Civil Rights Restoration and Recidivism

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January 14, 2021

Abstract

When a person is convicted of a felony offense, they lose the right to vote, the candidacy to sit on a jury, the ability to hold public office, and the right to own firearms. In addition, civil rights revocation also denies the eligibility of certain occupational licenses and state-funded scholarships. It is unknown, a priori, if civil right status influences labor market outcomes, voting behavior, or educational attainment, any of which may affect incentives for convicted felons to re-offend. As an aggregate measure of these channels, I analyze the casual link between civil rights restoration and rates of recidivism. To establish this relationship, this paper uses variation in the Rules of Executive Clemency, which affect an ex-felons' ability to restore their civil rights. I find that restoring an individual's civil rights reduces their probability to recidivate by 18 percentage points, which translates to a reduction in the overall recidivism rates by 1 percentage point.

1 Introduction

When a person is convicted of a felony, he or she loses the right to vote, the candidacy to sit on a jury, the right hold public office, and the right to legally possess a firearm. In addition to losing these explicit rights, persons who experience civil rights revocation may lose eligibility for certain state administered benefits or occupational licenses. This leads to a potential rippling effect across various channels of an individual's economic life, such as educational attainment, employment opportunities, and civil engagement. How revocation of civil rights affect the economic opportunities, and more importantly, economic outcomes of an individual is an open question in the literature. In this paper, I quantify how policy induced changes in the civil rights restoration process impacts recidivism outcomes for a population of former felons. Furthermore I explore the

intermediate channels in which civil rights restoration may directly influence, which ultimately influences an individual's decision to recidivate.

This analysis uses data from the state of Florida as the state provides an ideal setting for several reasons. First, Florida is estimated to be home to over 1.5 million disenfranchised individuals, which represents more than 25 percent of disenfranchised population in the United States [29]. This disproportionate share is partially due to the historical procedures surrounding the clemency process, as Florida was one out of only a handful of states that virtually disenfranchised felony offenders permanently. In contrast, in 2016, a majority of states restore civil rights after prison, parole and probation [29].[1] Florida's high rate of felon disenfranchisement and significant variation in clemency policy over the last two decades provides an opportunity to study the link between the restoration of civil rights and recidivism. Secondly, Florida has experienced significant policy variation over the last 20 years. The Rules of Executive Clemency, which defines the rules and processes for civil rights restoration, have been revised 8 times over the past 20 years. As such, this analysis utilizes variation in these Rules of Executive Clemency for identifying Although the analysis focuses on Florida, the findings are applicable to broader settings and states that are considering amendments to their clemency and rights restoration process.

This paper focuses on recidivism rates for several reasons. First of all, conviction of a felony offense and revocation of civil rights produce lesser-known secondary effects, such as being barred from certain licensed occupations and loss of eligibility to some state funded student loans. These secondary effects of conviction are commonly known as collateral consequences of sentencing and are usually not disclosed prior to or during conviction. The knowledge of these punitive laws are generally unknown to the public and, furthermore, there is even anecdotal evidence that even attorneys and judges are not familiar with all of the collateral consequences triggered by certain crimes [8, 4]. As such, first-time offenders may not be responsive to these considerations as they fail to consider such consequences during their criminal behavior calculation. By focusing solely on a population who had experience in the criminal justice system through the analysis of recidivism rates, this population is most likely to respond in some dimension to changes in clemency policy. In a similar vein, first time and prior felony offenders are subject to a different set of collateral consequences, for example, first time felony offenders lose eligibility status for numerous public assistance programs. Secondly, recidivism is the main outcome variable of interest in this paper as the literature exploring the impact of civil right restoration typically make a causal claim between rights restoration and reduced rates of recidivism [12]. Although reduced recidivism is posed as a benefit, proponents fail to provide causal evidence. Knowing the implications of civil rights restoration and the channels in which they operate will greatly advise these policies and their potential implications in the long-run. Finally, recidivism is the focus of this analyses as it serves as a summary statistic for

[1] Two states, Maine and Vermont, do not place any restrictions on civil rights revocation for felony offenders.

the potential avenues through which civil rights may operate. Although a single channel may not provide statistical significance nor be available to be quantified in a meaningful way, the net effect of the various mechanisms may produce a quantifiable result observable via recidivism.[2]

This paper contributes to a growing body of research that seeks to understand how criminal justice reforms affect outcomes of at risk populations. Although there is an abundance of research regarding recidivism, there is little empirical literature regarding the restoration of civil rights [1]. Hamiltion-Smith and Vogel utilize interstate comparisons of state disenfranchisement policies to identify civil rights restoration and find that individuals who were arrested in states that permanently disenfranchised felons were 19 percent more likely to be rearrested than those released in states that restore rights after release [12]. Their estimates, however, might confound unobserved variation across states over time, such as drug statues or mandatory minimums in sentencing, with differences in civil right restoration policies. My paper utilizes plausibly exogenous policy induced variation overtime, namely, changes in Rules of Executive Clemency by the incoming administration, to identify how variation in civil rights restoration effects recidivism rates. Moreover, this paper attempts to identify the mechanisms in which felony disenfranchisement policies operate through, as such channels are not well understood. The proposed mechanisms I analyze in this paper include employment opportunities through occupational licensing, reduced costs of educational attainment, and identity adhesion.

2 Background Information: Rules of Executive Clemency Across Time

Under the current Florida Constitution, a person convicted of a felony loses the right to vote, serve on a jury, hold public office, and possess a firearm.[3] Although felon disenfranchisement was not explicit in the state's first constitution in 1838, lawmakers adopted a mandate which stripped the voting rights of felons in 1868 to disproportionately effect African-Americans.[4] Since then, Florida has experienced a number of revised constitutions, although felon disenfranchisement laws always remained. Thus the modern day practice of felony disenfranchisement in the Florida constitution is regarded as a vestige of Reconstruction era laws.

Although the constitution effectively disenfranchises convicted felons for life, persons with a prior felony offense may seek clemency, the constitutionally authorized process that provides the means through which persons may seek restoration of their civil rights, with the exception of the right to own firearms. The clemency administration is comprised of three entities, which include the

[2] I do not analyze channels in which eligibility does not vary by civil rights status, such as public housing and income assistance eligibility status.

[3] Constitution of the State of Florida. As Revised in 1968 and subsequently amended. `http://www.leg.state.fl.us/statutes/index.cfm?submenu=3`

[4] This mandate was part of a series laws such as additional requirements for first-time voters and increasing punishment for crimes likely to be committed by newly freed slaves.

Governor and three publicly-elected members of the Cabinet.[5] These elected officials form the Board of Executive Clemency and together establish the Rules of Executive Clemency.[6] In Florida the number of ex-felons who receive clemency is largely affected by policies enacted by the sitting administration, as demonstrated by the annual variation in Figure 1. For the past 26 years, every new Governor's administration has revised the Rules of Executive Clemency. Below I outline a more detailed account of these changes throughout the years. The leniency regarding the Rules of Executive Clemency depend upon the administration in the office. Between the years 2002 through 2006, more than 72,080 ex-felons received clemency, compared to the years 2007 through 2010, when more than 155,315 ex-felons received clemency and the right to vote. During the Scott administration, for the years 2011 to 2014, only 1,534 were able to make it entirely through the process and receive clemency. Figure 2 contains a graph on the number of applications and grants received by the Florida Commission on Offender Review for each calendar year. It is clear that clemency applications surged in the early 2000's and in the mid- to late-2000's, which may be related to the presidential elections in 2000 and in 2008, but the 2004 presidential election year experienced a relatively low number of applications. Furthermore, the rate of approvals for clemency experienced a significant increase from the years 2007 to 2009, which is explained by the changes in the Rules of Executive Clemency. In what follows is a brief description of the most significant changes in the Rules of Executive Clemency from 2000 to present.

2.1 Governor Bush Administration

On January 1^{st} 2000, the Executive Clemency Board amended the Rules of Executive Clemency by adding a list of disqualifying crimes and specified the requirement to have a hearing before the Executive Clemency Board prior to receiving clemency for certain offenders.[7] Furthermore, an individual may have their rights restored, excluding the specific authority to own, possess, or use firearms, without a hearing after completing and satisfying all sentences and all conditions of supervision. The Florida Parole Commission reviewed the records of individuals released by the Department of Corrections from community supervision who were deemed eligible for review. If all requirements were found to be met, a preliminary review list was circulated for review by the Clemency board. This level of clemency was not guaranteed, however, because if three or more members of the Clemency Board objected within 20 days of issuing the preliminary review list, the individual must seek rights restoration through an application. The Rules of Executive Clemency stated that eligible individuals, in most cases, receive a certificate evidencing restoration of civil rights within

[5]The clemency administration is comprised of three entities; the Executive Clemency Board, the Office of Executive Clemency, and the Florida Commission on Offender Review.

[6]The Board of Executive Clemency is comprised of the Governor and three publicly elected members of the Cabinet, the Attorney General, Commissioner of Agriculture, and Commissioner of Finance.

[7]Types of offenders include habitual felony offenders, habitual violent felony offenders, three-time violent felony offenders, violent career criminals, and prison release re-offenders.

one calendar year. Should any eligible individual have need of restoration of civil rights within an earlier time frame, they were instructed to contact the Office of Executive Clemency.

In response to criticism resulting from the 2000 election, Governor Bush directed the Office of Executive Clemency to implement a plan to provide the clemency application form to all prison or community supervision releasees on December 14^{th}, 2001. This process resulted in notifying all offenders of their eligibility status for restoration of civil rights without a hearing. Those eligible without a hearing were placed on a list for approval by the Executive Clemency Board automatically, without being initiated by the released offender. Those who were deemed ineligible for restoration without a hearing were provided with a hard-copy application and instructions regarding further consideration of restoration of their civil rights. On December 9^{th}, 2004, the Rules were revised again such that individuals with disqualifying convictions were to become eligible for restoration without a hearing if they remained crime-free for at least five years after completion of all sentences and allowed all individuals, regardless of conviction, to become eligible for rights restoration without a hearing if they remained crime-free for at least 15 years after completion of all sentences.[8]

2.2 Governor Charlie Crist Administration

On April 5^{th} 2007, the Executive Clemency Board amended the Rules and implemented an automatic approval process (Level I) for the restoration of civil rights for felons convicted of specific offenses.[9] Felons were eligible if they had completed their sentences or supervision, paid all restitution, and had no pending criminal charges, outstanding detainers, or warrants. The cases were reviewed for eligibility and placed on an executive order for signature by the Clemency Board. Once the order was signed, certificates were mailed to the persons granted restoration of civil rights. Individuals who were convicted of more serious offenses were eligible for a Level II review for restoration of civil rights *without a hearing*.[10] An in-depth investigation was required for these cases, with report provided to the Clemency Board for a 30-day review. At the end of the review period, if the Clemency Board approved the applications, the names of the eligible individuals were placed on an executive order for signature of the Clemency Board and restoration of civil rights certificates were mailed to those persons once the order was signed. Persons convicted of the most serious offenses were investigated for restoration of civil rights *with a hearing* as a Level

[8]The Rules of Executive Clemency were also amended to eliminate owing outstanding monetary obligations (other than restitution) as a disqualifier and eliminate having more than two felony convictions as a disqualifier for restoration without a hearing. Rule revisions were made effective January 1^{st}, 2000.

[9]Persons eligible for Level I automatic approval were those convicted of less serious offenses such as grand theft, burglary of a dwelling, possession of firearm by convicted felon, robbery (no deadly weapon), felony DUI, and sale of controlled substance.

[10]These offenses include aggravated battery and assault, trafficking cocaine, aggravated stalking, kidnapping and false imprisonment, or those who were designated as a three-time violent felony offender.

III case.[11] These in-depth field investigations required a personal interview and an advisory Commission recommendation. A notification letter was mailed to those individuals determined by the Commission to be ineligible for restoration of civil rights without a hearing. This letter provided information to the recipient on how to proceed with the request for restoration of civil rights *with a hearing* or how to resolve issues such as outstanding restitution or pending criminal charges.

The most notable feature of this administration's Rules was the automatic process of application processing. Cases were sent electronically to the Florida Commission of Offender Review (FCOR) Clemency Investigations Office by the Florida Department of Corrections based on offenders either ending their prison sentence or being terminated from community supervision. An eligibility review was conducted by FCOR for these electronic requests and, if deemed eligible, the case was passed on an Executive Order and submitted to the Board for signature. If found ineligible, the individual was notified and told of the process to request a hearing. These revisions were made effective on April 5^{th}, 2007.

2.3 Governor Rick Scott Administration

On March 9^{th} 2011, Governor Rick Scott and fellow Cabinet Members adopted changes to the Rules of Executive Clemency which became effective immediately. The Rules of Executive Clemency were amended such that automatic restoration of rights for convicted felons was eliminated. Under these new rules, felons seeking to have their rights restored must complete a five year waiting period in order to be eligible and must submit an application along with the accompanying court documents to the Office of Executive Clemency. [12] Restoration of civil rights cases are broken down into two categories: *without a hearing* and *with a hearing*. The type of clemency investigation conducted by the Florida Parole Commission primarily depends on the severity and nature of the offense as designated by the Rules of Executive Clemency. In November 2018, Amendment 4 passed which restores the voting rights of Floridians with felony convictions after they complete all terms of their sentence including parole or probation. However, completing sentencing requires more than serving time incarcerated, as the Florida legislators interpreted paying all fees, fines, and restitution as part of completing all terms of a sentence and as of January 2020, the Florida Supreme Court issued an advisory opinion upholding this interpretation.[13] [14] A timeline of the Rules of Executive Clemency changes is provided in Figure 3 and a more detailed description of qualifying and disqualifying felony offenses for

[11] The most serious offenses include murder and manslaughter, sexual battery, aggravate child abuse, or persons designated as sexual predators.

[12] Civil rights cannot be restored until all sentences of supervision periods have been completed, all restitution owed to current or prior victim(s) is paid in full, there are no pending criminal charges, warrants, or detainers, and established waiting periods have been met.

[13] CS/HB 7089. `https://www.flsenate.gov/Session/Bill/2019/7089/BillText/e1/PDF`

[14] Supreme Court of Florida. Advisory Opinion To The Governor Re: Implementation Of Amendment 4, The Voting Restoration Amendment. January 16, 2020 `https://www.floridasupremecourt.org/content/download/567884/6414200/file/sc19-1341.pdf`

rights restoration is provided in the appendix under Section **??** and Section **??**.

In early 2019, Ron DeSantis became the 46^{th} governor of Florida. DeSantis has not changed the Rules of Executive Clemency but this paper will not use observations of individuals released in 2019 nor in 2020.

3 Civil Rights Channels

In this section, I describe multiple channels in which civil rights revocation and restoration may operate through. A conceptual framework is contained in Section **??** in the Appendix for a more formalized overview of how the following mechanisms work. As previously suggested, revocation of civil rights automatically results in a disqualification of certain occupational and professional licenses, business licenses, and employment positions. Furthermore, if the loss of an occupational license results in loss of employment, certain convicted felons may become ineligible for unemployment assistance.[15] Such an effect upon employment opportunities may have been considerably prevalent in recent years given the increasing frequency of occupational licensing [15]. It is plausible for an offender to switch occupations after an offense, though occupational licenses require substantial up-front cost resulting in a disincentive to occupational switching [6]. Although Florida Statues were amended in 2010 to remove any general prohibition against those with a felony conviction, some licensing boards have interpreted the statutes as implying a requirement for restoration of civil rights.[16][17] An Interim Project Report presented to the Florida Senate in 2007 identified over 37 occupations that required the civil rights restoration by the issuing state agency.[18] Included in this list was construction and electrical contractor licenses, which has been identified as one of the most common occupations among persons with previous felony convictions [17, 30]. For the complete list of state-maintained occupational licenses which placed any level of civil rights requirement in the eligibility criteria, see Section **??** in the Appendix. Furthermore, this potential channel is especially important in Florida where approximately 29 percent of the workforce are licensed, in which places Florida as the 4^{th} state of the highest percentage of

[15] Florida Statutes 443.101

[16] In 2010, Florida statutes declared that a person may not be disqualified from a professional license, unless the offense was directly related to the occupation (F.S. 112.011). Many agencies interpreted this as a requirement rather than prohibition of discrimination, as the language in statute was not specific as to what constitutes as being "related to the specific occupation or trade". In 2011, the statute was amended to clarify the language in which a person may be denied access to an occupation. Language was updated such that first degree misdemeanors or felonies could disallow a person from an occupation "if it was directly related to the standards determined by the regulatory authority to be necessary and reasonably related to the protection of public health, safety, and welfare for the specific occupation".

[17] Scherer v. Department of Business and Professional `https://caselaw.findlaw.com/fl-district-court-of-appeal/1276117.html`

[18] The Florida Senate Interim Project Report 2008-114. Rules for Restoration of Civil Rights For Felons and Impacts On Obtaining Occupational Licenses and Other Occupations. December 2007. `http://archive.flsenate.gov/data/Publications/2008/Senate/reports/interim_reports/pdf/2008-114cj.pdf`

licensed workers [16]. There is also evidence of employers utilizing occupational licenses as a signal of non-felony status, especially for states which experienced "ban the box" reforms [5]. I will test for this differential impact by utilizing data on occupational counts at the county level.

Civil rights restoration also has the possibility of influencing educational attainment and thus human capital accumulation. Florida has a state-wide scholarship system known as Bright Futures. Recipients receive an award based on merit and reduces the cost per credit hour for attending a qualified Florida institution. In order to be eligible, applicants must not have been convicted of a felony, unless granted clemency by the Executive Clemency Board.[19] Although the ineligibility of the Bright Futures scholarship program does not permanently disbar a person convicted of a felony conviction from seeking a higher-education, it may significantly increase the relative cost of attainment. Individual level data of educational attainment is not available in this study. The education channel can roughly be identified through proxies, such as income. Those who are more income constrained will be disproportionately influenced by revocation and restoration of civil rights as the cost of education varies by civil rights status. Another potential proxy is age, as younger persons are more likely to accumulate human capital [31]. As age is correlated with propensity to accumulate human capital, those who are relatively younger are disproportionately effected by civil rights policies through the education channel. If the estimation provides insignificant estimates for these proxies, it may be indicative of individuals not being income constrained. It is questionable, however, if the education mechanism significantly contributes to the criminal decision. First of all, Bright Futures is only one of a handful scholarships offered by the State of Florida. In 2014, only 8.19 percent of all scholarships, grants, loans, and work-study funding awards dispersed to Florida university students was attributable to Bright Futures. Eligibility requirements are set to high standards, as over the last ten years only 20 to 30 percent of Florida high school graduates have been found to be eligible for Bright Futures.[20] Furthermore, the majority of those attending Florida public institutions do not receive Bright Futures as recipients constitute only 7.67 percent of Florida public university and college student population. As a consequence, the education channel may not significantly impact rates of recidivism.

Another avenue civil rights restoration may influence recidivism is through identity and civic engagement. Many individuals who are subject to disenfranchisement laws speak of felon disenfranchisement as a symbol that they do not belong and are outsiders in their own community [21]. Following the life-course model of role transition, criminal behavior is explained by identities surrounding civic engagement. As previously mentioned, the status of civil rights for ex-felons are severely impaired, as they lose the right to vote, the right to hold public office, and the ability to serve on a jury. This idea of adhering to a

[19] 2018-2019 Bright Futures Student Handbook. Chapter 1: Initial Eligibility Requirements. `https://www.floridastudentfinancialaidsg.org/PDF/BFHandbookChapter1.pdf`

[20] Florida High School Graduates Eligible for Receiving Bright Futures. Report B. September 2018. `https://www.floridastudentfinancialaidsg.org/PDF/PSI/BFReportsB.pdf`

particular identity is known within the criminology literature as labeling theory [7]. In an attempt to measure this channel, criminologists have used counts of prior offenses [10, 27]. There is some agreement that first-time offenders are more vulnerable to the negative consequences of sanctions, in this case, disenfranchisement. To capture this variation, I will construct a binary indicator if they are a first time offender and interact this indicator with clemency status. If the estimated coefficient is insignificant, it is suggestive of an improper proxy of identity adhesion and norm compliance. It may be the case that the magnitude of the marginal effect of social norm on is relatively small and therefore produces an insignificant effect on reducing the rates of recidivism. It may also be the case that insignificant estimates are the result of an improperly specified function of norm compliance. One potential issue of identifying this channel is that behaviors which are consistent with identities of career, family, and civic engagement are mutually reinforcing and as such identification of each separate channel may be unattainable [28].

Of all of the discussed possible mechanisms, awarding clemency may be functioning akin to the sheepskin effect. In short, the sheepskin effect is the observation that individuals who earned a degree experience greater levels of income compared to those with similar levels of education [13, 3]. In this sense, receiving restoration of civil rights serves as a signal to potential employers on one's productivity levels. There may also be an effect in which receiving a notification of restoration of civil rights signals to the individual and therefore makes one's identity more salient. This may be particularly true as during the Bush and Crist administrations, letters were sent to ex-felons notifying them of their eligibility status or certifying that they received clemency. It may be possible to isolate these effects if it is possible to identify which individuals received a notification and compare those to who did not receive a notification, holding baseline covariates and time-varying covariates constant. Of the previously explored channels through which civil rights restoration may operate, there is some anecdotal evidence that civic engagement may be the largest contributor of the three. In a survey conducted among those who applied for civil rights restoration in 2014, 87 percent of the applicants specifically indicated that they were interested in regaining their right to vote, sit on a jury or hold public office, and 30 percent of the applicants specifically indicated that they were interested in obtaining their civil rights to help them with employment, ranging from specific licenses or occupations to general job opportunities.[21] Although this survey demonstrates correlation, it is likely the case that there is self-selection among those applying for civil rights restoration.

Although the previous channels only highlighted the direct relationship between civil rights restoration and the propensity to commit criminal activities, the leniency of clemency policies themselves may produce a deterrence effect on decision to engage in criminal activity for individuals who are sufficiently forward-looking. For example, an individual who highly values their civil rights

[21] Florida Parole Commission Monthly Accomplishments Report. June 2014. `www.fcor.state.fl.us/docs/reports/monthlyAccomplishments/2014/June2014.pdf`

status, for any of the previously mentioned reasons, will have a lower propensity to commit a felony offense when the clemency restoration process is relatively more burdensome, holding all else constant. The interpretation of the channels therefore must be a net effect of both the identified civil rights restoration channel and the deterrence effect produced by the clemency policies themselves.

4 Data

This paper uses data from the Offender Based Information System (OBIS) hosted by the Florida Department of Corrections. This is a rich dataset including basic inmate information released from October 1^{st} 1997 to present day. Names, aliases, current and prior prison offenses, release plan of address, detainers, and incarceration history are included. The complete list of the data can be found in the data appendix.[22] Individuals are identified by their unique Department of Corrections ID numbers, also known as their DC number.

Not all those who are convicted of a felony are sentenced to incarceration, and as such, there may be a selection effect of including only the most serious offenders. This exclusion criteria may be small, however, as 75 percent of defendants convicted of a felony were sentenced to incarceration in a state prison or local jail [26]. Furthermore, as the database only includes those committed in Florida state prisons, the data excludes those who recidivate across state lines or for lesser offenses handled at the county court level.[23][24] In addition to being unable to connect offenses across state lines, I am unable to access certain individual-level variables of interest such as behavior while in prison through disciplinary reports and tested education level [20]. As a potential proxy for disciplinary reports, I create a continuous variable for the difference between time sentenced and observed incarcerated time. This proxy captures the fact that those who with frequent disciplinary reports are more likely to serve their full sentence. This type of selection regarding sorting into parole is expected to be small as the Florida Legislator abolished parole for most offenses in 1983.[25]

[22] Although the OBIS database does not identify if charges were a felony or misdemeanor, it does include the prison length. Since misdemeanors are less serious crime, such offenses are punishable up to one year and are individuals generally incarcerated at county jails. Therefore any person faced with prison term that is longer than one year is considered to have been convicted of a felony, given adjudicated guilty. Furthermore, as those in the database are given sentenced dates, it is by assumption that all of the individuals are convicted.

[23] The BJS estimates that within five years of release, approximately 10 percent of released offenders are arrested in a state other than the one that released them. See *Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010* `https://www.bjs.gov/content/pub/pdf/rprts05p0510.pdf`

[24] Civil rights restoration is handled by the state in which the offense was committed. If an offense was a federal crime, civil rights are still lost and restored at the state-level. If civil rights are restored in another state, then the prior offender has restored rights in Florida as well. As stated in the 2007 and 2011 Rules of Executive Clemency, *[i]f the person was convicted in a court other than a court of the State of Florida, he or she must be a legal resident of the State of Florida at the time the application is filed, considered, and acted upon.*

[25] Although parole was abolished, those who were parole-eligible at the time of the passed

In 2016 to 2017, 15.8 percent of releases were to probation or community supervision and 61.4 percent were due to expired sentences. For more serious offenders, 17.5 percent were released to conditional release supervision.[26] To show mercy for first-time offenders who commit less-significant crimes, adjudication may be withheld.[27] Since only criminal offenders who are adjudicated guilty lose their civil rights, these subset of individuals will be unaffected by changes in the clemency policy. These individuals, nevertheless, still bear the mark of a criminal record and may face the aforementioned wage penalties for a felony conviction, such as a wage penalty. As such, I propose using adjudication status as an additional robustness check for identifying the causal mechanism of reduced recidivism rates. If recidivism rates vary across governing administrations for this control population, it would be indicative that changes in administrations are influencing recidivism rates through other channels than clemency status. Withholding adjudication is fairly unlikely as it is only observed in 0.05% of the cases brought to state court. It is also very unlikely that those will be sentenced any prison time as only 0.003% of the cases observed have adjudication withheld and some level of prison sentencing.

The variable clemency is constructed by looking up the clemency status for each individual using their name, DC number, and birth date. Using the information provided on the FCOR's website, I observe if an individual received clemency, what type of clemency was granted (i.e. Automatic, Level I, Level II, Level III), and when the executive order was signed. The counts of observed clemency types can be found in Table 1. To analyze the specific channels which rights restoration operates through, individual observations are merged with total employment at the size-digit occupational code according to prior residence along with individual voter history. In instances where the individual's residence was not recorded, I assume that they return to live in the county of release. Typically individuals who are placed on probation or community supervision are required to remain in the county of conviction or last county of residence. This practice of using county of release as assumed residence is common in the literature [25]. Ideally, occupation of employment would be used to estimate this channel, however, such data is not available at the individual level. To capture this variation, I identify occupations at the six-digit occupational level which require a license and place some restriction on civil rights status for license eligibility.[28] Knowing this, I create a share of occupations at the geographical level which are subject to such clemency restrictions. This will serve as a rough proxy for the probability that the offender in a specific area was employed in a particular occupation, and thus, the probability they were exposed to losing an occupational license. It is possible, however, that the estimates of this channel will be insignificant due to the aforementioned assumption that criminal wages must exceed wages of unlicensed wages. Monthly

legislation were still eligible for parole.

[26] Florida Department of Corrections Annual Report. 2016-2017. `http://www.dc.state.fl.us/pub/annual/1617/FDC_AR2016-17.pdf`

[27] Usually lesser crimes and those who are first-time offenders have adjudication withheld.

[28] For now, I only consider licenses which are under the authority of the state.

statewide and county-level unemployment rates are provided by the Bureau of Labor Statistics Local Area Unemployment Statistics (LAUS) program. Average weekly wage data is recorded quarterly at the county-level is taken from the Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW) program. County-level revenue and expenditure data is taken from the Florida Department of Financial Services' Bureau of Local Government Local Government Electronic Reporting (LOGER) system. Trial court data is reported yearly at the circuit level and is provided by the Florida Office of the State Courts Administrator. Median household income and 4-year high school graduation rates are reported yearly at the county-level and are provided by the U.S. Census American Community Survey.

5 Descriptive Statistics

To check the accuracy of the data within the OBIS database, I compare the computed recidivism rates against those reported from the Florida Department of Corrections. In order to make a direct comparison with the state reports, the Kaplan-Meier failure function, or the computed probability that an individual will recidivate (fail) within the number elapsed months, for all prisoners since 2000. The graph can be found in Figure 4.[29] The failure function is the cumulative distribution of the length of a crime-free spell lasting exactly m months and is interpreted as the recidivism rate for a given time period since release. The magnitude of this failure function closely resemble the results from recent recidivism reports produced by the Florida Department of Corrections, as the reported recidivism rate after 3 years of release is between 12 to 30 percent, depending upon year of release.

To verify the existence of a potential treatment effect, the Kaplan-Meirer failure function is computed for those who received and those who never receive clemency and is provided in Figure 5. It is clear that those who received clemency had a lower probability of failure than those who did not have their rights restored for any month m. As previously emphasized, however, the difference in recidivism rates may only reflect the differences in underlying covariates. Descriptive statistics comparing those who received clemency and those who never received clemency are listed in Table 2. By analyzing the difference in means, it is clear that the two groups vary in terms of a handful of baseline covariates. For example, the average length of incarceration is significantly different as sentence length is intrinsically related to the severity of offense, which determines eligibility status for clemency. The difference in means is tested using a t-test, all of which are statistically significant.[30]

In order to address the aforementioned selection biases, the clemency indica-

[29] Kaplan-Meier is more preferable method for computing failure functions when time intervals are irregular.

[30] This data includes individuals who experience individual spells in which civil rights were revoked and later restored. Inclusion of these individuals would reduce the difference between revoked and restored groups, given the covariates are not time-varying.

tor variable is refined to only include individuals who received clemency through an automatic process. Furthermore, an appropriate control group is comprised of individuals who *would have been* eligible for automatic clemency under the Crist administration but were released from Florida custody during a different time period. Table 3 contains descriptive statistics for those who received automatic clemency and those who *would have been eligible*. The absolute difference in means are, for the most part, smaller compared to the differences in means reported in Table 2, which provides evidence that the revised control group comparable to the treatment group on baseline covariates.

6 Empirical Strategy

In an ideal control trial, clemency status would be randomly assigned to individuals in order to obtain an unbiased estimate. Unfortunately, clemency is not randomly assigned as civil rights status not only varies by eligibility criteria, but also by unobservable personal characteristics. For example, individuals who are more engaged in civic life may have a higher propensity to apply for clemency. Those in licensed occupations have a relatively larger incentive to apply for clemency than those in unlicensed occupations. These characteristics are unobservable in the data, yet are plausibly related to an individual's propensity to engage in criminal behavior. Failure to account for these unobservables would bias the estimate of clemency. In order to address this issue, I instrument clemency status using a set of indicators for the Rules of Executive Clemency in which an individual was released under. As previous discussed, the Rules of Executive Clemency varied greatly over time and directly impacted one's ability to apply for and receive clemency. For example, during the Crist administration, obtaining clemency was automatic for those placed on the preliminary review list. Under the Scott administration, however, individuals were required to wait a minimum of five years and must submit an application in order to receive clemency. As such, the proposed set of instruments explain a great deal of variation in clemency status. In order to be valid instruments, the timing of the various Rules of Executive Clemency must not be correlated with the unobservables. In the prior example given, these unobservables may be personal characteristics which influence an individual's propensity to obtain clemency. The proposed set of instruments satisfy this condition as it is unlikely that administration changes are correlated with a particular individual's personal characteristics. The estimation specification is provided in Equation 1 below.

$$\begin{aligned} Recidivate_i &= \mathbf{1}[\phi_0 + B^{K\prime}\mathbf{X}_i^K + \phi_1 Clemency_i + \phi_2 Eligible_i > \varepsilon_{1,i}] \\ Clemency_i &= \mathbf{1}[\pi_0 + \Pi^{K\prime}\mathbf{X}_i^K + \lambda^{J\prime}\mathbf{R}_i^J + \pi_2 Eligible_i > \varepsilon_{2,i}] \\ (\epsilon_1, \epsilon_2) &\sim N(0, \Sigma) \end{aligned} \tag{1}$$

The variable $Recidivate_i$ is equal to 1 if individual i recidivated within a 3-year period since their last release from a Florida Department of Corrections facility.

The vector $\mathbf{X}_i^K$ contains individual-level controls, such as prior offense type, prior days incarcerated, age at release, race, gender, marital status, and employment status. The variable $Clemency_i$ is equal to 1 if individual i received clemency within a 3-year period since their last date of release. As previously iterated, clemency status is endogenous as it is influenced by individual characteristics. In order to address this concern, I use a biprobit specification with a exclusion restriction. The vector $\mathbf{R}_i^J$ contains a set of indicators for which Rules of Executive Clemency individual i was released under. The variable $Eligible_i$ is an indicator if individual i became eligible for level 1 automatic clemency within a 3-year period since their release. As previously mentioned, during the Crist administration, some offenses which would have been eligible for automatically restoration under the Bush administration were now subject to a more in-depth review by the clemency board.[31] Furthermore, some offenses became eligible for automatic clemency during the Crist administration while ineligible during the Bush administration.[32] In this case, eligibility of automatic restoration not only varies by offense, but also throughout time due to changes in the Rules of Executive Clemency. To capture this variation, the variable $Eligible_i$ is included in the estimation.

Potential threats to identification still exist by utilizing the changes in the Rules of Executive Clemency as instruments. First, timing of the policy implementation may be related to other time-related variable which also influence rates of recidivism. Such considerations include unemployment rates, strength of law enforcement, and potentially statutory and budgetary changes which may influence rates of prosecution. To address these concerns, individual observations are matched with local unemployment levels, population density, public assistance expenditure, and number of law enforcement expenditure per capita by county of release. Secondly, clemency policy changes may not be exogenous as policies themselves are directly related to the political leanings of the sitting administration. For example, the Office of Executive Clemency cabinet members may decide to adopt more lenient policy in order to enable more ex-felons to vote. Felons who lost their right to vote have a significantly higher expected level of Democratic support, and because of this, strict felon disenfranchisement policies provide a clear advantage for Republican administrations [19]. In addition to influencing clemency policies, administrations also determine levels of public assistance, such as eligibility requirements for public housing or supplemental food assistance [2]. The levels and availability of public assistance

[31] These offenses include luring and enticing a child, poisoning of food or water, computer pornography, transmission of computer pornography, buying or selling of minors, first degree burglary or attempted first degree burglary, abuse of a dead human body, and unlawful throwing, placing, or discharging of a destructive device or bomb.

[32] Offenses include illegal use of explosives, child abuse, abuse of aggravated abuse of an elderly person or disabled adult, robbery, shooting or throwing missiles into or from a vehicle or dwelling, burglary of an unoccupied dwelling, stalking, manufacturing any substance in violation of ch. 893 F.S., battery on a law enforcement officer or other specified officer, DUI resulting in serious bodily injury under s. 361.193 F.S., public corruption or violations of election laws, crimes committed by an elected official, leaving the scene of an accident with serious injury or death, and possession of a firearm by a convicted felon.

programs may influence the decision to commit crimes causing the proposed automatic clemency variable to no longer be clearly identified. To address this concern, additional time-varying controls are introduced which captures the level of public assistance at the state and county level. Once including the additional control variables, I estimate the relationship between recidivism and clemency by specifying the following biprobit model:

$$\begin{aligned} Recidivate_{i,c} &= \mathbf{1}[\phi_0 + \Lambda^{J\prime}\mathbf{Y}_c^J + B^{K\prime}\mathbf{X}_i^K + \phi_1 Clemency_{i,c} > \varepsilon_{1,i,c}] \\ Clemency_{i,c} &= \mathbf{1}[\pi_0 + \Delta^{J\prime}\mathbf{Y}_c^J + \Pi^{K\prime}\mathbf{X}_i^K + \lambda^{J\prime}\mathbf{R}_i^J + \pi_2 Eligible_i > \varepsilon_{2,i,c}] \\ (\epsilon_1, \epsilon_2) &\sim N(0, \Sigma) \end{aligned} \tag{2}$$

The vector $\mathbf{X}_i^K$ contains individual-level controls while the vector $\mathbf{Y}_c^J$ contains county-level controls, such as unemployment rates and average wage levels at time of release, expenditure on law enforcement and public assistance, and fraction of felony cases disposed. In order for the instrumental variables approach to be valid, the proposed instrument must be independent from the error term in the estimating equation. Therefore the instrument must only influence the outcome variable *Recidivate* through *Clemency*, once controlling for other covariates in the estimating equation. As previously iterated, the proposed instruments $\mathbf{R}_i^J$ are a set of indicators for which Rules of Executive Clemency individual i was released under. It is arguable that $\mathbf{R}_i^J$ only enters the estimating equation through *Clemency* once controlling for individual-level and county-level covariates. As I am relying on policy variation to identify the effect of clemency, it is important to include covariates which vary coincidentally with the change in administration. Table **??** in the appendix includes a list of all individual and county level controls used. To explore the channels in which civil rights restoration operate on recidivism, I will estimate the following biprobit reduced form equations.

$$\begin{aligned} Recidivate_{i,c} = \mathbf{1}[&\phi_0 + B^{K\prime}\mathbf{X}_i^K + \Lambda^{J\prime}\mathbf{Y}_c^J + \phi_1 Clemency_{i,c} + \phi_2 Eligible_{i,c} + \phi_3 Clemency_{i,c} \times OccShare_c + \\ &\phi_4 Clemency_{i,c} \times Age25_i + \phi_5 Clemency_{i,c} \times FirstOffense_{i,c} + \\ &\phi_6 OccShare_c + \phi_7 Age25_i + \phi_8 FirstOffense_{i,c} > \epsilon_{1,i}] \\ Clemency_{i,c} = \mathbf{1}[&\pi_0 + \Pi^{K\prime}\mathbf{X}_i^K + \Delta^{J\prime}\mathbf{Y}_c^J + \lambda'\mathbf{R}_i^J + \pi_2 Eligible_{i,c} > \epsilon_{2,i}] \\ &(\epsilon_1, \epsilon_2) \sim N(0, \Sigma) \end{aligned} \tag{3}$$

The variable $OccShare_c$ is the proportion of those employed in an occupation which is subject to any related clemency restriction for an occupational license.[33] This variable is defined at the metropolitan statistical area (MSA) level, so multiple counties are mapped into a single MSA while other counties have no corresponding MSA and thus are dropped from the dataset. The intuition is that

[33] See Section **??** in the Appendix for details on the crosswalk from occupational licenses to occupational codes.

individuals who reside in an area where licensed occupations are more prevalent are more likely to be employed by such sectors and therefore more exposed to the affects resulting from changes in clemency policies. If clemency is operating on the rate of recidivism through restrictions on occupational licenses, then ϕ_3 will be positive and significant.[34] To isolate the influence of educational opportunities on recidivism through changes in clemency, I create the variable $Age25_i$ which is an indicator which equals one when the age of the offender is below the age of 25 at the time of release. This coefficient will capture the education mechanism, as those who have the highest propensity to accumulate human capital will 'turn on' this indicator if they are influenced by the automatic clemency treatment. If educational opportunities significantly influences recidivism, then ϕ_4 will be positive and significant. As previously discussed, identity adhesion and labeling theory is suspected to be the largest mechanism in which clemency may operate through. One possible method of estimating this channel is interacting the indicator for an individual's first offense, $FirstOffense_{i,c}$, with clemency status. It is hypothesized in the criminology literature that labeling effects may the strongest for first time offenders [9]. If clemency is operating through the labeling theory mechanism, one might expect that ϕ_5 to be negative and statistically significant, thereby differentially impacting those who are first time offenders.

As a robustness check of the biprobit specification, the model is estimated using a linear probability model with the Rules of Executive Clemency as instruments for clemency status. The results for the linear probability model specification are reported in Table 5. Without controlling for the heterogeneous effects by age or proportion of restricted occupation licenses, the estimated influence of clemency on recidivism is -0.407 although it is not statistically significant. Once including the clemency interaction terms, the estimated coefficient increases to -0.484 and is not statistically significant. Importantly, the estimated F-statistic is remarkably low for both specifications, at around 4.98 and 6.81. Therefore utilizing the linear probability model approach would suffer from a weak instruments problem. The biprobit approach, however, does not require such a restriction and as such, it shall be the preferred specification.

7 Biprobit Results

The results of the biprobit estimation are listed in Table 4. The estimated coefficients in columns 1 and 2 are from a probit specification with *Recidivate* and *Clemency* as dependent variables. As these equations are estimated separately, this approach does not allow the error terms to correlate across the estimating equations. As a quasi 'first stage' for the biprobit approach, it is clear that receiving clemency statistically reduces the probability of recidivating. Similarly, the estimated influence of the set of indicators for Rules of Executive Clemency

[34] This is under the assumption that the distribution of occupations across MSAs do not simultaneously change with Rules of Executive Clemency rule change or *because* of Rules of Executive Clemency changes.

significantly predicts the probability of receiving clemency, as seen in column 2. Hence, the set of proposed instruments is relevant in capturing the proposed variation of clemency status. Columns 3 and 4 report the estimated coefficients from Equation 2 in which the error terms may correlate across equations. The estimated correlation between the error terms is reported as $\hat{\rho}$. A Wald test is conducted with the null hypothesis that $\rho = 0$. Th resulting χ^2 and p-value are reported below $\hat{\rho}$. If $\rho = 0$, then $\epsilon_{1,i}$ and $\epsilon_{2,i}$ are uncorrelated and therefore no issue of unobserved confounding factors [11]. The Wald test reports a p-value of 0.05 and as such the biprobit approach is justified. In column 3, *Clemency* and *Eligible* have a negative and statistically significant effect on the probability of recidivating. In column 4, the instruments of being released under the 2004 or the 2007 Rules of Executive Clemency increases the probability of receiving clemency and is statistically significant at the 1 percent level. Consequently, the set of indicators for the Rules of Executive Clemency is a valid instrument for predicting clemency status. The average treatment effect, which is computed as $Pr(Recidivate = 1|Clemency = 1) - Pr(Recidivate = 1|Clemency = 0)$ is estimated to be -0.1651. In other words, those who received clemency are 16.51 percent less likely to recidivate within a 3 year period after release. This estimate is comparable to the estimate provided by Hamilton-Smith and Vogel, who found that released in states who permanently disenfranchise experience a 19 percent increase in the probability of recidivating. Columns 5 and 6 report the biprobit specification detailed in Equation 3. Interestingly, the estimated correlation of the errors switches directions and is no longer statistically significant. The marginal effect of clemency alone is now estimated to be -0.105, which implies that those who received clemency are 10.5 percent less likely to recidivate within a 3 year period. This specification also explores the heterogeneous effects of clemency by including an interaction term with clemency on occupational share and if the individual was released at or below the age of 25. The sign on $Clemency \times OccupationalShare$ predicts a negative relationship between the interaction between clemency status and the proportion of occupations with clemency restrictive licenses on the probability of recidivating. However, the estimated coefficient is statistically insignificant. The interaction between clemency status and the age indicator is positive and significant at the 10 percent level. The marginal effect, however, is very small, which is computed to be 0.00148. Finally, the coefficient of the interaction term between clemency and first offense is negative and statistically significant, indicating that first time offenders who received clemency were significantly less likely to recidivate within a three-year period, compared to other first-time offenders and those who receive automatic clemency but are not first-time offenders. The marginal effect of receiving clemency for first time offenders is estimated to decrease the probability of recidivating within a three year period of 0.287 percent. This finding is indicative that clemency status is operating through the proposed identity channel.

The estimated reduction in the probability of recidivating results in potential savings to the state in terms of expenditure. First, by reducing an individual's propensity to recidivate, total expenditure on incarceration will decrease. From

2011 to 2016, the annual cost to house an inmate in a state operated facility was estimated to be between $18,000 and $19,000 [22]. Similarly, from 2011 to 2016, the annual average number of inmate releases was in between 34,000 to 32,000 with a recidivism rate between 27% to 25% [23]. Reducing the rate of recidivism will thereby decrease the expenditure on incarceration between $27 million to $33 million over a 3-year period. A process of automatic rights restoration will also result in reduction in costs associated with processing clemency applications, as around 50% of the Florida Department of Offender Review workload hours are dedicated to processing clemency applications [24]. Therefore, automatic restoration of civil rights will unequivocally result in decreased expenditure for the state, in both incarceration costs and in administrative costs.

8 Weibull Estimation

Although the biprobit specification allows for a familiar application of a binary instrumental variable, such an estimation strategy has some drawbacks. For example, the biprobit estimation method experiences a loss of potential explanatory power which is embedded along the time dimension. For example, the variables *Recidivate* and *Clemency* are defined as binary variables defined at an arbitrary 3-year period cut-off. Therefore the model is unable to differentiate individuals who received clemency relatively quickly after becoming eligible against those who received clemency later on. To address this concern, I will also estimate a model using survival analysis techniques.

In following with the recidivism literature, the time to a felony offense conviction will be estimated using a hazard model. An individual becomes at risk once they are released from Florida custody. Likewise, an individual exits the risk pool or 'fail' when they enter into Florida custody. Therefore the length of a particular spell is coded as the total number of months in which an individual has refrained from entering a Florida correctional institution. If an individual leaves Florida custody without returning by the end of July 2018, their observations are considered right-censored. Those whose release date flag indicates deceased shall be considered removed from the risk pool instead of re-entering the risk pool. Those who become deceased while in the risk pool should also be removed, but this status is unobserved in the data. Figure 6 contains the cumulative distribution function of the current age of those who are released and do not enter Florida custody by July 2018 and those who are currently in Florida custody.[35] As the cumulative distribution function for released offenders lies underneath the cumulative distribution function for incarcerated offenders, the age distribution of released offenders is right-shifted (older) compared to incarcerated offenders. This also underlies the issue that those who do not recidivate are released at an older age than those who do re-offend, as seen in the age of release cumulative distribution function in Figure 7. This may lead to an identification problem as potential unobservables may be related to age and the probability to recidivate. To address this issue, the data is refined so that the

[35] Observations were dropped if release date was not coded as valid.

oldest 20 percent of the current age for offenders who are released are removed from the analysis. This results in the age at release cumulative distribution function to be much more comparable to those who recidivate and those who do not, as seen in Figure 8. This age restriction also helps to identify the causal mechanisms discussed earlier, as both the employment and education channel are most likely to active during the earlier stages of life. I estimate a Weibull model for duration of a crime-free spell. I assume that the functional form to be used is the single-spell Weibull model. The hazard function $\theta(t, X_{i,m})$ is specified as the following:

$$\theta(t, X_{i,m,c}) = \alpha t^{\alpha-1} \exp(\beta' X_{i,m,c}) \tag{4}$$

The hazard function, $\theta(t, X_{i,m,c})$, is the probability of having a conviction-free spell of exactly t, conditional on surviving up to time t. This function depends on the length of duration, t, along with covariates which depend on the calendar time m, for individual i residing in county c. The parameter α is known as the shape parameter and captures the duration elasticity of the hazard function. Notice that the hazard is monotonically increasing for $\alpha > 1$, showing increasing duration dependence and the hazard is monotonically decreasing for $\alpha < 1$, showing a decreasing duration dependence. The variable t is current duration of the spell. One can visually inspect observed survival times to test the validity of the Weibull distribution by plotting the log of the integrated hazard function against the log of survival time [14]. For groups characterized by combinations of $X_{i,m}$, the graph should show parallel lines. A demonstration of this is shown in Figure 9 for groups characterized by gender, race, offense type, age bins, and clemency status. The baseline hazard function is defined as $\theta_0 = \alpha t^{\alpha-1}$. The estimating equation can be broken down further into the following:

$$\beta' X_{i,m,c} = \beta_0 + \beta_1 Clemency_{i,m,c} + B^{K\prime} \mathbf{X}_i^K + \Lambda^{J\prime} \mathbf{Y}_{m,c}^J + \varepsilon_{i,m,c} \tag{5}$$

The variable $\mathbf{X}_i^K$ is a vector of K time-invariant explanatory variables. Time-invariant control variables include age at release, sex, race, location of residence, number and length of previous incarcerations, conditional release indicators, offense type, and marital and employment status at time of intake. Notice that all of these time-invariant covariates are constant during individual i's spell. The variable $\mathbf{Y}_{m,c}^J$ is a vector of length J and contain time-varying covariates including monthly county-level economic indicators, such as unemployment rate, average wages, law enforcement expenditure, public assistance expenditures, high-school graduation rates, and fraction of disposed cases. Within each spell, these covariates will change by calendar month m. $Clemency_{i,m,c}$ is an indicator equal to one when an individual i is granted clemency in month m of a given spell. The interpretation of coefficient β_1 is the relative risk of obtaining a felony conviction for an individual who has obtained clemency status compared with an individual who did not, holding covariates constant at any point in time. If clemency status reduces rates of recidivism, one would expect $\beta_1 < 0$,

and likewise, if clemency status increases rates of recidivism, one would expect $\beta_1 > 0$.

There are some serious deficiencies by using clemency status to estimate the impact on recidivism as there may be potential correlation of unobservables, either constant or time-varying, and status of obtaining clemency. More specifically, unobservable factors may contribute to selection *into* the applicant pool for clemency, while other unobservable factors may contribute to the selection *out* of the applicant pool. Regarding selection into the applicant pool, during certain administrations, the process of obtaining clemency was burdensome and required considerable time and effort on the behalf of applicant. The motivation and patience necessary to complete the clemency process is plausibly correlated with personal attributes that simultaneously influence criminal behavior, such as grit, commitment, and civic engagement. The second type of selection effect is in regards to whose applications also required explicit approval from the clemency board, thereby influencing the selection of individual *out* of the applicant pool and granting clemency. For example, those who are eligible for restoration of civil rights without a hearing must have their clemency application approved by the Governor plus two members of the board.[36] As clemency applications may include character references, letters of support, and other relevant documents, approval for clemency may be related to unobservable factors which in turn influence rates of recidivism.[37] The ideal control group to mitigate this type of selection bias out of the applicant pool would be the subset of individuals who applied for clemency without a hearing, but nonetheless were not approved. Unfortunately, clemency applications and application materials are strictly confidential under Florida Commission on Offender Review's Management of Application for Clemency (MAC) database and such counterfactual group cannot be constructed. The probability of receiving clemency, conditional on being eligible and submitting an application, also depends upon other administrative constraints. For example, clemency status is largely influenced by the frequency of Executive Clemency Board meetings and the current backlog in the clemency application pipeline. As an illustration, in the fiscal years 2014 to 2015, in addition to 9,674 new cases, there were 20,125 pending clemency cases on July 2014.[38] Executive Board meetings for application reviews, however, occurred on a quarterly basis and review less than 100 applications per meeting.[39] This poses an issue to the proposed identification strategy as clemency status may be simultaneously determined by the number of pending applicants. Taking all of the aforementioned selection issues together, clemency status is not randomly assigned to individuals uniformly across dimensions of individual characteristics nor across time. In order to avoid such issues with identifica-

[36] Those who are not approved for clemency without a hearing may choose to apply for restoration of civil rights with a hearing following their application rejection.

[37] Rules of Executive Clemency, March 9^{th} 2011. `www.fcor.state.fl.us/docs/clemency/clemency_rules.pdf`

[38] Florida Commission on Offender Review. Long Range Program Plan. September 30^{th}, 2014. `www.fcor.state.fl.us/docs/reports/FCORlongRangeProgram1516.pdf`

[39] Florida Parole Commission. Monthly Accomplishments Report. Chair's Message. June 2014. `www.fcor.state.fl.us/docs/reports/monthlyAccomplishments/2014/June2014.pdf`

tion, the estimating equation instead identifies clemency status on the subset of individuals who were granted clemency through an automatic process. The following is the preferred specification of the covariates included in the Weibull hazard function:

$$\beta' X_{i,m,c} = \beta_0 + \beta_1 AutomaticClemency_{i,m,c} + \beta_2 PotentialClemency_{i,m,c} + B^{K\prime}\mathbf{X}_i^K + \Lambda^{J\prime}\mathbf{Y}_{m,c}^J + \varepsilon_{i,m,c} \tag{6}$$

Individuals who were granted clemency automatically were not independently reviewed and scrutinized, unlike applications which require a review by the Board and possibly a hearing. There are two threats to identification that automatic clemency aims to address. First, there is an issue of self-selection into the applicant pool for types of clemency which required manually submitting an application. Secondly, there is a concern that the selection out of the applicant pool, as some forms of clemency require review by the Clemency board. Automatic restoration of civil rights reduces the potential threat of endogeneity resulting from application strength, receiving Board approval, and the levels concurrent pending applications. Conditional on eligibility status, automatic restoration of rights may be thought of as randomly assigned to individuals who were exiting Florida custody at that time. The ideal counterfactual now becomes those who were eligible for automatic clemency, but nonetheless did not receive automatic clemency nor receive other levels of clemency. However, those who were eligible for automatic clemency during a sitting administration were granted clemency *by definition*, resulting in the ideal counterfactual being an empty set. To compose a second best control group, I code observations of individuals who *would have been* eligible to receive automatic clemency (based upon prior offense history and date in which observed probation and parole sentences expire) during a particular spell's date start and end date.[40] The variable $PotentialClemency_{i,m,c}$ is an indicator equal to one when individual i *would have been* eligible to receive automatic level 1 clemency were they released during the Crist administration's Rules of Executive Clemency. The inclusion of this indicator allows for non-linearities to exist with offense types and disqualifying offenses. By construction, those who have $Clemency_{i,m,c} = 1$ must have $PotentialClemency_{i,m,c} = 0$. Further those who have $PotentialClemency_{i,m,c} = 1$, must have $Clemency_{i,m,c} = 0$ by construction. Eligibility criteria for automatic restoration of rights depends on prior felony offenses, completion of all sentences and conditions of supervision, absence of outstanding detainers, and having paid all restitution pursuant to a court order or civil judgment and obligations. As court ordered restitution is not readily observable, the counterfactual eligibility status will be a stochastic measure. If eligibility status is coded only on observable factors, the resulting control group will include those who are not eligible due to unpaid restitution. This will upward bias the estimated treatment effect if the ineligible are more likely to recidivate. In order to control for this issue of misspecification of eligi-

[40] True eligibility status will be a subset of this coded group as individuals must pay all restitution pursuant to a court order or civil judgment and obligations pursuant to F.S. 960 in order to be eligible.

bility status, the counterfactual (and also the treatment group) are conditioned on offense history which are likely to have minimal or no victim restitution.[41] In essence, the *PotentialClemency* variable is coded using a combination of binary indicators and as such, the inclusion of the indicator is allowing for a more flexible specification of the hazard function by allowing non-linearities to exist between offense history and clemency status. To further analyze the mechanisms in which clemency status operates through, I interact the *AutomaticClemency* and variable with the previously mentioned variables of interest.

$$\begin{aligned}&\beta' X_{i,m,c} = \beta_0 + \beta_1 AutomaticClemency_{i,m,c} + \beta_2 PotentialClemency_{i,m,c} + \\ &\beta_3 AutomaticClemency_{i,m,c} \times OccShare_{m,c} + \beta_4 AutomaticClemency_{i,m,c} \times Age25_i + \\ &\beta_5 AutomaticClemency_{i,m,c} \times FirstOffense_{i,c} + \beta_6 PotentialClemency_{i,m,c} \times OccShare_{m,c} + \\ &\beta_7 PotentialClemency_{i,m,c} \times Age25_i + \beta_8 PotentialClemency_{i,m,c} \times FirstOffense_{i,c} + \\ &\beta_9 OccShare_{m,c} + \beta_{10} Age25_i + \beta_{11} FirstOffense_{i,c} + \\ &B^{K\prime} \mathbf{X}_i^K + \Lambda^{J\prime} \mathbf{Y}_{m,c}^J + \varepsilon_{i,m,c}\end{aligned} \tag{7}$$

In this specification, the coefficients β_3 and β_4 capture the variation in which clemency influences the rate of recidivism. Again, we are concerned with the share of occupations within a county with occupational licenses which require civil rights status and also those who may be the most likely to benefit from gains in human capital, those under the age of 25 and coming from a low-income county.

9 Weibull Estimation Results

The results of the estimated Equation 6 and Equation 7 are reported in Table 6. For both specifications, the estimated shape parameter is less than one, implying that the hazard rate is decreasing in duration. In other words, the longer the crime-free spell, the less-likely the individual will recidivate. This finding is consistent with the recidivism literature. The estimated coefficient on *PotentialAutomaticClemency* is positive and significant, implying that those who would have received automatic clemency, had a hazard rate 11.1% higher than the baseline. In the estimates provided in column 1, many of the estimated hazard ratios are in the direction which is standard in the literature. Age of release, violent offenses, and high school graduation rate have a lower hazard ratio whereas male, number of prior offenses, and property related offenses experience a higher hazard ratio. Those who are eligible for automatic clemency but were not released during the 2007 Rules of Executive Clemency have a 11.1% higher hazard than those who do not qualify for automatic clemency. This makes intuitive sense as those who are eligible are composed of those with

[41] Restitution is a payment by an offender to the victim for harm caused by the offender's wrongful acts.

less serious crimes (non-violent) and thus are more likely to recidivate. Individuals who receive clemency automatically experience a hazard 27% (0.723-1) lower than those who do not receive clemency. When including the heterogeneous terms, the automatic clemency indicator is in the similar direction but looses statistical significance. The interaction term between automatic clemency and occupational share captures additional variation in hazard ratios from the occupational licensing channel. For those who received automatic clemency, increasing the proportion of occupations with a clemency restricted occupational license by one percentage point decreases the hazard ratio by (0.257-1=) 74.3% compared to those who did not receive automatic clemency. Interestingly, the automatic clemency variable interacted with the age indicator is close to one and is not statistically significant. In other words, the hazard ratio for those most likely to benefit from the education mechanism of clemency is not significantly different than those who would not benefit. For first time offenders, those who receive automatic clemency have a hazard rate that is 13% (0.870-1) lower than the baseline. Comparing the estimated coefficients of the identified channels, it appears that the occupational licensing channel has the most influence on recidivism, followed by the first time offenders, while the education mechanism seems to not be significant.

10 Robustness Checks

As previously mentioned, since the Rules of Executive Clemency are typically amended when a new administration takes office, it is possible that other state-level factors simultaneously are effected by changes in the administration. I attempt to control for this variation by including economic county-level data and court-level data on fraction of cases disposed. To verify that the estimates are indeed robust to such a critique, I condition all of the observations from those released between the years 2004 and 2007 for the Weibull estimation approach. The time restricted Weibull model's estimates are provided in Table 7. As previously found, the estimated shape parameter for both of the estimated equations are less than one, signifying a decreasing time-dependence. The estimated coefficients of Equation 6 are in similar direction and significance levels, although the magnitude of some are slightly different. For the estimated coefficients of Equation 7, the automatic clemency indicator interacted with occupational share and first offense are in the same direction but are no longer statistically significant. Similarly, the estimated coefficient on the automatic clemency interacted with the age of 25 or more indicator becomes statistically significant, although the exponentiated coefficient suggests an increase in the hazard ratio for those over the age of 25. The consistency of direction and magnitude of the coefficients of interest verifies that economic or politically influenced factors are not likely driving the variation in recidivism rates and automatic clemency. A similar time restriction exercise is conducted for the biprobit estimation approach. The estimated coefficients and covariance of the errors terms are reported in Table 8. Across all specifications, the Wald test on ρ fails to reject the null hypothesis.

The estimated coefficient of clemency in column 1 is very similar to the prior estimate (-0.838 to -0.731) and is statistically significant. Once including heterogeneous terms, the estimated influence of clemency listed in column 3 becomes much larger (-0.798 to -0.433), although the interaction term of clemency and first offense no longer is statistically significant. This exercise of restricting the sample to a narrow time period verifies that the effect of clemency on recidivism is unlikely due to slow-moving economic unobservables.

The second robustness check I conduct is on the method used to quantify the proposed occupational licensing channel. As previously discussed, I have quantified this mechanism by constructing a cross-walk from occupational licenses that impose a civil rights restriction to their respective occupational O*net code. Using this O*net code, I use the proportion of occupations within a metropolitan statistical area as a measure of this channel. Although this measure is intuitive, there are some downsides to relying on this measure. First, the prevalence of occupational licensing for the particular O*net occupational code is assumed to be uniform across all occupations. Secondly, the data is only available at the geographical level of metropolitan statistical area, thereby aggregating some counties together and dropping smaller, less populated counties from the dataset. Another plausible measure of the barrier that occupational licenses poses on ex-offenders is the number of occupational licenses granted in the state of Florida for any particular year. This data was obtained from the Florida Department of Business and Professional Regulation through a Public Records Request. The results of this respecification can be found in column 3 in Table 8. The estimated interaction term between clemency and count of licenses granted is estimated to be precisely at zero.

Finally, the last robustness check I conduct is on the validity of the biprobit approach. As previously discussed, the biprobit approach has the ability to control for unobservable confounds whenever the error terms among the system of equations are significantly correlated. However, when conducting the heterogeneity analysis, the estimated correlation between the two equations becomes statistically insignificant (see Table 4). To verify the estimated magnitude and direction of the coefficients on the heterogeneous terms, I focus on only those who receive automatic clemency. To do this, I estimate the following probit equation:

$$\begin{aligned} Recidivate_{i,c} = \mathbf{1}[&\phi_0 + B^{K\prime}\mathbf{X}_i^K + \Lambda^{J\prime}\mathbf{Y}_c^J + \phi_1 Automatic_{i,c} + \phi_2 Eligible_{i,c} + \\ &\phi_3 Automatic_{i,c} \times OccShare_c + \phi_4 Automatic_{i,c} \times Age25_i + \\ &\phi_5 Automatic_{i,c} \times FirstOffense_{i,c} + \phi_6 OccShare_c + \phi_7 Age25_i + \\ &\phi_8 FirstOffense_{i,c} > \epsilon_i] \end{aligned} \tag{8}$$

The variable *Automatic* is an indicator function which is equal to 1 if an individual receives clemency within 3 years of release. All of the other variables are similarly defined. Unlike the previous biprobit approach, this estimating equation does not rely on the exclusion restriction of the Rules of Executive

Clemency instruments. The results from the estimation of Equation 8 is contained in Table 9. The coefficient on automatic clemency is estimated to be -0.741, which is very close in magnitude of the biprobit estimate of -0.731. Estimating the marginal effect of automatic clemency results in -0.193, that is, automatic clemency reduces the probability of recidivating within a 3-year follow up period by 19.3 percentage points. Column 2 of Table 9 provides the estimates of the heterogeneous specification. Again, the estimated influence of automatic clemency is very similar to the estimate provided in the biprobit approach (-0.517 compared to -0.433). The marginal effect is estimated to decrease the probability of recidivating by 14.28 percentage points. The estimated coefficient on the interaction term between automatic clemency and being under the age of 25 is statistically insignificant, whereas the biprobit approach estimated a positive relationship and weak statistical significance. The interaction term between automatic clemency and occupational share is also statistically insignificant, a finding which coincides with the previous biprobit estimates. The interaction term between automatic clemency and first time offense is estimated to be positive and statistically significant at -0.193. This is a similar finding to the biprobit approach, which estimated a coefficient of -0.119. The marginal effect of automatic clemency is estimated to further reduce the probability of recidivating within a 3-year period by 5.34 percentage points for first-time offenders. The similarity of the estimated coefficients may highlight the fact that a majority of those who received *any* type of clemency tend to be those who received automatic clemency. To put it differently, automatic clemency is strongly correlated with the constructed clemency variable. Nevertheless, the results of this robustness check reconfirms the estimates provided by the biprobit specification.

11 Conclusion

The purpose of this paper is to estimate the influence of civil rights restoration on the probability to recidivate. Although there is an abundance of research regarding recidivism, there is little empirical literature regarding the influence of clemency policies on individual outcomes. This paper contributes to the literature as it identifies the causal influence of civil rights restoration by use of policy variation overtime, namely, changes in Rules of Executive Clemency by the sitting administration. I find that the restoration of civil rights is associated with a decrease in the probability to recidivate by 16 percent within a three year period. Moreover, I find clemency reduces the probability of recidivating by an additional 0.287 percent for first time offenders in comparison to repeat offenders. This observation is consistent with labeling theory, whereas first time offenders are more reactive to changes in their criminal identity than those with prior offenses.

There are several limitations to this research, the first being the limited measure of recidivism. This paper utilizes state-level incarceration data and thereby only categorizes an individual to have recidivated once entering a state

facility. However, alternative measures of recidivism may have been used, such as rearrest or reconviction with no reincarceration. Absent of an alternative measure of recidivism, the estimated influence of clemency on recidivism defined as reincarceration is negative and statistically significant, which may provide a lower bound of the estimated influence of clemency on alternative measures of recidivism. Further research is needed to understand the influence of clemency along the criminal pathway.

This paper also contributes to the literature on criminal justice reform, specifically in terms of offering relief which is automatic. Although pardon, expungements, and other policies are in place, the process for obtaining such relief as been found to be lengthly, expensive, and cumbersome for ex-offenders to navigate [18]. As demonstrated in for civil rights restoration in Florida, many who are eligible for level 1 clemency do not receive it. This paper demonstrates that establishing policies which provide offender-level relief though an automatic process is a viable option to influence take-up rates and reduce overall recidivism.

Natural extensions of this research would be further understand the mechanisms in which clemency is operating through. As previously discussed, occupational licensing may serve as a significant barrier to gainful employment for those with criminal records. Further understanding the origins of these restrictions, the practicality as a means to reduce work-related crimes, and their scope is an area that needs further investigation. For example, this study only considered occupational licensing which is managed by the state. However, there are numerous occupations or professions which are regulated by other national entities. Addressing these questions would be a natural extension of this research.

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Table 1: Individual Counts of Clemency Types

	Observations
Automatic Approval	43,187
Level 2 PR List	33,901
Application Without Hearing	190
Application With Hearing	231
No Clemency	391,667

Table 2: Descriptive Statistics of Clemency

	Revoked			Restored					
	Mean	Std.Dev.	N	Mean	Std.Dev.	N	Difference	t-stat	p
$\leq$ 25 yrs old	0.18	0.38	427,800	0.21	0.41	42,223	-0.030366	-15.3796	0.00
% First Offense	0.70	0.46	427,800	0.81	0.39	42,223	-0.111839	-48.4654	0.00
% Occupational Share	0.16	0.02	396,586	0.16	0.02	39,719	0.002463	19.8369	0.00
Age at Release	35.66	10.66	427,800	35.10	10.53	42,223	0.560032	10.3060	0.00
Number of Prior Offenses	1.44	0.80	427,800	1.23	0.54	42,223	0.205605	51.6721	0.00
Violent	0.42	0.49	427,800	0.48	0.50	42,223	-0.064306	-25.5390	0.00
Weapon	0.03	0.16	427,800	0.02	0.15	42,223	0.001939	2.3833	0.02
Drug	0.25	0.43	427,800	0.45	0.50	42,223	-0.204493	-91.2569	0.00
Property	0.30	0.46	427,800	0.22	0.41	42,223	0.082260	35.3957	0.00
Months Incarcerated	28.41	34.45	427,800	15.15	13.67	42,223	13.255270	78.4595	0.00
Male	0.90	0.31	427,800	0.83	0.37	42,223	0.061752	38.8422	0.00
White	0.49	0.50	427,800	0.50	0.50	42,223	-0.013839	-5.4275	0.00
Law Enforcement Per Capita	178.49	81.33	427,130	177.42	80.42	42,194	1.060420	2.5576	0.01
Average Wage	3005.32	553.80	427,800	2923.24	453.79	42,223	82.082754	29.4942	0.00
Unemployment Rate	6.56	2.71	427,800	5.50	2.54	42,223	1.064230	77.2669	0.00
% Cases Disposed	0.94	0.10	427,800	0.94	0.09	42,223	-0.002871	-5.5603	0.00
% < High School	83.78	6.16	365,476	84.30	4.92	36,439	-0.512659	-15.3994	0.00

Notes: Columns 1 through 4 list descriptive statistics for spells in which the individual did not receive clemency. Columns 5 through 6 list descriptive statistics for individuals who have received clemency. Age is calculated as the difference between release date and birth date, divided by 365. Violent is equal to one if any offense for an individual and adjudication date falls under a category of violent felony offenses by F.S. 775.085. Months incarcerated is calculated as the difference in days between the receipt and release date. Male is an indicator equal to one if the individual is male. White is an indicator equal to one if the individual is white. Law enforcement expenditure per capita is computed at the county-level. The unit of observation is an individual as they exit a correctional facility.

Table 3: Descriptive Statistics of Automatic Clemency

	Would be Eligible			Automatic					
	Mean	Std.Dev.	N	Mean	Std.Dev.	N	Difference	t-stat	p
$\leq$ 25 yrs old	0.17	0.37	162,279	0.20	0.40	29,829	-0.031097	-13.1269	0.00
% First Offense	0.69	0.46	162,279	0.77	0.42	29,829	-0.080149	-27.9564	0.00
% Occupational Share	0.16	0.02	149,735	0.16	0.02	29,396	0.001837	12.5040	0.00
Age at Release	36.60	11.18	162,279	35.49	10.62	29,829	1.109634	15.8742	0.00
Number of Prior Offenses	1.46	0.82	162,279	1.29	0.60	29,829	0.165285	33.3625	0.00
Violent	0.37	0.48	162,279	0.51	0.50	29,829	-0.141736	-46.4503	0.00
Weapon	0.02	0.14	162,279	0.03	0.16	29,829	-0.008016	-8.8586	0.00
Drug	0.20	0.40	162,279	0.41	0.49	29,829	-0.209196	-79.7508	0.00
Property	0.21	0.40	162,279	0.23	0.42	29,829	-0.024654	-9.6269	0.00
Months Incarcerated	36.25	42.06	162,279	15.64	14.49	29,829	20.607888	83.7207	0.00
Male	0.92	0.27	162,279	0.84	0.37	29,829	0.086764	48.3017	0.00
White	0.47	0.50	162,279	0.51	0.50	29,829	-0.040864	-12.9895	0.00
Law Enforcement Per Capita	178.77	79.38	162,068	188.67	82.25	29,800	-9.898813	-19.6728	0.00
Average Wage	3016.44	562.30	162,279	3021.72	437.03	29,829	-5.277116	-1.5378	0.12
Unemployment Rate	6.48	2.69	162,279	5.89	2.85	29,829	0.585971	34.3037	0.00
% Cases Disposed	0.94	0.10	162,279	0.95	0.10	29,829	-0.009383	-14.8815	0.00
% < High School	83.52	6.28	138,638	85.72	3.51	24,820	-2.206509	-53.8333	0.00

Notes: Columns 1 through 4 list descriptive statistics for individuals who are computed to be in the would have been eligible control group. Columns 5 through 6 list descriptive statistics for individuals who have received clemency automatically during the Crist administration. Age is calculated as the difference between release date and birth date, divided by 365. Violent is equal to one if any offense for an individual and adjudication date falls under a category of violent felony offenses by F.S. 775.085. Months incarcerated is calculated as the difference in days between the receipt and release date. Male is an indicator equal to one if the individual is male. White is an indicator equal to one if the individual is white. Law enforcement expenditure per capita is computed at the county-level. The unit of observation is an individual as they exit a correctional facility.

Table 4: Biprobit Estimation

	Probit Estimation		Biprobit		Biprobit Heterogeneity	
	(1)	(2)	(3)	(4)	(5)	(6)
Clemency	-0.666***		-0.731***		-0.433***	
	(0.011)		(0.035)		(0.098)	
Clemency × Age ≤ 25					0.061*	
					(0.024)	
Clemency × First Offense					-0.119***	
					(0.024)	
Clemency × Occupational Share					-0.685	
					(0.541)	
Age 25 or Less at Release					0.074***	
					(0.008)	
First Offense					-0.193***	
					(0.010)	
Occupational Share					0.315	
					(0.299)	
Released under 2000 Rules		-0.021		-0.020		-0.020
		(0.046)		(0.046)		(0.050)
Released under 2001 Rules		0.056		0.056		0.043
		(0.034)		(0.034)		(0.037)
Released under 2004 Rules		0.176***		0.177***		0.156**
		(0.048)		(0.048)		(0.053)
Released under 2007 Rules		0.193***		0.195***		0.172**
		(0.052)		(0.052)		(0.057)
Released under 2011 Rules		0.000		0.090		0.035
		(.)		(1201.839)		(1205.909)
Eligible	-0.072***	0.781***	-0.066***	0.779***	-0.070***	0.791***
	(0.006)	(0.013)	(0.007)	(0.013)	(0.007)	(0.013)
Age at Release	-0.012***	0.002***	-0.012***	0.002***	-0.010***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. Prior Offenses	0.262***	-0.237***	0.261***	-0.239***	0.176***	-0.233***
	(0.003)	(0.007)	(0.004)	(0.007)	(0.006)	(0.007)
Male	0.269***	-0.040***	0.268***	-0.040***	0.260***	-0.042***
	(0.009)	(0.011)	(0.009)	(0.011)	(0.009)	(0.011)
White	0.099***	0.189***	0.100***	0.189***	0.095***	0.189***
	(0.015)	(0.024)	(0.015)	(0.024)	(0.015)	(0.024)
Black	0.256***	0.198***	0.258***	0.199***	0.244***	0.200***
	(0.015)	(0.024)	(0.015)	(0.024)	(0.015)	(0.024)
Statewide Unemployment Rate	-0.030***	-0.082***	-0.031***	-0.082***	-0.032***	-0.082***
	(0.006)	(0.009)	(0.006)	(0.009)	(0.007)	(0.010)
County Unemployment Rate	0.006	0.030***	0.006	0.030***	0.007	0.031***
	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)	(0.007)
County Average Hourly Wage	-0.000**	0.000	-0.000**	0.000	-0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Law Enforcement Per Capita	0.000**	0.000	0.000**	0.000	0.000**	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Public Assistance Per Capita	-0.001*	0.002*	-0.001*	0.002*	-0.001	0.002*
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)
Proportion of Cases Disposed	0.089**	0.085	0.088**	0.084	0.120***	0.087
	(0.029)	(0.051)	(0.029)	(0.051)	(0.031)	(0.054)
% High School or More	-0.005**	0.003	-0.005**	0.002	-0.005*	0.002
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)
Observations	346,682	252,479	346,682		325,802	
ρ			.0390137		-.0247286	
χ^2			3.6005		1.3533	
p-value			0.0578		0.2447	

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Column 1 reports the estimates from a probit specification with recidivate as the dependent variable. Column 2 reports the estimates from a probit specification with clemency as the dependent variable. Columns 3 and 4 report the estimated coefficients Equation 2 and columns 5 and 6 report the estimated coefficients from Equation 3. Standard errors are reported in parentheses. The covariance between the biprobit equations is reported as ρ. Coefficients not reported include marital status, employment status, type of offense, days sentenced to prison, parole, or probation, length of incarceration, custody level, county and year fixed effects.*

Table 5: Linear Probability Model Estimation

	(1)	(2)
Clemency	-0.564*	-0.248
	(0.265)	(1.982)
Clemency × Occupational Share		0.420
		(11.627)
Clemency × Age ≤ 25		-0.027*
		(0.014)
Clemency × First Offense		0.035
		(0.153)
Occupational Share		0.079
		(1.174)
Age 25 or Less at Release		0.028***
		(0.003)
First Offense		-0.053***
		(0.014)
Eligible	0.010	-0.020***
	(0.021)	(0.004)
Age at Release	-0.003***	-0.002***
	(0.000)	(0.000)
Num. Prior Offenses	0.071***	0.056***
	(0.006)	(0.002)
Male	0.062***	0.064***
	(0.004)	(0.002)
White	0.035***	0.026***
	(0.007)	(0.004)
Black	0.081***	0.068***
	(0.007)	(0.004)
Statewide Unemployment Rate	-0.013**	-0.008***
	(0.004)	(0.002)
County Unemployment Rate	0.003	0.001
	(0.002)	(0.002)
County Average Hourly Wage	-0.000	-0.000
	(0.000)	(0.000)
Law Enforcement Per Capita	0.000***	0.000
	(0.000)	(0.000)
Public Assistance Per Capita	-0.000	-0.000
	(0.000)	(0.000)
Proportion of Cases Disposed	0.022*	0.036***
	(0.010)	(0.009)
% High School or More	0.002***	0.003
	(0.000)	(0.002)
Observations	346,682	325,802
F-Stat	7.034	7.203

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Column 1 reports the estimated coefficients from a linear probability model and column 2 reports the estimated coefficients of a linear probability model with interaction terms with the clemency indicator. Standard errors are reported in parentheses. Coefficients not reported include marital status, employment status, type of offense, days sentenced to prison, parole, or probation, length of incarceration, custody level, county and year fixed effects.*

Table 6: Estimated Hazard Ratios of Weibull Model

	Weibull			Weibull with Heterogeneity		
	exp(β)	β	Std.Err.	exp(β)	β	Std.Err.
Automatic Clemency	0.723***	-0.002***	(0.011)	0.974	-0.000	(0.101)
Potential Automatic Clemency	1.111***	0.001***	(0.008)	1.125*	0.001*	(0.061)
Automatic × Occupational Share				0.257*	-0.001*	(0.161)
Automatic × Age ≤ 25				1.004	0.000	(0.002)
Automatic × First Offense				0.870***	-0.001***	(0.030)
Potential Automatic × Occupational Share				1.278	0.000	(0.409)
Potential Automatic × Age ≤ 25				0.997**	-0.000**	(0.001)
Potential Automatic × First Offense				0.919***	-0.001***	(0.014)
Occupational Share				0.105***	-0.001***	(0.035)
Age of 25 or Less at Release				1.205***	0.002***	(0.019)
First Offense				0.753***	-0.003***	(0.012)
Age at Release	0.986***	-0.002***	(0.000)	0.988***	-0.002***	(0.001)
Male	1.468***	0.003***	(0.017)	1.461***	0.003***	(0.019)
White	1.147***	0.001***	(0.023)	1.155***	0.002***	(0.025)
Black	1.418***	0.004***	(0.028)	1.376***	0.003***	(0.030)
Num. Prior Offenses	1.469***	0.006***	(0.006)	1.300***	0.004***	(0.009)
Statewide Unemployment Rate	1.052***	0.003***	(0.005)	1.029***	0.001***	(0.006)
County Unemployment Rate	0.975***	-0.001***	(0.005)	0.980***	-0.001***	(0.006)
County Average Hourly Wage	0.999***	-0.013***	(0.000)	0.999***	-0.013***	(0.000)
Law Enforcement Spending Per Capita	1.001***	0.002***	(0.000)	1.000	-0.000	(0.000)
Public Assistance Spending Per Capita	1.003***	0.001***	(0.001)	0.995***	-0.001***	(0.001)
Fraction of Filed Cases Disposed	1.430***	0.001***	(0.049)	1.296***	0.001***	(0.051)
% High School or More	0.957***	-0.005***	(0.002)	0.886***	-0.009***	(0.003)
Observations	463,457			451,466		
Shape Parameter (α)	0.94149			0.89837		

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Column 1 and 2 reports the estimated coefficients and exponentiated coefficients from Equation 6 and column 4 and 5 reports the estimated coefficients and exponentiated coefficients from Equation 7. Standard errors are reported in parentheses in columns 3 and 6. Excluded coefficients include employment and marital status, type of offense, days sentenced to prison, parole, or probation, length of incarceration, custody type, and county fixed effects.*

Table 7: Estimated Hazard Ratios of Weibull Model - Robust

	Weibull			Weibull with Heterogeneity		
	exp(β)	β	Std.Err.	exp(β)	β	Std.Err.
Automatic Clemency	0.794***	-0.002***	(0.019)	0.940	-0.001	(0.155)
Potential Automatic Clemency	1.262***	0.003***	(0.017)	1.256*	0.003*	(0.126)
Automatic × Occupational Share				0.526	-0.001	(0.527)
Automatic × Age ≤ 25				1.007*	0.000*	(0.003)
Automatic × First Offense				0.916	-0.001	(0.046)
Potential Automatic × Occupational Share				1.408	0.001	(0.861)
Potential Automatic × Age ≤ 25				0.999	-0.000	(0.002)
Potential Automatic × First Offense				0.970	-0.000	(0.026)
Occupational Share				0.000***	-0.005***	(0.000)
Age of 25 or Less at Release				1.138***	0.001***	(0.029)
First Offense				0.874***	-0.001***	(0.027)
Age at Release	0.987***	-0.002***	(0.001)	0.991***	-0.001***	(0.001)
Male	1.622***	0.004***	(0.033)	1.613***	0.004***	(0.034)
White	1.153***	0.002***	(0.042)	1.163***	0.002***	(0.044)
Black	1.477***	0.004***	(0.054)	1.488***	0.004***	(0.056)
Num. Prior Offenses	1.630***	0.006***	(0.015)	1.480***	0.005***	(0.026)
Statewide Unemployment Rate	1.013	0.001	(0.010)	0.974*	-0.002*	(0.010)
County Unemployment Rate	0.960***	-0.003***	(0.009)	0.972**	-0.002**	(0.009)
County Average Hourly Wage	0.998***	-0.016***	(0.000)	0.999***	-0.014***	(0.000)
Law Enforcement Spending Per Capita	1.002***	0.003***	(0.000)	1.001***	0.002***	(0.000)
Public Assistance Spending Per Capita	1.006***	0.002***	(0.001)	1.000	-0.000	(0.001)
Fraction of Filed Cases Disposed	1.970***	0.002***	(0.134)	2.118***	0.002***	(0.146)
% High School or More	0.936***	-0.006***	(0.004)	0.848***	-0.013***	(0.005)
Observations	95,169			95,169		
Shape Parameter (α)	0.98462			0.99954		

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Regression is conditioned on those released between the years 2004 to 2007. Column 1 and 2 reports the estimated coefficients and exponentiated coefficients from Equation 6 and column 4 and 5 reports the estimated coefficients and exponentiated coefficients from Equation 7. Standard errors are reported in parentheses in columns 3 and 6. Excluded coefficients include employment and marital status, type of offense, days sentenced to prison, parole, or probation, length of incarceration, custody type, and county fixed effects.*

Table 8: Biprobit Estimation - Robust

	Released in 2004 to 2007		License
	(1)	(2)	(3)
Clemency	-0.819***	-0.771***	-0.249***
	(0.064)	(0.148)	(0.057)
Clemency × Age ≤ 25		0.094**	0.063**
		(0.035)	(0.024)
Clemency × First Offense		-0.016	-0.125***
		(0.035)	(0.024)
Clemency × Occupational Share		-0.329	
		(0.780)	
Clemency × License Count			-0.000***
			(0.000)
Age 25 or Less at Release		0.068***	0.068***
		(0.016)	(0.008)
First Offense		-0.114***	-0.194***
		(0.023)	(0.010)
Occupational Share		1.545**	
		(0.557)	
License Count			-0.000***
			(0.000)
Eligible	-0.011	-0.003	-0.074***
	(0.014)	(0.015)	(0.007)
Age at Release	-0.010***	-0.009***	-0.010***
	(0.001)	(0.001)	(0.000)
Num. Prior Offenses	0.361***	0.295***	0.174***
	(0.009)	(0.017)	(0.006)
Male	0.290***	0.284***	0.262***
	(0.016)	(0.016)	(0.009)
White	0.103***	0.096***	0.097***
	(0.028)	(0.029)	(0.015)
Black	0.287***	0.284***	0.248***
	(0.028)	(0.029)	(0.015)
Statewide Unemployment Rate	-0.043*	-0.045*	-0.029***
	(0.020)	(0.021)	(0.006)
County Unemployment Rate	-0.016	-0.016	0.005
	(0.012)	(0.013)	(0.004)
County Average Hourly Wage	-0.000	-0.000	-0.000**
	(0.000)	(0.000)	(0.000)
Law Enforcement Per Capita	0.000	0.000	0.000**
	(0.000)	(0.000)	(0.000)
Public Assistance Per Capita	0.001	0.000	-0.001*
	(0.002)	(0.002)	(0.000)
Proportion of Cases Disposed	-0.000	0.042	0.085**
	(0.107)	(0.109)	(0.029)
% High School or More	0.003	0.008	-0.005**
	(0.004)	(0.005)	(0.002)
Observations	96,054	90,756	346,682
ρ	.0250907	.0251826	-.0331702
χ^2	0.4638	0.4207	2.5186
p-value	0.4959	0.5166	0.1125

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Column 1 and 2 are restricted to inmates who were released from 2004 to 2007. Column 3 use license count to measure occupational licensing instead of proportion of occupations within a MSA. Columns 1 report the estimated coefficients Equation 2 and columns 2 report the estimated coefficients from Equation 3. Standard errors are reported in parentheses. The covariance between the biprobit equation error terms is reported as ρ. Coefficients not reported include marital status, employment status, type of offense, days sentenced to prison, parole, or probation, length of incarceration, custody level, county and year fixed effects.*

Table 9: Automatic Clemency - Probit Specification

	(1)	(2)
Automatic Clemency	-0.742***	-0.517**
	(0.041)	(0.183)
Automatic Clemency × Age ≤ 25		0.016
		(0.031)
Automatic Clemency × First Offense		-0.193***
		(0.026)
Automatic Clemency × Occupational Share		-0.690
		(1.117)
Age 25 or Less at Release		0.111***
		(0.018)
First Offense		-0.115***
		(0.020)
Occupational Share		0.678
		(0.716)
Eligible	0.055	0.078*
	(0.041)	(0.039)
Age at Release	-0.012***	-0.010***
	(0.001)	(0.001)
Num. Prior Offenses	0.203***	0.147***
	(0.007)	(0.010)
Male	0.326***	0.316***
	(0.020)	(0.019)
White	0.104**	0.100**
	(0.032)	(0.033)
Black	0.298***	0.292***
	(0.031)	(0.031)
Statewide Unemployment Rate	-0.028**	-0.034***
	(0.010)	(0.010)
County Unemployment Rate	0.001	0.005
	(0.008)	(0.009)
County Average Hourly Wage	-0.000	-0.000
	(0.000)	(0.000)
Law Enforcement Per Capita	0.000	0.000
	(0.000)	(0.000)
Public Assistance Per Capita	-0.001	-0.001
	(0.001)	(0.001)
Proportion of Cases Disposed	0.086	0.117
	(0.064)	(0.076)
% High School or More	-0.002	-0.000
	(0.005)	(0.006)
Observations	139,628	131,923

*Notes: *** p< 0.01, ** p < 0.05, * p < 0.1. Column 1 contains estimates of Equation 8 excluding heterogeneous terms and column 2 includes the heterogeneous terms. Standard errors are clustered at the county level.*

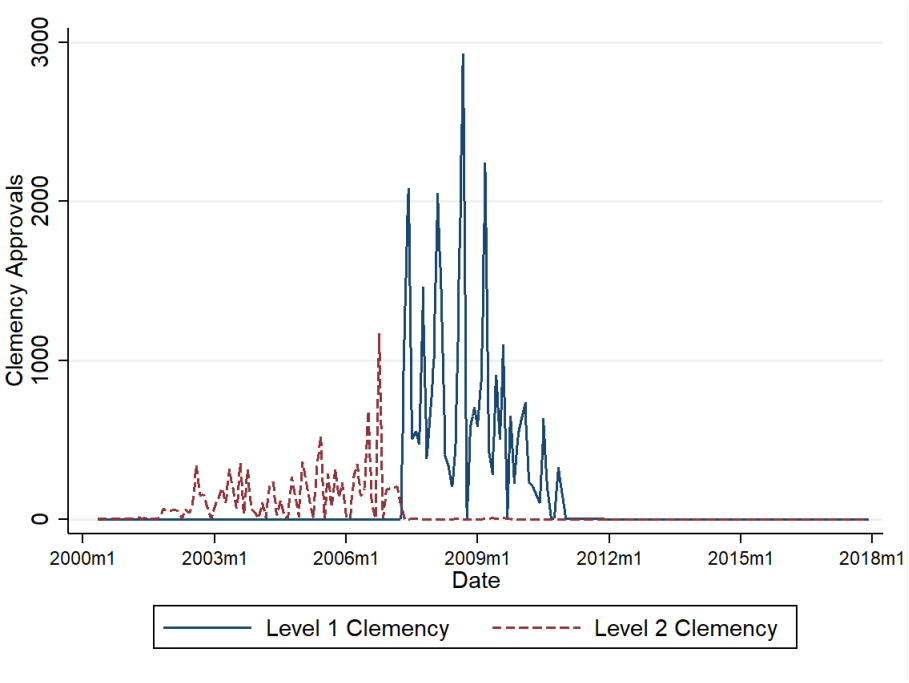

Figure 1: Clemency Approvals Overtime By Type

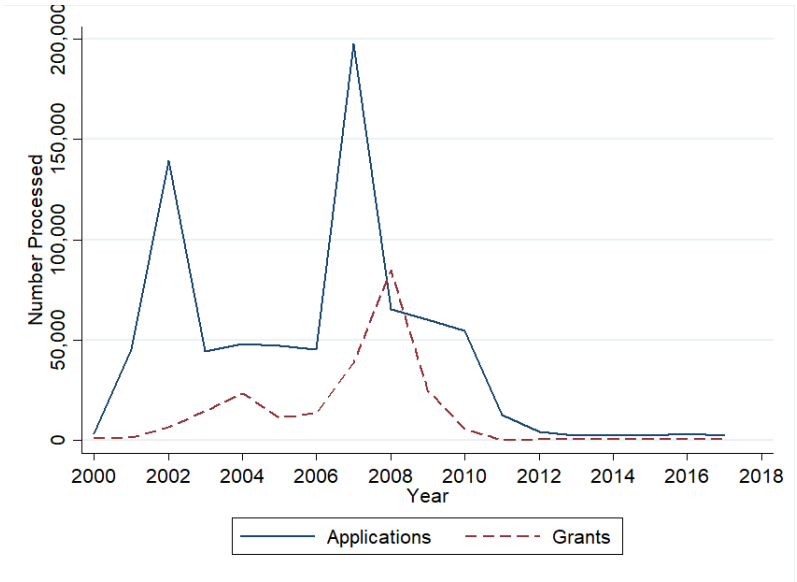

Figure 2: Florida Clemency Applications and Grants by Year
Source: Florida Commission on Offender Review

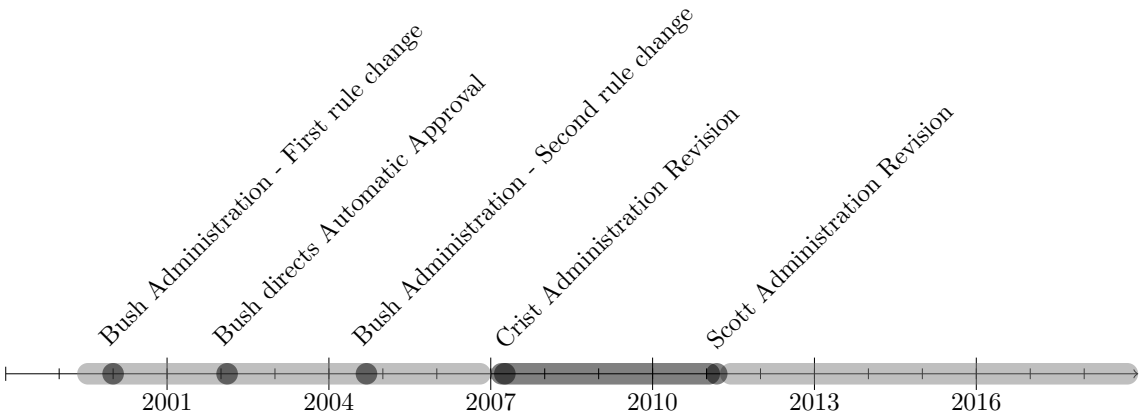

Figure 3: Timeline of Rules of Executive Clemency Revisions

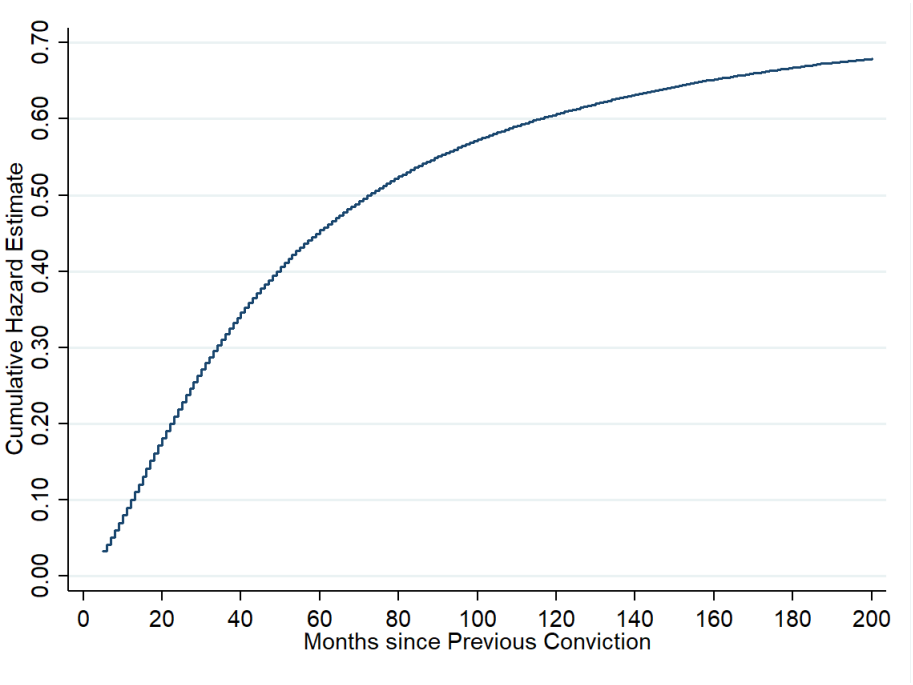

Figure 4: Kaplan-Meier Failure Function

Note: The failure function is specified as $F(t) = 1 - S(t)$ where $S(t)$ is the probability that an individual will have a crime-free spell beyond time t. The variable t is the elapsed number of months since released from a Florida incarceration facility.

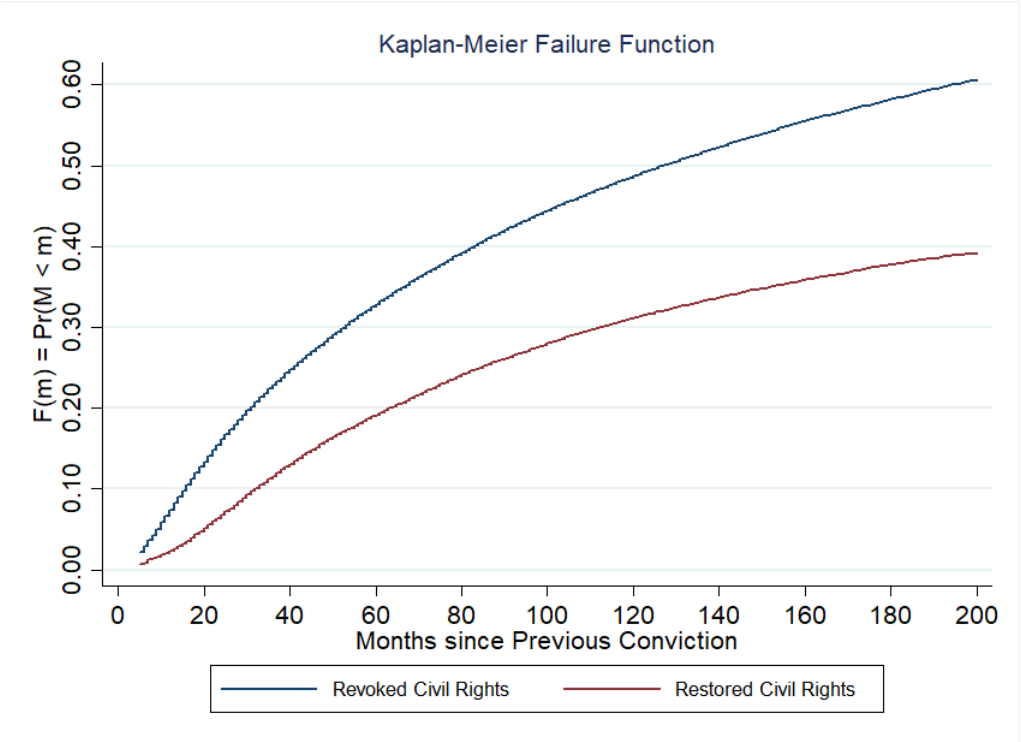

Figure 5: Kaplan-Meier Failure Function by Clemency Status

Note: The failure function is specified as $F(t) = 1 - S(t)$ where $S(t)$ is the probability that an individual will have a crime-free spell beyond time t. The variable t is the elapsed number of months since released from a Florida incarceration facility.

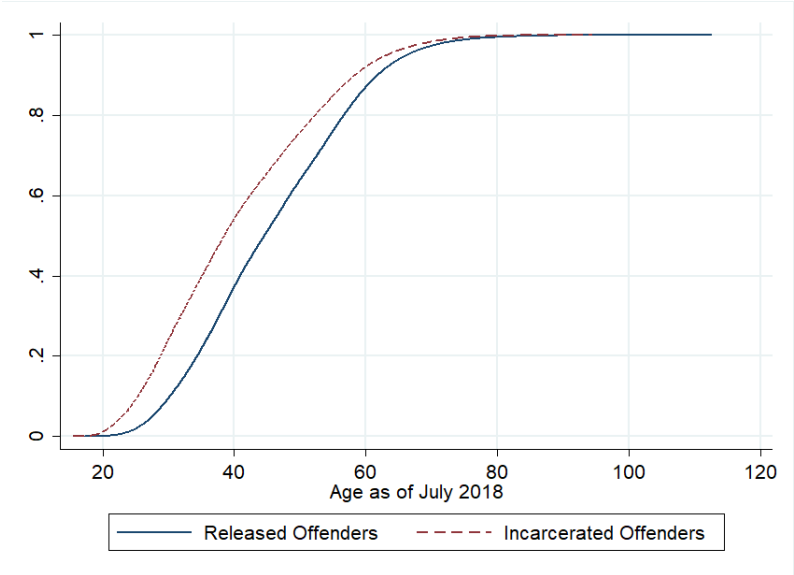

Figure 6: Cumulative Distribution Function of Current Age by Incarceration Status

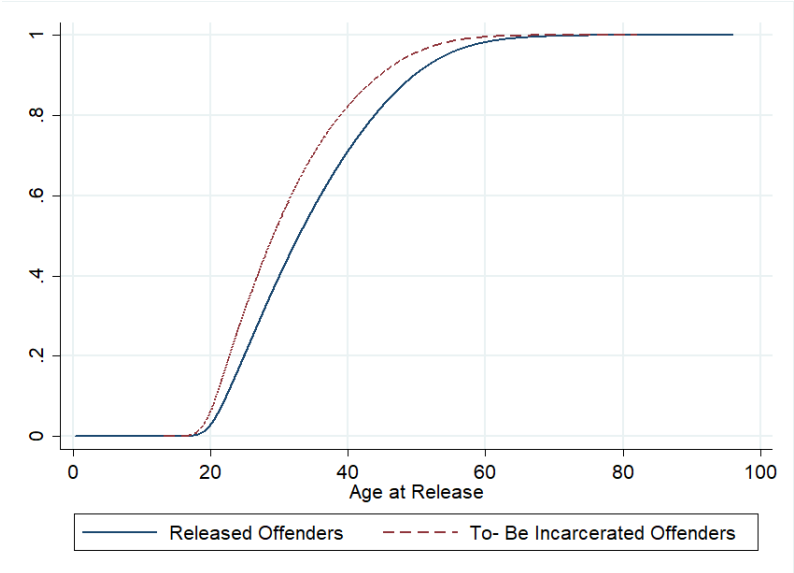

Figure 7: Cumulative Distribution Function of Age at Release

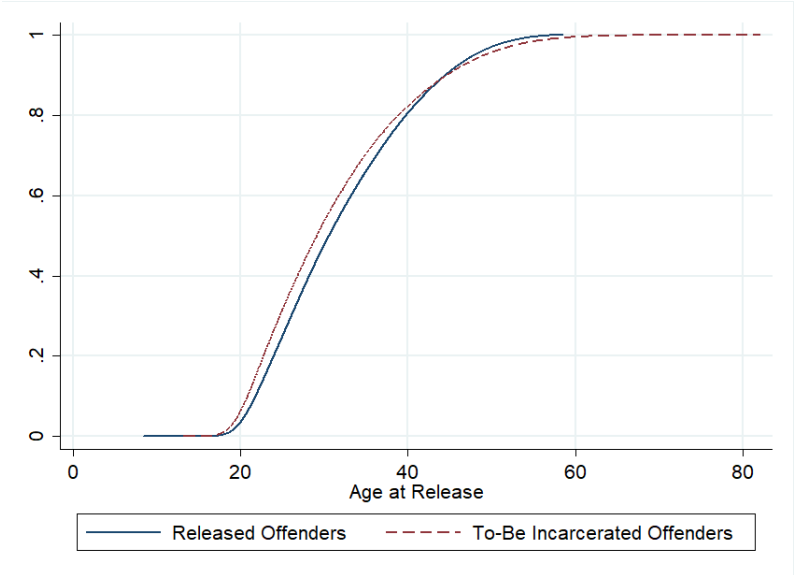

Figure 8: Cumulative Distribution Function of Age at Release with Restriction

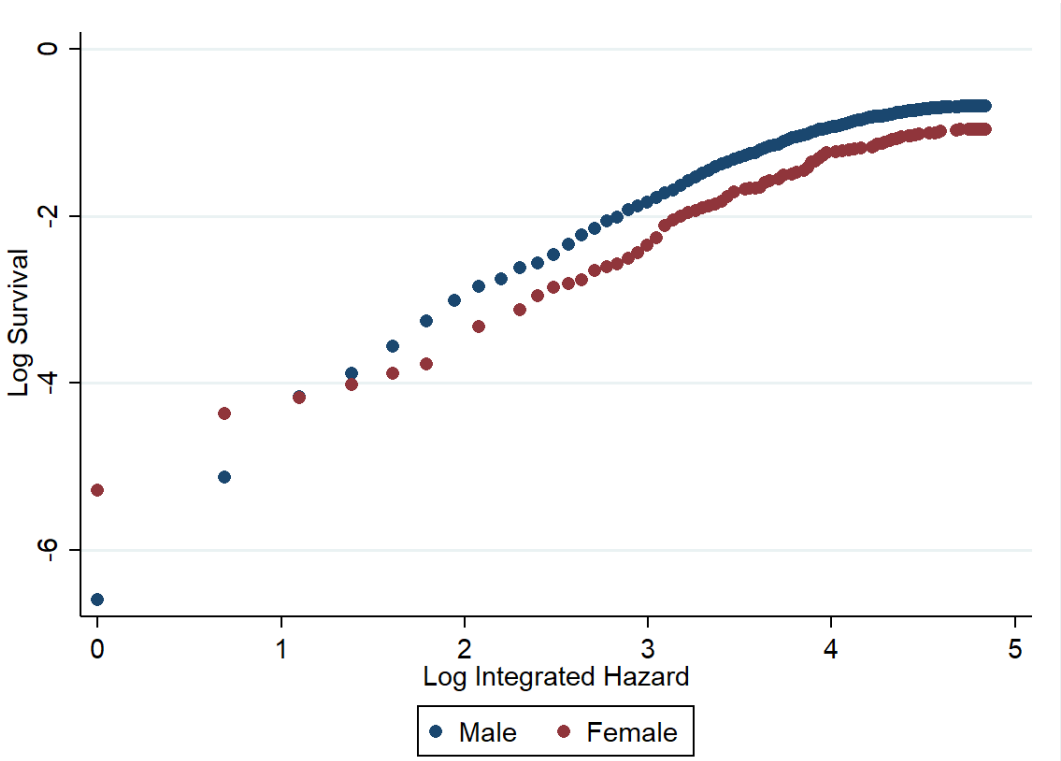

Figure 9: Log Integrated Hazard by Log Survival Time

Note: The fitted line of the scatter plot provides as estimate of the parameter α. The integrated hazard is computed separately by age, race, gender, release year, type of offense committed (violent/weapon), and clemency status.