

# INMATE ASSISTANCE PROGRAMS: TOWARD A LESS PUNITIVE AND MORE EFFECTIVE CRIMINAL JUSTICE SYSTEM

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## INMATE ASSISTANCE PROGRAMS: TOWARD A LESS PUNITIVE AND MORE EFFECTIVE CRIMINAL JUSTICE SYSTEM\*

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*High recidivism rates in the United States are a well-known and disturbing problem. In this Article, we explain how this problem can be mitigated in a cost-effective manner through reforms that make greater use of humane methods to help inmates rather than punitive measures.*

*We focus on Inmate Assistance Programs (IAPs) adopted by many states. Some of these programs provide inmates with valuable skill sets to utilize upon their release; others provide treatment of mental health and substance use problems. IAPs are likely to reduce recidivism by lowering ex-convicts' need to resort to crime for income as well as reducing their likelihood of committing crimes impulsively under influence. However, those who oppose IAPs quickly point out their significant costs. Moreover, because IAPs provide inmates with benefits, critics further suggest that IAPs may weaken the general deterrence effects of criminal punishment by lowering the expected cost of criminal punishment. Therefore, whether IAPs can be used in a cost-effective manner is an empirical question whose answer depends on the tradeoff between its recidivism-reducing effects on the one hand and its financial and potential general deterrence costs on the other.*

*Here, we discuss additional considerations including discounting, impulsivity problems, knowledge problems, and what we call "network effects." We explain why these often-overlooked factors may cause IAPs to either have weakly negative or even positive effects on general deterrence. We then build on prior economic theories to explain how criminal justice reforms that use shorter imprisonment sentences and more frequent use of IAPs can reduce crimes as well as the costs of administering the criminal justice system. The cost savings from reducing sentences for repeat offenders can be used to finance IAPs without significantly affecting deterrence when existing lengthy imprisonment sentences are ineffective deterrents. Thus, in these cases, our analysis suggests IAPs can, in fact, be used in a cost-effective manner to reduce crime, and are valuable and humane tools that policymakers ought to consider as alternatives to punitive measures.*

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## INTRODUCTION

Lengthy prison terms are not only highly destructive for inmates<sup>1</sup> and their families,<sup>2</sup> but they are also ineffective in reducing crime<sup>3</sup> and costly to administer.<sup>4</sup> These facts have been noted by academics as well as politicians from both sides of the aisle. Indeed, the bipartisan agreement for a need to reform the American criminal justice system has been paralleled by legislative actions and efforts to reduce the size of the prison population while supplementing the criminal justice system with less punitive measures, culminating recently in the First Step Act<sup>5</sup> at the federal level.<sup>6</sup>

In addition to federal legislation, there have also been numerous local and non-centralized attempts to improve the criminal justice system to make it more humane.<sup>7</sup> A glowing example is the Prison University Project<sup>8</sup> at San Quentin Prison in California, which received the National Humanities Medal from President Barack Obama in 2015 “[f]or transforming the lives of incarcerated people through higher education.”<sup>9</sup> As an exemplary prison program, the Prison University Project provided college education to improve the welfare of inmates.<sup>10</sup> Those who completed the program demonstrated a substantial reduction in their post-release criminal involvement: Program graduates experienced a recidivism rate four times lower than the average state recidivism rate, and none of the recidivated crimes involved violence.<sup>11</sup>

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1. See, e.g., Timothy G. Edgemon & Jody Clay-Warner, *Inmate Mental Health and the Pains of Imprisonment*, 9 SOC’Y & MENTAL HEALTH 33 (2019) (finding that incarceration is correlated with negative mental health impacts).

2. Hedwig Lee & Christopher Wildeman, *Assessing Mass Incarceration’s Effects on Families*, 374 SCI. 277, 280–81 (2021).

3. Marc Mauer, Long-Term Sentences: Time to Reconsider the Scale of Punishment, 87 UMKC L. REV. 113, 123–124 (2018).

4. See generally, e.g., Christian Henrichson & Ruth Delaney, Vera Inst. of Just., *The Price of Prisons: What Incarceration Costs Taxpayers* (2012), <https://www.vera.org/downloads/publications/price-of-prisons-updated-version-021914.pdf> [<https://perma.cc/4GVU-UD63>].

5. First Step Act, Pub. L. No. 115-391, 132 Stat. 5194 (2018) (codified as amended in scattered sections of 18, 21, and 34 U.S.C.).

6. *Bipartisan Support for Criminal Justice Reform Still Strong*, EQUAL JUST. INITIATIVE (Dec. 20, 2018), <https://eji.org/news/bipartisan-support-criminal-justice-reform-still-strong> [<https://perma.cc/ZYV4-HCMY>].

7. See *infra* Part I (reviewing inmate welfare programs in different states).

8. Now renamed to Mount Tamalpais College. See *Introducing Mount Tamalpais College*, MOUNT TAMALPAIS COLL., <https://www.mttamcollege.org> [<https://perma.cc/77HZ-T9XM>].

9. *Prison University Project*, NAT’L ENDOWMENT FOR THE HUMANS., <https://www.neh.gov/about/awards/national-humanities-medals/prison-university-project> [<https://perma.cc/4JYV-KY43>].

10. *Id.*

11. AMY E. LERMAN, PRISON UNIVERSITY PROJECT PROGRAM EVALUATION: PROGRESS REPORT 2 (2012), <https://www.mttamcollege.org/wp-content/uploads/2020/08/PUP-Progress-2012.pdf> [<https://perma.cc/LL85-TRA6>]. The reduction in recidivism and violent crimes cited in the award statement of the National Humanities Medal is merely anecdotal (since it likely suffers from selection bias). However, recent research has rigorously demonstrated the positive impact of prison educational and vocational programs on

Successful programs such as the Prison University Project are not without critique. Although the Prison University Project provides free-of-charge classes to inmates thanks to private donations and the voluntary service of professors and students from various universities (such as University of California Berkeley, San Francisco State University, and Stanford University<sup>12</sup>), the actual cost of running these programs is very high. For example, Illinois' Kewanee Life Skills Re-Entry Center had an annual cost of \$68,489 per offender in 2020,<sup>13</sup> which was 84% higher than the state's average annual cost to incarcerate one inmate.<sup>14</sup> Access to higher education is expensive in the United States, and some politicians have voiced their opposition to such programs, arguing that it is unfair to divert money from law-abiding students to inmates.<sup>15</sup> Moreover, there is concern that improving the quality of inmates' lives may reduce the general deterrence potency of imprisonment for those without prior convictions.<sup>16</sup> Thus, some argue that while these programs aim to reduce recidivism, they may unintentionally increase crime committed by individuals *without prior convictions*.<sup>17</sup>

In this Article, we address these two concerns. First, we explain why programs benefiting inmates may not significantly reduce general deterrence, and may actually increase it. And second, we note that it might be possible for the criminal justice system to self-finance the costs of administering these programs—sentences for repeat offenders can be reduced, and the resulting cost savings can be channeled to fund Inmate Assistance Programs to strengthen specific deterrence. In so doing, we consider a two-step reform in the criminal justice system that may reduce imprisonment sentences and channel the saved costs of incarceration to beneficial programs that would diminish crime and improve the lives of inmates.

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reducing recidivism. See Brian D. Galle, *The Economic Case for Rewards Over Imprisonment*, 96 IND. L.J. 471, 481 & n.59 (2021) (citing Aaron Chalfin & Steven Raphael, *Work and Crime*, in OXFORD HANDBOOK OF CRIME AND CRIMINAL JUSTICE 444, 457–58 (Michael Tonry ed., 2011)); Faye S. Taxman & Amy Murphy, *Community Interventions for Justice-Involved Individuals*, in SMART DECARCERATION: ACHIEVING CRIMINAL JUSTICE TRANSFORMATION IN THE 21ST CENTURY 192, 193–94 (Matthew W. Epperson & Carrie Pettus-Davis eds., 2017); Manudeep Bhuller et al., *Incarceration, Recidivism, and Employment*, 128 J. POL. ECON. 1269, 1271, 1310, 1318 (2020).

12. *Prison University Project*, *supra* note 9.

13. FRANK J. MAUTINO, OFF. OF THE AUDITOR GEN. OF ILL., SUPPLEMENTAL DIGEST: ILLINOIS DEPARTMENT OF CORRECTIONS 3 (2021), <https://www.auditor.illinois.gov/Audit-Reports/Compliance-Agency-List/Corrections/FY20-Corrections-Supplemental-Digest.pdf> [<https://perma.cc/T8PU-46V5>].

14. \$37,000 if including capital costs and employee benefits. See *Trends in Illinois Department of Corrections Spending and Prison Population*, CIVIC FED'N (Mar. 20, 2020), <https://www.civicfed.org/iifs/blog/trends-illinois-department-corrections-spending-and-prison-population> [<https://perma.cc/96S4-LVQA>].

15. See, e.g., Nicole Lewis, *The Uncertain Fate of College in Prison*, MARSHALL PROJECT (Mar. 28, 2018, 10:00 PM), <https://www.themarshallproject.org/2018/03/28/the-uncertain-fate-of-college-in-prison> [<https://perma.cc/626G-4UZ2>].

16. TCR Staff, *Do Prison Rehabilitation Programs Really Work?*, CRIME REP. (Aug. 15, 2022), <https://thecrimereport.org/2022/08/15/do-prison-rehabilitation-programs-really-work/> [<https://perma.cc/GM8S-LLPV>].

17. *Id.*

Before explaining our theory in greater detail, we first define the programs which constitute the subject of our analysis. We use the phrase “Inmate Assistance Programs” (henceforth, IAPs) to refer to all programs that provide inmates with valuable benefits that reduce their propensity to recidivate after release. Many different programs fall within our broad definition. In-prison programs such as the Prison University Project are one example.<sup>18</sup> So too are reentry and reintegration programs that occur after incarceration to help inmates readjust to life after imprisonment (for example, providing released inmates with job opportunities, housing assistance, cash assistance, and health care).<sup>19</sup> Part I categorizes and reviews existing IAPs.

IAPs are particularly important in the context of incarceration in the United States, which tops the world in both its incarcerated population size and per-capita incarceration rate.<sup>20</sup> Moreover, of the approximately 1.23 million inmates currently serving time in federal and state prisons (excluding jails), about 40% are released every year.<sup>21</sup> Concurrently, another 40% are newly incarcerated.<sup>22</sup> In other words, about half a million individuals cycle in and out of American prisons every year.<sup>23</sup> Therefore, IAPs are crucial policy tools, which affect not only the life quality of this very large group of individuals but also the nature of their future social interactions with the general population.

Benefits from successful implementations of IAPs are not hard to list. First, they directly improve the welfare of convicts, providing them with a more meaningful second chance.<sup>24</sup> Additionally, IAPs confer sizable benefits to friends and families of convicts.<sup>25</sup> Society also benefits if inmates become more productive members in the labor market upon their release with the help of IAPs.<sup>26</sup> Indeed, IAPs can bridge the gap between the incarcerated and the

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18. See *infra* Part I (reviewing existing IAPs).

19. See *infra* Part I; see generally Cheryl Jonson & Francis Cullen, *Prison Reentry Programs*, 44 CRIME & JUST. 517 (2015) (discussing the historical background and effectiveness of IAPs).

20. Statistics are available from the World Prison Brief database. See *Highest to Lowest – Prison Population Total*, WORLD PRISON BRIEF, <https://www.prisonstudies.org/highest-to-lowest/prison-population-total> [<https://perma.cc/D2Q6-NGFB>].

21. E. ANN CARSON & RICH KLICKOW, BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., PRISONERS IN 2022, at 1 (2023), <https://bjs.ojp.gov/document/p22st.pdf> [<https://perma.cc/6GK2-8DJB>]. According to the latest Department of Justice report, 448,400 inmates were released in the United States in 2022. *Id.*

22. *Id.*

23. *Id.*

24. See Mark V. Holden, *The Second Chance: A Movement to Ensure the American Dream*, 87 UMKC L. REV. 61, 71 (2018).

25. See, e.g., Patrick Oakford et al., Vera Inst. Just., *Investing in Futures: Economic and Fiscal Benefits of Postsecondary Education in Prison* 37 (2019), <https://www.vera.org/downloads/publications/investing-in-futures.pdf> [<https://perma.cc/8Z5G-QJ3P>] (“Formerly incarcerated people who re-enter the labor market with greater levels of education are more likely to find employment and less likely to return to prison, potentially improving social and economic outcomes for their communities, families, and themselves while leading to significant savings to states.”).

26. See *id.*

general public, paving the way for the reintegration of the incarcerated population.<sup>27</sup>

In addition to these numerous benefits, the recidivism reductions that can be obtained from IAPs provide a particularly strong policy justification. Some of these programs make recommitting crimes a less desirable option by increasing the quality of life for inmates outside of prison after their release (by, for instance, reducing barriers to employment through work training and skill development programs).<sup>28</sup> Others directly target the potential impetus of crime. To illustrate, some IAPs provide medical treatment to individuals who suffer from mental health or substance abuse problems during and/or after incarceration, thereby reducing their likelihoods of impulsively committing crimes again after release.<sup>29</sup>

Despite these beneficial effects, a concern raised by critics is that IAPs may inadvertently reduce the potency of what we refer to as *general* deterrence—deterrence of individuals with no prior convictions.<sup>30</sup> The claim is that IAPs may reduce general deterrence because the perceived severity of punishment attached to imprisonment may be partially offset by the welfare-enhancing aspects of IAPs available to the convicted population.<sup>31</sup> Thus, a tradeoff may emerge between increased specific deterrence (of repeat offenders) and decreased general deterrence (of first-time offenders).

From this perspective, the overall impact of IAPs on crime is, a priori, ambiguous. Moreover, reductions in general deterrence have an asymmetric effect on crime because one cannot become a recidivist if never convicted. Stated differently, deterring a person without a prior conviction has a greater impact on crime than reducing the recidivism of an otherwise identical ex-offender.<sup>32</sup>

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27. See Jonson & Cullen, *supra* note 19, at 522, 536 for a historical overview of reintegration.

28. See *infra* Part I.

29. See, e.g., Erkmen G. Aslim et al., *The Effect of Public Health Insurance on Criminal Recidivism*, 41 J. POL'Y. ANALYSIS & MGMT. 45 (2022) (demonstrating that the expansion of Medicaid coverage has led to a reduction in recidivism among people previously convicted for violent crimes as well as public order violations); see also Hefei Wen et al., *The Effect of Medicaid Expansion on Crime Reduction: Evidence from HIFA-Waiver Expansions*, 154 J. PUB. ECON. 67, 68–69, 71, 77–79 (2017); Qiwei He & Scott Barkowski, *The Effect of Health Insurance on Crime: Evidence from the Affordable Care Act Medicaid Expansion*, 29 HEALTH ECON. 261, 262 (2020); Jacob Vogler, *Access to Health Care and Criminal Behavior: Evidence from the ACA Medicaid Expansions*, 39 J. POL'Y ANALYSIS & MGMT. 1166, 1167 (2020) (all finding crime reductions associated with Medicaid expansions).

30. Our definition of general deterrence differs from a more ambiguous definition of the term which considers the impact of a particular policy on “the general public.” Since the general public can be thought of as including people with prior convictions, this definition would not allow for a clear distinction between recidivism effects and other deterrence effects.

31. See Aslim et al., *supra* note 29, at 47.

32. This asymmetry, the ambiguous impact of IAPs on crime, and the tradeoff between general deterrence and recidivism that gives rise to it can be formalized through a very simple mathematical representation. Specifically, starting from a state of the world in which everyone has not committed any crime, one can denote the expected number of crimes committed by a particular individual over their lifetime as a function of the extent of IAPs,  $e$ , as  $P(e)[1 + R(e)]$ . Here,  $P$  denotes the likelihood with which a person

These observations suggest that, unless IAPs have a disproportionate recidivism-reduction effect as compared to their negative effect on general deterrence, such programs may backfire. Instead of reducing crime, they may lead to a net increase in the overall crime rate.<sup>33</sup> Part II of this Article evaluates these concerns, showing that they are based on analyses<sup>34</sup> that have overlooked several important considerations—knowledge gaps, impulsive behavior, discounting of future events, loss aversion, and what we call “network effects.” These considerations suggest that IAPs may not have significant negative effects on general deterrence.

Ideally, we would like to empirically evaluate our prediction that IAPs are unlikely to have a general-deterrence-reducing effect. However, this type of evaluation is quite difficult to accomplish for several reasons. First, as we note in Part I, there are many different types of IAPs whose general deterrence effects may differ from each other. Second, even similar IAPs may have different effects across time and geographies. Given these realities, it would be difficult to provide evidence regarding the general deterrence effects of all IAPs. Perhaps more importantly, our claim amounts to a null hypothesis that IAPs are *not* likely to have general deterrence effects. Thus, even if an empirical analysis fails to generate evidence that IAPs have an impact on general deterrence, it would be difficult to ascertain whether this is because the null hypothesis is true, or because there is too much noise in the data to reject the null hypothesis. This last problem, combined with data limitations, makes it very difficult to provide conclusive evidence that IAPs have no impact on general deterrence.

In a companion research note, we acknowledge these limitations and present an empirical analysis of the relationship between an existing IAP and its general deterrence effects.<sup>35</sup> We estimate the impact of states’ decisions to opt out of a 1996 federal ban under the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), which prevented drug offenders from applying for welfare benefits and food stamps.<sup>36</sup> Our empirical analysis in this research note fails to find any association between IAPs and a significant change in general deterrence.<sup>37</sup>

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commits their crimes prior to any conviction, and  $R(e)$  is the expected number of subsequent crimes the same person commits as a function of available IAPs.

33. This can be formalized by noting the effect of IAPs on the number of crimes committed by a person, using the notation in *supra* note 32 as:  $P'(e)[1 + R(e)] + P(e)R'(e)$  where the symbol ' denotes a derivative. This expression is positive, meaning that IAPs increase the expected number of crimes committed by this person, if  $\frac{P'(e)}{P(e)} > -\frac{R'(e)}{1+R(e)}$ , which holds when offenses prior to a first conviction and post-conviction repeat offenses are equally responsive to these policies.

34. See *infra* note 105.

35. See Erkmen Giray Aslim, Yijia Lu, & Murat C. Mungan, On the General Deterrence Effects of Inmate Assistance Programs (March 18, 2024) (unpublished manuscript) (SSRN).

36. *Id.* at 9–10.

37. *Id.*

After explaining why IAPs may not have significant negative impacts on general deterrence, in Part III we consider the implementation costs of these programs. Specifically, we explain how imprisonment sentences for repeat offenders can be reduced to generate cost savings, which can then be diverted to fund IAPs. Building on previous theoretical and empirical scholarship, we explain why these cost diversions will lead to an overall reduction in recidivism. Because imprisonment generates small marginal deterrence effects when the sentence is very lengthy, a reduction in the sentences for repeat offenders will lead to significant per-inmate cost savings without generating substantial changes in released inmates' incentives to recidivate. These cost savings can then be diverted to fund IAPs, which will generate recidivism-reducing effects that are more substantial than any recidivism-increasing effects caused by the shortening of imprisonment for repeat offenders. Thus, our analysis suggests that expansions of IAPs can be self-financed within the criminal justice system, while preserving their advantage of overall crime reduction.

In Part IV, we discuss how IAPs can be better tailored to generate recidivism reductions in a cost-effective manner: prioritizing program coverage to recipients most likely to change their behavior because of their participation in IAPs. We discuss various means of achieving this goal, such as prioritizing programs for juveniles and letting inmates choose whether to participate in IAPs.

#### I. EXISTING INMATE ASSISTANCE PROGRAMS: AN OVERVIEW

We begin with a review of various IAPs currently implemented in the United States. Our review shows that IAPs, available across many states, have the potential to deliver valuable benefits: IAPs provide help to inmates and reduce recidivism. With rehabilitation as their primary goal,<sup>38</sup> IAPs can broadly be divided into three categories:<sup>39</sup> (1) work training and skill development; (2)

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38. See generally Beth A. Colgan, *Teaching a Prisoner to Fish: Getting Tough on Crime by Preparing Prisoners to Reenter Society*, 5 SEATTLE J. FOR SOC. JUST. 293 (2012) (outlining programs in Washington State); Francis T. Cullen, *Rehabilitation: Beyond Nothing Works*, 42 CRIME & JUST. 299 (2013) (highlighting various policy solutions to recidivism); Reuben Jonathan Miller & Amanda Alexander, *The Price of Carceral Citizenship: Punishment, Surveillance, and Social Welfare Policy in an Age of Carceral Expansion*, 21 MICH. J. RACE & L. 291 (2016) (explaining cost of supervision and lack of social cohesion in encouraging recidivism).

39. A further distinction can be drawn based on whether the programs are provided inside prisons (in-prison programs), after release (reentry programs), or both. The San Quentin University Project discussed in the introduction is an example of an in-prison program. See *supra* notes 8–9. On the other hand, the provision of housing subsidies to released inmates is an example of a reentry program. See, for example, GA. DEP'T OF CMTY. SUPERVISION, GA. DEP'T OF CMTY. AFFAIRS, FACT SHEET: REENTRY PARTNERSHIP HOUSING (RPH) PROGRAM (2021), [https://www.dca.ga.gov/sites/default/files/final.rph\\_factsheet\\_updated.spring21\\_0.pdf](https://www.dca.ga.gov/sites/default/files/final.rph_factsheet_updated.spring21_0.pdf) [<https://perma.cc/X9K3-H7A6>], which provides “\$750 per month for each individual with no Mental Health diagnosis and those with a Mental Health II diagnosis for up to six (6) months and \$850 per month for up to six (6) months for individuals with a Mental Health III diagnosis.” A program that falls into both categories is the provision of health insurance to both current and released inmates, which can reduce barriers to access medical treatment. See generally Randi Hjalmarsson & Matthew J.



mental health and chemical dependency treatment; and (3) social and community relationship building.<sup>40</sup> While the first two categories have traditionally received the most focus and attention from policymakers, an emerging trend focuses on the relationship between social connections and recidivism.<sup>41</sup>

In the next Subparts, we review currently instituted IAPs under each of these categories. Our review highlights a key feature of all well-designed IAPs: They discourage recidivism by reducing the attractiveness of recommitting crimes.

#### A. Work Training and Skill Development

The first set of programs that departments of corrections have implemented are work training and skill development programs. Many prisoners lack adequate education and training prior to incarceration,<sup>42</sup> and this disadvantage is compounded by inmates' inabilities to gain job experiences during their time in prison. It is well demonstrated that people incarcerated at younger ages face greater challenges when reentering the work force upon exiting prison.<sup>43</sup> Programs designed to combat this problem can take a variety of forms, but generally they attempt to make productive use of a prisoner's time by providing them with useful skills.<sup>44</sup> These are usually in-prison programs, but they are sometimes made available to released inmates.<sup>45</sup>

One such program in Washington State has three different options for prisoners to improve their education and work experience.<sup>46</sup> First, Washington prisons allow inmates to take GED preparation classes and vocational skills training.<sup>47</sup> These programs are in high demand.<sup>48</sup> Unfortunately, due to budget constraints, they are limited through a priority system, which is designed to help only the most in-need prisoners.<sup>49</sup> Second, Washington makes use of a correctional industries program, where the Department of Corrections

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Lindquist, *The Health Effects of Prison*, 14 AM. ECON. J.: APPLIED ECON. 234 (2022) (demonstrating that provision of in-prison health care and treatment services can reduce mortality as well as recidivism).

40. See, e.g., Colgan, *supra* note 38, at 309; Miller & Alexander, *supra* note 38, at 304.

41. This shift could also be described as a new focus on "collateral consequences," which are the non-definite penalties faced by prisoners when reentering society. See J.J. Prescott & Sonja B. Starr, *Expungement of Criminal Convictions: An Empirical Study*, 133 HARV. L. REV. 2460, 2468–69 (2020).

42. See Colgan, *supra* note 38, at 298 ("Of state prisoners throughout the United States, an estimated 40 percent have not received either a high school diploma or a GED.").

43. See Holden, *supra* note 24, at 71, 73.

44. See *id.* at 72–73.

45. See Colgan, *supra* note 38, at 294, 298, 317–18.

46. See *id.* at 298–303.

47. *Id.* at 298–99.

48. See *id.* at 299.

49. *Id.*

contracts with private industries to employ prisoners.<sup>50</sup> Lastly, the Department of Corrections also uses work-release programs that allow prisoners in good behavior to work outside the prison system.<sup>51</sup> All three of Washington's programs have been shown to correlate with decreases in recidivism.<sup>52</sup>

These types of programs are not only employed in the state of Washington. A program in Michigan, for instance, focuses heavily on vocational training for prisoners.<sup>53</sup> The Vocational Village program allows prisoners to enroll in various vocational skills courses and provides prisoners with a nationally recognized certificate upon completion.<sup>54</sup> Moreover, participants of the program live together in units, and this arrangement helps them improve their social skills and acclimates them to a working life outside of prison.<sup>55</sup>

In sum, many states have implemented some form of work training and skill development programs. These benefit not only prisoners but also society: Evidence suggests that these programs reduce recidivism by easing the prisoner's transition back into society.<sup>56</sup>

### B. *Mental Health and Chemical Dependency Treatment*

About 7.5% of American adults suffer from a clinically significant chemical dependency, and about 3.8% suffer from a serious mental illness.<sup>57</sup> These numbers are estimated to be about two to four times higher among the incarcerated population.<sup>58</sup>

Given the extent of the problem, many correctional facilities operate in-prison programs that focus on mental health and chemical dependency treatments. For example, both Illinois and Virginia have implemented programs aimed at treating mental illness among prisoners.<sup>59</sup> The Illinois Department of Corrections estimates that 31% of its prison population suffers from mental

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50. *Id.* at 301–02. Although the availability of this program was significantly curtailed by a court ruling, the program nevertheless is still available on a limited basis. *Id.* at 302.

51. *Id.* at 303.

52. *Id.* at 298, 302–03.

53. *Vocational Village*, MICH. DEP'T OF CORR., [https://www.michigan.gov/corrections/0,4551,7-119-33218\\_75514---,00.html](https://www.michigan.gov/corrections/0,4551,7-119-33218_75514---,00.html) [<https://perma.cc/9TXD-P7CN>].

54. *Id.*

55. *Id.*

56. See A. Mitchell Polinsky, *Prison Work Programs in a Model of Deterrence*, 19 AM. L. & ECON. REV. 391, 391 (2017) (showing that so long as a prisoner is compensated by no more than the disutility they face from the labor, no negative deterrence effect should occur).

57. Colgan, *supra* note 38, at 303.

58. See *id.* at 304–05 (“Nationally, at least 30 percent of convicted persons report they used illegal drugs at the time of their offense. . . . The national prevalence rates for prisoners with mental illness ‘are two to four times higher than rates among the general public.’”) (citations omitted) (quoting John J. Gibbons & Nicholas de B. Katzenbach, *Confronting Confinement: A Report of the Commission on Safety and Abuse in America's Prisons*, 22 WASH. U. J.L. & POL'Y 385, 448 (2006)).

59. See Michael Manganelli, Note, *Recidivism in Former Mentally Ill Prisoners Connected to Lower Funded Mental Health Programs in Prisons*, 29 ANNALS HEALTH L. ADVANCE DIRECTIVE 163, 165 (2020).

illness.<sup>60</sup> In response, the Department is constructing new mental health facilities and instituting mental health treatment programs.<sup>61</sup> These programs are designed to focus on a number of mental health factors. For example, in a program implemented at the Hill Correctional Center,<sup>62</sup> prisoners are treated based on static factors (such as mental health) and dynamic factors (such as chemical dependency).<sup>63</sup> The Hill Correctional Center program, along with other related programs, has reduced recidivism by about 12% over five years.<sup>64</sup>

Virginia has been immensely successful in refocusing its prisoner reentry plans on mental health treatment.<sup>65</sup> Although Virginia has one of the lowest recidivism rates in the country, the state continues to implement new programs that focus on fourteen mental health standards.<sup>66</sup> Virginia has six specialized mental health units, which are able to provide prisoners with screenings, treatments, and monitoring.<sup>67</sup> Perhaps most significantly, Virginia's success stems from its focus on the needs of individual prisoners instead of significantly increasing its overall spending.<sup>68</sup>

Since the treatment of mental health and substance abuse problems often requires long periods to be effective, in-prison treatment programs must transition into reentry programs after inmates' release, especially for those inmates serving short sentences.<sup>69</sup> One approach is to extend the coverage of health insurance to released inmates.<sup>70</sup> Some states combine in-prison treatment programs with work-release reentry programs. One such program in Delaware targets substance abuse problems.<sup>71</sup> After inmates participate in an in-prison program addressing substance abuse, they are conditionally released into a work-release center where they are expected to work and also receive treatment until they have satisfied the abstinence requirement.<sup>72</sup> Results from a small-scale

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60. *Id.* at 166.

61. *Id.* at 167–69.

62. *Id.* at 168.

63. *Id.*

64. *Id.* (“In fact, from 2013 to 2018, Illinois recidivism rates have decreased from fifty-one to thirty-nine percent.”).

65. *Id.* at 171.

66. *Id.* at 173–74.

67. *Incoming Inmates: Health Services*, VA. DEP'T OF CORR., <https://vadoc.virginia.gov/offender-resources/incoming-offenders/health-services/> [https://perma.cc/BC22-QWZR].

68. Manganelli, *supra* note 59, at 175.

69. *See generally* Substance Abuse & Mental Health Serv. Admin., Guidelines for Successful Transition of People with Mental or Substance Use Disorders from Jail and Prison: Implementation Guide (2017), <https://store.samhsa.gov/sites/default/files/d7/priv/sma16-4998.pdf> [https://perma.cc/WB7Y-XQCK] (providing transition strategies to ensure post-release treatments needs are met).

70. *See* Aslim et al., *supra* note 29, at 2–3.

71. *Program Profile: Delaware KEY/Crest Substance Abuse Programs*, NAT'L INST. OF JUST. (May 5, 2021), <https://crimesolutions.ojp.gov/ratedprograms/55> [https://perma.cc/ZDW7-C8EM].

72. Colgan, *supra* note 38, at 317.

study indicate that the program was highly successful in reducing both short-term recidivism and chemical dependency.<sup>73</sup>

Another method for dealing with mental health and chemical dependency is the implementation of programs through “specialty courts.”<sup>74</sup> There are currently over 2,100 drug courts and 150 mental health courts in the United States.<sup>75</sup> As opposed to traditional courts that punish offenders with prison sentences, these courts provide treatment opportunities and supervision for offenders with the penalty of further sanctions if they do not comply.<sup>76</sup> Evidence suggests that these courts have a moderate effect on decreasing recidivism, while also providing a politically viable alternative to policymakers wishing to appear tough on crime.<sup>77</sup>

### C. *Social and Community Relationship Building*

Many ex-prisoners struggle with social reintegration after incarceration.<sup>78</sup> While there are a number of factors previously discussed that contribute to this difficulty, two additional factors are the loss of social connection<sup>79</sup> and community stigma.<sup>80</sup> These two factors combined can lead to what one author has called “carceral citizenship,” which can effectively cause prisoners to be treated as second-class citizens.<sup>81</sup>

Although social connections and community relationships are often beneficial side effects of other programs,<sup>82</sup> evidence suggests that programs which specifically target transitions back into the community can be highly successful.<sup>83</sup> These programs typically help with post-release case management, family reunification, community coordination, and locating appropriate housing.<sup>84</sup>

One specific reentry program that is prevalent in a number of states is automatic expungement.<sup>85</sup> In general, this program allows prisoners convicted

73. *Id.*

74. *See* Cullen, *supra* note 38, at 357–58.

75. *Id.* at 357.

76. *Id.*

77. *Id.*

78. *See* Prescott & Starr, *supra* note 41, at 2468.

79. *See* Michael Windzio, *Is There a Deterrent Effect of Pains of Imprisonment? The Impact of ‘Social Costs’ of First Incarceration on the Hazard Rate of Recidivism*, 8 PUNISHMENT & SOC’Y 341, 354 (2006) (“Being incarcerated, inmates pay social costs of imprisonment . . . Persons who are not socially integrated outside in a satisfying way, do not pay as much for incarceration as those who are. If persons do not have anything to lose outside, in this regard, social costs of imprisonment will be rather low.”).

80. *See* Prescott & Starr, *supra* note 41, at 2468–69.

81. For a discussion of carceral citizenship, see Miller & Alexander, *supra* note 38.

82. *See, e.g.*, Colgan, *supra* note 38, at 303.

83. *See id.* at 317–18 (discussing various reintegration programs in Tennessee, Hawaii, New York, Illinois, and Washington).

84. *See id.*

85. Prescott & Starr, *supra* note 41, at 2472–74.

of certain crimes to have their records automatically expunged after a given period of good behavior after release.<sup>86</sup> Automatic expungement appears to be correlated with prisoners' recidivism rates, and possibly with ex-convicts' prospects of finding work and housing, receiving loans, or participating in other community activities.<sup>87</sup> These programs continue to gain popularity, along with their less comprehensive counterpart, "Ban-the-Box" statutes.<sup>88</sup>

An alternative approach to expungement is certification.<sup>89</sup> Certification declares a prisoner rehabilitated, rather than attempting to conceal the conviction.<sup>90</sup> While a number of states have implemented various certification programs, New York's program is the most prominent.<sup>91</sup> New York allows prisoners to apply for one of two types of certificates that remove legal restrictions imposed by conviction.<sup>92</sup>

Lastly, a less involved policy that helps exiting inmates with community reintegration provides them with an adequate amount of money upon leaving prison to cover the costs of their immediate and most fundamental needs.<sup>93</sup> Many states implement this type of policy and provide exiting inmates with a small amount of money, often known as "gate money."<sup>94</sup> Unfortunately, the funds provided by most states are barely enough to cover expenses beyond one week.<sup>95</sup> As a result, many prisoners are released without having the monetary means to acquire food and shelter, let alone find work.<sup>96</sup> Additionally, given modern society's dependence on the internet and phones, many prisoners who have been incarcerated for extended periods face significant barriers to reestablishing communication with their communities.<sup>97</sup>

To conclude, social and community reintegration programs can often be expensive, but studies show a positive reduction in recidivism associated with some programs that help exiting prisoners connect with their communities after release.

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86. *Id.*

87. *See id.* at 2520–21.

88. *See id.* at 2474–75. Ban-the-Box statutes are designed to merely prohibit employers from asking about prior criminal history on initial job applications. *Id.* at 2475.

89. MARGARET LOVE & APRIL FRAZIER, CERTIFICATES OF REHABILITATION AND OTHER FORMS OF RELIEF FROM THE COLLATERAL CONSEQUENCES OF CONVICTION: A SURVEY OF STATE LAWS (2006), reprinted in SECOND CHANCES IN THE CRIMINAL JUSTICE SYSTEM: ALTERNATIVES TO INCARCERATION AND REENTRY STRATEGIES 50, 50–51 (American Bar Association: Commission on Effective Criminal Sanctions, 2007).

90. *See* Cullen, *supra* note 38, at 355–56.

91. *See id.*

92. *Id.*

93. *See* Ji Hyun Rhim, Note, *Left at the Gate: How Gate Money Could Help Prisoners Reintegrate upon Release*, 106 CORNELL L. REV. 783, 792 (2021).

94. *See id.* at 785–86.

95. *See id.*

96. *See id.* at 798–804.

97. *See id.* at 810–12.

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In addition to providing valuable benefits to inmates and society, all of the IAPs categorized and examined in this Part share one important social advantage: They are likely to reduce recidivism by increasing the perceived opportunity cost of committing crimes.

Programs that focus on providing inmates with employment skills improve their post-release employment prospects: Higher income and greater life quality both make recommitting crimes less likely.<sup>98</sup> Programs providing inmates with mental health or substance abuse treatment reduce recidivism by targeting offenders' impulsivity problems, helping them become more aware of the consequences of their actions.<sup>99</sup> Finally, programs that help inmates receive community and family support strengthen inmates' post-release social connections, thereby reducing their likelihood of committing crime again.<sup>100</sup> The following Parts of this paper will focus on this recidivism-reduction advantage of the IAPs.

## II. TRADEOFF BETWEEN GENERAL DETERRENCE AND SPECIFIC DETERRENCE

Our review of IAPs shows that these programs deliver direct benefits for inmates, and evidence suggests that they lead to reductions in recidivism. But because IAPs provide direct benefits to inmates, some suggest that these programs reduce the expected cost of committing crimes for potential first-time offenders, thereby reducing general deterrence. Part II.A reviews the existing law-and-economics literature wherein this tradeoff between specific deterrence and general deterrence emerges. In Part II.B, we use a more nuanced economic reasoning to explain why this tradeoff may be less significant than what traditional analyses suggest.

### *A. Tradeoff Between Specific Deterrence and General Deterrence: A Review of Existing Theories*

More than forty years ago, Isaac Ehrlich identified a potential "counterdeterrent" tradeoff associated with policies which provide benefits to convicted people.<sup>101</sup> Ehrlich was concerned about this effect in the context of rehabilitation programs, but his reasoning is equally applicable to all IAPs, which confer benefits to prisoners. Specifically, Ehrlich states:

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98. See Polinsky, *supra* note 56, at 391.

99. See Aslim et al., *supra* note 29, at 3.

100. See Colgan, *supra* note 38, at 317–18.

101. See Isaac Ehrlich, *On the Usefulness of Controlling Individuals: An Economic Analysis of Rehabilitation Incapacitation and Deterrence*, 71 AM. ECON. REV. 307, 315 (1981).

[S]uccessful rehabilitation confers an implicit subsidy on potential offenders by offering training and employment benefits at public expense . . . . [T]he provision of rehabilitative net benefits—to the extent that they are positive—necessarily enhances the anticipated net return from crime to the potential offender . . . by the magnitude of the rehabilitation subsidy per offense . . . .<sup>102</sup>

Simply stated, a policy that enhances the *ex post* wellbeing of convicts counteracts the severity of punishment perceived by potential offenders *ex ante*, thereby diluting the general deterrence effect of punishment.

Ehrlich's analysis is based on rational economic analysis: a potential offender commits a crime if the perceived private benefit from committing the crime outweighs its perceived costs. The “rational offender model” has been the standard economic approach towards modeling criminal behavior<sup>103</sup> ever since Nobel laureate Gary Becker published his pioneering work *Crime and Punishment: An Economic Approach* in 1968.<sup>104</sup>

In this framework, individuals' perceived costs and benefits are affected not only by the immediate consequences associated with their actions, but also by the impact of their current behavior on their *future* costs and benefits. This approach is followed in numerous economic analyses of recidivism: A person without a prior conviction will compare the private gains of committing a crime against the net cost of future imprisonment if caught and convicted for it.<sup>105</sup>

A person without a prior conviction is not a beneficiary of IAPs. If the person commits a crime and is arrested and convicted, the cost of punishment is partially offset by the increase in life quality associated with IAPs following incarceration.<sup>106</sup> Because of lower expected costs of punishment in the future, the implementation of IAPs may thus tip the scale on the margin to induce a person without a prior conviction to choose to commit a crime, thereby weakening general deterrence.

In contrast, IAPs can strengthen specific deterrence further if reconviction means the loss of privilege to benefit from IAPs. The opportunity cost for

102. *Id.*

103. See, e.g., James Foreman-Peck & Simon C. Moore, *Gratuitous Violence and the Rational Offender Model*, 30 INT'L REV. L. & ECON. 160, 160–61 (2010).

104. Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968).

105. In fact, this is implicitly assumed in “backward induction,” a decision-derivation method frequently used in studies focusing on repeat offenses. See, e.g., Stefan Buehler & Nicholas Eschenbaum, *Explaining Escalating Prices and Fines: A Unified Approach*, 171 J. ECON. BEHAV. & ORG. 153, 155 (2020); Murat C. Mungan, *Optimal Warning Strategies: Punishment Ought Not to Be Inflicted Where the Penal Provision Is Not Properly Conveyed*, 9 REV. L. & ECON. 303, 311 (2013); Murat C. Mungan, *Repeat Offenders: If They Learn, We Punish Them More Severely*, 30 INT'L REV. L. & ECON. 173, 173–76 (2010); Tim Friehe, *Escalating Penalties for Repeat Offenders: A Note on the Role of Information*, 97 J. ECON. 165, 165–67 (2009); Thomas J. Miceli & Catherine Bucci, *A Simple Theory of Increasing Penalties for Repeat Offenders*, 1 REV. L. & ECON. 71, 71–72 (2005); Winand Emons, *A Note on the Optimal Punishment for Repeat Offenders*, 23 INT'L REV. L. & ECON. 253, 253–55 (2003).

106. This is a simple implication of potential offenders' calculation of expected costs. A similar result emerges in all models wherein future benefits partially offset these costs. See, e.g., Murat C. Mungan, *Reducing Crime Through Expungements*, 137 J. ECON. BEHAV. & ORG. 398 (2017).

released individuals to commit another crime is higher than that for a potential individual to commit a crime for the first time.

The observations in this Subpart thus imply a tradeoff: IAPs incentivize released inmates to stay out of the prison system, but they also reduce the overall potency of punishment as a general deterrent for those who have never been convicted of a crime. Which of these two effects dominates is, a priori, ambiguous. Next, we present additional considerations which may cause recidivism to be the predominant effect.

*B. Other Considerations: Insignificant or Positive General Deterrence Effects*

We investigate whether IAPs are likely to significantly reduce general deterrence effects when five additional factors ignored in existing models are brought into consideration. These considerations cut against IAPs' general-deterrence-reducing effects and suggest that they may even strengthen general deterrence.

In Part II.B.1, we argue that individuals, especially those without a prior conviction, are likely unaware of IAPs, and therefore do not weigh this factor in their *ex ante* evaluation of the net costs of incarceration. Part II.B.2 asserts that even if potential offenders are aware of such programs, they may not factor in these future benefits in the heat of the moment if impulsivity is the impetus of their crimes. Relatedly, we explain in Part II.B.3 that even if a person without a prior conviction rationally compares the immediate private gains from committing a crime to the potential future costs of conviction, the individual is likely to *discount* the future consequences of crime in comparison to their immediate gains. In Part II.B.4, we point out that recidivating offenders may value IAPs more than a person without a prior conviction because of *loss aversion*<sup>107</sup>: recidivating offenders, as current beneficiaries of IAPs, stand to *lose their benefits* if they commit crimes again; individuals without a prior conviction *gain from such programs* only if they commit crimes and are convicted. Finally, in Part II.B.5, we explain how improvement in an existing inmate's life due to IAPs can exert positive externality effects on the individuals within the inmate's "networks," thereby reducing these individuals' inclinations to commit crimes. This network effect, unlike the other four considerations, implies a potential increase in general deterrence.

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107. Loss aversion refers to the observed phenomenon that people prefer avoiding losses to receiving gains of the same amount. See, e.g., Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q. J. ECON. 1039, 1039 (1991). We discuss loss aversion in greater detail in *infra* Part II.B.4.



### 1. Lack of Knowledge

For IAPs to weaken general deterrence, a person without a prior conviction must both be aware of such IAPs and believe that they can take advantage of them. This information problem is less significant for reentering inmates than for individuals without a prior conviction because existing inmates have more opportunities to learn about post-release programs.<sup>108</sup> In contrast, individuals without a prior conviction have not entered prison and are less likely to be aware or informed of post-incarceration programs. Because existing inmates are more likely to be aware of IAPs than potential first-time offenders, IAPs' impact on specific deterrence is likely greater than the impact on general deterrence.

While no empirical study to our knowledge specifically tests the general population's knowledge of IAPs, prior research has demonstrated a lack of awareness among the general population concerning some criminal laws. For instance, Professors Darley and Robinson argue in a series of articles that specific criminal law rules are unlikely to have significant deterrence effects because people often do not know about them at the time they are committing crimes.<sup>109</sup>

One can take further advantage of this information asymmetry concerning IAPs between existing inmates and individuals without convictions by keeping existing inmates better informed of IAPs, thereby further strengthening specific deterrence without significantly impacting general deterrence. To be more specific, prisoner exit procedures that disseminate pertinent information to help increase enrollment in beneficial programs for released inmates<sup>110</sup> can further enhance the recidivism-reducing effects of IAPs by informing inmates of such programs.

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108. See NANCY LA VIGNE ET AL., URB. INST. JUST. POL'Y. CTR., *RELEASE PLANNING FOR SUCCESSFUL REENTRY: A GUIDE FOR CORRECTIONS, SERVICE PROVIDERS, AND COMMUNITY GROUPS* 11 (2008), <https://www.urban.org/sites/default/files/publication/32056/411767-Release-Planning-for-Successful-Reentry.PDF> [<https://perma.cc/25B3-3NXG>] (reporting that of the forty-three state departments of corrections surveyed, "when applicable, 58 percent ensure that eligible inmates leave prison with benefits and entitlements reinstated or restored and 88 percent ensure that those individuals leave prison with information on how to restore/enroll in federal benefits." (emphasis in original)). More than half of the surveyed departments of corrections provide inmates with a reentry handbook or a community resource guide upon release. *Id.* at xvi. For a detailed description of one such program, see, for example, Audra T. Wenzlow et al., *Effects of a Discharge Planning Program on Medicaid Coverage of State Prisoners with Serious Mental Illness*, 62 *PSYCHIATRIC SERVS.* 73, 74 (2011) (describing the Oklahoma discharge planning program, which employs managers to identify inmates with serious mental illnesses and help them enroll for Medicaid six to nine months before release).

109. See Paul H. Robinson & John M. Darley, *Intuitions of Justice: Implications for Criminal Law and Justice Policy*, 81 *S. CALIF. L. REV.* 1, 21 (2007); Paul H. Robinson & John M. Darley, *Does Criminal Law Deter? A Behavioural Science Investigation*, 24 *OXFORD J. LEGAL STUD.* 173, 173 (2004); Paul H. Robinson & John M. Darley, *The Role of Deterrence in the Formulation of Criminal Law Rules: At Its Worst When Doing Its Best*, 91 *GEO. L.J.* 949, 951–53 (2003).

110. See generally Wenzlow et al., *supra* note 108.

Much remains to be done in practice to inform and assist released inmates in taking advantage of post-release programs. Recent work by Professors Prescott and Starr shows that among individuals who become eligible for expunging their criminal records, a surprising 91.2% do not apply for such benefits within the first years of their eligibility.<sup>111</sup> Released inmates may not be aware of IAPs because prison officials fail to adequately convey the needed information to them.<sup>112</sup> Moreover, many released prisoners may lack the means or motivation to complete the necessary process to enroll in programs for which they are eligible.<sup>113</sup> Prior research illustrates this problem in the context of Medicaid enrollment by eligible released prisoners. For instance, a study on the effects of assisting released inmates with Medicaid enrollment through a discharge program found that Medicaid enrollment on the day of release increased from 8% to 25% after program implementation.<sup>114</sup> We revisit this observation below in Part IV when discussing features of effective IAPs.

## 2. *Impulsivity*

Even if individuals without a prior conviction are fully aware of the availability of beneficial IAPs, they may not factor in such benefits when committing crimes, especially if they are committing crimes impulsively. One widely cited psychiatric study describes individuals acting impulsively as having “a predisposition toward rapid, unplanned reactions to internal or external stimuli *without regard to the negative consequences of these reactions to the impulsive individual or to others.*”<sup>115</sup> Criminals that impulsively commit crimes do so without much regard for future consequences.

Impulsivity can be quantified by using self-report measures or surveys.<sup>116</sup> For example, Professor David Anderson’s general survey of inmates suggests that 35% of the respondents did not think about punishment when committing their crimes.<sup>117</sup> Indeed, offenders who commit crimes impulsively are likely to ignore potential benefits from IAPs, just as they disregard potential incarceration costs.

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111. See Prescott & Starr, *supra* note 41, at 2489.

112. See LA VIGNE, *supra* note 108, at 11.

113. See Wenzlow et al., *supra* note 108, at 77.

114. *Id.* at 73; see also Erkmen G. Aslim & Murat C. Mungan, *Access to Substance Use Disorder Treatment During Covid-19: Implications from Reduced Local Jail Populations*, 119 J. SUBSTANCE ABUSE TREATMENT 108 (2020) (discussing how exit programs can play an important role in mitigating enrollment problems).

115. F. Gerard Moeller et al., *Psychiatric Aspects of Impulsivity*, 158 AM. J. PSYCHIATRY 1783, 1783–84 (2001) (emphasis added) (summarizing various definitions of impulsivity).

116. See generally Wenzlow et al., *supra* note 108.

117. See David Anderson, *The Deterrence Hypothesis and Picking Pockets at the Pickpocket’s Hanging*, 4 AM. L. & ECON. REV. 295, 303 tbl.1 (2002) (demonstrating that the impulsivity problem is especially prominent in deadly crimes: 55% of inmates convicted of deadly crimes report not having thought of the punitive consequences of their criminal acts).

In contrast, some IAPs provide psychological counseling and mental health treatment to inmates during incarceration to address their impulsivity issues.<sup>118</sup> Moreover, benefits such as public health insurance that are available to inmates upon their release facilitate the provision of needed medical and substance use disorder treatment following their release.<sup>119</sup> These programs directly target impulsivity as a cause for crime, thereby directly reducing the recidivism rate of violent crimes and other crimes that are typically committed impulsively.<sup>120</sup>

IAPs addressing impulsivity as a significant cause for crimes are not available to individuals without a prior conviction. Therefore, individuals without prior convictions who act impulsively are unlikely to factor in the future benefits associated with these programs when committing offenses. This causes the availability of these programs to have no expected general deterrence effects on impulsively committed crimes. On the other hand, the availability of IAPs at the recidivism stage likely helps many released inmates better cope with impulsivity problems. In summary, the availability of these programs may reduce impulsive recidivism without significantly affecting the general deterrence of impulsive crimes.

### 3. *Discounting of Future Events*

Even if individuals without prior convictions include IAP benefits in their calculus, they are likely to *discount* these benefits because such benefits are received in the *distant* future. This phenomenon is known as the discounting of future events.<sup>121</sup> Because impulsivity can be thought of as a special case of discounting, the thrust of the discounting argument parallels the one presented directly above in Part II.B. At the general deterrence stage, individuals without a prior conviction *discount* the benefits of IAPs. This is unlike the specific deterrence stage, where there is no discounting because released individuals are current beneficiaries of IAPs.

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118. For a detailed case study of mental health programs in prison, see Manganelli, *supra* note 59 (comparing the reentry program in Virginia to that in Illinois). The federal government has endorsed programs applying the Risk-Need-Responsivity model, which targets, *inter alia*, impulsivity. See E. Lea Johnston, *Reconceptualizing Criminal Justice Reform for Offenders with Serious Mental Illness*, 71 FLA. L. REV. 515, 540 (2019); see also Moeller et al., *supra* note 115, at 1785–87 (discussing the strong correlation between impulsivity and psychiatric disorders). Prison and jail websites also describe programs targeting mental health issues and impulsivity. See, e.g., *Jail Programs for Inmates*, SHERIFF'S OFF. OF WASH. CNTY., OR., <https://www.co.washington.or.us/Sheriff/Jail/JailPrograms/index.cfm> [<https://perma.cc/9BN5-QPTQ>] (“[p]rogram activities target the issues most likely to result in ongoing criminal behavior, including . . . impulsive behavior . . .”); see also *Jail Mental Health Pilot Program*, VA. DEP'T OF CRIM. JUST. SERVS., <https://www.dcjs.virginia.gov/correctional-services/grants/jail-mental-health-pilot-program> [<https://perma.cc/PB2A-23EW>].

119. See Aslim et al., *supra* note 29, at 43–44.

120. *Id.*

121. See Jonathan Cohen et al., *Measuring Time Preferences*, 58 J. ECON. LITERATURE 299 (2020) (reviewing recent research that measures time preferences).

The theory of discounting future events predicts that the same amount of benefit (cost) is valued less (more) if received later.<sup>122</sup> The typical method to model discounting in economics is to use a discount rate  $\delta < 1$  for a defined lag of time,<sup>123</sup> such as one year. To illustrate, a dollar received a year later is worth  $\delta$  today, after discounting. For example, if  $\delta$  is 95%, that means a person is indifferent between receiving \$0.95 today and receiving \$1 a year later. This theory is consistent with the observation of positive interest rates: saving \$0.95 in a bank today will yield more money later; borrowing \$0.95 today will normally require a greater total payment in the future. Discounting arises not just from the recognition that money has a time value—discounting—but can also be explained by one's less direct connectedness to the future self.<sup>124</sup>

Discounting applies to losses, too.<sup>125</sup> Between incurring a cost of \$1 today and incurring the same cost of \$1 a year later, most would prefer the latter. This is because discounting at the same  $\delta = 95\%$  with a one-year lag implies that having to pay \$1 a year later is equivalent to paying \$0.95 today, a \$0.05 cost savings.

The discounting of future cost is readily applicable to the imposition of fines in the criminal justice system: fines feel less potent if delayed.<sup>126</sup> But discounting is not restricted to monetary fines, as money is just a medium of exchange. Accordingly, discounting can be applied just as aptly to the avoidance of non-monetary costs such as incarceration.<sup>127</sup>

Recent scholarship has highlighted the importance of discounting in the criminal justice system, with applications to sentencing,<sup>128</sup> conspiracy law,<sup>129</sup> and probation programs.<sup>130</sup> Similarly, discounting has important implications for IAPs. Since offenders without a prior conviction gain access to IAPs much later, they must be convicted before they can benefit from these programs. It follows that the benefits from the programs, when discounted to present value, are perceived as less than their value if the benefits were to be enjoyed immediately. To illustrate, suppose a particular program offers free health insurance for a year to recently released individuals valued at \$1,000. When individuals without a prior conviction evaluate whether to commit a crime, they will not value the future health insurance at \$1,000 because it can only be

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122. *Id.* at 303.

123. *Id.* at 304–05.

124. See Arif Ahmed, *Rationality and Future Discounting*, 39 *TOPOI* 245, 247 (2020).

125. See Yair Listokin, *Crime and (with a Lag) Punishment: The Implications of Discounting for Equitable Sentencing*, 44 *AM. CRIM. L. REV.* 115, 116 (2007).

126. *Id.*

127. See *id.* at 116–17 (discussing discounting as applied to incarceration).

128. See *id.* at 115–40.

129. See Richard H. McAdams, *Present Bias and Criminal Law*, 2011 *U. ILL. L. REV.* 1607, 1614–22 (2011).

130. See *id.* at 1622–30.

enjoyed much later. Indeed, the same individual likely prefers to receive \$1,000 today instead of receiving the same amount years later.<sup>131</sup>

At the general deterrence stage, a person without a prior conviction weighs the immediate or near-immediate private benefit of committing a crime<sup>132</sup> against the potential future cost of the crime. Individuals without a prior conviction are likely to put more weight on the immediate or near immediate private benefit from committing a crime than on future punishment and reward programs.<sup>133</sup>

In contrast, released offenders will not discount the value of these programs because they are already enjoying these benefits when deciding whether to recidivate. IAPs immediately benefit the released offender, raising the opportunity cost of recidivating because reconviction results in an *immediate* loss of benefits receivable from IAPs.<sup>134</sup> At its core, the recidivating offender asks whether the *immediate* gain from committing another crime outweighs the *immediate* loss of existing IAP benefits and potential punishment if caught and convicted again. There is no discounting of IAPs' benefits *ex post* at the recidivism stage.

In sum, because the benefits of IAPs are discounted *ex ante* at the general deterrence stage but not discounted *ex post* at the specific deterrence stage, the suggested reduction in general deterrence owing to IAPs is limited under discounting.

#### 4. Loss Aversion

Numerous experiments have demonstrated that people generally value avoiding losses more than obtaining gains of the same amount, a phenomenon known as loss aversion in behavioral economics.<sup>135</sup> Loosely defined, the theory of loss aversion predicts that most people would prefer avoiding the loss of \$100 to gaining \$100.<sup>136</sup>

IAPs weaken general deterrence because the future *gains* from IAPs reduce the net cost of committing crimes at the general deterrence stage (i.e., prior to any conviction). On the other hand, IAPs reduce recidivism by increasing the cost of recidivating—the *loss* associated with not receiving the increased benefits due to participation in IAPs. At its root, an individual who has never been convicted of a crime values IAPs as distant *gains*. In contrast, a recidivating

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131. See *id.* at 1610. One reason for this preference is that \$1,000 today can be placed into an interest-earning savings account and will grow to an amount greater than \$1,000 in the future. See *id.* at 1614–22.

132. The benefits from committing crimes are typically immediate or nearly immediate: when one steals money, one benefits (or at least has the option of benefiting) almost immediately from the stolen money.

133. See McAdams, *supra* note 129, at 1609.

134. *Id.* at 1619–20.

135. See Tversky & Kahneman, *supra* note 107, at 1039.

136. See *id.* at 1041–42.

individual values the loss of IAPs immediately; the direct and palpable benefit inmates derive from IAPs is lost immediately if the inmate is convicted of a crime again. Loss aversion therefore suggests that IAPs may be valued less *ex ante* during the general deterrence stage than *ex post* at the specific deterrence stage.

### 5. *Network Effects*

The four previous considerations focus on the behavioral dynamics of an individual in isolation. However, individuals exist within socioeconomic networks. Policies that directly affect an individual also indirectly affect people close to that individual.<sup>137</sup>

This general observation applies to IAPs as well: IAPs improve the lives of inmates who later reenter their communities. In these communities, these ex-inmates are part of a larger network: they are parents to children, partners to their spouses, colleagues in their workplace, and neighbors and friends to many others in their communities. Thus, the well-being of ex-inmates can have a significant impact on the well-being,<sup>138</sup> as well as criminal involvement, of others<sup>139</sup> in their community. There are at least two types of network effects, well-being effects and peer effects, which can cause IAPs to reduce the criminal propensities of other individuals in the ex-inmates' networks, thereby strengthening general deterrence and specific deterrence.

The well-being effect refers to the improved life conditions of people in the ex-inmates' networks. The best example is presumably the improved life conditions of ex-inmates' relatives, especially their children, as a result of the ex-inmate's improved life. IAPs, which provide increased job opportunities to an ex-inmate parent, can increase the well-being of their children by allowing the parent to provide more financial support to their children, thereby reducing their children's likelihood of criminal involvement.<sup>140</sup> Perhaps more importantly, ex-inmates who receive mental health and substance use disorder treatments are more likely to provide a peaceful, and, in more extreme cases,

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137. See, e.g., Giorgio Top & Yves Zenou, *Neighborhood and Network Effects*, in HANDBOOK OF REGIONAL AND URBAN ECONOMICS 562, 595–599 (Giles Duranton et al. eds., 2011); John Hagan & Ronit Dinovitzer, *Collateral Consequences of Imprisonment for Children, Communities, and Prisoners*, 26 PRISONS 121, 134–148 (1999); Magnus Lofstrom & Steven Raphael, *Crime, the Criminal Justice System, and Socioeconomic Inequality*, 30 J. ECON. PERSPECTIVES 103, 115 (2016) (reviewing studies that demonstrate increased correctional populations negatively impacted the offender's families and community).

138. See, e.g., Hagan & Dinovitzer, *supra* note 137, at 134 (“[O]ffenders who are employed in more conventional work often contribute in positive ways to their communities and families.”).

139. Matthew J. Lindquist & Yves Zenou, *Crime and Networks: Ten Policy Lessons*, 35 OXFORD REV. ECON. POL'Y 746, 748–49 (2019) (reviewing the “growing empirical literature suggesting that peer effects are important in criminal activities”).

140. Randall Akee et al., *Parents' Income and Children's Outcomes: A Quasi-Experiment*, 2 AM. ECON. J.: APPLIED ECON. 86, 86–115 (2010) (demonstrating through a quasi-experiment that an additional \$4,000 a year for the poorest families reduce delinquency of 16- to 17-year-old children by 22%).

less abusive, home environment for their families.<sup>141</sup> This can have a positive impact on the psychological state of the family members,<sup>142</sup> which, in turn, may reduce the likelihood of criminal involvement among family members.

The peer effect, on the other hand, refers to cases in which an ex-inmate who recidivates is also likely to encourage others in his network to commit crimes.<sup>143</sup> This is especially true when crimes are committed together in a group: criminals often solicit the help from or sometimes pressure their peers to commit crimes together.<sup>144</sup> Since IAPs reduce the likelihood of ex-inmates' recidivism, they also likely reduce crimes committed due to peer effects by people in the ex-inmates' networks, thus strengthening both general deterrence and specific deterrence.

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Rational economic theories of criminal behavior suggest that any policy which provides a benefit to inmates is likely to dilute the general deterrence effect of punishment because they partially offset the perceived costs of punishment to potential offenders. The first four theoretical considerations reviewed in this Part suggest that these deterrence-diluting effects may be small; the fifth consideration suggests that IAPs may actually positively strengthen general deterrence. Thus, these five considerations together suggest that IAPs may not reduce general deterrence significantly and may even enhance it if the "network effects" are sufficiently strong.

### III. FINANCING INMATE ASSISTANCE PROGRAMS

In Part II we argued that IAPs, if administered effectively, may reduce recidivism without a significant reduction in general deterrence. Even if true, this alone does *not* imply that these programs are socially desirable. From a cost-benefit perspective, for programs to be socially desirable, their social benefits must exceed the cost of their provision. After all, there are many goods and services that the government can provide to benefit individuals with specific needs, but it is socially desirable to provide only a subset of them because government services are financed through tax dollars.

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141. See Elaine Anderson & Mary Lynch, *A Family Impact Analysis: The Deinstitutionalization of the Mentally Ill*, 33 FAM. RELS. 41, 44 (1984) (finding that more frequent contact between family members and a mentally ill relative is correlated with greater stress and conflict within the family).

142. See, e.g., Samuel Noh & R. Jay Turner, *Living with Psychiatric Patients: Implications for the Mental Health of Family Members*, 25 SOC. SCI. MED. 263, 270 (1987) (finding that the presence of mental health patients is "associated with substantial psychological costs for some families"); Anderson & Lynch, *supra* note 141.

143. Lindquist & Zenou, *supra* note 139.

144. *Id.* at 747-48.

The collection of taxes causes private losses to taxpayers, in addition to inefficiencies, due to distortions in their behavior.<sup>145</sup> Therefore, the implementation of IAPs can be efficient only if they do not lead to greater losses associated with tax collection than the benefits that they deliver. In this Part, we explain how the government may be able to broaden the scope of these beneficial programs without causing undue fiscal burdens. We consider a criminal justice reform that strives to finance IAPs with administrative cost savings resulting from a reduction in the lengths of the sentences imposed on repeat offenders. We explain how the proposed reform may decrease recidivism without adversely affecting the cost of administering the criminal justice system. We characterize the conditions under which the proposed reform would jointly reduce recidivism, total tax dollars spent on the criminal justice system, and time served by repeat offenders.

*A. Preliminaries: Carrots, Sticks, and Beyond*

In Part II, we explained the typical economic model of criminal behavior that Gary Becker introduced in 1968: potential offenders commit crimes if they perceive that the private benefits from crime relative to not committing crime outweigh the perceived costs associated with committing it.<sup>146</sup> Within Becker's original framework, there are two different instruments that are available to the government for reducing crime: punishment (i.e., sticks) for committing a crime and rewards (i.e., carrots) for not committing a crime.<sup>147</sup> While sticks increase the costs of committing a crime, carrots increase the benefits of not committing a crime. Perhaps because these two instruments are mirror images of each other and have very similar functions in reducing crime, most analyses of criminal behavior focus exclusively on punishment as a tool for reducing crime.<sup>148</sup>

The focus on punishment in the literature may be due to *path dependence*. After all, Gary Becker's pioneering work referred to "Crime and *Punishment*,"<sup>149</sup> the title of Dostoevsky's famous novel.<sup>150</sup> Another plausible explanation is the recognition that it might be cost-effective to punish crimes, which are less frequent, than to reward the more frequent compliance with the laws.<sup>151</sup>

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145. See, e.g., HAL R. VARIAN, INTERMEDIATE MICROECONOMICS: A MODERN APPROACH 298–310 (9th ed. 2014) (discussing how taxes can change behavior and cause deadweight losses).

146. See *supra* Part II.

147. See generally, e.g., Murat C. Mungan, *Rewards Versus Imprisonment*, 23 AM. L. & ECON. REV. 432 (2021) (explaining the functional equivalence of carrots and sticks within the standard economics of the law enforcement model).

148. *Id.*

149. *Id.* at 434 (emphasis added).

150. FYODOR DOSTOEVSKY, CRIME AND PUNISHMENT (Constance Garnett trans., Random House 1950) (1866).

151. Donald Wittman, *Liability for Harm or Restitution for Benefit?*, 13 J. LEGAL STUD. 57, 62–65 (1984) (noting this asymmetry, which could explain why most scholars have ignored rewards as an instrument that can be used to reduce crime).



Whatever the reason for this asymmetric focus, recent scholarship indicates that the focus on punishment is partially fading away. Theoretical and empirical analyses, as well as legal commentaries, all note the important role that “rewards” can play in reducing crime through numerous channels.<sup>152</sup> The broad definition used in this scholarship includes many different types of governmental programs that increase the quality of life outside of prison, such as public education, health care, and more subtle efforts “such as remediating blighted lots, enforcing housing codes, and installing streetlights.”<sup>153</sup>

The very high administrative costs associated with locking inmates up, as well as the documented ineffectiveness of longer sentences in deterring crime,<sup>154</sup> may make the use of rewards a cost-effective alternative for reducing crime. Similarly, as highlighted in recent scholarship, medical treatment can play an important role in reducing impulsive criminal behavior.<sup>155</sup> Thus, as we have explained in Part I, IAPs that include a health care component can be particularly effective in reducing crime.

In short, although prior scholarship has almost exclusively focused on punishment as a tool for reducing crime, rewards can be a viable alternative or complement. IAPs supply these rewards to a subset of the population, namely inmates. In the next Subpart, we explain why rewards provided in this manner may be cost-effective by describing a criminal justice system reform that strives to shift resources from punishment (imprisonment) to rewards (IAPs) without increasing the burden to taxpayers.

### B. Reducing Recidivism, Taxes, and Sentences

In this Subpart, we propose a reform based on a closely related framework discussed by one of us in a recent article titled *Rewards Versus Imprisonment*.<sup>156</sup> The article considers the following hypothetical exercise wherein a part of the criminal justice system’s budget is redirected from financing imprisonment towards providing *rewards*:

First, suppose that the state reduces sentences imposed on convicts by a certain percentage. This naturally results in a reduction in deterrence, but, reduces the tax burden by  $X$  dollars. Second, suppose that the state announces that it will provide rewards to each individual who is not convicted by splitting the  $X$  dollars saved through the reduction in sentences. This will naturally lead to an increase in deterrence. If the reduction in deterrence due to reduced

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152. See, e.g., Galle, *supra* note 11; Mungan, *supra* note 147.

153. Galle, *supra* note 11, at 483.

154. David S. Lee & Justin McCrary, *The Deterrence Effect of Prison: Dynamic Theory and Evidence*, 38 REGRESSION DISCONTINUITY DESIGNS 73, 116–17 (2017).

155. See *supra* note 29.

156. Mungan, *supra* note 147, at 436.

sentences is smaller than the increase in deterrence caused by the prospect of receiving rewards, then employing rewards will lead to a reduction in crime.<sup>157</sup>

As pointed out in *Rewards Versus Imprisonment*, if crime can be reduced in this manner, so too can the tax burden. This is because only some of the tax savings obtained by reducing imprisonment sentences need to be directed towards rewards. Thus, if the adjustment described above can be successfully implemented, one could reduce crimes generally, the tax burden on the criminal justice system, and the lengths of sentences altogether.

The hypothetical exercise is, however, unlikely to work practically because the cost savings obtained from reducing sentences served by a very small percentage of the population (namely inmates) would need to benefit the remaining, much larger, proportion of individuals (the population not serving any sentence).<sup>158</sup> Given that the former group makes up less than 1% of the general population,<sup>159</sup> the savings obtained by reducing sentences across the board would be diluted, thus failing to provide the necessary funds to finance rewards that can more than offset the reduction in deterrence caused by these sentence reductions.<sup>160</sup>

We propose a reform that addresses this problem. Instead of rewarding the general non-incarcerated population, the proposed reform implements programs that benefit non-recidivating released inmates.<sup>161</sup> Instead of reducing sentences for all future offenders, our reform reduces sentences for released inmates who recidivate in the future.

The new proposal shifts the cost of punishing recidivating inmates towards benefiting released inmates who choose not to recidivate. Under this new proposal, the cost savings obtained from reducing sentences for recidivating

157. *Id.* at 436 & n.13 (“Here,  $\$X$  is assumed to be the reduction in imprisonment costs at the new equilibrium level of deterrence after both policy changes (including the change described in the second step) have been implemented.”).

158. Specifically, Mungan derives a very simple condition under which crime, taxes, and sentences can be jointly reduced: the ratio between the imprisoned population and the unimprisoned population would need to be greater than the ratio between the per-dollar deterrence effect of imprisonment versus rewards, i.e.  $\frac{\rho}{1-\rho} > \frac{i}{r}$ , where  $\rho$  is the current imprisonment rate,  $i$  is the per-dollar deterrence effect of imprisonment, and  $r$  is the per-dollar deterrence effect of rewards. *Id.*

159. The Prison Policy Initiative, for instance, suggests that about 0.7% of the United States population is incarcerated (in local jails, state prisons, or federal prisons). See Peter Wagner & Wanda Bertram, “What Percent of the U.S. Is Incarcerated?” (*And Other Ways to Measure Mass Incarceration*), PRISON POLICY INITIATIVE (Jan. 16, 2020), <https://www.prisonpolicy.org/blog/2020/01/16/percent-incarcerated/> [https://perma.cc/QUY5-JC5L].

160. This is precisely why in *Rewards Versus Imprisonment*, Mungan questions whether rewards can be used more sparingly and effectively to reduce crime, for example, by targeting the judgment-proof population. Mungan, *supra* note 147.

161. The policymaker has additional decisions to make about (1) what programs to provide and (2) the target of these programs (as subsets of current and released inmates). For example, policymakers may decide to provide health insurance to all inmates (both current and released). By contrast, policymakers may decide to provide employment benefits to released inmates who do not recidivate. Policymakers should ideally evaluate the effectiveness of the programs and also consider their possible impact on recidivism rates. See *infra* Part IV.

inmates are to be distributed among a smaller population, namely inmates.<sup>162</sup> The percentage of released prisoners who are rearrested within a year, for instance, is about 44%, according to the National Institute of Justice.<sup>163</sup> Therefore, within the scope of a year under current rates, the reform we propose reduces the sentences for a large percentage of released inmates who are reconvicted and channels the corresponding cost savings to benefit all inmates.<sup>164</sup>

Within the framework described, if a dollar spent on reentry efforts is modestly more effective than a dollar spent on imprisoning a recidivating ex-inmate, one could reduce recidivism by redirecting part of the budget spent on imprisonment towards IAPs. As noted in numerous previous studies, given the very long sentences in place today, a slight reduction in current sentences is likely to result in negligible changes in deterrence.<sup>165</sup> Therefore, substituting some imprisonment sentences for repeat offenders with even modestly effective IAPs would reduce recidivism.

It is important to note that money spent on IAPs, unlike imprisonment, provides valuable benefits in addition to crime reduction. The next Subpart argues that, when the programs' additional benefits are considered, the social desirability of the reform to shorten sentences for repeat offenders and enhance the scope of IAPs becomes even more salient.

### *C. Wealth Creation Versus Destruction*

An important difference between imprisonment and IAPs is that imprisonment acts to decrease the well-being of convicts,<sup>166</sup> whereas IAPs

162. More specifically, the ratio between returning prisoners who recidivate and all inmates is much higher than the ratio between imprisoned and unimprisoned individuals within the general population.

163. This number increases to 68% in three years. *See, e.g.*, MARIAL ALPER ET AL., BUREAU OF JUST. STAT., U.S. DEP'T OF JUST., 2018 UPDATE ON PRISONER RECIDIVISM: A 9-YEAR FOLLOW-UP PERIOD (2005-2014), at 1 (2018), <https://bjs.ojp.gov/content/pub/pdf/18upr9yfup0514.pdf> [<https://perma.cc/Y3BK-8DEC>].

164. We note that some IAPs can be designed to redirect these saving not to the entire population of inmates but a subset thereof. For instance, employment subsidies for former inmates provide benefits receivable only by those who subsequently stay out of prison. These programs increase the per-beneficiary cost savings from reduced sentences even further.

165. Specifically, existing empirical studies report imprisonment elasticities of crime of 0.07, 0.1, and 0.13 in Helland and Tabarrok (2007), Iyengar (2008), and Lee & McCrary (2007), respectively. *See* Eric Helland & Alexander Tabarrok, *Does Three Strikes Deter? A Nonparametric Estimation*, 42 J. HUM. RES. 309 (2007); Radha Iyengar, *I'd Rather be Hanged for a Sheep than a Lamb: The Unintended Consequences of 'Three-Strikes' Laws* (Nat'l Bureau of Econ. Rsch., Working Paper No. 13784, 2008) (NBER); Lee & McCrary, *supra* note 154. Even Levitt, who finds a greater responsiveness, reports an elasticity of 0.4. *See* Steven D. Levitt, *Juvenile Crime and Punishment*, 106 J. POL. ECON. 1156 (1998); *see also infra* Part IV.C (discussing the concept of imprisonment elasticity of crime).

166. Imprisonment must be distinguished from monetary fines. Imposing a fine of \$X on a person does not destroy \$X; the money is used for something else. The punishment inflicted upon convicts through imprisonment is not transferred as an equal benefit to others, as would be the case in the context of monetary

improve the well-being of inmates. In other words, criminal punishment results in deadweight loss or wealth destruction for society.<sup>167</sup> By contrast, IAPs are valuable resources made available to convicted individuals—these programs operate through wealth creation.<sup>168</sup>

This asymmetry between imprisonment and IAPs causes the latter to possess an inherent advantage in cost–benefit analyses. While both imprisonment and IAPs reduce recidivism, the former does so at the expense of destroying the welfare of convicts, whereas the latter achieves the same by increasing the welfare of those ex-convicts who choose not to recidivate. Everything else equal, welfare creation makes society better off (rather than welfare destruction).

To make this point more apparent, consider two hypothetical policies. The first policy relies on lengthy imprisonment sentences for repeat offenders coupled with minimal or no IAPs, and the second complements shorter imprisonment sentences with IAPs. If these two policies lead to the same levels of recidivism,<sup>169</sup> general deterrence, and tax expenditures, it follows that the second policy is superior from a welfare maximization perspective.<sup>170</sup>

In fact, the second policy is Pareto superior to the first policy. First, released inmates who do not recidivate are better off because they benefit from helpful programs. Second, released inmates who recidivate are also better off because they now receive shorter sentences. And finally, it is difficult to identify anyone who suffers reasonably cognizable harms from a shift from the first policy to the second one since the criminal harms inflicted under both policies remain the same.<sup>171</sup>

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finer. For a recent discussion of the transferability of sanctions, see, for example, Brian D. Galle & Murat C. Mungan, *Optimal Enforcement with Heterogeneous Private Costs of Punishment*, 50 J. LEGAL STUD. 445 (2021).

167. See, e.g., Mark Seidenfeld & Murat C. Mungan, *Duress as Rent-Seeking*, 99 MINN. L. REV. 1423, 1423 (2015).

168. We note that, in the worst case, these programs can take the form of cash transfers conditional on desistance from crime. *Id.* at 1435–36. These programs would operate through wealth transfers as opposed to wealth creation.

169. Under the new proposal, shortening sentences for recidivists increases recidivism, and IAPs decrease recidivism. This hypothetical here considers a situation where these two effects exactly cancel each other out for the purpose of demonstrating the benefits of achieving similar levels of deterrence through IAPs as opposed to imprisonment. However, as we explain below, in our proposed reform, the decrease in recidivism due to the provision of beneficial programs is likely to dominate the slight increase in recidivism due to shorter sentences for recidivists (because the imprisonment elasticity of crime is low).

170. Under this welfare maximization approach, the objective function is a utilitarian social welfare function which aggregates the utilities of each individual in society. Therefore, a policy which achieves a specific consequence through wealth creation or transfers leads to greater welfare than another which achieves the same consequence through wealth destruction. However, we explain how a similar result would be obtained under a welfarist objective that respects the Pareto principle. For further discussion of welfarist analyses, see, for example, Louis Kaplow & Steven Shavell, *Fairness Versus Welfare*, 114 HARV. L. REV. 961 (2001).

171. As with any discussion of Pareto improvements, one can identify some individuals with idiosyncratic preferences who are made worse off (e.g., sadistic individuals who prefer others to suffer). See, e.g., Kaplow & Shavel, *supra* note 170, at 1339. Because this problem is not unique to the context we are considering, we do not discuss it any further.

If society values this type of Pareto improvement, it follows that the reform we propose may be desirable even if it comes at additional costs, so long as such costs do not offset the improvement. From a welfare maximization perspective, this implies that policymakers ought to be willing to sacrifice tax dollars, or perhaps even some degree of recidivism loss, to implement our proposed reform. Reducing taxes and recidivism jointly is a sufficient, but not necessary, condition for our proposed reform to be welfare improving; our proposed reform delivers greater benefits than costs under much broader conditions.

*Rewards Versus Imprisonment* identifies the condition for welfare-enhancing reforms,<sup>172</sup> which depends on the responsiveness of offenders to sanctions. This responsiveness is measured by what economists call the imprisonment elasticity of crime—the percentage change in crime rates in response to percentage changes in imprisonment length.<sup>173</sup> Intuitively, when this number is small, sentences for repeat offenders can be reduced substantially and generate cost savings sufficient to finance IAPs that reduce recidivism. This results in a simultaneous reduction of sentence lengths, administrative costs of running prisons, and recidivism rates.

Importantly, rigorous empirical studies find that crime is inelastic with respect to imprisonment. Specifically, in a recent study, Lee and McCrary find an imprisonment elasticity of crime of 0.13, and prior studies have found similar results.<sup>174</sup> These low elasticities make the reform we have outlined even more likely to be welfare enhancing.

To give a more discrete example, we revisit *Rewards Versus Imprisonment*. There, it is estimated that introducing rewards while reducing existing imprisonment sentences is welfare enhancing when the imprisonment elasticity of crime is below 0.21.<sup>175</sup> This upper bound of 0.21 on imprisonment elasticity will increase if the ratio of inmates receiving sentence reductions to benefit recipients increases.<sup>176</sup> As we previously explained, this ratio is much larger in our proposed reform targeting inmates than when rewards are provided to the general non-incarcerated population. Thus, the imprisonment elasticities that are sufficient to make our proposal welfare enhancing are much larger than the recent empirical estimates of the same, e.g., 0.13 reported in Lee and McCrary.<sup>177</sup>

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172. Mungan, *supra* note 147, at 444–45.

173. *Id.*

174. Lee & McCrary, *supra* note 154.

175. Mungan, *supra* note 147, at 449–52 (discussion of Proposition 2).

176. *Id.* at 453. Mungan derives a conservative upper bound on the imprisonment elasticity of crime which is increasing in the population of inmates for whom sentences are shortened. This upper bound is produced in expression (475) in the article, and differentiating it with respect to the population of offenders for whom sentences are shortened reveals that it is, in fact, increasing in this value. *See id.*

177. Lee & McCrary, *supra* note 154.

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Criminal justice scholars have been paying exceedingly more attention to benefits rather than punitive measures as tools for reducing crime.<sup>178</sup> Many argue that using these tools can generate undue tax burdens.<sup>179</sup> We have shown here that the reform we consider may not suffer from this cost burden because IAPs can be financed through reductions in imprisonment sentences, thus eliminating the need to increase tax burdens. Moreover, when the non-crime-related benefits of IAPs are factored in, the existing theoretical and empirical economic analyses suggest that the implementation of our proposed reform is even more likely to be welfare enhancing.

#### IV. POLICY RECOMMENDATIONS

A key insight from Part III is that the cost savings from sentence reductions should be channeled to fund programs for inmates instead of the much larger general population. While IAPs improve the welfare of all their recipients, they are most effective for society if they deter their recipients from recommitting crimes. From a policy perspective, the most efficient way to reduce recidivism is to provide programs to those inmates on the margin—inmates who would have recidivated if not for the intervention of IAPs.

One way to achieve this goal is through narrowing the program coverage to recipients who are most likely to change their behavior as a result of their participation in the program. In the following Subparts, we discuss general strategies that can increase the deterrence impact of IAPs.

##### *A. Letting Inmates Choose*

Policymakers cannot observe directly which inmates would be responsive to program treatment. Asking inmates to self-declare their type will not work. Since these programs provide direct benefits to inmates, the conditioning of program eligibility on an inmate's self-declaration would incentivize all inmates to make such declarations.<sup>180</sup>

To encourage truth telling, a mechanism must make it more costly for members from the non-targeted group to self-declare compared to members of the targeted group.<sup>181</sup> To illustrate, consider the following mechanism: Released inmates can choose whether to participate in an IAP in exchange for agreeing

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178. See, e.g., Mungan, *supra* note 147.

179. *Id.* at 435.

180. This signaling problem under information asymmetry was first formalized and studied in Michael Spence, *Job Market Signaling*, 87 Q. J. ECON. 355 (1973).

181. See *id.*

to serve a longer sentence if reconvicted in the future.<sup>182</sup> Participation brings welfare benefits, but in exchange, inmates agree that they will be subject to a more severe punishment if they recidivate after their release. This mechanism incentivizes inmates who believe they are unlikely to recommit crimes after receiving program benefits to opt into the IAP because the stick of longer sentences is unlikely to apply to them. On the other hand, those who believe they are likely to recidivate even when enrolled in the IAP are less likely to choose to participate in these programs because participation implies higher costs if they are later caught and reconvicted. Thus, the mechanism achieves separation and incentivizes inmates to reveal their true criminal propensities.

### B. Conditioning Program Eligibility on Crimes Committed

Policymakers can also improve program cost-effectiveness by conditioning program coverage on the types of crimes committed by using inmates' previous convictions as a proxy for the likely effectiveness of the IAP. For example, an inmate with a previous conviction for a reckless crime may be more responsive to IAP treatments than an inmate who has harmed others knowingly or purposely. Reckless crimes are committed by criminals who consciously or deliberately disregard "the creation of a substantial and unjustifiable risk of harm to others."<sup>183</sup> It may be more feasible to help or incentivize reckless inmates to develop mechanisms to become more aware of the consequences of their actions than to persuade criminals who harm others on purpose. Some programs (such as mental health and substance abuse treatment programs) may be particularly effective in helping inmates better understand the harmful consequences of their actions.<sup>184</sup>

The criminal justice system distinguishes crimes that are committed recklessly or impulsively from crimes committed knowingly or purposely.<sup>185</sup>

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182. A similar mechanism, applied to the general public as opposed to people with prior offenses, is formalized in Mungan, *supra* note 147.

183. *Reckless*, BLACK'S LAW DICTIONARY (11th ed. 2019); *see also* MODEL PENAL CODE § 2.02(c) (AM. L. INST. 1962) ("A person acts recklessly with respect to a material element of an offense when he consciously disregards a substantial and unjustifiable risk that the material element exists or will result from his conduct. The risk must be of such a nature and degree that, considering the nature and purpose of the actor's conduct and the circumstances known to him, its disregard involves a gross deviation from the standard of conduct that a law-abiding person would observe in the actor's situation.")

184. *See* Aslim et al., *supra* note 29, at 28 (showing that Medicaid expansions reduce recidivism among people who have committed violent offenses but lead to no noticeable change in the behavior of individuals who have committed property crimes).

185. *See* MODEL PENAL CODE § 2.02(b) (AM. L. INST. 1962) ("A person acts knowingly with respect to a material element of an offense . . . (ii) if . . . he is aware that it is practically certain that his conduct will cause . . . a result."); *cf. id.* § 2.02(c) ("A person acts recklessly with respect to a material element of an offense when he consciously disregards a substantial and unjustifiable risk that the material element exists or will result from his conduct. The risk must be of such a nature and degree that, considering the nature and purpose of the actor's conduct and the circumstances known to him, its disregard involves a gross deviation from the standard of conduct that a law-abiding person would observe in the actor's situation.")

Under the theory that the former types of crimes signal lower culpability than the latter, the criminal justice system tends to be less punitive for recklessly or impulsively committed crimes.<sup>186</sup> One prominent example is the criminal law's distinction between involuntary manslaughter and murder and its lesser punishment of the former compared to the latter.<sup>187</sup>

Our main point here is that similar distinctions can be used to determine whether a person is eligible for an IAP. For instance, inmates with a history of impulsive crimes may benefit more from receiving specific medical treatments that reduce self-control problems. However, these types of categorizations would of course need to be based on rigorous empirical research, which is yet to be conducted.

### C. *Increasing the Availability of Programs for Juveniles*

In the previous Subpart, we explained why providing specific programs to inmates based on the types of crimes they have committed, such as impulsive crimes, may be cost-effective: therapies for mental illnesses and substance abuse may help criminals cope with impulsivity problems.<sup>188</sup> Similarly, personal characteristics, such as age, can also be strong predictors of program effectiveness. In particular, we focus on juvenile detention and argue that our proposal is likely to work well in the context of juvenile delinquency for three reasons.

First, adolescents are considered more formative than adults. Recent research in neuroscience has found heightened neuroplasticity in the adolescent brain, which makes adolescents particularly susceptible to environmental influences.<sup>189</sup> Heightened neuroplasticity is a double-edged sword: while adolescents are susceptible to the influence of their delinquent peers, they are also open to positive changes and programs.<sup>190</sup> Moreover, because younger people have a longer expected remaining life than older people, the benefits from IAPs for juveniles are longer lasting than those for adults.

Second, our suggestion to shorten sentences and use the cost savings to fund beneficial programs is particularly likely to work in the context of juvenile delinquency because existing studies show that family and community-based

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186. See Carissa Byrne Hessick & Douglas A. Berman, *Towards a Theory of Mitigation*, 96 B.U. L. REV. 161, 195–97 (2016) (showing mitigation in sentencing for crimes with reduced culpability).

187. This distinction can be seen clearly through the federal sentencing guidelines for murder and involuntary manslaughter. See, e.g., 18 U.S.C. § 1111 (“Whoever is guilty of murder in the first degree shall be punished by death or by imprisonment for life”); cf. 18 U.S.C. § 1112 (“Whoever is guilty of involuntary manslaughter, shall be fined under this title or imprisoned not more than 8 years, or both.”).

188. See *supra* Part II.B.

189. Delia Fuhrmann et al., *Adolescence as a Sensitive Period of Brain Development*, 19 TRENDS COGNITIVE SCI. 558, 562–63 (2015).

190. Kerstin Konrad et al., *Brain Development During Adolescence: Neuroscientific Insights into this Developmental Period*, 110 DEUTSCHES ARZTEBLATT INT’L 425, 430 (2013).



programs are more effective alternatives to juvenile detention in reducing recidivism.<sup>191</sup> Numerous studies have found that processing youths through the juvenile system or placing them in detention centers, camps, and group homes are ineffective in reducing recidivism.<sup>192</sup> On the other hand, studies indicate that programs harnessing the joint effort of the delinquent's family and/or community have been effective.<sup>193</sup>

Finally, providing mental health screening and treatment to juveniles is likely to be very effective in reducing recidivism rates among released juveniles because of the high demand and inadequate provision of such services. Mental health problems affect 60% to 80% of youths in detention—four times higher than the general rate for adolescents.<sup>194</sup> Yet mental health screening, assessment, and treatment for youths in detention remain vastly inadequate.<sup>195</sup> Our proposal to shorten detention time and use the money saved to finance mental health programs can fill in this gap that experts have identified. While treating youths suffering from mental illnesses is a tremendous social benefit in itself, doing so is also likely to reduce juvenile recidivism, especially since existing research suggests that youths suffering from mental health problems are associated with higher recidivism.<sup>196</sup>

#### D. Additional Considerations

Our reform proposal channels cost savings from sentence reductions to benefit specific groups of inmates and thereby reduce recidivism. While certain programs such as mental health treatment services are applicable to both current and released inmates, a subset of these programs are IAPs applicable only to released inmates.<sup>197</sup> Since inmates who are currently serving time cannot recidivate, targeting released inmates through IAPs may, all else equal, be more cost-effective in reducing recidivism.

Even though reducing recidivism through IAPs is an important policy goal for society, one must not ignore the direct benefits that inmates receive from IAPs. These programs, when administered effectively, help inmates become

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191. For a summary of these studies, see Scott Henggeler & Sonja Schoenwald, *Evidence-Based Interventions for Juvenile Offenders and Juvenile Justice Policies that Support Them*, 25 SOC. POL'Y REP. 1, 4–5 (2011).

192. *Id.*

193. *See id.* at 5–6 (reviewing various studies to demonstrate that functional family therapy, multisystemic therapy, and multidimensional-treatment foster care are effective interventions).

194. Matthew C. Aalsma et al., *Behavioral Health Care Needs, Detention-Base Care, and Criminal Recidivism at Community Reentry From Juvenile Detention: A Multisite Survival Curve Analysis*, 105 AM. J. PUB. HEALTH 1372, 1372 (2015).

195. *Id.* at 1375 (“[T]he juvenile courts across different counties ordered psychological assessments for an average across sites of 1.8% of youths during detention and 11.3% of youths on release from detention. Furthermore, 16.1% of detained youths who screened positive obtained behavioral health services during detention, and 15.3% of these youths’ caregivers were given behavioral health service recommendations.”).

196. *Id.* at 1374–75.

197. *See, e.g., supra* text accompanying note 18.

healthier, self-sufficient, and more educated—important benefits that are not as easily quantifiable as reductions in recidivism.

To conclude, the effectiveness of providing programs to a subset of criminals based on (1) their own election; (2) the crimes they previously committed; and (3) other observable characteristics, such as age, is an empirical inquiry that merits further research. We hope that our brief discussion here will lead to more relevant work in this area.

#### CONCLUSION

Programs designed to improve inmates' welfare provide enormous benefits—not just to their recipients, but to society in general through reduced recidivism. This paper tackles two of the strongest objections to these beneficial programs.

We first evaluate the consequentialist concern that because these beneficial programs reduce the net punitive impact of imprisonment, they may dilute the general deterrent effect of incarceration. We explain why the impact of IAPs on general deterrence may be insignificant or even positive by putting forward realistic considerations that are often ignored in economic analyses of crime (*i.e.*, knowledge gaps, impulsive behavior, discounting, loss aversion, and network effects).

Second, we propose a criminal justice reform to resolve the fairness-based objection that the high cost of implementing these programs would divert funds away from other public-funded programs. We demonstrate that a reform that shortens sentences and uses the cost savings to fund beneficial IAPs may lead to a criminal justice system that is less punitive (shorter sentences), more effective (fewer crimes), and potentially cheaper to administer—appealing outcomes regardless of one's political or ideological views.

Our analysis also reveals key principles that can be useful to policymakers in designing IAPs to reduce recidivism. IAPs are most cost-effective if provided first to individuals whose behavior is most likely to change as a result of program participation. We also note a few simple ways to increase the probability of recidivism reduction: giving inmates a choice over program participation; conditioning program eligibility on crimes committed; and increasing the scope of programs for juveniles.

In closing, we note that if more information correlating offender characteristics to their responsiveness to various IAPs were available, then eligibility requirements for these programs could be optimized, creating additional synergies. It is, therefore, our hope that this study will foster additional empirical research to clarify the most critical factors influencing IAPs' effectiveness in reducing recidivism.