TOWARD AN OPTIMAL DECARCERATION STRATEGY

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With mounting support for dramatic criminal justice reform, the question is no longer whether we should decarcerate American prisons but how. This question is far more complicated than it might seem. We could cut the prison population in half, for example, by drastically shortening sentences. Or we could reduce prison admissions. Or we could do both. And we could do either or both for countless combinations of criminal offenses. Moreover, even when they reach the same numeric target, these strategies are not equivalent. They would have vastly different consequences for both prisoners and the public, and widely varying timeframes to take effect. To pick among them, we need richer metrics and more precise empirical estimates to evaluate their consequences.

This Article begins by proposing metrics to evaluate the relative merits of competing decarceration strategies. The public debate has focused almost exclusively on how we might decarcerate while minimizing any increases in crime and has, therefore, underappreciated the costs of prison itself. We should consider at least three more metrics: the social harm of incarceration, racial disparity, and timing. Next, the Article develops an empirical methodology to identify the range of strategies that would reduce the national prison population by 25, 50, and 75%. Finally, it identifies the best performing strategies against each metric.

The results have several broader takeaways. First, the optimal approach to decarceration depends heavily on which metrics we value most. The results thus quantify a stark set of policy choices behind a seemingly simple objective. Second, the results confirm that, to dramatically shrink prisons, it is critical to decarcerate a substantial number of people convicted of violent offenses—a fact that may surprise the majority of Americans who believe people convicted of drug offenses occupy half of prison beds. Finally, the results show that race-neutral decarceration

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strategies are likely to exacerbate rather than mitigate racial disparities. Armed with the conceptual tools and methodologies developed in this Article, we can make more informed decisions about how to best scale down prisons, given our priorities and constraints.

INTRODUCTION

The numbers are all too familiar. The United States imprisons 2.3 million people—almost 1% of its residents, more than any other country in the world, and over four times more per capita than fifty years ago.[1] Half of prisoners released will return within three years.[2] People of color are vastly overrepresented, with Black and Latinx residents incarcerated at rates five and three times higher than white residents.[3] So too are the poor. Before their incarceration, prisoners' median annual income is 41% lower than that of people of the same age on the outside.[4] And far too many have serious mental health issues.[5] Jails and prisons are also brutal places, with high rates of physical and sexual violence committed by both inmates and staff.[6] And there's little evidence that much of the rise in incarceration over the last forty years—particularly during the 1990s—substantially reduced crime.[7]

All of these statements have been true for decades. But after the murder of George Floyd and the protests that followed, there has been renewed optimism about the possibility of dramatic criminal justice reform. The consensus is growing that we have far too many people behind bars, even more so since the spread of COVID-19, which has killed thousands of prisoners and infected hundreds of thousands more.[8]

Among academics and activists, two rich literatures appear to be gaining

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1. *United States Profile*, PRISON POL'Y INITIATIVE, https://perma.cc/TP7K-SQFJ (archived Jan. 28, 2022); Wendy Sawyer & Peter Wagner, *Mass Incarceration: The Whole Pie 2020*, PRISON POL'Y INITIATIVE (Mar. 24, 2020), https://perma.cc/338E-5XUY.

2. MATTHEW R. DUROSE, ALEXIA D. COOPER & HOWARD N. SNYDER, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 244205, RECIDIVISM OF PRISONERS RELEASED IN 30 STATES IN 2005: PATTERNS FROM 2005 TO 2010, at 15 (2014).

3. E. ANN CARSON, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 253516, PRISONERS IN 2018, at 10 (2020).

4. Bernadette Rabuy & Daniel Kopf, *Prisons of Poverty: Uncovering the Pre-incarceration Incomes of the Imprisoned*, PRISON POL'Y INITIATIVE (July 9, 2015), https://perma.cc/3F8V-QRUT.

5. *See* JENNIFER BRONSON & MARCUS BERZOFSKY, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 250612, INDICATORS OF MENTAL HEALTH PROBLEMS REPORTED BY PRISONERS AND JAIL INMATES, 2011-12, at 3 (2017) (finding, in a national survey of state and federal prisoners, that 24% and 18% had previously been informed by a mental health professional they had a major depressive or bipolar disorder, respectively).

6. *See* ALLEN J. BECK, MARCUS BERZOFSKY, RACHEL CASPAR & CHRISTOPHER KREBS, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 241399, SEXUAL VICTIMIZATION IN PRISONS AND JAILS REPORTED BY INMATES, 2011-12, at 6 (2013) (finding that 4% of state and federal prisoners reported experiencing sexual victimization in the last year, over half the time by staff); Nancy Wolff & Jing Shi, *Type, Source, and Patterns of Physical Victimization: A Comparison of Male and Female Inmates*, 89 PRISON J. 172, 177 (2009) (reporting prevalence of self-reported physical victimization among a sample of prisoners).

7. STEVEN RAPHAEL & MICHAEL STOLL, WHY ARE SO MANY AMERICANS IN PRISON? 228-35 (2013).

8. *See National COVID-19 Statistics*, COVID PRISON PROJECT (Jan. 28, 2022), https://perma.cc/3MF8-AA5C (describing infection data from 42 state prisons, the Federal Bureau of Prisons, and Immigration and Customs Enforcement detention centers).

ground. The first is written by abolitionists like Angela Davis, Ruth Wilson Gilmore, Mariame Kaba, Beth Ritchie, and others.[9] They argue that, given the massive social costs of prison, its historical connections to slavery, and its social and racial inequalities today, the ultimate goal of a democratic society must be to restructure economic conditions such that prison is no longer necessary.[10] They envision massive investment in community infrastructure and an overhaul of criminal justice towards decriminalization, restorative justice, treatment programs, and community control.[11] A second literature, written largely by legal scholars and criminologists, dives into the procedural details, identifying specific legal tools like sentencing and parole reforms that could be used to engineer decarceration.[12]

There are weak signals that large-scale decarceration is slowly creeping into the mainstream, too.[13] During the 2020 presidential primary, for example, at least five major Democratic candidates—Cory Booker, Pete Buttigieg, Julian Castro, Tulsi Gabbard, and Beto O'Rourke—"committed to reducing incarceration by half" at public campaign events.[14]

Yet, even among scholars and activists who support large-scale reductions in the prison population, there's little consensus on who we should decarcerate

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9. There are far too many materials to cite, but for a few canonical pieces, see generally ANGELA Y. DAVIS, ARE PRISONS OBSOLETE? (2003); RUTH WILSON GILMORE, GOLDEN GULAG: PRISONS, SURPLUS, CRISIS, AND OPPOSITION IN GLOBALIZING CALIFORNIA (2007); and PRISON RESEARCH EDUCATION ACTION PROJECT, INSTEAD OF PRISONS: A HANDBOOK FOR ABOLITIONISTS (1976). For one of the first extended law review discussions of prison abolition, see generally Allegra M. McLeod, *Prison Abolition and Grounded Justice*, 62 UCLA L. REV. 1156 (2015).

10. *See* Allegra M. McLeod, *Envisioning Abolition Democracy*, 132 HARV. L. REV. 1613, 1617-20 (2019) (describing a variety of definitions of abolitionism).

11. Mariame Kaba & Erica R. Meiners, *Arresting the Carceral State*, JACOBIN (Feb. 24, 2014), https://perma.cc/CH6Z-PZDV; McLeod, *supra* note 10, at 1620-37.

12. *See, e.g.*, Michael Tonry, *Remodeling American Sentencing: A Ten-step Blueprint for Moving Past Mass Incarceration*, 13 CRIMINOLOGY & PUB. POL'Y 503, 516-25, 527 (2014) (outlining ten, "mostly technocratic," steps to decarcerate, primarily through sentencing and parole reform); RACHEL ELISE BARKOW, PRISONERS OF POLITICS: BREAKING THE CYCLE OF MASS INCARCERATION 143-64 (2019) (arguing for greater administrative regulation of prosecutorial discretion); Lynn Adelman, *What the Sentencing Commission Ought to be Doing: Reducing Mass Incarceration*, 18 MICH. J. RACE & L. 295, 310-13 (2013) (arguing that sentencing guidelines should be used to decarcerate); ACLU, A PRESIDENTIAL ROADMAP TO ENDING INCARCERATION: INVEST IN PEOPLE, NOT PRISONS 17-25 (2019), https://perma.cc/LH5Y-Q6CQ (identifying policy tools to decarcerate).

13. As early as 2016, 29% of "all voters" and 42% of "liberals" in a Morning Consult national survey supported reducing "prison sentences for people who committed a violent crime and have a low risk of committing another crime." German Lopez, *Want to End Mass Incarceration? This Poll Should Worry You*, VOX (Sept. 7, 2016 11:30, AM EDT), https://perma.cc/Q5ZU-GKM2.

14. Taylor Pendergrass, *We Can Cut Mass Incarceration by 50 Percent*, ACLU (July 12, 2019, 10:00 AM), https://perma.cc/Y9MW-XGZT. Now-President Joe Biden also committed to reducing incarceration by 50% while speaking on camera to a volunteer at the rope line in a campaign event but backed off days later. Katherine Miller, *Joe Biden Told a Voter He'll "Go Further" than Cutting Incarceration by 50%*, BUZZFEEDNEWS (July 9, 2019, 4:33 PM ET), https://perma.cc/76XM-YW4M.

and how. Indeed, there are many ways to reduce the prison population by a given quantity; we could shorten sentences or we could reduce admissions, and we could do either for countless combinations of offenses. But, critically, these strategies are not equivalent. They could have vastly different social consequences even if they would achieve the same numeric reduction in the prison population. To pick among them, we need richer metrics and more precise empirical estimates of the varied consequences of decarceration strategies.

This paper proposes metrics to assess the relative merits of different decarceration strategies and puts them to the test. The mainstream public debate has focused almost exclusively on a single metric: minimizing increases in crime. In doing so, it has underappreciated the costs of prison itself.[15] In evaluating decarceration strategies, we should consider at least three additional metrics.

First, and admittedly sometimes in tension with the metric of crime, decarceration should seek to minimize the social harms of prison. As Dorothy Roberts and others have argued, incarceration imposes enormous costs on prisoners, their families, and their communities, particularly among Black people and other people of color.[16] Incarceration disrupts education and careers; separates families; exposes prisoners to disease, violence, and trauma; disenfranchises; and, for some people, it may even be criminogenic.[17] Many of these harms cluster at the moment of entry into prison, which means there are unique benefits to decarceration strategies that keep people out altogether. To be clear, social harm need not be a secondary metric relative to crime. Indeed, the relevant harms are sufficiently large that some scholars and activists would prefer the risk of higher crime over that of continued mass incarceration, as long as the communities most affected support that tradeoff.[18]

Second, decarceration strategies should, to the extent possible, minimize *racial disparities* behind bars. As noted, people of color are vastly overrepresented in prison.[19] These disparities have long historical roots, dating back to the end of slavery.[20] And they have been exacerbated by more recent criminal justice policies, including the war on drugs, order maintenance policing, and mandatory minimum sentencing.[21]

Third, we cannot talk about decarceration without also talking about *timelines*. With the right political will, some strategies could happen almost overnight by cutting time served for both current and future prisoners. On the other hand,

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15. *See infra* Part I.

16. *See* Dorothy E. Roberts, *The Social and Moral Cost of Mass Incarceration in African American Communities*, 56 STAN. L. REV. 1271, 1281-97 (2004) (reviewing literature on the effects of prison on these different groups).

17. *Id.*

18. *See, e.g.*, McLeod, *supra* note 9, at 1171 ("Reducing social risk by physically isolating and caging entire populations is not morally defensible, even if abandoning such practices may increase some forms of social disorder.").

19. *See* CARSON, *supra* note 3, at 10.

20. *See infra* notes 89-93 and accompanying text.

21. *See infra* notes 96-105 and accompanying text.

approaches that focus on reducing admissions or time served exclusively for future prisoners can take decades to realize, particularly with respect to prisoners with long sentences. Given the fickle dynamics of American politics, decarceration strategies that are quicker—actualized over years, not decades—are probably preferable. Quicker decarceration nonetheless comes with real costs. Perhaps most important, some government officials may be unwilling to support a decarceration strategy if they perceive it does not provide sufficient insulation against political backlash.

With metrics in hand, the Article next develops an empirical methodology to forecast the effects of a wide range of decarceration strategies. Here, I build on prior empirical work in the literature. The only national analysis, published by the Brennan Center for Justice, sought to estimate the number of prisoners at year-end 2012 that it believed could be released "without endangering public safety."[22] The report recommends releasing 39% by eliminating incarceration for low-level crimes and reducing time served for others.[23]

One limitation in this analysis is that a prison system cannot be represented simply by a static population at the end of the year;[24] a prison is also a dynamic flow of new admissions every day. Thus, concluding that we should release 39% of prisoners on a given day doesn't tell us what will happen in the months and years afterwards. To understand the effect of decarceration over the long term, we also need to model flow.[25]

To forecast the effects of decarceration while accounting for flow,[26] I estimate release rates by crime type and race of prisoners, conditional on their "spell age"—the length of time since they were admitted to prison.[27] I then forecast a baseline projection of the prison population, assuming constant rates of admission and time served in future periods, and compare that projection against forecasts that assume reductions in admissions and time served for different offenses.

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22. Inimai Chettiar, *Preface* to JAMES AUSTIN & LAUREN-BROOKE EISEN WITH JAMES CULLEN & JONATHAN FRANK, BRENNAN CTR. FOR JUST., HOW MANY AMERICANS ARE UNNECESSARILY INCARCERATED? 3, 3 (2016), https://perma.cc/B6LU-6YHN.

23. AUSTIN ET AL., *supra* note 22, at 7.

24. The prison literature often refers to this concept as a "stock." I use the term "static population" instead.

25. *See* John F. Pfaff, *The War on Drugs and Prison Growth: Limited Importance, Limited Legislative Options*, 52 HARV. J. ON LEGIS. 173, 191 (2015) ("[L]ooking only at prison counts provides a potentially incomplete picture . . . since the total population . . . reflects only a fraction of those passing through.").

26. Since the Brennan report, a few papers have forecasted prison populations at the state-level accounting for flow. *See* Lindsay Bostwick, Reducing the Prison Population: Evidence from Pennsylvania 16-18 (Oct. 29, 2016) (unpublished manuscript), https://perma.cc/8RW8-DTXM (forecasting effects of different reduction strategies in Pennsylvania); *Smart Justice 50-State Blueprints*, ACLU, https://perma.cc/V5B4-EHJR (archived Jan. 27, 2022) (forecasting effects of a decarceration strategy in each state separately). As I discuss below, I build on their methodologies in several ways, including conducting my analysis at the national level.

27. In technical terminology, I apply a cohort component projection method using a synthetic cohort life table.

Based on these projections, I identify the range of decarceration strategies that would likely reduce the national prison population by 25, 50, and 75%. For each of these thresholds, I then select the strategy that would perform best against each of the metrics. The results thus seek to capture the best ways to reduce the prison population by 25, 50, and 75% depending on which metrics we value most. As a robustness check, I also assess how sensitive the results are to the possibility that reducing the prison population diminishes deterrence or incapacitation and, in turn, drives up admissions.

Ultimately, my metrics and empirical results have several important takeaways. First, they illustrate a few key principles to help evaluate competing decarceration strategies. To begin with, when the prison population is stationary (as it has been in recent years),[28] equal reductions in admissions and time served have the same effects on the size of the prison population over the long term, which means they both get to the same place eventually. But they come with different policy tradeoffs. Shortening time served is less likely to increase crime and, when applied to *all* prisoners, takes effect quickly. Shortening time served only for *future* prisoners takes much longer but can provide political cover for legislators. Either way, reducing time served alone leaves the same number of people exposed to the harmful conditions of prison. By contrast, reducing admissions stems the harms of prison contact but takes longer to bring the prison population down—and, comparatively, may deter and incapacitate less crime.

Second, because many decarceration strategies can achieve the same reduction in the prison population, the optimal approach depends heavily on which metrics we value most. This fact presents a stark range of policy choices. If we seek to cut the prison population by 50%, for example, and we care most about minimizing increases in crime or achieving results quickly, the best strategy is likely shortening time served for all non-violent and less serious violent offenses by three-quarters while leaving constant the number of admissions.[29] Alternatively, if we care most about diminishing the social harms of incarceration, we could instead cut admissions by three-quarters for all non-violent and less serious violent offenses and thereby divert over 300,000 people from the harmful conditions of prison each year. I explain these options, and many more, in Part IV. But the broader point is that, although the numerical effect on the prison population of these two strategies is the same, the overall social consequences differ sharply. The near-exclusive focus on crime in the mainstream decarceration debate may, therefore, blind both policymakers and the public to more socially optimal strategies that give weight to other metrics.

Third, as others have anticipated,[30] to dramatically shrink prisons, we need to decarcerate a substantial number of people convicted of violent offenses.[31]

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28. *See infra* notes 147-149 and accompanying text.

29. I define less serious violent offenses as manslaughter, robbery, assault, and a few "other violent crimes." *See infra* note 112.

30. *See, e.g.*, JOHN F. PFAFF, LOCKED IN: THE TRUE CAUSES OF MASS INCARCERATION—AND HOW TO ACHIEVE REAL REFORM 185-87 (2017).

31. I define violent offenses as homicide, rape, sexual assault, robbery, assault, and a

This may come as a surprise to the majority of Americans who believe that people convicted of drug crimes make up half of state prisoners when,[32] in fact, they make up just 15%.[33] If we are to substantially shrink prisons, it is necessary to begin developing the political will to decarcerate violent offenses. Below, I discuss at length how we might begin to do that.

Fourth, race-neutral decarceration strategies are likely to exacerbate racial disparities in prison. Importantly, this is not an argument against decarceration. After all, Black prisoners would disproportionately benefit relative to other groups. But out of all the decarceration strategies tested, the only ones that would reduce racial disparity are those that decarcerate violent offenses far more than non-violent ones (and even then, they never reduce Black overrepresentation by more than 13%). To reduce racial disparities, we need a broader range of policy solutions, like changing law enforcement patterns, combatting racial profiling, and making large investments of social, economic, and political resources in communities of color.[34]

Finally, the results of my robustness check suggest that scaling down the prison population may modestly increase the incidence of crimes that most often result in prison admission. For this reason, my primary models (and the rest of the models in the literature) may meaningfully, but not dramatically, overestimate the effects of decarceration on the size of the prison population. Again, this finding reinforces the abolitionist call not only to reduce the footprint of criminal law, but also to expand social policies that reduce poverty, inequality, and crime.

At bottom, this Article brings both good news and bad. In providing an empirically grounded analysis of the policy choices for decarceration, it shows how hard are some of the tradeoffs we face. But the harms of prison are enormous, and so too are the potential gains from rectifying them. The conceptual tools, methodologies, and results in this Article can help scholars and policymakers optimize these difficult tradeoffs.

As I discuss below, law will play a critical role in that process.[35] Policymakers have a variety of legal tools to reduce criminal enforcement, decriminalize offenses, shorten or eliminate prison sentences, and invest in community infrastructure.[36] And Congress could encourage these efforts by conditioning funding grants on how much states reduce their prison populations.[37]

The remainder of the paper proceeds as follows. Part I develops the metrics of decarceration. Part II describes the data. Part III provides a statistical portrait

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small number of other violent crimes. *See infra* note 112.

32. Lopez, *supra* note 13.

33. *See infra* Figure 2.

34. *See infra* Part I.C.

35. *See infra* Part V.B.

36. *See, e.g.*, Tonry, *supra* note 12, at 516-25; Adelman, *supra* note 12, at 310-13.

37. *See* LAUREN-BROOKE EISEN & INIMAI CHETTIAR, BRENNAN CTR. FOR JUST., THE REVERSE MASS INCARCERATION ACT 7 (2015), https://perma.cc/42N9-9TLB (proposing a federal grant program that would provide funds to states that reduce their prison population by 7% over three years).

of who is in and admitted to state prison each year. Many of the statistics I report are already available—though not always easily accessible. But some results are new. I show, for example, that the number of American prisoners convicted of murder, rape, and sexual assault is so high that—even if every other prisoner were released—the United States would still have the second highest incarceration rate in Western Europe. Part IV describes the forecasting methodology and reports results. Finally, Part V summarizes and discusses implications for theory, policy, and law.

I. METRICS OF DECARCERATION

From 2006 to 2016, a slight majority of states experienced declines in their prison populations—three by over 20%.[38] But some of this trend was driven by falling crime rates,[39] and, overall, the national decline was miniscule, just 3%.[40]

During that period, the federal government and many states enacted policies to speed up decarceration. By and large, these efforts have been modest in scope. For example, in its first year the First Step Act of 2018 released just 3,000 federal prisoners and shortened 2,000 others' sentences by a quarter[41]—in a system that houses 180,000 people.[42] Somewhat more impactful, nine of twelve states participating in the Justice Reinvestment Initiative (JRI) were successful at reducing their prison populations, but only by an average of 6%.[43] Perhaps the most notable decarceration occurred after a federal court ordered California to mitigate overcrowding.[44] The state enacted a series of laws, known as Realignment, which cut the state's prison population by over 17%, mostly by diverting parole violators from prison.[45]

One common thread running through these decarceration efforts is that they focus on minimizing increases in crime.[46] In part because of their modest effects

38. LAUREN-BROOKE EISEN & JAMES CULLEN, BRENNAN CTR. FOR JUST., UPDATE: CHANGES IN STATE IMPRISONMENT 3 (2019), https://perma.cc/2SN8-AAZ4.

39. MATTHEW FRIEDMAN, AMES C. GRAWERT & JAMES CULLEN, BRENNAN CTR. FOR JUST., CRIME TRENDS: 1990-2016, at 2, 5 (2017), https://perma.cc/VWS7-MZEZ.

40. E. ANN CARSON, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 251149, PRISONERS IN 2016, at 5 (2018).

41. SENT'G PROJECT, ONE YEAR AFTER THE FIRST STEP ACT: MIXED OUTCOMES 1 (2019).

42. *See* CARSON, *supra* note 3, at 3.

43. I focus on the twelve states for which there are four years of follow-up data. *See* SAMANTHA HARVELL ET AL., URBAN INST., REFORMING SENTENCING AND CORRECTIONS POLICY: THE EXPERIENCE OF JUSTICE REINVESTMENT INITIATIVE STATES 34-35 (2017).

44. Brown v. Plata, 563 U.S. 493, 501-02 (2011).

45. Magnus Lofstrom & Steven Raphael, *Prison Downsizing and Public Safety*, 15 CRIMINOLOGY & PUB. POL'Y 349, 351 (2016).

46. Most jurisdictions, for example, did not prioritize minimizing racial disparity. *See* HARVELL ET AL., *supra* note 43, at vi-ix (not mentioning reducing racial disparity as a goal of any of the JRI sites in the leading evaluation report); DENNIS SCHRANTZ, STEPHEN T. DEBOR & MARC MAUER, SENT'G PROJECT, DECARCERATION STRATEGIES: HOW 5 STATES ACHIEVED SUBSTANTIAL PRISON POPULATION REDUCTIONS 7 (2018) (noting that the five states covered in the report did not "directly address[] the problem"); MAGNUS LOFSTROM, BRANDON MARTIN

on the prison population, the evidence suggests they achieved their goal.[47] But by emphasizing crime they ignored other important metrics of success. In addition to crime, I consider three more: social harm, racial disparity, and timing.

A. Crime

More than anything else, crime dominates conversations about decarceration. But our understanding of the effects of incarceration on crime is limited. One problem is that it's challenging to isolate the effects of prison from all the other social forces that shape crime rates. Another is that, for lack of good measures, the empirical literature focuses on reported civilian-on-civilian crime and doesn't count the high rates of violence committed inside prison or most uses of illegal force by criminal justice officials.[48] All of this means it's difficult to predict the precise effects of different decarceration strategies on crime. But at least two rules of thumb can provide some rough guidance in sorting strategies based on this metric.

First, all three traditional mechanisms through which incarceration is thought to reduce crime—incapacitation, specific deterrence, and general deterrence—imply that reducing time served drives up civilian-on-civilian crime less than reducing admissions. For one thing, there is evidence that certainty of punishment matters more than severity.[49] For another, the effects of incarceration on crime are likely subject to diminishing marginal returns. With respect to incapacitation, each passing year of a prison spell prevents fewer offenses against the

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& STEVEN RAPHAEL, PUB. POL'Y INST. OF CAL., PROPOSITION 47'S IMPACT ON RACIAL DISPARITY IN CRIMINAL JUSTICE OUTCOMES 17 (2020) (providing the first analysis of the effects of California realignment on racial disparity nine years after the law was enacted). For one notable exception, see SENT'G PROJECT, *supra* note 41, at 1 (observing that 91% of the small number of sentence-reduction recipients under the First Step Act were Black). Another possible exception is JRI, which was designed to reinvest cost savings from prison reduction into community programs; in practice, however, this didn't happen. *See* James Austin, Todd Clear & Garry Coventry, *Reinvigorating Justice Reinvestment*, 29 FED. SENT'G REP. 6, 11 (2016) ("The [JRI] prototype has been to invest in other correctional agencies and criminal justice agencies: probation/parole, halfway houses, drug treatment programs, and policing . . . . Nowhere, however, have savings been dedicated to community infrastructure or community health—youth programs, education, economic development, and the like.").

47. *See, e.g.*, EISEN & CULLEN, *supra* note 38, at 2 (noting that all but one of the twenty-eight states that reduced their prison population from 2006 to 2014 also experienced a decline in crime); Magnus Lofstrom, *Incarceration and Crime: Evidence from California's Public Safety Realignment Reform*, 664 ANNALS AM. ACAD. POL. & SOC. SCI. 196, 197 (2016) (finding "very little evidence of an effect of [California Realignment] on violent crime and evidence of modest effects on property crime").

48. Ben Gifford, *Prison Crime and the Economics of Incarceration*, 71 STAN. L. REV. 71, 103-05 (2019).

49. For two literature reviews, see Aaron J. Chalfin & Sarah Tahamont, *The Economics of Deterrence: A Review of the Theory and Evidence*, *in* DETERRENCE, CHOICE AND CRIME 29, 66-67 (Daniel S. Nagin, Francis T. Cullen & Cheryl Lero Jonson eds., 2018); Aaron Chalfin & Justin McCrary, *Criminal Deterrence: A Review of the Literature*, 55 J. ECON. LITERATURE 5, 32 (2017).

public because people tend to commit less crime as they get older.[50] With respect to specific and general deterrence, the evidence suggests that, if longer sentences deter, each additional year has a diminishing effect.[51] Indeed, several review papers conclude that—at least today, when sentences are already long—modest increases have little or no deterrent effect.[52]

Thus, from the perspective of crime control, reducing time served likely represents a more efficient allocation of limited prison beds than reducing admissions. To emphasize, this is not merely the tautological point that, if prison prevents crime, some prison prevents more crime than no prison. Instead, the point is distributional; if we seek to reduce the total number of prisoner-years by some amount while minimizing effects on crime, the diminishing returns from incarceration imply that reducing time served represents a more efficient use of limited prison beds than reducing admissions.

But what if exposure to prison *increases* crime through other causal mechanisms? Might that hypothesis suggest a reverse rule of thumb—that reducing admissions would actually drive up crime less than shortening time served? It's plausible, for example, that incarceration causes some people to commit crime by disrupting their employment prospects or enabling them to acquire criminal capital behind bars.[53] Some scholars have also suggested that, when incarceration

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50. Robert J. Sampson & John H. Laub, *Life-Course Desisters? Trajectories of Crime Among Delinquent Boys Followed to Age 70*, 41 CRIMINOLOGY 555, 566 (2003). As one illustrative data point, a recent national study shows that roughly 15% of people released between the ages of 18 and 24 are reincarcerated for a violent crime within three years while the rates are just 5.6 and 3.1% for those released between 45 and 54 and those over 55, respectively. J.J. Prescott, Benjamin Pyle & Sonja B. Starr, *Understanding Violent-Crime Recidivism*, 95 NOTRE DAME L. REV. 1643, 1690 (2020).

51. David S. Abrams, Building Criminal Capital vs Specific Deterrence: The Effect of Incarceration Length on Recidivism 21 (Nov. 11, 2010) (unpublished manuscript), https://perma.cc/RG2H-BYVC; Evan K. Rose & Yotam Shem-Tov, Does Incarceration Increase Crime? 30 (May 29, 2019) (unpublished manuscript), https://perma.cc/666P-CEGD.

52. *See* Chalfin & Tahamont, *supra* note 49, at 67 ("[T]here is little evidence that a modest general increase in the severity of a sanctions regime will deter crime."); Daniel S. Nagin, *Deterrent Effects of the Certainty and Severity of Punishment*, *in* DETERRENCE, CHOICE AND CRIME 157, 165 (Daniel S. Nagin, Francis T. Cullen & Cheryl Lero Jonson eds., 2018) ("[T]he deterrent return to increasing an already long sentence is small, possibly zero."); David S. Abrams, *The Imprisoner's Dilemma: A Cost-Benefit Approach to Incarceration*, 98 IOWA L. REV. 905, 920 (2013) (concluding that the deterrence studies generally "find a non-zero, but relatively small, general deterrent effect"). Policies that lengthen sentences dramatically—like three-strikes laws—appear to have larger effects that are nonetheless too small to justify the economic and social costs. *See* Eric Helland & Alexander Tabarrok, *Does Three Strikes Deter? A Nonparametric Estimation*, 42 J. HUM. RES. 309, 328 (2007) (estimating that three strikes cost $148,000 per crime avoided, a "large number"); Nagin, *supra*, at 158 ("[T]here is little evidence that increases in the length of already long prison sentences yield general deterrent effects that are sufficiently large to justify their social and economic costs. Such severity-based deterrence measures include 'three strikes, you're out' . . . .").

53. The relevant empirical results on this point are mixed, with some studies finding negative effects, *see, e.g.*, Abrams, *supra* note 51, at 21; Ilyana Kuziemko, *How Should Inmates be Released from Prison? An Assessment of Parole Versus Fixed-Sentence Regimes*, 128 Q.J. ECON. 371, 376 (2013) (estimating that "an extra month in prison reduces the probability that an inmate returns to prison within three years of his release by 1.3 percentage

is highly geographically concentrated, it increases crime by "damaging familial, economic, and political sources of informal social control."[54]

On balance, however, the empirical evidence suggests that prison admissions do prevent more crime than they cause (at least for civilian-on-civilian crime). Indeed, a few studies have estimated the net effects of incarceration—covering multiple causal mechanisms—by examining how prison and crime correlate over time within states. Using data from 1977 to 2010, Steven Raphael and Michael Stoll find evidence that, on average, the net effects of rising prison rates meaningfully decreased some crimes against the public, including murder, rape, burglary, and theft during the 1980s—but not during the 1990s when incarceration rates were already quite high.[55] If that's right, we have good reason to reject the hypothesis that admissions cause more crime than they prevent. And, if so, there's also good reason to reject the idea that reducing admissions might drive up crime less than reducing time served.

A second rule of thumb for sorting decarceration strategies based on their effects on crime prioritizes less serious offenses, which likely cause fewer harms. Indeed, this is one of the main reasons that more serious offenses receive longer sentences. As just one example, decarcerating violent offenses, like homicide, robbery, or aggravated assault, likely has a bigger effect on the social costs of crime than decarcerating theft or drug possession.

Importantly, incarceration is not the only way to reduce crime. Prison abolitionists have argued for decades that a more powerful crime-reduction strategy would involve the "massive infusion of resources in innercity neighborhoods to build local institutions, support social networks, and create social citizenship."[56] Indeed, a growing empirical literature shows that many investments in local infrastructure reduce violent crime, including drug treatment centers,[57] mental

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points"), and others finding positive ones. *See* Anna Aizer & Joseph J. Doyle, Jr., *Juvenile Incarceration, Human Capital, and Future Crime: Evidence from Randomly Assigned Judges*, 130 Q.J. ECON. 759, 763 (2015) ("[J]uvenile incarceration is estimated to . . . increase adult incarceration by 23 percentage points."); Michael Mueller-Smith, The Criminal and Labor Market Impacts of Incarceration 27 (Aug. 18, 2015) (unpublished manuscript), https://perma.cc/2RE2-WFCM ("[L]onger exposure to jail and prison increases the likelihood of new criminal behavior.").

54. Todd R. Clear, Dina R. Rose, Elin Waring & Kristen Scully, *Coercive Mobility and Crime: A Preliminary Examination of Concentrated Incarceration and Social Disorganization*, 20 JUST. Q. 33, 34-35 (2003). While plausible, this "coercive mobility" theory is largely untested. The few relevant papers show cross-sectional associations between incarceration and crime across a small number of neighborhoods and thus may very well be biased by omitted variables and model sensitivity. Jeffrey D. Morenoff & David J. Harding, *Incarceration, Prisoner Reentry, and Communities*, 40 ANN. REV. SOCIO. 411, 417-18 (2014).

55. RAPHAEL & STOLL, *supra* note 7, at 228-35. Other studies find similar results. *See* Raymond V. Liedka, Anne Morrison Piehl & Bert Useem, *The Crime-Control Effect of Incarceration: Does Scale Matter?*, 5 CRIMINOLOGY & PUB. POL'Y 245, 260-61 (2006); *see also* RAPHAEL & STOLL, *supra* note 7, at 201-228 (reviewing the literature).

56. Roberts, *supra* note 16, at 1304-05.

57. Samuel R. Bondurant, Jason M. Lindo & Isaac D. Swensen, *Substance Abuse Treatment Centers and Local Crime*, 104 J. URB. ECON. 124, 128-30 (2018).

healthcare,[58] medical healthcare,[59] cognitive behavioral therapy,[60] early childhood education,[61] lead mitigation,[62] emergency financial assistance for financial shocks to families,[63] greening vacant lots,[64] enhanced street lighting,[65] and local non-profit programs focused on "reducing violence and building stronger communities."[66] Some of these options may be more cost-effective than incarceration. John Donahue and Peter Siegelman, for example, argue that additional dollars we spend on early childhood education can prevent more crime against the public than additional dollars on prison.[67] Decarceration strategies should be accompanied by large investments in these and other community programs.

But crime shouldn't be the only metric of decarceration. In the next subparts, I suggest three more.

B. Social Harm

The social harms of prison are massive, in some cases, large enough to outweigh its beneficial effects on crime.[68] Megan Stevenson and Sandra Mayson report that the median respondent in a recent survey preferred being the victim

58. Monica Deza, Johanna Catherine Maclean & Keisha T. Solomon, *Local Access to Mental Healthcare and Crime* 14 (Nat'l Bureau of Econ. Rsch., Working Paper No. 27619, 2020), https://perma.cc/4NWC-P9SM.

59. Jennifer L. Doleac, *New Evidence That Access to Health Care Reduces Crime*, BROOKINGS (Jan. 3, 2018), https://perma.cc/Q7MK-PPRA.

60. Sara B. Heller, Anuj K. Shah, Jonathan Guryan, Jens Ludwig, Sendhil Mullainathan & Harold A. Pollack, *Thinking, Fast and Slow? Some Field Experiments to Reduce Crime and Dropout in Chicago*, 132 Q.J. ECON. 1, 4 (2017).

61. John J. Donahue III & Peter Siegelman, *Allocating Resources Among Prisons and Social Programs in the Battle Against Crime*, 27 J. LEGAL STUD. 1, 15-22 (1998).

62. Jennifer L. Doleac, *New Evidence That Lead Exposure Increases Crime*, BROOKINGS (June 1, 2017), https://perma.cc/K464-Z5KB.

63. Caroline Palmer, David C. Phillips & James X. Sullivan, *Does Emergency Financial Assistance Reduce Crime?*, 169 J. PUB. ECON. 34, 35 (2019).

64. Charles C. Branas, Eugenia South, Michelle C. Kondo, Bernadette C. Hohl, Philippe Bourgois, Douglas J. Wiebe & John M. MacDonald, *Citywide Cluster Randomized Trial to Restore Blighted Vacant Land and Its Effects on Violence, Crime, and Fear*, 115 PROC. NAT'L ACAD. SCI. 2946, 2947 (2018).

65. Aaron Chalfin, Benjamin Hansen, Jason Lerner & Lucie Parker, *Reducing Crime Through Environmental Design: Evidence from a Randomized Experiment of Street Lighting in New York City* 3-6 (Nat'l Bureau of Econ. Rsch., Working Paper No. 25798, 2019), https://perma.cc/KSL2-3WZM.

66. *See* Patrick Sharkey, Gerard Torrats-Espinosa & Delaram Takyar, *Community and the Crime Decline: The Causal Effect of Local Nonprofits on Violent Crime*, 82 AM. SOCIO. REV. 1214, 1215 (2017).

67. *See* Donahue & Siegelman, *supra* note 61, at 1, 39-40 ("Given precise targeting, and if a broadly implemented preschool program . . . could generate half the crime-reduction benefits achieved in the pilot studies, then cutting spending on prisons and using the savings to fund intensive preschool education would reduce crime.").

68. Roberts, *supra* note 16, at 1281-97.

of a burglary or robbery over spending a relatively short stint in jail.[69] If the costs of crime are large enough to be heavily weighed in the decarceration debate, then so too are the social harms of prison. And, at least for some, social harm is not merely a secondary metric. Indeed, some scholars and activists would prefer the risk of higher crime over that of continued mass incarceration, as long as the communities most affected support that tradeoff.[70]

The harms of prison fall most directly on prisoners themselves. To begin with, incarceration "dehumanizes" and "degrades" individuals' "sense of self-worth."[71] As Allegra McLeod explains:

> The inmate's movement is tightly controlled, sometimes by chains and shackles, and always by orders backed with the threat of force; his body is subject to invasive cavity searches on command; he is denied nearly all personal possessions; his routines of eating, sleeping, and bodily maintenance are minutely managed; [and] he may communicate and interact with others only on limited terms strictly dictated by his jailers.[72]

Prisoners also experience job loss; disenfranchisement; social isolation; high rates of physical and sexual violence by inmates and staff; physical and mental health issues; and uncomfortable or unsanitary living conditions.[73] COVID-19 has made everything worse. Some prisons have the highest infection rates in the country[74] and, thirteen months into the pandemic, almost 2,200 state inmates had died from the virus,[75] almost the same number of people who died in prison each year *before* the pandemic.[76]

The harms are even more severe for women, and especially women of color. Women report far higher rates of sexual victimization than men.[77] Because there are fewer facilities, women are housed further from home, making visitation harder.[78] Many prisons also provide "substandard, minimal, or even dangerous"

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69. Megan T. Stevenson & Sandra G. Mayson, Pretrial Detention and the Value of Liberty 5 (Feb. 16, 2021) (unpublished manuscript), https://perma.cc/TP7R-LT2W.

70. *See supra* note 18 and accompanying text.

71. *Id.* at 1173.

72. *Id.* at 1173-74.

73. Roberts, *supra* note 16, at 1281-97; Naomi F. Sugie & Kristin Turney, *Beyond Incarceration: Criminal Justice Contact and Mental Health*, 82 AM. SOCIO. REV. 719, 728-29 (2017).

74. Eddie Burkhalter et al., *Incarcerated and Infected: How the Virus Tore Through the U.S. Prison System*, N.Y. TIMES (Apr. 10, 2021), https://perma.cc/S6PJ-C29S.

75. *National COVID-19 Statistics*, *supra* note 8.

76. *See* E. ANN CARSON & MARY P. COWHIG, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 251920, MORTALITY IN STATE AND FEDERAL PRISONS, 2001-2016—STATISTICAL TABLES 5 (2020) (reporting that there were over 53,000 state prison deaths from 2001 to 2016, an average of almost 3,300 annually).

77. *See* BECK ET AL., *supra* note 6, at 12, 40 (including "willing" sexual encounters with staff because "all sexual contacts between inmates and staff are legally nonconsensual").

78. *See* John C. Coughenour, *Separate and Unequal: Women in the Federal Criminal Justice System*, 8 FED. SENT'G REP. 142, 143 (1995) (noting that a woman in federal prison is housed, on average, "more than 160 miles farther from her family" than a man).

reproductive healthcare,[79] and pregnant women are often shackled during labor or separated from their newborn within a day or two after birth.[80] Because mothers more often live alone with children than do fathers, they may also be at greater risk of having children placed in foster care.[81]

Many of the costs of incarceration can continue long after release, too. Past prison stints can, for example, interfere with employment and housing opportunities.[82] Moreover, many prisoners with serious health conditions are released without medication, and others are unable to procure affordable healthcare.[83]

The harms of incarceration also extend beyond prisoners. Their families, and especially their partners and children, bear a heavy burden as well. Prison "breaks families apart, strains their economic resources, weakens parental involvement, and leads to emotional and social isolation."[84] Incarceration, particularly in high concentration, may also harm prisoners' communities. For example, roughly 15% of all state prisoners in Illinois return to just six of the seventy-seven "most socially and economically disadvantaged" neighborhoods in Chicago[85] even though those neighborhoods represent just 3% of the state's entire population.[86] High rates of incarceration may disrupt social networks, displace

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79. Crystal M. Hayes, Carolyn Sufrin & Jamila B. Perritt, *Reproductive Justice Disrupted: Mass Incarceration as a Driver of Reproductive Oppression*, 110 AM. J. PUB. HEALTH S21, S22 (2020).

80. *Id*. at S23.

81. Dorothy E. Roberts, *Prison, Foster Care, and the Systemic Punishment of Black Mothers*, 59 UCLA L. REV. 1474, 1495-96 (2012).

82. Mueller-Smith, *supra* note 53, at 3; David J. Harding, Shawn D. Bushway, Jeffrey D. Morenoff & Anh P. Nguyen, *Imprisonment and Labor Market Outcomes: Evidence from a Natural Experiment*, 124 AM. J. SOCIO. 49, 74-76 (2018); SANETA DEVUONO-POWELL, CHRIS SCHWEIDLER, ALICIA WALTERS & AZADEH ZOHRABI, WHO PAYS? THE TRUE COST OF INCARCERATION ON FAMILIES 27 (2015), https://perma.cc/4EVN-6SEW.

83. *See* Christopher Wildeman & Emily A. Wang, *Mass Incarceration, Public Health, and Widening Inequality in the USA*, 389 LANCET 1464, 1468 (2017) (reviewing the academic literature); Jacques Baillargeon, Thomas P. Giordano, Josiah D. Rich, Z. Helen Wu, Katherine Wells, Brad H. Pollock & David P. Paar, *Accessing Antiretroviral Therapy Following Release from Prison*, 301 JAMA 848, 855 (2009) (reporting that more than 60% of parolees with HIV in Texas experienced an interruption in anti-viral treatment of sixty days or more because they did not fill a prescription).

84. Todd R. Clear, *The Effects of High Imprisonment Rates on Communities*, 37 CRIME & JUST. 97, 103-04 (2008). Though, a few studies that plausibly identify causal effects produce opposite results. *See* Will Dobbie, Hans Grönqvist, Susan Niknami, Mårten Palme & Mikael Priks, *The Intergenerational Effects of Parental Incarceration* 15-19 (Harv. Kennedy Sch. Fac. Rsch. Working Paper No. RWP19-031, 2019), https://perma.cc/N6LX-KVS9; Samuel Norris, Matthew Pecenco & Jeffrey Weaver, *The Effects of Parental and Sibling Incarceration: Evidence from Ohio*, 111 AM. ECON. REV. 2926, 2928 (2021); Robynn Cox & Sally Wallace, *Identifying the Link Between Food Security and Incarceration*, 82 S. ECON. J. 1062, 1073-74 (2016).

85. NANCY G. LAVIGNE & CYNTHIA A. MAMALIAN WITH JEREMY TRAVIS & CHRISTY VISHER, URB. INST., JUST. POL'Y CTR., A PORTRAIT OF PRISONER REENTRY IN ILLINOIS 47, 51 (2003), https://perma.cc/8N4N-Q9GN.

86. There were 12,419,231 residents of Illinois in 2000. *Population of Illinois*, CENSUS VIEWER, https://perma.cc/4A2X-LTZJ. Those six neighborhoods had roughly 332,000 residents in 2003. LAVIGNE ET AL. *supra* note 85, at 57-59.

workers, remove role models, and expose residents to infection and disease in prison.[87]

As with crime, it's hard to predict precisely how different decarceration strategies change the social harms of prison. But, given that disproportionate harm likely accrues at admission or the first few months thereafter—due to "the psychological adjustment [and] disruption to employment, housing status, child-care arrangements, and other life circumstances"[88]—reducing admissions likely mitigates social harm more than reducing time served because it diverts a larger number of people from prison altogether.

C. Racial Disparity

In addition to minimizing crime and social harm, decarceration should also seek to decrease racial disparities behind bars. We tend to think that the four-fold increase in the incarceration rate in recent decades was unprecedented, but, at least in relative terms, prisons in some southern states soared by even larger margins after the Civil War, initiating large racial disparities that persist until today.[89] In Georgia, for example, the prison population increased ten-fold in the following three decades, and, by the late 1890s, prisons were "almost entirely" Black.[90] Racial discrimination in policing and prosecution played a large role in generating these disparities, some of which were driven by demands for cheap labor as a substitute for slavery.[91] Indeed, there is historical and some quantitative evidence that Black people were imprisoned at higher rates in areas with greater labor shortage.[92] In the North, racial disparities in prison predated the Civil War,

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87. Roberts, *supra* note 16, at 1281; Rucker C. Johnson & Steven Raphael, *The Effects of Male Incarceration Dynamics on Acquired Immune Deficiency Syndrome Infection Rates Among African American Women and Men*, 52 J.L. & ECON. 251, 270-73 (2009).

88. Stevenson & Mayson, *supra* note 69, at 34 (making a similar point in the jail context and noting that detaining "two different people for two weeks each likely creates graver harms than detaining a single person for one month").

89. This was, in large part, due to the very low baseline incarceration rates at the time. *See* MARGARET WERNER CAHALAN WITH LEE ANNE PARSONS, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 102529, HISTORICAL CORRECTIONS STATISTICS IN THE UNITED STATES, 1850-1984, at 30 (1986) (reporting that there were sixty-one state and federal prisoners per 100,000 in the country in 1880).

90. Matthew J. Mancini, *Race, Economics, and the Abandonment of Convict Leasing*, 63 J. NEGRO HIST. 339, 343, 346 (1978).

91. *See* William Cohen, *Negro Involuntary Servitude in the South, 1865-1940: A Preliminary Analysis*, 42 J.S. HIST. 31, 33-34 (1976) ("Broadly drawn vagrancy statutes enabled police to round up idle blacks in times of labor scarcity."); DAVIS, *supra* note 9, at 29.

92. *See* Cohen, *supra* note 91, at 50 ("At harvest time cotton farms experienced an acute need for a large work force, and it was precisely at such times that the police became most active in discovering vagrants."); Melissa Rubio Ramos, The Economics of Coercive Institutions, Conflict, and Development 25 (May 2020) (Ph.D. dissertation, University of Gothenburg), https://perma.cc/7T3D-UTJ2 (finding that counties exposed to the Boll Weevil plague, which damaged cotton production, experienced "lower black and white incarceration rates" and also finding that the effect on black incarceration was "three times higher").

were even higher than in the South, and remain so.[93]

While racial disparities in state and federal prison have fallen in recent years, they remain large. The Bureau of Justice Statistics estimates that, in 2016, Black and Hispanic incarceration rates were approximately 1,200 and 590 prisoners per 100,000 residents, respectively. In contrast, the white incarceration rate was approximately 220 per 100,000 residents.[94] These statistics mask even greater disparities conditioned on other demographic variables. One study estimates that, on any given day in 2007, about 26% of Black men between the ages of eighteen and thirty with less than a high school education were incarcerated, with 14% in state prison.[95]

These racial disparities are the result of social policy choices and racial discrimination in the criminal justice system. To begin with, deep structural, economic, and social inequality contribute to higher rates of crime in disproportionately Black neighborhoods.[96] Criminal justice policy has also substantially increased disparities[97] through the war on drugs;[98] sentencing policies like three-strike laws and mandatory minimums for violent and drug offenses;[99] policing policies like order maintenance and low-level misdemeanor enforcement;[100] and administrative court policies like cash bail. And there is evidence that criminal justice officials engage in racial discrimination in individual cases at each stage

93. William J. Sabol, *Racially Disproportionate Prison Populations in the United States: An Overview of Historical Patterns and Review of Contemporary Issues*, 13 CONTEMP. CRISES 405, 408 (1989).

94. *See* CARSON, *supra* note 3, at 9.

95. RAPHAEL & STOLL, *supra* note 7, at 17.

96. *See* Richard H. McAdams, *Economic Costs of Inequality*, 2010 U. CHI. LEGAL F. 23, 37 (2010); Lauren J. Krivo & Ruth D. Peterson, *Extremely Disadvantaged Neighborhoods and Urban Crime*, 75 SOC. FORCES 619, 621 (1996).

97. Michael Tonry, *The Social, Psychology, and Political Causes of Racial Disparities in the American Criminal Justice System*, 39 CRIME & JUST. 273, 274 (2010).

98. *Id.*; MICHAEL TONRY, PUNISHING RACE: A CONTINUING AMERICAN DILEMMA 53-76 (2011); MICHELLE ALEXANDER, THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS 185-90 (2010).

99. Linda S. Beres & Thomas D. Griffith, *Do Three Strikes Laws Make Sense? Habitual Offender Statutes and Criminal Incapacitation*, 87 GEO. L.J. 103, 110-12 (1998); Brian Chad Starks & Alana Van Gundy, *Race and the Three Strikes Law*, *in* COLOR BEHIND BARS: RACISM IN THE U.S. PRISON SYSTEM 413, 426-27 (Scott Wm. Bowman ed., 2014).

100. Sharad Goel, Justin M. Rao & Ravi Shroff, *Precinct or Prejudice? Understanding Racial Disparities in New York City's Stop & Frisk Policy*, 10 ANNALS APPLIED STAT. 365, 379-80 (2016).

of the criminal process—in deciding whom to stop,[101] detain pretrial,[102] and convict at trial;[103] and in deciding how to charge[104] and sentence.[105] In designing decarceration, policymakers should prioritize those strategies that minimize racial disparities behind bars.

D. Timing

One final metric of decarceration is timing. In practice, advocates have generally pushed for medium-term timelines—eight to fifteen years.[106] The most prominent campaign, Cut50, has pushed for a 50% reduction in ten years.[107]As a matter of public policy, fast timelines are probably better, at least to a certain point. Indeed, faster decarceration minimizes the aggregate social costs of prison over time.

Faster decarceration delivers advantages in political strategy, too: once a policy is adopted, speedy implementation improves the chance of success. As one example, in 2013, the Arkansas prison population was decreasing due, in part, to a series of reforms implemented by the state.[108] In that year, a parolee committed murder, fueling a wave of negative media attention. Under pressure, probation and parole "tighten[ed] revocation policies," which led the prison population to rise again.[109] To succeed, decarceration must move faster than the oscillating swings of politics.

Still, there are costs to speed. Because of prison's intense geographic concentration, a sudden spike in releases might overwhelm local reentry systems if they're not prepared. Another cost concerns political feasibility. While speedy decarceration policies may be more successful once adopted, they may be harder

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101. *Id*.

102. David Arnold, Will Dobbie & Crystal S. Yang, *Racial Bias in Bail Decisions*, 133 Q.J. ECON. 1885, 1889 (2018).

103. *See, e.g*., Shamena Anwar, Patrick Bayer & Randi Hjalmarsson, *Impact of Jury Race in Criminal Trials*, 127 Q.J. ECON. 1017, 1032-35 (2012).

104. M. Marit Rehavi & Sonja B. Starr, *Racial Disparity in Federal Criminal Sentences,* 122 J. POL. ECON. 1320, 1323 (2014).

105. David S. Abrams, Marianne Bertrand & Sendhil Mullainathan, *Do Judges Vary in Their Treatment of Race?*, 41 J. LEGAL STUD. 347, 350 (2012).

106. *See* Eric Eckholm, *A.C.L.U. in $50 Million Push to Reduce Jail Sentences*, N.Y. TIMES (Nov. 6, 2014), https://perma.cc/H979-MGSK ("[ACLU Director] said the goal of the campaign was to reduce incarceration by 50 percent in eight years."); NAZGOL GHANDNOOSH, SENT'G PROJECT, CAN WE WAIT 75 YEARS TO CUT THE PRISON POPULATION IN HALF? 2 (2018) ("A growing number of policy experts and advocacy organizations are now calling for a 50 percent cut in the U.S. prison population within the next 15 years."); Dana Goldstein, *How to Cut the Prison Population by 50 Percent*, MARSHALL PROJECT (Mar. 4, 2015), https://perma.cc/VN4E-6BK4.

107. *See* Camille Augustin, *#cut50 Co-Founder Jessica Jackson Sloan Breaks Down the Mechanics of Mass Incarceration*, VIBE (Dec. 29, 2017, 3:46 PM), https://perma.cc/E3SA-GMLN (noting that cut50, which was established in 2015, seeks to reduce the incarceration rate by 50% by 2025).

108. HARVELL ET AL., *supra* note 43, at 59.

109. *Id*.

to adopt in the first place because they provide weaker protections for elected officials against backlash in the event of a high-profile crime (as in Arkansas). For this reason, decarceration strategies that immediately impact the prison population—those that cut admissions or time served for existing prisoners—may be harder to adopt than strategies with delayed effects. Strategies that reduce time served for future prisoners may be easiest to adopt because they have little effect on the prison population until years later, at the *end* of *future* prisoners' terms. This form of political insulation is particularly powerful where needed most—decarcerating people convicted of violent offenses with long sentences, whose early release won't come till many years later, perhaps after some of the politicians responsible for its adoption have already left office.

With metrics in hand, I turn next to the core database I use to describe the national prison population and to forecast the effects of decarceration strategies.

II. DATA

Since 1983, the National Corrections Reporting Program (NCRP) has collected annual data on individuals admitted to and released from state prisons in participating jurisdictions.[110] My analysis focuses on the thirty-nine states—which account for 90% of all residents in the country—that reported prison term records to the NCRP in 2016, the most recent year for which data is available.[111]

The NCRP contains individual-level information on all 1,677,513 unique prison stints open for at least one day in 2016. For each stint, the dataset contains the year and month of admission and release, and demographic information like gender, age, race, and education. The NCRP also classifies each prison stint into 181 codes based on the most serious convicted offense. I aggregate those codes into thirteen crime types based on the NCRP's classification scheme: murder (including non-negligent manslaughter), negligent manslaughter, rape and sexual assault, robbery, assault, other violent offenses,[112] burglary, larceny, motor

110. I use the restricted-access dataset, provided by the Interuniversity Consortium for Political and Social Research (ICPSR), covering 1991 to 2016. From the 1980s until 2010, the NCRP was administered by the United States Census Bureau. WILLIAM RHODES, GERALD GAES, TOM RICH, YULI ALMOZLINO, MICA ASTION, RYAN KLING, JEREMY LUALLEN, KEVIN NEARY & MICHAEL SHIVELY, ABT ASSOCS., WHITE PAPER #1: OBSERVATIONS ON THE NCRP 1 (2012). Two studies that used data from that period reported extensive data quality issues. *See* Derek Neal & Armin Rick, *The Prison Boom & Sentencing Policy*, 45 J. LEGAL STUD. 1, 17-18 (2016); John F. Pfaff, *The Myths and Realities of Correctional Severity: Evidence from the National Corrections Reporting Program on Sentencing Practices*, 13 AM. L. & ECON. REV. 491, 519-24 (2011). Since then, Abt Associates has taken over administration of the program, restructured the data series, replaced or dropped data with quality issues, and created a battery of diagnostic data quality tests. *See, e.g.*, RHODES ET AL., *supra*, at 9-10. I use the NCRP dataset created by Abt Associates.

111. The data include all states except: Alaska, Arkansas, Connecticut, Hawaii, Idaho, Maryland, New Mexico, North Dakota, Oregon, Vermont, and Virginia.

112. At year-end 2016, "other violent offenses" represented 3% of prisoners. Over half were kidnappings, and the rest were hit and run, child abuse, blackmail/extortion, and a few unspecified "violent" crimes.

vehicle theft, fraud, other property offenses, drugs (including possession, distribution, trafficking), public order, and other/unspecified. Due to low sample sizes, I combine larceny and motor vehicle theft together. I also reassign each of the 98,000 terms missing offense information to "other/unspecified."

The NCRP's major strength is that it is the only dataset that contains individual-level information about prison stints for a large number of states. It therefore provides the best opportunity to study decarceration at the national level.

But the data series also has some limitations. First, it does not cover local jails—for which national individual-level data is simply not available—or federal prison. Thus, my analyses only examine the effects of decarceration strategies on state prisons, which together house roughly 80% of all adults serving time for criminal convictions in the United States.[113]

Second, prison administrative records significantly undercount Hispanic prisoners. The National Prisoner Statistics program, which collects administrative data, reports that 16% of state prisoners are Hispanic,[114] and I find the same in the NCRP. In contrast, the 2016 National Prison Survey, which uses the preferred methodology of asking people to self-identify ethnicity, finds that 21% are Hispanic—roughly 30% more.[115] As Hispanic people represent about 16% of the American population, the NCRP ethnicity data inaccurately suggest that Hispanic people are not overrepresented in state prisons relative to the general population.[116] For that reason, my measure of race only distinguishes between two groups, Black and other.[117]

The third limitation concerns the NCRP's variable indicating admission type—whether, for example, a prison stint arises from a new court commitment, a revocation of probation or parole because of a new substantive offense, or a revocation for a technical violation. Unfortunately, this variable is unreliable.[118] For that reason, I cannot distinguish between prison stints for new commitments and those for revocations, which means I cannot forecast the effects of reducing

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113. Another 470,000 prisoners are detained pretrial in local jails, before conviction. Sawyer & Wagner, *supra* note 1.

114. *See* CARSON, *supra* note 40, at 7.

115. *Id*.

116. It was not possible to adjust for misclassified Hispanic prisoners because the forecast methodology requires granular data about individual prisoners, including information on convicted crime, year of admission, and time served and because prisoners who self-identify as Hispanic but are officially recorded as "white" may not be representative of those officially recorded as "Hispanic."

117. The NCRP also tracks data on the following groups: Asian, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, two or more races, and other. Their sample sizes, however, are very small. I group them with "other."

118. *See* WILLIAM RHODES, GERALD GAES, TOM RICH, YULI ALMOZLINO, MICA ASTION, CHRISTINA DYOUS, RYAN KLING, JEREMY LUALLEN, KEVIN NEARY & MICHAEL SHIVELY, ABT ASSOCS., WHITE PAPER #2: NCRP REPORTING 3 n.7 (2011) ("We discourage stratification by type of admissions and type of release. These details may be accurate in some states, but they appear unreliable in most. There are two problems. It seems likely that prison authorities . . . are unaware of admission type. Or, if admission type is recorded accurately, the type may have little meaning.").

or eliminating prison admissions for technical violations specifically.

The last major limitation is that admissions arising from revocations are often coded under the same offense classification as the original admission. This problem is most significant for revocations based on new crimes.[119] Identifying offense classifications in these cases is notoriously difficult—due both to administrative limitations in data collection and also substantive and conceptual ambiguities inherent in the revocation process.[120] Indeed, even if we knew the crime charged in the arrest, the most relevant offense classification would depend on local rules and practices and might still be unclear.[121] Thus, for a significant fraction of revocations for a new crime, the NCRP may erroneously misclassify the offense code based on that of the initial prison admission. I turn next to describing the composition of American prisons.

III. DESCRIBING STATE PRISONERS

To choose a decarceration strategy, it is critical to have descriptive information about who is in and admitted to prison each year. In this Part, I review demographics, the most serious convicted charge, and time served among state prisoners based largely on the 1,158,000 year-end prisoners and 501,000 admissions in the NCRP in 2016.

A. Demographics

Figure 1 describes the demographic composition of prisoners in the thirty-nine states that reported data to the NCRP in 2016. The black points in the Race/Ethnicity panel show, for example, that non-Hispanic Black prisoners account for 40% in the year-end population, as do non-Hispanic white prisoners. Roughly 16.5% are recorded as Hispanic, but, as noted, administrative prison records typically undercount Hispanic people; the number in self-report surveys is closer to 21%. Compared to the year-end population, the gray dots show that white prisoners make up a substantially larger fraction of admissions—48%. The reverse is true for Black and Hispanic prisoners, reflecting that, on average, they experience longer time served per admission.

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119. In the case of revocations for genuine technical violations, this is likely not a problem. The offense classification of the initial admission is most relevant because the technical violation triggering admission is not itself a crime and would, thus, not trigger incarceration had the individual not been convicted of the initial offense.

120. For a review of the literature, see GERALD GAES, WILLIAM RHODES, TOM RICH, JARED EDGERTON, RYAN KLING & JEREMY LUALLEN, ABT ASSOCS., CLASSIFYING PRISONERS AND RETURNS: PROBLEMS AND POTENTIAL SOLUTIONS 2-3 (2015).

121. *See id.* at 2-3, 20-21 ("While we are skeptical about the accuracy of admission codes for prison returns in many states, the accuracy is somewhat beside the point. Even when codes are accurate, interpretation is made ambiguous by the fact that characterizing the return is complicated by the revocation process.").

The prison population aged significantly in recent decades, but it remains substantially younger than the general population.[122] Roughly 11% of prisoners at year-end 2016 were under twenty-five and another 33% were between twenty-five and thirty-four. Roughly 12% are over fifty-five. Predictably, the age distribution among admissions is younger.

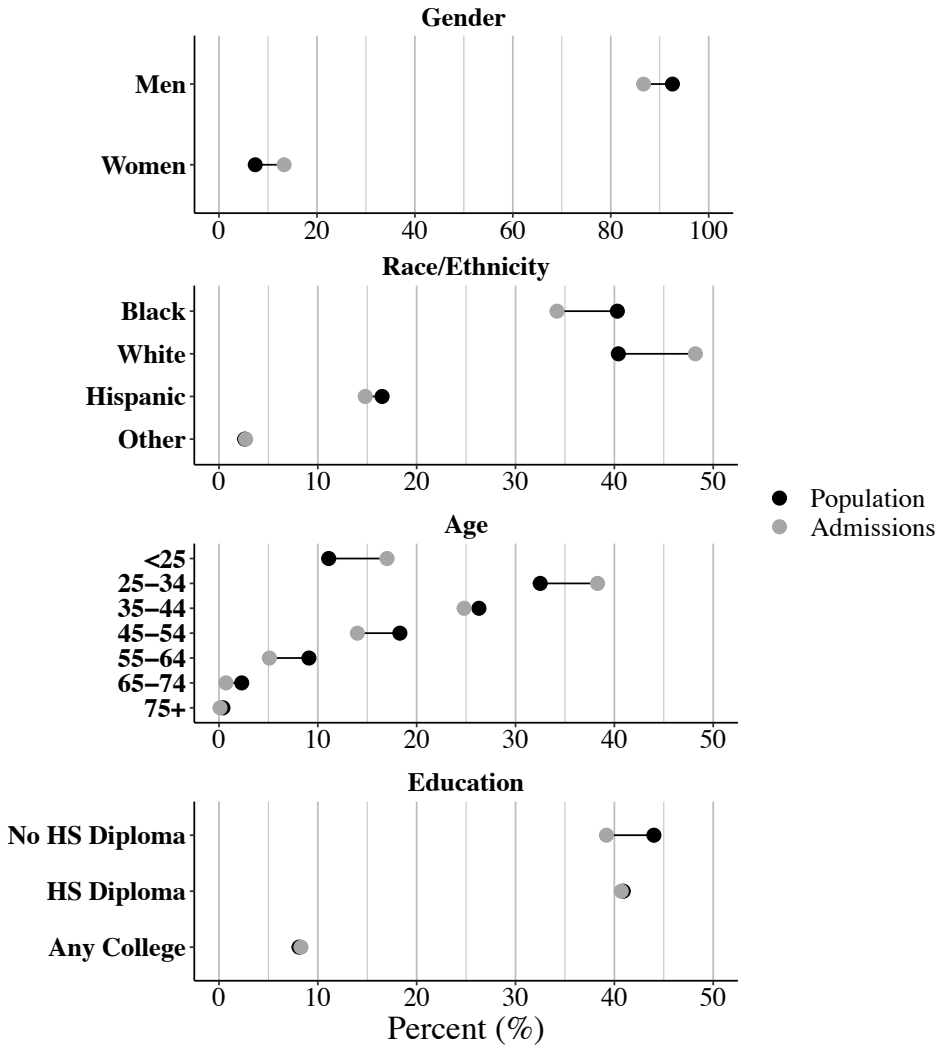
State prisoners have relatively low educational attainment. Among the twenty-four states that reliably reported education data, 44% of year-end prisoners did not attain a high school diploma or GED. Another 41% had such a degree, and just 8% had any college education. The trends are similar for admissions.

The NCRP does not collect information on sexual orientation, but the National Prison Survey estimates that 6% of men and 33% of women in state prison identified as gay, bisexual, or lesbian in 2011.[123]

122. *See* E. ANN CARSON & WILLIAM J. SABOL, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 248766, AGING OF THE STATE PRISON POPULATION, 1993-2013, at 4 (2016) (describing changes in the age composition of prisoners from 1993 to 2013).

123. Ilan H. Meyer, Andrew R. Flores, Lara Stemple, Adam R. Romero, Bianca D. M. Wilson & Jody L. Herman, *Incarceration Rates and Traits of Sexual Minorities in the United States: National Inmate Survey*, 2011-2012, 107 AM. J. PUB. HEALTH 267, 269 (2017).

Figure 1. Demographics of Year-End Prison Population and Admissions, 2016[124]



124. There is virtually no missing data for gender and age. Roughly 0.1% of the prison population is missing race information. For education, I only include information from the twenty-four states that reported education information for at least three-quarters of the year-end prison population. Among those states, an average of 7% of prisoners are missing education.

B. Criminal Offenses

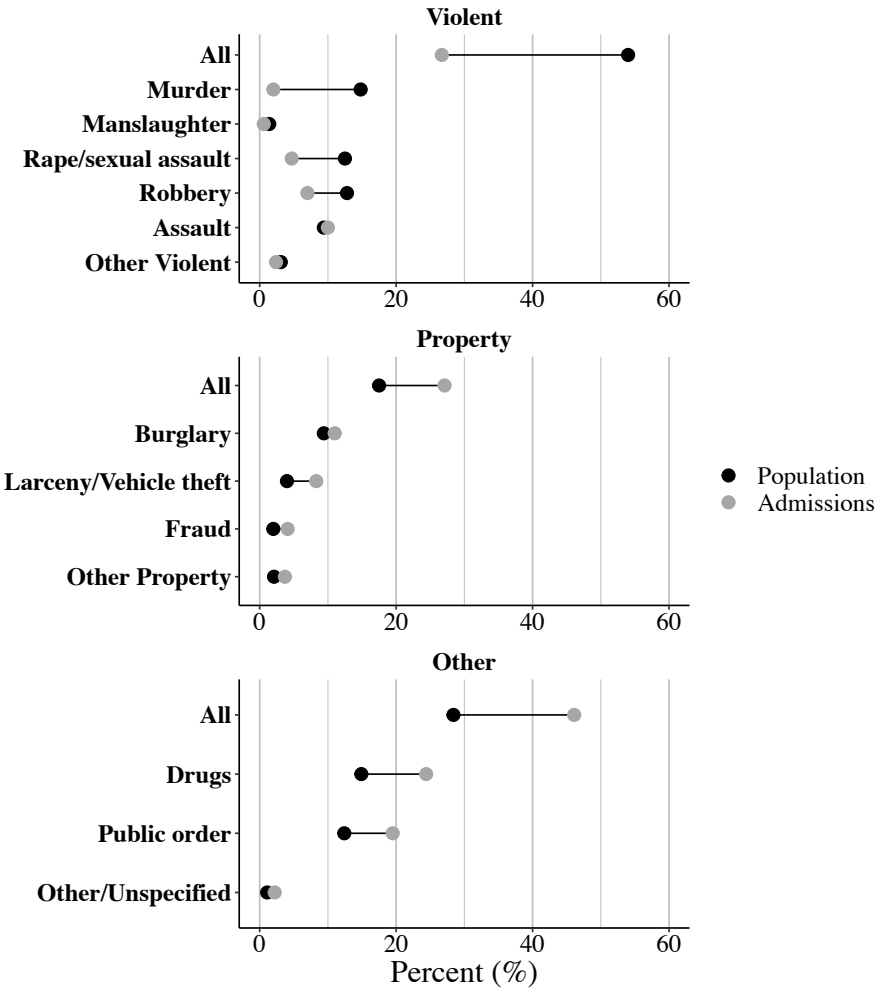
Next, I describe the most serious crime for which prisoners serve time. The black points in Figure 2 show the percent of the 2016 NCRP year-end prison population by most serious conviction. A few statistics stand out. First, violent crime represents over half of year-end prisoners' most serious conviction—54%. Property crimes represent just 18% and other crimes 28%. Second, and even so, the category of violent crimes within prison are serious.[125] Just over half of the violent crimes are murder, rape, or sexual assault. Third, as others have recently observed, contrary to a common story about how mass incarceration is driven by the war on drugs, people convicted of drug offenses represent just 15% of the state prison population.[126] Even if we release them all, the year-end prison population would fall by just 15%.

The gray points, which depict 2016 admissions by most serious convicted charge, highlight the need to distinguish between the static prison population and the flow of admissions. Violent crime represents only a quarter of annual admissions, far less than the 54% of the year-end population. The same pattern is consistent within each violent offense type—for all but one, the gray point for admissions is far to the left of the black point for the population. The most extreme example is murder, which makes up 15% of the year-end population but only 2% of admissions. Property and other offenses reflect the same pattern in reverse. Across the board, they make up more of admissions than of the static population, and drugs offer a particularly stark example, making up a quarter of admissions, far more than its 15% of the population.

125. *See* Pfaff, *supra* note 25, at 200 (finding that only a quarter of the total number of prison-bed-days resulting from violent offenses are for non-index offenses).

126. PFAFF, *supra* note 30, at 32-33.

Figure 2. Percent of Year-End Prison Population and Admissions by Convicted Offense, 2016



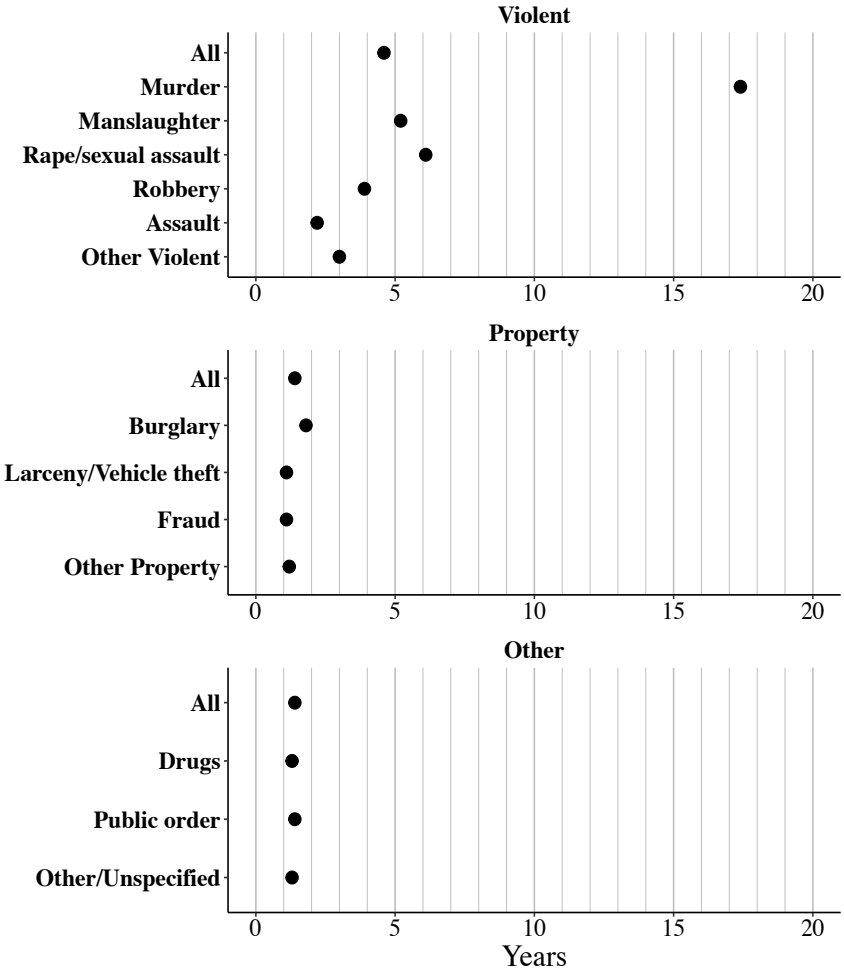
C. Time Served

The NCRP does not reliably collect information on how long prisoners admitted today will serve in total, in part because expected time served is difficult to predict, particularly in states with indeterminate sentencing.[127] But if we assume that the prison population is stationary, as it was around 2016, there is a simple trick for estimating the average total expected time served for those admitted in that year: I divide the number of year-end 2016 prisoners by the number of prisoners released in 2016.[128] Figure 3 shows the estimated expected time

127. RAPHAEL & STOLL, *supra* note 7, at 49.
128. *Id.* at 50.

served by most serious convicted charge. Prisoners convicted of violent crimes are expected to serve an average of almost five years in total; though, that number is much higher for murder, roughly seventeen years. As the figure makes clear, on average, expected time served is quite low for all other offense categories. The average prisoner convicted of property or drug offenses is expected to serve just under one and a half years. Though, some prisoners in these categories will serve far longer sentences.

Figure 3. Time Served in Years, 2016



D. International Comparison

While stark, the numbers described so far somehow underplay how remarkable the American prison system really is. To give international context, Figure

4 presents a familiar graph, comparing post-conviction incarceration rates for all member countries of the Organization for Economic Co-operation and Development (OECD).[129] Predictably, the United States tops the list, with a post-conviction incarceration rate of 507 per 100,000 residents, which includes all prisons and jails.

But the figure also highlights something new. Using 2016 data from the thirty-nine NCRP states, the black bar shows that the state prison incarceration rate for *murder and sexual assault* falls right in the middle of the pack compared to the *total* incarceration rate of all OECD countries. Even more striking, only one Western European country—the United Kingdom—has a higher total incarceration rate. In other words, even if the United States released every prisoner who isn't serving time for murder and sexual assault, we would still have the second highest incarceration rate in Western Europe. And note that this estimate does not even include people held in federal prison or local jail.

What explains the high rates of American incarceration? Some of the difference is crime. Indeed, the homicide rate in the United States is nearly three times higher than the average OECD country.[130] But for most offenses, the United States is not a huge outlier.[131] The bigger driver of American incarceration is harsh criminal justice policy. Indeed, the most sophisticated international study concludes that American carceral exceptionalism "results primarily from much greater lengths of prison sentence . . . per recorded crime[,] conviction, [and prison] commitment."[132] To a lesser extent, it is also driven by higher "probabilities of imprisonment given a conviction."[133] With these basic patterns in mind, I now turn to my forecasts.

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129. The Institute for Crime & Justice Policy Research collects information on the total incarceration rate and the proportion of prisoners detained pretrial for most countries. *See World Prison Brief*, INST. FOR CRIME & JUST. POL'Y RSCH., https://perma.cc/2WBW-WVYP (archived Jan. 27, 2022). I compute country-level post-conviction incarceration rates by multiplying the first variable by one minus the second. The incarceration rate for the United States for murder and sexual assault alone is based on 2016 NCRP data from thirty-nine states and their respective census population information.

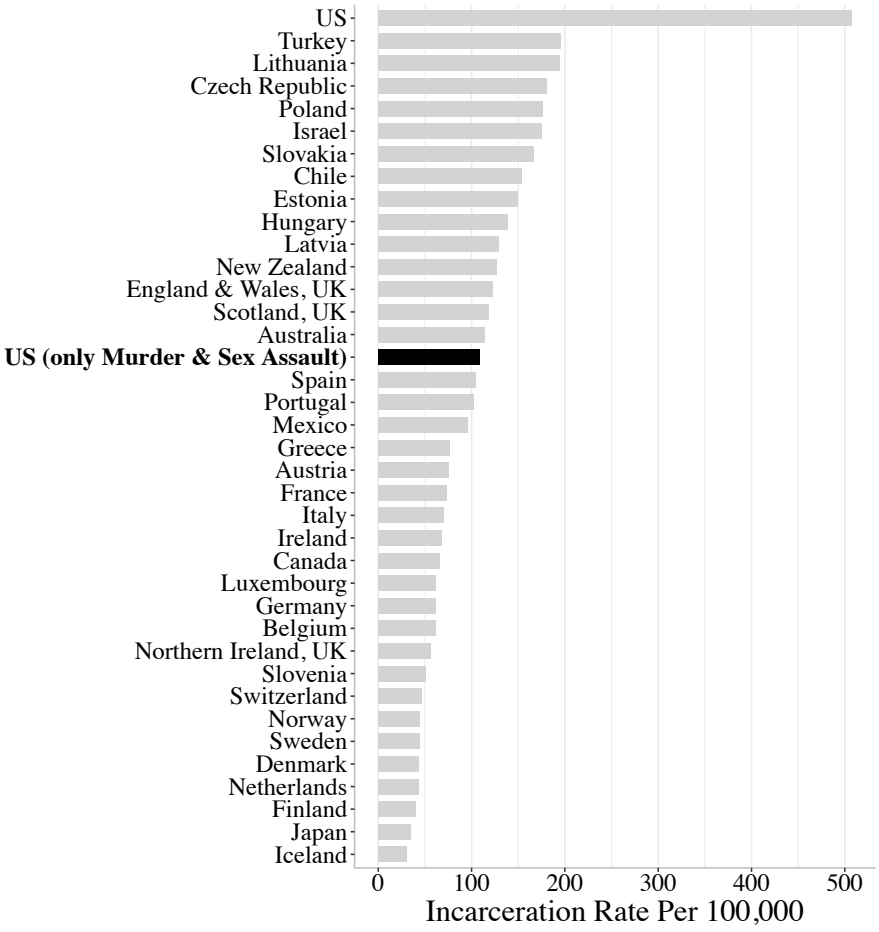
130. Holger Spamann, *The U.S. Crime Puzzle: A Comparative Perspective on U.S. Crime and Punishment,* 18 AM. L. & ECON. REV. 33, 40 (2015).

131. *Id.*

132. Alfred Blumstein, Michael Tonry & Asheley Van Ness, *Cross-National Measures of Punitiveness*, 33 CRIME & JUST. 347, 348 (2005).

133. *Id.*

Figure 4. Post-Conviction Incarceration Rates for OECD Countries



IV. FORECASTING DECARCERATION

In this Part, I forecast the effects of a wide range of decarceration strategies and identify those that would likely reduce the prison population by 25, 50, and 75%. Among the strategies that would achieve these thresholds, I then identify the best performers against each metric. The results thus illustrate how to reduce the prison population by 25, 50, and 75% depending on which metric we care about most.

It's worth pausing for a moment to acknowledge that this analysis might seem backwards, at least at first, because it seems to skip a beat, asking how to decarcerate a given number of prisoners before answering what that number should be. But as a substantive matter, these issues are inextricably linked; it's

difficult to decide by how much we should shrink prisons if we do not yet know what it would take to do so. And, as a strategic matter, the question of how to reduce the prison population by a given number is also politically powerful. Proponents of prison reduction hold widely divergent philosophical values.[134] While they likely disagree on why we should decarcerate by some number, they might nonetheless form an "overlapping consensus" about how much.[135] Thus, answering how to reduce the prison population by a given number can be critical to decarceration, even if we lack one definitive answer to the substantive reasons leading to a particular numeric target.

In this Part, I forecast and sort a variety of decarceration strategies to advance these and other goals. Part IV.A describes my methodology and its limitations. Part IV.B reports the results of hundreds of forecasting models. Readers who are more interested in bottom-line results should go straight to Part IV.C, which whittles down the hundreds of strategies to those that perform best against the metrics of decarceration. Part IV.D then reports the results of a robustness check that attempts to account for the effects of diminished deterrence and incapacitation.

A. Methodology

As noted, to model the effects of decarceration, it is necessary to account for both the static prison population at a given time and the flow of new admissions. A few papers have forecasted prison populations at the state-level accounting for flow,[136] and I build on that work in several ways. First, I conduct my analysis at the national level, using data from the NCRP on all state prisoners in thirty-nine states, which together cover 90% of U.S. residents. While my results may miss state-specific patterns, they generalize to nearly the entire country.[137] Second, the existing flow papers use methodologies that can accurately forecast the effects of decarceration over the long term—say, twenty or thirty years—but they are less suited to short-term projections, which limits their utility to evaluate the performance of decarceration strategies against the metric of timing.[138] My methodology is designed to make forecasts in both the short and long term. Third, my approach forecasts the effect of decarceration on racial disparities while accounting for differences in sentences across racial groups.[139] And finally, unlike prior

134. Tonry, *supra* note 12, at 507-508 (documenting examples of conservative politicians professing a commitment to reduce the prison population).

135. *See* JOHN RAWLS, POLITICAL LIBERALISM 144 (1993).

136. *See* Bostwick, *supra* note 26, at 16-18 (forecasting effects of different reduction strategies in Pennsylvania); *Smart Justice 50-State Blueprints*, *supra* note 26 (forecasting effects of a decarceration strategy in each of the 50 states).

137. *See* Leah Sakala & Bryce Peterson, *What We Learn from Forecasting State Prison Populations*, URB. INST.: URB. WIRE (Oct. 1, 2018), https://perma.cc/ZVF4-49U6 (arguing that "there is no one-size fits-all solution for reducing the total number of people in prison").

138. *See infra* Part IV.A.1.

139. One prior study examined the effect of decarceration on racial disparity but relied on a heavy assumption that time served does not vary across racial groups. *See* ELIZABETH

studies, which forecast a small number of selected decarceration strategies—in some cases just one, in others a couple more—I forecast hundreds. I do so, in part, to draw more general lessons about the effects of decarceration. But I also do so in recognition that the metrics of decarceration and their ranked ordering are subject to reasonable debate, and that readers may have different views about which ones are most important.

Ultimately, my forecasting methodology has two main components: data inputs and a forecasting algorithm. I discuss each in turn.

1. Data Inputs

Forecasting the prison population requires three basic inputs. First, it requires data on the number of people currently in prison by offense type and race. As the closest approximation, I use NCRP data on prisoners at year-end 2016, which, as noted, is the most recent year for which data is available.

While this project predates COVID-19, the spread of the virus in early 2020 introduces an important limitation—the NCRP data does not account for changes in admissions and releases due to the virus. This complication may be far less significant than it first appears. Unlike local jails, which have released many people early, prisons have tragically resisted that trend.[140] Purely from a methodological perspective, the bigger challenge is that many state prisons have substantially reduced admissions.[141] Ultimately, however, a short-term reduction in admissions—even a severe one—is unlikely to dramatically reshape prisons because most admissions are for relatively short stints. Indeed, as I show in Appendix Table A.1, if prisons admitted zero people for an entire year—an extreme assumption—the prison population would bounce back to roughly 95% of its size (absent the drop in admissions) within five years, and 98% within ten. To sharpen the point further, if prisons admit zero people for two full years, the population

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PELLETIER, BRYCE PETERSON & RYAN KING, URBAN INST., THE PRISON POPULATION FORECASTER: METHODOLOGY AND APPENDIXES 9 (2018) ("[W]e examined the racial and ethnic representation within each offense category for the last year of available NCRP data, which was usually 2015. In other words, we determined the percentage of the population in prison for that offense in 2015 that was white, black, Hispanic, and so on. We then applied these percentages to the offense-level 2025 year-end baseline population . . . and the 2025 year-end population under the forecast.").

140. The UCLA Law COVID Behind Bars Data Project reports that prisons in 32 states released just 37,300 people during the first wave of the virus—a mere 5% of their total population—and many of the releasees had only a few months left on their sentences anyway. Sharon Dolovich, *UCLA Law COVID Behind Bars Data Project*, UCLA PRISON LAW AND POLICY PROGRAM, https://perma.cc/JA6C-QC78 (archived Jan. 29, 2022); *see also* Emily Widra & Peter Wagner, *While Jails Drastically Cut Populations, State Prisons Have Released Almost No One*, PRISON POL'Y INITIATIVE (May 14, 2020), https://perma.cc/HHS9-VMXX ("[S]tate prisons—where social distancing is just as impossible as in jails, and correctional staff still move in and out every day—have been much slower to release incarcerated people [than local jails].").

141. Emily Widra, *With Over 2,700 Deaths Behind Bars and Slow Vaccine Acceptance, Prisons and Jails Must Continue to Decarcerate*, PRISON POL'Y INITIATIVE (June 23, 2021), https://perma.cc/4WPH-ELV7.

would return to 90% of its size in five years, and 96% in ten. In other words, assuming the criminal justice system returns to "normal" at some point in the next few years—a plausible, though regrettable, assumption given its historical resistance to change—there is much we might learn from the NCRP.

Second, forecasting the prison population also requires estimates of the number of admissions in future years by offense type and race. Admissions are a function of crime rates and criminal justice policy. Like other prior work in the literature, I assume in my baseline forecast that crime rates and criminal justice policy, and thus also admission rates, remain stable going forward at 2016 levels.[142] This assumption is less heavy than it might seem. For example, changes in criminal behavior can "explain very little of the increase in state incarceration rates" from the 1980s to the early 2000s, less than 9%.[143] Changes in criminal justice policy during that period, however, were "paramount."[144]

Finally, forecasting the prison population requires estimates of the timing of future prison releases by offense type and race—both for "real" prisoners who are currently behind bars as of year-end 2016 and "simulated" prisoners admitted in subsequent periods of the forecast.[145] As noted, the NCRP does not reliably collect information on time served for people who have not yet been released, in part because it is difficult to predict in many states.[146]

The most common solution is to assume that the prison population is stationary, meaning that the number of admissions and releases are equal and the total population remains constant from one period to the next.[147] While stationarity is a theoretical concept that never perfectly describes a prison population, it appears roughly accurate. Indeed, in 2016, the total number of state prison admissions and releases were very similar: 561,000 and 574,000, respectively.[148] And in the

142. *See* Bostwick, *supra* note 26, at 18.

143. RAPHAEL & STOLL, *supra* note 7, at 77-79.

144. *Id*.

145. In demographic terminology, I assume that prison is a single-decrement process—that prisoners only exit by being released. But, in fact, prison is a multiple-decrement process because prisoners can also exit through death. Because prison deaths are rare, representing less than 1% of all exits in 2016, I assume that all exits are non-death releases. *Compare* CARSON, *supra* note 40, at 11 (reporting 574,000 releases from state prison in 2016) *with* CARSON & COWHIG, *supra* note 76, at 5 (reporting 4,100 deaths in state prison in 2016).

146. *See supra* text accompanying note 127.

147. For examples of studies relying on stationarity assumption, see RAPHAEL & STOLL, *supra* note 7, at 50-51 and PELLETIER ET AL., *supra* note 139, at 6. For a rigorous discussion of stationarity in prison, see Evelyn J. Patterson & Samuel H. Preston, *Estimating Mean Length of Stay in Prison: Methods and Applications*, 24 J. QUANTITATIVE CRIMINOLOGY 33, 34-36 (2008) ("A stationary population is created when the annual number of entrances to a state has been constant for a long period and the set of duration-specific attrition rates from that state have also been constant over time. When these conditions prevail in a prison population, the number of prisoners at a particular duration will be constant and equal to the annual number of annual entrants times the probability of surviving to that duration. Accordingly, the total size of the prison population will be constant; the growth rate will be zero, and the number of annual entrances will equal the number of annual exits.").

148. CARSON, *supra* note 40, at 11. The numbers were similar in the NCRP: 502,000 admissions and 519,000 releases.

decade before, the state prison population decreased by just 3%.[149] If the assumption of stationarity holds, it is possible to estimate expected time served for the current prison population based on the actual time served of recent releases.

Relying on stationarity, prior work has applied methods that accurately forecast prison populations over the long term but are less suited for the short term. Elizabeth Pelletier and colleagues compute average release rates for each crime type in their last year of data and then randomly select prisoners to release in future periods in proportion to those rates.[150] Similarly, Lindsay Bostwick computes offense-specific average time served among prisoners who were recently released and assumes in future periods that prisoners are released after serving the average time served for their offense.[151] These methods are less suited for short-term projections because they do not account for the fact that release rates vary by prison-spell age—that is, the length of time since a prisoner was admitted. Prisoners who have already served much of their sentence will be released much sooner than reflected in average release rates.[152]

To produce accurate short-term projections of the prison population using the stationarity assumption, I need to account for variation in release rates by prison-spell age. This same problem arises in efforts to forecast future growth of national populations: people are born (admitted to prison) at age zero, and the probability of death (release) changes over time as they age.[153] To account for variation in death rates across age, demographers construct a period life table based on a synthetic cohort of all people alive in a given period, say 2016. More specifically, they compute age-specific death rates by dividing the number of people in a given year who died at a given age by the total number of people who reached that age. The resulting death-rate estimates describe what "would happen to a cohort if it were subjected for all of its life to the [death] conditions" in 2016.[154] Assuming stationarity, the period life table provides an accurate picture of how long current and future members of a national population are projected

149. *Id*. at 5.

150. PELLETIER ET AL., *supra* note 139, at 7.

151. Bostwick, *supra* note 26, at 17.

152. Pelletier and colleagues compute release rates based on a population of prisoners who have already served part of their sentence. PELLETIER ET AL., *supra* note 139, at 6-7. In the early years of the simulation, those release rates are likely inflated as applied to newly admitted prisoners, who have not yet served any time. Similarly, because Bostwick assumes prisoners are released when their spell age equals the average time served for their most serious offense, none of the newly admitted prisoners are released in the early years of the forecast. Bostwick, *supra* note 26, at 17-18. A second limitation is that many baseline prisoners' spell ages are already higher than the average time served for their respective offense. As a result, the forecasting model immediately releases all prisoners with spell ages older than their respective average time served, leading to a sharp and inaccurate drop in the prison population in the first period of the forecast. *See id*. at 21 (ignoring the first seven years of forecasted prison populations because of a "rather large drop in the population . . . explained by inmates who were already past their average length of stay" in the first year of the simulation).

153. *See* Patterson & Preston, *supra* note 147, at 34-35.

154. SAMUEL H. PRESTON, PATRICK HEUVELINE & MICHEL GUILLOT, DEMOGRAPHY: MEASURING AND MODELING POPULATION PROCESSES 42 (2001) (emphasis omitted).

to live.

To forecast the prison population, I use the same period life table methodology.[155] Because of my interest in racial disparities and because time served varies substantially across offense types, I construct separate life tables for each race-offense type combination. I begin by creating a life table for each race-offense combination, where each row represents one spell age measured at the year-quarter level. Because very few prisoners remain behind bars beyond a spell age of 240 quarters (or sixty years), I assume that any prison stints that survive for 240 quarters end in that quarter.[156] Therefore, each life table has 240 rows—one for each possible spell age. I then count the number of prisoners in each row who were behind bars for at least one day in the final quarter of 2016, and the number who were released. I then compute the release rate for each spell age by dividing the number of releases by the number of prisoners. I also make several further adjustments to account for seasonality and small sample sizes.[157] Assuming stationarity, the resulting estimates, depicted in Appendix Figure A.1, represent my estimated release rates by race, offense, and prison-spell age.

I complete the period life table by estimating the distribution of expected time served for each offense type by race. I assume a hypothetical cohort of 100,000 prisoners are admitted for each crime type and race category. I then promote this cohort through each spell age in the table, sequentially removing the number of prisoners released at each age based on the respective release rates. For each crime type, I then compute the proportion of all releases that occur during each spell age. I use this period life table to estimate the distribution of expected time served for both new admissions and the population of existing prisoners at year-end 2016.[158]

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155. *Id*.

156. *See* Patterson & Preston, *supra* note 147, at 35 n.3 (assuming that no prison stints survive past 50 years).

157. Both to increase precision and to diminish seasonality, I repeat the same procedure for the first, second, and third quarter of 2016, and use the average of each quarter rather than the fourth quarter alone. Because some cells for older spell ages have insufficient sample sizes, I also identify the youngest spell age for each race-offense combination with fewer than 50 observations and aggregate that spell age with all older ones. For all spell ages older than the youngest spell age with fewer than 50 observations, I assign the aggregated release rate. Patterson and Preston take a similar approach by aggregating release rates for all spell ages over twenty years. *See id*. at 35 n.2.

158. More specifically, for new admissions, I assign prisoners time served values in proportion to the number of releases that occur within each spell age for the relevant race and offense type. For example, if the life table estimates that 2% of all Black prisoners convicted of burglary are released in their eighth quarter, I assign an expected time served of eight quarters to 2% of all Black prisoners newly admitted for burglary. Assigning an expected time served to prisoners who are already in prison at year-end 2016 is more complex because they have already served some of their sentence and, therefore, release rates for earlier spell ages are not relevant to them. For each combination of race, offense, and spell age, I compute the number of prisoners released at each older spell age and then compute the proportion of all releases at each of those spell ages. I then assign year-end-2016 prisoners an expected time served in proportion to the number of releases at each older spell age. For example, to estimate time served for Black prisoners convicted of burglary who have already served eight quarters

2. Forecasting Algorithm

The baseline forecast—which assumes no change in crime or criminal justice policy after 2016—works as follows. I begin with the existing prison population as of year-end 2016. In the first quarter of the forecast, I add one quarter (i.e., three months) to the age of every prison term. I then admit new, simulated prisoners for each offense type based on the number of admissions in 2016. I assign expected time served to each prisoner based on the period life table. I release any prisoners who have reached their time served at the end of the quarter. I then repeat this same process 120 times, once for each quarter until 2046.

I then adjust the inputs to the forecasting algorithm to compare this baseline projection against counterfactual forecasts that assume changes to criminal justice policy for some or all offenses. First, I create inputs that assume 25, 50, 75, and 100% reductions in admissions, relative to 2016 levels, for specific crime types. Second, I create inputs that assume 25, 50, and 75% reductions in time served, relative to 2016 levels, for specific offense types.[159] I then rerun the algorithm on the adjusted inputs. Finally, I compute the average number of annual admissions as well as the level of Black overrepresentation in the final year of the forecast by dividing the proportion of prisoners who are Black by the proportion of American residents who are Black in the general population.[160]

B. Primary Results

The universe of decarceration strategies is nearly unlimited. To reduce the dimensions of the testable policy space, the following subparts forecast the effects of decarcerating five broad categories of crimes: (1) low-level, (2) drug, (3) other non-violent, (4) less serious violent, and (5) all violent offenses.

1. Low-Level Offenses

In this section, I illustrate both the independent and joint effects of reducing admissions and time served for what I refer to as low-level offenses, which include larceny, motor vehicle theft, public order, other property, and other/unspecified offenses.

In Table 1, I begin by forecasting the effects of reducing *admissions* for low-

at year-end 2016, I drop all burglary cells for Black prisoners with spell ages younger than eight quarters and compute the proportion of all releases that occur in each remaining spell age. If 1% of all prisoners convicted of burglary who have already served eight quarters are released in their twelfth quarter, then I assign a value of twelve to 1% of those prisoners.

159. I assume constant and linear reductions in time served for all prisoners within a given offense type, but it is possible policymakers would seek to reduce longer sentences by a larger margin. In general, this approximation likely only affects the timing of decarceration, not the magnitude over the long term.

160. I use 2016 demographic Census data from the thirty-nine states in the NCRP data to compute the racial composition of the United States. I assume this composition remains stable in future years.

level offenses. The first column presents the baseline population forecast, which assumes that 2016 levels of admissions and time served remain constant into the future. At year-end 2016, which is labeled as year 0 in the forecast, there were roughly 1,158,000 prisoners behind bars in the NCRP states, and the model forecasts that number will fall slightly to 1,137,000 within five years, and to just under 1,112,000 in thirty. In other words, absent a policy change, the model forecasts that the prison population will remain largely stable, falling by just 4% in thirty years.

Each of the remaining columns assume 25, 50, 75, and 100% reductions in admissions for low-level offenses, respectively. Each row in those columns shows the forecasted reduction in the prison population in a given year relative to the baseline projection in that year. For example, the first column assumes a 25% reduction in admissions for low-level offenses in each year of the forecast. The second and fourth rows of that column forecast roughly a 2 and 5% reduction in the prison population relative to the baseline projection in one and ten years, respectively. The next three columns show that 50, 75, and 100% reductions in admissions would cut the prison population relative to the baseline projection by 5, 7, and 10% within one year and by 9, 14 and 19% in ten.

Table 1. Reducing Admissions for Low-Level Offenses

Year	Baseline	Low-level 25%	50%	75%	100%
0	1,158,046	0%	0%	0%	0%
1	1,150,623	2.4	4.8	7.2	9.6
5	1,137,150	4.3	8.7	13.1	17.4
10	1,129,587	4.7	9.4	14.2	18.9
20	1,119,899	4.9	9.8	14.6	19.5
30	1,111,762	4.9	9.9	14.7	19.7
Admissions	501,124	8.4%	16.8%	25.3%	33.7%
Black Overrep	3.2	3.3	3.3	3.3	3.3

Table 1 describes two additional dimensions of these decarceration strategies. The second-to-last row shows the percent reduction in average annual admissions compared to the baseline projection. According to my models, the strategies in Table 1 would reduce the total number of admissions by 8, 17, 25, and 34%, respectively. Notably, those decreases in *admissions* are roughly 70% bigger than the respective decreases in the prison *population*. The reason is that low-level offenses, on average, receive relatively short sentences. Thus, while reducing admissions for low-level offenses makes a small dent on the population, it reduces the number of people exposed to the harmful conditions of incarceration by a larger margin.

Finally, the last row of Table 1 forecasts overrepresentation of Black prisoners in the final year by dividing the proportion of prisoners who are Black by the proportion of American residents who are Black in the general population. Under the baseline projection, there are 3.2 times more Black prisoners than would be expected based on the general population. The remaining columns show that, according to my forecasting models, reducing admissions for low-level offenses would have little effect on Black overrepresentation, and, if anything, would slightly increase it.

There are a few basic takeaways from Table 1. First, reducing admissions for low-level offenses cannot dramatically reduce the prison population. None of the tested decarceration strategies would depopulate prison by even 25%. For that reason, I do not evaluate them based on the metrics of decarceration. Second, the effect of reducing admissions changes over time. Much of the effect adheres within a year, but as noted, it takes ten to twenty years to fully realize. Third, reducing admissions for low-level offenses has a much larger effect on the number of people admitted than on the total size of the prison population. Finally, cutting admissions for low-level offenses is unlikely to improve Black racial disparity.

Next, I forecast the effect of reducing *time served* for low-level offenses of both "real" prisoners who were incarcerated as of year-end 2016 and of "simulated" prisoners who are admitted in each subsequent period of the forecast. The

columns in Table 2 assume a 25, 50, and 75% reduction in time served. Within one year, the model estimates that the prison population would fall by 4.5, 10, and 15%, respectively, and would remain relatively stable thereafter.

Table 2. Reducing Time Served for Low-Level Offenses

		Low-level		
Year	**Baseline**	**25%**	**50%**	**75%**
0	1,158,046	0%	0%	0%
1	1,150,623	4.5	9.9	15.0
5	1,137,150	4.6	10.1	15.2
10	1,129,587	4.6	10.2	15.3
20	1,119,899	4.7	10.3	15.3
30	1,111,762	4.7	10.3	15.3
Admissions	501,124	0.0%	0.0%	0.0%
Black Overrep	3.2	3.3	3.3	3.3

The key takeaway is that, when viewed together, Table 1 and Table 2 show cutting admissions and cutting time served tend to have broadly similar results over the long term: 25, 50, and 75% reductions in either both achieve roughly 5, 10, and 15% reductions in the prison population, respectively. This basic pattern will be consistent across decarceration strategies and is a useful general principle: cutting admissions and cutting time served by the same amount produces similar results over time (assuming stationarity). Table 1 and Table 2 also show similar effects on Black overrepresentation, another common trend. One major difference, however, is timing. The effect of cutting time served for current and future prisoners accrues immediately, while the effects of reducing admissions realize over decades.

For reasons of parsimony, in subsequent sections, I limit my forecasts to decarceration strategies that reduce time served for both "real" prisoners who were incarcerated at the beginning of the forecast and future "simulated" prisoners. But some decarceration strategies only apply to future prisoners, not current ones. As one illustrative example, the last three columns of Table 3 assume 25, 50, and 75% reductions in time served for future prisoners but not existing ones at the beginning of the forecast. One key takeaway is that, over the long term, the size of the effect is the same as for reducing admissions or for reducing time served for both current and future prisoners. But the timing differs. As Table 3 shows, the slowest way to decarcerate is to reduce the sentences of future prisoners, a point to which I return below in Part V.C.

Table 3. Reducing Time Served for Low-Level Offenses—Future Prisoners Only

		Low-level		
Year	**Baseline**	**25%**	**50%**	**75%**
0	1,158,046	0%	0%	0%
1	1,150,623	0.7	3.0	5.7
5	1,137,150	3.5	8.2	12.9
10	1,129,587	4.2	9.4	14.3
20	1,119,899	4.5	9.9	14.9
30	1,111,762	4.6	10.0	15.1
Admissions	501,124	0%	0%	0%
Black Overrep	3.2	3.3	3.3	3.3

Finally, I forecast the joint effect of reducing *both* admissions and time served for both "real" prisoners at the beginning of the forecast and future "simulated" prisoners. The last four columns in Table 4 assume 25, 50, 75, and 100% reductions in time served and admissions. As the final column shows again, no reduction in time served or admissions could achieve more than a 20% reduction in the prison population. Note that the effects of reducing admissions and time served for a given crime are not simply additive. The reason is that, once we cut admissions by, say, 25%, an additional 25% reduction in time served would, over the long term, apply to a smaller pool of prisoners. To decarcerate any further, policymakers need to decarcerate other crime categories, to which I turn next.

Table 4. Reducing Admissions and Time Served for Low-Level Offenses

		Low-level			
Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
0	1,158,046	0%	0%	0%	0%
1	1,150,623	6.7	13.2	17.9	19.7
5	1,137,150	8.1	14.7	18.6	19.8
10	1,129,587	8.3	14.9	18.7	19.9
20	1,119,899	8.5	15.1	18.8	19.9
30	1,111,762	8.5	15.1	18.8	19.9
Admissions	501,124	8.4%	16.8%	25.3%	33.7%
Black Overrep	3.2	3.3	3.3	3.3	3.3

2. Low-Level and Drug Offenses

Next, I examine the effect of decarcerating both low-level offenses and drug offenses, which include possession and trafficking charges. Once again, I begin with admissions. In Table 5, Panels A through D assume 25, 50, 75, and 100% reductions in admissions for low-level offenses, respectively, and each column assumes the same reductions for drug offenses. According to my models, none of the tested decarceration strategies would shrink the prison population by half. Several, however, would by at least a quarter.

Of those, how do they perform against the metrics of decarceration? First, in assessing which strategies would minimize increases in crime, two stand out. Reducing admissions by 75% for both low-level and drug offenses would cut the prison population by 25% in ten years (Panel C, third column). And reducing admissions for low-level offenses by 100% and for drug offenses by 50% would accomplish the same feat (Panel D, second column). This latter strategy also performs best against the second metric, social harm, by minimizing annual admissions by 46%. Both strategies perform comparatively well in terms of timing, reducing the prison population by a quarter in ten years. Finally, against the metric of racial disparity, all of the strategies that achieve 25% reductions perform equally poorly, slightly raising Black overrepresentation from 3.2 to 3.4.

As in the last subpart, the results are broadly similar for decarceration strategies that reduce time served rather than admissions. I present those results in Appendix Table A.2.

In Table 6, I forecast the effects of reducing both admissions and time served for low-level and drug offenses. Panels A through D assume reductions in both time served and admissions for low-level offenses by 25, 50, 75, and 100%, respectively, and the columns assume the same reductions for drug offenses.

Once more, none of the tested strategies would halve the prison population, but reducing both admissions and time served opens several new paths to reduce the prison population by a quarter. First, if we seek to minimize increases in crime, two stand out. A 50% reduction in admissions and time served for both low-level and drug offenses would cut the prison population by about 25% in five years (Panel B, second column). So would reducing admissions and time served by 75% for low-level offenses and 25% for drug offenses (Panel C, first column). This strategy also outperforms others against the metric of social harm by decreasing annual admissions by 31%.[161] Third, against the metric of racial disparity, all of the strategies that achieve a 25% reduction in the prison population perform equally poorly, increasing Black overrepresentation from 3.2 to 3.4—a relative rise of 6%. Finally, against the metric of timing, the two strategies

161. Other strategies in the table do produce larger reductions in annual admissions, but they would require more aggressive cuts to admissions and time served than necessary to achieve the 25% threshold.

I have already flagged perform well, almost reducing the population by a quarter within a year, and crossing that threshold within five. A few other more aggressive strategies would also cross the 25% threshold within a year.

Table 5. Reducing Admissions for Drug and Low-Level Offenses

			Drug			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Low 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	4.2	5.9	7.7	9.5
	5	1,137,150	7.6	10.9	14.2	17.5
	10	1,129,587	8.2	11.8	15.3	18.8
	20	1,119,899	8.5	12.1	15.8	19.4
	30	1,111,762	8.6	12.2	15.9	19.5
	Admissions	501,124	14.5%	20.6%	26.8%	32.9%
	Black Overrep	3.2	3.3	3.3	3.3	3.3
Panel B: Low 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	6.6	8.3	10.1	11.9
	5	1,137,150	12.0	15.3	18.5	21.8
	10	1,129,587	13.0	16.5	20.0	23.5
	20	1,119,899	13.4	17.0	20.6	24.3
	30	1,111,762	13.5	17.1	20.8	24.5
	Admissions	501,124	77.0%	70.9%	64.8%	58.7%
	Black Overrep	3.2	3.3	3.3	3.3	3.4
Panel C: Low 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	8.9	10.7	12.5	14.3
	5	1,137,150	16.3	19.6	22.9	**26.2**
	10	1,129,587	17.7	21.2	**24.7**	28.2
	20	1,119,899	18.2	21.9	25.5	29.1
	30	1,111,762	18.4	22.1	25.7	29.4
	Admissions	501,124	31.4%	37.5%	43.6%	49.7%
	Black Overrep	3.2	3.3	3.3	3.4	3.4
Panel D: Low 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	11.3	13.1	14.9	16.7
	5	1,137,150	20.7	24.0	**27.3**	**30.5**
	10	1,129,587	22.4	**25.9**	29.4	33.0
	20	1,119,899	23.1	26.7	30.4	34.0
	30	1,111,762	23.3	27.0	30.6	34.3
	Admissions	501,124	39.8%	45.9%	52.0%	58.1%
	Black Overrep	3.2	3.4	3.4	3.4	3.4

Table 6. Reducing Admissions and Time Served for Drug and Low-Level Offenses

			Drug			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Low 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	11.9	16.9	20.3	21.5
	5	1,137,150	14.1	19.0	21.8	22.7
	10	1,129,587	14.5	19.3	22.0	22.9
	20	1,119,899	14.7	19.5	22.3	23.1
	30	1,111,762	14.8	19.6	22.4	23.2
	Admissions	501,124	14.5%	20.7%	26.8%	32.9%
	Black Overrep	3.2	3.3	3.3	3.3	3.3
Panel B: Low 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	18.4	23.4	**26.8**	**28.0**
	5	1,137,150	20.7	**25.6**	28.4	29.3
	10	1,129,587	21.1	25.9	28.6	29.5
	20	1,119,899	21.3	26.1	28.8	29.7
	30	1,111,762	21.4	26.2	29.0	29.8
	Admissions	501,124	23.0%	29.1%	35.2%	41.3%
	Black Overrep	3.2	3.3	3.4	3.4	3.4
Panel C: Low 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	23.1	**28.0**	**31.5**	**32.7**
	5	1,137,150	**24.6**	29.5	32.3	33.2
	10	1,129,587	24.9	29.7	32.4	33.3
	20	1,119,899	25.0	29.8	32.5	33.4
	30	1,111,762	25.0	29.9	32.6	33.5
	Admissions	501,124	31.4%	37.5%	43.6%	49.7%
	Black Overrep	3.2	3.4	3.4	3.4	3.4
Panel D: Low 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**24.9**	**29.8**	**33.2**	**34.4**
	5	1,137,150	25.9	30.7	33.6	34.4
	10	1,129,587	26.0	30.9	33.6	34.4
	20	1,119,899	26.1	30.9	33.7	34.5
	30	1,111,762	26.2	31.1	33.8	34.6
	Admissions	501,124	39.8%	45.9%	52.0%	58.1%
	Black Overrep	3.2	3.4	3.4	3.4	3.4

3. Low-Level, Drug, and Other Non-Violent Offenses

Next, I examine decarceration strategies that target not only low-level and drug offenses but also all other non-violent offenses—meaning burglary and fraud. To do so, I test the effect of 25, 50, 75, and 100% reductions in admissions or time served for low-level and drug offenses interacted with similar reductions for the other non-violent offenses. To avoid repetition, a complete discussion of the results is available in Appendix B.1. Here, I merely highlight a few key points. And, as a reminder, readers who prefer to see bottom-line results are encouraged to skip ahead several pages to Part IV.C.

First, the biggest reduction we could expect—by eliminating incarceration entirely for low-level, drug, and other non-violent offenses—is 45%. In other words, we cannot cut the prison population in half through non-violent offenses alone.

Second, assuming we prefer to decarcerate low-level and drug offenses over the remaining non-violent ones—which are predominantly burglary—none of the strategies that cut the prison population by a quarter through admissions alone or time served alone appear more desirable than those identified in the previous subpart.

Third, reducing both admissions and time served *together* produces a few new desirable strategies. Among them, the best performer for minimizing increases in crime would reduce admissions and time served by 50% for low-level and drug offenses and by 25% for other non-violent crimes. Somewhat unusually, this same strategy also performs best against the metric of social harm, cutting annual admissions by 33%; against the metric of timing, cutting the population by a quarter within a year; and against the metric of racial disparity, because it only increases Black overrepresentation to 3.4, less so than the other options that cut the prison population by a quarter.

4. Less Serious Violent Offenses

As noted, decarceration strategies that only apply to non-violent offenses cannot cut the prison population even by 50%, let alone 75%. Next, I examine strategies that decarcerate relatively less serious forms of violence—manslaughter, robbery, assault, and "other" violent offenses.[162] To do so I test the effect of 25, 50, 75, and 100% reductions in admissions or time served for all non-violent offenses interacted with similar reductions for less serious violent offenses. Once again, a complete discussion of the results is available in Appendix B.2. Here, I merely highlight the main takeaways.

Given that I have already identified many strategies that cut prison by a quarter without decarcerating violent offenses, it's probably unnecessary to review the strategies that cross that threshold here. But one key point is that decarcerating less serious violent offenses produces the first strategy that can achieve a

162. For more information on "other" violent crime, see *supra* note 112.

25% reduction while *reducing* racial disparity: decreasing admissions (or time served) for all non-violent offenses by 25% and less serious violent offenses by 75%—a politically implausible plan that would decarcerate violent offenses far more than non-violent ones—would reduce Black overrepresentation slightly, from 3.2 to 3.1.

There are a few other takeaways, too. First, none of the models that decarcerate less serious violent offenses achieve a 75% reduction in the prison population—a notable result following directly from the fact that over 25% of people in prison are serving time for murder, rape, or sexual assault.

Second, decarcerating less serious violent offenses creates the first set of opportunities to halve the prison population. If we seek to minimize increases in crime, the best options appear to be reducing time served alone by 75% for non-violent and less serious violent offenses (notably, this strategy is also the quickest); reducing admissions and time served by 75% for non-violent offenses and by 25% for less serious violent offenses; and reducing admissions and time served by 50% for both non-violent and less violent offenses. Against the metric of social harm, the best option is eliminating admissions entirely for non-violent offenses and reducing admission by 25% for less violent ones, which would cut annual admissions by 78%. Notably, none of the decarceration strategies that would halve the prison population would diminish Black overrepresentation; though, a few would leave it unchanged (e.g., halving time served and admissions for non-violent and less violent offenses).

5. All Violent Offenses

Finally, I examine the effects of decarcerating prisoners serving time for all violent offenses, including the most serious ones—murder, rape, and sexual assault. All the results are available in Appendix B.3, but the takeaways are as follows.

First, decarcerating all violent offenses provides numerous additional routes to halve the prison population. If we care most about minimizing increases in crime, the best option would shorten time served for non-violent offenses and all violent ones by 50% This same strategy also performs comparatively well in terms of racial disparity because, unlike most other options, it does not increase Black overrepresentation. Alternatively, if we seek to minimize exposure to prison, the models recommend eliminating admissions for non-violent offenses and reducing them by 25% for all violent offenses, which would bring down the total number of people admitted to prison by 80%.

Second, decarcerating all violent offenses, including the most serious, enables the first strategies forecasted to reduce prison by 75%. If we seek to minimize increases in crime, my models suggest the two best options would reduce time served by 75% for all non-violent and violent offenses or reduce both admissions and time served by 50% for all non-violent and violent offenses. The second of those two strategies also performs comparatively well for racial disparity because it leaves Black overrepresentation unchanged, unlike the others,

which increase it. Against the metric of social harm, the best strategy to cross the 75% threshold within the thirty-year window of my forecast would eliminate admissions entirely for non-violent offenses and reduce them by 75% for all violent ones; in doing so, it would reduce admissions by 93%.

C. Summary of Best Options

The last section (and corresponding appendices) reported the results of hundreds of forecasting models. Here, I summarize and synthesize, flagging the decarceration strategies that are both forecasted to achieve 25, 50, and 75% reductions in the prison population and that fare best against the metrics of decarceration.

Without a stronger understanding of the precise impacts of decarcerating specific groups of prisoners, it's hard to identify the single strategy that minimizes crime or the social harms of incarceration. Instead, I rely on several rules of thumb described earlier.[163] First, due to diminishing marginal returns in the length of prison sentences, I assume that strategies that rely more on shortening time served and less on cutting admissions increase crime less than others. Second, I assume that decarcerating less serious offenses increases crime less than decarcerating more serious ones. In doing so, I rely on the five categories of crimes used in the previous sections, which are themselves, broadly speaking, based on average sentence lengths. Third, I assume that reducing admissions rather than time served drives down more of the social harms of prison by diverting more people from its harmful conditions each year. While somewhat imprecise, these rules of thumb help sort decarceration strategies based on the metrics of crime and social harm. Reasonable minds can certainly disagree on my selections, and those that do are free to choose their own "best" strategies from the previous section.

1. Best 25% Strategies

Table 7 identifies four "best options," all highlighted earlier, that are forecasted to cut the prison population by 25%. The top row indicates whether the relevant decarceration strategy reduces time served ("TS"), admissions ("Adm"), or both ("TS/Adm"). The numbers associated with each year show the percent decrease in the prison population relative to the baseline forecast (which assumes no change in admissions or time served). The bottom row flags the metrics against which each strategy performs well.

If we seek to cut the prison population by a quarter and we care most about minimizing increases in crime, the first column likely reflects the optimal strategy because it relies exclusively on reducing time served (for current and future prisoners) and only for the lowest possible offenses—that is, by 75% for both low-level and drug offenses. The second column shows another strategy that

163. *See supra* Parts I.A-I.B.

would perform comparatively well: reducing time served and admissions by 75% and 25% for low-level and drug offenses, respectively.

Table 7. Best Options for Reducing the Prison Population by 25%

Year	Baseline	TS Low: 75% Drug: 75%	TS/Adm Low: 75% Drug: 25%	Adm Low: 100% Drug: 50%	TS/Adm Non-Viol: 25% Less Viol: 75%
0	1,158,046	0%	0%	0%	0%
1	1,150,623	26.4	23.1	13.1	39.0
5	1,137,150	26.5	24.6	24.0	43.4
10	1,129,587	26.5	24.9	25.9	43.9
20	1,119,899	26.5	25.0	26.7	44.0
30	1,111,762	26.6	25.0	27.0	44.0
Admissions	501,124	0.0	31.4	45.9	33.3
Bl Overrep	3.2	3.4	3.4	3.4	3
Metrics		Crime Timing	Crime	Social Harm	Racial Disparity Timing

Alternatively, if we care most about minimizing social harm while seeking to decrease prisons by 25%, the third column recommends eliminating admissions for low-level offenses and halving them for drug offenses, which would reduce annual admissions by 46% and divert over 200,000 people from prison each year.

Against the metric of racial disparity, my forecasts found no politically plausible way to shrink prison by a quarter while also reducing Black overrepresentation. The final column shows one of the very few strategies forecasted to reduce disparity, and it would do so just barely—from 3.2 to 3—by reducing time served and admissions by 25% for non-violent offenses and by 75% for less serious violent ones, an unlikely combination. Finally, the first column represents one of the quickest decarceration strategies, which would likely cut the prison population by a quarter in a year.

2. Best 50% Strategies

Table 8 identifies "best options" for shrinking prison by 50%. The first and second columns likely minimize effects on crime because they rely exclusively on reducing time served for the lowest possible offenses—that is, by 75% for both non-violent and less serious violent offenses or by 50% for non-violent and all violent offenses. The third column presents one more strong performer: reducing time served and admissions by 75% and 25% for non-violent offenses and less serious violent offenses, respectively.

Table 8. Best Options for Reducing the Prison Population by 50%

Year	Baseline	TS Non-viol: 75% Less Viol: 75%	TS Non-viol: 50% Viol: 50%	TS/Adm Non-viol: 75% Less Viol: 25%	Adm Non-viol: 100% Less Viol: 25%
0	1,158,046	0%	0%	0%	0%
1	1,150,623	55.5	50.0	49.9	23.0
5	1,137,150	55.3	50.5	53.1	44.2
10	1,129,587	55.2	50.9	53.9	48.7
20	1,119,899	54.9	51.2	54.3	50.9
30	1,111,762	54.7	51.0	54.4	51.5
Admissions	501,124	0.0%	0.0%	60.0%	78.3%
Black Overrep	3.2	3.2	3.2	3.4	3.5
Metric		Crime Racial Disparity Timing	Crime Racial Disparity Timing	Crime Timing	Social Harm

Alternatively, if we care most about minimizing the social harms of incarceration while shrinking prison by 50%, the fourth column recommends eliminating admissions for non-violent offenses and cutting them by a quarter for all violent ones. Doing so would reduce annual admissions by 78%, diverting almost 400,000 people from prison each year.

With respect to racial disparity, none of the tested decarceration strategies would reduce Black overrepresentation. At the very least, though, the strategies reflected in the first and second columns would not make things worse. Finally, the first, second, and third columns all identify strategies that perform well in terms of timing, by halving the prison population in a year.

3. Best 75% Strategies

Table 9 identifies "best options" for shrinking prison by 75%. If we seek to minimize increases in crime, the first column recommends reducing time served by 75% for both non-violent and violent offenses. Another approach reflected in the second column would halve time served and admissions for both non-violent and all violent offenses.

Against the metric of social harm, the third column shows that the top performing strategy would eliminate admissions for non-violent offenses and cut admissions by 75% for all violent ones. That would reduce annual admissions by 93%, diverting over 450,000 people from prison each year.

Against the metric of racial disparity, the second column's strategy performs comparatively well because it leaves Black overrepresentation unchanged, while most others increase it. Finally, the first column shows one of the quickest strategies, which would reduce the prison population by 75% in a year.

Table 9. Best Options for Reducing the Prison Population by 75%

Year	Baseline	TS Nonviol: 75% Viol: 75%	TS/Adm Non-viol: 50% Viol: 50%	Adm Non-viol: 100% Less Viol: 75%
0	1,158,046	0%	0%	0%
1	1,150,623	75.9	61.3	28.3
5	1,137,150	76.2	70.3	60.4
10	1,129,587	76.4	73.3	71.4
20	1,119,899	76.2	75.2	79.8
30	1,111,762	76.1	75.5	83.2
Admissions	501,124	0.0%	50.0%	93.3%
Black Overrep	3.2	3.3	3.2	3.7
Metric		Public Safety Timing	Public Safety Racial Disparity	Social Harm

D. Accounting for Diminished Deterrence & Incapacitation

The forecasting models I have reported so far—and all the other models in the literature—assume that the annual number of prison admissions is not affected by any diminished deterrence or incapacitation from decarceration. This may be a reasonable assumption for strategies that focus on low-risk prisoners or that are accompanied by other crime-reducing social programs. But where the assumption does not hold, my forecasts overestimate effects on the prison population.

Ideally, to assess the extent of this problem, I would account for all relevant features of a decarceration strategy, including its effect on the population size, the offenses to which it applies, and whether it reduces time served, admissions, or both. But our understanding of deterrence and incapacitation is nowhere near precise enough. At best, the literature provides rough estimates of the net effect of the total incarceration rate on the incidence of specific crimes reported to the police.

I rely on a study by Raphael and Stoll, which, according to a recent literature review, provides the best estimates of the effect of incarceration rates on civilian-on-civilian crime.[164] Raphael and Stoll estimate the effect of the incarceration

164. Raphael and Stoll rely on a methodology first developed in Rucker Johnson & Steven Raphael, *How Much Crime Reduction Does the Marginal Prisoner Buy?*, 55 J.L. & ECON. 275 (2012). In a thorough review of the deterrence literature, Aaron Chalfin and Justin McCrary conclude: "Our best guess is that the current elasticity of crime with respect to prison populations is approximately -0.2, as reported by Johnson and Raphael." Chalfin & McCrary, *supra* note 49, at 26; *see also* Nagin, *supra* note 52, at 162 ("[W]ith the possible exception of Levitt (1998) and Johnson and Raphael (201[2]), [the existing studies] do not resolve the identification problem resulting from the endogenous determination of crime rates and imprisonment rates.").

rate per 100,000 residents on the rates of seven UCR Part I crimes from 1977 to 2010—a period in which the national incarceration rate increased by nearly five-fold, from roughly 110 to 500 prisoners per 100,000.[165] As I describe in detail in Appendix C, I translate these results into estimates of the effect of incarceration rates on prison admissions largely by assuming that increases in crime produce proportional increases in admissions.

Panel A of Table 10 replicates Table 8's "best" strategies for cutting the prison population by 50%, and Panel B presents the same decarceration strategies after accounting for diminished deterrence and incapacitation. In most models, diminished deterrence and incapacitation mutes the reduction in the prison population by roughly 10 percentage points so that my "best options" for cutting the prison population in half are now forecasted to cut the prison population by approximately 40 to 45%. Diminished deterrence and incapacitation thus appear to change the result appreciably but not overwhelmingly. The results are similar for the "best" strategies for cutting the prison population by 25 and 75%.[166]

Table 10. Best Options for Reducing Prison Population by 50% Adjusting for Diminished Deterrence and Incapacitation[167]

			TS	TS	TS/Adm	Adm
	Year	Baseline	Nonviol: 75% Less Viol: 75%	Non-viol: 50% Viol: 50%	Non-viol: 75% Less Viol: 25%	Non-viol: 100% Less Viol: 25%
Panel A: Unadjusted	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	55.5	50.0	49.9	23.0
	5	1,137,150	55.3	50.5	53.1	44.2
	10	1,129,587	55.2	50.9	53.9	48.7
	20	1,119,899	54.9	51.2	54.3	50.9
	30	1,111,762	54.7	51.0	54.4	51.5
	Admissions	501,124	0.0%	0.0%	60.0%	78.3%
	Black Overrep	3.2	3.2	3.2	3.4	3.5
Panel B: Adjusted	**0**	1,158,046	0%	0%	0%	0%
	1	1,151,228	50.5	43.5	48.0	22.7
	5	1,141,937	47.6	39.6	48.0	41.3
	10	1,136,992	46.5	39.1	47.1	43.6
	20	1,130,558	45.0	38.8	46.1	43.7
	30	1,125,129	44.3	38.5	45.6	43.5
	Admissions	508,148	-33.2%	-28.3%	49.3%	75.3%
	Black Overrep	3.2	3.3	3.3	3.5	3.6

This empirical strategy makes substantial progress towards accounting for the feedback effects of diminished deterrence and incapacitation, but it is far from perfect. Perhaps the biggest limitation is that the effect of decarceration depends on who the marginal decarcerated prisoner is. If incarceration rates are

165. RAPHAEL & STOLL, *supra* note 7, at 5.

166. *See* Appendix Tables A.3-A.4.

167. Negative admissions estimates imply that admissions *increase* relative to the baseline projection.

low and the marginal prisoner is high risk, then, decarceration likely has a bigger effect than if incarceration rates are high and the marginal prisoner's risk is low.[168] Thus, some of my models—particularly those that reduce incarceration for low-level offenses—may overestimate diminished deterrence and incapacitation and other models—particularly those that reduce incarceration for the most severe offenses—may underestimate them.

V. IMPLICATIONS AND TAKEAWAYS

The range of policy strategies to reduce incarceration is nearly endless. Taken together, the metrics, forecasting methodology, and empirical results in this paper can help policymakers, scholars, and activists choose among them. In this Part, I emphasize key takeaways. Part V.A describes a few important principles to evaluate the varied strengths and weaknesses of different decarceration strategies. Part V.B discusses optimal strategies for achieving threshold reductions in the prison population depending on one's priorities and legal tools to carry them out. Part V.C addresses the challenge of decarcerating violent offenses and of addressing racial disparity. And Part V.D discusses the potential feedback effects of diminished incapacitation and deterrence.

A. A Few Guiding Principles

This Article's framework and empirical results illustrate a few helpful principles for evaluating competing decarceration strategies. To begin with, when the prison population is stationary, equal reductions in time served and admissions have the same effect on the size of the prison population over the long term, which means they both get to the same place eventually. For example, reducing the number of robbery admissions by 50% and reducing the average time served for robbery by 50% would both, eventually, cut the total number of prisoners convicted of robbery by 50%.

Still, these policies come with different tradeoffs. Reducing time served has several notable advantages—it likely has smaller effects on crime and, assuming reductions are applied to both current and future prisoners, it reduces the prison population quickly. Reducing time served exclusively for future prisoners, on the other hand, takes much longer, but this delay has the notable advantage of political insulation for legislators who might otherwise oppose decarceration due to the attendant professional risks—a point I expand on below. Reducing time served, however, does have the notable downside of leaving the same number of people exposed to the harmful conditions of prison.

Conversely, focusing on admissions stems the harms of prison contact but takes far longer to bring the prison population down than reducing time served for both current and future prisoners. And, comparatively, it may have the incidental effect of deterring and incapacitating less crime.

168. *See* RAPHAEL & STOLL, *supra* note 7, at 229.

B. Decarceration's Priorities

My metrics and empirical results illustrate that many decarceration strategies can achieve the same reduction in the prison population and that the optimal approach depends on what metrics we value most. These facts present a stark range of policy choices. Suppose we seek to reduce the prison population by 25%. If we care most about minimizing increases in crime or achieving our goal quickly, my models suggest that one of the best strategies is shortening time served by 75% for all prisoners convicted of drug and low-level offenses. That would cut the prison population by 26% in a year while holding constant the number of people admitted to prison. If, alternatively, we care most about diminishing the social harms of incarceration, my models recommend cutting admissions by 100% for low-level offenses and 50% for drug offenses, which would reduce annual admissions by 45% and thereby divert 225,000 people from prison each year. Both strategies would likely achieve similar reductions in the prison population, but their social consequences would differ dramatically. These results highlight how the near-exclusive focus on crime in the mainstream decarceration debate may blind both policymakers and the public to more socially optimal strategies that give weight to other metrics.

Whatever decarceration strategies are adopted, law and legal institutions will play an essential role in carrying them out. As a few examples, legislatures can reduce admissions by decriminalizing offenses, as some have for certain drug possession charges;[169] downgrading charges, as California has for certain low-level drug and property offenses;[170] and eliminating mandatory minimums, reducing presumptive minimum sentences, and expanding presumptive probation, as states have done through the Justice Reinvestment Initiative.[171] State legislatures can also reduce time served by cutting truth-in-sentencing restrictions, increasing good time credits, reducing statutory and guideline ranges and mandatory minimums, eliminating life without parole, creating presumptive parole release guidelines, reducing the availability for revocations of community supervision, expanding second-look sentencing, and reducing sentences for specific charges.[172] They can also supply funding to invest in community infrastructure to reduce crime.

Criminal justice officials at the local level can also help. Courts can reduce the severity of sentences they impose, apply second-look sentencing statutes, and enforce the Eighth Amendment against overcrowding.[173] Prosecutors can adopt

169. *See* Sam Kamin, *Marijuana at the Crossroads: Keynote Address*, 89 DENV. U. L. REV. 977, 977-980 (2012) (describing the recent trend towards decriminalization).

170. MIA BIRD, MAGNUS LOFSTROM, BRANDON MARTIN, STEVEN RAPHAEL & VIET NGUYEN, PUB. POL'Y INST. OF CAL., THE IMPACT OF PROPOSITION 47 ON CRIME AND RECIDIVISM 4 (2018).

171. SCHRANTZ ET AL., *supra* note 46, at 6.

172. *Id*. at 28; SENT'G PROJECT, *supra* note 41, at 1-2; Tonry, *supra* note 12, at 516-24; Todd R. Clear & Dennis Schrantz, *Strategies for Reducing Prison Populations*, 91 PRISON J. 138S, 149S (2011).

173. *See* Brown v. Plata, 563 U.S. 493, 501-02 (2011).

non-enforcement policies, file and pursue less severe charges, recommend non-carceral punishments at sentencing, and expand diversion programs. And governors can get involved as well by exercising the commutation power.[174]

The federal government also has a role to play, not only in shrinking federal prison directly, but also by incentivizing the states. One option is for Congress to condition funding on states rescinding truth-in-sentencing statutes—the very same statutes Congress incentivized in the 1990s.[175] Another attractive proposal, put forth by the Brennan Center, is for Congress to promise states funding if they reduce their prison populations by 7% within three years.[176]

As some of these examples highlight, one challenge of applying the methodological framework proposed in this paper to formulate decarceration strategies is that it's not always easy to predict ex ante exactly how much a given policy change would cut admissions or shorten time served. From a national perspective, for example, decarcerating prisoners in one jurisdiction might just transfer them to another. In the year after the First Step Act was enacted, roughly a third of the 3,000 federal prisoners released were "transferred to the custody of other jurisdictions because of existing detainers."[177] Similar dynamics are also possible within the same jurisdiction; prisoners diverted from state prison might go to a local jail instead.[178] Or people diverted from prison to probation may violate and go to prison later anyway. Perhaps most challenging, arrest, charging, plea bargaining, and sentencing decisions are made by local officials, and it may be hard to predict the extent to which those actors would undermine or circumvent decarceration policies they do not support.[179]

At least with respect to the last problem, there are a number of policy tools available to encourage local actors to get on board.[180] Policies that force counties to internalize more of the *costs* of incarceration could help. In most states, for example, counties do not pay for state prison.[181] Requiring them to do so—perhaps above some minimum number of prisoner-days calculated based on county

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174. LEAH SAKALA, RODERICK TAYLOR, COLETTE MARCELLIN & ANDREEA MATEI, URB. INST., HOW GOVERNORS CAN USE CATEGORICAL CLEMENCY AS A CORRECTIVE TOOL 2-3 (2020).

175. *See* Joanna M. Shepherd, *Police, Prosecutors, Criminals and Determinate Sentencing: The Truth About Truth-in-Sentencing Laws*, 45 J.L. & ECON. 509, 511-12 (2002) (describing the enactment of state truth-in-sentencing provisions, which require certain prisoners to serve at least 85% of their sentence).

176. *See* EISEN & CHETTIAR, *supra* note 37, at 7.

177. SENT'G PROJECT, *supra* note 41, at 1.

178. After Realignment, for example, local jail populations in California increased by roughly one-third the size of the decrease in the state prison system. Lofstrom & Raphael, *supra* note 45, at 353.

179. *See, e.g.*, Hailey Fuchs, *Law to Reduce Crack Cocaine Sentences Leaves Some Imprisoned*, N.Y. TIMES (Aug. 1, 2020), https://perma.cc/VWC3-QJJ8 ("Critics say the First Step Act is being applied too arbitrarily by judges who are taking a hard line when it comes to revisiting nonviolent drug sentences.").

180. For an extended discussion of related issues, see BARKOW, *supra* note 12, at 143-64, 186-201.

181. *See* Aurélie Ouss, *Misaligned Incentives and the Scale of Incarceration in the*

characteristics like age and crime—would force counties to internalize more of the financial costs.[182] Alternatively, states can amplify or funnel the *benefits* of decarceration back to counties by providing financial incentives to use fewer prison beds.[183] They can also eliminate elections for local prosecutors and judges, and thus provide those government officials more insulation against political backlash due to the consequences of decarceration. Finally, states might also limit local officials' discretion by enacting sentencing guidelines (and perhaps even plea-bargaining guidelines) that substantially reduce sentences for specific crimes.[184] These and other policy reforms could help ensure that local criminal justice officials carry out the day-to-day details of long-term decarceration projects.

C. Violent Offenses & Racial Disparities

Another takeaway from my analysis is that, as others have anticipated,[185] it is difficult to dramatically shrink state prisons without substantially decarcerating violent offenses. Indeed, my models suggest that halving the prison population without reducing admissions would require reducing time served by 75% for both non-violent and less serious violent offenses.

The policy solutions to this problem are closely related to another key takeaway: the results suggest that decarceration would likely exacerbate racial disparity among those left behind bars.[186] Importantly, this is not an argument against decarceration. After all, Black prisoners would disproportionately benefit. But it does mean it's hard to reduce racial disparity in prison through race-neutral decarceration strategies alone. This finding stems from the fact that, relative to white prisoners, Black prisoners are admitted at heightened and roughly constant rates across offense types, with the exception of violent offenses, for which they are admitted at even higher rates. It also stems from the fact that Black prisoners, on average, serve a similar length of time as other prisoners for non-violent offenses but more time for violent ones. The upshot is that decarcerating non-violent offenses alone likely increases racial disparities. In my models, it does so by up to 13%. Out of all the decarceration strategies tested, the only ones that reduce racial disparity are those that would decarcerate violent offenses far more than non-violent ones. Even then, these strategies never reduce Black overrepresentation dramatically.

United States, 191 J. PUB. ECON. 1, 2 (2020) ("States bear the costs of imprisonment, while sentencing decisions are made by county prosecutors and judges.").

182. *See id*. at 3-4.

183. *See* Mona Lynch, *Mass Incarceration, Legal Change, and Locale: Understanding and Remediating American Penal Overindulgence*, 10 CRIMINOLOGY & PUB. POL'Y 673, 691 (2011) (describing such an effort to reduce probation revocations in Arizona).

184. Adelman, *supra* note 12, at 310-13.

185. *See, e.g.*, PFAFF, *supra* note 30, at 185-87.

186. Prescott et al., *supra* note 50, at 1658; MARIE GOTTSCHALK, CAUGHT: THE PRISON STATE AND THE LOCKDOWN OF AMERICAN POLITICS 133 (2015).

Decarcerating violent offenses thus provides the opportunity both to shrink the prison population and limit racial disparities, at least to some extent. So, how could we do it?

One option is to reduce violent crime, particularly in predominantly Black neighborhoods. In certain contexts, the simplest path is to scale back criminal justice. Diverting low-level defendants from criminal court, for example, can decrease violent offending.[187] But, as prison abolitionists have argued for decades, a more powerful alternative would be a massive investment in the infrastructure of impoverished communities. Indeed, much of the empirical evidence suggests that high levels of poverty increase violent crime.[188] And, as discussed earlier, there is growing empirical evidence about a number of social investments that can reduce violence.[189]

In addition to reducing incidents of violence, we can decarcerate violent offenses by shortening overly long sentences and decreasing admissions for at least some offenses. Admittedly, decarcerating violent offenses is probably politically infeasible in many jurisdictions. But it may be possible in others. In fact, there's evidence it's already happened in a few places, including New York City, Philadelphia, California, and Mississippi.[190]

One major obstacle is that the public debate about criminal justice—which typically only grants sympathy and mercy to people convicted of non-violent offenses—has entrenched in the public consciousness a monolithic image of the "violent offender" as dangerous and irredeemable.[191] It may be possible to push back in a few ways.

A starting point is to emphasize that "violence is a much more capacious legal category than most people assume."[192] Many jurisdictions count burglary as a violent crime even though less than 4% involve a physical attack.[193] Even broader, some jurisdictions count larceny, driving under the influence, certain

187. *See* Michael Mueller-Smith & Kevin T. Schnepel, *Diversion in the Criminal Justice System*, 88 REV. ECON. STUD. 883, 899 (2021); Amanda Y. Agan, Jennifer L. Doleac & Anna Harvey, *Misdemeanor Prosecution* 4 (Nat'l Bureau of Econ. Rsch., Working Paper No. 28600, 2021), https://perma.cc/7B72-66FE.

188. *See* McAdams, *supra* note 96, at 37; Sara B. Heller, Brian A. Jacob & Jens Ludwig, *Family Income, Neighborhood Poverty, and Crime*, *in* CONTROLLING CRIME: STRATEGIES AND TRADEOFFS 419, 436-48 (Philip Cook, Jens Ludwig & Justin McCrary eds., 2011).

189. *See supra* notes 57-66 and accompanying text.

190. *See* John F. Pfaff, *A Second Step Act for the States (and Counties, and Cities)*, 41 CARDOZO L. REV. 151, 181-82 (2019) (citing examples of district attorneys and legislatures treating violent convictions less harshly).

191. *See, e.g.*, Josie Duffy Rice, *My Brother, the Violent Offender*, SLATE (Aug. 14, 2017, 9:00 AM), https://perma.cc/CP8M-TTKJ (noting that people convicted of violent offenses are "generally considered beyond redemption or mercy").

192. Leon Neyfakh, *OK, So Who Gets to Go Free?*, SLATE (Mar. 4, 2015, 3:47 PM), https://perma.cc/N3BP-N5J7 (quoting Jonathan Simon).

193. Phillip M. Kopp, *Is Burglary a Violent Crime? An Empirical Investigation of the Armed Career Criminal Act's Classification of Burglary as a Violent Felony*, 30 CRIM. JUST. POL'Y REV. 663, 672 (2016).

forms of drug trafficking, and mere threats of physical harm as violence.[194] Even within my relatively narrow definition of violent crime—which predominately includes homicide, rape, sexual assault, robbery, and assault—there are likely a substantial number of cases where the prisoner did not use actual violence, like robberies without actual use of force or cases where an accomplice is liable for the violent conduct of a principal. Emphasizing that some people convicted of violent offenses have committed no violent conduct may help assuage some fears about them.

Another strategy would seek to build public sympathy towards people convicted of violent offenses by emphasizing that violent conduct cannot simply be reduced to the "behavioral propensities of the perpetrator;" violence is contextual.[195] People convicted of violent crimes often come from communities with extreme socioeconomic disadvantage; weak informal social bonds; few social services; and high rates of unemployment, untreated mental illness, and crime—all of which increase opportunities for violence.[196] Many have also been victims of serious violence themselves.[197] Understanding that violence is contextual may "temper our assessments of culpability" and highlight that the risk of violence may be diminished by changing context.[198]

Recidivism data provides another opportunity to push back against the collective image of the "violent offender." At the time of release, people convicted of violent offenses are less likely to be arrested for another offense in three years (62%) than people convicted of property (75%) and drug offenses (69%).[199] And, while they are more likely to be arrested for a violent crime (25%) than those convicted of property (21%) or drug offenses (18%), the difference isn't huge.[200] Thus, at least by the time of release—and recall that people convicted of violent offenses are incarcerated for an unusually long time—they are not much riskier than other prisoners. This means that, to the extent the public is willing to accept the risk of decarcerating non-violent offenses, the risks of shortening sentences for violent offenses may not be much higher. Moreover, released prisoners represent only a sliver of all non-violent and violent crime. One study of thirteen states, for example, reports that prisoners released in 1994 represented only 8, 4, 9 and 5% of all arrests for homicide, rape, robbery, and assault in the next four years, respectively.[201]

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194. Michael O'Hear, *Third-Class Citizenship: The Escalating Legal Consequences of Committing a "Violent" Crime*, 109 J. CRIM. L. & CRIMINOLOGY 165, 173-76 (2019).

195. JAMES AUSTIN, VINCENT SCHIRALDI, BRUCE WESTERN & ANAMIKA DWIVEDI, SQUARE ONE PROJECT, RECONSIDERING THE "VIOLENT OFFENDER" 7 (2019).

196. *Id*. at 7-9.

197. *Id*. at 9-14.

198. *Id*. at 7-9.

199. MARIEL ALPER, MATTHEW R. DUROSE & JOSHUA MARKMAN, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., NCJ 250975, 2018 UPDATE ON PRISONER RECIDIVISM: A 9-YEAR FOLLOW-UP PERIOD (2005-2014), at 11 (2018)

200. *Id*. A recent academic study using prison data found similar results. Prescott et al., *supra* note 50, at 1645.

201. PATRICK A. LANGAN & DAVID J. LEVIN, BUREAU OF JUST. STAT., U.S. DEP'T OF

Even more important than data are stories about the successes of people convicted of violent offenses. The Innocence Project has gained huge public support in recent decades, in large part due to news articles, documentaries, and podcasts about innocent people exonerated after suffering decades of incarceration.[202] But we do not have many high-profile stories about the successes of people convicted of violent offenses after their release from prison. Scholars, journalists, writers, and filmmakers can help build public support for people convicted of violent offenses by amplifying their success stories—stories about becoming violence interrupters,[203] entrepreneurs,[204] community leaders and elected officials,[205] social workers,[206] legal scholars,[207] impactful advocates of criminal justice reform,[208] and much more.

One final way to push back against the violent-offender trope is to enhance public understanding that incarceration isn't just a financial burden on state budgets; it also imposes massive social costs on prisoners, their families, and their communities.[209] Taken together, these messages could help nudge government officials and the public to consider shortening time served for violent offenses, particularly those that already have long sentences.

As a matter of political strategy, timing can also help decarcerate violent offenses. I have argued that, in general, faster timelines are strategically valuable because public support for decarceration can reverse quickly after just one high-profile crime committed by a parolee or probationer. But slower decarceration has at least one advantage: it may be easier for public officials to adopt because temporal separation between adoption and implementation provides meaningful political insulation for the responsible government officials.

Recall that Table 3 showed the slowest decarceration strategy is one that reduces time served for future prisoners because the effects adhere only at the *end* of those prisoners' terms. For most crimes—which have an average time served of a couple years—the delay is small. But the delay is much longer—and thus

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JUST., NCJ 193427, RECIDIVISM OF PRISONERS RELEASED IN 1994, at 5 (2002).

202. INNOCENCE PROJECT, https://perma.cc/8G4C-BETS (archived Jan. 27, 2022).

203. WESLEY G. SKOGAN, SUSAN M. HARTNETT, NATALIE BUMP & JILL DUBOIS, EVALUATION OF CEASEFIRE-CHICAGO 13 (2008), https://perma.cc/RQ64-WNML.

204. Ileana Najarro, *Former Prisoner Finds Success in Entrepreneurship*, HOUS. CHRON. (Nov. 4, 2016, 10:14 PM), https://perma.cc/6XVL-HQAM.

205. Stephanie Lai, *26 Years After Being Convicted of Murder, a D.C. Jail Inmate is Elected to Public Office*, WASH. POST (June 17, 2021, 6:00 AM EDT), https://perma.cc/MK4P-N9VT.

206. *See generally* Lindsey L. Runell, *Becoming a Social Work Professional After Incarceration*, 20 J. SOC. WORK 307 (2020) (interviewing previously incarcerated social workers).

207. Susan Svrluga, *He Robbed Banks and Went to Prison. His Time There Put Him on Track for a New Job: Georgetown Law Professor*, WASH. POST (Apr. 21, 2017), https://perma.cc/S2N2-D55J; Reginald Dwayne Betts, *Could an Ex-Convict Become an Attorney? I Intended to Find Out*, N.Y. TIMES (Oct. 16, 2018), https://perma.cc/4FU9-FUXP.

208. Adnan Khan, *I Didn't Kill Anyone. Why Did I Just Serve 16 Years for Murder?*, N.Y. TIMES (July 22, 2019), https://perma.cc/7HFU-SDZ9.

209. *See supra* Part I.B.

offers even more political insulation—for violent offenses, which tend to have long sentences.

To illustrate, Panel A in Table 11 forecasts the effects of 25, 50, and 75% reductions in admissions for all violent offenses but not non-violent ones—an implausible decarceration strategy that nonetheless illustrates how timing varies based on the structure of a decarceration strategy. Across each of the columns, roughly a fifth of the long-term effect on the prison population adheres within one year, one half adheres within five, and three quarters adheres in ten. Panel B shows that reducing time served for both current and future prisoners decarcerates even faster. Nearly all of the effect adheres within a year. Finally, Panel C shows that, compared to the previous two strategies, the effect of reducing time served exclusively for future prisoners (and not current ones) adheres far more slowly. For example, when reducing time served by 25% for all violent offenses, almost none of the effect adheres within a year, only a third accrues within five, and only half within ten. In other words, by the time half of the effect of the decarceration policy is realized, many of the political officials who supported it—including the governor—will no longer hold the same political office. Quantifying these kinds of temporal delays associated with specific decarceration proposals could therefore diminish officials' fears of giving their support. With sufficient political insulation and serious efforts to push back against the dominant public image of violent offenses, it may be possible to begin decarcerating some violent offenses.

Table 11. Forecasting Timelines for Decarcerating All Violent Offenses

			All Violent		
	Year	**Baseline**	**25%**	**50%**	**75%**
Panel A: Admissions	**0**	1,158,046	0%	0%	0%
	1	1,150,623	2.3	4.7	7.0
	5	1,137,150	6.9	13.8	20.6
	10	1,129,587	9.4	18.8	28.2
	20	1,119,899	11.7	23.4	35.1
	30	1,111,762	12.7	25.4	38.1
	Admissions	501,124	6.7%	13.4%	20.0%
	Black Overrep	3.2	3.2	3.1	3.0
Panel B: TS Current & Future Prisoners	**0**	1,158,046	0%	0%	0%
	1	1,150,623	12.6	26.6	40.8
	5	1,137,150	13.0	27.2	41.2
	10	1,129,587	13.3	27.5	41.3
	20	1,119,899	13.7	27.7	41.2
	30	1,111,762	13.7	27.6	41.1
	Admissions	501,124	0.0%	0.0%	0.0%
	Black Overrep	3.2	3.2	3.1	3.0
Panel C: TS Future Prisoners	**0**	1,158,046	0%	0%	0%
	1	1,150,623	0.4	1.6	3.4
	5	1,137,150	3.7	8.9	16.1
	10	1,129,587	6.4	14.5	24.9
	20	1,119,899	9.5	20.9	33.7
	30	1,111,762	11.4	24.1	37.6
	Admissions	501,124	0.0%	0.0%	0.0%
	Black Overrep	3.2	3.2	3.2	3.1

There are also opportunities to reduce racial disparities in prison among non-violent offenses, too. Jurisdictions can reduce enforcement of less serious offenses in Black and Hispanic communities;[210] they can proactively combat racial discrimination in policing, prosecution, and the courts;[211] and they can require criminal justice agencies to conduct racial impact statements, similar to fiscal or environmental impact statements, which would "obligate policymakers to review data on racial effects prior to adopting new legislation."[212]

210. *See supra* text accompanying note 100.

211. *See supra* notes 101-105.

212. Marc Mauer, *Racial Impact Statements as a Means of Reducing Unwarranted Sentencing Disparities*, 5 OHIO ST. J. CRIM. L. 19, 21 (2007).

D. Feedback Effects of Diminished Deterrence & Incapacitation

One final takeaway is that diminished deterrence and incapacitation may undo a small fraction of decarceration's effects on the prison population by increasing the types of crimes that often result in a prison sentence and, in turn, increasing admissions. That's particularly true for more aggressive strategies that seek to reduce the prison population by, say, 50% or 75%. My analysis suggests that the effects of diminished deterrence and incapacitation are meaningful in size but would not dramatically affect my results.

This finding has at least two implications. First, it suggests that future efforts to forecast the effects of decarceration should, to the extent possible, model and adjust for the potential feedback effects of diminished deterrence and incapacitation. Second, it reinforces the need to decarcerate not only through criminal justice interventions but also through social and economic policies that reduce poverty, inequality, and crime. Indeed, this has been an animating principle of prison abolition all along, and the programs I discussed above for reducing violent crime are similarly relevant here.[213]

CONCLUSION

Suppose we agreed to reduce the prison population by some number—say, 25, 50, or 75%. How should we do it? There are only two policy levers: imprisoning fewer people or shortening the time they serve. But these levers do not represent equivalent policy choices, and the universe of options is nearly infinite. To help pick among them, this Article proposes metrics and an analytic methodology to forecast effects on population size, crime, the number of people exposed to the social harms of prison, racial disparities, and timing. Armed with these tools, we can make more informed decisions about how to best shrink prisons, given our priorities and constraints.

213. *See supra* notes 56-66 and accompanying text.

APPENDIX A. ADDITIONAL TABLES AND FIGURES

Appendix Table A.1. Prison Population Forecasts Assuming Zero Admissions in First and Second Year

Year	Baseline	1 Yr No Admission	2 Yr No Admission
0	1,158,046	100%	100%
1	1,150,623	69.4	69.4
2	1,145,559	84.4	53.6
3	1,142,039	90.6	75.0
4	1,139,301	93.6	84.2
5	1,137,150	95.3	88.9
6	1,135,255	96.3	91.6
7	1,133,503	97.0	93.3
8	1,132,021	97.5	94.5
9	1,130,779	97.9	95.4
10	1,129,587	98.2	96.1
15	1,124,558	99.0	97.9
20	1,119,899	99.4	98.7
25	1,115,436	99.6	99.2
30	1,111,762	99.8	99.5
Admissions	501,124	97%	93%
Black Overrep	3.2	3.2	3.2

Appendix Table A.2. Reducing Time Served for Drug and Low-Level Offenses

			Drug		
	Year	**Baseline**	**25%**	**50%**	**75%**
Panel A: Low 25%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	8.1	12.2	15.9
	5	1,137,150	8.0	12.1	15.8
	10	1,129,587	8.1	12.1	15.8
	20	1,119,899	8.1	12.2	15.9
	30	1,111,762	8.2	12.3	16.0
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.3	3.3
Panel B: Low 50%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	13.5	17.6	21.3
	5	1,137,150	13.5	17.6	21.3
	10	1,129,587	13.6	17.7	21.4
	20	1,119,899	13.7	17.8	21.5
	30	1,111,762	13.7	17.8	21.5
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.3	3.3
Panel C: Low 75%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	18.6	22.7	**26.4**
	5	1,137,150	18.7	22.7	26.5
	10	1,129,587	18.7	22.8	26.5
	20	1,119,899	18.7	22.8	26.5
	30	1,111,762	18.8	22.8	26.6
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.4	3.4

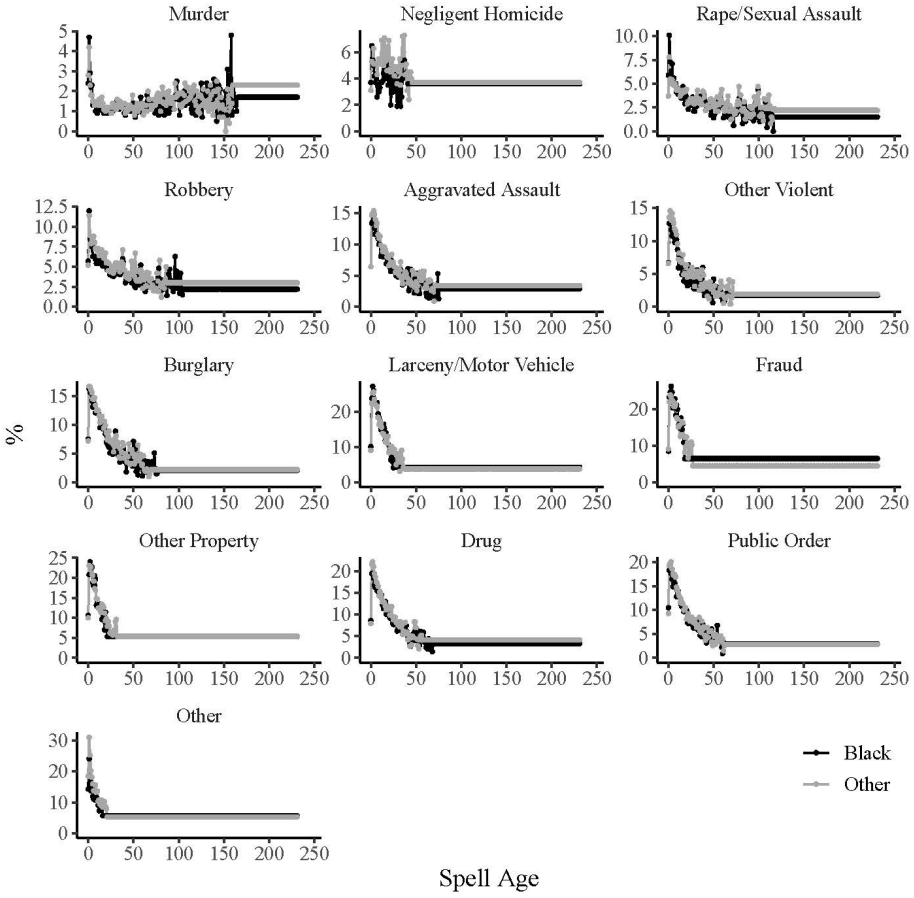
Appendix Table A.3. Best Options for Reducing Prison Population by 25% Adjusting for Diminished Deterrence and Incapacitation

			TS	TS/Adm	Adm	TS/Adm
	Year	Baseline	Low: 75% Drug: 75%	Low: 75% Drug: 25%	Low: 100% Drug: 50%	Non-Viol: 25% Less Viol: 75%
Panel A: Unadjusted	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	26.4	23.1	13.1	39.0
	5	1,137,150	26.5	24.6	24.0	43.4
	10	1,129,587	26.5	24.9	25.9	43.9
	20	1,119,899	26.5	25.0	26.7	44.0
	30	1,111,762	26.6	25.0	27.0	44.0
	Admissions	501,124	0.0%	31.4%	45.9%	33.3%
	Black Overrep	3.2	3.4	3.4	3.4	3
Panel B: Adjusted	**0**	1,158,046	0%	0%	0%	0%
	1	1,151,228	23.5	20.8	12.4	34.8
	5	1,141,937	20.9	19.2	19.6	34.6
	10	1,136,992	20.1	18.6	20.0	34.0
	20	1,130,558	19.6	18.1	19.9	33.3
	30	1,125,129	19.5	18.0	19.9	33.0
	Admissions	508,148	-14.6%	22.7%	39.4%	16.1%
	Black Overrep	3.2	3.4	3.4	3.4	3

Appendix Table A.4. Best Options for Reducing Prison Population by 75% Adjusting for Diminished Deterrence and Incapacitation

			TS	**TS/Adm**	**Adm**
	Year	**Baseline**	**Nonviol: 75% Viol: 75%**	**Non-viol: 50% Viol: 50%**	**Non-viol: 100% Less Viol: 75%**
Panel A: Unadjusted	**0**	1,158,046	0%	0%	0%
	1	1,150,623	75.9	61.3	28.3
	5	1,137,150	76.2	70.3	60.4
	10	1,129,587	76.4	73.3	71.4
	20	1,119,899	76.2	75.2	79.8
	30	1,111,762	76.1	75.5	83.2
	Admissions	501,124	0.0%	50.0%	93.3%
	Black Overrep	3.2	3.3	3.2	3.7
Panel B: Adjusted	**0**	1,158,046	0%	0%	0%
	1	1,151,228	69.2	57.4	28.2
	5	1,141,937	66.4	62.1	59.4
	10	1,136,992	66.0	63.8	69.4
	20	1,130,558	65.8	64.9	76.3
	30	1,125,129	65.7	65.1	78.8
	Admissions	508,148	-47.7%	27.1%	91.8%
	Black Overrep	3.2	3.3	3.3	3.8

Appendix Figure A.1. Spell Age-Specific Release Rates, by Crime Type and Race



APPENDIX B. SUPPLEMENTARY ANALYSES

As noted, I excluded from the body of the paper a full discussion of my results for low-level, drug, and other non-violent offenses; less serious violent offenses; and all violent offenses in Parts IV.B.3-B.5, respectively. I describe the results in full here.

1. Low-Level, Drug, and Other Non-Violent Offenses

Here, I examine decarceration strategies that target low-level and drug offenses as well as other non-violent offenses—i.e., burglary and fraud. Beginning with admissions, Panels A through D in Appendix Table B.1 assume 25, 50, 75, and 100% reductions in admissions for both low-level and drug offenses, while the columns assume the same reductions for all other non-violent offenses.

As the final column in Panel D shows, the biggest reduction we could expect—by cutting admissions entirely for all such offenses—is 45% in about twenty years. In other words, cutting admissions for all non-violent offenses would not cross the 50% threshold. Furthermore, assuming we prefer to decarcerate low-level and drug offenses over the remaining non-violent offenses—which are predominantly burglary—none of the strategies in Appendix Table B.1 that cut the prison population by a quarter appear more desirable than those identified earlier by any of the metrics of decarceration. The results are substantively similar in Appendix Table B.2 for decarceration strategies that reduce time served rather than admissions.

Next, I forecast the effects of reducing both admissions and time served together. Panels A through D in Appendix Table B.3 assume reductions in both admissions and time served of 25, 50, 75, and 100% for low-level and drug offenses, and the columns assume such reductions for all other non-violent crimes. Once again, none of the tested policy changes would halve the prison population.

But my models forecast that several approaches would scale the population down by at least a quarter. Against the metric of crime, two stand out. First, reducing admissions and time served by 25% for low-level and drug offenses and by 75% for other non-violent offenses would reduce the prison population by a quarter in five years (Panel A, third column). Assuming we prefer to decarcerate low-level and drug offenses over the remaining non-violent offenses—which are predominantly burglary—a second strategy is probably preferable: reducing admissions and time served by 50% for low-level and drug offenses and by 25% for other non-violent crimes would cut the prison population by 27% within a year (Panel B, first column). This strategy also performs comparatively well in terms of the metric of social harm because it cuts annual admissions by 33%, and against the metric of timing, because it cuts the population by a quarter within a year. Finally, against the metric of racial disparity, both the first and second strategies perform best, as they only increase Black overrepresentation to 3.4, less than the other options in the table.

Appendix Table B.1. Reducing Admissions for Low-Level, Drug, and Other Non-Violent Offenses

			Non-Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Low/Drug 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	5.3	6.5	7.6	8.8
	5	1,137,150	9.9	12.2	14.5	16.8
	10	1,129,587	10.8	13.3	15.9	18.4
	20	1,119,899	11.2	13.8	16.5	19.2
	30	1,111,762	11.3	13.9	16.7	19.4
	Admissions	501,124	18.3%	22.1%	25.9%	29.7%
	Black Overrep	3.2	3.3	3.3	3.3	3.4
Panel B: Low/Drug 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	9.5	10.6	11.8	13.0
	5	1,137,150	17.6	19.9	22.2	24.5
	10	1,129,587	19.0	21.6	24.1	26.7
	20	1,119,899	19.7	22.3	25.0	27.7
	30	1,111,762	19.9	22.6	25.3	28.0
	Admissions	501,124	32.9%	36.6%	40.4%	44.2%
	Black Overrep	3.2	3.3	3.4	3.4	3.4
Panel C: Low/Drug 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	13.7	14.8	16.0	17.1
	5	1,137,150	25.2	27.5	29.8	32.1
	10	1,129,587	27.3	29.8	32.4	34.9
	20	1,119,899	28.2	30.8	33.5	36.2
	30	1,111,762	28.4	31.1	33.8	36.6
	Admissions	501,124	47.4%	51.2%	55.0%	58.8%
	Black Overrep	3.2	3.4	3.4	3.5	3.5
Panel D: Low/Drug 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	17.8	19.0	20.1	21.3
	5	1,137,150	32.8	35.1	37.4	39.8
	10	1,129,587	35.5	38.1	40.6	43.2
	20	1,119,899	36.7	39.3	42.0	44.7
	30	1,111,762	37.0	39.7	42.4	45.1
	Admissions	501,124	61.9%	65.7%	69.5%	73.3%
	Black Overrep	3.2	3.5	3.5	3.6	3.6

Appendix Table B.2. Reducing Time Served for Low-Level, Drug, and Other Non-Violent Offenses

			Non-Violent		
	Year	**Baseline**	**25%**	**50%**	**75%**
Panel A: Low/Drug 25%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	10.8	13.9	16.8
	5	1,137,150	10.7	13.8	16.6
	10	1,129,587	10.7	13.8	16.6
	20	1,119,899	10.8	13.8	16.6
	30	1,111,762	10.9	13.8	16.6
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.3	3.3
Panel B: Low/Drug 50%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	20.3	23.4	**26.3**
	5	1,137,150	20.3	23.3	26.2
	10	1,129,587	20.3	23.3	26.2
	20	1,119,899	20.5	23.4	26.2
	30	1,111,762	20.5	23.4	26.2
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.4	3.4
Panel C: Low/Drug 75%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	**29.2**	**32.3**	**35.2**
	5	1,137,150	29.2	32.2	35.0
	10	1,129,587	29.2	32.2	35.0
	20	1,119,899	29.2	32.2	35.0
	30	1,111,762	29.3	32.2	35.0
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.4	3.4	3.5

Appendix Table B.3. Reducing Admissions and Time Served for Low-Level, Drug, and Other Non-Violent Offenses

			Non-Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Low/Drug 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	15.8	19.4	22.2	23.3
	5	1,137,150	18.7	22.3	**24.6**	**25.3**
	10	1,129,587	19.1	22.8	24.9	25.5
	20	1,119,899	19.4	23.0	25.0	25.7
	30	1,111,762	19.5	23.1	25.1	25.8
	Admissions	501,124	18.3%	22.1%	25.9%	29.7%
	Black Overrep	3.2	3.3	3.4	3.4	3.4
Panel B: Low/Drug 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**27.2**	**30.9**	**33.6**	**34.7**
	5	1,137,150	30.1	33.8	36.1	36.8
	10	1,129,587	30.5	34.2	36.3	37.0
	20	1,119,899	30.8	34.4	36.5	37.1
	30	1,111,762	30.9	34.5	36.5	37.2
	Admissions	501,124	32.9%	36.6%	40.4%	44.2%
	Black Overrep	3.2	3.4	3.5	3.5	3.5
Panel C: Low/Drug 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**35.3**	**39.0**	**41.8**	**42.8**
	5	1,137,150	36.9	40.5	42.8	43.5
	10	1,129,587	37.1	40.7	42.9	43.5
	20	1,119,899	37.3	40.9	42.9	43.5
	30	1,111,762	37.3	40.9	43.0	43.6
	Admissions	501,124	47.4%	51.2%	55.0%	58.8%
	Black Overrep	3.2	3.5	3.5	3.6	3.6
Panel D: Low/Drug 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**38.2**	**41.9**	**44.7**	**45.8**
	5	1,137,150	39.0	42.6	44.9	45.6
	10	1,129,587	39.1	42.8	44.9	45.5
	20	1,119,899	39.3	42.9	44.9	45.5
	30	1,111,762	39.4	42.9	45.0	45.6
	Admissions	501,124	61.9%	65.7%	69.5%	73.3%
	Black Overrep	3.2	3.5	3.5	3.6	3.6

2. Less Serious Violent Offenses

As the results so far have shown, decarceration strategies that only apply to non-violent offenses cannot cut the prison population by half or more. Next, I examine strategies that decarcerate relatively less serious forms of violence—manslaughter, robbery, assault, and other violent offenses.

Beginning with admissions, each panel in Appendix Table B.4 assumes a 25, 50, 75, and 100% reduction in all non-violent offenses, and each column assumes the same reductions in less-serious violent offenses. Given that I have already identified many strategies that achieve a 25% reduction without decarcerating violent offenses, it's probably unnecessary to review the strategies that cross that threshold here. But one point worth noting is that Appendix Table B.4 presents the first strategy that can achieve the 25% threshold while reducing racial disparity: decreasing admissions for all non-violent offenses by 25% and for less serious violent offenses by 75%—a politically implausible plan—would reduce Black overrepresentation slightly, from 3.2 to 3.1 (Panel A, third column).

Several strategies in Appendix Table B.4 achieve a 50% reduction. If we seek to minimize increases in crime, a few stand out. Cutting admissions by 75% for both non-violent and less violent offenses halves the prison population in under twenty years (Panel C, third column). This strategy also performs best in terms of racial disparity, as it leaves Black overrepresentation unchanged, unlike the other strategies, which tend to worsen it. The other top performer against the metric of crime is eliminating admissions for non-violent offenses and cutting admissions by 25% for less-serious violent offenses, which would halve the prison population in under twenty years (Panel D, first column). That same strategy likely also minimizes social harm by reducing annual admissions by 78%. Appendix Table B.5 shows that the results are substantively similar for decarceration strategies that reduce time served instead of admissions.

Appendix Table B.4. Reducing Admissions for Non-Violent and Less Serious Violent Offenses

			Less Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Non-viol 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	7.0	8.7	10.4	12.1
	5	1,137,150	14.4	18.8	23.3	27.7
	10	1,129,587	16.3	21.9	27.4	33.0
	20	1,119,899	17.4	23.6	29.8	36.0
	30	1,111,762	17.7	24.0	30.4	36.8
	Admissions	501,124	23.3%	28.3%	33.3%	38.3%
	Black Overrep	3.2	3.2	3.2	3.1	3.0
Panel B: Non-viol 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	12.3	14.0	15.7	17.4
	5	1,137,150	24.3	28.7	33.2	37.6
	10	1,129,587	27.1	32.7	38.2	43.8
	20	1,119,899	28.5	34.8	40.9	47.2
	30	1,111,762	28.9	35.3	41.7	48.1
	Admissions	501,124	41.7%	46.7%	51.7%	56.7%
	Black Overrep	3.2	3.3	3.2	3.2	3.1
Panel C: Non-viol 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	17.7	19.4	21.0	22.7
	5	1,137,150	34.2	38.7	43.1	47.6
	10	1,129,587	37.9	43.5	49.0	**54.5**
	20	1,119,899	39.7	45.9	**52.1**	58.3
	30	1,111,762	40.2	46.6	53.0	59.3
	Admissions	501,124	60.0%	65.0%	70.0%	75.0%
	Black Overrep	3.2	3.4	3.3	3.2	3.1
Panel D: Non-viol 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	23.0	24.7	26.4	28.1
	5	1,137,150	44.2	48.6	**53.1**	**57.5**
	10	1,129,587	48.7	**54.3**	59.8	65.3
	20	1,119,899	**50.9**	57.1	63.3	69.5
	30	1,111,762	51.5	57.9	64.3	70.7
	Admissions	501,124	78.3%	83.3%	88.3%	93.3%
	Black Overrep	3.2	3.5	3.5	3.4	3.2

Appendix Table B.5. Reducing Time Served for Less Serious Violent Crimes

			Less Violent		
	Year	Baseline	25%	50%	75%
Panel A: Non-viol 25%	0	1,158,046	0%	0%	0%
	1	1,150,623	17.3	24.4	31.2
	5	1,137,150	17.3	24.3	31.0
	10	1,129,587	17.3	24.2	30.9
	20	1,119,899	17.4	24.2	30.7
	30	1,111,762	17.4	24.1	30.6
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.2	3.2	3.1
Panel B: Non-viol 50%	0	1,158,046	0%	0%	0%
	1	1,150,623	29.9	36.9	43.8
	5	1,137,150	29.8	36.8	43.5
	10	1,129,587	29.9	36.9	43.5
	20	1,119,899	30.0	36.8	43.3
	30	1,111,762	30.0	36.7	43.1
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.2	3.1
Panel C: Non-viol 75%	0	1,158,046	0%	0%	0%
	1	1,150,623	41.7	48.7	**55.5**
	5	1,137,150	41.6	48.6	55.3
	10	1,129,587	41.6	48.5	55.2
	20	1,119,899	41.6	48.4	54.9
	30	1,111,762	41.5	48.2	54.7
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.4	3.3	3.2

In Appendix Table B.6, I forecast the effects of reducing both admissions and time served for non-violent and less-serious violent crimes. Panels A through D assume 25, 50, 75, and 100% reductions in admissions and time served for all non-violent offenses, respectively, while the columns assume the same reductions for less serious violent offenses. Once again, none of the policy changes are likely to achieve a 75% reduction in the prison population—a notable result following directly from the fact that over 25% of all people in prison are serving time for murder, rape, or sexual assault.

The table does, however, identify additional paths to reduce the prison population by 50%. Two would likely perform well against the metric of crime. First, a 50% reduction in admissions and time served for both non-violent and less

serious violent crime would achieve a 53% reduction in under five years (Panel B, second column). This strategy also performs best in terms of racial disparity, by leaving Black overrepresentation unchanged.[214] Second, a 75% reduction in time served and admissions for non-violent offenses and a 25% reduction for less serious violent offenses would reduce the prison population by 50% in a year (Panel C, first column). That same strategy would also perform comparatively well in terms of minimizing social harm because it would reduce annual admissions by 60%. It is also among the fastest, halving the population in a year.

214. The only strategies in the table that reduce Black overrepresentation cut the prison population by dramatically more than 50%.

Appendix Table B.6. Reducing Admissions and Time Served for Non-Violent and Less Serious Violent Offenses

			Less Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Non-viol 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	23.9	32.0	39.0	42.5
	5	1,137,150	28.9	37.7	43.4	45.2
	10	1,129,587	30.1	38.8	43.9	45.5
	20	1,119,899	30.8	39.1	44.0	45.5
	30	1,111,762	30.9	39.2	44.0	45.5
	Admissions	501,124	23.3%	28.3%	33.3%	38.3%
	Black Overrep	3.2	3.2	3.1	3.0	3.0
Panel B: Non-viol 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	39.0	47.1	**54.1**	**57.6**
	5	1,137,150	44.1	**52.8**	58.5	60.3
	10	1,129,587	45.2	53.8	59.0	60.6
	20	1,119,899	45.8	54.2	59.0	60.6
	30	1,111,762	45.9	54.2	59.0	60.6
	Admissions	501,124	41.7%	46.7%	51.7%	56.7%
	Black Overrep	3.2	3.3	3.2	3.1	3.1
Panel C: Non-viol 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**49.9**	**58.0**	**65.0**	**68.5**
	5	1,137,150	53.1	61.8	67.5	69.3
	10	1,129,587	53.9	62.5	67.6	69.2
	20	1,119,899	54.3	62.7	67.5	69.1
	30	1,111,762	54.4	62.6	67.4	69.0
	Admissions	501,124	60.0%	65.0%	70.0%	75.0%
	Black Overrep	3.2	3.4	3.3	3.2	3.2
Panel D: Non-viol 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	**53.9**	**62.0**	**69.0**	**72.5**
	5	1,137,150	55.9	64.6	70.3	72.1
	10	1,129,587	56.5	65.2	70.3	71.9
	20	1,119,899	56.9	65.3	70.1	71.7
	30	1,111,762	57.0	65.3	70.1	71.7
	Admissions	501,124	78.3%	83.3%	88.3%	93.3%
	Black Overrep	3.2	3.5	3.3	3.2	3.2

3. All Violent Offenses

Finally, I examine the effects of decarcerating prisoners serving time for all violent offenses, including the most serious ones—murder, rape, and sexual assault. Each panel in Appendix Table B.7 assumes 25, 50, 75, and 100% reductions in admissions for non-violent crimes, and each column assumes the same reductions for all violent crimes.

The results suggest a majority of the decarceration strategies in the table would halve the prison population. First, if we seek to minimize increases in crime, two strategies stand out. Reducing admissions by 75% for non-violent crimes and by 50% for violent ones would reduce the prison population by 51% within ten years (Panel C, second column). Similarly, reducing admissions for non-violent crimes by 100% and violent crimes by 25% would reduce the prison population by 53% within ten years (Panel D, first column). Second, against the metric of social harm, that same model performs best as it cuts total annual admissions by 80%. Third, against the metric of racial disparity, all of the strategies that halve the prison population increase Black overrepresentation. But one does come close to halving the population within thirty years while reducing Black overrepresentation just slightly, to 3.1 (Panel A, third column).

Ignoring the two strategies that would eliminate admissions for all violent offenses, only one strategy in Appendix Table B.7 would reduce the prison population by 75%: eliminating admissions for non-violent offenses and cutting admissions for all violent ones by 75% would reduce the prison population by 80% in twenty years and would cut admissions by 93% (Panel D, third column). It would also substantially increase Black overrepresentation, from 3.2 to 3.7.

As expected, the results in Appendix Table B.8 are broadly similar for decarceration strategies that shorten time served rather than admissions. But because the effects of reducing time served adhere more quickly, two additional time-served strategies would achieve a 50 and 75% reduction, respectively, within the thirty-year timeframe of my forecast even though the analogous admissions strategies would not. First, reducing time served by 50% for all non-violent and all violent offenses would halve the prison population in a year (Panel B, second column) without affecting Black overrepresentation. Second, reducing time served by 75% for both non-violent and all violent offenses would reduce the prison population by 76% in a year (Panel C, third column) and would increase Black overrepresentation to 3.4, by roughly 6%.

Appendix Table B.7. Reducing Admissions for All Violent and Non-Violent Offenses

			All Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Non-viol 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	7.7	10.0	12.3	14.7
	5	1,137,150	16.8	23.7	30.6	37.5
	10	1,129,587	20.2	29.6	39.0	48.5
	20	1,119,899	22.9	34.6	46.3	**58.1**
	30	1,111,762	24.0	36.7	49.4	62.2
	Admissions	501,124	25.0%	31.7%	38.4%	45.0%
	Black Overrep	3.2	3.2	3.2	3.1	3.0
Panel B: Non-viol 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	13.0	15.3	17.6	20.0
	5	1,137,150	26.8	33.6	40.5	47.4
	10	1,129,587	31.0	40.4	**49.8**	**59.3**
	20	1,119,899	34.0	45.8	57.4	69.2
	30	1,111,762	35.2	48.0	60.6	73.5
	Admissions	501,124	43.3%	50.0%	56.7%	63.4%
	Black Overrep	3.2	3.3	3.3	3.2	3.0
Panel C: Non-viol 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	18.3	20.6	23.0	25.3
	5	1,137,150	36.7	43.6	**50.5**	**57.3**
	10	1,129,587	41.8	**51.2**	60.6	70.0
	20	1,119,899	45.2	56.9	68.7	80.4
	30	1,111,762	46.6	59.2	72.0	84.7
	Admissions	501,124	61.6%	68.3%	75.0%	81.7%
	Black Overrep	3.2	3.4	3.4	3.3	3.2
Panel D: Non-viol 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	23.6	26.0	28.3	30.6
	5	1,137,150	46.6	**53.5**	**60.4**	**67.3**
	10	1,129,587	**52.6**	62.0	71.4	80.8
	20	1,119,899	56.4	68.1	79.8	91.6
	30	1,111,762	57.8	70.5	83.2	96.1
	Admissions	501,124	80.0%	86.6%	93.3%	100%
	Black Overrep	3.2	3.6	3.6	3.7	4.2

Appendix Table B.8. Reducing Time Served for All Violent and Non-Violent Offenses

			All Violent		
	Year	**Baseline**	**25%**	**50%**	**75%**
Panel A: Non-viol 25%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	23.4	37.4	**51.6**
	5	1,137,150	23.7	37.9	51.9
	10	1,129,587	24.1	38.3	52.1
	20	1,119,899	24.5	38.6	52.1
	30	1,111,762	24.6	38.5	51.9
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.2	3.1	3.0
Panel B: Non-viol 50%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	36.0	**50.0**	**64.2**
	5	1,137,150	36.3	50.5	64.5
	10	1,129,587	36.7	50.9	64.7
	20	1,119,899	37.1	51.2	64.7
	30	1,111,762	37.2	51.0	64.5
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.3	3.2	3.1
Panel C: Non-viol 75%	**0**	1,158,046	0%	0%	0%
	1	1,150,623	47.7	**61.8**	**75.9**
	5	1,137,150	48.0	62.2	76.2
	10	1,129,587	48.4	62.6	76.4
	20	1,119,899	48.7	62.7	76.2
	30	1,111,762	48.7	62.6	76.1
	Admissions	501,124	0%	0%	0%
	Black Overrep	3.2	3.4	3.4	3.3

Appendix Table B.9 forecasts the effects of reducing both admissions and time served for all non-violent and all violent crimes. In general, the forecasts suggest each of the tested strategies either do not reach the 50% threshold or shoot far past it. But the table does identify several new strategies forecasted to reduce the prison population by 75%. First, if we seek to minimize effects on crime, the best strategy would reduce admissions and time served for both non-violent and violent offenses by 50%, shrinking the population by 75% in twenty years (Panel B, second column). Second, that same strategy would also perform best in terms of social harm because it reduces annual admissions by 50%. Third, against the metric of racial disparity, Appendix Table B.9 identifies the only

decarceration strategies that would substantially diminish Black overrepresentation. All of them, however, require decarcerating violent offenses far more than non-violent ones, an unlikely policy approach.

Appendix Table B.9. Reducing Admissions and Time Served for All Violent and Non-Violent Offenses

			All Violent			
	Year	**Baseline**	**25%**	**50%**	**75%**	**100%**
Panel A: Non-viol 25%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	30.6	46.2	61.0	70.0
	5	1,137,150	37.6	55.2	68.4	73.1
	10	1,129,587	40.3	58.3	70.0	73.6
	20	1,119,899	42.4	60.2	70.5	73.8
	30	1,111,762	43.1	60.6	70.5	73.9
	Admissions	501,124	25.0%	31.7%	38.4%	45.0%
	Black Overrep	3.2	3.2	3.1	2.9	2.8
Panel B: Non-viol 50%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	45.7	61.3	**76.1**	**85.1**
	5	1,137,150	52.7	70.3	83.5	88.2
	10	1,129,587	55.4	73.3	85.1	88.7
	20	1,119,899	57.5	**75.2**	85.6	88.9
	30	1,111,762	58.1	75.5	85.6	88.9
	Admissions	501,124	43.3%	50.0%	56.7%	63.4%
	Black Overrep	3.2	3.4	3.2	3.0	2.8
Panel C: Non-viol 75%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	56.6	72.2	**87.0**	**96.0**
	5	1,137,150	61.7	**79.3**	92.5	97.2
	10	1,129,587	64.0	82.0	93.8	97.3
	20	1,119,899	65.9	83.7	94.0	97.4
	30	1,111,762	66.6	84.0	94.0	97.4
	Admissions	501,124	61.6%	68.3%	75.0%	81.7%
	Black Overrep	3.2	3.5	3.5	3.3	2.8
Panel D: Non-viol 100%	**0**	1,158,046	0%	0%	0%	0%
	1	1,150,623	60.6	**76.2**	**91.0**	**100**
	5	1,137,150	64.5	82.1	95.3	100
	10	1,129,587	66.7	84.7	96.4	100
	20	1,119,899	68.6	86.3	96.7	100
	30	1,111,762	69.2	86.6	96.7	100
	Admissions	501,124	80.0%	86.6%	93.3%	100%
	Black Overrep	3.2	3.6	3.6	3.6	--

APPENDIX C. ACCOUNTING FOR DIMINISHED DETERRENCE AND INCAPACITATION

To run a robustness check that incorporates the possibility of diminished deterrence and incapacitation into my forecasts, I use estimates of the effect of the total prison population on crime against the public from a study by Raphael and Stoll.[215] The study examines the effect of the incarceration rate per 100,000 residents on the crime rates for seven UCR Part I crimes from 1977 to 2010. The core methodological challenge is that incarceration may affect crime, but crime may also affect incarceration. To address this problem, the authors observe: "Given that incarceration rates adjust to permanent changes in behavior with a dynamic lag . . . one can identify variation in incarceration rates that is not contaminated by contemporary changes in criminal behavior."[216] The authors isolate this variation by using an instrumental variable to predict the change in the incarceration rate in the next year based on the difference in the previous year between the actual incarceration rate and the steady state incarceration rate implied by prison admissions and releases.

Raphael and Stoll's estimates of the effect of incarceration on crime are presented in the fourth column of Table 7.2 in their book.[217] To be conservative, I use all negative coefficients, even if they are statistically insignificant. Assault is the only crime with a positive coefficient—which would imply that decreasing the incarceration rate would decrease assault—but the coefficient is small and statistically insignificant. I therefore assume no diminished deterrence or incapacitation for assault. Because Raphael and Stoll do not estimate effects for all of my crime categories, I make several additional assumptions. For negligent homicide and other violent crime, I use the estimates for total violent crime. For fraud and other property crime, I use the estimates for total property crime. The three remaining offense types—drugs, public disorder, and other crimes—are most challenging because they do not have an obvious analogue crime for which an estimate is available in the Raphael and Stoll study. To be conservative, I assigned these crimes the estimate associated with robbery, the largest estimate relative to the average level of the respective crime.

Because most crimes do not result in a prison admission, I cannot use Raphael and Stoll's results directly to estimate how many additional prison admissions would result from lower incarceration. I address this problem in several steps. First, I divide each of the crime-specific estimates by their respective average annual crime rates in 2016 to estimate the relative effect of a one-unit increase in the aggregate incarceration rate on the crime-specific rates in that year. For example, Raphael and Stoll estimate that a one-unit increase in the aggregate incarceration rate per 100,000 residents causes a 0.009 decrease in the murder rate per 100,000 residents. I divide -0.009 by the homicide rate in 2016—5.1

215. RAPHAEL & STOLL, *supra* note 7, at 228-35.
216. Johnson & Raphael, *supra* note 164, at 276.
217. RAPHAEL & STOLL, *supra* note 7, at 231.

homicides per 100,000—to estimate the effect of a one-unit increase in the aggregate incarceration rate on the murder rate relative to 2016 levels of murder. In other words, I estimate that an increase of one prisoner per 100,000 residents is associated with a (-.009/5.1=) -0.2% change in murder relative to the 2016 homicide rate.[218]

Second, in each quarter of the simulation, I compute the difference between the aggregate national incarceration rate in that quarter and year-end 2016. Suppose, for example, there were 600 and 590 prisoners per 100,000 residents in the last quarter of 2016 and the last quarter in the first year of the forecast, respectively. The difference between the aggregate national incarceration rate in those two periods would be 10 prisoners per 100,000 residents.

Third, to estimate the number of additional admissions in a given quarter due to diminished deterrence and incapacitation I multiply: (1) 2016 crime-specific quarterly admission rates by (2) the difference in the aggregate incarceration rate between year-end 2016 and the current quarter of the forecast by (3) the crime-specific estimate of the effect of the aggregate incarceration rate on crime relative to 2016 crime levels. Suppose, for example, that 2,000 people were admitted to prison per quarter in 2016 for murder and that there were 10 fewer prisoners per 100,000 residents in the final quarter of the first year of the forecast when compared to year-end 2016. Under these circumstances, I would estimate the number of murder admissions in the final quarter of the first year of the forecast as follows: (2,000 admissions in 2016) + (2,000 admissions in 2016)*(-10 prisoners per 100,000 residents)*(-.002) = 2,040 murder admissions. Note that this approach assumes that increases in crime produce a linear increase in prison admissions.

Finally, for models that assume a policy decision to reduce admissions, I multiply the estimated number of admissions in a given quarter by one minus the proportional reduction in admissions. If a decarceration strategy seeks to reduce admissions for murder by 25%, for example, I would reduce the number of prison admissions in the last quarter of the first year of the forecast as follows: 2,040 * (1-.25) = 1,530 murder admissions. I round any final estimate of admissions in a given year to the nearest integer.

218. I compute the average number of incidents reported to the UCR for each crime category from Jacob Kaplan, *Concatenated Files: Uniform Crime Reporting Program Data: Offenses Known and Clearances by Arrest, 1960-2018*, OPENICPSR (Feb. 19, 2019), https://perma.cc/ES84-RFRW.