

# TOWARD AN OPTIMAL BAIL SYSTEM

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*Few decisions in the criminal justice process are as consequential as the determination of bail. Indeed, recent empirical research finds that pre-trial detention imposes substantial long-term costs on defendants and society. Defendants who are detained before trial are more likely to plead guilty, less likely to be employed, and less likely to access social safety net programs for several years after arrest. Spurred in part by these concerns, critics of the bail system have urged numerous jurisdictions to adopt bail reforms, which have led to growing momentum for a large-scale transformation of the bail system. Yet supporters of the current system counter that pre-trial detention reduces flight and pre-trial crime—recognized benefits to society—by incapacitating defendants. Despite empirical evidence in support of both positions, however, advocates and critics of the current bail system have generally ignored the real trade-offs associated with detention.*

*This Article provides a broad conceptual framework for how policymakers can design a better bail system by weighing both the costs and benefits of pre-trial detention—trade-offs that are historically grounded in law, but often disregarded in practice. I begin by presenting a simple taxonomy of the major categories of costs and benefits that stem from pre-trial detention. Building from this taxonomy, I conduct a partial cost-benefit analysis that incorporates the existing evidence, finding that the current state of pre-trial detention is generating large social losses. Next, I formally present a framework that accounts for heterogeneity in both costs and benefits across defendants, illustrating that detention on the basis of “risk” alone can lead to socially suboptimal outcomes.*

*In the next part of the Article, I present new empirical evidence showing that a cost-benefit framework has the potential to improve accuracy and equity in bail decision-making, where currently bail judges are left to their own heuristics and biases. Using data on criminal defendants and bail judges in two urban jurisdictions, and exploiting variation from the random assignment of cases to judges, I find significant judge differences in pre-trial release rates, the assignment of money bail, and racial gaps in release rates. While there are any number of reasons why judges within the same jurisdiction may vary in their bail decisions, these results indicate that judges may not be all setting bail at the socially optimal level.*

*The conceptual framework developed in this Article also sheds light on the ability of recent bail reforms to increase social welfare. While the empirical evidence is scant, electronic monitoring holds promise as a welfare-enhancing alternative to pre-trial detention. In contrast, application of the conceptual framework cautions*

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against the expanding use of risk-assessment instruments. These instruments, by recommending the detention of high-risk defendants, overlook the possibility that these high-risk defendants may also be “high-harm” such that they are most adversely affected by a stay in jail. Instead, I recommend that jurisdictions develop “net benefit” assessment instruments by predicting both risk and harm for each defendant in order to move closer toward a bail system that maximizes social welfare.

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## INTRODUCTION

On any given day, the United States detains almost half a million individuals before trial,<sup>1</sup> with over 60% of the U.S. jail population comprised of individuals who have not yet been convicted.<sup>2</sup> These high rates of pre-trial detention have been coupled with the increasingly prevalent use of financial conditions of release.<sup>3</sup> For example, between 1990 and 2009, the fraction of felony defendants who were released with financial conditions increased from 40% to 62%.<sup>4</sup> Indeed, the majority of defendants are detained before trial because they cannot afford to pay relatively small amounts of bail.<sup>5</sup> In New York City, 46% of misdemeanor defendants in 2013 were detained because they were unable to post bail of \$500 or less.<sup>6</sup>

Perhaps unsurprisingly then, criticisms of the current bail system are mounting. For instance, some critics argue that pre-trial detention does little to protect the public if jurisdictions detain individuals on the basis of ability to pay, but rather increases socioeconomic and

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<sup>1</sup> See ROY WALMSLEY, INT’L CTR. FOR PRISON STUDIES, *WORLD PRE-TRIAL/REMAND IMPRISONMENT LIST 1* (2d ed. 2014), [http://www.prisonstudies.org/sites/default/files/resources/downloads/world\\_pre-trial\\_imprisonment\\_list\\_2nd\\_edition\\_1.pdf](http://www.prisonstudies.org/sites/default/files/resources/downloads/world_pre-trial_imprisonment_list_2nd_edition_1.pdf).

<sup>2</sup> See TODD D. MINTON & DANIELA GOLINELLI, U.S. DEP’T OF JUSTICE, *JAIL INMATES AT MIDYEAR 2013 - STATISTICAL TABLES 1* (2014), <https://www.bjs.gov/content/pub/pdf/jim13st.pdf> (finding that 60% of inmates in jail were still awaiting court action annually between 2005 and mid-year 2013).

<sup>3</sup> A recent estimate suggests that the money bail system costs taxpayers \$38 million a day. Nick Wing, *Our Money Bail System Costs U.S. Taxpayers \$38 Million a Day*, HUFFINGTON POST (Jan. 24, 2017), [http://www.huffingtonpost.com/entry/money-bail-cost\\_us\\_58879342e4b098c0bba6d5c6](http://www.huffingtonpost.com/entry/money-bail-cost_us_58879342e4b098c0bba6d5c6).

<sup>4</sup> See RAM SUBRAMANIAN ET AL., VERA INST. OF JUSTICE, *INCARCERATION’S FRONT DOOR: THE MISUSE OF JAILS IN AMERICA* 29 (2015), <http://archive.vera.org/sites/default/files/resources/downloads/incarcerations-front-door-report.pdf>.

<sup>5</sup> See Nick Pinto, *The Bail Trap*, N.Y. TIMES MAG. (Aug. 13, 2015), [http://www.nytimes.com/2015/08/16/magazine/the-bail-trap.html?\\_r=1](http://www.nytimes.com/2015/08/16/magazine/the-bail-trap.html?_r=1) (finding that many of the people in jails who have not yet been convicted remain in jail because they cannot afford bail).

<sup>6</sup> See N.Y.C. CRIMINAL JUSTICE AGENCY, *ANNUAL REPORT* 30 (2013) (finding that even when bail was posted to \$500 or less, defendants were detained in 30% of felony cases and 46% of non-felony cases).

racial inequalities in the criminal justice system.<sup>7</sup> In response to these concerns, numerous cities and states are adopting alternatives to pre-trial detention and implementing evidence-based practices such as the use of risk-assessment instruments,<sup>8</sup> with several bail reform efforts garnering bipartisan support.<sup>9</sup> Bail reform is also building momentum at the federal level. For example, in February 2016, Representative Ted Lieu (D-CA) introduced the first-ever bail reform legislation in Congress, the No More Money Bail Act of 2016, aimed at prohibiting money bail in the federal system and denying states access to federal law enforcement funds until they end the practice of money bail.<sup>10</sup> In August 2016, the Department of Justice filed an amicus brief in an ongoing case, *Walker v. City of Calhoun*, arguing that fixed bail schedules that allow for pre-trial release for only those who can afford to pay bail violate the Fourteenth Amendment, calling into question the

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<sup>7</sup> See, e.g., JUSTICE POLICY INST., BAIL FAIL: WHY THE U.S. SHOULD END THE PRACTICE OF USING MONEY FOR BAIL (2012), [http://www.justicepolicy.org/uploads/justicepolicy/documents/bailfail\\_executive\\_summary.pdf](http://www.justicepolicy.org/uploads/justicepolicy/documents/bailfail_executive_summary.pdf) (explaining how the money bail system disparately impacts African American and Latino populations); see also *Bail in America: Unsafe, Unfair, Ineffective*, PRETRIAL JUSTICE INST., <http://www.pretrial.org/the-problem/> (last visited June 16, 2017) (explaining how people of color are disadvantaged by the money bail system because they are more likely to live in poverty).

<sup>8</sup> For example, some cities are considering the use of risk-based assessment tools to more accurately predict each defendant's flight risk. Other cities, such as New York, have earmarked substantial funds to supervise low-risk defendants instead of requiring them to post bail or face pre-trial detention. See Will Dobbie et al., *The Effects of Pre-trial Detention on Conviction, Future Crime, and Employment: Evidence from Randomly Assigned Judges* 1 n.2 (Nat'l Bureau of Econ. Research, Working Paper No. 22,511, 2016), [https://scholar.harvard.edu/files/cyang/files/dgy\\_bail\\_feb2017.pdf](https://scholar.harvard.edu/files/cyang/files/dgy_bail_feb2017.pdf). In May 2015, Illinois lawmakers passed a bill requiring that a nonviolent defendant be released pre-trial without bond if his or her case had not been resolved within 30 days. See *id.* In November 2016, New Mexico voters approved a constitutional amendment prohibiting pre-trial detention based on inability to pay bail. See Nick Wing, *New Mexico Votes to Reform Bail System that Jails People Just Because They're Poor*, HUFFINGTON POST (Nov. 8, 2016, 10:52 PM), [http://www.huffingtonpost.com/entry/new-mexico-amendment-1\\_us\\_5817a3cfe4b0990edc32ed05](http://www.huffingtonpost.com/entry/new-mexico-amendment-1_us_5817a3cfe4b0990edc32ed05). In addition, communities and organizations have created charitable bail organizations like the Bronx Freedom Fund and the Brooklyn Community Bail, which posts bail for individuals held on misdemeanor charges when bail is set at \$2000 or less. For a discussion of these community bail funds, see Jocelyn Simonson, *Bail Nullification*, 115 MICH. L. REV. 585, 590–93 (2017); Dobbie et al., *supra* at 1 n.2.

<sup>9</sup> See, e.g., Sara Dorn, *Bail Reform Gets Liberal Rap But Can Be Bipartisan: 6 States That Prove It*, CLEVELAND METRO NEWS (Feb. 15, 2017), [http://www.cleveland.com/metro/index.ssf/2017/02/bail\\_reform\\_is\\_bipartisan\\_six.html](http://www.cleveland.com/metro/index.ssf/2017/02/bail_reform_is_bipartisan_six.html) (citing New Jersey, Arizona, New Mexico, Utah, California, and Indiana as examples of bipartisan bail reform efforts).

<sup>10</sup> Press Release, Ted W. Lieu, Congressman, Congressman Ted W. Lieu Introduces the "No Money Bail Act of 2016" (Feb. 24, 2016), <https://lieu.house.gov/media-center/press-releases/congressman-ted-w-lieu-introduces-no-money-bail-act-2016-0>.

constitutionality of a long-established practice in the U.S. criminal justice system.<sup>11</sup>

On the other hand, advocates of the current bail system argue that pre-trial detention and, relatedly, money bail provide important constitutionally recognized benefits of preventing flight and protecting the public.<sup>12</sup> For example, in the context of recent litigation, advocates on behalf of the bail industry, including former U.S. Solicitor General Paul Clement, have argued that the money bail system is a “well-founded tradition” that “allows individuals of all financial means to leverage their social networks and community ties to obtain pretrial release,” and that releasing individuals without monetary conditions would endanger public safety.<sup>13</sup> Yet, in almost all of the current debates surrounding the bail system, both advocates and critics of the current system have generally ignored the real trade-offs associated with pre-trial detention.<sup>14</sup>

In light of impending and rapid reform,<sup>15</sup> how should bail judges decide how to make pre-trial release decisions? Which defendants should they release and which should they detain? And how should policymakers evaluate the efficacy of proposed reforms, such as the use of alternatives like electronic monitoring? In this Article, I argue that a cost-benefit framework can inform institutional actors and policymakers about how to design a bail system that moves closer

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<sup>11</sup> See Pete Williams, *Justice Department Says Poor Can't Be Held When They Can't Afford Bail*, NBC NEWS (Aug. 19, 2016), <https://www.nbcnews.com/news/us-news/justice-department-says-poor-can-t-be-held-when-they-n634676>.

<sup>12</sup> See Stewart Taylor, Jr., *Pretrial Jailing of 'Dangerous' Suspects*, N.Y. TIMES (Feb. 25, 1981), <http://www.nytimes.com/1981/02/25/us/issue-and-debate-pretrial-jailing-of-dangerous-suspects.html> (identifying protection of citizens as part of the reasoning for Chief Justice Burger and other advocates' support of pre-trial detention).

<sup>13</sup> Ryan J. Reilly, *Dog the Bounty Hunter and a Top Conservative Lawyer Are Trying to Save the Bail Industry*, HUFFINGTON POST (Feb. 23, 2017), [http://www.huffingtonpost.com/entry/bail-industry-unconstitutional\\_us\\_58adf025e4b05ca474a04011](http://www.huffingtonpost.com/entry/bail-industry-unconstitutional_us_58adf025e4b05ca474a04011).

<sup>14</sup> See, e.g., Press Release, Mayor Bill de Blasio, Mayor de Blasio Calls for Change in State Law to Better Ensure Dangerous Defendants Are Detained (Oct. 23, 2015), <http://www1.nyc.gov/office-of-the-mayor/news/750-15/mayor-de-blasio-calls-change-state-law-better-ensure-dangerous-defendants-detained> (ignoring the costs of pre-trial detention on defendants by arguing that “dangerous people should be detained” and “[r]isk must be the factor that determines whether someone is detained or released”).

<sup>15</sup> See, e.g., Nissa Rhee, *Has Bail Reform in America Finally Reached a Tipping Point?*, CHRISTIAN SCI. MONITOR (Apr. 3, 2017), <http://www.csmonitor.com/USA/Justice/2017/0403/Has-bail-reform-in-America-finally-reached-a-tipping-point> (describing the impetus and momentum for reform generated from a flood of recent lawsuits challenging the use of money bail and community advocacy efforts). Most recently, in April 2017, a federal judge in Houston issued a preliminary injunction on the current bail system in Harris County, Texas. See Eli Rosenberg, *Judge in Houston Strikes Down Harris County's Bail System*, N.Y. TIMES (Apr. 29, 2017) <https://www.nytimes.com/2017/04/29/us/judge-strikes-down-harris-county-bail-system.html?emc=eta1&r=0>.

towards maximizing social welfare.<sup>16</sup> Specifically, I argue that current bail practices fail to take into account the private and social *costs* of pre-trial detention—notably, the loss of freedom to defendants, the collateral consequences to defendants and their family members, and the administrative costs to the state. Instead, bail practices primarily reflect a concern with certain *benefits* of pre-trial detention, namely, preventing flight and new crimes if defendants are released.<sup>17</sup> Indeed, current bail practices focus almost exclusively on treating pre-trial detention as a solution to the risks of pre-trial flight and new crime, while categorically ignoring the ways in which pre-trial detention may impose both private costs to individual defendants and social costs on other members of society, with the consequence that the bail system is potentially generating massive losses to social welfare. In contrast, a cost-benefit framework has tremendous potential in improving social welfare by explicitly analyzing these real trade-offs associated with pre-trial detention, largely missing from the current debate.<sup>18</sup>

To motivate the conceptual framework, in Part I, I begin with a brief history of bail in the United States to highlight the objectives of the bail system, which has historically emphasized both ensuring that defendants appear at trial and more recently, protecting the community from danger. Today, the bail system in most jurisdictions has three main objectives: (1) to release as many defendants as possible

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<sup>16</sup> This type of cost-benefit approach is increasingly applied in the criminal justice system, although primarily to analyze post-conviction incarceration. See David S. Abrams, *The Prisoner's Dilemma: A Cost-Benefit Approach to Incarceration*, 98 IOWA L. REV. 905, 910 (2013) (performing cost-benefit analyses on three types of sentencing and release policies); Darryl K. Brown, *Cost-Benefit Analysis in Criminal Law*, 92 CALIF. L. REV. 323, 328 (2004) (proposing cost-benefit analysis for criminal law generally). The use of a cost-benefit framework also has been applied to the pre-trial context, although less commonly. See William M. Landes, *The Bail System: An Economic Approach*, 2 J. LEGAL STUD. 79, 83–86 (1973) (providing the first theoretical economic analysis of pre-trial detention); see also David S. Abrams & Chris Rohlfs, *Optimal Bail and the Value of Freedom: Evidence from the Philadelphia Bail Experiment*, 49 ECON. INQUIRY 750, 750–51 (2011) (conducting a cost-benefit analysis to determine optimal money bail levels for felony defendants in Philadelphia); Shima Baradaran Baughman, *Costs of Pretrial Detention*, 97 B.U. L. REV. 1, 3–4 (2017) (arguing for an explicit cost-benefit approach to pre-trial decision-making, using empirical data on released felony defendants to highlight that the benefits of detention differ by defendants). This paper extends this prior work to provide a comprehensive framework that allows for heterogeneity in assessing both the costs and benefits of detention, provides new empirical data on bail decision-making, and utilizes the framework to assess policy alternatives such as electronic monitoring.

<sup>17</sup> See *infra* Section II.B.

<sup>18</sup> Documenting the costs associated with pre-trial detention may have constitutional implications as well. See Paul Heaton, Sandra Mayson & Megan Stevenson, *The Downstream Consequences of Misdemeanor Pretrial Detention*, STAN. L. REV. 711, 769–85 (2017) (analyzing constitutional implications in terms of equal protection, substantive and procedural due process, the Sixth Amendment, and the Eighth Amendment).

before trial to ensure that there is no infliction of punishment prior to conviction, while (2) minimizing pre-trial flight, and (3) protecting the community from danger.<sup>19</sup> Notably, these objectives of the bail system would naturally arise from a standard, utilitarian social welfare function. For example, releasing defendants at the pre-trial stage increases social welfare by avoiding the imposition of substantial restrictions on liberty and the potential harms incurred in jail. In addition, fewer defendants are at risk of falsely pleading guilty and potentially losing their jobs or homes either in the short- or long-term. Similarly, preventing pre-trial flight increases social welfare. Pre-trial flight may lower the welfare of victims who want to see their offenders punished by the state, may lead to increased court expenditures used to apprehend fugitives, and may increase crime by reducing deterrence to the extent that some defendants abscond and are never punished. Finally, preventing new crime through incapacitation also increases social welfare because new crimes impose hefty costs on victims and other members of the community.<sup>20</sup> Thus, a cost-benefit approach is particularly appropriate in the pre-trial context because bail judges are already instructed by statute to balance competing and measurable trade-offs.<sup>21</sup>

In Part II, I provide a simple taxonomy of the major costs and benefits of pre-trial detention, building on the traditional objectives of the bail system. Under this categorization, the costs of pre-trial deten-

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<sup>19</sup> See Stevens H. Clarke, Nat'l Inst. of Corr., *Pretrial Release: Concepts, Issues, and Strategies for Improvement*, in 1 RESEARCH IN CORRECTIONS 1 (1988) ("Pretrial release policy in the American criminal justice system has two goals: (1) to allow pretrial release whenever possible and thus avoid jailing a defendant during the period between his arrest and court disposition, and (2) to control the risk of failure to appear and of new crimes by released defendants."); John S. Goldkamp, *Judicial Responsibility for Pretrial Release Decisionmaking and the Information Role of Pretrial Services*, 57 FED. PROB. 28, 31 (1993) ("Effective release may be most simply defined as decision practices that foster the release of as many defendants as possible who do not fail to appear in court at required proceedings or commit crimes during the pretrial release period.").

<sup>20</sup> See *infra* Section II.A.

<sup>21</sup> See *infra* note 60 and accompanying text. In addition, a cost-benefit framework lends itself naturally to the pre-trial stage of the criminal justice process, distinct even from its application to other stages, such as sentencing. For instance, defendants' welfare should be considered at this pre-trial stage because no conviction has yet been rendered, unlike at the sentencing stage where some may argue that defendants' welfare should play no role (or a discounted role) in assessing the appropriate punishment. Furthermore, many of the competing objectives considered at the bail stage are measurable and quantifiable. In contrast, the use of cost-benefit analysis at sentencing is arguably more complicated because of hard-to-quantify yet important goals like retribution and mercy. See, e.g., Sonja B. Starr, *On the Role of Cost-Benefit Analysis in Criminal Justice Policy: A Response to The Prisoner's Dilemma*, 98 IOWA L. REV. BULL. 97, 110-11 (2013) (pointing out that cost-benefit analysis has a limited role in evaluating incarceration rates if retribution is the sole justification for punishment).

tion include private costs to defendants, such as the loss of liberty and the loss of future earnings, as well as externalities imposed on families and members of the community. The benefits of pre-trial detention include the prevention of new crime and flight through incapacitation, as well as general deterrence benefits. I then evaluate the available empirical evidence on some of these costs and benefits, which are required inputs into any cost-benefit framework. Recent empirical work, including my own, estimates the causal impact of pre-trial detention on a variety of important outcomes, such as labor supply, receipt of public benefits, and future crime.<sup>22</sup> This work suggests that pre-trial detention imposes large private and social costs. Pre-trial detention causes defendants to plead guilty (perhaps erroneously), increases future crime after case disposition, reduces formal employment, and reduces the take-up of employment-related benefits, like Unemployment Insurance (UI) and the Earned Income Tax Credit (EITC) up to four years after arrest. In particular, my recent research with Will Dobbie and Jacob Goldin suggests that pre-trial detention reduces formal labor market attachment through the stigma of a criminal conviction following a guilty plea, which subsequently reduces eligibility and take-up of government benefits tied to formal employment.<sup>23</sup> Yet this work also documents that pre-trial detention provides social benefits through the incapacitation of defendants, leading to decreases in both pre-trial crime and missed court appearances.<sup>24</sup> As a result, policymakers cannot justifiably draw sharp welfare conclusions about the optimality of the current bail system without a consideration of both the costs and benefits of pre-trial detention, highlighting the need for a cost-benefit framework.

Importantly, I do not claim that the existing evidence captures all of the relevant costs and benefits. For example, there exists limited empirical evidence on how to quantify the loss of liberty imposed by pre-trial detention. Nor does there exist any quantitative evidence on the effects of pre-trial detention on deterrence more generally. In addition, I do not discount the possibility that some costs and benefits may be difficult to quantify, such as trust in, and legitimacy of, legal institutions. Nevertheless, I argue that a cost-benefit framework is important for two main reasons. First, it highlights the need for considering both costs and benefits of detention, many of which are overlooked, and potentially spurs further research that fills our current

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<sup>22</sup> See, e.g., Dobbie et al., *supra* note 8 (examining the impact of pre-trial release on case outcomes, court appearances and future crime, formal sector employment, tax filing behavior, and social benefits receipt).

<sup>23</sup> See Dobbie et al., *supra* note 8, at 22–23.

<sup>24</sup> *Id.* at 4.

gaps in knowledge. Second, incorporating the current empirical research into a cost-benefit framework already provides information to policymakers. Indeed, I conduct a partial cost-benefit analysis that incorporates the best available evidence on both the costs and benefits of detention, finding that on the margin, pre-trial detention imposes far larger costs than benefits.<sup>25</sup> As a result, one can begin to quantify how large potential unmeasured benefits have to be in order to justify the current state of detention, a form of “break-even” analysis advocated by scholars in other contexts.<sup>26</sup>

Following this cost-benefit approach, I develop a conceptual framework of bail decision-making at the individual level in Part III that allows for heterogeneity in costs and benefits across defendants. I describe how a welfare-maximizing social planner decides whether to release or detain a defendant by comparing the benefits of detention against the costs of detention.<sup>27</sup> This framework illustrates the first-order importance of accounting for both costs and benefits when designing a bail system, rather than focusing solely on the benefits of detention or the “risk” of defendants. I demonstrate that in certain situations, the optimal bail decision results in the detention of high-risk defendants, or defendants who face a high risk of pre-trial misconduct. However, I also show that, depending on the relationship between the costs and benefits of pre-trial detention, it may be optimal to detain low-risk defendants while releasing high-risk defendants, contrary to the recommendations of recent policy reforms to the bail system.<sup>28</sup> Specifically, I allow for the very real possibility that defendants vary not only based on “risk” but also on “harm.” For example, the private costs of pre-trial detention may be much larger for marginalized defendants who lose their jobs and income as a result of detention compared to defendants who are able to retain their jobs

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<sup>25</sup> See *infra* Section II.C.

<sup>26</sup> See, e.g., Cass R. Sunstein, *Financial Regulation and Cost-Benefit Analysis*, 124 *YALE L.J.F.* 263, 263 (2015) (challenging the view that financial regulators should not employ cost-benefit analysis).

<sup>27</sup> In this Article, I take no strong view on the particular form of the social welfare function. Instead, I simply make the argument that costs and benefits should be taken into account to promote welfare, whatever it may be.

<sup>28</sup> For example, the Laura and John Arnold Foundation, which has created a risk-assessment tool used in many jurisdictions, identifies three risk levels for defendants: (1) low-risk individuals who “are highly unlikely to commit other crimes and are likely to return to court,” (2) moderate-risk individuals who “can often be managed in the community,” and (3) high-risk individuals who “pose significant risks of committing acts of violence, committing additional crimes, or skipping court.” The Foundation further stated that it was critical to distinguish defendants across these levels and “identify those who are at an elevated risk for violence.” See *Public Safety Assessment*, LAURA & JOHN ARNOLD FOUND., <http://www.arnoldfoundation.org/initiative/criminal-justice/crime-prevention/public-safety-assessment/> (last visited June 16, 2017).

and financial support.<sup>29</sup> Thus, detention on the basis of “risk” alone may generate socially suboptimal outcomes.

In Part IV, I address the possibility that all judges are already achieving socially optimal bail decisions, in which case my conceptual framework would provide little practical value. After all, some may argue that judges are already engaged in weighing competing and measurable trade-offs, which are embedded in statutory directives to minimize the harms of detention prior to conviction while preserving the integrity of the court system and protecting the public.<sup>30</sup> I demonstrate empirically that this is unlikely to be true. Specifically, I test for whether judges are deviating from the same social optimum by comparing pre-trial detention decisions *across* judges who are randomly assigned bail cases. The idea here is straightforward: If all bail judges decide whether to detain a defendant or release a defendant using the same social welfare function and with the same information, then two judges who are assigned identical defendants should reach the same conclusion about whether to detain or release those defendants. But any large and significant differences in detention rates across these two judges suggest that these bail judges are not maximizing the same objective social welfare function and/or that they have different information or beliefs about costs and benefits.

To implement this test, I use unique data linking over 400,000 defendants to bail judges in two large urban counties with vast jail systems: Philadelphia and Miami-Dade. I describe how in these jurisdictions, defendants are quasi-randomly assigned to bail judges, allowing for a test of deviations from the social optimum by comparing release rates across judges within the same court. I then show that there are large and systematic differences in bail decisions across judges within the same court, due to judge-specific preferences rather than differences in case composition.<sup>31</sup> These significant judge-specific differences emerge in pre-trial release rates, the assignment of money bail, and in racial gaps in release, with the vast majority of judges being more likely to release white defendants relative to black defen-

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<sup>29</sup> See *infra* Section III.C.

<sup>30</sup> See *supra* note 19 and accompanying text.

<sup>31</sup> Other scholars have argued that pre-trial detention decisions are unpredictable and variable by showing that pre-trial release rates differ across counties in the United States. See Baughman, *supra* note 16, at 2–3 (arguing that inconsistency across judges “is evidenced by the inconsistency in pre-trial release rates across counties in the United States—some judges release less than 5% of defendants, whereas others release more than 90% of defendants, even when the defendants were charged with exactly the same types of crimes in similar neighborhoods”). However, the characteristics of defendants and crimes across counties are likely very different, making these cross-county comparisons uninformative.

dants.<sup>32</sup> These results indicate that the current state of discretionary bail determination leads to highly variable and inconsistent decisions, highlighting the potential for an objective cost-benefit framework to guide decision-making and reduce variability. Indeed, cost-benefit analysis is beginning to receive attention in the pre-trial justice arena, with some jurisdictions considering the use of cost-benefit analysis in deciding which defendants to detain or release before trial.<sup>33</sup>

Next, in Part V, I demonstrate that the application of the cost-benefit framework is not only useful in guiding pre-trial release decisions, but can also be used more broadly to assess the welfare consequences of other bail practices and much-discussed bail reforms. I begin by considering how a policymaker should assess the use of money bail, the most predominant bail system in the United States. For example, assessing the current use of money bail requires weighing the benefits of money bail, such as providing financial incentives to defendants to return to court and abide by all release conditions, against the costs. I then turn to an assessment of electronic monitoring as an intermediate alternative to detention, arguing that while the empirical evidence to date is mixed and speculative, there are reasons to believe that more extensive use of electronic monitoring is welfare-enhancing.<sup>34</sup> Indeed, recent technological advances in electronic monitoring suggest that it may reduce pre-trial flight and crime at lower private and social cost than pre-trial detention.

Finally, I consider the recent interest in, and proliferation of, risk-assessment tools used to predict the likelihood that an individual defendant will engage in pre-trial misconduct. Most notably, as of June 2015, over thirty cities and states have adopted the Public Safety Assessment (PSA) created by the Laura and John Arnold Foundation.<sup>35</sup> While these tools can arguably improve predictive accuracy in bail setting and conversely reduce judge bias and inconsistency, I argue that they are one-sided, focusing solely on the benefits of pre-trial detention and the goal of ensuring public safety. As one organization has noted, these “algorithms privilege a view of justice

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<sup>32</sup> See *infra* Section IV.A.4.

<sup>33</sup> For instance, the Crime & Justice Institute has created a cost-benefit model for pre-trial detention in order to illustrate how cost-benefit analysis “allows local officials to estimate the impact of policy changes on system costs and public safety,” and in 2015, piloted these models in Johnson County, Kansas, and Boulder County, Colorado. See *Groundbreaking Pretrial Cost-Benefit Model Puts New Information in the Hands of Decision Makers*, COMMUNITY RESOURCES FOR JUST., <http://www.crj.org/news/entry/groundbreaking-pretrial-cost-benefit-model-puts-new-information-in-the-hand> (last visited June 16, 2017) (describing the cost-benefit models piloted in these jurisdictions).

<sup>34</sup> See *infra* Section V.B.

<sup>35</sup> See LAURA & JOHN ARNOLD FOUND., *supra* note 28.

based on estimating the ‘risk’ posed by the offender.”<sup>36</sup> In doing so, these risk-assessment tools may recommend pre-trial detention for high-risk defendants, despite the very real possibility that risky defendants may also be those who are most adversely affected by pre-trial detention. As my framework will illustrate, if certain high-risk defendants are also the most adversely affected by a stay in jail, it may be welfare-decreasing to detain these defendants, potentially undermining these tools’ stated purpose of reducing unnecessary harm associated with pre-trial detention. Instead, I argue that jurisdictions interested in the use of evidence-based practices should test and develop “net-benefit” assessment tools, using data to predict not only which defendants are most at risk upon release, but also which defendants will be most negatively affected by a stay in jail before trial.

## I

### BRIEF HISTORY OF U.S. BAIL REFORM

The origins of the U.S. bail system derive largely from medieval England, including the constitutional guarantee against “excessive bail.”<sup>37</sup> Under the Eighth Amendment of the U.S. Constitution, “[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.”<sup>38</sup> In line with their English predecessors, early common law judges in the United States presumed that non-capital defendants would be released before trial unless there was a serious flight risk.<sup>39</sup>

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<sup>36</sup> ANGÈLE CHRISTIN, ALEX ROSENBLAT & DANAH BOYD, *Courts and Predictive Algorithms*, DATA & C.R. 7 (Oct. 27, 2015), [http://www.datacivilrights.org/pubs/2015-1027/Courts\\_and\\_Predictive\\_Algorithms.pdf](http://www.datacivilrights.org/pubs/2015-1027/Courts_and_Predictive_Algorithms.pdf).

<sup>37</sup> England’s 1689 Bill of Rights included the grievance that “excessive bail hath been required of persons committed in criminal cases, to elude the benefit of the laws made for the liberty of the subjects.” An Act for Declaring the Rights and Liberties of the Subject, and Settling the Succession of the Crown 1689, 1 W. & M. 2 c. 2, § 10 (Eng.).

<sup>38</sup> U.S. CONST. amend. VIII. The excessive bail clause has been interpreted to reflect a right against non-excessive bail, rather than an absolute right to bail. The Supreme Court first adopted this more limited interpretation of the bail clause in *Carlson v. Landon*, 342 U.S. 524, 529 n.9, 545–46 (1952) (stating that in “England that clause has never been thought to accord a right to bail . . . but merely to provide that bail shall not be excessive . . . where it is proper to grant bail. When this clause was carried over into our Bill of Rights, nothing was said that indicated any different concept”).

<sup>39</sup> See Statute of Westminster I 1275, 3 Edw. c. 15 (Eng.) (explaining which prisoners were eligible for bail); WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND: A FACSIMILE OF THE FIRST EDITION OF 1765-1769, at 371 (Univ. of Chi. Press 1979) (1769) (“By the [ancient] common law, before and since the conquest, all felonies wereailable, till murder was excepted by statute . . .”); ELSA DE HAAS, ANTIQUITIES OF BAIL: ORIGIN AND HISTORICAL DEVELOPMENT IN CRIMINAL CASES TO THE YEAR 1275, at 59 (1940); see also 1 JAMES FITZJAMES STEPHEN, A HISTORY OF THE CRIMINAL LAW OF ENGLAND 234 (London, MacMillan & Co. 1883) (explaining how the Statute of Westminster was the law on bail in England for 550 years). In fact, older English law

The importance of pre-trial release, as provided for under the bail system, is grounded in the presumption of innocence, an “axiomatic and elementary” right to protect defendants prior to any finding of guilt.<sup>40</sup> This principle was embodied in the Judiciary Act of 1789, which stated that non-capital defendants should be entitled to some form of bail, although capital crimes wereailable at the discretion of the judge.<sup>41</sup> The bail system laid in place by this foundation remained largely the same for the next two centuries.

In the past several decades, the right to bail in the United States has evolved significantly, shifting from a substantive focus on solely preventing flight to an additional focus on preventing new crime.<sup>42</sup> For instance, prior to the 1960s—a period that ushered in significant changes to bail—the Supreme Court held that a defendant’s bail cannot be set higher than an amount that is reasonably likely to ensure the defendant’s presence at trial, because denying a defendant bail hurts his or her “traditional right to freedom before conviction.”<sup>43</sup> Beginning from the 1960s, critics of the bail system became increasingly vocal, questioning whether the discretionary application of bail was equitable and whether pre-trial detention adversely affected criminal defendants, particularly those who were too poor to pay.<sup>44</sup> Early

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banned pre-trial detention in all cases, including capital cases. See Shima Baradaran, *Restoring the Presumption of Innocence*, 72 OHIO ST. L.J. 723, 729 (2011) (citing THOMAS WONTNER, *OLD BAILEY EXPERIENCE: CRIMINAL JURISPRUDENCE AND THE ACTUAL WORKING OF OUR PENAL CODE LAWS* 263 (London, Ibotson & Palmer 1833)).

<sup>40</sup> Coffin v. United States, 156 U.S. 432, 454 (1895) (stating that this presumption of innocence is the foundation of United States criminal law).

<sup>41</sup> Judiciary Act of 1789, ch. 20, § 33, 1 Stat. 73, 91.

<sup>42</sup> See Baradaran, *supra* note 39, at 754; William F. Duker, *The Right to Bail: A Historical Inquiry*, 42 ALB. L. REV. 33, 68–69 (1977) (“The function of bail is . . . limited to insuring the presence of a defendant before the court.”); David J. McCarthy, Jr. & Jeanne J. Wahl, *The District of Columbia Bail Project: An Illustration of Experimentation and a Brief for Change*, 53 GEO. L.J. 675, 715 (1965) (“[T]he purpose of bail is to ensure that the accused will appear in court . . . not to prevent the commission of crime.”); Samuel R. Wiseman, *Pretrial Detention and the Right to Be Monitored*, 123 YALE L.J. 1344, 1351 (2014) (noting that “[h]istorically, the U.S. system of bail and associated pretrial detention was employed solely to prevent pretrial flight”).

<sup>43</sup> See Stack v. Boyle, 342 U.S. 1, 4–5 (1951) (holding that the setting of money bail “must be based upon standards relevant to the purpose of assuring the presence of [the] defendant”).

<sup>44</sup> See, e.g., RONALD GOLDFARB, *RANSOM: A CRITIQUE OF THE AMERICAN BAIL SYSTEM* 127 (1965) (noting that the failing bail system could be challenged on constitutional grounds); JOHN S. GOLDKAMP, *TWO CLASSES OF ACCUSED: A STUDY OF BAIL AND DETENTION IN AMERICAN JUSTICE* 25 (1979) (criticizing the factors considered in pre-trial detention under the Bail Reform Act); WAYNE H. THOMAS, JR., *BAIL REFORM IN AMERICA* 227 (1976) (citing the Manhattan Bail Project’s findings that socioeconomic status rather than dangerousness determined whether a defendant was subject to pre-trial detention); Caleb Foote, *The Coming Constitutional Crisis in Bail: I*, 113 U. PA. L. REV. 959, 965 (1965) (outlining the author’s examination of the constitutionality of a right to

studies and experiments of the bail system in several large urban cities showed that the individual characteristics of defendants were more predictive of flight risk than the application of money bail, which was increasingly used across the country.<sup>45</sup> Designed in part to reduce the increasingly high bail amounts imposed by judges,<sup>46</sup> and as part of a compromise with the critics of the bail system,<sup>47</sup> Congress passed the Bail Reform Act of 1966, which sought to protect the right to pre-trial release without the payment of money, known broadly as release on recognizance. This 1966 Act represented the first major federal bail reform since the passage of the Judiciary Act of 1789, by making the release of defendants without money bail the norm, rather than the exception.<sup>48</sup>

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bail); Charles Ares & Herbert Sturz, *Bail and the Indigent Accused*, 8 CRIME & DELINQ. 12, 13 (1962) (finding that bail discriminates against those with few or no monetary resources).

<sup>45</sup> See Charles E. Ares, Anne Rankin & Herbert Sturz, *The Manhattan Bail Project: An Interim Report on the Use of Pre-trial Parole*, 38 N.Y.U. L. REV. 67, 68 (1963) (determining whether courts should consider defendant's character and community history when setting bail); Caleb Foote, *Compelling Appearance in Court: Administration of Bail in Philadelphia*, 102 U. PA. L. REV. 1031, 1070 (1954) (analyzing the consideration of individual circumstances of defendants in Philadelphia sentencing procedures); John W. Roberts & James S. Palermo, *A Study of the Administration of Bail in New York City*, 106 U. PA. L. REV. 693, 730 (1958) (concluding that judges and magistrates should consider the background and financial status of defendants when setting bail); McCarthy, Jr. & Wahl, *supra* note 42, at 680 (determining whether community ties can be used to assure a defendant's presence at trial). These findings were subsequently forwarded to the Attorney General's Committee on Poverty and the Administration of Federal Criminal Justice. See ATT'Y GEN.'S COMM. ON POVERTY AND THE ADMIN. OF FED. CRIM. JUST., REPORT 82-83 (1963) (citing to the Foote and Roberts & Palermo articles in this footnote).

<sup>46</sup> See S. REP. NO. 98-225, at 5 (1983), as reprinted in 1984 U.S.C.C.A.N. 3182, 3187-88 (quoting ATT'Y GEN.'S TASK FORCE ON VIOLENT CRIME, FINAL REPORT 50-51 (1981)) (stating that the goals of the 1966 Bail Reform Act were to "cut[ ] back on the excessive use of money bonds and provid[e] for flexibility in setting conditions of release appropriate to the characteristics of individual defendants"); see also Bail Reform Act of 1966, Pub. L. No. 89-465, § 2, 80 Stat. 214, 214 (stating the purpose of the Act as revising practices relating to bail such that individuals are not needlessly detained); H.R. REP. NO. 89-1541, as reprinted in 1966 U.S.C.C.A.N. 2293, 2295 (1966) ("The purpose of [the Act] . . . is to revise existing bail procedures . . . to assure that all persons, regardless of their financial status, shall not needlessly be detained pending their appearance to answer charges, to testify, or pending appeal, when detention serves neither the ends of justice nor the public interest.").

<sup>47</sup> See Shima Baradaran & Frank L. McIntyre, *Predicting Violence*, 90 TEX. L. REV. 497, 503-04 (2012) (explaining that the history of the Bail Reform Act included collaboration between Congress and critics of the pre-trial detention system); see also Sam J. Ervin, Jr., *Foreword: Preventive Detention - A Step Backward for Criminal Justice*, 6 HARV. C.R.-C.L. L. REV. 291, 292 (1971) (explaining the legislative effort by different parties when proposing the Bail Reform Act).

<sup>48</sup> See Patricia M. Wald & Daniel J. Freed, *The Bail Reform Act of 1966: A Practitioner's Primer*, 52 A.B.A. J. 940, 941 (1966) (noting that the "system's emphasis shifts from release of specially qualified defendants on personal bond to release of all defendants on conditions suited to their individual risks").

The passage of the Bail Reform Act of 1966 had a dramatic effect on the states, which adopted similar laws authorizing the release of defendants on recognizance, or a simple promise to return to court.<sup>49</sup> However, in emphasizing the long-standing objective that bail should be used solely to prevent flight risk, the 1966 Act explicitly introduced the discretionary consideration of various factors to assess flight risk, such as a defendant's record.<sup>50</sup> For example, the 1966 Act required judges to release non-capital defendants unless the judge "determine[d] . . . that such a release [would] not reasonably assure the appearance of the person as required,"<sup>51</sup> which some scholars have argued inadvertently paved the path for increased pre-trial detention.<sup>52</sup>

Shortly after the passage of the 1966 Act, Congress passed the District of Columbia Crime Bill in 1970, which authorized the detention of criminal defendants without bail if they were assessed to be dangerous to society—the first incarnation of preventive detention.<sup>53</sup> Other states followed suit in adopting similar preventive detention bills,<sup>54</sup> particularly after the 1970 Bill was upheld by the Court of Appeals of the District of Columbia.<sup>55</sup> Due in large part to a growing concern about pre-trial crime and public safety,<sup>56</sup> Congress subsequently adopted the 1984 Bail Reform Act,<sup>57</sup> significantly changing the federal bail landscape.<sup>58</sup> This 1984 Act, which borrowed many pro-

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<sup>49</sup> See also CONN. GEN. STAT. ANN. § 54-63c (1968); PA. R. CRIM. P. 4001-14; 116 CONG. REC. 2537 (1970) (statement of Warren J. Miller).

<sup>50</sup> 18 U.S.C. § 3146(b) (1970).

<sup>51</sup> *Id.* § 3146(a).

<sup>52</sup> See, e.g., Baradaran, *supra* note 39, at 741 ("While the immediate result of the 1966 Bail Reform Act was that more defendants were released, the long-term impact was a rationale that allowed for increased detention.").

<sup>53</sup> See District of Columbia Court Reform and Criminal Procedure Act of 1970, Pub. L. No. 91-358, § 23-1322(a)(1), 84 Stat. 473, 644 (effective February 1, 1971). Data from the D.C. Department of Corrections found a 50 percent increase in the number of detained individuals awaiting trial between January 1971 and April 1972. See Bernice Just, *Bail and Pre-trial Detention in the District of Columbia: An Empirical Analysis*, 17 How. L.J. 844, 850 (1973).

<sup>54</sup> See BARBARA GOTTLIEB, NAT'L INST. OF JUSTICE, PUBLIC DANGER AS A FACTOR IN PRETRIAL RELEASE: A COMPARATIVE ANALYSIS OF STATE LAWS 19 (1985) (finding that several states that passed danger laws in the 1970s also authorized pre-trial detention).

<sup>55</sup> See *United States v. Edwards*, 430 A.2d 1321, 1324 (D.C. 1981).

<sup>56</sup> For example, a 1984 Senate report noted that the "broad base of support for giving judges the authority to weigh risks to community safety in pretrial release decisions is a reflection of the deep public concern, which the Committee shares, about the growing problem of crimes committed by persons on release." S. REP. NO. 98-225, at 6 (1983), as reprinted in 1984 U.S.C.C.A.N. 3182, 3188.

<sup>57</sup> Bail Reform Act of 1984, 18 U.S.C. §§ 3141–3150.

<sup>58</sup> See Marc Miller & Martin Guggenheim, *Pretrial Detention and Punishment*, 75 MINN. L. REV. 335, 344 (1990) (stating that pre-trial crime was a major concern for legislators after the passage of the 1966 Bail Reform Act).

cedural provisions from the District of Columbia Crime Bill,<sup>59</sup> allowed judges to make bail determinations based on their individual assessment of each defendant's risk to the community.<sup>60</sup>

The idea of preventive detention faced substantial criticism, both among the judicial and scholarly community. For example, shortly after the passage of the 1984 Act, the Second Circuit Court of Appeals ruled in *United States v. Salerno* that the law violated the Due Process Clause by allowing judges to deny bail to defendants who they believed were dangerous to the community.<sup>61</sup> Specifically, the Second Circuit found that the statute's authorization of pre-trial detention on the basis of future dangerousness was "repugnant to the concept of substantive due process, which we believe prohibits the total deprivation of liberty simply as a means of preventing future crimes."<sup>62</sup> Similarly, scholars and commentators decried the use of preventive detention as antithetical to the idea that there be no punishment prior to conviction.<sup>63</sup> Indeed, preventive detention rests on the idea of detaining individuals not based on harms they have already imposed, but on the possibility of future crime, which is similar to justifications for punishment on the basis of incapacitation.<sup>64</sup>

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<sup>59</sup> See S. REP. NO. 98-225, at 12 (revising the Bail Reform Act of 1966).

<sup>60</sup> For example, the 1984 Act states, among other things, that defendants should be granted bail "unless . . . such release will not reasonably assure the appearance of the person . . . or will endanger the safety of any other person or the community." 18 U.S.C. § 3142(b) (1988).

<sup>61</sup> 794 F.2d 64, 66 (2d Cir. 1986) (vacating the district court order and remanding for setting conditions of bail after finding § 3142(e) unconstitutional), *rev'd*, 481 U.S. 739 (1987); see also Michael Norman, *Appeals Court Strikes Down U.S. Pretrial Detention Law*, N.Y. TIMES (May 3, 1986), <http://www.nytimes.com/1986/05/03/nyregion/appeals-court-strikes-down-us-pretrial-detention-law.html> (explaining the majority's view that pre-trial detention to prevent future crimes against society was unconstitutional and creates a police state approach to criminal justice). For a fascinating account of the story behind *Salerno*, see Daniel C. Richman, *The Story of United States v. Salerno: The Constitutionality of Regulatory Detention*, FORDHAM L. FAC. COLLOQUIUM PAPERS, Apr. 2005, at 7–11.

<sup>62</sup> *Salerno*, 794 F.2d 64, 71–72 (2d Cir. 1986).

<sup>63</sup> For example, when Attorney General Mitchell of the Nixon Administration proposed a federal statute that would allow judges to consider dangerousness in making bail decisions, scholars denounced the proposal as "exceptionally hospitable to the authoritarian values of 'order' and dangerously inimical to the libertarian values of 'law.'" Laurence H. Tribe, *An Ounce of Detention: Preventive Justice in the World of John Mitchell*, 56 VA. L. REV. 371, 375 (1970); see also Sam J. Ervin, Jr., *Preventive Detention, a Species of Lydford Law*, 52 GEO. WASH. L. REV. 113, 114 n.9 (1983) (describing the Nixon proposal as "pervert[ing] the historic and legitimate purpose of bail—to assure the appearance of the accused at trial").

<sup>64</sup> See Ronald J. Allen & Larry Laudan, *Deadly Dilemmas III: Some Kind Words for Preventive Detention*, 101 J. CRIM. L. & CRIMINOLOGY 781, 801–02 (2011) (defending pre-trial detention on the basis of dangerousness because "we should be willing to impose a greater risk on the defendant in the case of a prospective harm than in the case of a harm that has already been done").

Yet, despite features of the 1984 Act that arguably lowered the procedural protections against pre-trial detention for defendants,<sup>65</sup> the Supreme Court, reviewing the Second Circuit's opinion, rejected claims that pre-trial detention on the basis of dangerousness violated the Due Process Clause and upheld the constitutionality of the 1984 Bail Reform Act.<sup>66</sup> The Court concluded that, while the defendant Salerno had in some sense lost his liberty while detained, he had not been "punished," but had simply been subject to regulatory control—noting, among other factors, that (1) those detained pre-trial were ensured a prompt hearing, (2) the period of detention was limited by the Speedy Trial Act of 1974, and (3) pre-trial detainees were housed separately from convicted defendants.<sup>67</sup> The Court reasoned further that this regulatory deprivation of liberty was not unconstitutional, as "[e]ven outside the exigencies of war, we have found that sufficiently compelling governmental interests can justify detention of dangerous persons."<sup>68</sup> In weighing the government's interests in preventing new crime by arrestees, which it concluded was legitimate and compelling, against the individual's liberty interest, the Court concluded that "this [individual] right may, in circumstances where the government's interest is sufficiently weighty, be subordinated to the greater needs of society."<sup>69</sup>

The impact of *Salerno* on the state of the bail system was profound, contributing to a rise of what some call "the preventive state."<sup>70</sup> In the years that followed, almost all states adopted statutes explicitly allowing judges to consider dangerousness as a factor in pre-trial release.<sup>71</sup> Today, in most jurisdictions, bail judges are granted

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<sup>65</sup> For example, the 1984 Bail Reform Act creates a rebuttable presumption in favor of detention if the defendant was previously convicted of certain offenses within the past five years and committed the current offense while on release pending trial for another offense, or committed certain specified drug or firearms offenses. 18 U.S.C. § 3142(e) (1988).

<sup>66</sup> *United States v. Salerno*, 481 U.S. 739, 748 (1987). In addition, the Court rejected the argument that the Bail Reform Act violated the Excessive Bail Clause of the Eighth Amendment. *Id.* at 752–54.

<sup>67</sup> *Id.* at 747–48.

<sup>68</sup> *Id.* at 748.

<sup>69</sup> *See id.* at 750–51.

<sup>70</sup> *See, e.g.,* Carol S. Steiker, *Punishment and Procedure: Punishment Theory and the Criminal-Civil Procedural Divide*, 85 GEO. L.J. 775, 780, 819 (1997).

<sup>71</sup> *See* Laura I. Appleman, *Justice in the Shadowlands: Pretrial Detention, Punishment, & the Sixth Amendment*, 69 WASH. & LEE L. REV. 1297, 1330 (2012) (noting that "forty-five states and the District of Columbia specifically permit[] the determination of dangerousness as a predicate for denying pretrial release"); *see also* Baradaran & McIntyre, *supra* note 47, at 507 ("In determining whether the accused is too dangerous to release prior to conviction, state courts consider three main categories: (1) the circumstances surrounding the present offense charged, (2) the defendant's past conduct, and (3) judicial discretion regarding the defendant's circumstances and character."). For an

vast discretion to make pre-trial release decisions that take into account factors such as “providing due process to those accused of crime, maintaining the integrity of the judicial process by securing defendants for trial, and protecting victims, witnesses and the community from threat, danger or interference.”<sup>72</sup>

## II

### CLASSIFYING THE COSTS AND BENEFITS OF PRE-TRIAL DETENTION

Designing the optimal bail system requires a social planner to balance both the total costs of detention and the total benefits of detention. As described previously, some of these costs and benefits are already accounted for in the explicitly-stated objectives of most bail statutes. As stated previously, the bail system in most jurisdictions has three main objectives: (1) to release as many defendants as possible before trial to ensure that there is no infliction of punishment prior to conviction, while (2) minimizing pre-trial flight and (3) protecting the community from danger.<sup>73</sup> These objectives present competing trade-offs that would naturally arise from a utilitarian framework. For example, as this Section will demonstrate, releasing more defendants prior to trial lowers the private and social costs of pre-trial detention. Fewer defendants face a loss of freedom and fewer lose their jobs either in the short- or long-run. On the other hand, releasing more defendants increases the risk of flight, which may drain court resources and dampen deterrence if fugitives are not apprehended. Similarly, releasing more defendants increases the risk of harm and fear to victims and the community at large.

In this Section, I provide a taxonomy of the major categories of costs and benefits that a social planner would consider in order to maximize social welfare. While I categorize these costs and benefits in terms of the pre-trial detention versus release decision, a very similar taxonomy could be applied to assess other decisions, such as the imposition of money bail. I am agnostic as to which costs and benefits a

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overview of differences among state bail laws, see Pretrial Justice Institute, *Matrix of State Bail Laws*, PRETRIAL JUST. INST., <http://www.pretrial.org/wpfb-file/matrix-of-state-bail-laws-april-2010-pdf/> (last visited June 16, 2017).

<sup>72</sup> STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE § 10-1.1 (AM. BAR ASS'N 2007).

<sup>73</sup> See *supra* note 19 and accompanying text; see also STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE § 10-1.1 (AM. BAR ASS'N 2007) highlighting the importance of these factors and noting that the “deprivation of liberty pending trial is harsh and oppressive, subjects defendants to economic and psychological hardship, interferes with their ability to defend themselves, and, in many instances, deprives their families of support”).

policymaker in a specific jurisdiction may choose to include, as some may be impractical for policy reasons and others may be invalid for legal reasons. Nonetheless, I include all first-order costs and benefits to provide a frame of reference.

Within each category, I also describe and evaluate the existing empirical evidence on the magnitude of each cost and benefit of pre-trial detention, which are critical inputs in any cost-benefit analysis. As will be demonstrated below, there are gaps in knowledge where the literature has not thus far yielded rigorous estimates. Nevertheless, I show through a partial cost-benefit analysis that this current state of research already provides useful information to bail judges and policymakers.

### A. *Private and Social Costs of Pre-trial Detention*

The private costs of pre-trial detention encompass costs borne by the individual defendant, while social costs include costs borne by individuals other than the defendant, such as taxpayers, families, and communities. The private and social costs of pre-trial detention fall into five main categories: loss of freedom, wrongful conviction, future costs associated with the collateral consequences of detention, externalities on other members of society, and finally the administrative costs of jails.<sup>74</sup>

#### 1. *Loss of Freedom*

Pre-trial detention imposes a loss of freedom on criminal defendants for the time spent incarcerated. The costs of this loss of freedom includes earnings lost while in detention, the psychic and mental costs of being physically incapacitated, and the risk of injury or death to defendants held in jail.<sup>75</sup>

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<sup>74</sup> In the past several decades, scholars and journalists have evaluated the potential costs of pre-trial detention on individual defendants, families, and communities. For example, the authors of one of the earliest bail experiments, the Manhattan Bail Project, stated that “[t]he bail system has, almost from its inception, been the subject of dissatisfaction. Every serious study published since the 1920’s has exposed defects in its administration.” See Ares, Rankin & Sturz, *supra* note 45, at 67 (citing a list of studies dating back to the 1920s through 1950s). More recent coverage on the effects of pre-trial detention on defendants and their communities is exemplified by articles such as the *The Bail Trap*. Pinto, *supra* note 5 (citing to examples of individuals who lose their jobs or access to shelters and caretakers as a result of pre-trial detention).

<sup>75</sup> See, e.g., Jennifer Gonnerman, *Kalief Browder, 1993–2015*, NEW YORKER (June 7, 2015), <http://www.newyorker.com/news/news-desk/kalief-browder-1993-2015> (describing the tragic death of Kalief Browder who endured two years of solitary confinement while awaiting a trial that never happened); Mihir Zaveri, *Harris County to Place Public Defenders at Bail Hearings*, HOUS. CHRON. (Mar. 14, 2017), <http://www.houstonchronicle.com/news/houston-texas/houston/article/Harris-County-to-place->

It is important to note that the degree to which the loss of freedom due to *pre-trial* detention should be incorporated into a cost-benefit analysis may depend on the time spent in *post-trial* incarceration. Specifically, a subset of defendants would serve no additional time but for pre-trial detention (e.g. defendants who have their cases dismissed or who are sentenced to probation) such that the time spent in pre-trial detention and the related loss of freedom is fully borne as a private cost. In contrast, another subset of defendants may serve additional time in prison regardless of pre-trial detention such that the time spent in pre-trial detention is merely shifted forward in time if they receive credit for time served.<sup>76</sup> For these defendants, pre-trial detention may impose no additional private costs if pre-trial detention and post-trial incarceration are perfect substitutes.<sup>77</sup> As a result, a policymaker assessing the broader general equilibrium effects of pre-trial detention may choose to account for this possibility of substitution by analyzing both pre- and post-trial periods of incarceration. Specifically, a policymaker needs to ascertain the causal effect of pre-trial detention not just on the number of days detained *pre-trial* but also on the *total* number of days incarcerated (pre-trial and post-trial).

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public-defenders-at-bail-11002089.php (“In Harris County, 55 people died in pre-trial detention from 2009 to 2015, including defendants arrested for misdemeanors such as trespassing and driving while intoxicated.”).

<sup>76</sup> See Stephanos Bibas, *Plea Bargaining Outside the Shadow of Trial*, 117 HARV. L. REV. 2464, 2492 (2004) (detention may “approach or even exceed the punishment that a court would impose after trial”); see also Wiseman, *supra* note 42, at 1356 (stating that “[i]n some cases, the periods that defendants spend in jail awaiting trial is comparable to, or even greater than, their potential sentences, thus substantially incentivizing quick plea deals regardless of guilt or innocence”); Samuel R. Wiseman, *Fixing Bail*, 84 GEO. WASH. L. REV. 417, 419 (2016) (describing how “if defendants receive credit for the time spent in jail awaiting conviction, the remainder of their detention time can be short, or nonexistent, if they take a plea”).

<sup>77</sup> This statement is subject to three caveats. The first caveat is that if jails impose substantially more loss of freedom/harms than prisons, there are additional costs imposed through pre-trial detention even for defendants who experience a time shift. According to the United Nations Office on Drugs and Crime, “although pre-trial detainees should be presumed innocent until found guilty by a court of law, and treated as such, conditions in pre-trial detention are often much worse than those of prisons for convicted prisoners.” See *Why Promote Prison Reform?*, UNITED NATIONS OFF. ON DRUGS & CRIME, <https://www.unodc.org/unodc/en/justice-and-prison-reform/prison-reform-and-alternatives-to-imprisonment.html> (last visited June 16, 2017). The second caveat is that if defendants have high discount rates and suffer greater loss from an immediate day of incarceration compared to a future day of incarceration, then there are again additional costs imposed through pre-trial detention even for defendants who experience a time shift. The third caveat is that if policymakers view the justifications of pre- and post-trial incarceration as distinct (in particular, the view that pre-trial detention should not be “punishment” under the law), then policymakers may choose not to account for possible time substitution effects.

Accounting for the total number of days incarcerated also allows for the possibility that pre-trial detention may endogenously affect post-trial incarceration. First, as some have suggested, pre-trial detention may hamper the ability of a defendant to mount a successful defense or to gather evidence.<sup>78</sup> Difficulty in preparing a defense can increase the probability of conviction and incarceration. Second, pre-trial detention may adversely affect case outcomes if prosecutors, trial judges, and jurors believe that detained defendants are more likely to be guilty. For example, if detained defendants appear at arraignment and at trial in shackles, prosecutors and jurors may be biased in favor of finding the defendant guilty and sentencing a defendant to prison time.<sup>79</sup> Psychologically, trial judges may also be more willing to sentence a defendant to post-trial incarceration if prison time would be a continuation of jail time for a defendant who was detained versus the first stint of incarceration for a defendant who was released pre-trial. Third, the unpleasantness of a stint in jail may increase the incentive for defendants to plead guilty to additional time in prison simply so that they can be freed. Finally, pre-trial detention may worsen sentencing outcomes conditional on conviction. For example, stable employment is often a mitigating factor at sentencing.<sup>80</sup> If pre-trial detention leads to job loss and financial instability, detained defendants may be in a weaker position to argue for more lenient sentencing outcomes compared to those who were released before trial.

Here, a simple comparison of the total days incarcerated between detained and released defendants does not provide a causal estimate

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<sup>78</sup> See Wiseman, *supra* note 42, at 1355–56 (describing how a detained “defendant must recruit friends or family members to collect evidence and witnesses and will often have difficulty communicating with his attorney due to limited visiting hours”); see also Bibas, *supra* note 76, at 2493 (stating that “[d]etained defendants find it harder to meet and strategize with their lawyers and to track down witnesses”); Douglas J. Klein, Note, *The Pretrial Detention ‘Crisis’: The Causes and the Cure*, 52 WASH. U. J. URB. & CONTEMP. L. 281, 294 (1997) (noting that “prisoners, including pretrial detainees, may be incarcerated in facilities far away from the district in which they are tried,” which “can inhibit a defense attorney from consulting with the pretrial detainee”).

<sup>79</sup> See Klein, *supra* note 78, at 294 (noting that “the tendency of pretrial detainees ultimately to be found guilty may reflect juror bias. Jurors may reason that if the defendant was incarcerated, then he must be guilty of the charged offense because the government would not have jailed the defendant in the first place”); cf. *Estelle v. Williams*, 425 U.S. 501, 512–13 (1976) (holding that under the Fourteenth Amendment, the government cannot compel an accused to stand trial before a jury while dressed in identifiable prison clothes, which may limit the instances in which detained defendants appear at trial in prison garb).

<sup>80</sup> See, e.g., Natalie R. Ortiz & Cassia Spohn, *Mitigating the Effect of a Criminal Record at Sentencing: Local Life Circumstances and Substantial Assistance Departures Among Recidivists in Federal Court*, 25 CRIM. JUST. POL’Y REV. 3, 22 (2014) (finding that employment increased the likelihood of a government-sponsored sentence departure among recidivists in federal court).

because differences in the total days incarcerated may be explained by differences in the characteristics of detained and released defendants, rather than by the effect of pre-trial detention itself—the classic problem of “omitted variables bias.” However, my recent study with Will Dobbie and Jacob Goldin estimates the causal effect of pre-trial detention on total days ever incarcerated (for the initial charge) using arrest and court records on over 400,000 defendants from two large urban counties, Philadelphia and Miami-Dade. That paper exploits variation stemming from the fact that defendants in several counties are more or less randomly assigned to bail judges, who differ greatly in their propensity to detain or release defendants.<sup>81</sup> Thus, because some defendants are effectively detained by random chance because they were assigned to a harsher judge while other defendants are effectively released by random chance because of assignment to a more lenient judge, we can estimate the causal impact of pre-trial detention on various outcomes.

Using this quasi-random assignment of cases to bail judges, we find that pre-trial detention leads to an average of 14 extra days spent in pre- and post-trial incarceration for the marginally detained defendant relative to the marginally released defendant.<sup>82</sup> While these estimates are from two jurisdictions and apply only to marginal defendants, such that one should be cautious about external validity, this finding suggests that pre-trial detention imposes 14 extra total days of lost freedom.

These days of lost freedom can then be multiplied by a quantifiable per-day loss. Unfortunately, very few studies have attempted to empirically estimate and quantify this loss. One study finds that the loss of freedom is valued at \$1000 for ninety days of detention, or approximately \$11 per day.<sup>83</sup> This low estimate arises from assuming that if a defendant posts bail at a certain amount, their value of freedom must exceed the cost of posting the amount (the “revealed preference” approach).<sup>84</sup> Another imperfect approach to valuing the loss of freedom might be to use compensation offered by states for individuals who are wrongfully convicted. While compensation in the context of wrongful conviction encompasses payment for harms beyond the immediate loss of freedom (such as future lost earnings),

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<sup>81</sup> Dobbie et al., *supra* note 8, at 2.

<sup>82</sup> *Id.* at 17.

<sup>83</sup> See Abrams & Rohlf, *supra* note 16, at 769.

<sup>84</sup> *Id.* However, this revealed preference approach is likely to lead to underestimates of the value of freedom, in part because criminal defendants may fail to consider all costs of detention and because whether a defendant posts bail may reflect financial constraints rather than willingness to pay. See Starr, *supra* note 21, at 105.

states with wrongful conviction statutes mandate payment of between \$50 and \$140 per day.<sup>85</sup>

## 2. *Wrongful Conviction*

As described previously, to the extent that some individuals would not have been convicted and/or incarcerated had they been released, pre-trial detention may increase the risk of wrongful convictions and wrongful case outcomes, such as receiving a more severe sanction than warranted on the basis of the evidence.<sup>86</sup>

Wrongful convictions caused by pre-trial detention may reduce social welfare for several primary reasons. First, the possibility of being wrongfully convicted as a result of detention may reduce the willingness of certain members of society to engage in innocent, socially-beneficial activity. Second, as will be described further below, pre-trial detention may yield a social benefit of deterring crime, but this deterrence value is limited to the extent that some individuals may be punished even if they do not commit an actual crime. Third, fear of wrongful convictions may perpetuate a distrust of the legal system, breeding disrespect for legal institutions in a way that can lead to lack of compliance with the law and lack of cooperation with law enforcement in identifying criminals and fighting crime.<sup>87</sup>

While there is very limited empirical evidence on the impact of pre-trial detention on wrongful conviction or case outcomes, much of the existing empirical research documents an adverse relationship between case outcomes and pre-trial detention. Since the early bail

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<sup>85</sup> See *Wrongful Conviction Compensation Statutes*, CNN, <http://www.cnn.com/interactive/2012/03/us/table.wrongful.convictions/> (last visited June 25, 2017).

<sup>86</sup> See *supra* note 76 and accompanying text; see also Issa Kohler-Hausmann, *Managerial Justice and Mass Misdemeanors*, 66 STAN. L. REV. 611, 664 (2014) (noting that the structure of the bail system, “and not necessarily the legal or factual merits of the case, often drives disposition”); Alexandra Natapoff, *Misdemeanors*, 85 S. CAL. L. REV. 1313, 1346–47 (2012) (describing how, in low-level cases, “[t]he confluence of police authority to trigger incarceration simply by asserting that a minor offense has been committed, combined with the pressures of bail and general acquiescence of the poor, can create the perfect storm of wrongful pleas”).

<sup>87</sup> Several works discuss the social psychology evidence on the importance of procedural justice in understanding how individuals interact with the legal system. See TOM R. TYLER ET AL., *SOCIAL JUSTICE IN A DIVERSE SOCIETY* 75–76 (1997) (discussing the distinctions between procedural justice, distributive justice, and outcome favorability); Tom R. Tyler, *Procedural Justice, Legitimacy, and the Effective Rule of Law*, CRIME & JUST., Dec. 2003, at 283, 286 (noting that “[p]rocedural justice judgments consistently emerge as the central judgment shaping people’s reactions to their experiences with legal authorities”); see also Tracey L. Meares, *Norms, Legitimacy and Law Enforcement*, 79 OR. L. REV. 391 (2000); Tom R. Tyler & Jeffrey Fagan, *Legitimacy and Cooperation: Why Do People Help the Police Fight Crime in Their Communities?*, 6 OHIO ST. J. CRIM. L. 231 (2008).

experiments of the 1960s, researchers have found a negative correlation between pre-trial detention and criminal case outcomes after controlling for other characteristics of defendants. For example, the Manhattan Bail Project, a collaboration between the Vera Institute of Justice, New York University School of Law, and the Institute of Judicial Administration, followed a sample of defendants at arraignment through case disposition. Research staff interviewed defendants and, in the treatment group, provided judges with a recommendation for whether each defendant should be released pre-trial without bail. Researchers on this project found that those who were detained pre-trial were more likely to be convicted and incarcerated than those who were released, leading them to conclude that detention may impose costs that are “more than a temporary deprivation of [ ] liberty.”<sup>88</sup> Recently, several papers have exploited variation stemming from the fact that defendants in several counties are more or less randomly assigned to bail judges, who differ greatly in their propensity to detain or release defendants.<sup>89</sup> Thus, these papers can estimate the causal

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<sup>88</sup> Anne Rankin, *The Effect of Pretrial Detention*, 39 N.Y.U. L. REV. 641, 641 (1964); see also *id.* at 648 (finding a negative relationship between pre-trial detention and conviction even after controlling for prior record, bail amount, type of counsel, and measures of family integration). Another seminal paper assessing the impact of pre-trial detention on case outcomes in Philadelphia found that pre-trial detention was associated with a higher probability of being incarcerated. John S. Goldkamp, *The Effects of Detention on Judicial Decisions: A Closer Look*, 5 JUST. SYS. J. 234, 254 (1980). Research that followed in the next several decades largely confirmed these correlations, concluding that conviction and sentencing outcomes could be largely predicted by whether a defendant had been detained before trial. See, e.g., CHRISTOPHER T. LOWENKAMP ET AL., LAURA & JOHN ARNOLD FOUND., INVESTIGATING THE IMPACT OF PRETRIAL DETENTION ON SENTENCING OUTCOMES 12 (2013), [http://www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF\\_Report\\_state-sentencing\\_FNL.pdf](http://www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF_Report_state-sentencing_FNL.pdf) (finding that defendants detained prior to trial were more likely to be incarcerated than those released prior to trial); MARY T. PHILLIPS, N.Y.C. CRIMINAL JUSTICE AGENCY, INC., PRETRIAL DETENTION AND CASE OUTCOMES, PART 1: NONFELONY CASES 56 (2007), [http://www.nycja.org/lwdcms/doc-view.php?module=reports&module\\_id=603&doc\\_name=doc](http://www.nycja.org/lwdcms/doc-view.php?module=reports&module_id=603&doc_name=doc) (finding that in a sample of defendants in New York City detained and released in 2003–2004, pre-detention was “one of the most important single factors” that influenced the “likelihood of conviction”); Jeffrey Manns, *Liberty Takings: A Framework for Compensating Pretrial Detainees*, 26 CARDOZO L. REV. 1947, 1972–73 (2005); J.C. Oleson et al., *The Effect of Pretrial Detention on Sentencing in Two Federal Districts*, 33 JUST. Q. 1103, 1116 (2016) (finding a correlation between pre-trial detention and longer prison sentences in federal courts); Marian R. Williams, *The Effect of Pretrial Detention on Imprisonment Decisions*, 28 CRIM. JUST. REV. 299, 313 (2003) (finding that pre-trial detention is correlated with increased incarceration sentences using a sample of Florida felony cases).

<sup>89</sup> See, e.g., Arpit Gupta et al., *The Heavy Costs of High Bail: Evidence from Judge Randomization*, 45 J. LEGAL STUD. 471, 477–48 (2016); Dobbie et al., *supra* note 8, at 19; Emily Leslie & Nolan G. Pope, *The Unintended Impact of Pretrial Detention on Case Outcomes: Evidence from NYC Arraignments* 3 (Nov. 9, 2016) (unpublished working paper), [http://home.uchicago.edu/~npope/pretrial\\_paper.pdf](http://home.uchicago.edu/~npope/pretrial_paper.pdf); Megan Stevenson, *Distortion of Justice: How the Inability to Pay Bail Affects Case Outcomes* 3 (Jan. 12, 2017)

impact of pre-trial detention on case outcomes because random assignment to a harsher judge effectively detains some defendants, while random assignment to a more lenient judge effectively releases others. These papers consistently find that the marginal detained defendant is significantly more likely to be convicted than the marginal released defendant, primarily through an increase in guilty pleas. However, to what extent these convictions are wrongful or erroneous is unknown.

### 3. *Collateral Consequences*

Pre-trial detention not only adversely affects defendants while incarcerated, but may also impact longer-term, non-criminal outcomes. As one bail lawyer told the *New York Times*, “[m]ost of our clients are people who have crawled their way up from poverty or are in the throes of poverty . . . . Our clients work in service-level positions where if you’re gone for a day, you lose your job . . . . People who live in shelters, where if they miss their curfews, they lose their housing.”<sup>90</sup> For example, detaining an individual pre-trial may lead to disruption, causing job or housing loss. Pre-trial detention can also adversely affect future labor market prospects through the stigma of a criminal conviction, both because employers discriminate on the basis of criminal history,<sup>91</sup> and because many states have laws banning the hiring of ex-offenders in certain professions.<sup>92</sup>

There has been little empirical evidence on the causal impact of pre-trial detention on employment and wages, likely because of how difficult it is to track labor market outcomes for defendants who are

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(unpublished working paper), [https://papers.ssrn.com/sol3/Papers.cfm?abstract\\_id=2777615](https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2777615).

<sup>90</sup> Pinto, *supra* note 5.

<sup>91</sup> See HARRY J. HOLZER, RUSSELL SAGE FOUND., *WHAT EMPLOYERS WANT: JOB PROSPECTS FOR LESS-EDUCATED WORKERS* 59–60 (1996) (finding that between thirty and forty percent of employers sampled in five major U.S. cities checked criminal history records of their recent hires, and sixty-five percent of all sampled employers stated that they would not knowingly hire an ex-offender regardless of the offense); Devah Pager, *The Mark of a Criminal Record*, 108 AM. J. SOC. 937, 959–60 (2003) (finding, in an audit study, that individuals with a criminal record are less likely to receive callbacks than individuals with no record); Amanda Y. Agan & Sonja B. Starr, *Ban the Box, Criminal Records, and Statistical Discrimination: A Field Experiment* 31 (Univ. Mich. Law & Econ. Research, Paper No. 16-012, 2016), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2795795](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2795795) (finding that a criminal record harms future employment prospects); see also Michael Mueller-Smith, *The Criminal and Labor Market Impacts of Incarceration* (Aug. 18, 2015) (unpublished working paper), <http://sites.lsa.umich.edu/mgms/wp-content/uploads/sites/283/2015/09/incar.pdf> (documenting negative impacts of incarceration on labor market outcomes for defendants in Harris County, Texas).

<sup>92</sup> See Brian M. Murray, *A New Era for Expungement Law Reform? Recent Developments at the State and Federal Levels*, 10 HARV. L. & POL’Y REV. 361, 365 (2016).

released and detained. However, my recent study links defendants to administrative tax records, which include information on W-2 earnings and reported income. In this study, we find that detained defendants are substantially less likely to be employed in the formal labor market and are significantly less likely to have any household income up to four years after their bail hearing.<sup>93</sup> In particular, the negative collateral consequences of pre-trial detention on formal sector attachment are the largest for defendants who had the strongest ties to the labor market prior to arrest and for defendants charged with misdemeanors, indicating substantial heterogeneity in costs across defendants.<sup>94</sup> This recent study suggests that the costs of pre-trial detention in terms of reduced labor market attachment are substantial, and estimates that the net present discounted value of lost earnings over the work-life of a detained defendant is over \$18,000.<sup>95</sup>

Because this lost productivity is a welfare loss for society, the magnitude of lost earnings due to pre-trial detention should be included in a cost-benefit analysis. Moreover, because the above quasi-experimental estimates measure labor market outcomes several years after both pre- and post-trial incarceration, they also account for the fact that some defendants would have been convicted or incarcerated post-trial regardless of pre-trial detention and thus may have suffered a private earnings loss regardless of detention.

Another collateral consequence of pre-trial detention is the impact on eligibility for public benefits that is especially relevant for the population of arrested offenders. Pre-trial detention may adversely affect take-up of social safety net programs, either through incarceration or conviction. For instance, during any period of incarceration, offenders cannot seek unemployment insurance (UI), or credits under the Earned Income Tax Credit (EITC) for any wages

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<sup>93</sup> See Dobbie et al., *supra* note 8, at 23 (concluding that the negative labor market consequences of pre-trial detention likely operate through the stigma of a criminal conviction).

<sup>94</sup> See *id.* at 23–25. Indeed, even a misdemeanor conviction can have potentially large collateral consequences as it relates to employment and housing. See, e.g., Paul Heaton et al., *The Downstream Consequences of Misdemeanor Pretrial Detention*, 69 STAN. L. REV. 711 (2017) (documenting the impacts of pre-trial detention on case outcomes for misdemeanor defendants in Harris County, Texas); Jenny Roberts, *Crashing the Misdemeanor System*, 70 WASH. & LEE L. REV. 1089, 1090 (2013) (noting that misdemeanor convictions “can affect future employment, housing, and many other basic facets of daily life”); see also Natapoff, *supra* note 86, at 1316–17 (noting that a misdemeanor conviction can limit access to employment, educational and social opportunities, professional licenses, child custody, food stamps, student loans, health care or public housing, and can lead to deportation, and an increased risk of later arrest, among other things).

<sup>95</sup> See Dobbie et al., *supra* note 8, at 77.

earned while incarcerated.<sup>96</sup> In many states, felony drug offenders are permanently banned from receiving food stamps and welfare.<sup>97</sup> Indeed, my recent work linking defendants to UI and EITC records finds that detained defendants are significantly less likely to receive UI and EITC benefits up to four years after arrest compared to released defendants.<sup>98</sup> Cumulated over the lifetime of a defendant, the reduced take-up of public benefits is over \$10,000, another large private cost of pre-trial detention.<sup>99</sup>

However, unlike lost earnings, a reduction in public benefits is not fully a social loss because it represents a transfer from taxpayers to claimants. Indeed, reduced take-up of public benefits represents a social gain to taxpayers. Nevertheless, the private loss to defendants is likely not fully cancelled by taxpayers' gain to the extent that the marginal utility of \$10,000 to a taxpayer is lower than the marginal utility of \$10,000 to a defendant. Given these considerations, a cost-benefit framework should appropriately scale down the private loss of \$10,000 to reflect that some portion of this cost is a welfare-neutral transfer.

#### 4. Externalities

Pre-trial detention, in addition to imposing private costs on the defendant, can also impose externalities. The most prominent externality is future crime. If pre-trial detention is criminogenic, it may increase the chances that a detained defendant engages in new criminal behavior.<sup>100</sup> Theoretically, pre-trial detention may be crimi-

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<sup>96</sup> For example, “[i]ncarcerated individuals are not eligible for UI benefits because they cannot meet the requirement to be available for work.” See *Governor Cuomo Announces \$500 Million Saved Through Unemployment Insurance Fraud Prevention Measures*, N.Y. ST. (Nov. 10, 2014), <https://www.governor.ny.gov/news/governor-cuomo-announces-500-million-saved-through-unemployment-insurance-fraud-prevention>. See generally I.R.C. § 32(c)(2)(B)(iv) (2012), which provides that “no amount received for services provided by an individual while the individual is an inmate at a penal institution shall be taken into account” in determining earned income.

<sup>97</sup> The federal ban on drug offenders receiving Supplemental Nutrition Assistance Program (SNAP) benefits or Temporary Assistance for Needy Families (TANF) was enacted as part of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). See Pub. L. No. 104-193, 110 Stat. 2105, 2180–81. Under the PRWORA, felony drug offenders are disqualified from these benefits for life unless states opt out of the federal ban. See 21 U.S.C. § 862a(a), (d)(1)(A) (2012); see also Rebecca Beitsch, *States Rethink Restrictions on Food Stamps, Welfare for Drug Felons*, PEW CHARITABLE TR.: STATELINE (July 30, 2015), <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2015/07/30/states-rethink-restrictions-on-food-stamps-welfare-for-drug-felons> (describing how some states still prevent people with a felony drug record from receiving food stamps and welfare).

<sup>98</sup> See Dobbie et al., *supra* note 8, at 23.

<sup>99</sup> See *id.* at Online Appendix D.

<sup>100</sup> See Wiseman, *supra* note 42, at 1354 (“Those accused of drug possession may develop new addictions, and non-violent criminals may quickly learn violence (if only to

nogenic through two main channels. The first is a direct channel of serving time in jail. Recent evidence suggests that time served in prison may be criminogenic by exposing inmates to harsh prison conditions<sup>101</sup> and criminal peers.<sup>102</sup> Second, pre-trial detention may increase future crime because it reduces formal labor market attachment, which may shift defendants into criminal activity.<sup>103</sup>

To what extent does pre-trial detention affect future crime? The available empirical evidence suggests that pre-trial detention is indeed criminogenic, imposing long-term costs on society. While not causal, a cross-sectional comparison between detained and released defendants indicates that detained defendants are more likely to recidivate after case disposition than released defendants.<sup>104</sup> But recent quasi-experimental work also finds positive effects of pre-trial detention on measures of new criminal activity.<sup>105</sup> After case disposition, marginal defendants who are detained before trial are over ten percentage points more likely to be rearrested for a new crime up to two years after the initial arrest,<sup>106</sup> with suggestive evidence that these defendants commit new crimes because they are unable to find employment

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defend themselves at first.”); see also Arthur R. Angel et al., *Preventive Detention: An Empirical Analysis*, 6 HARV. C.R.-C.L. L. REV. 300, 352 (1971) (arguing that detention “leave[s] many defendants hardened, embittered, and more likely to recidivate once released”).

<sup>101</sup> See M. Keith Chen & Jesse M. Shapiro, *Do Harsher Prison Conditions Reduce Recidivism? A Discontinuity-Based Approach*, 9 AM. L. & ECON. REV. 1, 22 (2007) (finding that federal inmates housed in higher security level prisons are more likely to recidivate than those housed in minimum security prisons); Mueller-Smith, *supra* note 91, at 23–26 (finding that defendants who are incarcerated are more likely to be charged with new offenses than those who are not incarcerated).

<sup>102</sup> See, e.g., Edward L. Glaeser et al., *Crime and Social Interactions*, 111 Q.J. ECON. 507, 510 (1996); Patrick Bayer et al., *Building Criminal Capital Behind Bars: Peer Effects in Juvenile Corrections*, 124 Q.J. ECON. 105, 135 (2009).

<sup>103</sup> See, e.g., Crystal S. Yang, *Local Labor Markets and Criminal Recidivism*, 147 J. PUB. ECON. 16, 17 (2016); Kevin T. Schnepel, *Good Jobs and Recidivism*, 127 ECON. J. (forthcoming 2017).

<sup>104</sup> See, e.g., Heaton et al., *supra* note 94, at 761–66 (finding a positive relationship between pre-trial detention and the likelihood of new charges within eighteen months of the initial bail hearing using defendants arrested in Harris County, Texas); CHRISTOPHER T. LOWENKAMP ET AL., LAURA & JOHN ARNOLD FOUND., *THE HIDDEN COSTS OF PRETRIAL DETENTION* 4 (2013), [www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF\\_Report\\_hidden-costs\\_FNL.pdf](http://www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF_Report_hidden-costs_FNL.pdf) (finding a positive relationship between the length of pre-trial detention and the likelihood of recidivism twelve to twenty-four months post-disposition using a sample of defendants booked in Kentucky jails).

<sup>105</sup> See Dobbie et al., *supra* note 8, at 20–22 (finding that marginally released defendants are more likely to miss court and be arrested prior to the case’s disposition than marginally detained defendants, but less likely to be arrested after case disposition); see also Gupta et al., *supra* note 89, at 494–96 (finding that money bail increases the probability of recidivism by 0.7 percentage points annually).

<sup>106</sup> Of course, as researchers can never observe real criminal activity, but only proxies such as arrests or new criminal charges, it is also important for future work to distinguish to

in the formal labor market.<sup>107</sup> These quasi-experimental estimates suggest that pre-trial detention, by reducing labor force attachment, imposes large externalities. To incorporate this externality into a cost-benefit analysis, the cost of future crimes can be quantified by combining crime-specific rearrest probabilities with established social costs of crime.<sup>108</sup>

In addition to affecting future criminal behavior, pre-trial detention may affect the lives of defendants' children and other family members.<sup>109</sup> While there is virtually no causal evidence of pre-trial detention on the welfare of others, cross-sectional comparisons (which may well be biased by omitted variables) indicate that children with fathers who have been incarcerated are significantly more likely to be expelled or suspended from school, and more likely to exhibit criminal behavior, potentially through mechanisms such as parental separation, loss of child custody, lack of role models, and lower parental resources following incarceration.<sup>110</sup> Pre-trial detention may also affect the welfare of other family members who may have to assume financial or caregiving responsibilities during the defendant's periods of incarceration. Outside of immediate families, pre-trial detention may affect communities to the extent that it reduces perceptions of fairness, legit-

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what extent pre-trial detention increases the likelihood of apprehension conditional on committing future crime.

<sup>107</sup> See Dobbie et al., *supra* note 8, at 23–26.

<sup>108</sup> See, e.g., TED R. MILLER ET AL., NAT'L INST. OF JUSTICE, VICTIM COSTS AND CONSEQUENCES: A NEW LOOK (1996), <https://www.ncjrs.gov/pdffiles/victcost.pdf> (calculating the social costs of types of offenses). One caveat is that as researchers can never observe real criminal activity, but only proxies such as arrests or new criminal charges, a cost-benefit analysis should appropriately account for the degree of underreporting of crime for detained defendants relative to released defendants (which itself may change in response to pre-trial detention).

<sup>109</sup> See, e.g., United States v. Barber, 140 U.S. 164, 167 (1891) (noting that pre-trial detention of poor defendants might lead to their families being “deprived, in many instances, of their assistance and support”); OPEN SOC'Y JUSTICE INITIATIVE, THE SOCIOECONOMIC IMPACT OF PRETRIAL DETENTION 12 (2011), [http://www.unicef.org/ceecis/Socioeconomic\\_impact\\_pretrial\\_detention.pdf](http://www.unicef.org/ceecis/Socioeconomic_impact_pretrial_detention.pdf) (stating that families of detained defendants “also suffer from lost income and forfeited education opportunities, including a multi-generational effect in which the children of detainees suffer reduced educational attainment and lower lifetime income”).

<sup>110</sup> See Rucker C. Johnson, *Ever-Increasing Levels of Parental Incarceration and the Consequences for Children*, in DO PRISONS MAKE US SAFER? THE BENEFITS AND COSTS OF THE PRISON BOOM 177, 202 (Steven Raphael & Michael A. Stoll eds., 2009) (linking parental incarceration to poor school outcomes and behavioral issues in children); Jeremy Travis & Michelle Waul, *Prisoners Once Removed: The Children and Families of Prisoners*, in PRISONERS ONCE REMOVED: THE IMPACT OF INCARCERATION AND REENTRY ON CHILDREN, FAMILIES, AND COMMUNITIES 1, 13–17 (Jeremy Travis & Michelle Waul eds., 2003) (documenting the effects of parental incarceration on children); see also Pinto, *supra* note 5.

imacy, and trust in legal institutions.<sup>111</sup> Studies on these social costs of pre-trial detention are practically non-existent, likely because of the difficulty of measuring and quantifying these costs, but understanding the magnitude of these externalities is important for designing an optimal bail system.

### 5. *Costs of Jail and Bail Administration*

The fifth broad category of costs is the cost to taxpayers of administering pre-trial detention. The costs of housing and providing food to detained defendants, as well as providing for medical care, can be staggering, with the costs to county governments of detaining defendants prior to trial alone estimated to be over nine billion dollars annually.<sup>112</sup> In fact, much of the growing cost of incarceration over the past several decades can be attributed to the costs of detaining individuals before trial, given that over sixty percent of all current jail inmates are awaiting trial.<sup>113</sup> Second-order costs include the administration of the bail system, including the costs of transporting detained defendants to court appearances, as well as court resources spent on detained defendants, such as bail modification hearings.<sup>114</sup>

In determining the costs of detention, it is important for policy-makers to distinguish between average and marginal costs. Most policy reforms to the bail system, such as the use of risk-assessment instruments, are changes that will impact the number of detained individuals at the margin, rather than eliminate pre-trial detention altogether, such that marginal costs are most relevant.<sup>115</sup> Average costs are likely substantially higher than marginal costs of pre-trial deten-

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<sup>111</sup> See, e.g., John S. Goldkamp, *Questioning the Practice of Pretrial Detention: Some Empirical Evidence from Philadelphia*, 74 J. CRIM. L. & CRIMINOLOGY 1556, 1562 (1983) (noting that “[i]f pretrial confinement practices were found to differentiate only poorly among criminal defendants awaiting adjudication, then grave questions concerning the legitimacy of the institution of pretrial detention would have to be faced”).

<sup>112</sup> See Eric Holder, U.S. Att’y Gen., Address at the National Symposium on Pretrial Justice (June 1, 2011), <https://www.justice.gov/opa/speech/attorney-general-eric-holder-speaks-national-symposium-pretrial-justice> (“Across the country, nearly two thirds of all inmates who crowd our county jails—at an annual cost of roughly nine billion taxpayer dollars—are defendants awaiting trial.”).

<sup>113</sup> *Id.*

<sup>114</sup> Individuals who are detained, but not denied bail altogether, have a right to petition for bail reductions after the initial bail hearing in some jurisdictions. See, e.g., 234 PA. CODE § 529 (2017).

<sup>115</sup> See ROGER BOWLES & MARK COHEN, OPEN SOC’Y JUSTICE INITIATIVE, PRE-TRIAL DETENTION: A COST-BENEFIT APPROACH 27 (2009), [http://www.opensocietyfoundations.org/sites/default/files/justice\\_20081124d\\_0.pdf](http://www.opensocietyfoundations.org/sites/default/files/justice_20081124d_0.pdf) (describing how their cost-benefit model requires an estimate of the “marginal daily cost of holding a prisoner in pre-trial detention, as any policy change would likely involve marginal adjustments in the number of defendants held in detention”).

tion because average costs will incorporate the large fixed costs associated with building new prisons to house detainees.<sup>116</sup> In contrast, marginal costs will more likely reflect the daily costs of housing a detainee, with estimates ranging between \$15 and \$25 per day.<sup>117</sup> These magnitudes can then be combined with the quasi-experimental evidence that pre-trial detention leads to an average of fourteen extra days spent in pre- and post-trial incarceration for the marginally detained defendant relative to the marginally released defendant.<sup>118</sup>

### B. Social Benefits of Pre-trial Detention

Pre-trial detention provides social benefits that can be broadly categorized into four categories: reducing pre-trial flight, reducing pre-trial crime through incapacitation, general deterrence, and conserving court resources.<sup>119</sup>

#### 1. Preventing Flight

The most common rationale for detaining defendants prior to trial is to minimize the risk that defendants will fail to appear at required court appearances or flee from the jurisdiction altogether. As discussed previously, ensuring a defendant's appearance at court was historically the primary, if not exclusive, objective of the bail system.<sup>120</sup>

Flight imposes potentially large societal costs. If defendants fail to appear at trial, this failure obstructs the administration of justice, imposes delays on the courts, and forces the expenditure of government resources on tracking down and apprehending defendants.<sup>121</sup> If

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<sup>116</sup> See Wiseman, *supra* note 42, at 1358 (noting that “some states and counties have had to build new jails to accommodate burgeoning populations”).

<sup>117</sup> See *id.* at 1358; see also Steven D. Levitt, *The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation*, 111 Q.J. ECON. 319, 346–47 (1996) (estimating that the annual cost of jailing a defendant ranges from \$23,500 to \$35,000, but marginal costs are “almost certainly lower”); cf. CHRISTIAN HENRICHSON ET AL., VERA INST. OF JUSTICE, *THE PRICE OF JAILS: MEASURING THE TAXPAYER COST OF LOCAL INCARCERATION* 22–23 (2015), [https://storage.googleapis.com/vera-web-assets/downloads/Publications/the-price-of-jails-measuring-the-taxpayer-cost-of-local-incarceration/legacy\\_downloads/price-of-jails.pdf](https://storage.googleapis.com/vera-web-assets/downloads/Publications/the-price-of-jails-measuring-the-taxpayer-cost-of-local-incarceration/legacy_downloads/price-of-jails.pdf) (finding that in some jurisdictions, the daily marginal cost is \$16 compared to a daily average cost of \$144).

<sup>118</sup> See Dobbie et al., *supra* note 8, at 17.

<sup>119</sup> There are no private benefits to pre-trial detention unless one assumes that defendants get utility from being detained before trial.

<sup>120</sup> See *supra* notes 42–43.

<sup>121</sup> See Abrams & Rohlfs, *supra* note 16, at 754 (describing the costs associated with apprehending a fugitive). Of course, the costs may be minimal if defendants quickly and voluntarily return to court. Some defendants miss court appearances because they have simply forgotten their court dates, such that phone or mail reminders can increase appearance rates by thirty to forty percent. See Timothy R. Schnacke et al., *Increasing*

a defendant absconds and never returns to the jurisdiction, the case is never adjudicated, imposing costs on the court system, witnesses, potential jurors, and victims. Similarly, if some fugitives are never apprehended and punished, the deterrent effect of criminal sanctions may be diminished. Thus, pre-trial detention provides social benefits by incapacitating defendants.

The benefits associated with preventing flight are likely quite sizable given that pre-trial flight is a non-negligible occurrence among defendants who are released before trial. According to the Bureau of Justice Statistics, between 1990 and 2004, approximately 23% of released felony defendants were issued a bench warrant for failure to appear in court.<sup>122</sup> 17% of felony defendants released in 2009 missed a scheduled court appearance, resulting in a bench warrant being issued for their arrest.<sup>123</sup> Among those who were issued bench warrants for their arrest, over a quarter, or about 6% of all defendants, were classified as fugitives within the year following release.<sup>124</sup> Of course, as noted before, a concern with cross-sectional comparisons of defendants who are detained and those who are released prior to trial may be that detained and released defendants are different in many ways. For example, if bail judges disproportionately detain individuals with the highest risk of jumping bail, simple comparisons between the two groups may lead to a biased estimate of the causal impact of pre-trial detention on failure to appear.

However, recent quasi-experimental studies find that pre-trial detention leads to less pre-trial flight. For example, David Abrams and Chris Rohlfs use data from the Philadelphia Bail Experiment, in which approximately 240 defendants were randomly assigned to control and treatment groups that differed in recommended bail amounts. They find a negative and significant relationship between the recommended bail amount and both release and failure to appear.<sup>125</sup> In another recent quasi-experimental study, my coauthors and I find that the marginal released defendant is 15.6 percentage points more likely

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*Court-Appearance Rates and Other Benefits of Live-Caller Telephone Court-Date Reminders: The Jefferson County, Colorado, FTA Pilot Project and Resulting Court Date Notification Program*, 48 CT. REV. 86, 89 (2012); see also Brian H. Bornstein et al., *Reducing Courts' Failure-to-Appear Rate by Written Reminders*, 19 PSYCHOL. PUB. POL'Y & L. 70, 76 (2013) (finding that reminders reduced instances of failures to appear).

<sup>122</sup> THOMAS H. COHEN & BRIAN A. REAVES, BUREAU OF JUSTICE STATISTICS, PRETRIAL RELEASE OF FELONY DEFENDANTS IN STATE COURTS 7 (2007), <https://www.bjs.gov/content/pub/pdf/prfdsc.pdf>.

<sup>123</sup> See BRIAN A. REAVES, BUREAU OF JUSTICE STATISTICS, FELONY DEFENDANTS IN LARGE URBAN COUNTIES, 2009 – STATISTICAL TABLES 15 (2013), <https://www.bjs.gov/content/pub/pdf/fdluc09.pdf>.

<sup>124</sup> See COHEN & REAVES, *supra* note 122, at 8.

<sup>125</sup> Abrams & Rohlfs, *supra* note 16, at 763.

to fail to appear at a required court appearance than the marginal detained defendant.<sup>126</sup> Unfortunately, there are no well-known studies that approximate the costs of a defendant failing to appear, but the few estimates that exist suggest a cost of several hundred dollars per defendant, measured in terms of the private costs of recapturing a fugitive, which is, if anything, an underestimate of the true harm.<sup>127</sup> As a result, pre-trial detention may generate fairly substantial benefits in preventing missed court appearances and flight.

## 2. Preventing Pre-trial Crime

Through the same channel of incapacitation, prevention of new crime is another social benefit of pre-trial detention—the core idea behind “preventive detention.” How common is pre-trial crime?<sup>128</sup> In a representative sample of felony defendants from the seventy-five most populous U.S. counties in 2009, sixteen percent of defendants who were released pre-trial were arrested for a new offense within a year of release.<sup>129</sup> Approximately half of all new arrests were for felony charges.<sup>130</sup> In particular, defendants who were released on violent charges were just as likely to be rearrested prior to case adjudication compared to offenders released on property, drug, or public order offenses.<sup>131</sup> In fact, defendants charged with robbery were the most likely to be rearrested pre-trial, with twenty-four percent of released defendants rearrested within one year.<sup>132</sup>

These statistics indicate that pre-trial arrests, particularly new arrests for violent crimes, are not uncommon, and may impose substantial societal costs.<sup>133</sup> In addition to preventing violent crimes, pre-trial detention may also prevent crimes associated with the obstruc-

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<sup>126</sup> Dobbie et al., *supra* note 8, at 21.

<sup>127</sup> See Abrams & Rohlf, *supra* note 16, at 767 (estimating the cost of recapturing a fugitive to be \$395 based on conversations with bail bondsman).

<sup>128</sup> One important caveat on measuring the benefits of preventing new crime is that most jurisdictions and scholars exclusively track criminal activity with respect to the general public. Unmeasured, but potentially just as or more prevalent, is criminal activity that can take place in jails and other detention facilities. See Sharon Dolovich, *Cruelty, Prison Conditions, and the Eighth Amendment*, 84 N.Y.U. L. REV. 881, 887–88 & n.21 (2009) (documenting instances and the underreporting of prison rape).

<sup>129</sup> REAVES, *supra* note 123, at 21 tbl.19.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

<sup>133</sup> In practice, the degree to which pre-trial crime occurs among released offenders depends on how accurately bail judges can predict risk, with some research finding that judges can somewhat accurately identify the risk of rearrest for defendants. See Jeffrey Fagan & Martin Guggenheim, *Preventive Detention and the Judicial Prediction of Dangerousness for Juveniles: A Natural Experiment*, 86 J. CRIM. L. & CRIMINOLOGY 415, 437–38 (1996). But see Jon Kleinberg et al., *Human Decisions and Machine Predictions* 4

tion of justice, such as intimidating potential witnesses or jurors.<sup>134</sup> The correlation in these cross-sectional comparisons is also confirmed in my recent quasi-experimental research, which finds that the marginal released defendant is much more likely to be rearrested, recharged, and reconvicted for a new crime committed prior to case disposition compared to the marginal detained defendant, even for new violent offenses.<sup>135</sup>

In quantifying the effect of pre-trial release on new crime, it is important to distinguish between the type of new crime, which can range from low-level misdemeanors to violent felonies, because these crimes impose different social costs on victims and communities. Using the social costs of crimes estimated in the literature,<sup>136</sup> policymakers can quantify the social benefits associated with reducing specific types of pre-trial crime. For example, using this approach, Abrams and Rohlfs find, using a sample of defendants from the Philadelphia Bail Experiment, that for each observed rearrest prior to case disposition, society incurs approximately \$44,700 of costs, and thus society saves this amount by detaining defendants before trial.<sup>137</sup>

Once again, however, a policymaker concerned with a general equilibrium cost-benefit analysis may note that some of the benefits of pre-trial incapacitation may be simply shifted forward in time depending on what happens in the post-trial period. For example, suppose a defendant would not be incarcerated post-trial but for pre-trial detention. In this case, the gains from reducing pre-trial crime are a full social benefit. On the other hand, if a defendant would be incarcerated post-trial regardless of pre-trial detention, and the defendant is given credit for time spent in jail pre-trial, the gains from reducing

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(Nat'l Bureau of Econ. Research, Working Paper No. 23,180, 2017) (finding that judges fare poorly at evaluating the risk of pre-trial crime posed by individual defendants).

<sup>134</sup> The Bail Reform Act of 1984 allows for pre-trial detention if the defendant “threaten[s], injure[s], or intimidate[s]” a witness or juror. See 18 U.S.C. § 3142(f)(2)(B) (2012). The Supreme Court also recognized that a defendant may be detained if he poses danger to witnesses. See *United States v. Salerno*, 481 U.S. 739, 749 (1987). According to the media, witness intimidation rates may be increasing. See Craig R. McCoy et al., *Justice: Delayed, Dismissed, Denied*, PHILA. INQUIRER (Dec. 13, 2009), [http://www.philly.com/philly/news/special\\_packages/20091213\\_Justice\\_Delayed\\_Dismissed\\_Denied.html](http://www.philly.com/philly/news/special_packages/20091213_Justice_Delayed_Dismissed_Denied.html) (“At least 13 witnesses or their families have been killed in the city over the last decade. Prosecutors charge more than 300 people a year with the crime of witness intimidation.”).

<sup>135</sup> See Dobbie et al., *supra* note 8, at 21–22. Note that because this study measures pre-trial detention as being detained within the first three days following arrest, some defendants described as initially detained are eventually released prior to trial.

<sup>136</sup> See, e.g., MILLER ET AL., *supra* note 108 (providing a range of costs including medical expenses, property loss, and pain and suffering as estimated using data from jury awards); see also BOWLES & COHEN, *supra* note 115, at 29 (advocating an examination of the cost of pre-trial crime).

<sup>137</sup> Abrams & Rohlfs, *supra* note 16, at 768.

pre-trial crime are merely shifted forward in time and should generally not be included in a cost-benefit analysis. As a result, a policymaker needs to determine the fraction of defendants for whom the pre-trial benefits are simply shifted forward in time versus those for whom the benefits are a real addition.<sup>138</sup>

### 3. General Deterrence

In addition to benefits that accrue from incapacitation, pre-trial detention may also produce general benefits for the criminal justice system. Theoretically, pre-trial detention, which increases the expected costs associated with crime, may deter future criminal activity, through general deterrence to the population of potential offenders.<sup>139</sup>

A large empirical economics and criminology literature has been devoted to measuring the impact of criminal sanctions on crime.<sup>140</sup> Particularly challenging is separating out the effects of deterrence versus incapacitation. While the overall literature is mixed with regards to deterrence, existing evidence suggests that swift and certain sanctions may have the largest impact on deterrence given the high discount rates of potential offenders.<sup>141</sup> As a result, pre-trial detention, by imposing a stay in jail prior to a finding of guilt, increases the cost of engaging in crime *ceteris paribus*, and may deter new crime. In fact, pre-trial detention may have a larger effect on reducing crime than other forms of criminal sanctions because it is arguably more certain and immediate than any post-trial punishment.<sup>142</sup>

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<sup>138</sup> Estimating the fraction of defendants in each of these groups is made challenging by the fact that post-trial incarceration is endogenous to pre-trial detention. But as a very crude benchmark, in Philadelphia and Miami-Dade counties, on average, seventy percent of detained defendants received no post-trial incarceration. Thus, if thirty percent of defendants are those for whom the gains from reducing crime are only shifted forward in time, the social benefit of reducing crime could be scaled down by 0.3 in a cost-benefit analysis. However, I caution that these shares are highly speculative and will also differ across jurisdictions.

<sup>139</sup> See Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 178 (1968) (discussing how punishment can reduce the number of criminal offenses through deterrence). For a survey of the extensive literature on crime and deterrence since Becker, see A. Mitchell Polinsky & Steven Shavell, *The Theory of Public Enforcement of Law*, in THE HANDBOOK OF LAW AND ECONOMICS 403 (A.M. Polinsky & S. Shavell eds., 2007).

<sup>140</sup> For a summary of the extensive literature on the empirical evidence of deterrence, see Aaron Chalfin & Justin McCrary, *Criminal Deterrence: A Review of the Literature*, 55 J. ECON. LITERATURE 5 (2017).

<sup>141</sup> See *id.* at 23–32.

<sup>142</sup> Post-conviction punishment is not universal for those who are arrested and is often imposed with substantial delays. For instance, of felony defendants arrested in 2009, only sixty-six percent were eventually convicted, and the median time from arrest to adjudication was 111 days. See REAVES, *supra* note 123, at 22, 23 tbls.20 & 21.

On the other hand, pre-trial detention may also increase crime by reducing the opportunity cost of crime. As discussed previously, pre-trial detention may cause job loss and impede attachment to the formal labor market.<sup>143</sup> If labor market opportunities (“carrots”) are more effective at reducing crime than sanctions (“sticks”), the net effect of detention may yield more costs than benefits. Unfortunately, there are no known studies that directly evaluate the deterrent impact of pre-trial detention, but the mechanism is plausible and should be considered in a cost-benefit analysis.

#### 4. *Conserving Court Resources*

Finally, perhaps inadvertently, pre-trial detention may conserve court resources in an overburdened criminal justice system, thus generating benefits. As some have commented, “[t]he open secret is that in most jurisdictions, bail is the grease that keeps the gears of the overburdened system turning.”<sup>144</sup> By incentivizing defendants to plead guilty rather than assert their rights to a trial, pre-trial detention may allow courts to more efficiently process the millions of defendants they encounter every year.<sup>145</sup> Indeed, comparisons of felony defendants indicate that released defendants wait three times as long between arrest and case disposition compared to detained defendants.<sup>146</sup> Recent quasi-experimental work shows that this relationship is causal—that pre-trial detention reduces the time between arrest and disposition. According to a sample of defendants arrested in Philadelphia and Miami-Dade, those detained pre-trial spent approximately forty-nine fewer days awaiting disposition compared to those released due to the leniency of the assigned bail judge.<sup>147</sup> Some of the reductions in court delays may mechanically be due to the effect of speedy trial rules, which often mandate a quicker time to trial for individuals who are already in custody.<sup>148</sup> Other time and resource savings may be due to increases in guilty pleas among those who are detained.

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<sup>143</sup> See Dobbie et al., *supra* note 8, at 22–23.

<sup>144</sup> Pinto, *supra* note 5.

<sup>145</sup> See *supra* note 88 and accompanying text. See also Pinto, *supra* note 5 (“In a given year, city and county jails across the country admit between 11 million and 13 million people.”).

<sup>146</sup> See COHEN & REAVES, *supra* note 122, at 7 (finding that released defendants waited a median of 127 days from time of arrest until adjudication compared to 45 days for detained defendants).

<sup>147</sup> See Dobbie et al., *supra* note 8, at 21.

<sup>148</sup> For example, in Pennsylvania, other than cases in which a defendant is not entitled to release on bail, a defendant generally cannot be detained for longer than 180 days from the date the complaint is filed. See PA. R. CRIM. P. 600(B).

Unfortunately, I am unaware of any study that quantifies the court savings achieved through speedier dispositions of cases.

Of course, the quick disposition of cases does not mean that courts are achieving the “right” outcomes in those cases.<sup>149</sup> To the extent that the bail system “keeps the gears” of the criminal justice system turning by inducing wrongful pleas, the bail system may generate many of the substantial private and social costs documented above, without yielding many of the social benefits.

### C. Combining (Known) Costs and Benefits

Having classified the major costs and benefits of pre-trial detention, I now combine the available estimates from the empirical literature to illustrate how they can be used to conduct a partial cost-benefit analysis. In Table 1, I present estimates of many of the previously discussed costs and benefits relying largely on the estimates from the Dobbie et al. study.<sup>150</sup> Column 1 presents empirical estimates and columns 2 and 3 present lower and upper bound ranges on the magnitude of the costs and benefits.

I begin by characterizing the known evidence on three types of costs mentioned in Section II.A: the loss of freedom, lost earnings and social assistance, and cost to the state of detaining individuals. For example, the marginal detained defendant spends a total of 14.4 extra total days incarcerated compared to the marginal released defendant. Using the previously described willingness to pay estimates and wrongful conviction statutes as a lower and upper bound on the daily cost of loss of freedom, I estimate that for the marginal defendant, pre-trial detention imposes a private loss of \$158 to \$2,015. To quantify the lost earnings and social assistance, I take pre-existing estimates that indicate the marginal detained defendant loses roughly \$948 per year in formal sector earnings, \$293 in UI income, and \$209 in EITC income. Following Chetty et al.,<sup>151</sup> I assume that the percentage gain in earnings remains constant over the working lifecycle and discount annual earnings at a three percent discount rate back to age thirty-four, the mean age in the sample. Under these assumptions, the marginal detained defendant loses approximately \$18,960 in earn-

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<sup>149</sup> See, e.g., Natapoff, *supra* note 86, at 1346–47 (describing how, in low-level cases, “[t]he confluence of police authority to trigger incarceration simply by asserting that a minor offense has been committed, combined with the pressures of bail and general acquiescence of the poor, can create the perfect storm of wrongful pleas”).

<sup>150</sup> Dobbie et al., *supra* note 8. See the Online Appendix of this study for some of the details and assumptions underlying this cost-benefit exercise.

<sup>151</sup> Raj Chetty, John N. Friedman & Jonah E. Rockoff, *Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood*, 104 AM. ECON. REV. 2633, 2654 (2014).

ings and \$10,041 in UI and EITC benefits over a lifetime relative to the marginal released defendant. Finally, to calculate the administrative costs of detaining an individual, I assume that the average marginal cost of an additional day in jail is \$20. Taking causal estimates on the number of days incarcerated for the marginal detained defendant versus the marginal released defendant (14.4 days more in total) implies that detaining the marginal defendant costs taxpayers \$288 in direct administrative costs.

I then quantify two of the benefits of pre-trial detention previously discussed: reductions in flight and future crime. Monetizing the cost of apprehending a defendant who fails to appear in court at approximately \$1,185,<sup>152</sup> I estimate that the expected benefit of preventing failures to appear is \$185 for the marginal detained defendant (\$1,185 multiplied by 15.6 percentage points). I also utilize a range of social costs of crime from the pre-existing literature<sup>153</sup> to estimate the net impact of pre-trial detention on future crime. Here, I combine the short-run incapacitation benefits of pre-trial detention with longer-term criminogenic costs of pre-trial detention. Multiplying these social costs by the change in the probability of being rearrested for each specific type of crime, I estimate that the expected crime cost of pre-trial detention ranges from \$26,123 to \$70,104, indicating that on net, the criminogenic costs of pre-trial detention outweigh the incapacitation benefits.

A comparison of these private and social costs and benefits allows us to partially assess the optimality of pre-trial detention on the margin. Based on these values, the lower-bound net cost of detention for the marginal individual is \$55,385 and the upper-bound net cost is \$101,223. These estimates suggest that pre-trial detention may generate net welfare losses due to the over-detention of marginal defendants. Intuitively, the large net cost of pre-trial detention is driven by the significant collateral consequences of having a criminal conviction on labor market outcomes and the relatively low costs of apprehending defendants who fail to appear in court.

These speculative estimates are by no means conclusive evidence that pre-trial detention is suboptimal on the margin. There are several

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<sup>152</sup> There are very few estimates of the costs of re-apprehending a defendant who misses a required court appearance, but I follow Abrams and Rohlfs, *supra* note 16, at 767, in assuming that the cost is roughly five percent of the bail amount, or approximately \$625 in the context of the study, and that the cost of additional bail hearings is roughly \$560, *see* David M. Bierie, *Cost Matters: Application and Advancement of Economic Methods to Inform Policy Choice in Criminology* (May 1, 2007) (unpublished Ph.D. Dissertation, University of Maryland), to total \$1185.

<sup>153</sup> *See* Mueller-Smith, *supra* note 91, at 24–26 (documenting negative impacts of incarceration on labor market outcomes for defendants in Harris County, Texas).

important caveats. First, the estimates in column 1 of Table 1 arise from a study of the bail systems in particular jurisdictions so external validity is a concern. Second, many of the estimates are not entirely precise and, as a result, the confidence interval surrounding the cost-benefit calculation is potentially large. Third, rearrests, as discussed previously in Section II.B.2, may underestimate actual criminal behavior depending on the degree of underreporting for marginal detained defendants relative to marginal released defendants. Fourth, as discussed previously in Section II.A.4, the loss of government and social benefits should be deflated to the extent that such loss represents a welfare-neutral transfer. Fifth, any of the short-run incapacitative benefits of pre-trial detention (such as reducing pre-trial crime) are inflated to the extent that some defendants would have served this time in post-trial incarceration.<sup>154</sup> Finally, there are many unmeasured benefits and costs, such as the general deterrence benefits of pre-trial detention or the costs of detention on families and communities.<sup>155</sup>

However, even with these caveats, a partial cost-benefit analysis may still be useful in several ways. First, it provides a rational framework to guide decision-making, focusing policymakers on the importance of accounting for both costs and benefits to pre-trial detention. Second, it highlights potentially overlooked costs and benefits, and in doing so, may spur further required research. Indeed, much more empirical evidence is needed to fill in some of our current gaps in knowledge as well as to tighten our understanding in areas where we currently have some evidence. Finally, a partial cost-benefit analysis may already provide some guidance to policymakers. If, for instance, one believes that the net costs of pre-trial detention are approximately \$55,385 to \$101,223, these estimates would suggest that any potentially unmeasured benefits to pre-trial detention would have to be at least this large in order to justify the current state of detention, in a form of “break-even” analysis. Thus, the partial cost-benefit analysis suggests that unless there are large unmeasured benefits to pre-trial detention, such as general deterrence effects, releasing more defendants on the margin will likely increase social welfare.

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<sup>154</sup> See *supra* Sections II.B.1–2. Of course, if these incapacitation benefits are scaled down appropriately, the net costs of detention for the marginal individual may be even larger than previously reported.

<sup>155</sup> See *supra* Section II.B.3. In addition, I do not discount the possibility that some costs and benefits may be difficult to quantify, such as trust in and legitimacy of legal institutions. See, e.g., Rachel Bayefsky, *Dignity as a Value in Agency Cost-Benefit Analysis*, 123 *YALE L.J.* 1732, 1735–37 (2014) (arguing for a form of cost-benefit analysis that incorporates values that do not have quantitative specificity, such as dignity interests).

TABLE 1.  
PARTIAL COST-BENEFIT CALCULATION

	Causal Estimate	Lower Bound	Upper Bound
	(1)	(2)	(3)
<i>Loss of Freedom</i>			
Total Days Incarcerated	14,391	\$11	\$140
<i>Lost Earnings and Social Assistance (Thousands)</i>			
Earnings	-0.948	-	-
UI	-0.293	-	-
EITC	-0.209	-	-
<i>Costs of Jail</i>			
Total Days Incarcerated	14,391	\$20	\$20
<i>Pre-trial Flight</i>			
Failure to Appear	-0.156	\$1,185	\$1,185
<i>Future Crime (Pre- and Post-trial) (Counts)</i>			
Murder	0.009	\$4,301,817	\$11,559,713
Rape	-0.004	\$187,680	\$343,859
Robbery	-0.062	\$73,196	\$333,701
Assault	-0.066	\$41,046	\$109,903
Burglary	-0.076	\$21,617	\$50,291
Theft	-0.053	\$9,598	\$9,974
Drug Crime	0.272	\$2,544	\$2,544
DUI	-0.037	\$25,842	\$25,842

### III

#### A COST-BENEFIT FRAMEWORK THAT ACCOUNTS FOR HETEROGENEITY

##### A. *Conceptual Framework*

In the previous section, I provided a classification of the major categories of costs and benefits to be considered in designing a bail system. These costs and benefits can be used to assess the current state of the bail system at large, but a similar framework can also be used to inform bail decisionmaking for specific individuals. In this section, I present a stylized framework to illustrate how cost-benefit analysis can inform pre-trial decisionmaking at the individual defendant level.

For simplicity, I assume that a social planner has one of two options: to release a defendant or to detain a defendant following the

filing of charges supported by probable cause. I also assume that if a defendant is released, he or she is released without any conditions, and that the social planner has identical preferences across all individuals and can perfectly observe the costs and benefits of pre-trial detention for each defendant.<sup>156</sup>

Before getting to specific stylized examples, let me take a step back to address and defend three main assumptions underlying my cost-benefit framework. First, I assume that defendants' welfare should be included in the social welfare function, whatever form that might take. As I discussed previously, this assumption is defensible not only on utilitarian grounds, but also on legal grounds because defendants have yet to be convicted at this stage and thus the presumption of innocence holds strong.

Second, I assume that a defendant's welfare can be weighed against the social benefits of detention at the pre-trial stage of the criminal justice process. While there may be moral and philosophical arguments for why a presumptively innocent defendant's welfare should not be traded off against any societal benefits, I take as my starting point the established legal principle that following a showing of probable cause in the charged offense, an individual's liberty interests can be weighed against compelling government interests.<sup>157</sup>

Third, as will be seen below, in my preferred state of the world, I allow for both the total (private and social) costs and social benefits of pre-trial detention to vary across defendants. Some critics may argue that all defendants have the same right to freedom before conviction and thus the costs of detention should not be allowed to vary across defendants under a rights-based or equality-based approach. To this critique, I offer two responses.

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<sup>156</sup> The stylized framework below approximates the theoretical predictions from a standard economic model of the bail system that incorporates the benefits of pre-trial detention and the social and private costs of pre-trial detention, accounting for deterrence and incapacitation. For example, a standard economic model may have a social planner selecting the number of released individuals and the length of pre-trial detention to maximize social welfare, choosing who to release by setting the marginal cost of release equal to the marginal benefit of release. For an example of this type of model, see Landes, *supra* note 16, at 84. A standard economic model can also be formalized to allow for the existence of Type I and Type II errors. Specifically, a Type I error occurs if an individual who should be released is detained before trial. Conversely, noisy information can also introduce Type II errors, which occur when someone who should have been detained is instead released. In a world with costly errors, the social planner sets bail to minimize Type I and II errors. See Alberto Alesina & Eliana La Ferrara, *A Test of Racial Bias in Capital Sentencing*, 104 AM. ECON. REV. 3397, 3404–05 (2014). The appropriate weights for Type I and II errors may reflect normative judgments about the trade-offs of each type of error.

<sup>157</sup> See STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE § 10-5.8 (AM. BAR ASS'N 2007).

First, the current bail system directly instructs judges to consider how defendants vary in their risk,<sup>158</sup> and thus the natural analogue would be to allow the costs of detention to also vary across defendants. Second, even if one firmly believes that the private costs of detention endured by each defendant should be constant, one can still rationalize allowing social costs to vary. Because pre-trial detention may impose externalities on families and communities, which depend on the circumstances of each defendant, allowing the total costs of detention to vary among defendants is still a defensible assumption even while ensuring equal private costs.

### *B. Case 1: Heterogeneous Benefits and Constant Costs*

I begin by considering the simplest scenario where there are heterogeneous benefits of pre-trial detention but homogenous costs. In other words, I assume that for each defendant  $i$ , there is a different total benefit of detention,  $B_i$ , to capture the fact that defendants differ in their riskiness based on their propensity for flight and new criminal activity. However, I assume that the total cost of pre-trial detention for each defendant,  $C$ , which includes social costs (costs to families, costs to communities, administrative costs of housing a defendant in jail) and private costs (loss of freedom, collateral consequences), is constant for all defendants.

While the costs of pre-trial detention are more likely to vary across defendants, as I will discuss later in this Section, I begin with this somewhat unrealistic scenario because it most closely approximates the current state of bail decisionmaking. For example, while jurisdictions have started to use risk-assessment tools that differentiate defendants based on their predicted probability of pre-trial misconduct,<sup>159</sup> I am unaware of a single jurisdiction that has considered or attempted to differentiate defendants based on the predicted harm that they will experience as a result of pre-trial detention. Moreover, bail judges are likely to ignore the private costs of pre-trial detention, which are essentially invisible to them, instead focusing only on social costs such as jail costs, as I discuss further in Section IV.B. And because the marginal cost of an additional day in jail is constant across most defendants, bail judges may assume that the costs of detention are the same for high-risk and low-risk defendants.

Under this scenario, a welfare-maximizing social planner evaluates whether the total benefit of detaining an individual defendant

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<sup>158</sup> Appleman, *supra* note 71, at 1330.

<sup>159</sup> See LAURA & JOHN ARNOLD FOUND., *supra* note 28.

before trial exceeds the total cost for each defendant. Specifically, the planner evaluates whether

$$B_i \geq C \quad \forall i \quad (1)$$

such that defendants with  $B_i \geq C$  are detained pre-trial, and defendants with  $B_i < C$  are released pre-trial. Under this decision rule, for each defendant  $i$ , the optimal bail decision can be characterized as:

$$B_i - C \geq 0 \rightarrow \text{Detain}$$

$$B_i - C < 0 \rightarrow \text{Release} \quad (2)$$

where defendants with net positive benefits of pre-trial detention are detained. The overall share of defendants who are detained pre-trial is thus based on the proportion of defendants whose benefits from pre-trial detention exceed  $C$ , which depends on the underlying distribution of  $B_i$ . Under this set-up, the *marginal* defendant is the defendant for whom the total benefits of pre-trial detention exactly equal the costs of pre-trial detention.

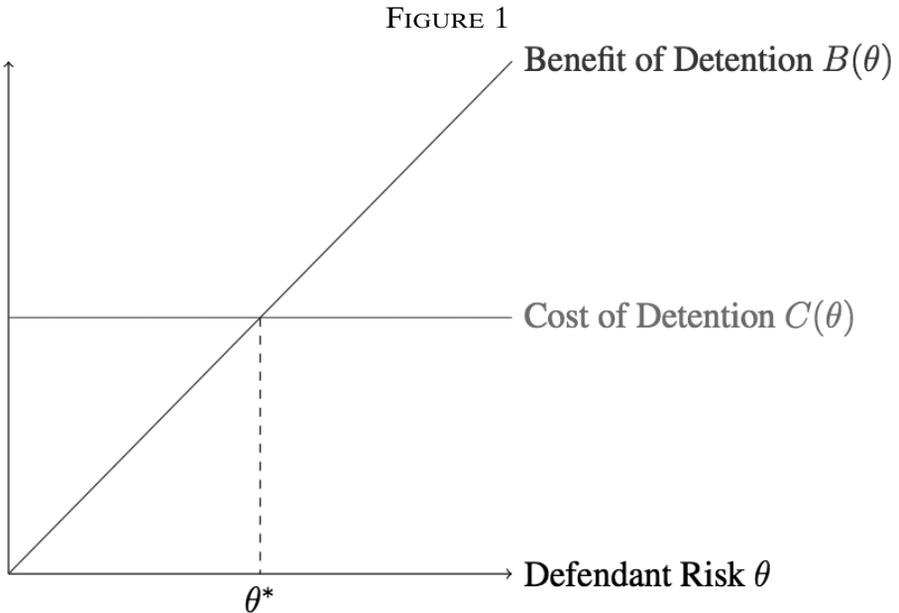
To illustrate how this conceptual framework would apply, consider the following stylized numerical example (Example 1). There are three types of defendants that differ in their riskiness of pre-trial misconduct—the probability of flight and new crime if released. I assume that the benefits of pre-trial detention are monotonic over the risk distribution, such that higher-risk defendants have at least as large benefits of detention compared to lower-risk defendants. Specifically, suppose that there are 30 defendants with benefits of detention equal to 40 (“low-risk”), 60 defendants with benefits of detention equal to 50 (“medium-risk”), and 10 defendants with benefits of detention equal to 100 (“high-risk”). Assume that the total cost of pre-trial detention per defendant is 55. In this scenario, the social planner would detain all high-risk defendants, for whom the benefits of detention exceed the costs, and release all medium-risk and low-risk defendants, whose benefits of detention are lower than the costs. These decisions result in ten percent of all defendants being detained pre-trial.

#### EXAMPLE 1

	Benefit	Cost	Optimal Decision
High-Risk N=10	100	55	Detain
Medium-Risk N=60	50	55	Release
Low-Risk N=30	40	55	Release

I now extend this simple numerical example to allow for a continuous distribution of defendant risk types,  $\theta$ , which are drawn from some distribution  $F$  distributed over the interval  $(\underline{\theta}, \bar{\theta})$ .

Let  $B'(\theta) \geq 0$ , such that the benefits of pre-trial detention are increasing in defendant risk. Graphically, suppose that the costs and benefits are distributed as in Figure 1 where the benefits of detention increase with defendant risk, but the costs are constant:



In this example, defendants with  $\theta \geq \theta^*$  are detained, and defendants with  $\theta < \theta^*$  are released, where  $\theta^*$  is the marginal defendant. As a result, in this state of the world, one would expect a positive, monotonic relationship between defendant risk and pre-trial detention. A higher-risk defendant is always equally or more likely to be detained pre-trial compared to a lower-risk defendant—a result that accords with the conventional wisdom in the bail policy sphere.

### *C. Case 2: Heterogeneous Benefits and Heterogeneous Costs*

Now, consider a slightly more complicated, but more realistic, state of the world where both the benefits and costs of pre-trial detention are heterogeneous. In this scenario,  $C_i$  and  $B_i$  differ for each defendant  $i$ .  $C_i$  likely varies across defendants because certain defendants may be more likely to lose their jobs and/or housing as a result of a stay in jail before trial, and thus pre-trial detention imposes larger private costs on particular defendants.

As before, a social planner evaluates whether the benefits of detaining an individual before trial exceed the costs:

$$B_i \geq C_i \quad \forall i \quad (3)$$

such that defendants with  $B_i \geq C_i$  are detained pre-trial and defendants with  $B_i < C_i$  are released pre-trial. Again, the optimal bail decision is characterized as:

$$B_i - C_i \geq 0 \rightarrow \text{Detain}$$

$$B_i - C_i < 0 \rightarrow \text{Release} \quad (4)$$

such that defendants with positive net benefits to detention are detained pre-trial.

In this world with heterogeneity in both benefits and costs, does the social planner detain the same set of individuals as he or she would in Case 1? Perhaps, but not necessarily. As I demonstrate below, depending on the distributions of  $B_i$  and  $C_i$ , the social planner could detain the exact same individuals as before, or any other subset, highlighting the importance of accounting for heterogeneity in both costs and benefits.

### 1. *Negatively Correlated Costs and Benefits*

First, consider what happens when the costs and benefits of pre-trial detention are both monotonic over the defendant risk distribution, but negatively correlated. In other words, higher-risk defendants entail larger benefits of being detained but also lower costs of detention compared to lower-risk defendants. This relationship between costs and benefits might exist if the labor market consequences of pre-trial detention are larger for lower-risk defendants compared to higher-risk defendants. For example, it may be likely that first-time offenders have the lowest risk of pre-trial flight and crime compared to repeat offenders. It is also possible that these first-time offenders may experience the largest private costs if detained before trial, perhaps because the mark of their first criminal arrest might lead them to lose their jobs, whereas defendants who are repeat offenders may already be unemployed in the labor market. If so, these low-risk offenders yield smaller benefits if detained, but experience larger costs relative to their riskier counterparts.

To make this scenario more concrete, consider a slight modification of the numerical example from before: 30 defendants with benefits of detention equal to 40 (“low-risk”), 60 defendants with benefits of detention equal to 50 (“medium-risk”), and 10 defendants with benefits of detention equal to 100 (“high-risk”). I assume that the average cost of pre-trial detention is 55 ( $25*0.1 + 50*0.6 + 75*0.3$ ) (as before), but that the costs of pre-trial detention vary across defendant types. In particular, I assume that high-risk defendants have the

lowest cost of detention of 25, medium-risk defendants have a cost of 50, and low-risk defendants have a cost of detention of 75. Under these assigned values, there is a negative correlation between benefits and costs.

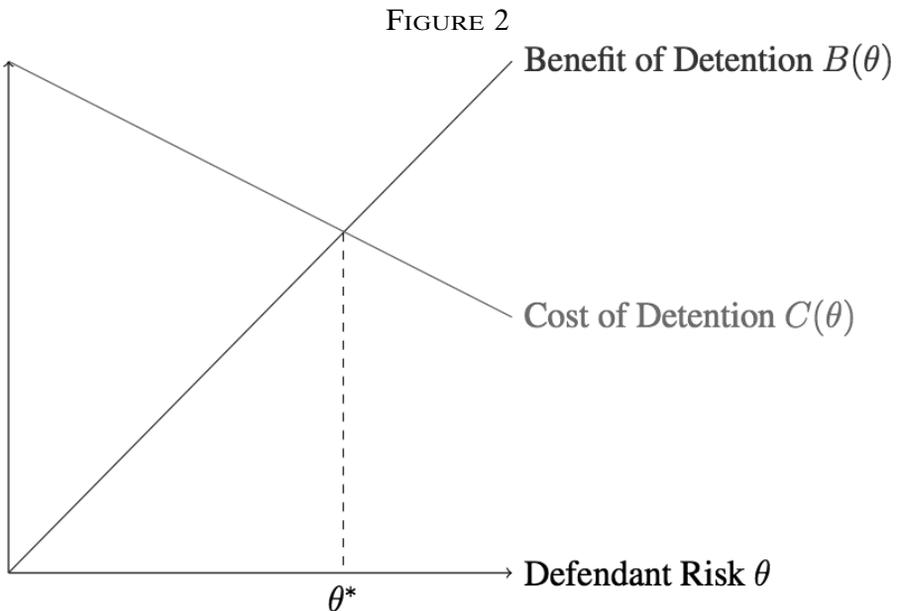
In this hypothetical (Example 2), the optimal bail decision is to detain both high-risk and medium-risk defendants, resulting in 70% of the defendant population being detained before trial.

#### EXAMPLE 2

	Benefit	Cost	Optimal Decision
High-Risk N=10	100	25	Detain
Medium-Risk N=60	50	50	Detain
Low-Risk N=30	40	75	Release

Turning to the continuous set-up, as before, the social planner's problem is to maximize the net social benefits of pre-trial detention, where  $B'(\theta) \geq 0$  and  $C'(\theta) \leq 0$ , to reflect the fact that the benefits of detention are increasing in defendant risk, but the costs of detention are decreasing in defendant risk.

Assuming a continuous distribution of risk types, suppose the benefit and cost curves are distributed as in Figure 2.



As before, defendants with risk  $\theta \geq \theta^*$  are detained because the benefits exceed the costs for this subset of defendants, and defendants with risk  $\theta < \theta^*$  are released because the costs exceed benefits. It can be shown that in general, with negatively correlated benefits and costs, both of which are monotonic over the risk distribution, the detention decision must be monotonically positive (never-decreasing) with defendant risk.<sup>160</sup> Specifically, it can be optimal to detain all defendants, or release all defendants, but it can never be the case that a higher-risk defendant is released while a lower-risk defendant is detained. Under this scenario, there remains a positive, monotonic relationship between defendant risk and pre-trial detention just as in Case 1.

## 2. *Positively Correlated Costs and Benefits*

Now, suppose that the costs and benefits of pre-trial detention are positively correlated throughout the entire risk distribution. In this scenario, detaining riskier defendants not only has larger benefits, but also greater costs, compared to detaining less risky defendants. This relationship between costs and benefits is possible if, for example, the costs of housing a high-risk prisoner, perhaps through the use of solitary confinement, are greater than the costs of housing a low-risk

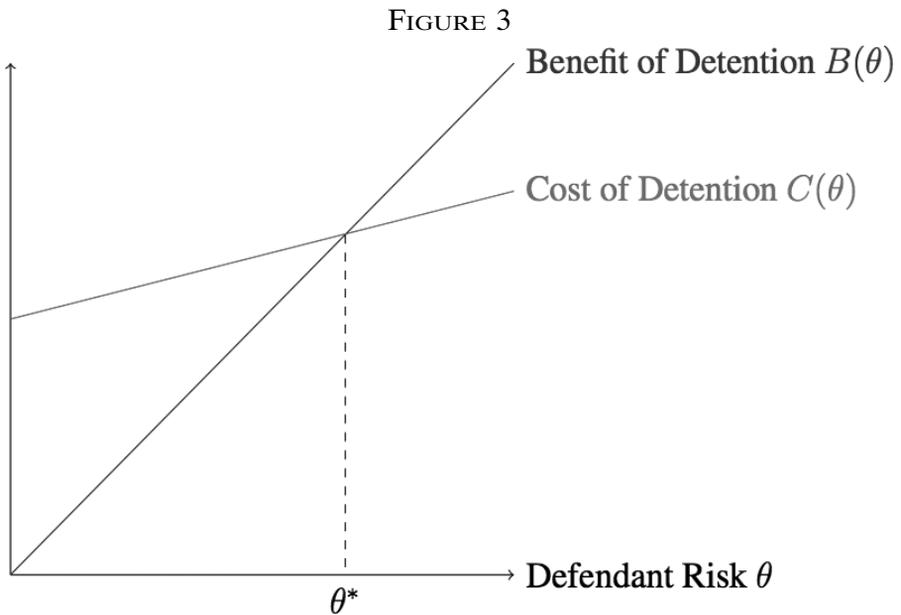
<sup>160</sup> In a more complicated case, if the costs and benefits of pre-trial detention are allowed to be non-monotonic, the relationship between defendant risk and pre-trial detention can also become non-monotonic.

defendant. Similarly, one might expect a positive relationship between costs and benefits if higher-risk defendants are the most likely to commit pre-trial misconduct and the most harmed by being detained prior to trial. For instance, drug offenders who have substance abuse issues may be at an elevated risk of re-offending prior to trial compared to non-drug offenders. On the other hand, these same defendants may have more tenuous connections to the formal labor market compared to non-drug defendants, and thus they may be more likely to lose their jobs and economic livelihood if detained. What is the optimal bail decision in this scenario? Consider again a modification of the numerical example from before: 30 defendants with benefits of detention equal to 40 (“low-risk”), 60 defendants with benefits of detention equal to 50 (“medium-risk”), and 10 defendants with benefits of detention equal to 100 (“high-risk”). As before, the average cost of pre-trial detention is still 55 ( $70*0.1 + 55*0.6 + 50*0.3$ ), but the costs vary across defendant types to allow for a positive correlation between costs and benefits. For example, assume that the benefits and costs of pre-trial detention are distributed as in Example 3, where the costs of detention are largest for high-risk defendants.

EXAMPLE 3

	Benefit	Cost	Optimal Decision
High-Risk N=10	100	70	Detain
Medium-Risk N=60	50	55	Release
Low-Risk N=30	40	50	Release

Note that just as in Case 1 (where the costs of detention were constant), the optimal bail decision results in only high-risk defendants being detained, resulting in 10% of defendants being detained before trial. To illustrate, the cost and benefit curves might look as in Figure 3 under a continuous distribution of risk types:



With this relationship between benefits and costs, defendants with risk  $\theta \geq \theta^*$  are detained because the benefits exceed the costs for this subset of defendants, and defendants with risk  $\theta < \theta^*$  are released because the costs exceed the benefits, yielding a positive monotonic relationship between defendant risk and pre-trial detention, as in Case 1.

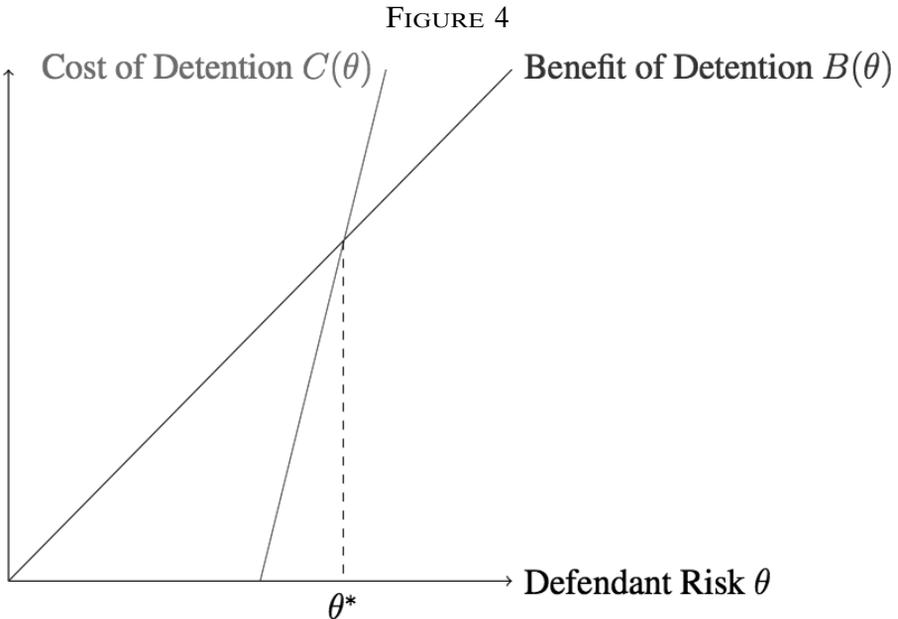
But there is no guarantee that this is the only possible relationship between risk and pre-trial detention. For example, consider the distribution of costs in Example 4, where the average cost of pre-trial detention is still 55 but varies across defendants. Again, costs and benefits are positively correlated.

#### EXAMPLE 4

	Benefit	Cost	Optimal Decision
High-Risk N=10	100	115	Release
Medium-Risk N=60	50	70	Release
Low-Risk N=30	40	5	Detain

In this scenario, the optimal bail decision leads to the detention of only low-risk defendants, with 30% of defendants being detained

before trial. This result is due to the fact that the costs of pre-trial detention exceed the benefits for high- and medium-risk defendants, while social welfare is maximized by detaining low-risk defendants. To illustrate graphically, suppose the benefits and costs of detention are distributed as follows:



In this case, because the costs of pre-trial detention increase faster than the benefits of pre-trial detention over the defendant risk distribution, the optimal decision results in a threshold  $\theta^*$  where defendants with risk  $\theta \geq \theta^*$  are released, and defendants with risk  $\theta < \theta^*$  are detained—the exact opposite result as found in Example 3 and Figure 3. Now, the optimal decision yields a *negative* relationship between defendant risk and pre-trial detention. In other words, the optimal decision may be to detain low-risk defendants but release high-risk defendants, exactly the opposite of what would occur in Case 1.

In fact, with monotonic, but *non-linear* costs or benefits, the relationship between defendant risk and the pre-trial detention decision can become non-monotonic. For example, suppose that the costs are distributed as follows:

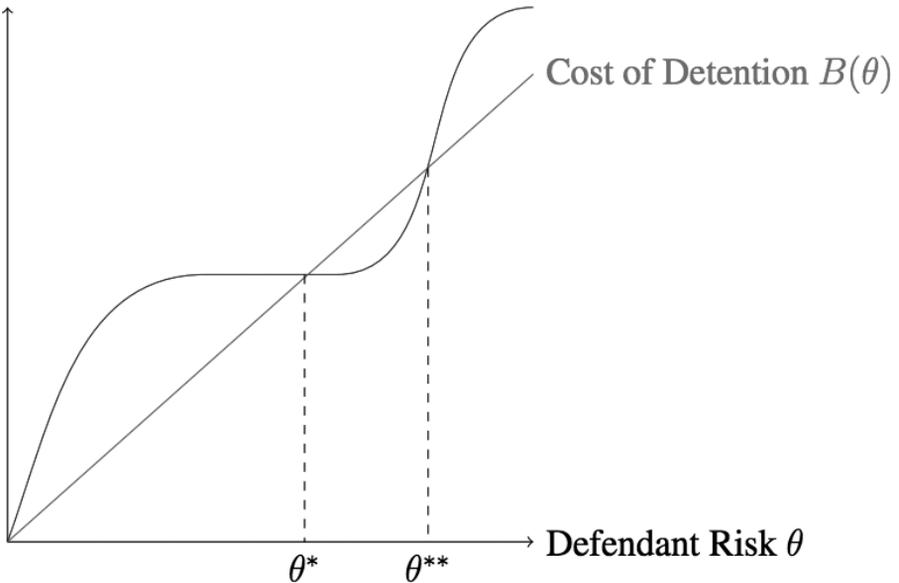
EXAMPLE 5

	Benefit	Cost	Optimal Decision
High-Risk N=10	100	95	Detain
Medium-Risk N=60	50	75	Release
Low-Risk N=30	40	2	Detain

As before, costs and benefits are positively correlated and the average cost is 55. However, now the optimal bail decision is to detain both high-risk and low-risk defendants, while releasing medium-risk defendants. To illustrate graphically, suppose the costs and benefits of pre-trial detention are distributed as follows in Figure 5:

FIGURE 5

Benefit of Detention  $B(\theta)$



Because the benefit curve is non-linear, it crosses the cost curve at two points  $\theta^*$  and  $\theta^{**}$ . In this scenario, defendants with risk  $\theta \leq \theta^*$  are detained, defendants with risk  $\theta^* < \theta < \theta^{**}$  are released, and defendants with risk  $\theta \geq \theta^{**}$  are detained, resulting in a non-monotonic relationship between pre-trial detention and defendant risk.

\* \* \*

In sum, these examples illustrate that maximizing social welfare requires consideration of both the benefits and costs of pre-trial detention. Any approach that focuses solely on the benefits of pre-trial detention, or in other words, the “risk” of the defendant, may generate large welfare losses.

In fact, it is very likely that in the real world, both benefits and costs vary widely across defendants. The examples above demonstrate that the social optimum can lead to the detention of any kind of defendant—not just defendants classified as “high-risk”—depending on the distribution of the costs and benefits of pre-trial detention over defendant risk types, which is ultimately an empirical question. This theoretical prediction runs counter to the predominant assumption in the bail system that only high-risk defendants should be detained. Indeed, the examples above show that detention on the basis of “risk” alone can lead to suboptimal outcomes.

#### IV

#### THE POTENTIAL FOR COST-BENEFIT ANALYSIS TO REDUCE ERRORS IN BAIL

The potential for cost-benefit analysis to improve decision-making at the bail stage of the criminal justice process is not only substantial but also feasible. Unlike other policy domains where there may be disagreements about the appropriate objective function, there is almost universal agreement that bail judges should be engaging in some form of cost-benefit analysis. Indeed, a variety of stakeholders, including judges, prosecutors, defense attorneys, and private foundations “have been working to determine the most legal, research-based, and cost-effective way to further the purpose of bail: to maximize the release of defendants on the least restrictive conditions that reasonably assure the safety of the public and defendants’ appearance in court.”<sup>161</sup>

For example, in 2014, the Department of Justice’s National Institute of Corrections issued a report stating that “[r]esearchers, bail historians, and even the National Judicial College state that the purpose of an effective bail decision is to maximize release while maximizing

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<sup>161</sup> See KRISTIN BECHTEL ET AL., PRETRIAL JUSTICE INST., *DISPELLING THE MYTHS: WHAT POLICY MAKERS NEED TO KNOW ABOUT PRETRIAL RESEARCH 2* (2012), [https://www.pretrial.org/download/pji-reports/Dispelling%20the%20Myths%20\(November%202012\).pdf](https://www.pretrial.org/download/pji-reports/Dispelling%20the%20Myths%20(November%202012).pdf)

public safety and court appearance.”<sup>162</sup> This objective is also embodied in the standards of the American Bar Association’s *Standards Relating to Pretrial Release*, which states that the judicial decision of whether to release or detain a defendant requires judges to “strike an appropriate balance” between the competing societal interests of individual liberty, court appearance, and public safety.<sup>163</sup>

Given that the considerations underlying current release/detention decisions are already grounded in a cost-benefit framework that reflects various competing objectives, one natural question is whether bail judges are already attaining the social optimum and making welfare-maximizing bail decisions. If so, my conceptual framework would provide little value. Recall that my partial cost-benefit analysis from the previous section suggests that there may be net costs to detention for defendants on the margin, but I am unable to account for any number of unmeasured benefits, such as general deterrence. But what if judges are taking these benefits into account in making decisions? Could their bail decisions then be optimal?

Unfortunately, without observing the exact same information on each defendant that judges have when they make bail decisions, it is difficult to test whether bail decisions in practice are socially optimal. However, one potential way to test for whether judges are deviating from the social optimum is to compare pre-trial decisions *across* judges who are randomly assigned bail cases. The idea here is straightforward: If all bail judges decide whether to detain a defendant or release a defendant using the same social welfare function and the same set of information about costs and benefits, then two judges who are assigned identical defendants, faced with the same information and objectives, should reach, on average, the same conclusions about whether to detain or release those defendants. But any large and significant differences in detention rates across these two judges suggest

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<sup>162</sup> TIMOTHY R. SCHNACKE, U.S. DEP’T OF JUSTICE, MONEY AS A CRIMINAL JUSTICE STAKEHOLDER: THE JUDGE’S DECISION TO RELEASE OR DETAIN A DEFENDANT PRETRIAL 54 (2014) <https://www.pretrial.org/download/research/Money%20as%20a%20Criminal%20Justice%20Stakeholder.pdf>; see also John Clark, *A Framework for Implementing Evidence-Based Practices in Pretrial Services*, in TOPICS IN COMMUNITY CORRECTIONS 3, 4 (2008), [https://www.pretrial.org/download/pji-reports/Topics%20in%20Community%20Corrections%20Annual%20Issue%202008%20Applying%20Evidence-Based%20Practices%20in%20Pretrial%20Services%20\(NIC-2008\).pdf](https://www.pretrial.org/download/pji-reports/Topics%20in%20Community%20Corrections%20Annual%20Issue%202008%20Applying%20Evidence-Based%20Practices%20in%20Pretrial%20Services%20(NIC-2008).pdf) (stating that the goal of pretrial services is “[t]o maximize rates of pretrial release while minimizing pretrial misconduct through the use of least restrictive conditions”); BECHTEL ET AL., *supra* note 161, at 3 (“An effective pretrial release occurs when a defendant is released from jail, does not commit a new crime, and makes all court appearances.”).

<sup>163</sup> STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE at 29–30 (AM. BAR ASS’N 2007).

that these bail judges are not both achieving socially optimal bail decisions.<sup>164</sup>

### A. Empirical Analysis

#### 1. Setting: Philadelphia and Miami-Dade

In this part of the Article, I explicitly test whether there are large and significant differences in bail decisions across judges to assess how much an objective cost-benefit approach to pre-trial detention may improve equity and consistency in bail decision-making. To do so, I use new data on bail decisions for all defendants arrested and charged in two large urban counties: Philadelphia and Miami-Dade.<sup>165</sup> Like the federal government, both Pennsylvania and Florida grant a constitutional right to some form of bail for most defendants.<sup>166</sup>

However, unlike in the federal system, where a pre-trial detention hearing is generally more time intensive and may involve formal proceedings, such as putting on witnesses, bail hearings in Philadelphia and Miami-Dade generally last less than five minutes.<sup>167</sup> In this brief period of time, the bail judge is presented with basic

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<sup>164</sup> The differences could, in practice, reflect any number of reasons. For example, some judges could be disregarding the costs of pre-trial detention altogether. Alternatively, judges could all be considering some costs and benefits but incorporating different ones into their decision-making. Finally, judges could even all be weighing the exact same set of costs and benefits but have different information about each, which is plausible given that there is uncertainty surrounding the magnitude of estimated costs and benefits (see Table 1).

<sup>165</sup> In these jurisdictions, there are two situations in which a bail hearing may not be held. First, certain defendants who have been accused of serious crimes may waive their right to a no-bail hearing. Second, during the time period, illegal immigrants may have been automatically detained and transferred to the Immigration and Customs Enforcement (ICE) for deportation without been accused of any other wrongdoing. For example, in Philadelphia, the yearly number of ICE arrests before 2014 was roughly 380 out of over 40,000. See Malcolm Burnley, *How Michael Nutter Changed Philadelphia's Immigration Status*, NEXT CITY (Mar. 30, 2015), <https://nextcity.org/features/view/philadelphia-immigrants-deportation-immigration-growth-michael-nutter>.

<sup>166</sup> For instance, Article I, Section 14 of the Pennsylvania Constitution states that “[a]ll prisoners shall be bailable by sufficient sureties, unless for capital offenses or for offenses for which the maximum sentence is life imprisonment or unless no condition or combination of conditions other than imprisonment will reasonably assure the safety of any person and the community . . . .” PA. CONST. art. I, § 14, and Article I, Section 14 of the Florida Constitution states that “[u]nless charged with a capital offense or an offense punishable by life imprisonment . . . every person charged with a crime . . . shall be entitled to pretrial release on reasonable conditions.” FLA. CONST. art. I, § 14.

<sup>167</sup> The time pressure at bail hearings is also present in many other jurisdictions. See Kathryn Malizia, *Assembly Line Justice*, NEW J. (Sept. 1, 2009), <http://www.thenewjournalatyaale.com/2002/09/assembly-line-justice/> (“In practice, when determining bail, judges have little time to consider the prescribed factors, especially in overcrowded courts. The average arraignment takes about five minutes, sometimes less. In that time, the judge gets only a snapshot of each case.”).

information about the case, the defendant's prior criminal history, and characteristics of the defendant such as employment status and ties to the community. In assessing bail, these judges are authorized to consider factors such as the nature of the alleged offense, the weight of the evidence against the defendant, any record of prior flight or bail violations, and the financial ability of the defendant to pay bail.

For example, under the Pennsylvania Rules of Criminal Procedure, "the bail authority shall consider all available information as that information is relevant to the defendant's appearance or nonappearance at subsequent proceedings, or compliance or noncompliance with the conditions of the bail bond," including information such as the nature of the offense, the defendant's employment status and relationships, and whether the defendant has a record of bail violations or flight.<sup>168</sup> Under the Florida Rules of Criminal Procedure, judges consider similar factors, such as

the nature and circumstances of the offense charged and the penalty provided by law; the weight of the evidence against the defendant; . . . the defendant's past and present conduct, including any record of convictions, previous flight to avoid prosecution, or failure to appear at court proceedings; the nature and probability of danger that the defendant's release poses to the community; [and] the source of funds used to post bail.<sup>169</sup>

Because each defendant poses a different set of risks, bail judges in these jurisdictions are granted considerable discretion in evaluating each defendant's circumstances when making decisions about release. This discretion, coupled with essentially no guidance on how to evaluate the costs and benefits of pre-trial detention and the minimal review time, may result in substantial differences in bail decisions across judges.

#### a. Philadelphia

The first jurisdiction in this empirical study is Philadelphia. The fifth largest city in the United States, Philadelphia spends seven cents of every tax dollar on detaining defendants before trial, with its spending almost rivaling that of Cook County, Illinois despite the fact that Cook County has triple the population of Philadelphia.<sup>170</sup>

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<sup>168</sup> PA. R. CRIM. P. 523.

<sup>169</sup> FLA. R. CRIM. P. 3.131.

<sup>170</sup> CLAIRE SHUBIK-RICHARDS & DON STEMEN, PEW CHARITABLE TRS. PHILA. RESEARCH INITIATIVE, PHILADELPHIA'S CROWDED, COSTLY JAILS: THE SEARCH FOR SAFE SOLUTIONS, TECHNICAL REPORT 6 (2010), [http://www.pewtrusts.org/~media/legacy/uploadedfiles/wwwpewtrustsorg/reports/philadelphia\\_research\\_initiative/philadelphiascrowdedcostlyjailsrevpdf.pdf](http://www.pewtrusts.org/~media/legacy/uploadedfiles/wwwpewtrustsorg/reports/philadelphia_research_initiative/philadelphiascrowdedcostlyjailsrevpdf.pdf).

Philadelphia's bail system has also faced substantial criticism. Beginning in the mid-2000s, media reports increasingly depicted Philadelphia's bail system as deeply flawed, as evidenced by the 19,000 defendants that annually fail to appear in court for at least one hearing, the total of nearly 47,000 fugitives, and the large amount of forfeited but uncollected bail.<sup>171</sup> In November 2009, for example, nearly 50,000 suspects were on the run, most of whom skipped bail after 1990, and the total amount of bail owed to the city was estimated at nearly \$1 billion.<sup>172</sup>

In Philadelphia, the bail system operates twenty-four hours a day, seven days a week in order to process the roughly 50,000 to 60,000 arrests in Philadelphia each year.<sup>173</sup> Arrested individuals are brought to several police stations across the city where they are booked and moved to holding cells, after which the city's Pretrial Services Bail Unit begins to interview defendants via videoconference.<sup>174</sup> During this interview, the pre-trial services officer solicits information on defendant demographics, residence, employment history, and physical and mental health issues, among other things.<sup>175</sup> Using bail guidelines, the Bail Unit then uses this information to calculate a release recommendation that is presented to the bail judge.<sup>176</sup>

Prior to the bail hearing and shortly following arrest, the Philadelphia District Attorney's Charging Unit will review and approve arrest charges.<sup>177</sup> After the Pretrial Services interview is completed and the charges are approved by the Philadelphia District Attorney's Office, the defendant is brought in for a bail hearing within twenty hours of arrest.<sup>178</sup>

Since the mid-1990s, this bail hearing has been conducted through videoconference by the bail judge on duty. At the hearing, representatives from the district attorney and local public defender's

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<sup>171</sup> See Craig R. McCoy et al., *supra* note 134.

<sup>172</sup> See *id.*

<sup>173</sup> JOHN CLARK, DANIEL PETERCA & STUART CAMERON, PRETRIAL JUSTICE INST., ASSESSMENT OF PRETRIAL SERVICES IN PHILADELPHIA 6 (2011), <https://www.courts.phila.gov/pdf/report/ti/Assessment-of-Pretrial-Services-in-Philadelphia-Pretrial-Justice-Institute.pdf>.

<sup>174</sup> *Id.* at 6–7. Over 96% of all arrested individuals are interviewed by Pretrial Services. *Id.* at 7.

<sup>175</sup> *Id.*

<sup>176</sup> Philadelphia's bail guidelines were initially introduced in 1982 and revised in 1995, with presumptive release guidelines based on an intersection of defendant risk (as measured by the probability of pre-trial misconduct) and the seriousness of the charge. These guidelines were initially created to improve equity in bail decisionmaking. See JOHN S. GOLDKAMP & MICHAEL R. GOTTFREDSON, POLICY GUIDELINES FOR BAIL: AN EXPERIMENT IN COURT REFORM, (1985).

<sup>177</sup> See CLARK ET AL., *supra* note 173, at 7.

<sup>178</sup> *Id.*

offices (or private defense counsel) are present. The bail judge (or “arraignment magistrate”) informs the defendant of the charges and his or her right to counsel, sets bail after hearing from the prosecutor’s office and defendant’s counsel, and schedules the next court date.<sup>179</sup> As authorized under the guidelines, bail judges have several options: release on recognizance, release with various supervision conditions, secured and unsecured money bail,<sup>180</sup> or detention without bail.<sup>181</sup>

After the bail hearing is completed, the defendant has an opportunity to post bail and secure private counsel if able and desired. If the defendant is unable to post bail, he or she is detained, but the defendant has the opportunity to petition for bail modification in later court proceedings.<sup>182</sup> In Philadelphia, all arraignments usually happen within a month of the bail hearing, at which point defendants formally enter a plea of guilty or not guilty.<sup>183</sup>

#### b. Miami-Dade County

The other jurisdiction in this study is Miami-Dade County, which operates the eighth largest jail system in the country, with 4,300 to 4,500 persons incarcerated daily.<sup>184</sup> As opposed to Philadelphia, where all defendants are required to have a bail hearing, most defendants in Miami-Dade can avoid a bail hearing with a judge by posting an amount designated by a standard bail schedule immediately following arrest and booking.<sup>185</sup> This schedule was originally created in

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<sup>179</sup> *Id.* at 9.

<sup>180</sup> Under unsecured money bail, release is conditioned upon the defendant’s written agreement to be liable for a fixed sum of money if he or she fails to appear as required or fails to comply with the conditions of the bail bond. No money or other form of security is deposited. *See* PA. R. CRIM. P. 524.

<sup>181</sup> CLARK ET AL., *supra* note 173, at 8–9.

<sup>182</sup> If the defendant’s arrest occurred while he or she was already on parole, the parole officer may choose to file a detainer. If a detainer is filed, the defendant is detained with no bail unless a judge overturns the decision and lifts the detainer. *See Philadelphia Detainer Petition and Parole Attorney*, FISHMAN FIRM, <http://www.thefishmanfirm.com/probation/> (last visited June 27, 2017).

<sup>183</sup> In Pennsylvania, cases that proceed to trial are either heard in the Courts of Common Pleas, the state trial courts that handle all felony criminal cases, or the Philadelphia Municipal Court, which handles all misdemeanor trials as well as felony preliminary hearings. A description of the Philadelphia court system can be found at *Courts of the District*, PHILA. CTS: FIRST JUD. DISTRICT PA., <http://courts.phila.gov/courts.asp> (last visited July 22, 2017).

<sup>184</sup> *See* Interim Director Daniel Junior, *Daily Jail Population Statistics Data*, MIAMI-DADE COUNTY CORRECTIONS & REHABILITATION DEP’T, <http://www.miamidade.gov/idwdashboard/statistics-en-us.pdf> (last visited Sept. 28, 2017).

<sup>185</sup> *See Inmate Release*, MIAMIDADE.GOV, [www.miamidade.gov/corrections/inmate-release.asp](http://www.miamidade.gov/corrections/inmate-release.asp) (last visited July 5, 2017) (describing the process for bonding out). Non-bailable offenses include murder and domestic violence offenses. For a current version of the bail schedule by offense type, see *Dade County Bond Schedule in Numeric Order*, BRENNAN

1958 following a judicial directive to the Sheriff of the county to set bail for defendants based on a master schedule.<sup>186</sup>

The Miami-Dade County bail schedule ranks offenses according to their severity and assigns an amount of money bail that must be posted to permit a defendant's release, without any individualized consideration of risk or ability to pay. Perhaps not surprisingly, critics have long argued that this schedule discriminates against poor defendants by setting a fixed price on release according to the charged offense rather than taking into account a defendant's propensity for pre-trial misconduct.<sup>187</sup> Indeed, only 20% of all defendants are able to secure release immediately following booking by posting the amount listed on the bond schedule, and the other 80% attend a bail hearing where their bail is determined by the assigned bail judge.<sup>188</sup> For defendants unable to post bail immediately, there is a bail hearing generally within twenty-four hours of arrest where defendants can argue for a lower bail amount or release without financial conditions. During the time period covered in this study, Miami-Dade conducted separate daily hearings for felony and misdemeanor cases via videoconference.<sup>189</sup>

At the bail hearing, the court will determine whether there is sufficient probable cause to detain the arrestee and if so, set the appropriate bail conditions, including release on recognizance, money bail, or detention without bail.<sup>190</sup> The standard bail amount (based on the bail schedule) can be lowered, raised, or remain the same depending on the specific circumstances of the case and the arguments made by defense counsel and the prosecutor at the bail hearing.<sup>191</sup>

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BAIL BONDS, <http://www.brennanbailbonds.com/dade-county-bond-schedule-numerical.pdf> (last visited Sept. 28, 2017).

<sup>186</sup> See Steven Wisotsky, *Use of a Master Bond Schedule: Equal Justice Under Law?*, 24 U. MIAMI L. REV. 808, 812 (1970).

<sup>187</sup> See *id.* at 810; 1 JOHN S. GOLDKAMP & MICHAEL R. GOTTFREDSON, THE DEVELOPMENT OF BAIL/PRETRIAL RELEASE GUIDELINES IN MARICOPA COUNTY SUPERIOR COURT, DADE COUNTY CIRCUIT COURT AND BOSTON MUNICIPAL COURT 107–11 (1988), <https://www.ncjrs.gov/pdffiles1/Digitization/124016NCJRS.pdf>.

<sup>188</sup> GOLDKAMP & GOTTFREDSON, *supra* note 187, at 57.

<sup>189</sup> *Id.* at 41. In Miami-Dade, misdemeanor arraignments coincide with the bail hearing, but felony arraignments generally occur several weeks after the bail hearing. If the case proceeds to trial, it is heard in either the Circuit Court or County Court. The court system in Miami-Dade County is structured as a two-tiered system with the Circuit Court handling felony cases and the County Court handling misdemeanor cases. A description of the Miami-Dade court system can be found at *Criminal Court Services*, MIAMI-DADE CLERK CTS., [http://www.miami-dadeclerk.com/courts\\_criminal.asp](http://www.miami-dadeclerk.com/courts_criminal.asp) (last visited July 22, 2017).

<sup>190</sup> MIAMI-DADE CLERK CTS., *supra* note 189.

<sup>191</sup> See Wisotsky, *supra* note 186, at 814 (“Occasionally, however, bail is set or modified by a judge in an informal manner. One possibility is that a defendant who is represented by counsel may have his attorney contact the judge by phone to request a reduction . . . .

### c. Empirical Design

Why are Philadelphia and Miami-Dade good settings to explore whether bail judges optimize their bail decisions? One important reason is that there are multiple bail judges that work simultaneously, allowing one to compare bail decisions across judges. For example, in Philadelphia, at any point in time, there are six arraignment court magistrates who work in the Preliminary Arraignment Court.<sup>192</sup> In Miami-Dade, there are also multiple bail judges serving simultaneously to hear weekend bond hearings.<sup>193</sup> A large number of trial court judges rotate in to sit at bond hearings on the weekend.<sup>194</sup>

Another important feature of these bail systems is that the assignment of judges is based on rotation systems, providing quasi-random variation in the assignment of bail judges. In Philadelphia, at any given point in time, six arraignment magistrates serve rotating eight-hour shifts in order to balance caseloads. The judges work in two teams of three for five consecutive days each, with one bail judge working the morning shift (7:30AM–3:30PM), another working the afternoon shift (3:30PM–11:30PM), and the final judge working the night shift (11:30PM–7:30AM).<sup>195</sup> Similarly, in Miami-Dade, judges rotate through the weekend felony and misdemeanor bail hearings to ensure balanced caseloads during the year.<sup>196</sup>

These features make Philadelphia and Miami-Dade ideal counties to study whether bail judges are making socially optimal bail decisions. Because there are multiple judges in each jurisdiction, and

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Occasionally, the reverse of this occurs.”). A unique feature of the Miami-Dade system is the use of “alternate bond”—a bond amount used as a backup to nonfinancial release, most similar to unsecured bond in other jurisdictions. GOLDKAMP & GOTTFREDSON, *supra* note 187, at 64.

<sup>192</sup> These judges serve four-year terms, are appointed by the Municipal Court Board of Judges, and are eligible for an unlimited number of reappointments. The bail judge positions were created by the Pennsylvania state legislature in 1984 in order to relieve the workload of Philadelphia Municipal Court judges. By law, Philadelphia bail judges are not required to be lawyers. See 42 PA. CONS. STAT. § 1123(a)(5) (2013).

<sup>193</sup> During the time period I discuss here, there are two bail hearings each day during the weekday. Felony bail hearings are conducted once at 9 AM and once at 1:30 PM Monday through Friday. Misdemeanor bail hearings, coupled with an arraignment during which defendants can plead guilty, are conducted in a separate courtroom at 9 AM and 1:30 PM Monday through Friday. See *Felony Bond Hearings and Misdemeanor Jail Arraignments*, MIAMI-DADE CLERK CTS., [http://www.miami-dadeclerk.com/courts\\_hearings\\_arraignments.asp](http://www.miami-dadeclerk.com/courts_hearings_arraignments.asp) (last visited July 6, 2017).

<sup>194</sup> GOLDKAMP & GOTTFREDSON, *supra* note 187, at 44.

<sup>195</sup> For an example of this schedule, see *Trial Division Judicial Schedule May 18, 2015 to May 22, 2015*, PHILA. CT. COMMON PLEAS, <https://www.courts.phila.gov/pdf/schedule/js150517.pdf>.

<sup>196</sup> The schedule of hearings is determined on the basis of exchanges with court administrators.

defendants are more or less randomly assigned to judges, comparisons across judges are reflective of judge-specific disagreements, rather than differences in case and defendant composition across judges.<sup>197</sup> Importantly, I empirically verify that defendants are randomly assigned to bail judges in both of these counties, such that the same types of defendants are assigned across all judges in the same court.<sup>198</sup>

## 2. Data

In these jurisdictions, I obtained rich administrative court records on defendants through records requests with the Clerk of Court in each county. In Philadelphia, I obtained criminal court records for all arrested offenders between 2007–2014 in the Pennsylvania Court of Common Pleas and the Philadelphia Municipal Court. In Miami-Dade, I obtained criminal court records for all arrested offenders between 2006–2014 in the Miami-Dade County Criminal Court and Circuit Criminal Court.

These administrative court data contain detailed information on charges, defendant characteristics, and case outcomes through each stage of the criminal justice process. For example, charge-level data include information on the original arrest charge, the filing charge, and the final disposition charge. From these charges, I can determine the severity of each charge based on state-specific offense grades (e.g. felony or misdemeanor), and whether each charge resulted in conviction and punishment.<sup>199</sup> Defendant characteristics include information on each defendant's name, gender, ethnicity, and age. Because of unique defendant identifiers, I can also measure whether a defendant

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<sup>197</sup> Assignment is only “quasi-random” due to the extent that it may be endogenous whether a defendant is arrested (and thus brought in for a bail hearing) in the morning or at night, or on a specific day of the week. But the fact that all judges rotate through all shifts and all days of the week allows me to separate out the independent effect of the bail judge from day-of-the-week and time-of-day effects. For a thorough discussion of this issue, see Dobbie et al., *supra* note 8, at 33 tbl.3.

<sup>198</sup> Dobbie et al., *supra* note 8, at 33 tbl.3.

<sup>199</sup> In Florida, there are five distinct offense grades: F1 (first degree felony), F2 (second degree felony), F3 (third degree felony), M1 (first degree misdemeanor), and M2 (second degree misdemeanor). In Florida, misdemeanors are less serious crimes, punishable by up to one year in county jail, whereas felonies are punishable by the death penalty or incarceration in a state prison. In Pennsylvania, there are ten distinct offense grades: H (homicide), F1 (first degree felony), F2 (second degree felony), F3 (third degree felony), F (ungraded felony), M1 (first degree misdemeanor), M2 (second degree misdemeanor), M3 (third degree misdemeanor), M (ungraded misdemeanor), and S (summary offense). In Pennsylvania, summary offenses are minor breaks in the law punishable by up to ninety days in jail, such as disorderly conduct, underage drinking, shoplifting (first offense), and criminal mischief. Individuals convicted of misdemeanors could be imprisoned for up to five years and individuals convicted of felonies could be sentenced to prison for more than five years. 18 PA. CONS. STAT. § 106(b) (2017).

has a prior criminal record in each jurisdiction. Most importantly for the purposes of this Article, for each defendant, I observe the bail judge who initially set bail, missing in almost all datasets used to previously study bail decisions,<sup>200</sup> allowing for comparisons across bail judges within the same court. For each defendant, I also observe information on bail type, bail amount when money bail is set, and whether bail was met.

I make three sample restrictions to the administrative court data. First, I drop a small set of cases with missing bail judge information. Second, I drop the roughly 20% of defendants in Miami-Dade who post bail immediately following arrest and booking, such that they never have a bail hearing. Third, I limit the sample to weekend hearings in Miami-Dade where bail judges are assigned to cases on a rotating basis.<sup>201</sup> After these sample restrictions, the analysis sample contains 328,492 defendants in Philadelphia and 97,538 defendants in Miami-Dade. In the sample, there are nine bail judges in Philadelphia and 170 total bail judges in Miami-Dade.

Table 2 presents summary statistics on defendants and bail decisions in these counties. In Philadelphia, 62.3% of defendants are released within three days of their bail hearing. In Miami-Dade, conditional on not posting bail immediately following arrest and booking, 31.5% of defendants are released within three days of a bail hearing. In Philadelphia, 62.7% of defendants are assigned money bail, and conditional on being assigned money bail, receive average bail amounts of \$28,492. In Miami-Dade, 73.0% of defendants are assigned money bail, with average bail amounts of \$57,093.

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<sup>200</sup> For example, prior studies have routinely utilized the State Court Processing Statistics which track roughly 100,000 felony defendants from arrest to bail to sentencing. However, this dataset does not collect information on the bail judge. As a result, most prior studies can only document differences in pre-trial release rates across different jurisdictions, rather than differences across judges within the same jurisdiction. *See, e.g.,* Baradaran & McIntyre, *supra* note 47, at 540 fig.5.

<sup>201</sup> The weekend bail judges in Miami-Dade are trial court judges from the misdemeanor and felony courts in Miami-Dade that assist the bail court with weekend cases. In contrast, bail judges in Philadelphia are assigned on a rotating basis on all days. On the weekdays in Miami, there is one permanently scheduled bail judge who conducts all bail hearings, thus not providing any source of variation. *See Felony Bond Hearings and Misdemeanor Jail Arraignments, supra* note 193.

TABLE 2. DESCRIPTIVE STATISTICS

	Philadelphia	Miami-Dade
	(1)	(2)
<i>Panel A: Bail Decision</i>		
Released in 3 Days	0.623	0.315
Release on Recognizance	0.253	0.069
Non-Money Bail With Conditions	0.120	0.201
Money Bail	0.627	0.730
Bail Amount (in thousands)	28.492	57.093
<i>Panel B: Characteristics</i>		
Male	0.820	0.842
White	0.361	0.474
Black	0.617	0.525
Age at Bail Decision	33.095	35.559
Prior Offense in Past Year	0.247	0.289
<i>Panel C: Change Characteristics</i>		
Number of Offenses	3.460	1.691
Felony Offense	0.440	0.547
Misdemeanor Only	0.560	0.453
Any Drug Offense	0.384	0.286
Any Violent Offense	0.248	0.189
Any Property Offense	0.229	0.354
<i>Panel D: Outcomes</i>		
Any Guilty Offense	0.515	0.558
Guilty Plea	0.264	0.466
Failure to Appear in Court	0.157	-
Rearrest Prior to Disposition	0.210	0.256
Observations	328,492	97,538

*Note:* This table reports descriptive statistics for a sample of defendants from Philadelphia and Miami-Dade counties. Data from Philadelphia are from 2007–2014 and data from Miami-Dade are from 2006–2014.

### 3. Documenting Substantial Disagreements in Bail Setting

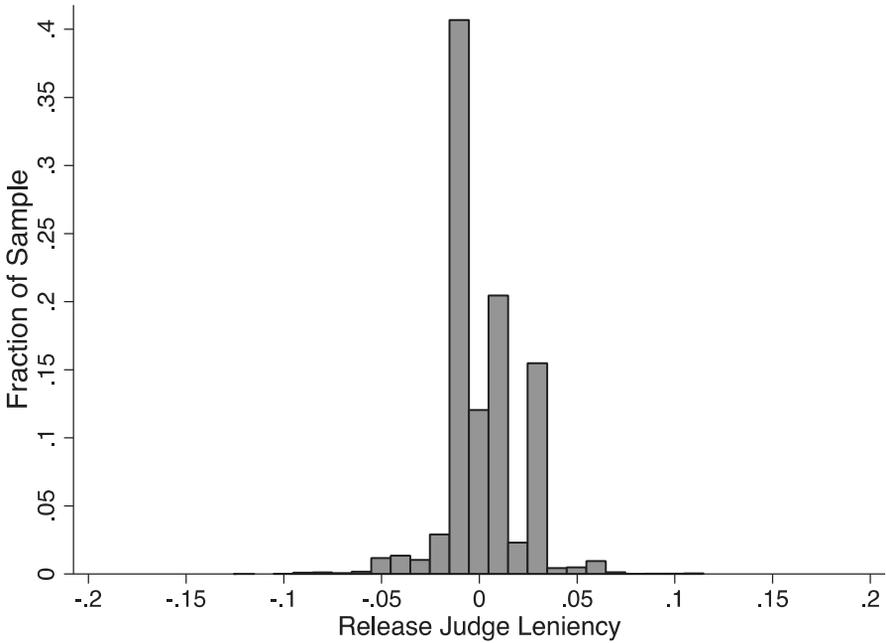
I next present results comparing pre-trial release rates across judges within the same court. Recall that because bail judges in my sample are assigned the same types of defendants on average due to quasi-random assignment, differences across judges may indicate that there is substantial disagreement in bail setting and provides suggestive evidence that bail judges are not all achieving the socially optimal levels of pre-trial release.

Figure 6 plots the mean residualized pre-trial release rate for each judge in the sample.<sup>202</sup> This figure documents stark differences in pre-trial release rates across judges within the same court. Specifically, the judge release measure ranges from -0.125 to 0.110 with a standard deviation of 0.020. In other words, moving from the least to most lenient judge (with more lenient defined as higher rate of pre-trial release) increases the probability of pre-trial release by 23.5 percentage points, a 42.6% change from the mean three-day release rate of 55.2 percentage points across both Philadelphia and Miami-Dade. Moving from a judge at the 25th percentile of leniency to a judge at the 75th percentile of leniency increases the probability of pre-trial release by 2.0 percentage points, a 3.6% change from the mean three-day release rate. These differences across judges are statistically significant and not simply the result of sampling variation. In other words, bail judges are substantially different in how often they release or detain similar defendants before trial, indicating large disagreements in whether defendants should be released or detained.

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<sup>202</sup> I residualize release rates by controlling for and removing the effect of an exhaustive set of court-by-time effects, which effectively limits the comparison to defendants at risk of being assigned to the same set of judges. For example, bail hearings following DUI arrests disproportionately occur in the evenings and on particular days of the week, leading to case selection. If certain bail judges are more likely to work evening or weekend shifts due to shift substitutions, the simple leave-out mean will be biased. See Appendix A for a description of how these judge rates are computed.

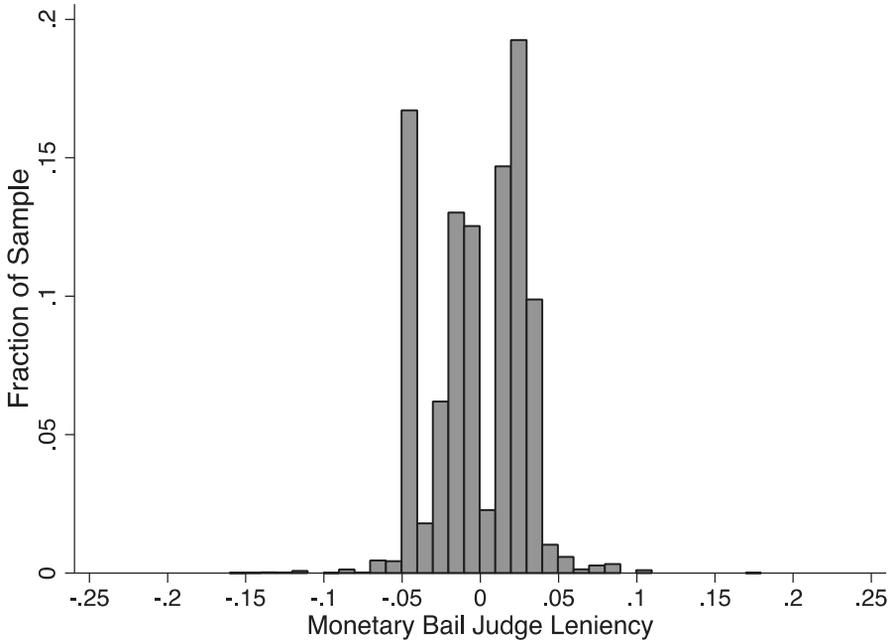
FIGURE 6. DISTRIBUTION OF JUDGE MEASURE FOR  
PRE-TRIAL RELEASE



*Note:* This figure reports the distribution of the judge measure based on the average release rate after residualizing with court-by-time fixed effects.

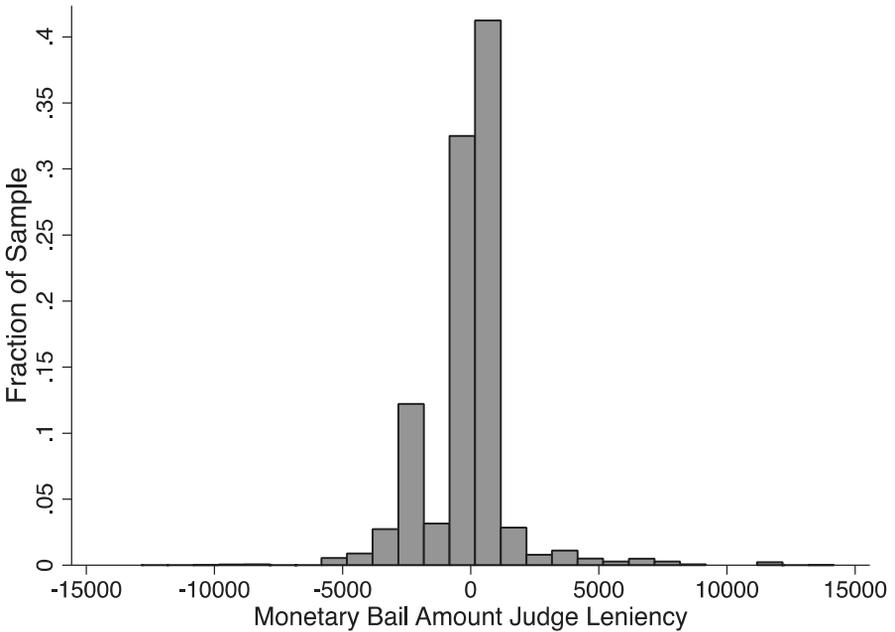
Of course, in practice, a judge affects whether a defendant is released pre-trial through a combination of different bail decisions. For example, some judges may impose money bail, which defendants may post to secure release. Do inter-judge differences appear in these other dimensions of bail setting? In Figures 7 and 8, I present the distribution of the residualized judge measure for the rate of money bail and money bail amount (in dollars), as opposed to the overall rate of pre-trial release. Much like in Figure 6, these figures show substantial variation across judges in the use of these bail dimensions.

FIGURE 7. DISTRIBUTION OF JUDGE MEASURE FOR MONEY BAIL



Note: This figure reports the distribution of the judge measure based on the average money bail rate after residualizing with court-by-time fixed effects.

FIGURE 8. DISTRIBUTION OF JUDGE MEASURE FOR BAIL AMOUNT  
(IN DOLLARS)



*Note:* This figure reports the distribution of the judge measure based on the average bail amount (including zeros for non-money bail) after residualizing with court-by-time fixed effects.

For example, the judge measure for money bail ranges from -0.160 to 0.175 with a standard deviation of 0.029. In other words, moving from the most to least lenient judge (with more lenient defined as a lower rate of money bail) increases the probability of receiving money bail by 33.5 percentage points. Moving from a judge at the 25th percentile to a judge at the 75th percentile increases the probability of receiving money bail by 4.8 percentage points. Similarly, judges differ substantially in the average bail amount they assign, such that moving from the most to least lenient judge increases the amount of money bail by \$26,904, and moving from a judge at the 25th percentile to a judge at the 75th percentile increases the amount of money bail by \$1,229.

In sum, these results suggest that there is substantial disagreement over the appropriateness of money bail, which translates into large differences in release rates across judges within the same court, raising equity and consistency concerns. These large differences persist despite the existence of bail guidelines in Philadelphia and the master bond schedule in Miami-Dade—mechanisms that would typically limit disparities by constraining judge decision-making. These

stark facts call into question whether bail judges in these jurisdictions are making socially optimal bail decisions.<sup>203</sup>

#### 4. Documenting Racial Disparities in Bail Setting

Another cost that the bail system may impose if pre-trial decision-making is ad-hoc, rather than based on social welfare maximization, is the unequal application of pre-trial detention across different populations of defendants. In other words, even if the average level of pre-trial detention is correct based on a cost-benefit analysis, individual-level bail decisions may be implemented in ways that have distributional ramifications. Here, I explicitly consider whether there are racial disparities in bail in the jurisdictions I study, contributing to an extensive literature that documents large and persistent racial differences in the determination of bail.<sup>204</sup>

Identifying the explanation for the observed racial disparities in bail is more challenging. Specifically, one possible explanation for the observed racial disparities is actual racial bias or discrimination. In the context of the model laid out in Section II, a judge may have discriminatory preferences in setting bail for different groups of defendants by imposing different thresholds. For example, a judge may discriminate against minority defendants by requiring that  $B_i - C_i \geq 0$  for minority defendants, but that  $B_i - C_i \geq t$  where  $t > 0$  for white defendants. In other words, in order to detain a defendant before trial, bail judges may require relatively larger net benefits to pre-trial detention for white defendants relative to minorities. Indeed, several other papers

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<sup>203</sup> Moreover, given the existence of decision-making guidelines, these facts also call into question whether the guidelines and bail schedules are actually achieving the ends they are designed to achieve.

<sup>204</sup> See, e.g., Celesta A. Albonetti et al., *Criminal Justice Decision Making as a Stratification Process: The Role of Race and Stratification Resources in Pretrial Release*, 5 J. QUANTITATIVE CRIMINOLOGY 57, 63–65 (1989) (studying ten federal district courts—Brooklyn, Manhattan, Chicago, Philadelphia, Baltimore, Dallas, Kansas City, Atlanta, Los Angeles and Detroit); Ian Ayres & Joel Waldfogel, *A Market Test for Race Discrimination in Bail Setting*, 46 STAN. L. REV. 987, 1024 (1994) (examining racial discrimination in bail determinations in New Haven, Connecticut); Traci Schlesinger, *Racial and Ethnic Disparity in Pretrial Criminal Processing*, 22 JUST. Q. 170, 187 (2005) (finding a racial disparity in hold rates within a county using the nationally representative State Court Processing Statistics); Stephen DeMuth, *Racial and Ethnic Differences in Pretrial Release Decisions and Outcomes: A Comparison of Hispanic, Black, and White Felony Arrestees*, 41 CRIMINOLOGY 873, 880–81 (2003) (finding Hispanic felony defendants more likely to be detained at the pre-trial release stage); see also Cassia Spohn, *Race, Sex, and Pretrial Detention in Federal Court: Indirect Effects and Cumulative Disadvantage*, 57 U. KAN. L. REV. 879 (2009) (using data on defendants convicted of drug offenses in federal district courts in Minnesota, Nebraska, and Iowa). But see Frank McIntyre & Shima Baradaran, *Race, Prediction, and Pretrial Detention*, 10 J. EMPIRICAL LEGAL STUD. 741, 769 (2013) (finding no evidence that black defendants are given bail amounts differently than white defendants after controlling for the probability of re-arrest).

have found evidence of racial bias as a driver of observed racial disparities using a variety of research designs.<sup>205</sup>

To test for the presence of racial disparities in my setting, I again utilize the quasi-random assignment of defendants to bail judges in Philadelphia and Miami-Dade counties. Following the test proposed by David Abrams, Marianne Bertrand, and Sendhil Mullainathan, I test for whether bail judges treat offenders differently on the basis of race by assessing whether there are systematic differences in racial gaps in pre-trial release rates across judges.<sup>206</sup> Because of unobservable factors that may differ based on defendants' race, such as criminal history or quality of counsel, cross-sectional comparisons of pre-trial release rates based on defendants' race may be biased. But if cases are randomly assigned to bail judges, then differences in racial gaps across judges indicates that bail judges treat defendants differently depending on their race, potentially due to discrimination.

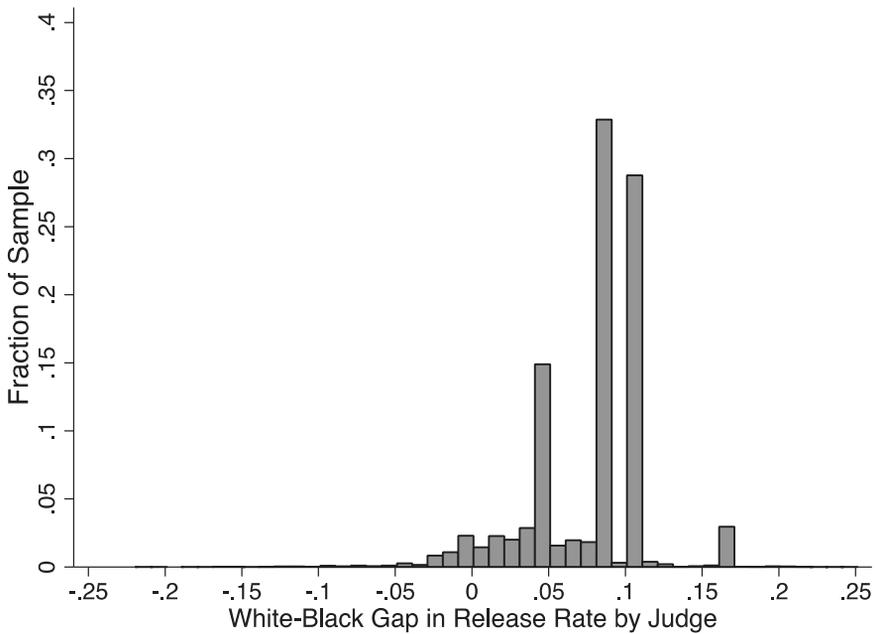
In Figure 9, I plot the gap or difference in the average residualized release rates for white defendants relative to black defendants by judge. Here, a positive gap would indicate that a particular bail judge is more likely, on average, to release white defendants pre-trial compared to black defendants. Indeed, the average white-black gap is 0.071 indicating that on average, bail judges are 7.1 percentage points more likely to release a white defendant relative to a black defendant. Relatedly, the distribution of Figure 9 shows that most judges have positive white-black gaps, suggesting that they are relatively more lenient on white defendants.

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<sup>205</sup> See Ayres & Waldfogel, *supra* note 204 (finding that New Haven courts deter minority defendants by setting bail at seemingly unjustified levels using market data on bail bonds); Shawn D. Bushway & Jonah B. Gelbach, *Testing for Racial Discrimination in Bail Setting Using Nonparametric Estimation of a Parametric Model* 32 (2011) (unpublished working paper), <https://ssrn.com/abstract=1990324> (finding racial discrimination against black defendants in bail setting); David Arnold, Will Dobbie & Crystal S. Yang, *Racial Bias in Bail Decisions* 3–4 (Nat'l Bureau of Econ. Research, Working Paper No. 23,421, 2017) (finding evidence that bail judges make racially biased prediction errors when setting bail). *But see* McIntyre & Baradaran, *supra* note 204, at 769 (finding no evidence that black defendants are given bail amounts differently than white defendants after controlling for the probability of re-arrest).

<sup>206</sup> David S. Abrams, Marianne Bertrand & Sendhil Mullainathan, *Do Judges Vary in Their Treatment of Race?*, 41 J. LEGAL STUD. 347, 350 (2012) (finding evidence of significant interjudge disparity in the racial gap in incarceration rates, indicating that some judges treat defendants differently on the basis of their race).

FIGURE 9. DISTRIBUTION OF THE WHITE-BLACK GAP IN PRE-TRIAL RELEASE BY JUDGE



Note: This figure reports the distribution of the white-black gap in release rates by judge after residualizing with court-by-time fixed effects.

Importantly, Figure 9 indicates that there are significant and systematic differences in inter-judge racial disparities in pre-trial release rates.<sup>207</sup> The white-black release gap has a standard deviation of 0.040 and ranges from -0.219 to 0.247, such that moving from a judge at one end of the racial gap distribution to a judge at the other end increases the relative racial gap by 46.6 percentage points. These results provide compelling evidence that bail judges in these jurisdictions treat defendants of different races differently in setting bail, raising additional equity concerns with the current state of bail decision-making.

### B. *The Promise of an Explicit Cost-Benefit Approach*

Overall, this empirical evidence shows that there is substantial disagreement over bail decisions across several important margins. These differences could, in practice, reflect some judges disregarding the costs of pre-trial detention altogether, or judges incorporating dif-

<sup>207</sup> I formally test for significant differences across judges by regressing pre-trial release on the full set of court-by-time fixed effects and judge fixed effects interacted with defendant race (179 total). The p-value on an F-test of the equality of the judge fixed effects interacted with defendant race is 0.000, rejecting the null hypothesis of no significant judge differences.

ferent costs and benefits into their decision-making. Judges could even all be weighing the exact same set of costs and benefits but have different information about each, which is plausible given that there is uncertainty surrounding the magnitude of estimated costs and benefits. However, the significant differences are highly suggestive that judges are not *all* implementing socially optimal release decisions based on the same objective criterion and information set. Judges differ significantly in their pre-trial release rates, use of money bail, and exhibit different treatment of defendants by race. These differences likely exist, despite the presence of bail guidelines or master bail schedules, because bail determinations are currently hastily conducted and insufficiently aligned with a consideration of the costs and benefits of detention, which include preserving the rights of the defendant while protecting the community and ensuring appearance in court.<sup>208</sup>

Consistent with this claim, anecdotal evidence indicates that judges are often disregarding potentially welfare-increasing practices because of the tremendous difficulty of changing ingrained judicial practices, such as reliance on money bail. For instance, in 2010, judges in Jefferson County, Colorado spent 14 weeks setting bail according to the ABA's Pretrial Release standards, which provide more objective guidance on what to consider in setting bail.<sup>209</sup> An evaluation of the project indicated that judges failed to abide by many of the ABA Standards, by, among other things, "avoiding release on unsecured bonds for a myriad of customary, albeit illogical or arbitrary reasons."<sup>210</sup> In Pittsburgh, judges given risk-assessment predictions followed the recommendations only 60% of the time, with some arguing that the lack of change is largely due to the "mindset" of these judges, who have been "conditioned to the existing bail system."<sup>211</sup> As

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<sup>208</sup> See Cynthia E. Jones, "Give us Free": Addressing Racial Disparities in Bail Determinations, 16 N.Y.U. J. LEGIS. & PUB. POL'Y 919, 930 (2013). Indeed, even in 1952, "Justice Jackson observed that, '[f]ixing bail is a serious exercise of judicial discretion that is often done in haste—the defendant may be taken by surprise, his counsel has just been engaged, or for other reasons, the bail is fixed without that full inquiry and consideration which the matter deserves.'" *Id.* (alteration in original) (quoting *Stack v. Boyle*, 342 U.S. 1, 11 (1952) (Jackson, J., concurring)).

<sup>209</sup> A general overview of the Jefferson County Bail Project may be found in the document presented at the National Symposium of Pretrial Justice. See Timothy R. Schnacke, Michael R. Jones, Claire M.B. Brooker & Margie L. Enquist, *The Jefferson County Bail Project: Project Summary Presented to the Attorney General's National Symposium on Pretrial Justice*, PRETRIAL JUSTICE INST. (May 23, 2011), <http://www.pretrial.org/download/research/The%20Jefferson%20County%20CO%20Bail%20Project%20Summary%20May%202011.pdf>.

<sup>210</sup> SCHNACKE, *supra* note 162, at 49.

<sup>211</sup> An-Li Herring, *States and Cities Take Steps To Reform 'Dishonest' Bail System*, NPR (Dec. 17, 2016, 8:00 AM), <http://www.npr.org/2016/12/17/505852280/states-and-cities-take-steps-to-reform-dishonest-bail-system?utm>.

another judge in Connecticut stated, “a judge can justify almost any bond . . . [c]ertain judges will assess certain cases differently. You can assemble a room full of judges and the range of bail for the same crime can vary from \$5,000 to \$250,000. It’s their individual decision.”<sup>212</sup>

While judicial resistance to change is always a valid concern, I argue that bail practices might move in a more socially desirable direction if judges were given explicit guidance on how to evaluate the trade-offs associated with pre-trial detention, and presented with evidence on the magnitude of the costs and benefits associated with detention. Without this guidance, judges are simply left to compare their subjective assessments of the benefits of pre-trial detention against some unspecified, subjective countervailing costs, leading to ambiguous trade-offs. In fact, judges likely use heuristics in forming subjective judgments on costs and benefits, likely injecting error, bias, and prejudice into bail decisions.<sup>213</sup>

In addition, without a framework that instructs judges to explicitly consider a vast array of empirically identifiable benefits *and* costs, it’s very likely that bail judges give insufficient attention to the costs of pre-trial detention. For instance, to the extent that judges give any weight to the costs of detaining defendants, the most visible cost of pre-trial detention to judges might be the monetary cost of housing and feeding a defendant per day in jail. Far less visible (or known) are the short-term and long-term collateral consequences to the defendant, families, and other members of society. In contrast, the benefits of pre-trial detention are all too visible and salient—bail judges are often directly confronted with and reputationally penalized when they release defendants who later commit new crimes or jump bail. As one judge frankly acknowledged, elected bail judges feel enormous pressure to detain defendants because “they will have less criticism from the public for letting someone out if that person gets out and commits another crime.”<sup>214</sup> As a result, the combination of this asymmetric visibility and political pressure may lead judges to overestimate the benefits of detention while severely underestimating the social costs of

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<sup>212</sup> Kathryn Malizia, *Assembly Line Justice*, NEW J. (Sept. 1, 2002) (quoting Judge Susan Handy, Chief Administrative Judge of Connecticut’s Criminal Division), <http://www.thenewjournalatyaale.com/2002/09/assembly-line-justice/>.

<sup>213</sup> See Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059, 1060 (2000) (“[C]ost-benefit analysis is best defended as a means of overcoming predictable problems in individual and social cognition. Most of these problems might be collected under the general heading of selective attention. Cost-benefit analysis should be understood as a method for putting ‘on screen’ important social facts that might otherwise escape private and public attention . . .”).

<sup>214</sup> Herring, *supra* note 211.

detention, leading to the over-detention of individuals.<sup>215</sup> Thus, incorporating objective evidence into the practice of setting bail could reduce overreliance on heuristics and reduce the prevalence of errors and bias. Indeed, recent research demonstrates that when evidence-based tools are implemented, such as the use of risk-assessment instruments that often provide more objective and systematic evidence on risk, judges often follow the tools' recommendations such that pre-trial detention rates fall.<sup>216</sup> In another important recent paper, a team of researchers show that risk predictions generated from machine learning techniques can improve substantially upon bail judges' decisions, such that if judges followed the recommendations, pre-trial detention rates could fall by 30% with no subsequent change in new crime and a simultaneous reduction in racial disparities.<sup>217</sup>

How exactly should a cost-benefit framework be incorporated into the current bail system? It's fair to say that given uncertainty over some of the costs and benefits of pre-trial detention, in particular costs and benefits which are currently unmeasured, bail decision-making is unlikely to reach the first-best solution at this point in time. But there are a myriad of potential second-best solutions that may move us towards a better bail system. For instance, simply presenting police, prosecutors, and bail judges with empirical evidence on the magnitude of the known costs and benefits associated with pre-trial detention might be a start. Alternatively, or in conjunction, cost-benefit could be used to more directly help judges make decisions, whether it be in the form of risk-assessment tools or bail guidelines that tailor their recommendations on the basis of both the costs and benefits of pre-trial detention. Or to the extent that policymakers believe that the vast majority of defendants experience net harms from pre-trial detention, perhaps making release on recognizance the default decision would be welfare-enhancing.

Ultimately, whatever the form it may take, I argue that the incorporation of a cost-benefit framework into the bail decision-making process could increase efficiency, equity, and fairness in bail decisions.

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<sup>215</sup> See SCHNACKE, *supra* note 162, at 70 (“[T]here is an overabundance of concern for public safety but little attention paid to the rights of defendants.”).

<sup>216</sup> See Jo-Ann Wallace, *The Promise and Practice of Risk Assessment Tools*, PRETRIAL JUST. INST.: BLOG (Mar. 30, 2016), <http://www.pretrial.org/promise-practice-risk-assessment-tools/> (discussing recent research of risk assessment tools and expressing the need for caution despite evidence of early success). As will be discussed in Part V of this Article, I argue that while risk-assessment tools may be a step in the right direction compared to the current state of bail decision-making, they are missing an essential component. See *infra* Part V.

<sup>217</sup> See Jon Kleinberg et al., *Human Decisions and Machine Predictions* 6 (Nat'l Bureau of Econ. Research, Working Paper No. 23,180, 2017).

By highlighting to judges the trade-offs in the bail system in a structured framework and presenting rigorous evidence on both the benefits and costs of pre-detention, bail judges may learn to make decisions that increase social welfare.<sup>218</sup> In particular, a cost-benefit framework makes visible the private and social costs of pre-trial detention, leveling the current playing field which privileges a concern over flight risk and public safety. As Tracey Meares and Bernard Harcourt have argued in the context of criminal adjudication, “[j]udicial decisions that address the relevant social science and empirical data are more transparent in that they expressly articulate the grounds for factual assertions and, as a result, more clearly reflect the interpretive choices involved in criminal procedure decision-making.”<sup>219</sup>

Moreover, there is hope that a cost-benefit approach to designing the bail system may achieve buy-in from a variety of institutional actors, including law enforcement, prosecutors, defense attorneys, and judges. As mentioned previously, there is nearly universal agreement by “[j]udges, prosecutors, defense attorneys, law enforcement, jail officials, victims’ advocates, pretrial services programs, researchers, grantors, foundations, and national professional organizations” that “the purpose of bail [is] to maximize the release of defendants on the least restrictive conditions that reasonably assure the safety of the public and defendants’ appearance in court.”<sup>220</sup> Of course, each of these institutional actors, while willing to adopt a cost-benefit framework that considers both costs and benefits of pre-trial detention, may disagree on the appropriate weights to put on each respective cost or benefit. Nevertheless, this type of political disagreement may be mitigated by the presentation of rigorous, objective evidence. Specifically, an objective consideration of costs and benefits to pre-trial detention may alleviate the political and reputational pressures that institutional actors like prosecutors and bail judges face by giving them objective guidance that can shield their bail recommendations and decisions from public scrutiny. Moreover, reframing the debate on bail reform to include the considerations espoused by both advocates and critics

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<sup>218</sup> See SCHNACKE, *supra* note 162, at 50 (noting that judicial difficulty in implementing best practices may be “beginning to change due to the current direction in pretrial research . . . the research being conducted during this third generation of bail reform is most relevant to helping judges make decisions to release or detain that are immediately effectuated and not contingent upon any other person or entity”).

<sup>219</sup> Tracey L. Meares & Bernard E. Harcourt, *Foreword: Transparent Adjudication and Social Science Research in Constitutional Criminal Procedure*, 90 J. CRIM. L. & CRIMINOLOGY 733, 735 (1999).

<sup>220</sup> BECHTEL ET AL., *supra* note 161.

of the current bail system may lead to greater consensus than focusing on one set of concerns to the exclusion of others.

## V

### USING THE CONCEPTUAL FRAMEWORK TO EVALUATE POLICY ALTERNATIVES

Not only can a cost-benefit framework improve equity and consistency in bail decision-making, it can also be used to assess various bail practices and proposed reforms. In this section, I discuss how the cost-benefit framework developed in Sections II and III can be used to assess money bail, used in most jurisdictions. I then consider how the framework can be used to evaluate two prominent reforms in the recent debate: electronic monitoring and the use of risk-assessment instruments.

#### A. Money Bail

The conceptual framework developed above can easily be extended to allow for money bail, or the practice of requiring a defendant to pay money in order to secure release before trial, which is dominant in the U.S. bail system.<sup>221</sup> The use of money bail has become increasingly prevalent over the last few decades, with the percentage of pre-trial releases among felony defendants involving financial conditions increasing from 37% in 1990 to 61% in 2009.<sup>222</sup>

In theory, the practice of money bail is premised on the idea that, by requiring defendants to post money, defendants have an increased incentive to abide by release conditions, such as appearing at trial.<sup>223</sup> However, since the 1960s, critics have noted that money bail may lead to the over-detention of low-income individuals because a defendant's ability to pay is not tied to guilt or risk.<sup>224</sup> For instance, many jurisdic-

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<sup>221</sup> See, e.g., TASKFORCE ON ADMIN. OF JUSTICE, PRESIDENT'S COMM'N ON LAW ENF'T & ADMIN. OF JUSTICE, TASK FORCE REPORT: THE COURTS 37 (1967) (describing money bail as "traditional practice").

<sup>222</sup> See REAVES, *supra* note 123, at 15.

<sup>223</sup> See Note, *Compelling Appearance in Court: Administration of Bail in Philadelphia*, 102 U. PA. L. REV. 1031, 1033 (1954) ("One purpose for imposing a higher [bail] amount which would be consistent with the theory of bail would be that the increase in the defendant's financial stake reduces the likelihood of non-appearance at his trial. In practice, however, higher bail usually means that appearance in court is being obtained by holding the defendant behind bars."); Wiseman, *supra* note 42, at 1352.

<sup>224</sup> See John N. Mitchell, U.S. Att'y Gen., Address at the 92nd Annual Meeting of the American Bar Association 10 (Aug. 13, 1969), <http://www.justice.gov/ag/aghistorical/mitchell/1969/08-13-1969a.pdf> (noting that "[t]he money bail system . . . made an accused's pretrial freedom depend upon his bank account"); President Lyndon B. Johnson, Remarks at the Signing of the Bail Reform Act of 1966 (June 22, 1966) (transcript available at <http://www.presidency.ucsb.edu/ws/?pid=27666>) ("The defendant with means can afford to pay

tions use fixed bail schedules set to the charged offense, which precludes any consideration of ability to pay.<sup>225</sup> As a result, certain bail practices that have led to the detention of poor defendants, without a consideration of ability to pay, have recently been challenged as unconstitutional,<sup>226</sup> leading some jurisdictions to consider the elimination of money bail.<sup>227</sup>

How can the conceptual framework developed previously be utilized to assess the use of money bail? Extending the previous framework where the social planner was deciding between detention or release, suppose that now the social planner decides what type of bail to set. To illustrate, for simplicity, assume that there are two options:

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bail. He can afford to buy his freedom. But the poorer defendant cannot pay the price. He languishes in jail weeks, months, and perhaps even years before trial. He does not stay in jail because he is guilty. He does not stay in jail because any sentence has been passed. He does not stay in jail because he is any more likely to flee before trial. He stays in jail for one reason only—he stays in jail because he is poor.”); PAUL BERNARD WICE, *BAIL AND ITS REFORM: A NATIONAL SURVEY* 14, 22–23 (1973) (noting that “[o]ne of the most ironic aspects of the bail-setting procedure is that the factor explored least frequently by the judge has the greatest impact on the defendant’s ability to secure pretrial release—his financial status and the amount of bail he can afford to pay”).

<sup>225</sup> See PRETRIAL JUSTICE INST., *PRETRIAL JUSTICE IN AMERICA: A SURVEY OF COUNTY PRETRIAL RELEASE POLICIES, PRACTICES AND OUTCOMES* 7 (2010), <http://www.pretrial.org/wpfb-file/pji-pretrial-justice-in-america-a-survey-of-county-pretrial-release-policies-practices-and-outcomes-2010-pdf> (documenting that 64% of counties participating in a survey use bail schedules).

<sup>226</sup> See, e.g., *Pierce v. City of Velda City*, No. 4:15-cv-570, 2015 WL 10013006, at \*1 (E.D. Mo. June 3, 2015) (adopting a settlement agreeing to a new bail policy and declaring that, under the Equal Protection Clause, no defendant can be held in custody based solely on inability to post a monetary bond); *Snow v. Lambert*, No. 3:15-cv-567, 2015 WL 5071981 (M.D. La. Sept. 3, 2015) (accepting a settlement prohibiting use of a secured monetary bond to hold misdemeanor arrestees in jail who cannot afford the bond). The Department of Justice has also recently issued statements challenging the use of bail practices that do not take into consideration the ability to pay and alternative methods of ensuring appearance at trial. See Brief for the United States as Amicus Curiae at 18, *Maurice Walker v. City of Calhoun*, 682 Fed. App’x 721 (11th Cir. 2017) (No. 16-10521-HH), 2016 WL 4417421 (arguing that fixed bail schedules “that allow for the pretrial release of only those who can pay, without accounting for ability to pay and alternative methods of assuring future appearance, do not provide for such individualized determinations, and therefore unlawfully discriminate based on indigence”). In February 2015, the Department also filed a statement of interest (SOI) arguing that bail practices that incarcerate indigent individuals before trial solely because of their inability to pay for their release violates the Fourteenth Amendment. See Press Release, Dep’t of Justice, Department of Justice Files Statement of Interest in Clanton, Alabama Bond Case (Feb. 13, 2015), <https://www.justice.gov/opa/pr/department-justice-files-statement-interest-clanton-alabama-bond-case>.

<sup>227</sup> For example, see the “No Money Bail Act of 2016,” a bail reform bill that seeks to eliminate the use of money bail on the basis that no one should be held in jail solely because of the inability to pay bail. Press Release, Congressman Ted W. Lieu, Congressman Ted W. Lieu Introduces the “No Money Bail Act of 2016” (Feb. 24, 2016), <https://lieu.house.gov/media-center/press-releases/congressman-ted-w-lieu-introduces-no-money-bail-act-2016-0>.

non-money bail (or simple release) versus money bail. Analogous to before, a welfare-maximizing social planner assesses whether the benefits of money bail exceed the costs of money bail relative to non-money bail for each defendant.

What are the possible costs to money bail? For one, assigning money bail rather than simply releasing a defendant on non-money bail imposes the very same social and private costs associated with detention, as previously described, for defendants who are unable to pay. In addition, for defendants who are able to post bail and secure release, either directly or through a bondsman, the assignment of money bail may impose financial hardships.<sup>228</sup> For instance, if a defendant who secures release is found to have violated a condition of release, he or she is then liable for the full bail amount, which may affect a defendant's ability to satisfy other financial obligations. Furthermore, if a defendant is unable to pay the full judgment on a release violation, the court may issue a judgment for a bond default, which may appear in credit reports, potentially affecting access to future credit and even employment.<sup>229</sup> Another potential cost of money bail is increased inequality along socioeconomic lines if defendants with fewer financial resources are less likely able to post bail and thus more likely to be detained before trial.

On the other hand, money bail may yield some benefits relative to alternatives like release with no conditions. First, defendants unable to pay money bail are detained before trial, likely reducing new crime and pre-trial flight. Second, unlike simple release, money bail may be beneficial if, conditional on posting bail, money bail incentivizes defendants to abide by release conditions. For example, if released defendants assigned money bail are more likely to appear at required court appearances because they do not want to forfeit any

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<sup>228</sup> The bail industry has faced substantial scrutiny since the 1960s, with various organizations like the American Bar Association recommending that the industry be abolished. It is estimated that over 14,000 commercial bail agents operate nationwide to secure the release of more than two million defendants each year. COHEN & REAVES, *supra* note 122, at 4 (citing the Professional Bail Agents of the United States). Regulation of bail agents varies by state, with four states (Illinois, Kentucky, Oregon, and Wisconsin) fully banning the use of commercial bondsmen. Generally, bail bondsmen post the deposit for any money bail and are liable for the full monetary amount if the defendant forfeits the bond, creating incentives for bondsmen to monitor their clients. *Id.*

<sup>229</sup> See John Gibeaut, *Get Out of Jail—But Not Free: Courts Scramble to Fill Their Coffers by Billing Ex-Cons*, ABA J., [http://www.abajournal.com/magazine/article/get\\_out\\_of\\_jailbut\\_not\\_free\\_courts\\_scramble\\_to\\_fill\\_their\\_coffers\\_by\\_billin](http://www.abajournal.com/magazine/article/get_out_of_jailbut_not_free_courts_scramble_to_fill_their_coffers_by_billin) (July 1, 2012) (“Non-payment of court fees in some states can mean loss of one’s driver’s license or denial of public benefits, such as housing assistance. Or it can inflict damage on credit reports so severe that employers and landlords who use them as background checks may think twice about hiring or renting to an ex-offender.”).

bail deposit already paid, the use of financial conditions may increase social welfare by reducing court delays and government expenditures spent to track down failures to appear.

Recently, some scholars have concluded that money bail is not cost-justified.<sup>230</sup> For example, some researchers have highlighted the large potential costs imposed by money bail and argue that the benefits are minimal, noting that the difference in pre-trial misconduct rates between defendants released on recognizance (without conditions) and those released on money bail are fairly small, such that “the system tolerates a relatively high level of failure as compared to the alternative of jailing all individuals, which would guarantee nearly perfect appearance rates.”<sup>231</sup>

But the conclusion that the money bail system is unjustified from a cost-benefit perspective is premature. First, without measuring the benefits of money bail and comparing them against the costs of money bail, one cannot definitively state that money bail is not cost-effective. For instance, even if pre-trial misconduct rates are only modestly lowered with money bail, if the quantifiable social costs associated with new crime and flight are large, it is conceivable that the expected benefits of money bail are non-trivial. Second, past conclusions rely on studies based on simple comparisons of misconduct rates between defendants who are released on recognizance and those released with some sort of money bail.<sup>232</sup> These studies are almost surely biased because defendants released on recognizance and those released on money bail likely differ in important dimensions, such as risk. For example, an oft-cited statistic is that, in a sample of released felony defendants across the 75 largest U.S. counties, 34% of defendants released on recognizance engaged in some form of pre-trial misconduct, such as being rearrested or failing to appear in court.<sup>233</sup> In contrast, approximately 30% of defendants who were required to post money bail directly or indirectly through a surety engaged in pre-trial misconduct.<sup>234</sup> These statistics have been employed to argue that

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<sup>230</sup> See Wiseman, *supra* note 42, at 1361 (stating that “neither effectiveness nor a lack of alternatives justifies” money bail).

<sup>231</sup> See *id.* at 1361–62. Similarly, the American Bar Association, which generates standards for pre-trial practices, “flatly rejects the practice of setting bail amounts according to a fixed bail schedule based on charge,” stating that “[t]he practice . . . leads inevitably to the detention of some persons who would be good risks but are simply too poor to post the amount required by the bail schedule. They also enable the unsupervised release of more affluent defendants who may present real risks of flight or dangerousness.” STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE intro. at 29–30, § 10-5.3(e) cmt. at 113 (AM. BAR ASS’N 2007).

<sup>232</sup> See, e.g., COHEN & REAVES, *supra* note 122, at 9–10 tbl.7.

<sup>233</sup> See *id.* at 9.

<sup>234</sup> See *id.*

money bail is not particularly effective at reducing pre-trial misconduct among released defendants.<sup>235</sup> But defendants assigned and released on money bail are likely higher risk than defendants released on recognizance. As a result, these simple comparisons do not tell policy-makers the real parameter of interest—the causal estimate of the impact of money bail on pre-trial misconduct.

Ideally, one would want to compare misconduct rates across similar defendants—one randomly assigned non-money bail and one randomly assigned money bail. Indeed, recent evidence exploiting this type of quasi-random variation to estimate causal effects finds stronger evidence that money bail reduces pre-trial misconduct compared to past cross-sectional research. In some jurisdictions, the marginal defendant assigned money bail is less likely to fail to appear and less likely to be re-arrested compared to a defendant assigned non-money bail, mostly because defendants assigned money bail are substantially less likely to secure release.<sup>236</sup> Studies of the bail bonding industry yield similar conclusions: that higher bail amounts do deter pre-trial flight.<sup>237</sup> These results highlight the important point that while money bail is likely costly, it also has potentially non-negligible social benefits, emphasizing the need for a cost-benefit analysis.

### B. *Electronic Monitoring*

I next apply the conceptual framework to the more recent use of electronic monitoring, which has been utilized as an alternative to pre-trial detention in the United States and Europe since the 1980s.<sup>238</sup> While electronic monitoring is a generic term that encompasses many release options, broadly speaking, electronic monitoring uses some form of radio or GPS device to track a defendant's movement, and is often combined with other conditions, such as curfew or home confinement.<sup>239</sup>

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<sup>235</sup> See Wiseman, *supra* note 42, at 1361 (citing Cohen & Reaves for the proposition that a “non-negligible percentage of defendants flee despite having posted large bonds”).

<sup>236</sup> Dobbie et al., *supra* note 8, at 31.

<sup>237</sup> See Ayres & Waldfogel, *supra* note 204, at 1015 (discussing the deterrence effect of rate schedules on people of color).

<sup>238</sup> See Wiseman, *supra* note 42, at 1364; Mike Nellis, *Surveillance and Confinement: Explaining and Understanding the Experience of Electronically Monitored Curfews*, 1 EUR. J. PROB. 41, 41 (2009) (noting its spread to Canada and Australia); see also George Mair, *Electronic Monitoring in England and Wales: Evidence-Based or Not?*, 5 CRIM. JUST. 257, 259, 262 (2005) (describing use in Israel, Singapore, and New Zealand). In Europe, the use of electronic monitoring was initially motivated by the problem of prison overcrowding. See Stephen J. Fay, *Electronically Monitored Justice: A Consideration of Recent Evidence as to Its Effectiveness*, 24 ANGLO-AM. L. REV. 397, 402 (1995).

<sup>239</sup> Wiseman, *supra* note 42, at 1365–67.

Within the United States, the first jurisdiction to test a home detention program that utilized electronic monitoring equipment was Palm Beach County, Florida in 1984.<sup>240</sup> Over the next several years, the use of electronic monitoring rapidly increased, with more than 12,000 individuals being monitored in almost every state across the United States by early 1990.<sup>241</sup> While electronic monitoring was initially used primarily for convicted defendants as an alternative to imprisonment, during the 1980s, jurisdictions also began to experiment with using electronic monitoring explicitly as an alternative to pre-trial detention. For example, during this time, Marion County, Indiana began proscribing electronic monitoring for those who could not pay their bail and those that did not qualify for release on recognizance.<sup>242</sup>

Today, there are two broad types of electronic monitoring used in the United States: passive and active. Passive electronic monitoring downloads information about a defendant's whereabouts a couple times every 24 hours.<sup>243</sup> Passive monitoring is often used in conjunction with other conditions of release, such as home confinement, and is primarily used to enforce the conditions of release.<sup>244</sup> Active electronic monitoring, on the other hand, uses a cellular communications network to provide continuous information throughout the day, allowing pre-trial services officers to detect or even prevent release violations.<sup>245</sup> In recent years, active electronic monitoring has been made easier by the advent of GPS satellite tracking devices.<sup>246</sup> As many have pointed out, active systems offer distinct advantages to passive systems: Continuous tracking allows government officials to

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<sup>240</sup> While electronic monitoring was not used in an entire jurisdiction until 1984, there are reports of its use by an individual judge in New Mexico in 1964. See J.M. Robert Lilly & Richard A. Ball, *A Brief History of House Arrest and Electronic Monitoring*, 13 N. Ky. L. REV. 343, 362 (1987).

<sup>241</sup> See Terry L. Baumer, Michael G. Maxfield & Robert I. Mendelsohn, *A Comparative Analysis of Three Electronically Monitored Home Detention Programs*, 10 JUST. Q. 121, 122 (1993); see also Annesley K. Schmidt, *The Use of Electronic Monitoring by Criminal Justice Agencies in the United States 1988*, in THE ELECTRONIC MONITORING OF OFFENDERS 9, 10, 15 (Ken Russell & J. Robert Lilly eds., 1989) (noting that by 1988, thirty-two states had implemented electronic monitoring programs that followed 2300 people, although only 4.6% of them were pre-trial detainees or defendants awaiting an appeal).

<sup>242</sup> See Wiseman, *supra* note 42, at 1365.

<sup>243</sup> Alexis Causey, *Reviving the Carefully Limited Exception: From Jail to GPS Bail*, 5 FAULKNER L. REV. 59, 100 (2013) (describing the difference between passive and active electronic monitoring systems).

<sup>244</sup> See Wiseman, *supra* note 42, at 1365–67 (describing the current electronic monitoring process in the United States and Europe).

<sup>245</sup> See Causey, *supra* note 243, at 100.

<sup>246</sup> See Wiseman, *supra* note 42, at 1367–68 (describing the use of GPS satellite tracking in various U.S. jurisdictions).

deter flight as it is happening and locate fugitives sooner,<sup>247</sup> and if used independently of other release conditions such as home confinement, active tracking can be less restrictive on defendants awaiting trial. However, active monitoring is limited by the fact that it depends on the availability of a cellular network.<sup>248</sup>

The promise of electronic monitoring has led to its use in some form within many states, although the criteria for implementing electronic monitoring as a viable method of pre-trial monitoring vary across states, with some states utilizing electronic monitoring on its own, while others use it in combination with house arrest.<sup>249</sup> Nevertheless, the use of electronic monitoring is expected to become even more widespread as an alternative to pre-trial detention in the near future, both in the United States and abroad.<sup>250</sup> For example, Belgium is currently investigating whether electronic monitoring could supplant or replace pre-trial detention altogether and serve as a solution to prison overcrowding.<sup>251</sup>

As jurisdictions consider whether electronic monitoring should be used as an alternative to pre-trial detention and how it should be applied, the conceptual framework developed in Parts II and III can provide a helpful guide. To illustrate, recall that the original conceptual framework allowed for two options: release or detention. Now suppose that the social planner has a third, intermediate option of electronic monitoring, and in assessing whether to impose electronic monitoring, considers how the costs and benefits of electronic monitoring compare to the costs and benefits of pre-trial detention, relative to release with no conditions.

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<sup>247</sup> See OFFICE OF JUSTICE PROGRAMS, U.S. DEP'T OF JUSTICE, ELECTRONIC MONITORING REDUCES RECIDIVISM 2 (2011), <https://www.ncjrs.gov/pdffiles1/nij/234460.pdf> (finding GPS monitoring more effective than radio monitoring in reducing misconduct rates for released felons).

<sup>248</sup> Wiseman, *supra* note 42, at 1368.

<sup>249</sup> See Blair T. Jackson, *Shackles Before Sentencing: The Global Positioning System as a Means of Pretrial Restraint*, 3 FAULKNER L. REV. 17, 23–28 (2011) (comparing statutes in Alabama, Oklahoma, and Arizona).

<sup>250</sup> In the United States, the number of individuals monitored through electronic monitoring has more than doubled in the past ten years. See *Use of Electronic Offender-Tracking Devices Expands Sharply*, PEW CHARITABLE TR. (Sept. 7, 2016), <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/09/use-of-electronic-offender-tracking-devices-expands-sharply>.

<sup>251</sup> See Eric Maes, et al., *Thinking About Electronic Monitoring in the Context of Pre-trial Detention in Belgium: A Solution to Prison Overcrowding?*, 4 EUR. J. PROB. 3 (2012) (reporting results of research on the possible use of electronic monitoring to reduce prison overpopulation); Eric Maes & Benjamin Mine, *Some Reflections on the Possible Introduction of Electronic Monitoring as an Alternative to Pre-trial Detention in Belgium*, 52 HOW. J. CRIM. JUST. 144, 145–46 (2013) (discussing the impact of introducing electronic monitoring rather than pre-trial detention to address overcrowding).

How might the relative benefits and costs compare? In terms of benefits, recall that pre-trial detention creates social benefits by reducing flight and pre-trial crime through incapacitation of offenders. How do these preventive benefits stemming from detention compare to the benefits that might arise from electronic monitoring? Most likely, the preventive benefits of electronic monitoring are smaller than the preventive benefits stemming from detention. After all, defendants released on electronic monitoring cannot be fully incapacitated, potentially leading to greater pre-trial misconduct.

Unfortunately, there has been relatively little rigorous empirical work testing the causal impact of electronic monitoring on pre-trial misconduct.<sup>252</sup> For instance, in a well-known study, Timothy Cadigan compares the failure to appear and re-arrest rates for federal defendants placed on electronic monitoring and finds generally higher misconduct rates among these defendants compared to national averages of defendants released with no conditions—a finding which a policymaker might naively interpret as evidence that electronic monitoring is ineffective at reducing pre-trial misconduct.<sup>253</sup> But Cadigan rightfully notes that these comparisons are not definitive proof that electronic monitoring does or does not work because the differences in the populations being compared are substantial.<sup>254</sup> That is, defendants placed on electronic monitoring are greater risks of flight and/or danger than defendants released with no conditions, which can lead to an underestimate of the effectiveness of electronic monitoring relative to release when making simple comparisons.<sup>255</sup> In another study, the Department of Justice used administrative data from the Florida Department of Corrections and compared the pre-trial misconduct rates of offenders placed into electronic monitoring and those not placed in electronic monitoring.<sup>256</sup> Controlling for many observable characteristics, the study concludes that electronic monitoring reduces defendants' probabilities of failure by 31 percent, with larger results

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<sup>252</sup> Wiseman, *supra* note 42, at 1368 (“Of course, the effectiveness of any given monitoring program at reducing flight risk is an empirical question, and while, as discussed below, existing technology shows promise, no conclusive empirical evidence of effectiveness currently exists (and with respect to future innovations, obviously cannot.)”); see also WILLIAM BALES ET AL., A QUANTITATIVE AND QUALITATIVE ASSESSMENT OF ELECTRONIC MONITORING 5 (2010), <https://www.ncjrs.gov/pdffiles1/nij/grants/230530.pdf> (noting that with respect to electronic monitoring, “in terms of scientifically-based outcome evaluation studies, the available studies have not kept pace with the increasing use of this new control technology”).

<sup>253</sup> Timothy P. Cadigan, *Electronic Monitoring in Federal Pretrial Release*, 55 FED. PROB. 26, 29 (1991).

<sup>254</sup> *Id.* at 29–30.

<sup>255</sup> *Id.* at 30.

<sup>256</sup> BALES ET AL., *supra* note 252, at 2.

for defendants assigned to GPS monitoring compared to radio frequency monitoring.<sup>257</sup> These results suggest that certain forms of more active electronic monitoring technologies may prevent many instances of pre-trial misconduct, albeit likely not as effectively as pre-trial detention. However, this study is unable to account for selection on unobservable factors between defendants who receive electronic monitoring and those who do not, and thus does not provide us with a causal estimate of the impact of electronic monitoring on pre-trial misconduct.

Nevertheless, there is reason to be cautiously optimistic about the welfare gains that might be generated from the use of electronic monitoring. The promise of this technology lies in its ability to reduce social and private costs relative to pre-trial detention. First, electronic monitoring imposes smaller costs on society than detaining individuals.<sup>258</sup> Compared to the marginal daily cost of housing a detainee, which ranges between \$15 and \$25 per day,<sup>259</sup> the costs of electronic monitoring are substantially lower, with active systems ranging between \$2.77 and \$9.04 and passive systems ranging between \$2.47 and \$3.03.<sup>260</sup> If anything, the costs of electronic monitoring will likely decrease over time with the advent of technological improvements.<sup>261</sup> Second, in addition to smaller social costs,<sup>262</sup> the private costs to defendants under electronic monitoring are also likely to be substan-

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<sup>257</sup> *Id.* at 58.

<sup>258</sup> For example, with respect to an early form of electronic monitoring used in Marion County, Indiana during the 1980s, scholars noted that “awaiting trial at home is less restrictive than confinement in jail” and that the program allowed “offenders to maintain employment and ties to their families.” Michael G. Maxfield & Terry L. Baumer, *Home Detention with Electronic Monitoring: Comparing Pretrial and Postconviction Programs*, 36 *CRIME & DELINQ.* 521, 523 (1990).

<sup>259</sup> See *supra* note 117 and accompanying text.

<sup>260</sup> See Cadigan, *supra* note 253, at 29.

<sup>261</sup> See Wiseman, *supra* note 42, at 1373.

<sup>262</sup> One qualification is that while the administrative cost of electronic monitoring is likely to be lower than that of detention, the burden of costs may yield distributional consequences. According to one study, states like Georgia, Arkansas, Colorado, Washington, and Pennsylvania contract with private, for-profit companies that require individuals to pay for their own tracking in order to secure release. Eric Markowitz, *Chain Gang 2.0: If You Can't Afford this GPS Ankle Bracelet, You Get Thrown in Jail*, *INT'L BUS. TIMES* (Sept. 21, 2015, 7:55 AM), <http://www.ibtimes.com/chain-gang-20-if-you-cant-afford-gps-ankle-bracelet-you-get-thrown-jail-2065283>. For example, companies like Offender Management Services (OMS) charge offenders fees of \$9.25 per day and an initial setup fee of \$179.50 in order to secure release. *Id.* As one public defender has noted, “[p]eople are pleading guilty because it’s cheaper to be on probation than it is to be on electronic monitoring. . . . It’s a newfangled debtors’ prison.” *Id.*; see also Joseph Shapiro, *As Court Fees Rise, the Poor Are Paying the Price*, *NPR* (May 19, 2014, 4:02 PM) <http://www.npr.org/2014/05/19/312158516/increasing-court-fees-punish-the-poor> (noting that electronic monitoring, aimed at helping people avoid jail time, is only available for those who can afford it).

tially lower relative to the costs imposed by pre-trial detention. Defendants who are released on electronic monitoring may be less likely to plead guilty, reducing the likelihood of wrongful conviction and incarceration. In addition, electronic monitoring programs may allow defendants to maintain or seek employment, unlike pre-trial detention, which completely incapacitates defendants. Finally, electronic monitoring may also reduce future crime compared to pre-trial detention to the extent that prison is criminogenic.<sup>263</sup>

While electronic monitoring likely lowers these aforementioned costs compared to pre-trial detention, one critique of electronic monitoring has been its implications on privacy and the increased risk of government surveillance.<sup>264</sup> Indeed, the Supreme Court has stated that some forms of electronic monitoring are searches protected by the Fourth Amendment,<sup>265</sup> and several federal courts have found that the mandatory imposition of electronic monitoring for certain offenses is unconstitutional.<sup>266</sup>

However, short of constitutional violations, the privacy implications of electronic monitoring are not fatal to its use if the objective is to maximize social welfare, at least in the context of bail. First, as others have noted, defendants would almost certainly prefer electronic monitoring over pre-trial detention, which is arguably much

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<sup>263</sup> Indeed, one quasi-experimental study of electronic monitoring in Argentina suggests that electronic monitoring is welfare improving relative to incarceration. Rafael Di Tella & Ernesto Schargrofsky, *Criminal Recidivism After Prison and Electronic Monitoring*, 121 J. POL. ECON. 23, 64–67 (2013). Using the random assignment of defendants to judges who differ in their use of electronic monitoring versus detention, the authors find that electronic monitoring substantially reduces recidivism relative to prison. *Id.* at 69.

<sup>264</sup> See Wiseman, *supra* note 42, at 1375–80 (discussing the privacy implications of electronic monitoring); see also Maes & Mine, *supra* note 251, at 150–57 (arguing that electronic monitoring is costly and raises a host of legal issues, privacy concerns, and execution challenges).

<sup>265</sup> See, e.g., *Grady v. North Carolina*, 135 S. Ct. 1368, 1370 (2015) (per curiam) (“[A] State . . . conducts a search when it attaches a device to a person’s body, without consent, for the purpose of tracking that individual’s movements.”); *United States v. Jones*, 565 U.S. 400, 415 (2012) (Sotomayor, J., concurring) (“In cases involving even short-term monitoring, some unique attributes of GPS surveillance . . . will require particular attention.”).

<sup>266</sup> See *United States v. Polouizzi*, 697 F. Supp. 2d 381, 389 (E.D.N.Y. 2010) (“Required wearing of an electronic bracelet, every minute of every day, with the government capable of tracking a person not yet convicted as if he were a feral animal would be considered a serious limitation on freedom by most liberty-loving Americans.”); see also *United States v. Karper*, 847 F. Supp. 2d 350, 354, 364 (N.D.N.Y. 2011) (finding that mandatory electronic monitoring conditions on defendants accused of certain sex offenses violates due process and constitutes excessive bail). *But see United States v. Gardner*, 523 F. Supp. 2d 1025, 1034, 1036 (N.D. Cal. 2007) (rejecting due process and excessive bail challenges to mandatory electronic monitoring).

more invasive than monitoring.<sup>267</sup> Second, the relevant question is not whether electronic monitoring imposes any costs, as implicated by reduced privacy and potential net-widening (which it probably does), but whether these costs are large enough such that physically incarcerating people in jail prior to trial is a better and more justified option.<sup>268</sup>

For example, to illustrate, consider again a simple, stylized numerical example, where a social planner is deciding between electronic monitoring or pre-trial detention, versus pure release. In this example, the total benefits and total costs of electronic monitoring are lower than the benefits and costs of pre-trial detention, to reflect the fact that electronic monitoring is most likely less effective at completely preventing pre-trial misconduct, but also imposes lower social and private costs than imprisoning someone before trial.

#### EXAMPLE 6

	Benefit	Cost	Net Benefits	Optimal Decision
High-Risk N=10				
Detention	100	70	30	Detention
Electronic Monitoring	60	40	20	
Medium-Risk N=60				
Detention	50	50	0	Electronic Monitoring
Electronic Monitoring	40	30	10	
Low-Risk N=30				
Detention	40	50	-10	Release
Electronic Monitoring	20	25	-5	

In this hypothetical, the optimal decision is to detain high-risk individuals because the net benefits of detention are higher than the

<sup>267</sup> Wiseman, *supra* note 42, at 1375–76 (noting how even if privacy is the sole criterion, the degree of invasiveness is likely higher in prison); Brian K. Payne & Randy R. Gainey, *The Electronic Monitoring of Offenders Released from Jail or Prison: Safety, Control, and Comparisons to the Incarceration Experience*, 84 PRISON J. 413, 420–21 (2004) (finding that offenders found electronic monitoring sanctions to not be overly punitive); CRIMINAL JUSTICE POLICY PROGRAM, HARVARD LAW SCH., MOVING BEYOND MONEY: A PRIMER ON BAIL REFORM 18 (2016), <http://cjpp.law.harvard.edu/assets/FINAL-Primer-on-Bail-Reform.pdf> (“Ultimately, the invasiveness of electronic monitoring will almost always be less severe than detention, so these constitutional considerations should not lead jurisdictions to conclude that electronic monitoring is unavailable as an alternative to incarceration.”).

<sup>268</sup> See Wiseman, *supra* note 42, at 1380 (“Orwellian fears about monitoring—however well justified elsewhere—are not as strong in the context of its use as a substitute for pretrial detention for failure to post bond. From the perspective of the defendant who would otherwise sit in jail, the privacy and liberty gains are immense.”).

net benefits of electronic monitoring, to use electronic monitoring for medium-risk defendants, and to release low-risk defendants with no conditions. In fact, by allowing for electronic monitoring as a third option, social welfare is increased relative to a world in which pre-trial detention is the only option.

Ultimately, the case for or against the use of electronic monitoring as an alternative to pre-trial detention is still inconclusive. Much remains to be done in terms of rigorously evaluating both the costs and benefits of electronic monitoring and until then, a cost-benefit analysis of electronic monitoring is largely speculative. Yet, for the reasons described above, electronic monitoring holds potential as a viable, politically feasible, and welfare-increasing alternative to pre-trial detention.<sup>269</sup>

### C. Risk-Assessment Tools

Another policy that has received substantial attention in recent debates is the use of risk-assessment instruments, data-driven mechanisms that claim to “accurately sort defendants into categories showing their likelihood of having a successful pretrial release.”<sup>270</sup> In the context of bail, the risk level assigned to a particular defendant can help determine whether he or she should be released or detained, and aids in the assignment of appropriate release conditions such as pre-trial supervision. Unlike electronic monitoring, a risk-assessment instrument is not an alternative to pre-trial detention in and of itself.<sup>271</sup> Instead, it can be thought of as a tool or supplement that might aid judges in deciding which individuals should be detained versus released.<sup>272</sup>

The use of pre-trial risk-assessment tools in the United States has its origins in the Manhattan Bail Project.<sup>273</sup> The model associated with

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<sup>269</sup> One known randomized control trial conducted by SPEC Associates found that electronic monitoring was effective at reducing parole violations for parolees relative to a control group. However, the study assessed the use of post-conviction monitoring, rather than pre-trial monitoring, and involved only 77 defendants, making the results difficult to generalize. See BALES ET AL., *supra* note 252, at 8–10 (discussing the study).

<sup>270</sup> PRETRIAL JUSTICE INST., PRETRIAL RISK ASSESSMENT: SCIENCE PROVIDES GUIDANCE ON ASSESSING DEFENDANTS, ISSUE BRIEF 2 (2015) [hereinafter ISSUE BRIEF], [http://www.pretrial.org/download/advocacy/Issue%20Brief-Pretrial%20Risk%20Assessment%20\(May%202015\).pdf](http://www.pretrial.org/download/advocacy/Issue%20Brief-Pretrial%20Risk%20Assessment%20(May%202015).pdf).

<sup>271</sup> See *id.*

<sup>272</sup> For a discussion of the potential concerns with risk-assessment instruments, see Megan Stevenson & Sandra G. Mayson, *Bail Reform: New Directions for Pretrial Detention and Release*, U. PA. FAC. SCHOLARSHIP, Mar. 13, 2017, at 11–15, [http://scholarship.law.upenn.edu/faculty\\_scholarship/1745](http://scholarship.law.upenn.edu/faculty_scholarship/1745).

<sup>273</sup> CYNTHIA A. MAMALIAN, PRETRIAL JUSTICE INST., STATE OF THE SCIENCE OF PRETRIAL RISK ASSESSMENT 19 (2011), <https://www.pretrial.org/download/risk-assessment/>

the project, created by the Vera Institute, used a point scale based on the strength of defendants' family and community ties, and reflected the notion that defendants with sufficient familial and community ties would be more likely to reappear at court, and thus should be recommended for release without monetary conditions.<sup>274</sup> In the decades that followed, many jurisdictions developed their own pre-trial risk-assessment instruments, but only some are empirically validated such that they are tested using real data.<sup>275</sup> Today, approximately ten percent of all courts use a risk-assessment instrument at the pre-trial stage, including several states and the federal government.<sup>276</sup> While the goal of each of these tools is to predict which defendants are at a high risk of engaging in pre-trial misconduct, the instruments differ in the factors they use to predict risk, although common factors include pending charges and previous convictions.<sup>277</sup>

In 2015, the Laura and John Arnold Foundation launched its own risk-assessment instrument, the "Public Safety Assessment" (PSA), which has since been implemented in over 30 jurisdictions.<sup>278</sup> Unprecedented in its scale, the PSA uses data on over 1.5 million cases drawn from over 300 jurisdictions and was created to address the concern that "too many low- and moderate-level offenders were being needlessly detained before trial."<sup>279</sup> The instrument differentiates between

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PJI%20State%20of%20the%20Science%20Pretrial%20Risk%20Assessment%20(2011).pdf (noting the progress made in pre-trial risk assessment since the Manhattan Bail Project).

<sup>274</sup> *Id.*

<sup>275</sup> *See id.* at 20 (finding that based on a survey of pre-trial release programs, 48 percent of pre-trial programs have never validated their instruments).

<sup>276</sup> *See* JAMES AUSTIN ET AL., JFA INST., FLORIDA PRETRIAL RISK ASSESSMENT INSTRUMENT (2012), [https://www.pretrial.org/download/risk-assessment/FL%20Pretrial%20Risk%20Assessment%20Report%20\(2012\).pdf](https://www.pretrial.org/download/risk-assessment/FL%20Pretrial%20Risk%20Assessment%20Report%20(2012).pdf) (describing Florida's pretrial risk assessment program); JAMES AUSTIN, ROGER OCKER & AVI BHATI, JFA INST., KENTUCKY PRETRIAL RISK ASSESSMENT INSTRUMENT VALIDATION (2010), <https://www.pretrial.org/download/risk-assessment/2010%20KY%20Risk%20Assessment%20Study%20JFA.pdf> (same for Kentucky); EDWARD LATESSA ET AL., UNIV. OF CINCINNATI, CREATION AND VALIDATION OF THE OHIO RISK ASSESSMENT SYSTEM FINAL REPORT (2009), [http://www.ocjs.ohio.gov/ORAS\\_FinalReport.pdf](http://www.ocjs.ohio.gov/ORAS_FinalReport.pdf) (same for Ohio); PRETRIAL JUSTICE INST. & JFA INST., THE COLORADO PRETRIAL ASSESSMENT TOOL (CPAT) (2012), <https://www.pretrial.org/download/risk-assessment/CO%20Pretrial%20Assessment%20Tool%20Report%20Rev%20-%20PJI%202012.pdf> (same for Colorado); MARIE VANNOSTRAND & KENNETH J. ROSE, LUMINOSITY, INC., PRETRIAL RISK ASSESSMENT IN VIRGINIA (2009), <https://www.pretrial.org/download/risk-assessment/VA%20Risk%20Report%202009.pdf> (same for Virginia). The federal government implemented its Pretrial Services Risk Assessment (PTRA) tool in September 2011. *See* Timothy P. Cadigan & James L. Johnson, *The Re-validation of the Federal Pretrial Services Risk Assessment (PTRA)*, 76 FED. PROB. 3, 6 (2012).

<sup>277</sup> ISSUE BRIEF, *supra* note 270, at 3.

<sup>278</sup> *See* LAURA & JOHN ARNOLD FOUND., *supra* note 28.

<sup>279</sup> *Id.*; Andrea Roth, *Trial by Machine*, 104 GEO. L.J. 1245, 1268 (2016).

low-, moderate-, and high-risk defendants on the basis of nine factors.<sup>280</sup> Unlike many other risk-assessment instruments, the PSA removes factors that could be discriminatory, such as race, gender, level of education, socioeconomic status, and neighborhood.<sup>281</sup>

Why have these risk-assessment instruments flourished? Advocates of these risk-assessment tools argue (rightfully so) that they increase predictive accuracy in ensuring public safety. In the absence of risk-assessment tools, bail judges often use their own subjective judgments to make predictions about pre-trial success. And while they are often instructed to consider a list of relevant factors, there is little guidance on which factors are more predictive than others or the appropriate weight to give each factor, leading some to conclude that “judges would often make decisions that may have been no better (and perhaps sometimes worse) than flipping a coin.”<sup>282</sup>

In fact, empirical work suggests that judges are not detaining individuals with the highest predicted risk of re-arrest. For example, Baradaran and McIntyre find, using a sample of felony defendants, that “about half of those detained have a lower chance of being rearrested pretrial than many of the people released,” leading them to conclude that “we would be able to release 25% more defendants while decreasing pretrial crime levels” based on their statistical model.<sup>283</sup> Similarly, Ludwig et al. find, based on a similar sample of felony defendants, that predictive algorithms are superior to judges in making bail decisions. Holding the number of releases constant, they estimate that a machine algorithm could reduce pre-trial misconduct by 20 percent.<sup>284</sup>

These studies indicate that bail judges are making imperfect decisions even when they have the information necessary to make more accurate decisions, highlighting the potential benefit of predictive algorithms. Indeed, early results suggest that risk-assessment instruments substantially reduce the pre-trial detention rate and increase

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<sup>280</sup> LAURA & JOHN ARNOLD FOUND., *supra* note 28. These factors are: whether the current offense is violent; whether there is a pending charge at the time of arrest; prior misdemeanor conviction; prior felony conviction; prior violent crime conviction; age at the time of arrest; failure to appear in the last two years at a pre-trial hearing; failure to appear more than two years ago at a pre-trial hearing; and previous history of incarceration. *Id.* The fact that this tool does not rely on a defendant interview is part of what contributes to its cost effectiveness.

<sup>281</sup> *Id.*

<sup>282</sup> SCHNACKE, *supra* note 162, at 54 (noting that limited guidance to judges led to imperfect decisionmaking for pre-trial release).

<sup>283</sup> Baradaran & McIntyre, *supra* note 47, at 558.

<sup>284</sup> See *Of Prediction and Policy*, ECONOMIST (Aug. 20, 2016), <http://www.economist.com/news/finance-and-economics/21705329-governments-have-much-gain-applying-algorithms-public-policy>.

court appearances in jurisdictions that implement the tool, with no differential release rates by gender or race.<sup>285</sup> As a result, jurisdictions across the country are contemplating the use of risk-assessment tools at the pre-trial stage.<sup>286</sup> For example, in June 2016, the federal government launched the Data-Driven Justice Initiative (DDJ) with a bipartisan coalition of 67 local governments, aimed at using data-driven strategies to, among other things, “change approaches to pre-trial incarceration, so that low-risk offenders no longer stay in jail simply because they cannot afford a bond.”<sup>287</sup>

### 1. *The Missing Component*

But these instruments exclude a critical component.<sup>288</sup> Noticeably missing from risk-assessment instruments is any consideration of the costs of pre-trial detention as borne by the government, individual defendant, or third parties, and how those costs vary across defendants. These risk-assessment tools do not attempt to differentiate between defendants who may be more and less adversely impacted by pre-trial detention, despite the fact that the purported goal of these tools is to “reduce the social harm of unnecessary pretrial detention.”<sup>289</sup> Instead, the sole focus of these instruments is to predict appearance at court and the likelihood of committing new crimes while out on bail—in sum, the objective of these instruments is to ensure public safety and thus, the social benefits to pre-trial detention. Moreover, explicit in the use of risk-assessment tools is the assump-

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<sup>285</sup> Press Release, Laura & John Arnold Found., New Data: Pretrial Risk Assessment Tool Works to Reduce Crime, Increase Court Appearances (Aug. 8, 2016), <http://www.arnoldfoundation.org/new-data-pretrial-risk-assessment-tool-works-reduce-crime-increase-court-appearances/>.

<sup>286</sup> See, e.g., Shaila Dewan, *Judges Replacing Conjecture with Formula for Bail*, N.Y. TIMES (June 26, 2015), <http://www.nytimes.com/2015/06/27/us/turning-the-granting-of-bail-into-a-science.html> (discussing the Laura and John Arnold Foundation’s work to make the tool accessible to all jurisdictions).

<sup>287</sup> Press Release, White House Office of the Press Sec’y, Launching the Data-Driven Justice Initiative: Disrupting the Cycle of Incarceration, (June 30, 2016), <https://www.whitehouse.gov/the-press-office/2016/06/30/fact-sheet-launching-data-driven-justice-initiative-disrupting-cycle>.

<sup>288</sup> Risk-assessment instruments have been criticized on other valid grounds as well. See MOVING BEYOND MONEY, *supra* note 267, at 22–23 (listing various potential harms of risk-assessment instruments such as inaccuracy, lack of individualized assessment, and widening of disparities).

<sup>289</sup> See Wallace, *supra* note 216 (“Risk assessment tools provide an empirical foundation to help inform release decisions. They represent a significant breakthrough in evidence-based practices with substantial potential to reduce the social harm of unnecessary pretrial detention.”). See also SCHNACKE, *supra* note 162, at 55 (“Accordingly, the test today is whether any particular pretrial research helps judges to make an in-or-out decision so as to avoid the negative effects of pretrial detention . . . that also maintains high court appearance and public safety rates.”).

tion that judges should detain defendants with a high risk of pre-trial misconduct and release defendants with a low risk.<sup>290</sup>

But how can we be sure that detaining high-risk defendants maximizes social welfare and reduces the social harm from unnecessary pre-trial detention? In other words, can we be sure that the benefits of detaining high-risk defendants exceed the harms imposed by pre-trial detention? No, we cannot. The conceptual framework developed in Section III illustrates that in order to maximize social welfare, policy-makers must take into consideration both benefits *and* costs of pre-trial detention. By failing to take both into account, decision-makers utilizing risk-assessment instruments may be lowering social welfare, counterproductive to the stated goals of these tools.

To illustrate, consider again Example 4 from Section III:

	Benefit	Cost	Optimal Decision	Risk-Assessment Decision
High-Risk N=10	100	115	Release	Detain
Medium-Risk N=60	50	70	Release	Detain
Low-Risk N=30	40	5	Detain	Release

In this hypothetical, the optimal bail decision is to release high- and medium-risk defendants while detaining low-risk defendants. In contrast, in a risk-assessment world, judges may be instructed to release low-risk defendants, while detaining or imposing conditions on release for medium- and high-risk defendants.<sup>291</sup> As can easily be seen from this example, risk-assessment instruments may actually lower total social welfare by instructing judges to detain individuals whose lives are especially affected by pre-trial detention.

And there exists empirical evidence suggesting that the pattern of costs and benefits in this example (e.g. positively correlated costs and

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<sup>290</sup> See Sandra G. Mayson, *Bail Reform and Restraint for Dangerousness: Are Defendants a Special Case?*, YALE L.J. (forthcoming 2017) (“The core reform goal is to untether pretrial detention from wealth and tie it directly to risk. To accomplish this, a growing number of jurisdictions are adopting actuarial risk assessment tools to sort high-risk from low-risk defendants.”).

<sup>291</sup> See, e.g., LAURA & JOHN ARNOLD FOUND., RESEARCH SUMMARY, DEVELOPING A NATIONAL MODEL FOR PRETRIAL RISK ASSESSMENT 5 (2013), [http://www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF-research-summary\\_PSA-Court\\_4\\_1.pdf](http://www.arnoldfoundation.org/wp-content/uploads/2014/02/LJAF-research-summary_PSA-Court_4_1.pdf) (“When judges can easily, cheaply, and reliably quantify defendant risk, they will be much better able to identify the high-risk defendants who must be detained and the low-risk defendants who can safely be released.”).

benefits) are not impossible. For example, in my recent study, my coauthors and I found that defendants charged with drug offenses are more likely than other defendants to fail to appear in court or be rearrested prior to case disposition. These same defendants are also more likely to plead guilty and less likely to be employed in the formal sector as a result of pre-trial detention, such that these defendants are both high-risk and “high-harm.”<sup>292</sup> While far from definitive, these results simply suggest that release decisions on the basis of risk-assessment may be suboptimal.

## 2. *An Improved “Net-Benefit” Assessment Tool*

By recommending pre-trial decisions solely on the basis of risk, current risk-assessment instruments take a one-sided approach. The instruments elevate the goal of ensuring public safety to the exclusion of other well-established goals of the bail system, such as minimizing unnecessary harm to defendants. Indeed, these instruments reinforce the current and arguably misguided notion in the bail system of exclusively considering the social benefits to pre-trial detention, with no consideration paid to the private and social costs.

However, the framework of evidence-based practices can be reimagined to maximize social welfare in the bail setting. In addition to using data to predict the likelihood of pre-trial misconduct upon release, jurisdictions that choose to employ evidence-based practices could also use data to predict the likelihood of harms associated with detention. For example, data on detained defendants can be used to identify factors that are most predictive of agreed-upon harms: whether someone is wrongfully convicted, whether someone loses their home, whether someone is unable to find employment in the formal labor market, and whether someone commits crime in the future. Indeed, there is already a recognition that certain defendants are more vulnerable to a stay in jail before trial.<sup>293</sup> For example, the harms of pre-trial detention appear to be relatively larger among defendants with a limited criminal history and defendants who were employed prior to arrest, potentially because these defendants have “more to lose” prior to detention.<sup>294</sup> Other work estimating the adverse impact of post-trial incarceration finds that income and employment prior to arrest is a positive predictor of the magnitude of

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<sup>292</sup> See Dobbie et al., *supra* note 8, at 3, 55 tbl.A14.

<sup>293</sup> See Pinto, *supra* note 5 (describing the costs of bail on innocent pre-trial detainees).

<sup>294</sup> See Dobbie et al., *supra* note 8, at 26–27 (finding a larger effect with respect to formal sector attachment for defendants with no prior history in the past year and employment in the year prior to bail).

harms experienced in the formal labor market post-release.<sup>295</sup> Finally, predictive factors from a related literature on wrongful convictions can also be informative.<sup>296</sup> For instance, researchers who compared wrongful conviction cases against “near miss” cases found ten factors that were predictive of a wrongful conviction, including a younger age, a criminal history, a weak prosecution, and lying by a non-eyewitness, among others.<sup>297</sup>

How might a jurisdiction design such a data-driven tool that incorporates both costs and benefits of detention? As an initial step, jurisdictions would need to track criminal defendants and obtain information on additional outcomes of interest such as employment and housing, in addition to information on new crimes and failures to appear. Having then collected data on both costs and benefits of pre-trial detention, jurisdictions can then use econometric techniques to predict both “risk” and “harm.” One could imagine these algorithms closely tracking the structure of current risk-assessment tools. For example, jurisdictions can predict risk using information on the sample of individuals who are released before trial, and analogously, predict harm using information on the sample of individuals who are detained before trial.

One question might be whether the factors that are most predictive of “harm” may reinforce existing inequalities (e.g. by classifying offenders who have “more to lose” on the basis of certain statuses like having a job or owning a home). While an important concern, there is no reason *ex ante* to assume that existing inequalities (racial, socio-economic, or otherwise) will necessarily be exacerbated by using predictions of both “risk” and “harm” to aid in pre-trial release decisions. For one, judges may already be using factors like employment and housing status in making bail decisions, and there is good reason to believe that a more objective, evidence-based assessment of those factors can lead to more equitable outcomes. Furthermore, policymakers could always impose certain equality constraints in the construction of predictions of “harm.” For example, if one is concerned that higher-income defendants are privileged over lower-income defendants in the event of a job loss, one would easily design a risk-assessment

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<sup>295</sup> Mueller-Smith, *supra* note 91, at 30 (finding an employment loss of 46% for those earning more than \$17,500 prior to detention).

<sup>296</sup> See generally BRANDON L. GARRETT, *CONVICTING THE INNOCENT: WHERE CRIMINAL PROSECUTIONS GO WRONG* (2011) (listing predictive factors such as contaminated confessions, eyewitness misidentifications, flawed forensics, and jailhouse informants).

<sup>297</sup> Jon B. Gould et al., *Predicting Erroneous Convictions*, 99 IOWA L. REV. 471, 477 (2014).

instrument that predicted the probability of job loss per se, rather than the amount of lost income, or one could impose statutorily fixed ceilings on the amount of lost income considered.

In the end, the impact of using both “risk” and “harm” predictions on disparities in bail is an empirical question, but there is reason to be hopeful. In practice, a data-driven algorithm has tremendous promise in reducing unnecessary harms to defendants and society. For example, the most recent machine learning techniques implemented in the setting of bail, which currently only predict the risk of pre-trial misconduct, can lower jail populations and new crime rates, while simultaneously decreasing racial disparities in bail.<sup>298</sup> Machine learning techniques that predict both “risk” and “harm” may yield even larger improvements to social welfare.

Ultimately, by using data to predict both the costs and benefits of pre-trial detention for each defendant, jurisdictions could create “net-benefit” assessment tools using largely the same set-up already employed for risk-assessment tools. Moreover, there is reason to be cautiously optimistic that jurisdictions and the actors within them, including prosecutors, defense counsel, and bail judges, will be amenable to these “net-benefit” assessment tools. As discussed previously, in jurisdictions that have adopted the use of risk-assessment tools, judges are already incorporating the information provided by the risk assessments and interestingly, following recommendations to release defendants such that release rates have fallen with no subsequent rise in pre-trial misconduct. Indeed, a “net-benefit” assessment instrument may even alleviate the political and reputational pressures that bail judges face by giving judges objective recommendations that can shield their bail decisions from public scrutiny.

Importantly, however, this Article makes no strong claims about the ultimate political feasibility of this recommendation. Nor does it make any claims about how bail decisions might change if a jurisdiction were to adopt such a tool, an important question that would need to be addressed through the implementation of pilot programs before any large-scale rollout. Rather, it simply makes the conceptual point that “net-benefit” tools, by giving equal and due consideration to costs and benefits, are much more likely to result in socially optimal bail decisions, and thus ought to be considered as a possible policy alternative.

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<sup>298</sup> See Jon Kleinberg et al., *Human Decisions and Machine Predictions* 5–6 (Nat'l Bureau of Econ. Research, Working Paper No. 23,180, 2017), <http://www.nber.org/papers/w23180.pdf> (finding that algorithms are able to reduce crime rates, jail populations and racial disparities better than judges).

#### D. Evaluating Other Policy Alternatives

As I have demonstrated above, a cost-benefit framework can be useful in evaluating current bail practices, such as the use of money bail, in addition to alternatives like electronic monitoring or the adoption of risk-assessment instruments. These examples illustrate the potential of an explicit cost-benefit approach to bail policy. Even beyond the reforms mentioned in this Article, the framework can be used to assess any number of other possibilities. For example, a cost-benefit approach could be used to evaluate the use of supervised release versus pre-trial detention. Like electronic monitoring, supervised release is another intermediate option between release with no conditions and pre-trial detention.<sup>299</sup> Less discussed but potentially welfare-enhancing are steps to shorten the time from arrest to case disposition. More robust speedy trial rights, in particular for those who are detained before trial, may lower the private and social costs associated with pre-trial detention.<sup>300</sup> Indeed, the ABA recommends that speedy trial rules be designed to “distinguish between defendants in detention and defendants on pretrial release . . . [such that] time limits concerning speedy trial for detained defendants should ordinarily be shorter than the limits applicable to defendants on pretrial release.”<sup>301</sup>

Even beyond a more micro-level analysis of the bail system, a cost-benefit framework can provide guidance in examining the more systemic, macro-level changes that large-scale bail reforms can have on the criminal justice system as a whole. Specifically, with many jurisdictions now effectively eradicating the use of money bail,<sup>302</sup>

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<sup>299</sup> For example, a new program in New York City expanded the use of supervised release to reduce reliance on pre-trial detention. According to the Director of the Mayor’s Office of Criminal Justice, “Supervised release is another step towards establishing a more rational approach to bail by moving us closer to a system that assesses the risk a person poses . . . . It is a common sense approach that balances public safety and liberty by expanding the options available to judges.” See Press Release, Mayor Bill de Blasio, Mayor de Blasio Announces Citywide Rollout of \$17.8 Million Bail Alternative Program (Apr. 8, 2016), <http://www1.nyc.gov/office-of-the-mayor/news/336-16/mayor-de-blasio-citywide-rollout-17-8-million-bail-alternative-program>.

<sup>300</sup> See Spencer Woodman, *No-show Cops and Dysfunctional Courts Keep Cook County Jail Inmates Waiting Years for a Trial*, CHI. READER (Nov. 16, 2016), <http://www.chicagoreader.com/chicago/cook-county-jail-pre-trial-detention-investigation/Content?oid=24346477> (“[T]he consequences for defendants of such lengthy trial delays are severe . . . . Extended trial delays deprive defendants of their liberty for months or years as they await trial, causing them to lose jobs, incur debt, fall behind on schooling, and endure separation from loved ones.”).

<sup>301</sup> See STANDARDS FOR CRIMINAL JUSTICE: PRETRIAL RELEASE § 12-1.3 (AM. BAR ASS’N 2007).

<sup>302</sup> See Lisa W. Foderaro, *New Jersey Alters Its Bail System and Upends Legal Landscape*, N.Y. TIMES (Feb. 6, 2017), <https://www.nytimes.com/2017/02/06/nyregion/new->

researchers and policymakers can begin to evaluate how changes in the bail system affect other parts of the criminal justice process, such as the impact on crime and arrests.

### CONCLUSION

Bail reform is on the horizon and the consequences of any reform are likely extensive, as reforms to our existing bail system have the potential to affect the millions of defendants who are detained every year before trial. This Article argues that a cost-benefit framework can aid policymakers in designing a better bail system. Currently, without explicit guidance on how to weigh the competing objectives of the bail system, bail judges are left to their own heuristics and likely biases, particularly if they overlook the less visible costs of pre-trial detention to defendants, their families, and their communities. The framework in this Article stresses the importance of considering both costs and benefits of pre-trial detention, some of which are already grounded in statutory bail directives, in order to maximize social welfare. In contrast, current bail practices largely ignore private and social costs, instead recommending detention on the basis of “risk” alone, a practice that is potentially generating massive welfare losses.

The cost-benefit framework developed in this Article is also a useful tool to assess policy reforms. In light of the framework, the most promising reforms are alternatives to pre-trial detention that lower private and social costs relative to detention, while also providing some protection against flight and danger. While substantially more empirical research is needed, a preliminary assessment suggests that the use of electronic monitoring may be welfare-improving.

In contrast, the approach calls into question the use of risk-assessment instruments to increase social welfare. These instruments, while improving the accuracy of risk predictions, do nothing to predict the harms associated with pre-trial detention. As mounting evidence indicates that high-risk defendants may also be most adversely affected by a stint in pre-trial detention, I argue that jurisdictions employing evidence-based practices should estimate both costs and benefits for each defendant. In doing so, policymakers can better ensure that detention is not based solely on ensuring public safety, but gives due weight to the short- and long-term consequences of pre-trial detention on defendants and society.

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[jersey-bail-system.html?\\_r=0](#) (describing the massive overhaul of the bail system in New Jersey).

APPENDIX A  
CALCULATING JUDGE DIFFERENCES

Let  $Released_{ict}$  be an indicator for whether defendant  $i$  was released before his or her trial in court  $c$  and year  $t$ . To calculate judge differences, I residualize pre-trial release decisions after removing the effect of an exhaustive set of court-by-time fixed effects, which is denoted by:

$$Released^*_{ict} = Released_{ict} - \gamma \mathbf{X}_{ict} = Z_{ctj} + \varepsilon_{ict} \quad (5)$$

where  $\mathbf{X}_{ict}$  includes the respective court-by-time fixed effects. Given the rotation systems in both counties, I account for court-by-bail year-by-bail day of week fixed effects and court-by-bail month-by-bail day of week fixed effects. In Philadelphia, I account for additional bail-day of week-by-bail shift fixed effects. Including these exhaustive court-by-time effects effectively limits the comparison to defendants at risk of being assigned to the same set of judges. The residual release decision,  $Released^*_{ict}$ , includes my measure of judge differences  $Z_{ctj}$ , as well as idiosyncratic defendant level variation  $\varepsilon_{ict}$ .

For each case, I then use these residual bail release decisions to construct the mean decision of the assigned bail judge:

$$Z_j = \left( \frac{1}{n_j} \right) \left( \sum_{k=0}^{n_j} (Released^*_{ikt}) \right) \quad (6)$$

where  $n_j$  is the number of cases seen by judge  $j$  across all years. I calculate the mean rate across all case types (i.e. both felonies and misdemeanors) and defendants.

Because these judge measures are demeaned relative to the court-by-time fixed effects, they are centered around zero. For example, with respect to release rates, higher measures imply that the judge is more likely to release defendants before trial compared to the court average, and vice versa.