, they typically offer non-conviction as an incentive. In these cases, the defendant agrees to participate in some program (e.g. community service, anger management, or drug treatment), and the prosecutor strikes the case with leave to reinstate the case if the defendant does not honor his end of the bargain.

We detect formal convictions in felony cases by checking for any sentence associated with the case. We also note whether the sentence is a sentence to probation or to state prison. Some effective sentences may be quite short because the defendant has already accumulated substantial time served in jail waiting for the case to resolve. We follow each parolee for 15 months after their prison release. Thus, we only count court cases filed before September 7, 2024. However, we are able to look for case outcomes through September 19, 2025. Thus, we have a minimum of 1 year and a maximum of over 3 years to follow cases after filing.

We match parolees returned to Cook County to the court record of the sentence that caused the prison spell that preceded their release to MSR. We fail to match 6% of Cook County parolees to their Cook County Court data. These failures likely

reflect the fact that we are matching based on name, and names are inconsistently recorded across the Court and IDOC data. We know from the internal person identifiers available in each data source that names are not recorded consistently across records even when it is clear from these identifiers that the records apply to the same person. Second, of the 134 cases where we observe a subsequent sentence to IDOC in the Court data, we observe 12 (9%) with no subsequent admission in the IDOC data. Two of these cases involve long jail spells, and in these cases, though IDOC does admit prisoners who have already served their full sentence in jail before releasing them immediately, the prison spell may not be recorded in the data we use. We have not discovered a likely reason for the other 10 failures.

Finally, the table below presents the distribution of felony classes for each of the subsequent felony cases we observe in our data. Non-conviction is more common among class 3 and 4 cases. Conditional on conviction, prison sentences are more common when parolees face conviction for more serious offenses. In fact, no Class X convictions produce probation sentences.

Felony Class Distribution of Court Outcomes

	Felony Class					
	Class X	Class 1	Class 2	Class 3	Class 4	Total
Court Outcome						
Felony - No Conv						
Frequency	8	2	3	3	14	30
Percent	66.67	28.57	25.00	30.00	60.87	46.88
Felony Conv - No IDOC						
Frequency		3	5	6	7	21
Percent		42.86	41.67	60.00	30.43	32.81
Felony Conv - IDOC						
Frequency	4	2	4	1	2	13
Percent	33.33	28.57	33.33	10.00	8.70	20.31
Total						
Frequency	12	7	12	10	23	64
Percent	100.00	100.00	100.00	100.00	100.00	100.00

D Supervision Rules in IL

The section of law that governs supervision conditions for parolees on Mandatory Supervised Release in IL is 730 ILCS 5/3-3-7. This statute lists 15 baseline supervision conditions.

1. Do not violate any criminal statute.
2. Refrain from possessing weapons.
3. Report to a parole agent.
4. Permit the agent to visit at home, work, etc.
5. Reside in approved housing.
6. Do not visit someone in prison without permission.
7. Report all arrests within 24 hours.
8. Obtain permission before leaving the State of Illinois.
9. Obtain permission before changing his or her residence or employment.
10. Consent to a search of property or residence.
11. Refrain from drug use.
12. Avoid places where drug us or trade is common.
13. Avoid people on parole or in gangs.
14. Provide true and accurate information in response to inquiries.
15. Follow any additional specific instructions provided by a parole agent.

For persons convicted of sex crimes or drug crimes, 730 ILCS 5/3-3-7 often adds many more conditions. However, these 15 are standard for all parolees.

E Fees, Fines, and Revocations In Other States

In section 8, we highlight on-going debates concerning whether parole violations related to failures to pay fines and fees should be grounds for revoking supervision and returning parolees to prison. Here, we provide more details about the current state of existing laws and debates over potential reforms.

As of 2022, 37 states expressly authorize the imposition of fees on those under parole supervision. The typical range of these fees is around $30 to $50 per month, though a few states charge considerably more, such as Massachusetts' standard charge of $80 or Kentucky's maximum of $208. Some states have provisions for lower fees for indigent parolees or policies that prevent parole revocation as a punishment for missed payments. However, at least 30 states explicitly authorize revocation if fees are not paid, and 16 will prevent a citizen's discharge from parole if he has an outstanding balance (50 State Survey: Probation & Parole Fees, 2022).[70]

[70] For a full description of each state's parole fees and the consequences of not paying them, see Appendices B and C of the cited report.

Direct fees for parole are not the only form of required monetary expenditure. At least 34 states assign charges for programming that may be required as a condition of parole, most commonly drug testing or electronic monitoring (50 State Survey: Probation & Parole Fees, 2022). Additionally, some states tie parole status to making regular payments on the debt that defendants accrue via their court cases in the form of fines, court fees, and victim restitution or through child support payments that accrue during incarceration. The size of these debts varies widely across states and offenders. Pleggenkuhle (2018)'s survey of parolees in Missouri finds that they owed an average of about $1,700 and a median of $375 in legal financial obligations, increasing to an average of about $6,500 and a median of $1,000 when accounting for outstanding child support. Harris et al. (2010)'s study of felony parolees in Washington finds an average legal financial obligation of about $2,500 and a median of about $1,300.

Bannon et al. (2010)'s study of criminal justice debt and reentry in the nation's 15 largest carceral systems finds that all 15 states make the repayment of at least some forms of criminal justice debt a condition for parole. It is unconstitutional to revoke parole due to debt nonpayment without considering a parolee's ability to pay. However, the application of this principle is not always stringent. In one example, a public defender in Illinois reported that a judge revoked parole from every supervisee accused of willful nonpayment who confessed to being a smoker. Further, the study finds that all 15 states give supervision officers responsibility to ensure that payments are made on time, diverting their attention away from tasks that directly aid parolees' reentry into society.