Center for Equitable Growth Continuing Student Fellowship:

The long and short run effects of incarceration on recidivism and earnings

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(Joint work with Evan Rose)

1 Introduction

Incarceration rates in the U.S. have increased by more than a factor of 4 from the 70s to the present, and are now one of the highest in the world (CEA, 2016; Raphael and Lofstrom, 2015). Crime rates in the U.S. dramatically increased in the 80s and followed a systematic decreasing trend since the 90s to the present. However, the social cost of crime is still extremely high and was recently estimated as roughly $3.2 trillion annually (Anderson, 2012).

The relationship between imprisonment and criminogenic behavior is crucial when evaluating the current criminal justice policy, and the social cost of keeping an individual in prison. There is severe selection regarding which offenders are sentenced to prison and for how long. We would expect prison sentences to be correlated with future criminogenic propensities. Judges will tend to sentence longer prison durations to offenders whom they perceive to be of greater threat to society.

In recent years a common methodological tool to overcome the selection problem was to take advantage of the random/rotational assignment of defendants across judges with different "harshness" levels (Bhuller et al., 2016; Mueller-Smith, 2016; Aizer and Doyle, 2015; Dobbie et al., 2016; Stevenson, 2016; Green and Winik, 2010; Kling, 2006). The assignment across judges is used as an instrument for endogenous sentencing outcomes of interest such as whether the defendant was sentenced to prison and the length of the prison duration. The "judges" design gained increasing popularity in recent years and has become the main tool for overcoming the selection problem concerning which defendants are assigned to a longer prison duration. The exogenous sentencing variation is due only to harshness differences across judges, which can be limited in magnitude, as offenders who committed similar offenses "should" be sentenced to similar punishments. In addition, not all jurisdictions in the U.S. randomly allocate defendants across judges. For example, both North Carolina and Washington State do *not* randomly assign defendants to judges, and therefore in those jurisdictions a different empirical approach is required to identify the causal effect of incarceration on recidivism.

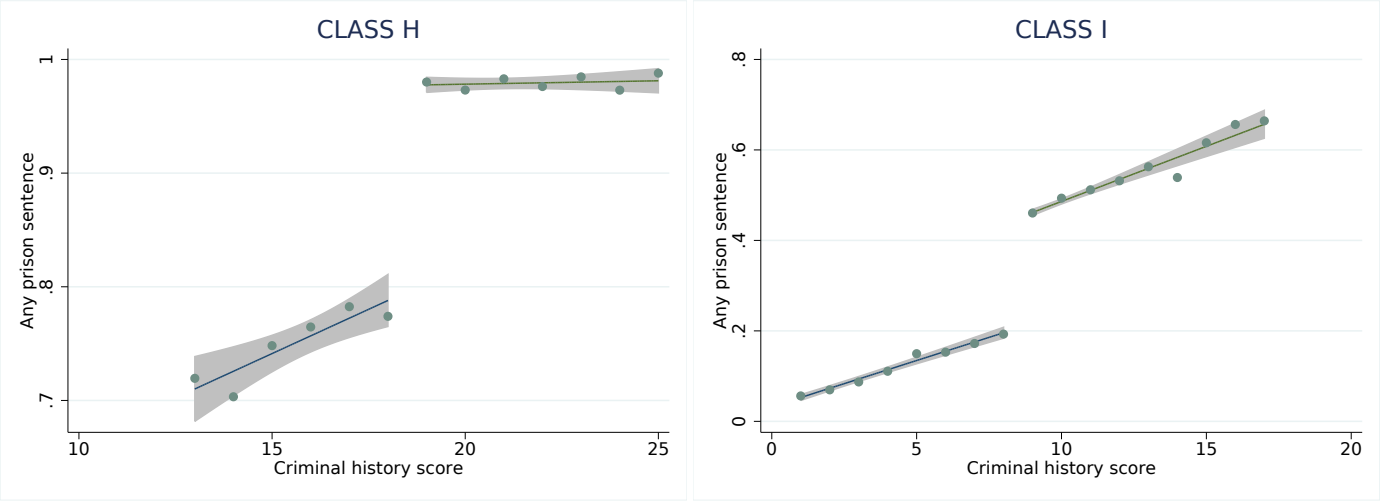
We use discontinuities in North Carolina's structured sentencing grid as a natural experiment that provides exogenous variation in the type (incarceration or not) and length of punishment. We show that comparable defendants may face substantially different sentencing regimes due to discontinuities in the sentencing guidelines. This natural experiment opens a vein for several different identification strategies that can be used to identify the *causal* effect of incarceration on the defendant's future outcomes

(e.g., recidivism, earnings). Each one of the empirical strategies entails different assumptions on the comparability of defendants across the sentencing grid.

Miller (2005) assessed that half of the states in the U.S. have adopted some model of sentencing guidelines since the 80s. This paper makes a methodological contribution by presenting the different methods by which variation in the sentencing regime across the grid can be utilized to estimate the causal relationship between incarceration and criminogenic behavior. This will shed new light on the study of recidivism by providing researchers a new strand of natural experiments that can utilized for different empirical designs.

Figure 1 illustrates the discontinuities in the sentencing guidelines for offenders convicted of offenses in class H and I. The change in sentencing regime can generate an increase of over 20pp in the probability of an offender to be sentence an imprisonment term.

Figure 1: Discontinuities in the probability of being incarcerated for offenders in class H and I



The sentencing grid generates discontinuities not only in sentencing, but also in the expected punishment from re-offending. We will utilize these discontinuities in deterrence to address the long standing question of whether harsher expected punishment deters individuals from engaging in criminal activity. One of the main objectives of the study is to construct a rigorous cost-benefit analysis that will evaluate the gains and costs of longer vs. shorter incarceration sentences on social welfare. The cost-benefit analysis is of special importance when examining the optimality of high incarceration rates in the face of tight budgetary limitations in the period after the Great Recession.

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