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ABSTRACT

Labor Market Impacts of Reducing Felony Convictions*

We study the labor market impacts of retroactively reducing felonies to misdemeanors in San Joaquin County, CA, where criminal justice agencies implemented Proposition 47 reductions in a quasi-random order, without requiring input or action from affected individuals. Linking records of reductions to administrative tax data, we find employment benefits for individuals who (likely) requested their reduction, consistent with selection, but no benefits among the larger subset of individuals whose records were reduced proactively. A field experiment notifying a subset of individuals about their proactive reduction also shows null results, implying that lack of awareness is unlikely to explain our findings.

JEL Classification: J0, K0

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* All results in this paper using IRS data are drawn from the publicly available working paper “The Impact of Criminal Records on Employment, Earnings, and Tax Filing,” which is available on the IRS Statistics of Income Tax Stats website. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors and do not necessarily reflect the views or the official positions of the U.S. Department of the Treasury or the Internal Revenue Service. All results have been reviewed to ensure that no confidential information is disclosed. Researchers Agan, Garin, and Kostas received funding for this research through the Clean Slate Initiative, a project of the New Venture Fund. We thank the San Joaquin Public Defender’s Office and District Attorney’s office for their help and tireless work in making this project possible. We also thank the numerous interns who worked in San Joaquin to help us gather data. Camilla Adams, Kaan Cankat, Sarah Frick, Jared Grogan, Bailey Palmer, and Kalie Pierce provided instrumental research assistance. We also thank Emma Rackstraw and J-PAL NA for the initial conversations that allowed this project to happen. The RCT in this paper was registered in the AEA RCT Registry, RCT ID: AEARCTR-0004414. IRB approvals were obtained where necessary.

1 Introduction

Criminal legal contact is unequally distributed across the population. [Shannon et al. \(2017\)](#) estimate that nearly 25% of the adult male African-American population has a felony conviction, compared to 6% of the non-African-American male population. Employment rates are lower for individuals who have been incarcerated in prison—usually those with felony convictions—than for the general population ([Mueller-Smith 2015](#); [Looney and Turner 2018](#)).

We study whether retroactively reducing felony convictions to misdemeanors can improve employment prospects for this population. Past work shows that employers are averse to calling back or hiring job applicants with criminal records ([Pager 2003](#); [Holzer et al. 2006](#); [Pager et al. 2009](#); [Uggen et al. 2014](#); [Agan and Starr 2018](#); [Cullen et al. 2023](#)) and that callback rate penalties are notably larger for felony convictions than misdemeanor arrests ([Uggen et al. 2014](#)). Taken together, these findings suggest that reducing felony convictions could increase formal labor market opportunities for impacted individuals.

We study California’s Proposition 47, which became effective in 2014 and reclassified certain theft and drug possession felonies to misdemeanors in an effort to reduce state prison overcrowding. Under this policy, individuals with eligible offenses could petition to have their previous felonies reclassified as misdemeanors, with an estimated one million Californians eligible for a record reduction under the law. Several articles written around the time of the law’s passage touted the potential for these retroactive reductions to increase employment.¹ Since the passage of Proposition 47, many other states, including Utah, Connecticut, Alaska, Rhode Island, and Oklahoma, have adopted measures reclassifying drug possession from a felony to misdemeanor, with policy advocates arguing these policies can improve outcomes for impacted individuals ([Elderbroom and Durnan 2018](#)). The promise of these initiatives has also resulted in the creation of a “Clean Slate Initiative” to support legislative efforts to expand criminal record remediation and research in this area, supported by major funders like Arnold Ventures and the Chan Zuckerberg Initiative ([Wolfe, 2021](#)).

We use two unique institutional features of Proposition 47’s implementation in San Joaquin County, CA to identify the causal impacts of this law and assess the importance of selection bias. First, criminal justice agencies in San Joaquin County worked together to reduce tens of thousands of eligible felonies to misdemeanors without involvement of eligible individuals. Importantly, the ordering of these public defender initiated reductions was as-good-as-random for a large subset of defendants, giving rise to plausibly exogenous variation in the timing of record reductions among a non-selected sample. Second, we designed

¹e.g. “Former felons find new jobs and new hope after Prop 47” ([Casselmann 2014](#) in *FiveThirtyEight*) and “Finding A Job With A Felony Conviction Is Hard. California May Make It Easier” ([Espino et al. 2016](#) in *The Desert Sun*).

and implemented a randomized control trial (RCT) with the San Joaquin County Public Defender’s Office to notify a random subset of individuals who received public defender initiated reductions of their record reduction. This experimental variation gives us the ability to measure the impact of these laws when individuals are fully informed about their record change, allowing for changes in labor supply. To assess the impacts of these interventions on labor market outcomes, we link data on Proposition 47 reductions in San Joaquin County to Internal Revenue Service (IRS) tax return data.

Past observational work studying the employment impact of expungement laws (e.g. [Prescott and Starr 2019](#); [Selbin et al. 2018](#)) finds increased employment after record expungement, and has been cited prominently by lawmakers in efforts to pass record clearing laws.² However, this past work relies on a sample of voluntary petitions by eligible individuals. The potential selection of individuals who choose to petition for an expungement complicates the identification of causal treatment effects (e.g. [Ashenfelter 1978](#); [LaLonde 1986](#); [Jones et al. 2019](#)). Our setting allows us to identify a subset of individuals who, with high likelihood, asked the public defenders office to file a petition on their behalf. Thus, we can differentially study the impact of individuals who (likely) self-initiated the petition process as compared to those petitions filed by the public defender on behalf of the defendant, allowing us to quantify the role of selection.

For our evaluation of public defender initiated reductions under Proposition 47, we use the quasi-random ordering of reductions to compare employment for individuals before and after their reductions. We find little evidence that employment, self-employment, and tax filing outcomes improve after a public defender initiated reduction from a felony to a misdemeanor. For any wage employment, a 90 percent confidence interval rules out effect sizes larger than a 3.6 percentage point (10%) increase in the year of reduction. We find evidence of increases in the prevalence of platform gig work after a felony reduction as well as suggestive evidence of positive employment increases for individuals with reductions less than four years since conviction.

Our experimental estimates on the impact of reduction notification also yield null effects. There is no detectable change in employment or other tax-related outcomes for notified individuals versus the control group who received no such notification, implying that lack of awareness on the part of impacted individuals is unlikely to be the main driver of our null result.

When we examine outcomes for individuals who likely self-initiated their petitions for a reduction, we find evidence of a marginally significant 12% increase in the probability of having any wage employment in the year of the reduction. Yet, we observe strong patterns

²See [Ashford \(2023\)](#) in the *New York Times*.

of selection. In the year prior to the reduction, likely petitioners have lower average wages than non-petitioners (\$6,003 vs \$7,920), and experience an upward employment trajectory even prior to treatment, suggestive of an “Ashenfelter dip” phenomenon (Ashenfelter, 1978). These non-experimental estimates on a selected sample of petitioners are qualitatively similar to those from prior observational studies, but can be ruled out by 90% confidence intervals of our quasi-experimental estimates using all public defender initiated reductions. These contrasting results highlight the importance of accounting for selection bias in the past non-quasi-experimental literature.

Our work contributes to the literature studying the impact of criminal record remediation laws by following the outcomes of individuals who self-petition for remediation, usually sealing or expungement. Earlier work examined the evolution of outcomes around self-initiated petitions for remediation and found that very few eligible individuals take-up these opportunities in practice (Chien 2020; Prescott and Starr 2019). Take-up rates may be low due to the burdens involved in petitioning (Prescott and Starr 2019), lack of knowledge, or perceived low rewards. Consistent with past work such as Prescott and Starr (2019) and Selbin et al. (2018), we also find evidence of employment increases among those who petition for a record reduction. Our study builds on this prior work and emphasizes selection into self-petitioning by exploring the difference between observational and (quasi-) experimental estimates. Our findings highlight the value of quasi- and randomized experiments in evaluating the labor market impacts of criminal remediation policies and provide a cautionary tale on the use of self-selected treatment in event-study designs more generally.

Our study is also closely related to a broad literature studying the interplay between crime, criminal records, and employment more generally. Previous work using tax data has documented that employment prospects for ex-prisoners are poor both before and after periods of incarceration (Looney and Turner, 2018; Garin et al., 2022). Quasi-experimental evidence has shown that arrests and incarceration (both post- and pre-trial) causally reduce the probability of formal sector employment (e.g. Mueller-Smith 2015; Dobbie et al. 2018). Criminal records also have adverse consequences for access and eligibility for housing and public benefits (Evans and Porter 2015; Leasure and Martin 2017; Yang 2017; Tuttle 2019). Our paper contributes to this broader literature by examining how reducing the severity of an individual’s criminal record affects employment and tax-related outcomes. Beyond standard employment outcomes, we also build on earlier work by Collins et al. (2018) by examining self-employment and alternative work based on the hypothesis that a criminal conviction may push individuals into alternative work, an outcome that has largely been missing from previous studies due to data availability.

2 Background: Felony Reductions Under Proposition 47

In November 2014, California voters passed Proposition 47 which reclassified certain theft and drug possession offenses from felonies to misdemeanors, and allowed for retroactive reduction mainly via petition.³ Under Proposition 47 an employer conducting a criminal background check will no longer be able to see the original felony conviction after a reduction. Instead, only a misdemeanor conviction remains. Appendix Figure B.1 shows four redacted examples of official court criminal record searches after Proposition 47 reductions. We have verified that this is the underlying data and process that criminal background check companies use when running a background check.

This reduction from a felony to misdemeanor conviction can theoretically improve employment prospects for a number of reasons. First, a felony conviction can be a direct barrier to employment. An individual with a reduced record due to Proposition 47 can legally respond “No” to a question of whether they have a felony conviction, even after a conditional offer of employment has been made. As a result, there may be employment opportunities among employers that are unlikely to hire those with felony convictions. A Proposition 47 reduction can also allow individuals to obtain certain occupational licenses that previously excluded those with felony convictions. In California, licensing laws can categorically exclude the hiring of individuals with certain criminal records in hundreds of professions, such as healthcare and education, regardless of whether the offense is relevant to the practice of the occupation or poses a substantive risk to public safety, and regardless of the age of the record.⁴

Second, before finalizing a hire, most employers conduct a criminal background check. Over 90 percent of employers state that they perform background checks for all or some of their positions ([Society for Human Resource Management 2012](#); [HireRight 2015](#); [hr.com 2017](#)). At this stage, a Proposition 47 reduction could increase employment if employers are more willing to hire a person with a misdemeanor conviction versus a felony conviction.⁵ Consistent with this preference, [Uggen et al. \(2014\)](#) find in the context of an audit study that employers are 10-14% less likely to call back individuals reporting a misdemeanor arrest, a

³Eligible offenses include theft offenses where the value of property stolen does not exceed \$950, such as shoplifting, grand theft, receiving stolen property, forgery, fraud, and drug offenses including the personal use of most illegal drugs.

⁴It is estimated that nearly 30 percent of California jobs require licensure, certification, or clearance by an oversight board or agency for approximately 1,773 different occupations. See https://www.bot.ca.gov/board_activity/meetings/20180524_material_3d_3e.pdf.

⁵See <https://www.mycaliforniadefenselawyer.com/2017/01/sentence-reduced-criminal-record-prop-47/>.

substantial but smaller effect than the impacts found in audit studies on felony convictions—50% less likely in Pager (2003); 37% less likely in Agan and Starr (2018). The effect of these various policies implies that the retroactive reclassification component Proposition 47 would most likely improve the employment prospects of individuals with (i) eligible felony records less than seven years old and (ii) those applying for jobs that prohibit the hiring of individuals with felony convictions regardless of age of record.

Any benefit of retroactive reductions under Proposition 47 should be declining in the time since conviction because of the California Investigative Consumer Reporting Agencies Act (ICRAA). Under ICRAA, criminal convictions can be reported by CRAs for only seven years from the latest of the date of disposition, date of release, or date of violation of parole from the original case (versus indefinitely under federal law), though there are several exceptions which require certain employers to look more deeply into the employee’s background; these exceptions under the ICRAA apply to certain types of jobs such as in the health industry, or any job requiring an occupational license.⁶

Survey Evidence on Hiring Practices. To better understand hiring practices around criminal records and criminal background checks, we conducted two surveys of individuals with hiring experience in the United States in the last five years.⁷ In a survey fielded in May-June 2021, 72% of respondents who self-identified as knowledgeable about criminal background check procedures reported that they were more likely to hire someone with a misdemeanor conviction rather than a felony conviction. In a second survey fielded in September-October 2021, respondents were asked whether they would still hire a candidate they consider qualified after finding out they had different types of criminal records. Respondents consistently reported that they were more likely to hire a candidate if their most recent conviction was a misdemeanor rather than a felony regardless of the time since that conviction—e.g. 28% would hire someone with a recent misdemeanor theft conviction, whereas only 14% would if it was a felony ($p < 0.05$).⁸

While Proposition 47 may have important implications for labor market outcomes, retroactive reclassification under the law could theoretically yield limited changes in employment. For many eligible for retroactive reclassification, much time has passed since the initial conviction and period of incarceration. As a result, it is possible that individuals accumulate employment-related scars due to the initial record, such as extensive periods of unemployment or weak attachment to the formal labor market. If so, employers may be hesitant to

⁶See also <https://help.checkr.com/hc/en-us/articles/360000725967-Lookback-periods-How-far-back-are-criminal-records-searched->.

⁷See Appendix C for details.

⁸Results for these two surveys in table form can be found in Appendix Tables A.1 and A.2; details of the survey can be found in Appendix C.

hire them even after the record is reduced.

3 Institutional Setting and Data

3.1 Public Defender Initiated Reductions in San Joaquin County

Starting in December 2014, the Office of the Public Defender of San Joaquin (OPDSJ) and the San Joaquin County District Attorney’s Office (SJCDAO) coordinated to file petitions on behalf of Proposition 47 eligible defendants without requiring their participation. As of September 2019, this effort resulted in over 8,000 successful reduction petitions for individuals who were not under criminal justice supervision at the time of the petition.⁹ We received data on these reductions directly from OPDSJ ([Office of the Public Defender of San Joaquin, CA 2019](#)).

Implementation of these retroactive reductions was a multi-step process. The OPDSJ first compiled a list of all people in the county with eligible criminal charges who had already completed their sentences from relevant state agencies. The OPDSJ started with the largest crime list, consisting of individuals with felony drug (“health and safety” or HS) convictions. Nearly 85% of individuals for whom petitions were filed had a crime on this list and this group is the focus of our analysis. Any individual with multiple eligible felonies had all reduced at the same time. Our main analysis sample focuses on 5,622 individuals who had an eligible HS crime and were able to be matched to the IRS data.¹⁰

Not all petitions filed by the OPDSJ were done through public defender initiated reductions. Some individuals called the OPDSJ to inquire about their eligibility to receive a reduction under Proposition 47 and to ask for a petition to be filed on their behalf. Collectively, these individuals were prioritized by the OPDSJ and had their petitions filed soon after contact, but data was not collected on which defendants called to self-petition.

For individuals who did not call to request their own petition, OPDSJ personnel worked through lists of eligible defendants with the class of crime and the first letter of last name dictating when an individual’s public defender initiated petition would be filed. They worked through these lists in various chunks, initially starting alphabetically with A, sometimes switching to the other end of the alphabet as a result of the division of labor between filing clerks. Figure 1 depicts the impact of the first letter of last name on the order of petition filing for individuals on the HS crimes list. The figure presents cumulative density functions

⁹The agencies initially focused on resentencing for individuals currently serving sentences or under supervision (parole/probation) for eligible felony offenses. Since there is no exogenous variation in when these reductions occurred across they are not included in our analysis.

¹⁰More details on the sample and matching process can be found in Appendix E.

(CDFs) for the proportion of petitions filed by date for each first letter of last name. There is a clear pattern whereby a vast majority of petitions for those with, say, “A” last names, were filed within a few months of each other during a “surge” period. After preparing a petition for each eligible individual, the OPDSJ sent the petition to the SJCDAO for review, with an understanding between the two agencies that the most petitions would be approved. The approved petition would then be sent to a judge to officially secure the reduction. This was a time- and labor-intensive process which spanned multiple years. Additional details on this process can be found in Appendix B.

Since we do not directly observe which petitions were requested by individuals themselves rather than those initiated by OPDSJ, we use the alphabetical nature of the public defender initiated petition filing to identify the individuals who were likely to be self-petitioners. Specifically, research assistants independently identified each letter’s intensive petition filing window, marking the start date where they saw a surge in petitions being filed for each last name letter and the end date. When there was disagreement, we took the median dates.¹¹ We classify petitions filed anytime before the corresponding “surge” as “likely self-initiated petitions.” Petitions filed during or after a surge are classified as “public defender (PD) initiated petitions.”

3.2 IRS Employment Outcomes

We draw our outcomes from the universe of IRS tax filings, which are linked to the individual-level reduction data ([Internal Revenue Service 2022](#)). The IRS data includes anyone who has ever filed an individual tax return or has had income reported to the IRS on an information return. The IRS data are linked to the criminal records data using individual name, date of birth, and geographic location. In the case of San Joaquin, California, we were able to match 84% of our main sample to the IRS data. Appendix E provides additional details and compares characteristics of matched and non-matched individuals.

We construct main employment and tax filing outcomes standard in the literature using administrative tax returns. We draw information on formal sector wage and salary earnings and employment from W-2 returns issued by employers for each employee in each year. W-2 returns are sent by employers to the IRS irrespective of whether the employee files their own individual tax return. Individuals with no W-2s or self-reported income in any particular year are assumed to have had no earnings in that year. The main outcome we study is whether the individual has any W-2 wages reported to the IRS in a given year. Following the methodology in [Collins et al. \(2018\)](#), we supplement these earnings records

¹¹Appendix B.2 provides additional details on our methodology and Appendix Figure B.2 provides surge dates for each letter.

with gross payments to non-employee independent contractors and online platform “gig” workers reported by firms on 1099-MISC and 1099K forms.¹² In the Appendix we study a full range of outcomes available in the IRS data.¹³

3.3 Summary Statistics

Table 1 presents summary statistics for our estimation sample, separated by individuals who we identify as likely self-initiated petitioners (column 1) and those who received public defender initiated reductions without their knowledge or involvement (column 2). Compared to those who received public defender initiated reductions, likely self-initiated petitioners are more likely to receive reductions within seven years of the original conviction (17.7 percent versus 6.1 percent). In terms of baseline outcomes measured at two years prior to the Proposition 47 reduction, likely self-initiated petitioners are slightly younger, more likely to have only one felony in San Joaquin, and are negatively selected in terms of the probability of having any wages, with an annual baseline of 29.6% compared to 33.7% for those who received public defender initiated reductions.¹⁴

4 Research Design and Results

In the main analysis, we estimate the following conventional event-study specification around the reduction of a felony to a misdemeanor ($t = 0$):

$$y_{it} = \sum_k \beta^k 1\{E_i = t + k\} + X'_{it} \gamma + \alpha_i + \alpha_t + \varepsilon_{it}, \quad (1)$$

where y_{it} is the labor market outcome of interest for individual i in year t . $1\{E_i = t + k\}$ is an indicator for the Proposition 47 reduction occurring k periods from t , with negative k indicating a future event date, and positive k indicating the event occurred k years in the past. α_i are individual fixed effects, α_t are year fixed effects, and X_{it} includes a quintic in age.¹⁵ Standard errors are clustered at the individual level. The coefficients of interest are

¹²See [Garin et al. \(Forthcoming\)](#) for a discussion of important reporting changes associated with the gig economy over time.

¹³We match to IRS data from 2000-2021. Our event studies in Section 4 are estimated on data through 2018, which leaves one not-yet-treated cohort in 2019, and is also prior to the start of the experiment discussed in Section 5.

¹⁴See Appendix Table A.3 for how those with any HS crime compare to those with no HS crimes.

¹⁵Our results are similar without age controls and if we use indicators for 5-year age bins.

β^k , which trace out the labor market impact of a Proposition 47 reduction. We omit $k = -2$ so that the estimated β^k coefficients are relative to two years before the reduction.¹⁶

Figure 2 Panel (a) plots the event-study coefficients around the Proposition 47 reduction for all public defender initiated petitions ($N = 4,967$). We do not find a statistically significant change in wage employment in the years after the reduction occurs. This null effect is precisely estimated and a 90 percent confidence interval rules out effect sizes larger than a 3.6 percentage point increase in the year of reduction. Consistent with the unsystematic ordering of these public defender initiated reductions, there are no systematic trends in employment in the pre-reduction periods.

Figure 2 Panel (b) reports event-study coefficients for the subsample we identified as likely self-initiated petitioners ($N = 655$). In contrast to Panel (a), we see that the treated group has higher employment rates after the reduction relative to pre-reduction. However, consistent with selection into treatment, the increases in any wage employment begin in the year *before* the reduction such that any effect is a continuation of pre-trends.¹⁷ Specifically, in the year of the reduction, any wage employment is 3.7 percentage points higher than in the year prior to the reduction (a 12% increase, $p < .10$). This effect can be ruled out by the 90 percent confidence interval of the estimates from Panel (a). To make precise the difference between the two groups, Figure 2 Panel (c) plots event-study estimates where we interact time since event with an indicator for being a likely self-initiated petitioner. The reported coefficients estimate the differential effect of the reduction for self-petitioners versus public defender initiated reductions by year since event. The findings document notable and statistically significant differences in both pre-trends and post-treatment effects among these two groups.

As can be seen in Figure 2 Panel (d), when combining the public defender initiated reductions and likely self-initiated petitioners there is an uptick in any wage employment in the one to two years following the Proposition 47 reduction. This increase is significant at the 10% level. Moreover, we find similar results in Figure 2 Panel (e), which focuses on likely self-initiated petitioners whose reductions were obtained more than seven years after the original conviction. The similar pattern here further highlights the importance of selection even for those whose convictions cannot be reported on many background checks under California law. Notably, even a small number of observations that were self-selected into treatment can be influential for the conclusions, highlighting the importance of accounting for selection.

We also present estimates from regression specifications with a single “treated” coeffi-

¹⁶In the Appendix we construct an alternative estimator following Sun and Abraham (2021) to examine potential bias from treatment effect heterogeneity and find similar results, see Figure A.2.

¹⁷The pre-trend suggests self-selection into petitioning based on pre-existing earnings trajectories and not greater gains from reductions, such that post-period increases in earnings is likely spurious.

cient:¹⁸

$$y_{it} = \beta \text{Treated}_{it} + \sum_{k \in K \leq -2} \delta^k \mathbf{1}\{E_i = t + k\} + X'_{it} \gamma + \alpha_i + \alpha_t + \varepsilon_{it} \quad (2)$$

The coefficient of interest is β , which estimates the average impact of a Proposition 47 reduction in all observed post-treatment years. Panel (a) of Table 2 reports impacts of public defender initiated reductions using equation 2. Column 1 shows results for the main outcome of “Any W2 wages”, which mimics the event study results and shows no statistically significant impact post-reduction (although the 95% confidence interval cannot rule out changes in the probability of employment between -7 percent and +9 percent of the baseline mean). In Column 2 we also consider whether the person has W2 wages >\$15,000 and similarly see null results.¹⁹ Panel (b) of Table 2 reports the impact of receiving a reduction for likely self-initiated petitioners, which shows a large although imprecise 3.4 percentage point increase in any wages, resulting in a 2.4 percentage point increase in any wages in the pooled sample (Panel c), significant at the 10% level, consistent with our event study estimates.

4.1 Mechanisms

One reason for these null effects could be because defendants have other non-reducible felony convictions on their record that remain. The OPSDJ recorded who received a reduction and only had one felony in San Joaquin county, so these individuals are most likely to have no felony convictions after the reduction. Around 8 percent of our population has one felony. In Table 2, we include an interaction term with being on this one felony list and do not find evidence that those with one felony benefit from the reductions.

Another possibility is that the reduced convictions occurred sufficiently long ago that remediation is no longer relevant. This might be the case if employers are less concerned by convictions in the distant past or if cumulative employment gaps after the initial conviction matter more than the conviction itself in the long run. Moreover, as a result of California laws described above, a criminal conviction is less likely to be reported on an employment report as a function of time since conviction. To assess heterogeneity in treatment effects by time since conviction, in Panel (a) of Table 2 Column 4 we interact our Treated indicator with the number of years since conviction at the time of public defender initiated reduction.²⁰ We

¹⁸In the year of reduction, Treated is coded as the fraction of the year being treated.

¹⁹Appendix Table A.4 shows results for other employment margins for the public defender initiated reductions with similar null results. It also has full employment outcomes for self-initiated petitions as well.

²⁰Note: The sample size falls slightly due to missing data. Unfortunately, we do not have data on release

find evidence consistent with the hypothesized relationship. The estimated interaction term is negative, and significant, implying that the benefits of a felony reduction are diminishing with time since initial disposition although we note that very few people in our sample obtained reductions in the year of conviction. The Treated main effect estimates the impact of a reduction for someone who was just convicted. This coefficient is estimated as 5.4 percentage points and is significant at the 5% level. This magnitude implies a 16% increase in employment rates following a felony reduction for someone with a conviction in the same year. The positive estimated impact of a reduction is significant at the 5% level for convictions occurring within the previous four years. While these dynamic estimates offer a glimmer of hope for the efficacy of the policy, the reason why these positive effects do not translate into average impacts, and why we consider these estimates as suggestive, is that there are few cases in our Proposition 47 estimation sample with such recent convictions (see Table 1).²¹

Another exception to the pattern of null average effects is gig platform work. While this type of employment is a small share, gig jobs are notable because, for the most part, gig platform work does not involve an interview process or an evaluation of one's work history. If an applicant can pass the initial requirements necessary to be on the platform, he or she is allowed to begin to earn money on the platform. Gig platform work, such as ride-sharing and app-based delivery services, has increased dramatically in recent years, and may provide opportunities that were not previously available, particularly for individuals with records. For example, the ride-sharing company Uber typically does not allow people with felony convictions to sign up as drivers. But Uber's official policy is that it will hire drivers who were originally convicted of felonies but whose convictions have been reduced to misdemeanors under Proposition 47.²²

In Panel (a) of Table 2 column (4), we see that a public defender initiated Proposition 47 reduction is associated with a 0.4 percentage point increase in the rate of gig work that is statistically significant at the 5% level (a 200% increase, off a very low a base rate of 0.2 percent). This increase doubles the rate of gig work prior to reduction. In column (6), we examine self employment filing more broadly, and find effects that are much smaller as compared to baseline means and statistically insignificant, suggesting that there may be limited self-employment effects for this population outside of platform gig work.

dates for individuals given incarceration sentences.

²¹In our sample, only 6.6% of petitions filed for reduction were within seven years of the conviction. This is partially mechanical as after 2014, Proposition 47 formally reclassified certain felonies as misdemeanors. Thus reductions can only occur for pre-2014 convictions and with each passing year, fewer individuals have the possibility of being reduced within seven years.

²²See <https://www.shouselaw.com/ca/blog/employment-law/uber-will-hire-drivers-who-have-had-felonies-reduced-under-prop-47/>.

5 The Role of Information: Evidence from a Randomized Experiment

Most automatic expungement or sealing laws do not have a notification component. Thus, the setting we study differs from situations where individuals choose to file petitions for sealing or expungement, such that they clearly know the record remediation has taken place. Individuals who know or voluntarily seek remediation of their records may change their labor supply, perhaps because they feel more confident when searching for jobs if they previously felt that their record was holding them back. Without knowledge of a reduced record, individuals may not increase their job search effort or enter the labor market at all, despite possible changes to labor demand (Smith and Broege, 2019).

To explore the importance of the labor supply channel, we designed an RCT in collaboration with the criminal justice agencies in San Joaquin County to notify a random subset of individuals about their reductions. We began with a list of 8,969 individuals who had obtained a felony reduction. Of these, 4,610 individuals were randomly assigned to the treatment group.²³ Of these treated individuals, contact information (addresses, phone numbers, or email addresses) could be located for 3,982 individuals (86.3%).²⁴ All communications came from OPDSJ and between June 2019 and March 2020, staff attempted to call these 3,982 individuals in a random order following written scripts. In January 2020, letters were mailed to individual homes on OPDSJ letterhead to all known addresses (with self-addressed postcards included to return upon receipt) and e-mails were sent as well. Text messages were sent between December 17, 2019 and May 15, 2020. Through this effort, we were able to confirm successful contact, either by phone, return of postcard, or email, of 1,175 individuals (29.5% of those with contact information, and 25.5% of the full first-wave treatment group). The true contact rate is likely higher since not everyone who received a letter called the OPDSJ or mailed back the included pre-addressed postcard.²⁵ For the 7,155 observations we could match to the IRS data, Appendix Table A.5 shows that observable baseline characteristics from both the criminal justice records and the tax data are balanced between treatment and control groups, as expected.

In Figure 3, we present raw trends in outcomes for treatment (N= 3,755) and control (N=3,400) groups in panels (a) and (c), as well as intention-to-treat (ITT) estimates of employment outcomes between 2019 and 2021 in panels (b) and (d). ITT estimates come

²³Randomization was stratified based on whether the defendant who received a reduction through the OPDSJ appeared on a list indicating that they had only one felony in San Joaquin County.

²⁴Contact information was collected by the Public Defender’s office from Transunion’s TLO product.

²⁵Details of how the contact was undertaken can be found in Appendix D, including sample notification letters and emails in Appendix Figures D.1 and D.2, and form of contact in Appendix Table D.1.

from the following specification, run separately in each year:

$$y_{it} = \beta \text{Treat}_i + X'_{it} \gamma + \text{OneFelony}_i + \varepsilon_{it} \quad (3)$$

where y_{it} is the outcome of interest for individual i in year t . Treat_i is an indicator for being in the treatment group, to whom notification was attempted. X_{it} includes a quintic in age, and OneFelony_i is an indicator for being on the one felony list, as randomization was stratified on this dimension. Standard errors are clustered at the individual level. Our ITT estimates, β , capture the causal effect of notification of Proposition 47 reduction on labor market outcomes.

We present results for any wage employment and wages $> \$15,000$. Figure 3 panels (a) and (c) reveal similar raw trends in any wage employment and wages exceeding \$15,000 between the treatment and control group in the years before and after notification. The COVID-19 pandemic began in the second year of the post-treatment period, but only small dips in employment rates are observed in that year and the treatment and control groups respond similarly. Our ITT estimates, shown in panels (b) and (d), confirm that individuals chosen for notification did not experience detectable improvements in labor market outcomes compared to those not chosen for notification. Appendix Table A.6 presents the full set of employment outcomes for the experiment, showing null effects across all outcomes. In sum, these results imply that lack of knowledge about a Proposition 47 reduction is unlikely to be the main driver of our null result among individuals who received public defender initiated reductions.

6 Discussion and Conclusion

In this paper, we study the impact of California’s Proposition 47, which retroactively reduced eligible felony convictions to misdemeanors. Exploiting a natural experiment from San Joaquin County where individuals received criminal justice agency-initiated reductions in a quasi-random fashion, we find little evidence that reductions led to large average increases in traditional employment or earnings reported to tax authorities. These findings hold even after individuals have been notified about the reduction. We also document strong patterns of selection among those who voluntarily seek record reduction. These patterns may help explain why past work on expungements, which has used voluntary petitioners, has generally found positive effects on employment outcomes.

One explanation for our results is that individuals with records are sufficiently detached from the labor market that retroactive reductions have little effect. In particular, our findings

are consistent with a dynamic scarring effect of convictions ([Agan et al. 2022](#)). The finding of an employment increase for felony reductions that occurs within the first year of conviction and quickly diminishes with time since conviction indicates that record remediation efforts may have minimal net effects because of the extensive length of time between conviction and record reduction. If a conviction causes individuals to quickly accumulate labor market scars, such as lengthy employment gaps, employers may remain hesitant to hire these individuals even after their record is reduced later. The finding of an increase in gig work after a reduction is compatible with this hypothesis because these jobs require clean records but otherwise minimal employer discretion for hiring. Policies that reduce records sooner may be more fruitful in generating larger labor market impacts and is an important area for future research.

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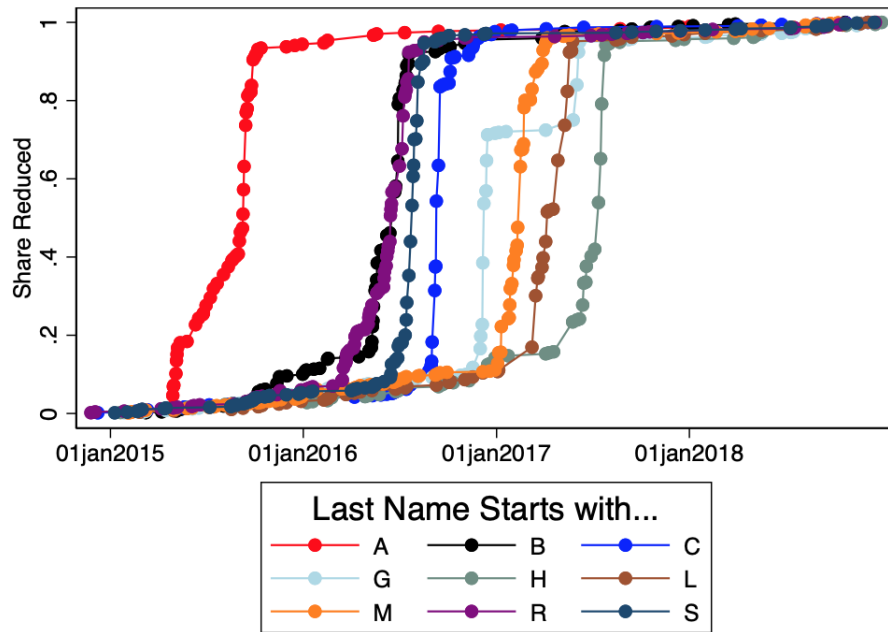
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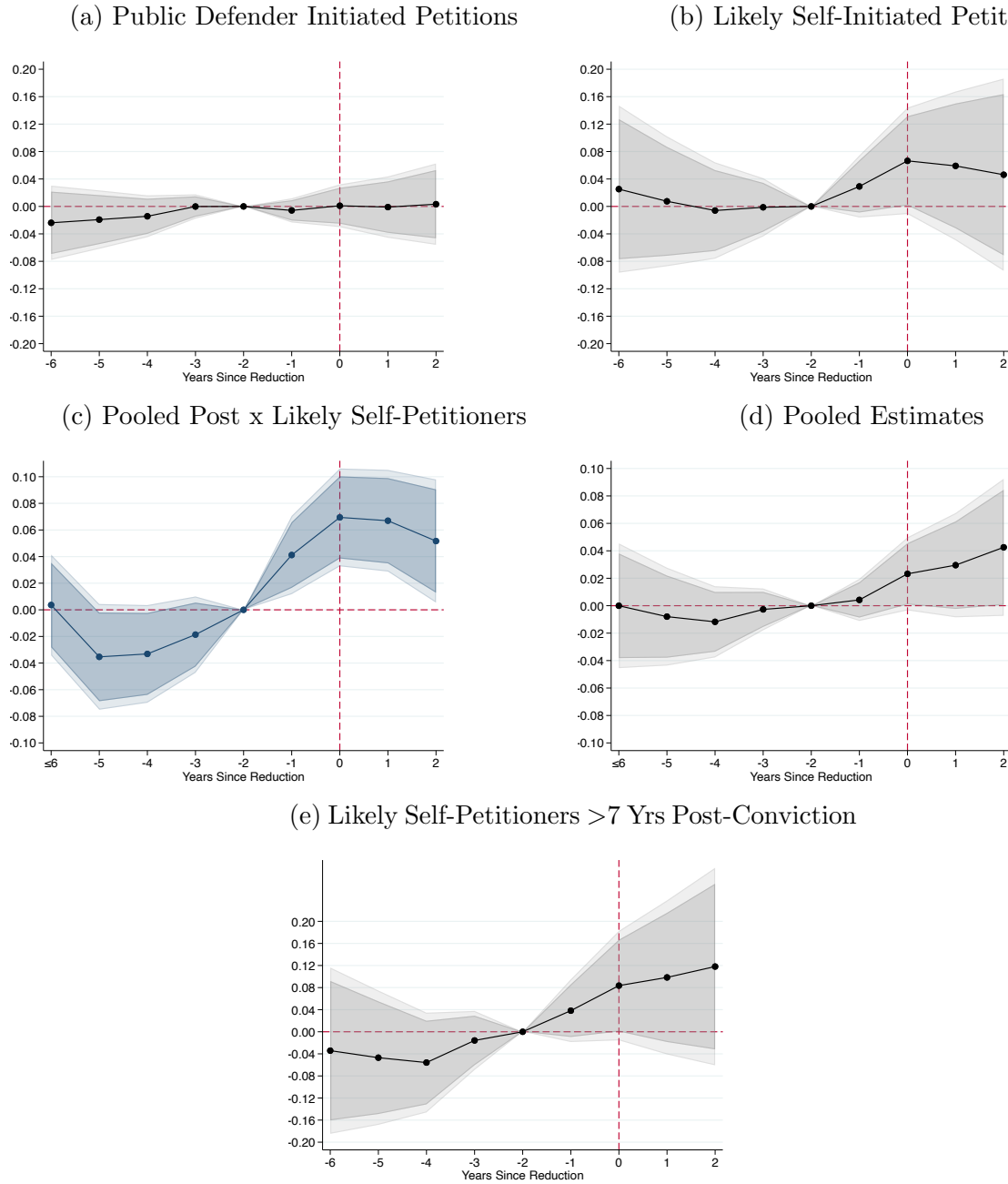
Figures and Tables

Figure 1: Alphabetical Ordering for HS (Drug) Crime Petitions



Notes: The timing of proactive felony reductions in San Joaquin County was determined in an alphabetical manner. Figure shows the CDF of felony reductions for HS crimes, by the indicated first letter of last name. Appendix B.2 contains the CDFs for other letters.

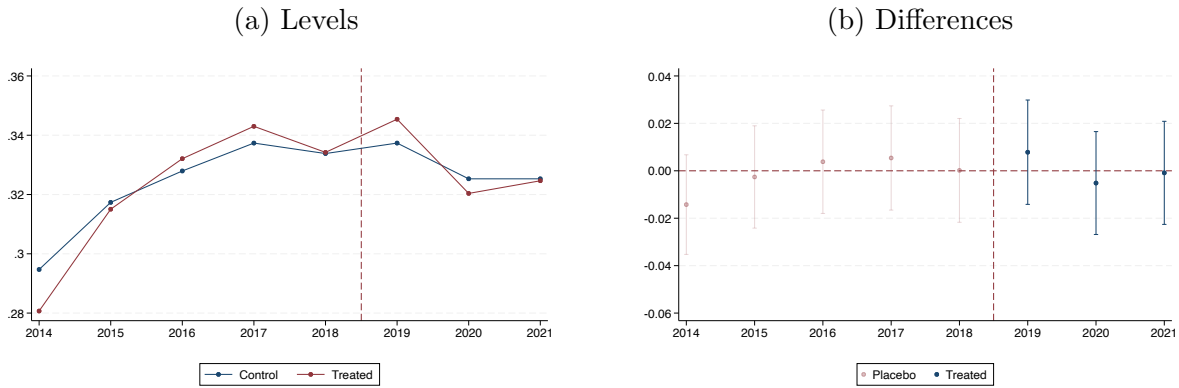
Figure 2: Any Wage Employment Around CA Prop 47 Reductions in SJ County



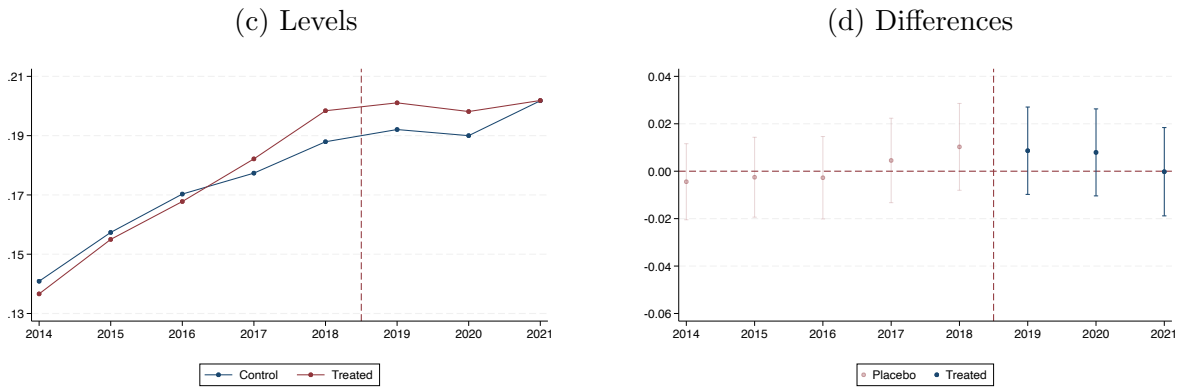
Notes: Figure shows event-study coefficients for having any wage employment around Proposition 47 felony reductions in San Joaquin County, CA. Panels (a) and (b) report event-study coefficients from separate regressions following equation 1 in the text for proactive reductions and likely self-petitioners, respectively. Panel (c) plots event-study coefficients from an interaction of post-reduction and likely self-petitioner, representing the differential labor market impacts for likely self-petitioners compared with individuals who received proactive reductions. Panel (d) pools all individuals (both likely self-petitioners and proactive reductions) in our main analysis sample of individuals with HS charges. Panel (e) plots event-study coefficients for likely self-petitioners who received reductions more than seven years post-conviction. Darker shading shows 90 percent confidence intervals, and lighter shading extends out to 95 percent confidence intervals.

Figure 3: CA Prop 47 Reductions in SJ County: Effect of Notifications

Any Wages > \$0



Any Wages > \$15,000



Notes: The treatment group are those who the PD's office attempted to notify about their reduction (N=3,755), control received no attempted notification (N=3,400). Figures (a) and (c) show raw probability of wages > \$0 and wages > \$15,000 for treatment (attempted notification) and control groups for each year. Figures (b) and (d) show ITT regression coefficients of the effect of notification from Equation 3 in the text run separately for each year. Notifications took place in 2019 and 2020, the dashed red line indicates the end of the pre-period, before any notifications took place.

Table 1: Summary Statistics

	(1)	(2)
	Likely Self-Initiated Petitioner	PD Initiated Petitioner
Male	0.766 (0.424)	0.749 (0.434)
Reduction<7 Years from Conviction	0.177 (0.382)	0.061 (0.239)
<i>2 Years Prior to Reduction:</i>		
Age	45.09 (10.79)	47.88 (10.55)
Years Since Conviction	12.176 (5.668)	14.474 (5.322)
1 Felony	0.095 (0.293)	0.073 (0.260)
Any Wages	0.296 (0.457)	0.337 (0.473)
Wages>\$15k	0.139 (0.346)	0.187 (0.390)
Any Platform Gig	0.002 (0.039)	0.001 (0.032)
Any Filed SE Income	0.029 (0.168)	0.030 (0.172)
Total Obs	655	4,967

Note: This table reports summary statistics for our main estimation sample in San Joaquin County, CA. Standard deviations are reported in parentheses. Likely self-initiated petitions are those whose petitions were filed before the “surge” for the first letter of their last name, the rest are classified as PD initiated petitions (see text for more detail). Everyone in the estimation sample has an HS (“health & safety”) crime as those were the petition list the public defender started with and make up a majority of petitions (84%). See Appendix Table A.3 for a comparison of those with HS crimes to all others.

Table 2: Impact of Proposition 47 Reductions on Employment Outcomes

(a) Public Defender Initiated Petitioners

	(1)	(2)	(3)	(4)	(5)	(6)
	Any Wages>\$0	...>\$15,000	...>\$0	...>\$0	Any Gig	Files SE
Prop 47 Reduction	0.003 (0.014)	0.002 (0.012)	0.003 (0.015)	0.054* (0.026)	0.004* (0.002)	0.003 (0.006)
× 1 Felony			-0.006 (0.026)			
× Years Since Crime				-0.004** (0.001)		
Dep. Mean (-1)	0.338	0.195	0.338	0.335	0.002	0.029
N	4,967	4,967	4,967	4,336	4,967	4,967
NxT	94,373	94,373	94,373	82,384	94,373	94,373
Age Controls	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

(b) Likely Self-Initiated Petitioner

	(1)	(2)	(3)	(4)	(5)	(6)
	Any Wages>\$0	...>\$15,000	...>\$0	...>\$0	Any Gig	Files SE
Prop 47 Reduction	0.034 (0.036)	0.019 (0.029)	0.036 (0.036)	0.024 (0.051)	-0.004 (0.006)	0.019 (0.013)
× 1 Felony			-0.018 (0.054)			
× Years Since Crime				-0.000 (0.003)		
Dep. Mean (-1)	0.334	0.160	0.334	0.330	0.005	0.031
N	655	655	655	615	655	655
NxT	12,445	12,445	12,445	11,685	12,445	12,445
Age Controls	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

(c) Pooled

	(1)	(2)	(3)	(4)	(5)	(6)
	Any Wages>\$0	...>\$15,000	...>\$0	...>\$0	Any Gig	Files SE
Prop 47 Reduction	0.024 ^a	0.006	0.024 ^a	0.078***	0.004*	0.006
	(0.013)	(0.010)	(0.013)	(0.022)	(0.002)	(0.005)
× 1 Felony			-0.002			
			(0.024)			
× Years Since Crime				-0.004***		
				(0.001)		
Dep. Mean (-1)	0.338	0.191	0.338	0.334	0.002	0.029
N	5,622	5,622	5,622	4,951	5,622	5,622
NxT	106,818	106,818	106,818	94,069	106,818	106,818
Age Controls	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X
Year FE	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Notes: This table reports coefficients on receiving a Prop 47 reduction indicator following Equation 2. Panel (a) presents results for Public Defender Initiated Petitioners, Panel (b) presents results for likely self-initiated petitioners, and Panel (c) presents results for the pooled sample.

Appendix

A Additional Figures and Tables

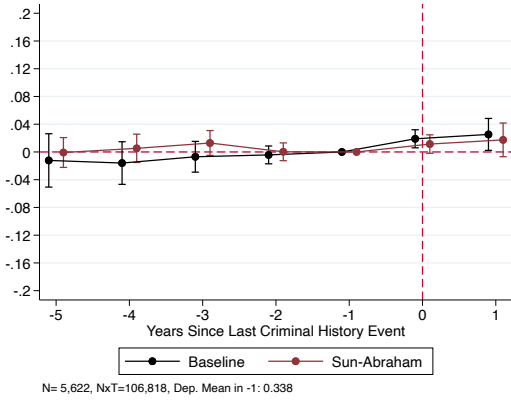
Figure A.1: Example of How Reductions Show up on Record Search

SEL	CHARGE	COUNT	STATUTE	PLEA	DISPOSITION	CHARGING DOCUMENT	LICENSE ALERTS
<input type="checkbox"/>	1	1	PC 666(A):MI-Petty Theft 3 Or More Conviction:Spec Offenses	Guilty on 05/02/1995	Reduced to Misd on 08/12/2016	Complaint filed on 05/02/1995	
<input type="checkbox"/>	1	1	HS 11377(A):MI-Possess Controlled Substance	Guilty on 06/22/2000	Reduced to Misd on 04/07/2017	Information filed on 09/09/1999	
<input type="checkbox"/>	1	3	HS 11350(A):MI-Possess Narcotic Controlled Substance	Nolo Contendere on 07/26/1993	Reduced to Misd on 03/14/2017	Complaint filed on 07/13/1993	
<input type="checkbox"/>	1	1	PC 666(A):MI-Petty Theft 3 Or More Conviction:Spec Offenses	Nolo Contendere on 11/30/2006	Reduced to Misd on 03/20/2017	Complaint filed on 09/22/2006	
<input type="checkbox"/>	2	2	PC 496(A):FE-Receive/Etc Known Stolen Property	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	
<input type="checkbox"/>	3	3	PC 466:MI-Possess/Etc Burglary Tools	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	
<input type="checkbox"/>	4	4	PC 1320(B):FE-Failure To Appear On Felony Charge	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	

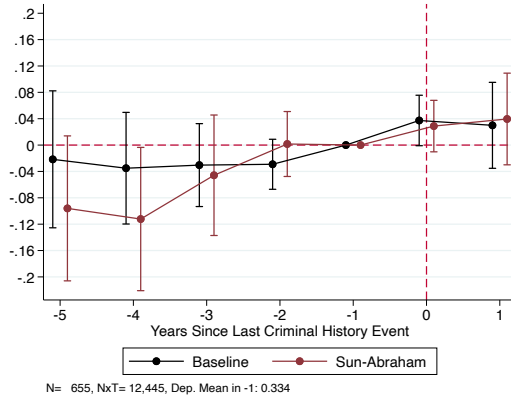
Notes: Screenshots from the San Joaquin County criminal record search portal for several different cases that received reductions. Several contacts at the courthouse in the PD office verified this is the same screen that individuals running background checks for background check companies would encounter.

Figure A.2: Any Wage Employment, Robustness

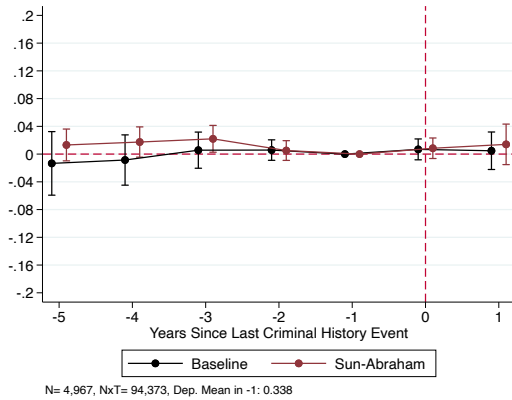
(a) Pooled



(b) Likely Self-Petitioners



(c) Proactive Reductions



Notes: Figure shows event-study coefficients for having any wage employment around Proposition 47 felony reductions in San Joaquin County, CA. We report our baseline estimates alongside event-study coefficients using the estimator proposed by Sun-Abraham (2020). The error bars report ninety percent confidence intervals.

Table A.1: Survey of Hiring Professionals on Criminal Background Check Procedures

	Yes	No	Unsure/ Missing
<i>Full Sample, N=808</i>			
Perform criminal background check?	0.69	0.23	0.08
Knowledgeable about background check procedure?	0.59	0.39	0.02
<i>Background Check & Knowledgeable Sample, N=383</i>			
Distinguish between felony and misdemeanor?			
More likely to hire if misdemeanor than felony	0.72		
Did not distinguish		0.24	
Other/No Response			0.04

Notes: Survey of 808 individuals with hiring experience in the United States in the past 5 years asked about firms' criminal background check practices for **entry-level** positions. Question wording for felony/misdemeanor question was "In making a hiring decision for this entry-level position, did you generally distinguish between misdemeanor convictions and felony convictions?" with three choices "Yes, more likely to hire if misdemeanor instead of felony" or "No, did not distinguish", or "Other, explain". See Appendix C for further details on the survey sample and design.

Table A.2: Survey of Hiring Professionals on Willingness to Hire Misd. vs. Felony Convictions

	Drug Conviction			Theft Conviction		
	Misd	Felony	Misd-Felony	Misd	Felony	Misd-Felony
<i>Prob Would Hire if Crime Was...</i>						
1-3 Years Ago	0.42	0.29	0.13** (0.05)	0.28	0.14	0.14*** (0.04)
4-7 Years Ago	0.75	0.64	0.12** (0.05)	0.61	0.51	0.10* (0.05)
8-10 Years Ago	0.91	0.83	0.08** (0.04)	0.82	0.76	0.06 (0.05)
N	121	134		125	128	

Notes: Survey of 1003 hiring professionals with experience in the United States in the past 5 years. Each respondent was randomly assigned to being asked about preferences for hiring someone with one of 8 potential criminal histories: (drug x theft) + (misd x felony) + (conviction x non-conviction). This table focuses on the 505 randomly asked about convictions. The question text was “You intend to hire a candidate for an open entry-level position at the most recent firm at which you had hiring experience. Through the hiring process, you decide that this candidate is well qualified for the position. You are ready to extend an offer to the candidate. However, you learn that the candidate was charged with **[crime type]** **[X years ago]** and was convicted. How likely are you to recommend that the company hire the candidate?” Choices were: Definitely will, probability will, probability will not, definitely will not. The respondent was asked this question for X from 1 through 10 on the same page. This table combines “Definitely will” and “probably will,” and shows the average probability the respondent reported would hire in bins of years. See Appendix C for further details on the survey sample and design.

Table A.3: Summary Statistics for Proposition 47 Reductions Full Sample

	(1)	(2)	(3)	(4)
	All Crimes	All	Has HS Likely Self- Petitioner	PD Initiated Petitioner
Male	0.735	0.751	0.766	0.749
Reduction<7 Years from Conviction <i>2 Years Prior to Reduction:</i>	0.087	0.075	0.177	0.061
Age	47.63	47.55	45.09	47.88
Any Wages	0.331	0.332	0.296	0.337
Wages>\$15k	0.179	0.181	0.139	0.187
Avg. Wages	7,674	7,697	6,003	7,920
Any 1099 NEC	0.033	0.032	0.020	0.034
Filed Taxes	0.303	0.310	0.301	0.311
Any SE Income	0.031	0.030	0.029	0.030
Total Obs	6,729	5,622	655	4,967

Notes: This table reports summary statistics for the broader sample in San Joaquin County, CA. Our main estimation sample consists of the 5,622 individuals who Had HS crimes. This table mimics Table 1 but adds Column (1) for a comparison to the broader sample with any crime. Summary statistics refer to the year prior to the Proposition 47 reduction.

Table A.4: Impact of Proposition 47 Reductions on Employment Outcomes

(a) Likely Self-Initiated Petitioner

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Wages	Any Gig	Any Other 1099	Files 1040	Files SE
Treated	0.0344 (0.0364)	0.0331 (0.0320)	0.0185 (0.0293)	-295.1 (1148.5)	-0.00375 (0.00629)	0.00792 (0.0106)	0.00708 (0.0352)	0.0194 (0.0134)
Dep. Mean (-1)	0.334	0.217	0.160	6815.554	0.005	0.021	0.299	0.031
N	655	655	655	655	655	655	655	655
NxT	12,445	12,445	12,445	12,445	12,445	12,445	12,445	12,445
Age Controls	X	X	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Notes: This table reports coefficients on a “treated” reduction indicator following Equation 2, for only those identified as likely self-petitioners, for a variety of outcomes.

(b) PD Initiated Petitioner

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Wages	Any Gig	Any Other 1099	Files 1040	Files SE
Treated	0.00270 (0.0145)	-0.00395 (0.0128)	0.00234 (0.0119)	795.7 (535.7)	0.00380* (0.00167)	0.00117 (0.00653)	-0.0133 (0.0142)	0.00270 (0.00586)
Dep. Mean (-1)	0.338	0.243	0.195	8460.821	0.002	0.038	0.304	0.029
N	4,967	4,967	4,967	4,967	4,967	4,967	4,967	4,967
NxT	94,373	94,373	94,373	94,373	94,373	94,373	94,373	94,373
Age Controls	X	X	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Notes: This table reports coefficients on a “treated” reduction indicator following Equation 2, for only those that received proactive reductions, for a variety of outcomes.

(c) PD Initiated Petitioner-By Years Since Conviction

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Wages	Any Gig	Any Other 1099	Files 1040	Files SE
Treated	0.054*	0.050*	0.052**	617.516	-0.000	0.008	0.002	0.012
	(0.026)	(0.022)	(0.020)	(939.489)	(0.003)	(0.012)	(0.025)	(0.010)
Treated × Years Since Crime	-0.004**	-0.005***	-0.005***	-40.145	0.000	-0.001	-0.002	-0.000
	(0.001)	(0.001)	(0.001)	(48.801)	(0.000)	(0.001)	(0.001)	(0.001)
Dep. Mean (-1)	0.335	0.243	0.196	8470.711	0.002	0.039	0.303	0.028
N	4,336	4,336	4,336	4,336	4,336	4,336	4,336	4,336
NxT	82,384	82,384	82,384	82,384	82,384	82,384	82,384	82,384
Age Controls	X	X	X	X	X	X	X	X
Indiv. FE	X	X	X	X	X	X	X	X
Year FE	X	X	X	X	X	X	X	X

Standard errors clustered on individual in parentheses

^a p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Notes: This table presents differential impacts for individuals who received proactive Proposition 47 reductions based on years since original conviction for a variety of outcomes.

Table A.5: Notification RCT Balance Table

	(1)	(2)	(3)	(4)	(5)	(6)
	Treated		Control		Difference (p-value)	
	1 Felony	All Others	1 Felony	All Others	1 Felony	All Others
Male	0.669	0.742	0.688	0.762	-0.018 (0.665)	-0.019 (0.066)
<i>Outcomes in 2018:</i>						
Age	49.70	49.07	49.46	49.08	0.233 (0.820)	-0.005 (0.984)
Any Wages	0.364	0.332	0.382	0.330	-0.018 (0.683)	0.002 (0.896)
Wages>\$15k	0.223	0.197	0.231	0.185	-0.008 (0.832)	0.012 (0.228)
Any SE Income	0.056	0.021	0.022	0.028	0.034 (0.051)	-0.007 (0.074)
Wages	10,322.01	8,710.60	9,810.20	8,592.98	511.81 (0.769)	117.62 (0.798)
Total Obs	269	3,486	225	3,175		

Notes: This table reports balance tests for treatment and control groups in our notification RCT. Randomization in this experiment was stratified on having one felony as recorded by the PD's office.

Table A.6: Notification RCT, Additional Employment Outcomes

(a) 2019 Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Any Gig	Any Other 1099	Files 1040	Files SE
Notified	0.0110 (0.0116)	0.00248 (0.0105)	0.00669 (0.00966)	0.00130 (0.00179)	0.000384 (0.00357)	0.00186 (0.0123)	-0.00855* (0.00377)
Notified × 1 Felony	-0.0460 (0.0453)	0.000128 (0.0428)	0.0284 (0.0406)	-0.00203 (0.00605)	-0.00846 (0.0140)	-0.0475 (0.0468)	0.0176 (0.0180)
1 Felony	0.0623 ^a (0.0337)	0.0632* (0.0315)	0.0513 ^a (0.0293)	-0.000280 (0.00460)	0.00525 (0.0110)	0.0256 (0.0344)	0.00721 (0.0127)
Constant	0.333*** (0.00837)	0.239*** (0.00757)	0.189*** (0.00695)	0.00472*** (0.00122)	0.0214*** (0.00257)	0.503*** (0.00888)	0.0283*** (0.00295)
N	7155	7155	7155	7155	7155	7155	7155

(b) 2020 Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Any Gig	Any Other 1099	Files 1040	Files SE
Notified	-0.00433 (0.0114)	0.00834 (0.0104)	0.00884 (0.00965)	-0.00144 (0.00233)	0.00247 (0.00331)	-0.00255 (0.0117)	-0.00202 (0.00382)
Notified × 1 Felony	-0.0121 (0.0450)	-0.00137 (0.0418)	-0.0132 (0.0392)	-0.00300 (0.00501)	-0.00311 (0.0149)	-0.0176 (0.0450)	0.00137 (0.0150)
1 Felony	0.0514 (0.0333)	0.0475 (0.0307)	0.0440 (0.0290)	-0.00532 (0.00477)	0.00934 (0.0110)	0.0168 (0.0334)	0.000840 (0.0111)
Constant	0.322*** (0.00829)	0.228*** (0.00745)	0.187*** (0.00692)	0.00976*** (0.00175)	0.0173*** (0.00232)	0.357*** (0.00850)	0.0258*** (0.00282)
N	7155	7155	7155	7155	7155	7155	7155

(c) 2021 Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Any Wages>\$0	...>\$7,500	...>\$15,000	Any Gig	Any Other 1099	Files 1040	Files SE
Notified	-0.00433 (0.0114)	0.00834 (0.0104)	0.00884 (0.00965)	-0.00144 (0.00233)	0.00247 (0.00331)	-0.00255 (0.0117)	-0.00202 (0.00382)
Notified × 1 Felony	-0.0121 (0.0450)	-0.00137 (0.0418)	-0.0132 (0.0392)	-0.00300 (0.00501)	-0.00311 (0.0149)	-0.0176 (0.0450)	0.00137 (0.0150)
1 Felony	0.0514 (0.0333)	0.0475 (0.0307)	0.0440 (0.0290)	-0.00532 (0.00477)	0.00934 (0.0110)	0.0168 (0.0334)	0.000840 (0.0111)
Constant	0.322*** (0.00829)	0.228*** (0.00745)	0.187*** (0.00692)	0.00976*** (0.00175)	0.0173*** (0.00232)	0.357*** (0.00850)	0.0258*** (0.00282)
N	7155	7155	7155	7155	7155	7155	7155

Notes: This table reports additional employment outcomes for treatment and control groups in our notification RCT. We separately report outcomes in 2019, 2020, and 2021.

B Details of San Joaquin County Reductions

B.1 Further details on how petitions were filed

The Public Defender’s office and the DA’s offices started work almost immediately after the law went into effect in November 2014 to begin the process of filing petitions. They started by prioritizing those on supervision (in jail or on parole/probation) as those individuals could seek resentencing to reduce their time of supervision and possibly be released (we do not focus on this sample). To streamline this process and prioritize those currently under criminal justice supervision, the criminal justice agencies requested comprehensive lists from the California Department of Corrections and Rehabilitation and from the California Department of Probation of anyone with qualifying charges currently under state supervision. The Deputy Public Defender (DPD) also checked custody lists published by the Sheriff’s office of people recently arrested and the “graduation lists” of collaborative courts like drug court, which divert individuals with drug charges to a rehab program.

After completing these they began filing petitions for all other eligible individuals. For the public defender initiated reductions, initially the DPD would file a petition only for the charge she encountered on the crime list she was working on, but the DPD soon realized that many people had multiple eligible charges for different crimes. She then began looking up an individual’s entire criminal history each time she checked a charge for eligibility. Before filing, she checked each person on the list to determine whether or not 1) their criminal charge was convicted, 2) the charge was a felony, and 3) they did not have any other disqualifying convictions such as sexual offenses, for example. The office started with the list of individuals who had Health and Safety (HS), basically drug, crimes as this list was the largest. They worked through in an alphabetical style fashion as described in the text.

Our main dataset is all Proposition 47 petitions that were filed between December 2014 to December 2018 and successfully reduced by September 2019. Excluding individuals who were currently serving sentences or under supervision (parole/probation) at the time of the filing, we have data on 8,155 successful petitions in San Joaquin. Our main analysis sample focuses on individuals convicted of a drug crime (also called “Health and Safety” or HS) which is the largest category of eligible offenses. 6,626 (81.3%) of these successful petitions involved a defendant who had at least one HS charge and the OPD relied on an alphabetical ordering to file petitions of people on this list. We do not focus on other offenses because alphabetical ordering, which is necessary to distinguish between self-petitions and public defender initiated petitions, were not preserved in these cases. This is because OPDSJ staff started on the HS list, and as they went down the list they also looked up all other eligible crimes for the individual and petitioned for those at the same time. Thus, by the time they started on the other lists, the alphabetical ordering was less intact given the priority for people who appeared on the HS list.

These underlying data were provided by the Office of the Public Defender of San Joaquin (OPDSJ) in the form of several Excel files and Word documents. The first set of files are lists containing the court case number, full names, dates of birth of the defendant, offense code/section, complaint number, citation date, pleading date, and the location of the physical file for every court case corresponding to a Proposition 47 eligible charge. The second set of files are lists of every petition the OPDSJ filed for a Proposition 47 reduction. These lists

contain the full name and date of birth of the defendant, court case number, date of petition filing, outcome of the petition, date of outcome, and the custody status of the defendant. We refer to these files as the “petition master lists.” As described above, these master lists are divided by each eligible charge, with 85% of individuals on the “health and safety” (HS) list. The third set of files is a list of defendants who received a Proposition 47 petition through the OPDSJ who had only one felony in San Joaquin County. We refer to this list as the “one felony list,” which we use to stratify in our notification RCT.

In Figure B.1 below, we show how a Proposition 47 reduction appears on a record search in San Joaquin.

Figure B.1: Example of How Reductions Show up on Record Search

SEL	CHARGE	COUNT	STATUTE	PLEA	DISPOSITION	CHARGING DOCUMENT	LICENSE ALERTS
<input type="checkbox"/>	1	1	PC 666(A):MI-Petty Theft 3 Or More Conviction:Spec Offenses	Guilty on 05/02/1995	Reduced to Misd on 08/12/2016	Complaint filed on 05/02/1995	
<input type="checkbox"/>	1	1	HS 11377(A):MI-Possess Controlled Substance	Guilty on 06/22/2000	Reduced to Misd on 04/07/2017	Information filed on 09/09/1999	
<input type="checkbox"/>	1	3	HS 11350(A):MI-Possess Narcotic Controlled Substance	Nolo Contendere on 07/26/1993	Reduced to Misd on 03/14/2017	Complaint filed on 07/13/1993	
<input type="checkbox"/>	1	1	PC 666(A):MI-Petty Theft 3 Or More Conviction:Spec Offenses	Nolo Contendere on 11/30/2006	Reduced to Misd on 03/20/2017	Complaint filed on 09/22/2006	
<input type="checkbox"/>	2	2	PC 496(A):FE-Receive/Etc Known Stolen Property	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	
<input type="checkbox"/>	3	3	PC 466:MI-Possess/Etc Burglary Tools	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	
<input type="checkbox"/>	4	4	PC 1320(B):FE-Failure To Appear On Felony Charge	Not Guilty on 11/03/2006	Dismissal/1385 PC Lack of Prosecution on 11/30/2006	Complaint filed on 09/22/2006	

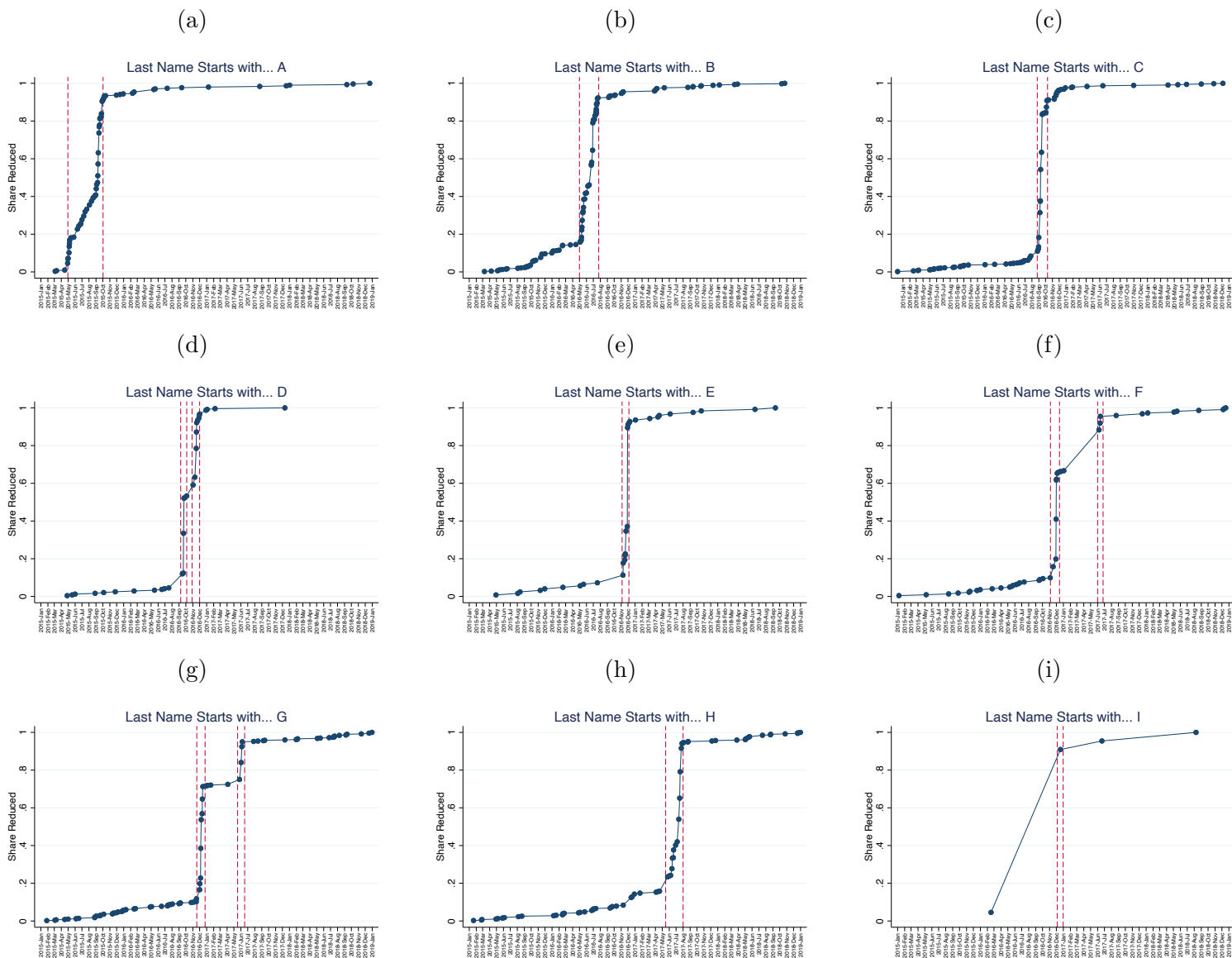
Notes: Screenshots from the San Joaquin County criminal record search portal for several different cases that received reductions. Several contacts at the courthouse in the PD office verified this is the same screen that individuals running background checks for background check companies would encounter.

B.2 Identifying Likely Petitioners in San Joaquin

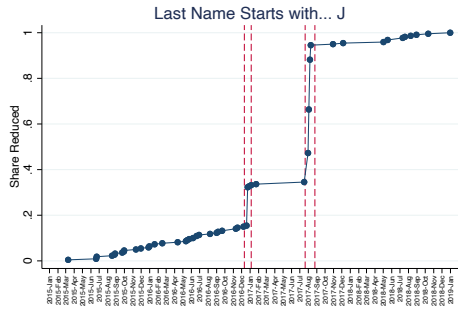
Most petitions were completed in an order corresponding to the first letter of the defendant’s last name (e.g., everyone whose last name begins with a “U” was handled in a few distinct chunks). Occasionally, individual petitions were completed outside of these surges. We had five research assistants identify each letter’s intensive petition filing window. We provided a CDF and a PDF of each letter’s time series, and had the research assistants mark the start date where they saw a surge in petitions being filed for that letter and the end date where the number being filed for that letter begins to wane. When there was disagreement, we take the median dates chosen. The figures below plot the results of this exercise. We cannot

be certain what drives the timing variation outside of the dashed lines. But we suspect the period prior to the first dashed line likely includes individuals who self-requested a petition from the office. Therefore we classify any petitions happening before the surge start date as “likely self-initiated petitions” and any petitions filed after the surge start date as “public defender (PD) initiated petitions”.

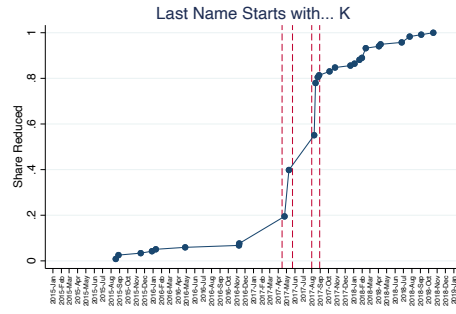
Figure B.2: Share of Petitions Filed by Date (CDFs) for each First Letter of Last Name



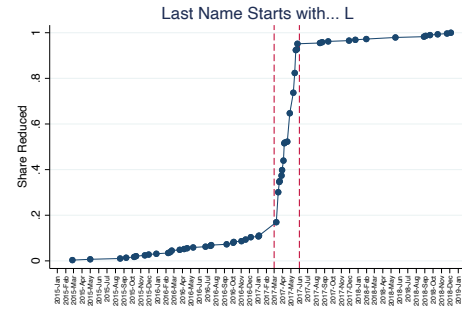
(j)



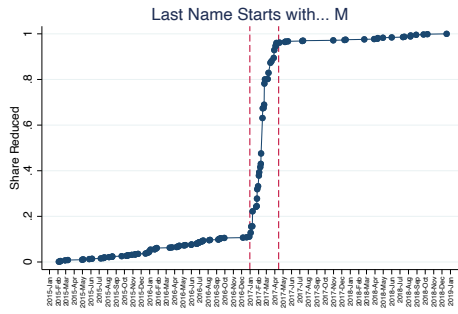
(k)



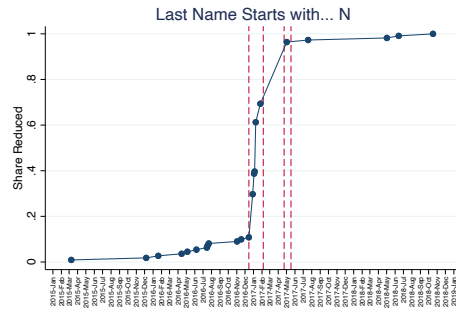
(l)



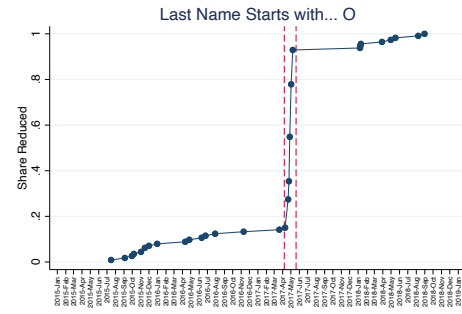
(m)



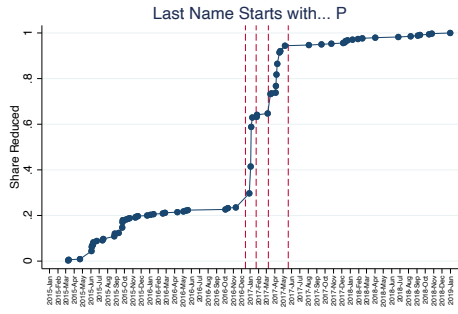
(n)



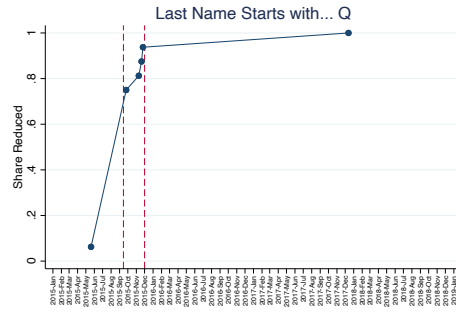
(o)



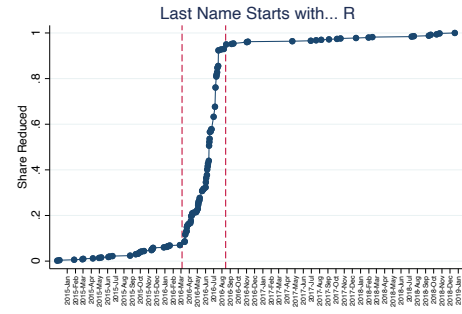
(p)

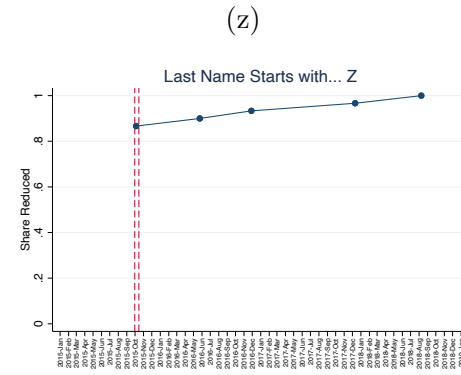
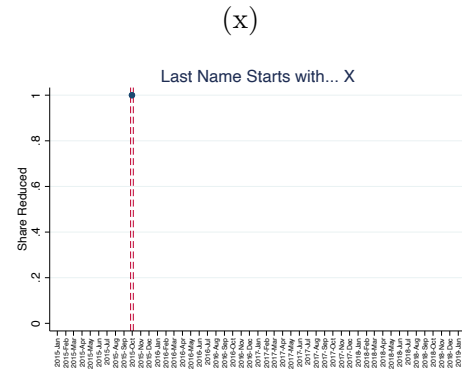
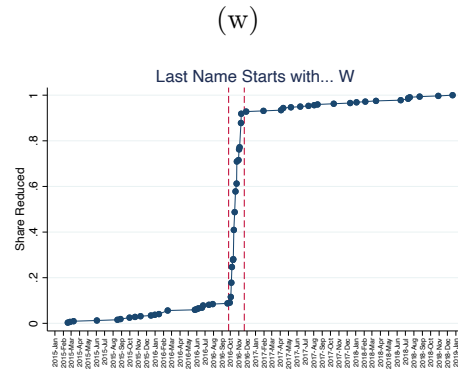
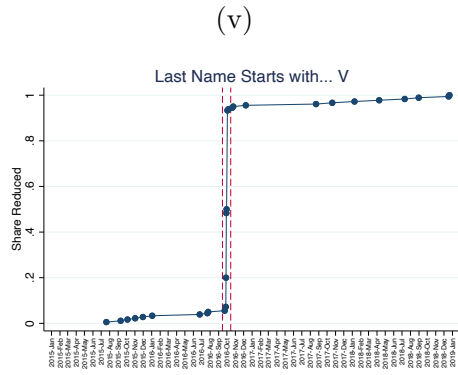
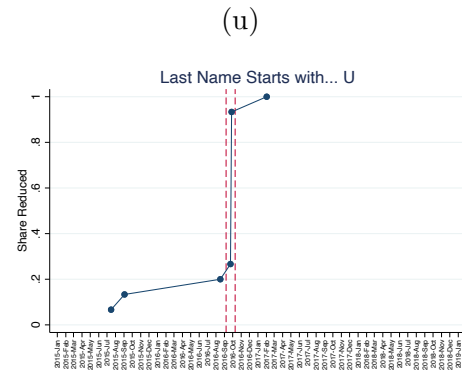
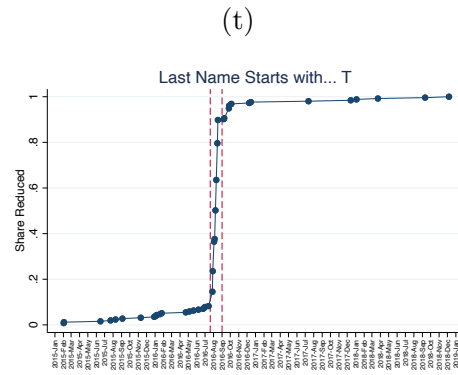
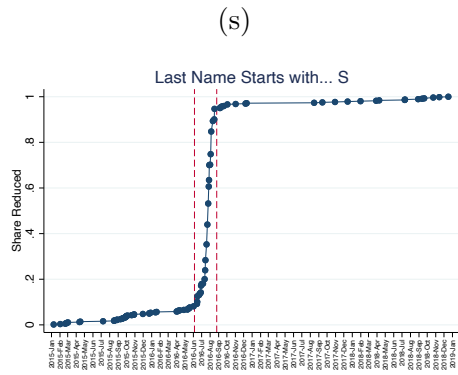


(q)



(r)





Notes: Figures represent CDFs of share of petitions filed by a certain date. Dashed lines are “surge” dates as identified by RAs.

C Details on Surveys

C.1 Survey 1

The first survey was conducted in May 2021 through Prolific and designed using Qualtrics. Prolific was selected because it allows for the pre-screening of respondents based off of their responses to prepared questions. Prolific has also compared favorably to other platforms for soliciting survey respondents (Peer et al., 2017). We selected people who responded “Yes” to the question: “Do you have any experience in making hiring decisions (i.e. have you been responsible for hiring job candidates)?” And later also added the criteria that the respondents should be located in the USA, after a pilot of the study accidentally included respondents in the UK. We additionally asked (though could not screen participants out based on responses, per Prolific guidelines): “In the past 5 years, have you had experience working in the United States in human resources and/or dealing with hiring processes for a firm with more than 1 employee?”

The survey starts with questions about recent hiring experience and a series of opening questions about the type of office the respondent worked in: the location, size, and industry of the firm. Then the survey asks the same set of questions twice about the most recent position in which the respondent had experience in making hiring decisions: first, for the position “closest to ‘entry-level’, meaning a job which required the least amount of experience and/or education in that firm,” then, later for the position, “closest to ‘mid-level’, meaning a job which required several years of experience.” The respondent’s were compensated 2\$ for their responses.

C.1.1 Sample Size, Compensation, and Technical Details

A small pilot was launched in May 2021 which helped us refine questions (results are not used in analysis). On May 25, 2021 we launched with 500 respondents. And on June 2, 2021 we requested an additional 500 respondents. In the full sample of 1000 responses, there are 808 valid responses (had recent hiring experience in the U.S. with a firm with more than 1 employee, of which 77% say their firm conducted a criminal background check. In total, there are 550 respondents who were aware of the background check process.

C.2 Survey 2

A second survey was designed and launched in late September to early October of 2021. The scope of this survey was broadly the same as the first, but the second survey was not a direct follow-up. The purpose of the second survey was to once again survey people with hiring experience in the United States and see how they would assess the risk of someone with a criminal record re-offending over time by asking them whether they would hire someone with a criminal record after X number of years.

There are two levels of randomization in the survey. The first is the nature of the crime that is posed in the hypothetical scenario asked to the hiring agent. There are four types of crimes: Felony Theft, Felony Drug Possession, Misdemeanor Theft, and Misdemeanor Drug Possession. There are also two possible dispositions: charged and convicted or charged and

not convicted. In total, this creates eight options for the randomization, which are selected randomly by Qualtrics. When a respondent is sorted into one of these eight categories, they will only respond to questions responding to that crime/disposition pair.

There is another level of randomization which is that each respondent receives one year since charge that they are asked about before all of the other years. For example, someone might be first asked if they would hire someone with a felony drug possession conviction 6 years ago. Someone else might be asked about conviction 4 years ago. The year value is randomized between 1 and 10.

The respondents also respond to the same question about whether they would hire someone with a charge from X years ago for all 10 years: only the first question is randomized. We ask the question in this format because we want to avoid biasing responses as respondents go through all the years. It also provides us a means through which we can make an assessment of the quality of the response: if the response in the first question does not match the response for the year in the second question, this might be a sign that the response is a low quality response.

The third question relevant to our main results is a question about whether the firm at which the respondent last had hiring experience has any policies about hiring individuals with given crime type and conviction after one through ten years. Unlike the other question, we only ask for the respondent to answer the question for all ten years, and do not present one randomized year.

Respondents were once again compensated 2\$ for their participation. It should be noted that the same survey was retained in Prolific so that the same individual could not be surveyed twice through the various versions of the second survey. The same person could be surveyed between the first and the second survey however.

C.2.1 Sample Size, Compensation, and Technical Details

In total, 2500 people were surveyed for the second survey.

Initially 20 people were part of the pilot of the survey. That number was then raised to 50 people. The first finalized version of the survey was then launched with 500 respondents without any randomization of the type of crime.

For the final version of the survey that included randomization of the type of crime, 1961 people were surveyed. 440 responses were discarded because two typos were found in the survey. Technically, the responses only applied to one eighth of the results, but for the sake of keeping the sample sizes and timings balanced, we discard all responses before 12:04 PM, which was when the typos were corrected.

C.2.2 Initial Pilot and First Version

The initial pilot was launched on September 29th, 2021 which helped us adjust questions (these results are not used in the analysis). We then launched with 500 participants on September 30, 2021.

C.2.3 Second Version

The second version of the survey was launched on October 6th, 2021. Following the first survey, a second version of the survey was designed that randomized the crime type and severity of the charge presented in hypothetical scenario. The following adjustments were also made:

- Size bins were changed in the question about firm size
- The industry options were modified in the question about the industry of the firm
- The wording of responses were changed in question 45.

Roughly 460 respondents were surveyed with a survey instrument that had a typo. Then the full sample of 1521 respondents were surveyed. Of these 1521 respondents, 1003 end up being valid responses that are not excluded as a result of any of our criteria. This resulted in roughly 250 respondents in each randomization bin for crime severity, though there is naturally some variation in the exact number for each category.

D Details of San Joaquin Notification Experiment

In the experiment, 4683 individuals were (randomly) selected to be notified by the Public Defender’s office about their reduction. The Public Defender’s office was able to obtain contact information for 3990 of these individuals using Transunion’s TLO service. The most common reason for not being matched to contact information (at a sufficient confidence level) was not having an SSN in the system. TLO was able to provide mailing addresses for all matched individuals. Of those, 22707 individuals also had at least one email address, and 3680 had at least one phone number. For each type of contact information, TLO provided up to 3 records per person.

The Public Defender’s office set up a “hotline” number specifically for these notifications. This was a voicemail box that was checked every business day by a member of the Public Defenders’ Office staff and any notifications like voicemails and texts included this number to get notification or ask questions, and an intern would call back the person to notify them or a Public Defender’s staff member would answer questions.

Some details follow. An even more complete description is available from the authors upon request.

Phone Calls: Calls were attempted in a randomized order. TLO provides up to 3 phone numbers. Interns attempted each of the 3 phone numbers, and tried up to 3 times for each until reaching the person or exhausting attempts (attempts were spaced at least a day apart). Calls were mainly made between 9am-5pm pacific time Monday through Friday. Notification was only given if the person answering explicitly confirmed they were the beneficiary (with very limited exception). If a voicemail was encountered, the interns left a voicemail only if the voicemail message matched the beneficiary name, in which case the interns left a message stating that the Public Defender had a notification for them and providing them with with a phone number that directed them to a Proposition 47 hotline manned by a PDO employee.

For each call, interns collect data on the date, time of day, outcome of call, and any relevant notes. If a beneficiary was reached who spoke Spanish, the case was transferred to a Spanish-speaking intern who called the individual back. Interns called from a script which detailed what to say. Pilot calls were conducted June 13-July 8, 2019. From December 12, 2019, main set of calls was attempted.

Texts: We sent the following text: “This is the San Joaquin County Public Defender’s Office. We have good news to share with you. Please call DPD Christine Kroger at (209) 468-425”. That number is the hotline number described above. The answering machine on the hotline says that the caller has reached Christine Kroger’s phone. We used the website TextMagic to send texts to each of the three numbers we have on file for beneficiaries. TextMagic allowed us to use a local (209) number to send the texts, which is likely more reputable. We sent the messages around noon on weekdays. TextMagic also allows us to send responses to people who respond to the initial text. We would reiterate the message, but we could not send personal information like the name of who we were trying to contact.

We texted in a randomized order, the same randomized order as the phone calls. Initially everyone on the contact list was texted, though the interns realized that people who had already received phone calls were calling in upset that they were being contacted again; subsequently, they began only sending texts to those who had not already been successfully notified via a phone call. Texts were sent in batches to reduce the load on the hotline. Texts were sent between December 17, 2019 and May 15, 2020.

Letters: We sent personalized letters to each of the 3 mailing addresses we have for our beneficiaries on January 17, 2020. We sent 10,529 letters to 3990 people. Some individuals have less than 3 addresses on file.

We excluded a small number of addresses that are clearly invalid (like “Homeless, Stockton CA”). The envelope indicated it was from the Public Defenders’ office, the letter itself had letterhead and DPD Christine Kroger’s signature. The letter included the hotline phone number and a special prop-47 email used exclusively for this project. We used mail forwarding from the postal service, which forwards mail to an updated address if an individual registered their change of address with the post office.

Each letter had a postcard with prepaid postage asking whether they were the correct individual (with first and last name), and whether or not they received the postcard at their address, from a friend or family member, or some other way. Most people who returned the postcard were the correct person. If someone received the letter but did not return the postcard, we have no way of knowing if they received notification, so the number of people notified by letter is a lower bound.

Figure [D.1](#) shows an image of the envelope and a hypothetical version of a letter.

E-mails: We sent 6305 emails to 2707 people. We began sending emails on January 15, 2020 and finished on Jan 29, 2020. We used the website SalesHandy, which provides read receipts and easy personalization. The content of the email was substantively identical to the letter. We sent the emails during waking hours Monday through Friday pacific time. We used a pre-send verification service from SalesHandy that checked whether or not the email would bounce prior to sending. The service categorizes emails into valid, risky, invalid and

we excluded all invalid emails. Emails were sent once a minute to avoid being put in the spam folder. The name of the email address was “Public Defender of San Joaquin County” and the subject was “Good News from the San Joaquin County Public Defender’s Office”. Figure D.2 has a sample version of the email.

Table D.1 shows that we successfully notified 25.2% of the entire sample (29.5% of the sample for which we had contact information).

Table D.1: Notification Success and Types of Notification for Treatment Group

Notification Type	N	%
<i>Success:</i>		
Successful	1180	25.20
Not Successful	2810	60.00
No Contact Info	693	14.80
Total	4683	100
<i>Amongst Successful, How Contacted:</i>		
Call Only	495	41.95
E-mail only	169	14.32
Letter only	236	20.00
Call and letter	135	11.44
Call and e-mail	88	7.46
Email and letter	24	2.03
All Three	33	2.80
Total	1180	100

Notes: No contact info/other issue: 627 people had no contact information in TLO; another 66 had other issues such as we discovered that they were mistakenly put into the group of people eligible for treatment (e.g. had not had a reduction by the time of randomization); had been put into a drug referral program which isn’t the same as a Prop 47 reduction; or we realized that what we thought were 2 people were actually 1 person.

Figure D.1: Sample of Letter and Envelope

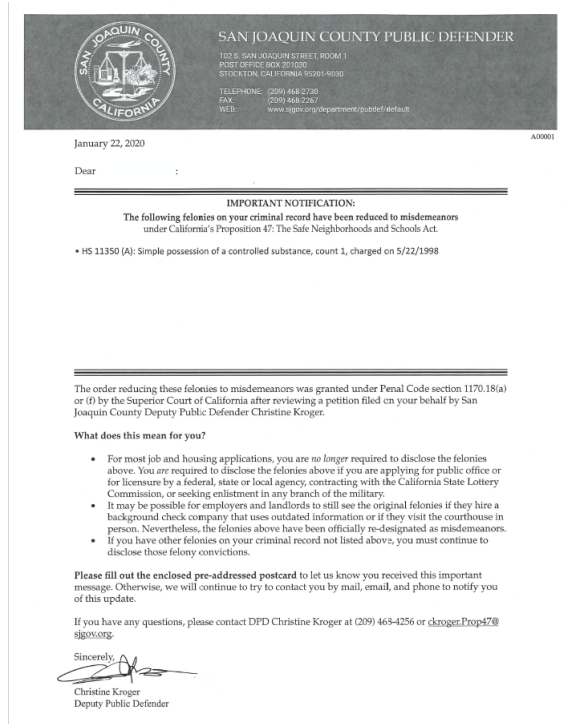
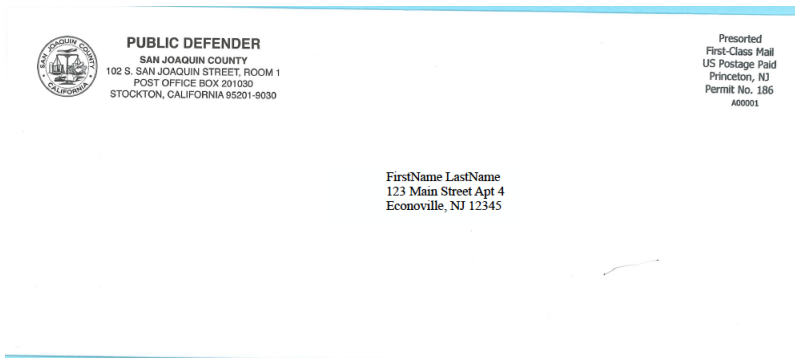


Figure D.2: Sample of Email

Good News from the San Joaquin County Public Defender's Office ▶

Public Defender of San Joaquin County ckroger.Prop47@sjgov.org xj@sjo365.onmicrosoft.com
to me ▾



January 21, 2020

Dear Mr./Ms. Agan:

IMPORTANT NOTIFICATION:

We have good news. The following felonies on your criminal record have been reduced to misdemeanors under California's Proposition 47: The Safe Neighborhoods and Schools Act.

- HS 11377 (A): Simple possession of methamphetamine, count 1, charged on 5/23/1994
- PC 666: Petty theft with a prior, count 1, charged on 8/27/2003
- PC 666: Petty theft with a prior, count 1, charged on 5/10/2004
- PC 666: Petty theft with a prior, count 1, charged on 12/8/2005
- PC 666: Petty theft with a prior, count 1, charged on 11/21/2006

The order reducing these felonies to misdemeanors was granted under Penal Code section 1170.18(a) or (f) by the Superior Court of California after reviewing a petition filed on your behalf by San Joaquin County Deputy Public Defender Christine Kroger.

What does this mean for you?

- For most job and housing applications, you are *no longer* required to disclose the original felonies. You *are* required to disclose the original felonies if you are applying for public office or for licensure by a federal, state or local agency, contracting with the California State Lottery Commission, or seeking enlistment in any branch of the military.
- It may be possible for employers and landlords to still see the original felonies if they hire a background check company that uses outdated information or if they visit the courthouse in person. Nevertheless, these felonies have been officially re-designated as misdemeanors.
- If you have other felonies on your criminal record not listed above, you must continue to disclose those felony convictions.

If you have any questions, please contact DPD Christine Kroger at (209) 468-4256 or ckroger.Prop47@sjgov.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Christine Kroger".

Christine Kroger
Deputy Public Defender

E Match Algorithm to IRS Data

This appendix outlines our approach to matching the names and birth dates from Proposition 47 reductions in San Joaquin County, CA to the IRS database and reports match performance. We rely on a variety of different sources in an iterative process as follows.

E.1 Step 1

We first search for possible match in the Social Security Database shared with IRS. The database provides date of birth and the first four letters of the last name (a field known as the “Name Control”), for every individual issued a Social Security Number or Individual Taxpayer Identification Number. The database includes a history of up to nine Name Controls ever-associated with an individual (for example, women a woman changes her last name after marriage, this would generate a new entry). We require an exact match on birthdate and first four letters of the last name in the database.

E.2 Step 2

Our procedure so far often results in multiple “hits.” To whittle down possible duplicate matches and assess match quality, we match to the database of individual tax returns and the database of information returns (W2s, 1099s, etc), each of which contain full names and ZIP code each time a form is filed. We track match hits to each data source with indicator variables.

Based on these match indicators, we create a priority ranking of matches. The highest quality matches (rank 1) have an exact match on first and last name, birthdate, and address (zipcode or state, when available as a match variable). If there is no address information available, or when the address information does not match, we prioritize matches of individuals that have ever appeared in Northern California, i.e. San Francisco, Sacramento, Palo Alto, San Mateo, Oakland, Berkeley, Richmond, San Rafael, San Jose, Stockton, Santa Rosa, Eureka, Sacramento, Marysville and Redding (zipcodes beginning with 94, 95, or 960). We next prioritize matches in California. We consider matches on first, last name, and birthdate, but no geographic match, to be the second highest quality matches. The remaining matches will be lower quality: we may have a Name Control, birthdate and geography match, but not an exact match on first and last name; or an exact name and DOB match, but not a geographic match. If there are duplicates, we prioritize the highest quality match. When duplicates remain, we throw out all matches.

E.3 Match performance

Below we document match performance for the entire universe of possibly eligible crimes in San Joaquin County based on the criteria described above.

We started with the original list of everyone potentially eligible for a reduction under Proposition 47 in San Joaquin county; note this is larger than the set of people who had actually received a reduction by September 2019. This list included 26,076 individuals,

though 427 were missing dates of birth and were dropped. Starting N (after dropping 427 with missing DOB)= 25,649

Highest Match Rank	No. Unique Matches	% of Matches	Cum.
1 - DOB, Full name, Northern CA	18,612	85.95	85.95
2 - DOB, Full name	1,249	5.77	91.72
3 - DOB, Name control, Northern CA	1,444	6.67	98.39
4 - DOB, Name control-only	349	1.61	100.00
Total	21,654		

Overall match performance: $21,654/25,649 = 84.42\%$

Of the 25,649 individuals, 10,360 of them had received a successful reduction by September 2019. We next compare characteristics of matched and non-matched individuals amongst those who received a reduction.

	(1)	(2)	(3)
	Matched	Unmatched	Difference (p-value)
Age in 2014	45.23	45.98	-0.753* (0.012)
One Felony	0.086	0.144	-0.0574*** 0.000
Has HS	0.819	0.830	-0.0104 0.309
Has 666	0.324	0.238	0.0861*** 0.000
Year of first petition	2016.2	2016.3	-0.0537* 0.033
Year of reduction	2016.8	2016.9	-0.0770* 0.010
Latest conviction year, eligible offenses	2004.7	2001.5	3.270*** 0.000
Supervised at time of first petition	0.219	0.193	0.0259* 0.016
Incarcerated at time of first petition	0.023	0.015	0.00832* 0.015
Obs	8,738	1,622	
Unique matches	8,702		

There are a small number of individuals (36) who are linked to the same SSN. For analysis, we assign the individual the earliest of their reduction dates and minimum of ONE FELONY status.

Our main analysis sample drops the 2,319 for individuals who were incarcerated or on parole/probation at the time of the reduction—these petitions were filed early and in a less exogenous fashion. With 8,041 reductions for non-supervised individuals, of which 6,729 could be matched to the IRS data. Table A.3 gives information about these 6,729 and in particular the 5,622 with HS crimes that are the focus of our analysis.

We have a slightly different estimation sample for the experiment. Randomization occurred earlier, before all reductions had been completed and before we had completed data collection and cleaning. As a result, we separately match the data using the data vintage as of the time of randomization. This full sample starts with 8,969 who had received reductions as of the first vintage of our data. We then drop 527 missing date of birth for a starting sample size of 8,442. 7,155 match to the IRS data. A comparison between matched and unmatched for this estimation sample is provided below.

	(1)	(2)	(3)
	Matched	Unmatched	Difference (p-value)
Randomized Into Treatment	0.525	0.505	0.020
			0.192
Age in 2014	45.89	45.11	-0.786
			0.015*
One Felony	0.069	0.124	-0.055
			0.000***
Obs	7,155	1,287	
Unique matches	7,128		