THE HAMILTON PROJECT

POLICY PROPOSAL 2019-05 | MARCH 2019

Proposals for Improving the U.S. Pretrial System

Will Dobbie and Crystal Yang

MISSION STATEMENT

The Hamilton Project seeks to advance America's promise of opportunity, prosperity, and growth.

We believe that today's increasingly competitive global economy demands public policy ideas commensurate with the challenges of the 21st Century. The Project's economic strategy reflects a judgment that long-term prosperity is best achieved by fostering economic growth and broad participation in that growth, by enhancing individual economic security, and by embracing a role for effective government in making needed public investments.

Our strategy calls for combining public investment, a secure social safety net, and fiscal discipline. In that framework, the Project puts forward innovative proposals from leading economic thinkers — based on credible evidence and experience, not ideology or doctrine — to introduce new and effective policy options into the national debate.

The Project is named after Alexander Hamilton, the nation's first Treasury Secretary, who laid the foundation for the modern American economy. Hamilton stood for sound fiscal policy, believed that broad-based opportunity for advancement would drive American economic growth, and recognized that "prudent aids and encouragements on the part of government" are necessary to enhance and guide market forces. The guiding principles of the Project remain consistent with these views.

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Proposals for Improving the U.S. Pretrial System

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MARCH 2019

This policy proposal is a proposal from the author(s). As emphasized in The Hamilton Project's original strategy paper, the Project was designed in part to provide a forum for leading thinkers across the nation to put forward innovative and potentially important economic policy ideas that share the Project's broad goals of promoting economic growth, broad-based participation in growth, and economic security. The author(s) are invited to express their own ideas in policy papers, whether or not the Project's staff or advisory council agrees with the specific proposals. This policy paper is offered in that spirit.

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Abstract

On any given day, there are approximately half a million individuals in custody awaiting trial in the United States, nearly double that of any other country. This high rate of pretrial detention has contributed to concerns regarding the effectiveness and constitutionality of the current bail system. In this paper, we review the empirical evidence documenting the costs, benefits, and distributional consequences of the current pretrial system. The available evidence suggests that there are economically large costs of pretrial detention due to the significant collateral consequences of a criminal conviction on an individual's labor market outcomes, and the criminogenic (i.e., crime-inducing) effects of pretrial detention. There are, conversely, relatively small benefits due to the low costs of apprehending defendants who fail to appear in court. The costs of pretrial detention are also disproportionately concentrated among black defendants, particularly in courts that rely on relatively inexperienced judges to make pretrial decisions.

On the basis of this evidence, we recommend two broad sets of policy proposals that can both reduce our nation's reliance on pretrial detention and improve pretrial decisions. The first set of proposals—to use behavioral nudges to decrease pretrial violations, and to move the default away from pretrial detention and cash bail for low-risk defendants—are supported by enough evidence to justify immediate nationwide implementation. The second set of proposals—to improve the pretrial decision-making process through risk assessment tools and judge decision-aids, and to provide additional information on judge performance to both judges and the general public—are supported by enough evidence to warrant pilot testing, with widespread implementation to follow if successful.

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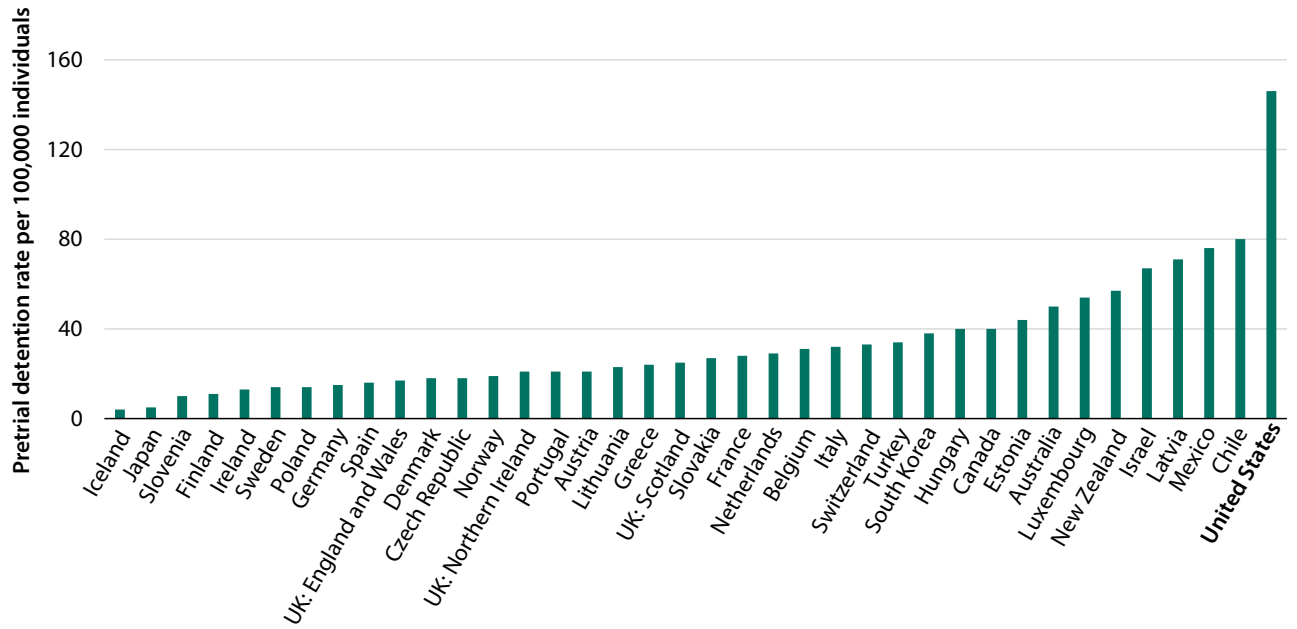
Introduction

Each year, more than 11 million individuals around the world are in prison awaiting trial. The United States leads all other countries with approximately half a million individuals detained before trial on any given day, nearly twice as many as any other country in the world (Walmsley 2016). In per capita terms, the United States detains between two and thirty-six times as many individuals before trial as other OECD countries (see figure 1; Walmsley 2016), with an estimated 65 percent of all jail inmates awaiting court action on a current charge and approximately 20 percent of the jail and prison population nationwide made up of individuals awaiting trial (Wagner and Sawyer 2018; Zeng 2018).

The high rate of pretrial detention in the United States in recent years is largely due to the increasing use of monetary or cash bail—release conditional on a financial payment—and the corresponding decreasing use of release on recognizance (ROR), a form of release conditional only on one's promise to return to the court. The share of defendants assigned monetary bail exceeded 40 percent in 2009 in the set of 40 populous U.S. counties where detailed data are available, an 11 percentage point–increase from 1990 (see figure 2; Reaves 2013). The fraction of defendants released on their own recognizance decreased by about 13 percentage points over the same period in these counties, with only 14 percent of defendants being released with no conditions in 2009. The widespread use of monetary bail directly leads to high pretrial detention rates in most jurisdictions because many defendants are unable or unwilling to pay even relatively small monetary bail amounts. In New York City, for example, an estimated 46 percent of all misdemeanor defendants and 30 percent of all felony defendants were detained prior to trial in 2013 because they were unable or unwilling to post bail set at $500 or less (New York City Criminal Justice Agency 2014).

FIGURE 1.

Pretrial Detention Rates in OECD Countries



Source: Walmsley 2016.

Note: Pretrial detention rates include all individuals who are deprived of liberty following a judicial or other legal process but who have not been definitely sentenced by a court for an offense. In almost all cases, the original data come from either the national prison administration of the country concerned, or the ministry responsible for the prison administration. The estimate for the United States excludes prison populations in overseas territories. The pretrial population rate for the Netherlands is based on data from 2013. The estimates for all other countries use data from 2014, 2015, or 2016. See Walmsley (2016) for additional details on the data and variable definitions.

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Pretrial detention and cash bail policies must balance the costs of detention, including harms to detainees, with the benefits of reducing pretrial crime and failures to appear in court. But the high rate of pretrial detention has contributed to concerns regarding the effectiveness and constitutionality of the current bail system. Critics argue that pretrial detention increases the pressure for defendants to accept unfavorable plea bargains, which can increase the risk of wrongful conviction. Critics also argue that excessive bail conditions and pretrial detention can disrupt defendants' lives, putting jobs, housing, and child custody at risks. As one defense lawyer explained to the *New York Times*

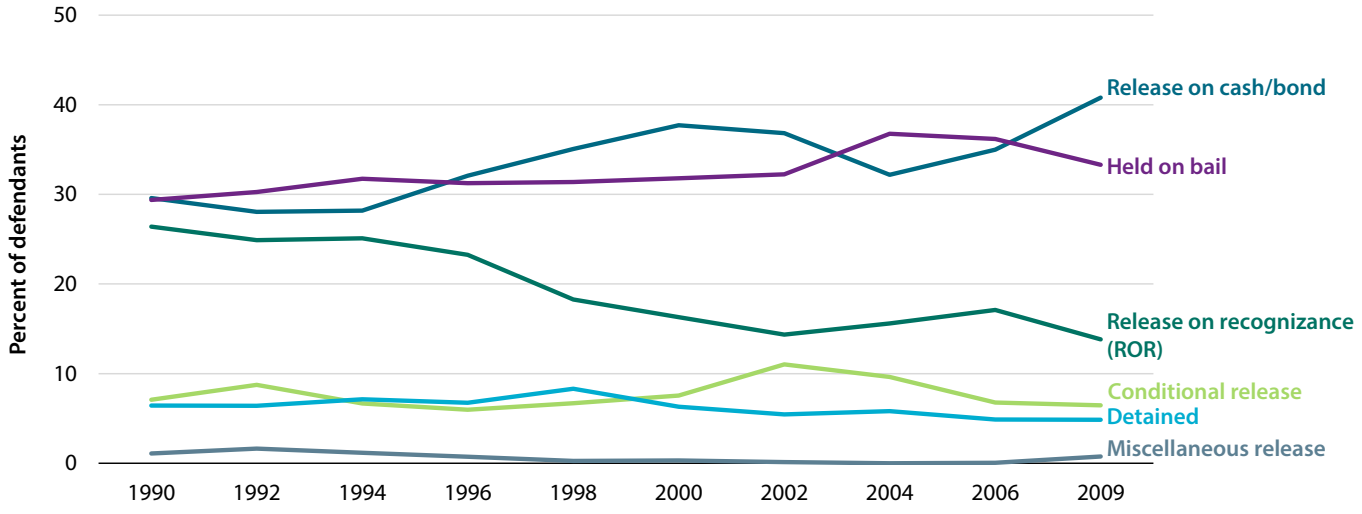
> Our clients work in service-level positions where if you're gone for a day, you lose your job. People in need of caretaking—the elderly, the young—are left without caretakers.
>
> People who live in shelters, where if they miss their curfews, they lose their housing. Folks with immigration concerns are quicker to be put on the immigration radar. So when our clients have bail set, they suffer on the inside, they worry about what's happening on the outside, and when they get out, they come back to a world that's more difficult than the already difficult situation that they were in before (Pinto 2015).

These critics also argue that many jurisdictions set bail without an adequate consideration of, and tailoring to, the defendant's ability to pay; as a result, they claim that pretrial detention is determined by a defendant's wealth, not by the defendant's risk to the community, thus exacerbating socioeconomic disparities. These concerns led the Department of Justice to recently conclude that the pretrial systems in many jurisdictions "are not only unconstitutional, but . . . also constitute bad public policy" (U.S. Department of Justice 2016).

A second set of concerns is that there are significant disparities in bail conditions and pretrial detention rates across seemingly identical defendants, both across and within jurisdictions. There are significant differences, for example, in the detention rates across U.S. counties even after accounting for demographic and charge characteristics of defendants, with counties such as Harris County in Texas and Orange County in California detaining 48 to 53 percent more defendants, respectively, than counties such as Middlesex County in New Jersey and Kings County in New York (see panel A of figure 3; Reaves 2013). There are also significant racial disparities in bail conditions and pretrial detention among seemingly similar defendants, contributing to the overrepresentation of certain demographic groups in the criminal justice system. Controlling again for observable characteristics of defendants, Harris County in Texas, for example, is 34 percent more likely to detain black defendants compared to white defendants with the same observable characteristics, while Baltimore County in Maryland is 1 percent less likely to detain black defendants compared to white defendants (see panel B of figure 3; Reaves 2013).[1]

FIGURE 2.

Share of Defendants with Various Pretrial Outcomes, 1990–2009



Source: State Court Processing Statistics, Bureau of Justice Statistics [BJS] 1990–2009; authors' calculations.

Note: Data are from the 40 largest counties in the United States. "Release on Cash/Bond" includes defendants who were released under some monetary conditions such as a surety bond, a full cash bond, a deposit bond, a property bond, an unsecured bond, or a combination of conditional release and surety bond. "Held on Bail" includes defendants who were assigned bail, but who did not post it and remained detained. "ROR," or release on recognizance, includes defendants who were released on the promise to return to court for their next scheduled hearing, with no financial liability if they fail to appear. "Conditional Release" includes defendants who were released under conditions such as monitoring or supervision. "Detained" includes defendants who were denied bail or held under another charge or for other reasons. "Miscellaneous Release" includes defendants who were released in response to a court order placing limits on a jail's population or under a type of release other than the specified above. See Reaves (2013) for additional details on the data and variable definitions.

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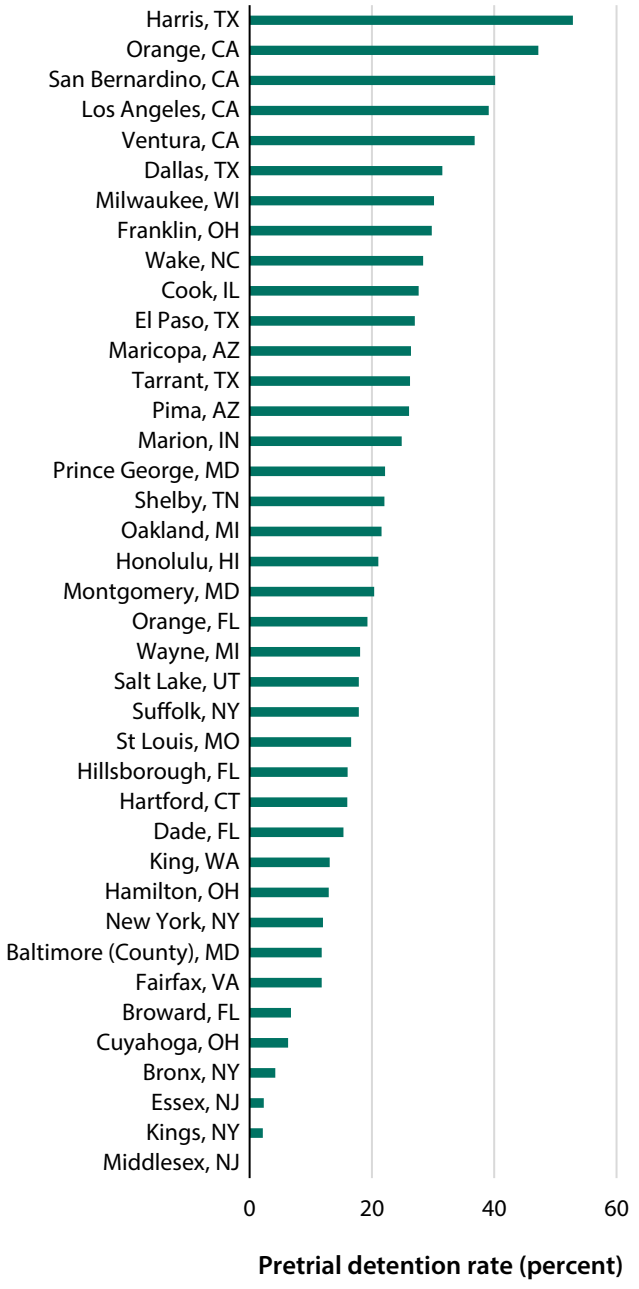
FIGURE 3A.

Unexplained Pretrial Detention Rates, by Selected County

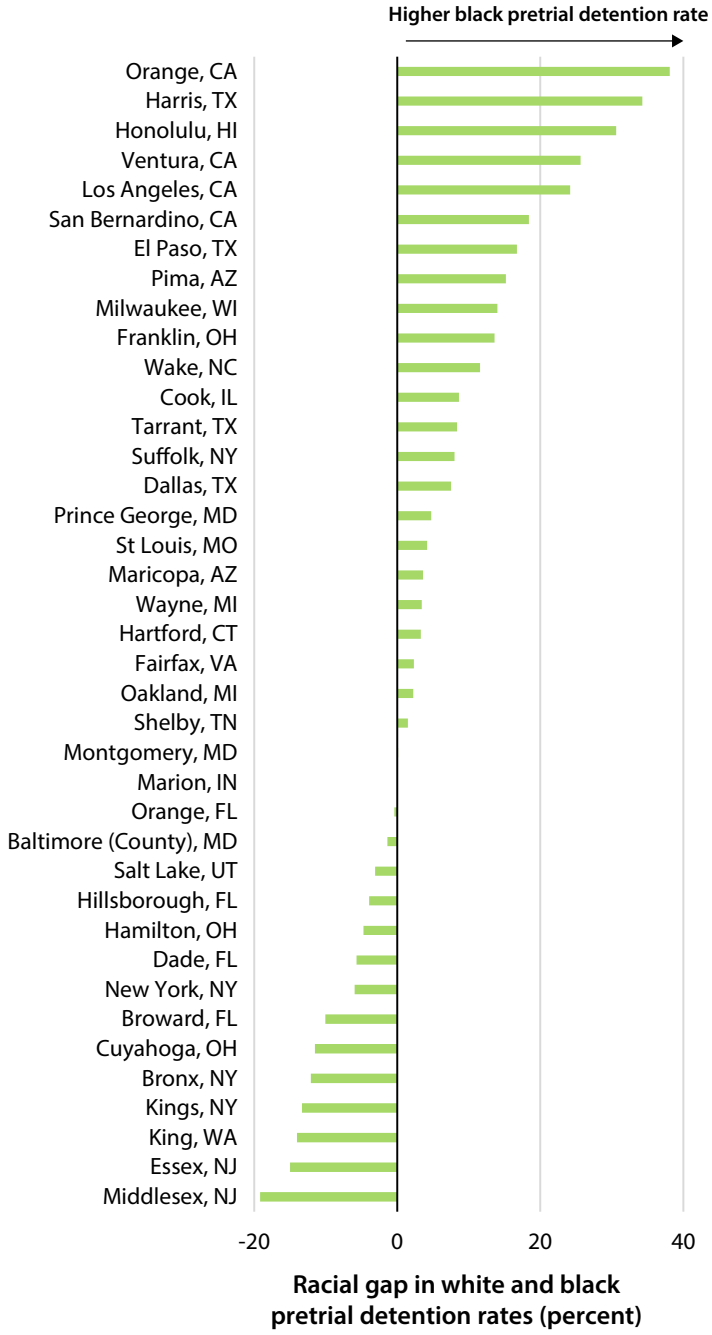


Source: State Court Processing Statistics, BJS 1990–2009; authors' calculations.

Note: Data show pretrial detention rates after controlling for defendant age, gender, most serious arrest charge type, total prior arrests, number of prior felony arrests, prior instances of failures to appear in court, total prior convictions, and the number of prior felony convictions. We report the coefficients on the 40 county fixed effects, normalized so that the smallest fixed effect equals zero.

FIGURE 3B.

Unexplained Racial Gaps in Pretrial Detention Rates, by Selected County



Source: State Court Processing Statistics, BJS 1990–2009; authors' calculations.

Note: The racial gap is the difference in white and black pretrial detention rates after controlling for defendant age, gender, most serious arrest charge type, total prior arrests, number of prior felony arrests, prior instances of failures to appear in court, total prior convictions, number of prior felony convictions, and county fixed effects. We report the coefficients on the 30 county fixed effects interacted with an indicator for a defendant being black. See Reaves (2013) for additional details on the data and variable definitions. New York, NY, refers to the county and borough of Manhattan; Bronx, NY, refers to the county and borough of the Bronx.

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The accumulation of these issues has led to a flurry of attempts to change the existing pretrial system, with a flood of lawsuits challenging the constitutionality of money bail. For example, in April 2017, a federal judge in Houston issued a preliminary injunction on the current bail system in Harris County, Texas. Similar lawsuits are under way in many other large cities across the country. In addition, a number of jurisdictions have begun exploring alternatives to pretrial detention, such as electronic or in-person monitoring for low-risk defendants, and the use of risk assessment tools to more accurately predict offender risk. New York City, for example, has earmarked substantial funds to supervise low-risk defendants instead of requiring them to post bail or face pretrial detention. A wave of community-based efforts to change the current pretrial system has also swept the country, with charitable bail organizations like the Bronx Freedom Fund and the Brooklyn Community Bail posting bail for individuals held on misdemeanor charges when bail is set at $2,000 or less.

Others claim that the bail system is operating as designed, and that releasing more defendants would increase pretrial flight and endanger public safety. For example, advocates of the current system, such as former U.S. solicitor general Paul Clement, have argued that the money bail system "allows individuals of all financial means to leverage their social networks and community ties to obtain pretrial release" (U.S. Department of Justice 2016, 3).

In this paper we provide an overview of the goals of the pretrial system and how it operates in practice today. We then review the empirical evidence documenting the costs, benefits, and distributional consequences of the current pretrial system. On the basis of this review, we conclude that there are economically large costs of pretrial detention—and, by extension, the use of cash bail—due to the significant collateral consequences of having a criminal conviction on labor market outcomes as well as the criminogenic effects of pretrial detention (Dobbie, Goldin, and Yang 2018; Leslie and Pope 2017). In contrast, there are relatively small benefits to pretrial detention due to the low costs of apprehending defendants who fail to appear in court (Dobbie, Goldin, and Yang 2018). Taking a range of costs and benefits into account, the existing evidence suggests that we should detain far fewer individuals before trial than we currently do.

The existing evidence also suggests that the current pretrial system contributes to inequalities and inefficiencies in the criminal justice system. In many jurisdictions, otherwise similar defendants are treated in significantly different ways, both by different judges in the same court (Dobbie, Goldin, and Yang 2018; Yang 2017) and by the same judge in different cases (Kleinberg et al., 2018).

The costs of pretrial detention are also disproportionately concentrated among black defendants, particularly in courts that rely on less-experienced judges to make pretrial detention decisions (Arnold, Dobbie, and Yang 2018). Put simply, the existing evidence suggests that the current pretrial system is both unfair and inefficient.

On the basis of this evidence, we recommend two sets of policy proposals that can reduce our nation's reliance on pretrial detention and improve pretrial release decisions more generally. The first set of proposals—to use behavioral nudges to decrease pretrial violations and to move the default away from pretrial detention for low-risk defendants—are supported by enough evidence to justify immediate nationwide implementation. There is increasing evidence, for example, that inexpensive behavioral nudges like text message reminders can significantly reduce failure-to-appear rates without the need for pretrial detention, leading to substantial social benefits at virtually no cost to the public (Cooke et al. 2018). The evidence also supports the release of many more low-risk defendants even without these behavioral nudges, because the social costs of pretrial detention are significantly higher than the social benefits, at least at current high levels of pretrial detention. Consistent with these ideas, California and New Jersey, among other states, have eliminated or curtailed the use of monetary bail, with the hope of decreasing pretrial detention rates among low-risk defendants.

Our second set of proposals—to improve the pretrial decision-making process through risk assessment tools and judge decision-aids, and to provide additional information on judge performance to both judges and the general public—are supported by enough evidence to justify pilot testing, with widespread implementation to follow if successful. Providing judges with risk assessment tools, for example, may help judges more accurately discern the potential risk of releasing a particular defendant and lead to more-accurate and more-appropriate pretrial detention decisions (e.g., Kleinberg et al. 2018; Laura and John Arnold Foundation 2016). Providing judges and the general public with information on past pretrial decisions and the best practices in other courts may similarly improve judges' decision making and lead to better pretrial detention decisions, while simultaneously decreasing racial and socioeconomic disparities.

We also note that there is significant public support for reforming the pretrial system in the United States. In a survey of registered voters in 2018, 76 percent of respondents supported the use of citations for low-level, nonviolent offenses as opposed to arrest and booking, while 72 percent support limiting the length of pretrial detention and more than 70 percent support providing pretrial support services for those with addiction or mental health issues (Pretrial Justice Institute 2018). Given this alignment between public opinion and empirical research, we believe there is no better time than now to implement long-lasting reforms that will improve our nation's pretrial system.

The Challenge

COSTS AND BENEFITS OF THE CURRENT PRETRIAL SYSTEM

In this section, we review the empirical evidence on the costs and benefits of the current pretrial system in the United States. We begin with a brief overview of the U.S. pretrial system, including its history and stated objectives. We then describe recent research estimating the impact of pretrial detention on a range of outcomes that reflect the primary costs and benefits of detention. We conclude by mapping these empirical estimates to a partial cost-benefit calculation to assess the welfare implications of the current pretrial system.

Overview and Historical Origins

In the United States, the pretrial system is meant to allow all but the most dangerous criminal suspects to be released from custody while ensuring their appearance at required court proceedings. More recently, the pretrial system has also adopted an explicit aim of protecting the public from potential harm or danger. Indeed, the importance of pretrial release is grounded in the presumption of innocence, an "axiomatic and elementary" right that protects defendants prior to any adjudication of guilt (*Coffin v. United States* 1895, 1). Today, these objectives are embodied in the standards of the American Bar Association's *ABA Standards for Criminal Justice: Pretrial Release,* which states that the judicial decision of whether to release or detain a defendant requires judges to "strike an appropriate balance" (American Bar Association 2007, 29–30) between the competing societal interests of individual liberty, court appearance, and public safety. Below, we provide a brief historical overview of the principles of the pretrial system before turning to a description of how the pretrial system operates in practice today.

Under the Eighth Amendment of the U.S. Constitution, "Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted." In *Carlson v. Landon* (1952), the excessive bail clause was interpreted to reflect a prohibition on excessive bail, rather than an absolute right to bail in all cases. Following the practice of their English predecessors, early common law judges in the United States presumed that all defendants, with the exception of defendants charged in capital cases, would be bailable before trial unless there was a serious flight risk. These norms were embodied in some of the earliest U.S. bail statutes, such as the Judiciary Act of 1789, which specified that all noncapital defendants would be eligible for some form of bail.

The U.S. pretrial system is also meant to ensure appearances at court, the principal objective of the bail system since the country's founding. Whereas early English practices ensured appearance at court through the use of unsecured pledges, the primary means of ensuring appearance in the United States since the start of the 20th century has been the use of monetary or cash bail. The trade-off between the right to pretrial release and the goal of ensuring a defendant's appearance at court is reflected in *Stack v. Boyle* (1951, 1(b)), in which the Supreme Court held that the setting of monetary bail "must be based upon standards relevant to the purpose of assuring the presence of [the] defendant." In that case, the Court stated that a defendant's bail cannot be set higher than an amount that is reasonably likely to ensure the defendant's presence at trial. Indeed, Congress affirmed this commitment to pretrial release by passing the Bail Reform Act of 1966 (hereafter the 1966 Act), which sought to protect the right to pretrial release without the payment of money, known broadly as release on recognizance or just ROR. The 1966 Act made the release of defendants without money bail the norm rather than the exception (Wald and Freed 1966). In fact, concerns about the regressive nature of money bail drove the passage of the 1966 Act. On signing the act into law, President Lyndon Johnson remarked, "The defendant with means can afford to pay 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."

While the historical purpose of bail was to ensure the defendant's appearance at court, in recent decades the right to bail in the United States has also incorporated concerns regarding community safety. Some scholars have argued that the 1966 Act set the stage for detention on the basis of dangerousness by explicitly allowing for the consideration of factors such as an individual's prior criminal record

when assessing flight risk (Baradaran 2011). For instance, shortly after the passage of the 1966 Act, Congress passed the District of Columbia Court Reform and Criminal Procedure Act of 1970, which authorized the detention of criminal defendants without bail if they were assessed to be dangerous to society—known as preventive detention—with other states quickly following suit in response to growing concerns about crime and public safety. Similar concerns led Congress to subsequently adopt the Bail Reform Act of 1984 (hereafter the 1984 Act), which allowed judges to make bail determinations based on their individual assessment of each defendant's risk to the community. In passing the 1984 Act, Senate members 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" (Senate Judiciary Committee 1983, 5). 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" (Bail Reform Act of 1984).

Despite substantial criticism and legal challenge to the 1984 Act, the Supreme Court in *United States v. Salerno* (1987) upheld the constitutionality of the 1984 Act. The Court ultimately concluded that individual liberty interests could be subordinated to the government's interest in preventing new crime. The impact of *Salerno* on the state of the bail system was profound, with almost all states adopting statutes explicitly allowing judges to consider potential danger to the community as a factor in determining whether a defendant should be released prior to trial and the conditions of release, such as imposition of cash bail (Appleman 2012).

From a social welfare perspective, the trade-offs inherent in the pretrial system therefore reflect competing costs and benefits. For example, releasing defendants at the pretrial stage avoids the imposition of substantial restrictions on the defendant's liberty and prevents potential harms that the defendant may incur in jail, such as risk of injury or death. Defendants who are released prior to trial may also be at lower risk of losing their jobs and housing. Releasing more defendants pretrial also increases social welfare if there are spillover benefits for families and communities (e.g., avoiding the separation of parents from their children). Finally, releasing more defendants saves taxpayers dollars: the costs of housing and providing food to jailed defendants can be staggering, with some estimates suggesting that the pretrial detention costs to county governments alone exceed $9 billion per year (Laura and John Arnold Foundation 2013).

On the other hand, releasing more defendants increases the risk of flight and failure to appear at a required court appearance, which may drain court resources, dampen deterrence, and impede trust in the legal system if fugitives are not apprehended and brought to justice. Similarly, releasing more defendants increases the risk of harm and fear to victims, witnesses, and the community at large if defendants commit new offenses while on release. See Yang (2017) for a more comprehensive taxonomy of the costs and benefits that can arise with pretrial detention.

How does the pretrial system operate in practice today? In most U.S. jurisdictions, pretrial conditions are determined by a bail or arraignment judge within 24 to 48 hours of a defendant's arrest. In making assessments of flight risk and dangerousness, bail judges are granted substantial discretion; they usually 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 (Foote 1954). In practice, however, there are allegations that many bail judges ignore financial ability when setting bail (U.S. Department of Justice 2016).

Based on the assessment of risk, bail judges typically have a number of options in setting conditions for release. For defendants who pose the most minimal risk of flight or danger, the judge may simply release the defendant—known as release on recognizance (ROR)—in which the defendant promises to return for all court proceedings. Defendants may also be released subject to some form of nonmonetary conditions, sometimes known as conditional release, when a judge determines that certain conditions are necessary to prevent flight or harm to the public. These conditions can range from regular reporting to a pretrial services officer, to drug treatment or testing, all the way to more-intensive measures such as electronic monitoring or home confinement.

A judge may also impose monetary bail. In some jurisdictions, defendants may need to post the full bail amount to secure release, while in other jurisdictions defendants are typically required to pay some fraction of the bail amount, such as 10 percent. Those who do not have the required deposit in cash can borrow this amount from commercial bail bondsmen, who will often accept cars, houses, jewelry, or other forms of collateral, and who generally charge a nonrefundable fee, typically 10 percent of the bail amount, for their services. If the defendant fails to appear or commits a new crime, either the defendant or the bail bondsman is theoretically liable for the full value of the bail amount and forfeits any amount already paid.

Finally, for the most serious crimes the bail judge may require that the defendant be detained pending trial by denying bail altogether, although outright detention is uncommon in practice. In many jurisdictions denial of bail is often mandatory in first- or second-degree murder cases, but can

also be imposed for other crimes, such as domestic violence, when the bail judge finds that no set of conditions for release will guarantee appearance or protect the community from the threat of harm posed by the suspect.

Estimating the Costs and Benefits of the Bail System

Estimating the causal impact of pretrial detention on defendant outcomes—and hence assessing the trade-offs inherent in the U.S. pretrial system—has been difficult for two reasons. First, there are few data sets that include information on both bail hearings and long-term outcomes for a large number of defendants. Data on defendants often contain some information on pretrial detention and outcomes from the criminal justice process (i.e., arrest, charging, trial, sentencing, and incarceration), but do not contain unique identifiers that allow defendants to be linked to longer-term noncase outcomes. For example, the Bureau of Justice Statistics' State Court Processing Statistics program tracks a sample of felony cases through the criminal justice process from some of the nation's largest counties, but does not allow for linking of defendants to other data sets.

Second, simple cross-sectional comparisons of detained and released defendants are liable to be biased because defendants who are detained before trial are likely different from defendants who are not detained, making it difficult to distinguish the effect of detention from those underlying differences. For example, defendants detained pretrial may be at higher risk of committing another crime in the future. Perhaps as a result, past work relying on cross-sectional comparisons has yielded mixed results. In this prior literature, some papers suggest little impact of pretrial detention on conviction rates (Goldkamp 1980), while others report a significant relationship between pretrial detention and outcomes such as the probability of conviction (Ares, Rankin, and Sturz 1963; Cohen and Reaves 2007; Phillips 2008) and probability of incarceration (Foote 1954; Oleson et al. 2017; Williams 2003).

In a series of recent papers, Didwania (2018), Dobbie, Goldin, and Yang (2018), Gupta, Hansman, and Frenchman (2016), Leslie and Pope (2017), and Stevenson (2018c) have overcome these problems using new and large-scale administrative data on criminal defendants to estimate the impact of pretrial detention on a range of important outcomes that are relevant to the costs and benefits of detention. In each of these papers, the authors estimate the effects of pretrial detention/release using the quasi-random assignment of defendants to bail judges who vary in the leniency of their bail decisions. This empirical design identifies the causal effects of pretrial detention for individuals at the margin of detention (i.e., cases in which bail judges disagree on the appropriate bail conditions). Individuals are rarely detained outright before trial, meaning that almost all of these disagreements are about whether cash bail should be imposed for a particular individual or what amount that bail should be.[2] In many of these analyses, the bail judges are also distinct from the trial and sentencing judges, who are assigned through a different process, allowing the researchers to separately identify the effects of being assigned to a lenient bail judge as opposed to a lenient trial or sentencing judge.

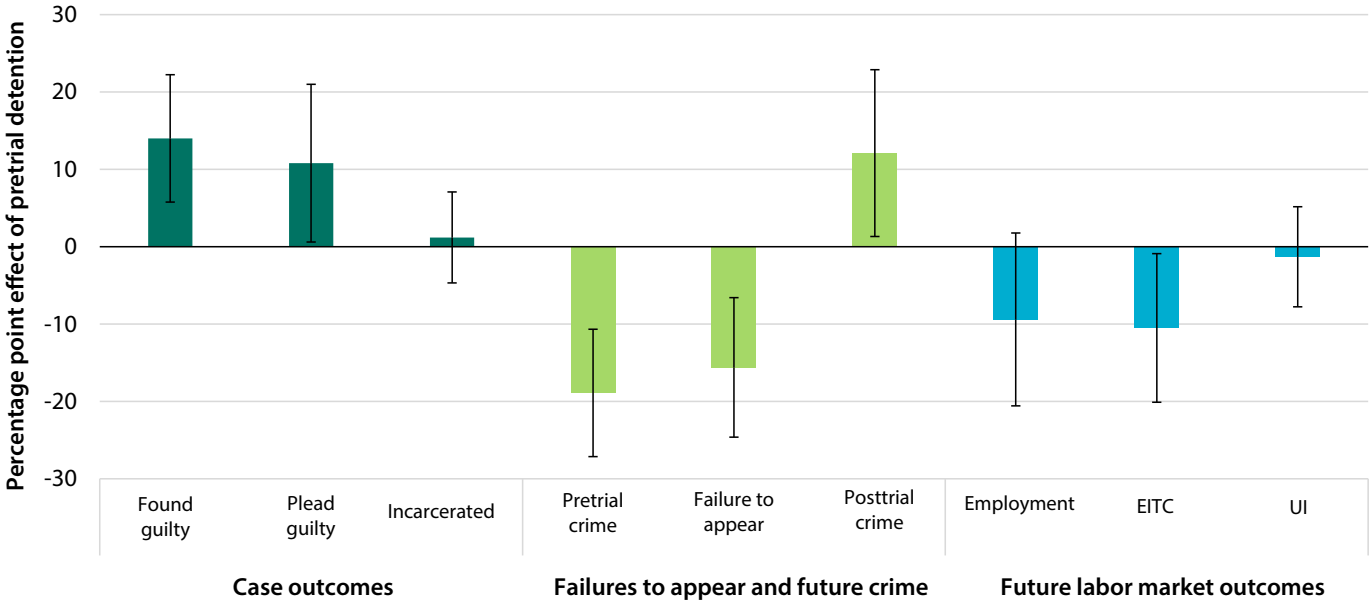
The estimated effects in this recent literature can be organized into three broad categories: (1) case outcomes, (2) pretrial flight and both pre- and posttrial crime, and (3) posttrial economic outcomes. We focus on the results from Dobbie, Goldin, and Yang (2018), where the largest range of outcomes is available for a consistent sample, but discuss the other results from the literature as well.

The left-side bars in figure 4 report point estimates and 95 percent confidence intervals of the impact of pretrial detention due to the assignment of a stricter judge on criminal case outcomes from Dobbie, Goldin, and Yang (2018) using data on criminal defendants arrested in Miami-Dade and Philadelphia. Figure 4 shows that initial pretrial detention of just three days increases the probability of being found guilty by 14.0 percentage points, a 24 percent change from the mean for defendants who are not detained before trial, with larger effects for defendants with no prior offenses in the preceding year.[3] The increase in conviction is largely driven by a higher probability of pleading guilty, which increases by 10.8 percentage points, a 25 percent change. Conversely, initial pretrial detention has a small and statistically insignificant effect on posttrial incarceration, likely because many detained defendants plead to time served and because most charged offenses in the sample carry minimal imprisonment time. These results suggest that initial pretrial detention affects case outcomes at the margin largely through a weakening of defendants' bargaining positions before trial.

The broader literature that uses the quasi-random assignment of bail judges also consistently finds a large negative impact of pretrial detention on case outcomes at the margin of detention. Using similar data from Philadelphia, Stevenson (2018c) shows that pretrial detention leads to a 6.2 percentage point increase in the likelihood of being convicted, a 13 percent change; and a 4.7 percentage point increase in the likelihood of pleading guilty, an 18 percent change. Leslie and Pope (2017) offer evidence of the effect of pretrial detention on case outcomes from New York City, concluding that, in felony cases, pretrial detention increases the probability of conviction by 13.0 percentage points and the likelihood of pleading guilty by 10.2 percentage points, or 18 and 16 percent, respectively. Gupta, Hansman, and Frenchman (2016) examine cases in Philadelphia and Pittsburgh and focus on the effects of being assigned monetary bail, rather than being detained directly. They find that defendants required to pay money bail as a result of being assigned to

FIGURE 4.

The Effects of Pretrial Detention on Case Outcomes, Future Crime, and Future Labor Market Outcomes



Source: Dobbie, Goldin, and Yang 2018.

Note: pp = percentage points. This figure reports estimates of the causal impact of pretrial detention on case outcomes, future crime, and future labor market outcomes from Dobbie, Goldin, and Yang (2018). The sample consists of defendants randomly assigned to judges in Miami-Dade and Philadelphia. All specifications instrument for pretrial detention using a leave-out measure of judge leniency, control for baseline defendant controls and court-by-time fixed effects, and cluster standard errors at the judge level. Pretrial crime and failure to appear are measured prior to case disposition. Posttrial crime is measured in years 0 to 2 after case disposition. Employment, EITC receipt, and UI receipt are measured in years 3 to 4 after case disposition. See Dobbie, Goldin, and Yang (2018) for additional details on the sample and empirical specification.

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a severe judge are 6.0 percentage points more likely to be convicted, a 12 percent change. Finally, in the federal criminal justice system, Didwania (2018) finds that pretrial detention increases a defendant's sentence length by 67 percent, and the probability of receiving at least a mandatory minimum sentence by 50 percent.

The middle bars of figure 4 turn to the effects of pretrial detention on flight and crime for the same sample of defendants from Miami-Dade and Philadelphia. Figure 4 shows that initial pretrial detention decreases the probability of failing to appear in court by 15.6 percentage points in these jurisdictions, a 129 percent decrease relative to the mean for those who are detained. In contrast, there is no detectable effect of initial pretrial detention on overall new crime, aggregating both pretrial and posttrial, up to two years after the bail hearing. As described in Dobbie, Goldin, and Yang (2018), this null result on overall crime is driven by offsetting incapacitation and criminogenic effects. That is, initial pretrial detention decreases the likelihood of rearrest prior to the adjudication of the initial case by 18.9 percentage points, a 122 percent change, because it is more difficult for an individual to re-offend while in custody. At the same time, pretrial detention increases the likelihood of rearrest following case disposition by 12.1 percentage points, a 35 percent change, because of the criminogenic effects of spending time in jail. In this setting, short-run incapacitation effects and medium-run criminogenic effects almost exactly offset each other, at least over the time horizons observed in the available data.

The broader literature also finds a large negative impact of pretrial detention on pretrial flight and pretrial crime at the margin, with mixed effects on posttrial crime. Leslie and Pope (2017) find offsetting effects in their New York City study, with pretrial detention in felony cases reducing the probability of being rearrested prior to case disposition by 12.2 percentage points, and increasing the probability of being rearrested within two years after disposition by 7.5 percentage points. In contrast, Gupta, Hansman, and Frenchman (2016) find that being assigned monetary bail in Philadelphia and Pittsburgh has only a negligible effect on failure to appear in court, but leads to a 0.7 percentage point yearly increase in the probability of committing future crime, a 9 percent change.[4]

Finally, the right-side bars of figure 4 report estimates of the impact of pretrial detention on longer-run economic outcomes measured in administrative tax records. Following Dobbie, Goldin, and Yang (2018), we focus on participation in the formal labor market, because formal-sector employment is closely related to consumption and has been found to be negatively correlated with criminal activity (e.g., Gould,

Weinberg, and Mustard 2002; Grogger 1998; Raphael and Winter-Ebmer 2001), and the take-up of the Earned Income Tax Credit (EITC) and unemployment insurance (UI), because these social insurance programs are directly tied to formal-sector employment and likely correlate with both consumption and criminal activity as well. Figure 4 shows that, in Miami-Dade and Philadelphia, pretrial detention decreases both attachment to the formal labor market and the receipt of employment- and tax-related government benefits. Initial pretrial detention of just three days decreases the probability of employment in the formal labor market three to four years after the bail hearing by 9.4 percentage points, a 25 percent decrease from the released defendant mean. Pretrial detention also decreases the probability that the defendant will take up UI benefits in three to four years after case disposition by 1.3 percentage points, a 20 percent decrease, and decreases the take-up of EITC benefits by 10.5 percentage points over the same time period, a 45 percent decrease. All of the estimated effects are again larger among individuals with no prior offenses in the preceding year. The employment results are primarily driven by a decrease in the joint probability of not having a criminal conviction and being employed in the formal labor market following initial pretrial detention, as discussed in greater detail in Dobbie, Goldin, and Yang (2018). We interpret these results as the stigma of a criminal conviction lowering defendants' prospects in the formal labor market (e.g., Agan and Starr 2017; Pager 2003), which in turn limits defendants' eligibility for employment-related benefits like UI and EITC.

Taken together, the findings from the recent empirical literature therefore suggest that pretrial detention imposes substantial short- and long-term costs to both individual defendants and society, with these social costs spilling over to longer-run economic outcomes. On the other hand, pretrial detention also conveys potentially important short-run benefits to society by reducing flight and pretrial crime prior to case disposition. The evidence on overall criminal behavior is more mixed, but is broadly consistent with offsetting short-run incapacitation effects and medium-run criminogenic effects.

Partial Cost-Benefit Calculation of the U.S. Pretrial System

An important open question is whether the estimated benefits of pretrial detention are, on net, larger than the estimated costs for defendants. While a comprehensive cost-benefit analysis is beyond the scope of this paper, we report results from Dobbie, Goldin, and Yang (2018) of a partial back-of-the-envelope calculation that takes into account some of the costs and benefits, focusing on defendants who are at the margin of detention. Specifically, the authors consider the administrative costs of jail, the costs of apprehending individuals who fail to appear to court, the costs of future criminality (both pre- and posttrial), and the economic impact on defendants.[5]

Based on these illustrative calculations, the authors estimate that the total net cost of pretrial detention for three or more days for the marginal defendant is between $55,143 and $99,124. Intuitively, additional pretrial detention reduces social welfare because of the significant long-term costs associated with having a criminal conviction on economic outcomes, the criminogenic effect of detention that offsets the incapacitation benefit, the administrative cost to taxpayers of jailing defendants, and the relatively low costs associated with apprehending defendants who miss required court appearances.

This cost-benefit analysis also reveals that pretrial detention is likely even more costly on net for certain groups of offenders. As reported in Dobbie, Goldin, and Yang (2018), the benefits of pretrial detention are also relatively small and the costs of detention relatively large for defendants with no recent prior criminal history, suggesting that the net cost of pretrial detention is even larger for this subsample. Based on the estimates available in Dobbie, Goldin, and Yang (2018), we calculate that the estimated total net cost of pretrial detention is between $84,782 and $162,327 for marginal defendants with no recent priors, 54 to 64 percent larger than for the full sample of defendants.

In sum, these calculations suggest that unless there is a large general deterrence effect of widespread use of cash bail and associated high levels of pretrial detention, detaining more individuals is unlikely to have benefits that exceed the costs. These results therefore suggest that it may be preferable for society to increase its use of alternatives to pretrial detention. For example, to the extent that recidivism rates are not appreciably higher when using electronic monitoring or supervised release, these alternatives may provide many of the same benefits of detention without the substantial costs to defendants documented in our analysis. We discuss these and other potential policies below.

One important caveat to the above partial cost-benefit analysis is that all of our estimates are based on defendants at the margin of release—not the average defendant—who may experience different impacts of pretrial detention. These cost-benefit calculations are therefore most relevant for policy changes at the margin of the pretrial system, such as releasing slightly more defendants on ROR or conditional release. The calculations may under- or overestimate the benefits of much larger changes to the pretrial system, such as completely eliminating cash bail and releasing nearly all defendants before trial. The only paper that has attempted to present a cost-benefit evaluation of pretrial detention for average defendants concludes that 28 percent fewer defendants could

be detained without risk to public safety, again suggesting that pretrial detention is overused from a social welfare perspective (Baughman 2017).

UNFAIRNESS AND INEFFICIENCY IN THE CURRENT U.S. PRETRIAL SYSTEM

In this section, we review the empirical evidence documenting unfairness and inefficiency in the current U.S. pretrial system. We explore three notions of fairness to evaluate the current pretrial system: (1) inconsistency in how seemingly identical defendants are treated by different judges in the same court, (2) inconsistency in how seemingly identical defendants are treated by the same judge in different cases, and (3) inconsistency in how otherwise identical black and white defendants are treated by the same judge in different cases. These three ideas of fairness also have implications for efficiency because a bail system that inconsistently treats otherwise similar offenders generates inefficient differences in the amount of deterrence and incapacitation that the pretrial system is aimed at achieving.

Inconsistent Treatment by Different Judges

We begin by considering how unequal treatment can stem from substantial differences in how otherwise similar offenders are treated by different judges. The inconsistent treatment of defendants by different judges, often referred to as inter-judge disparities, has long been perceived as a form of unwarranted disparity in the criminal justice system.[6]

Despite widespread agreement that inter-judge disparities are unwarranted at any stage in the criminal justice system, there is substantial empirical evidence that bail judges do not treat identical defendants equally. Didwania (2018), Dobbie, Goldin, and Yang (2018), Gupta, Hansman, and Frenchman (2016), Leslie and Pope (2017), and Stevenson (2018c), for example, all exploit variation in pretrial detention from the quasi-random assignment of bail judges who systematically vary in how they treat identical defendants. Yang (2017) similarly compares how judges set a variety of pretrial conditions within the same court in Miami-Dade and Philadelphia, where cases are quasi-randomly assigned to judges. Because judges are assigned the same types of defendants on average, significant differences across judges may indicate that there is substantial disagreement in bail setting and raises questions about the fairness and consistency of pretrial decision making. Dobbie, Goldin, and Yang (2018) present additional evidence on this issue, finding that disagreements among judges are the most prevalent for first-time offenders, drug offenders, and property offenders. These large inter-judge differences persist despite the fact that many jurisdictions in their sample use bail guidelines, such as in Philadelphia, or bail schedules, such as in Miami-Dade, which in theory promote consistency.

FIGURE 5A.

Judge Variation in Release on Recognizance (ROR) Rates

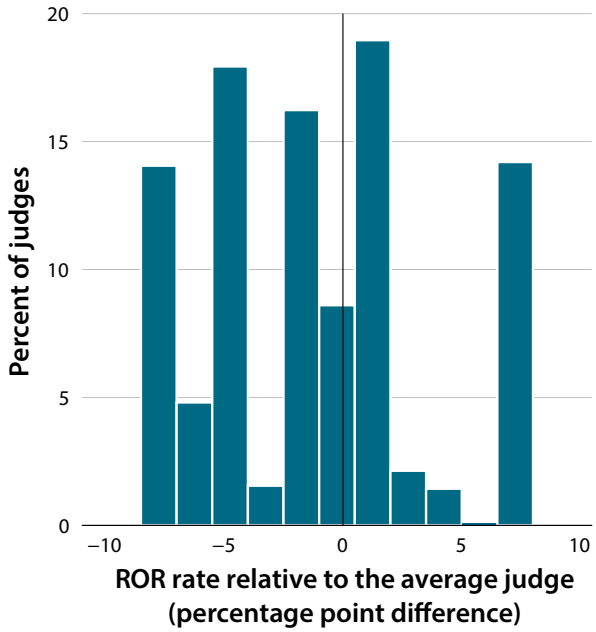
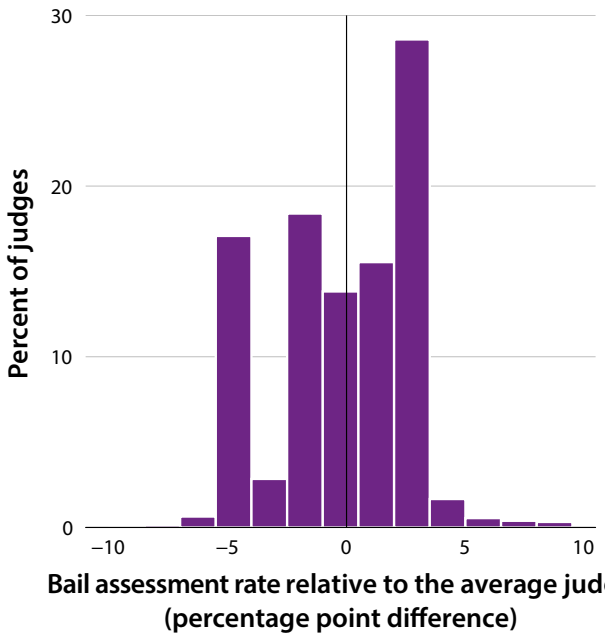


FIGURE 5B.

Judge Variation in Monetary Bail Assessment Rates



Source: Dobbie, Goldin, and Yang 2018; authors' calculations.

Note: The sample consists of defendants randomly assigned to judges in Miami-Dade and Philadelphia. Judge ROR and monetary bail rates are constructed using the mean rate of each outcome for all defendants after controlling for court-by-time effects. See Dobbie, Goldin, and Yang (2018) for additional details on the sample and specification.

Figure 5 reports judge variation in the decision to assign ROR and the decision to assign monetary bail from Yang (2017), again using data from Miami-Dade and Philadelphia. For each judge in our sample, we calculate the rate at which that judge assigns ROR or cash bail relative to the court average.[7] Figure 5a shows that there is substantial variation in the treatment of identical defendants across judges in the same court. Moving from the least to the most lenient judge in the sample increases the probability of receiving ROR by 18.3 percentage points, or 87 percent from the sample mean. Figure 5b shows that moving from the most to the least lenient judge also increases the probability of receiving monetary bail by 33.5 percentage points, or 52 percent from the sample mean. These large differences in ROR and monetary bail translate into significant differences in the rates of pretrial detention across judges, as is described in more detail in Yang (2017) and shown empirically in Dobbie, Goldin, and Yang (2018).

Inconsistent Treatment by the Same Judge

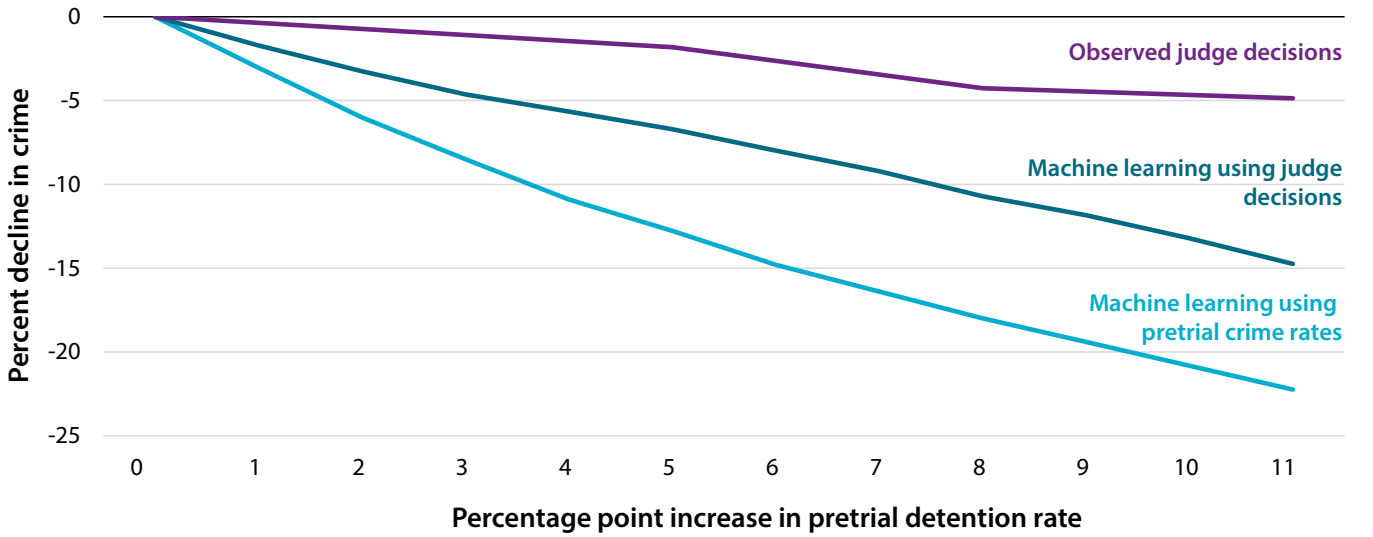
The second notion of fairness we consider is the inconsistent treatment of otherwise similar defendants by the same judge. The U.S. criminal justice system has long relied on the principle that only legally relevant factors should be considered when, say, setting bail conditions or sentencing defendants.

But, once again, there is substantial evidence that seemingly irrelevant factors can significantly alter case outcomes, even within the same decision maker, raising questions about consistency and fairness. The strongest evidence on whether judges are internally consistent when making bail decisions comes from Kleinberg et al. (2018), who evaluate whether arraignment judges are making errors in setting pretrial conditions. Using detailed data on pretrial release decisions made by New York City bail judges, the authors find that judges make significant errors when predicting risk. The authors find that a machine-learning (ML) algorithm, relative to judges, could either reduce the pretrial jail population while holding crime/failures to appear constant, or reduce crime/failures to appear while holding the pretrial jail population constant. Moreover, the authors show a lack of consistency and accuracy in decision making even within the same judge. A prediction of what each judge would do based on past decisions outperforms what the actual judge does, suggesting that bail decisions contain a large degree of noise rather than only relevant private information. The authors speculate that such sources of noise might stem from sources like the judge's mood at the time of arraignment, arguably an irrelevant factor that should not affect decision making.

Figure 6 builds on Kleinberg et al. (2018) by comparing the actual observed pretrial decisions of bail judges in Miami-Dade and Philadelphia to pretrial release decisions based on two algorithmic predictions: (1) those formed using the judges' own decisions, and (2) those formed using predictions of pretrial crime among released defendants.[8]

FIGURE 6.

Comparing Judge Decisions and Algorithmic Decisions



Source: Dobbie, Goldin, and Yang 2018; authors' calculations.

Note: ML = machine learning. This figure examines the performance of different data-based decision rules versus the actual decisions made by bail judges following Kleinberg et al. (2018). The left-most point in the graph represents the pretrial crime rate for the most lenient bin of judges. The top-most line shows pretrial crime rates and detention rates for the actual decisions made by the stricter judges. The bottom two lines show the hypothetical pretrial crime rates and detention rates from detaining additional defendants within the most lenient bin of judges' release set using different data-based decision rules. The dark blue line shows the trade-off when using actual judge decisions to train the machine-learning algorithm. The light blue line shows the trade-off when using actual pretrial crime rates to train the machine-learning algorithm. The sample consists of defendants randomly assigned to judges in Miami-Dade and Philadelphia. See Dobbie, Goldin, and Yang (2018) for additional details on the sample.

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Figure 6 presents these results in the sample of defendants in Miami-Dade and Philadelphia from Dobbie, Goldin, and Yang (2018). The bottom-most curve calculates the change in pretrial crime that would have resulted if additional defendants had been detained using the algorithm trained with pretrial crime among released defendants ("ML Using Pretrial Crime"). The next curve calculates the change in pretrial crime that would have resulted if additional defendants had been detained using the algorithm trained with the judges' pretrial decisions among all defendants ("ML Using Judge Decisions"). Finally, the top-most curve denotes the actual change in pretrial crime that resulted as we move from lenient to strict judges ("Observed Judge Decisions"). Consistent with Kleinberg et al. (2018), we find that in Miami-Dade and Philadelphia a machine-learning algorithm can significantly lower pretrial crime compared to decisions made by judges.[9] More importantly, a prediction of what each judge would do based on past decisions outperforms what the actual judge does, suggesting that bail decisions contain a large degree of noise rather than relevant private information. Figure 6 shows, for example, that moving from the most to the least lenient quartile of judges decreases pretrial crime by 1.0 percentage point, or about 5 percent. In contrast, we would have been able to decrease pretrial crime by about 3.1 percentage points, or 15 percent, if the additional defendants had been detained using the algorithm trained with the judges' pretrial decisions.

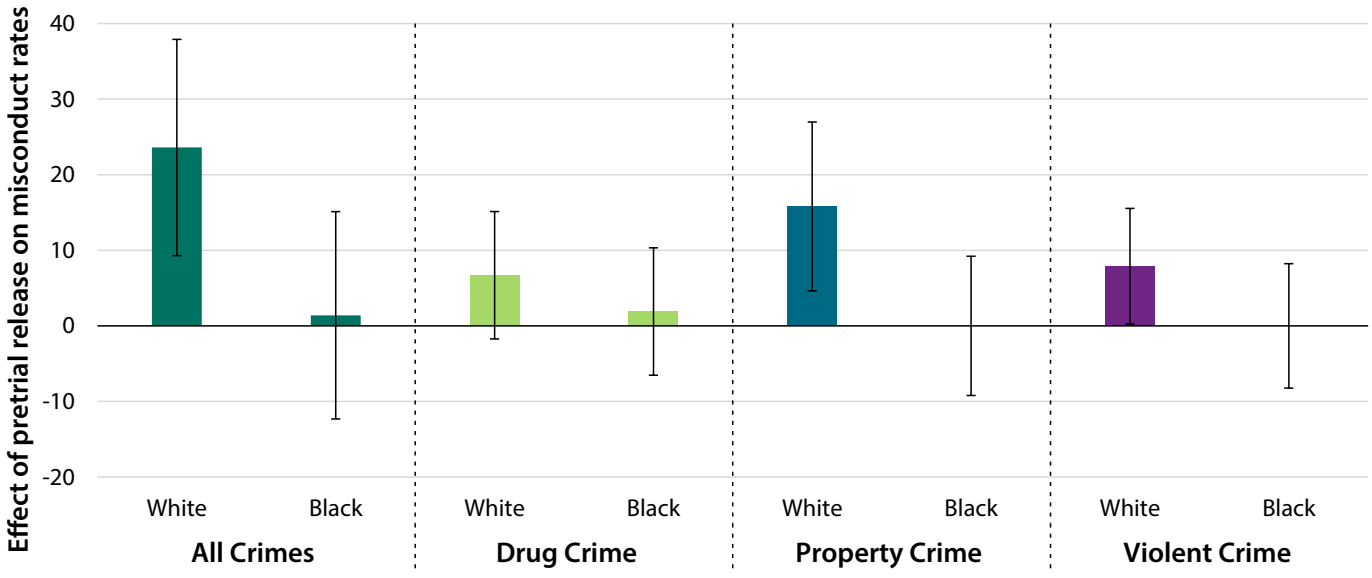
Inconsistent Treatment by Race

The final form of fairness we consider is the consistent treatment of otherwise similar individuals on the basis of protected characteristics such as race. The intentional unequal treatment of otherwise identical black and white individuals is prohibited by the Equal Protection Clause of the 14th Amendment, and, more generally, is unwarranted because membership in a particular demographic group is not relevant to the purposes of the criminal justice system.

However, once again, there is an extensive literature documenting that racial disparities exist throughout the U.S. criminal justice system, including the pretrial system. In data from Philadelphia and Miami-Dade, for example, Arnold, Dobbie, and Yang (2018) find that judges are 3.6 percentage points more likely to assign monetary bail to black defendants than white defendants; conditional on being assigned monetary bail, black defendants receive bail amounts that are $9,923 greater, even after controlling for observable case and defendant characteristics. Stevenson (2018a) finds in Philadelphia that these racial differences in pretrial detention rates are partially due to differences in the amount of money bail by race, but also due to differences in the ability or willingness of black defendants to pay money bail compared to white defendants. There is also evidence that among felony defendants in large U.S. counties, black defendants are 9 percentage points more likely to be detained

FIGURE 7.

Racial Bias in Pretrial Misconduct Rates by Crime Type



Source: Arnold, Dobbie, and Yang 2018.

Note: pp = percentage points. Effects reported are the estimated causal impact of pretrial release on misconduct rates by race. The sample consists of defendants randomly assigned to judges in Miami-Dade and Philadelphia. All specifications instrument for pretrial release using a leave-out measure of judge leniency, control for baseline defendant controls and court-by-time fixed effects, and cluster standard errors at the judge-by-year level. Pretrial misconduct is measured using rearrest for the designated crime type before the trial is over. See Arnold, Dobbie, and Yang (2018) for additional details on the sample and empirical specification.

pretrial compared to otherwise similar white defendants (McIntyre and Baradaran 2013), and that black defendants in New Haven are charged higher bail amounts than whites despite having a lower probability of flight, implying that bail judges demand lower probabilities of flight from minority defendants in order to grant them the same bail outcomes (Ayres and Waldfogel 1994).

An important question for policy is what drives these observed racial disparities in bail setting and pretrial detention. One view is that these racial disparities are driven by statistical discrimination, or the use of observable group traits such as race to form accurate beliefs about the unobservable characteristics of defendants (e.g., Arrow 1973; Phelps 1972). A second view is that statistical discrimination alone cannot explain these disparities, leaving a role for various forms of racial bias, such as racial animus (e.g., Becker 1957) or inaccurate racial stereotypes (e.g., Bordalo et al. 2016). However, distinguishing between these two contrasting explanations remains an empirical challenge.

In recent work Arnold, Dobbie, and Yang (2018) propose a new test for identifying racial bias that uses the release tendencies of quasi-randomly assigned bail judges.[10] Figure 7 reports these instrumental variable estimates of racial bias from Arnold, Dobbie, and Yang (2018) using data from Miami-Dade and Philadelphia. In terms of rearrest for any new crime, marginally released white defendants are 23.6 percentage points more likely to be rearrested compared to marginally detained white defendants. In contrast, the effect of pretrial release on rearrest rates for marginally released black defendants is a statistically insignificant 1.4 percentage points. Taken together, these results imply that marginally released white defendants are 22.2 percentage points more likely to be rearrested prior to disposition than marginally released black defendants, consistent with racial bias against blacks. These findings rule out statistical discrimination as the sole explanation for the observed racial disparities in bail.

There is also suggestive evidence that judges are likely racially biased against black defendants even if they are most concerned about minimizing specific types of new crime, such as violent crimes. For example, marginally released white defendants are also 4.7 percentage points more likely to be rearrested for a drug crime prior to case disposition than marginally released black defendants, and 16.3 percentage points more likely to be rearrested for a property crime. Marginally released whites are about 8.0 percentage points more likely to be rearrested for a violent crime prior to disposition than marginally released blacks.

Arnold, Dobbie, and Yang (2018) provide evidence that this racial bias is driven by bail judges relying on inaccurate stereotypes that exaggerate the relative danger of releasing black defendants, and not racial animus per se. There is, for example, substantially less racial bias among both the full-time and the more-experienced part-time judges who are least likely to rely on simple race-based heuristics, and substantially more racial bias among the least experienced part-time judges who are most likely to rely on these heuristics. There is also an equal level of bias among both black and white bail judges, which is inconsistent with most simple models of racial animus.

The findings in figure 7 are also broadly consistent with the work described above documenting unequal treatment of similar defendants both across different judges and by the same judge in different cases. For example, the work described above suggests that variables that are unobserved by researchers, such as a judge's mood or a defendant's demeanor at the bail hearing, are an important driver of unequal treatment, not private information that leads to more-accurate risk predictions. The results in figure 7 complement these findings by documenting one specific source of unequal treatment—racial bias among bail judges.

The Proposals

Based on the evidence just presented, we now discuss seven different policy proposals that can improve the U.S. pretrial system. We group these proposals into two broad categories: (1) those supported by enough evidence to warrant immediate nationwide implementation, and (2) those supported by enough evidence to warrant pilot testing, with widespread implementation to follow if successful. We summarize each proposal in table 1, with additional details below. These proposals would shift pretrial policy away from one of frequent use of cash bail to much more widespread use of release on recognizance or non-detention alternatives.

EVIDENCE SUPPORTS NATIONWIDE IMPLEMENTATION

Behavioral Nudges

Our first proposal is to use behavioral nudges such as text message reminders to decrease failure-to-appear rates among all released defendants. There is convincing experimental evidence that behavioral nudges can increase appearance rates, and the implementation of these nudges is likely to be extremely inexpensive.

Behavioral nudges such as text messages are currently being used with great success by charitable bail organizations such as The Bail Project and Bronx Freedom Fund, and have been recently tested using a randomized experiment in New York City (Cooke et al. 2018). Recognizing the existence of common behavioral barriers to appearing in court (e.g., a defendant might forget to request time off work or to arrange transportation on their court date), Cooke et al. (2018) implemented two experiments among defendants in New York City between January 2016 and January 2017. In the first experiment, the researchers redesigned the summons form so that it drew more attention to the actions required of the defendant, the time and place of the next court appearance, and the consequences of missing a court appearance. The newly redesigned summons form increased appearance rates

TABLE 1.

Proposals for Improving the U.S. Pretrial System

	Example Policies	Type of Evidence	Target Population	Examples in the Field
	Panel A: Evidence Supports Nationwide Implementation			
(1) Behavioral nudges	Text message reminders	Randomized trial	Released defendants	The Bail Project Bronx Freedom Fund
(2) Citations and ROR	Citations instead of arrests ROR instead of cash bail	Quasi-experimental	Lower-risk offenders	State of New Jersey
(3) Non-cash alternatives	Low-fee electronic monitoring Supervised release Pre-trial services	Quasi-experimental	Higher-risk offenders; all offenders in need of services	Washington, D.C.
	Panel B: Evidence Supports Pilot Testing			
	Example Policies	**Type of Evidence**	**Target Population**	**Examples in the Field**
(1) Risk assessment tools	Risk assessment info given to judges	Non-experimental	Defendants eligible for detention	LJAF in 40+ cities
(2) Judge feedback and learning	Past performance info given to judges	Non-experimental	All defendants	None
(3) Public report cards	Past performance info given to the public	Quasi-experimental in a different context	All defendants	None
(4) Judge decision-aids	Decision benchcards	Randomized trial in a different context	All defendants	None

by 6.4 percentage points, a 13 percent increase. In the second experiment, the researchers sent text message reminders seven days, three days, and one day before the defendant's next court appearance. The most effective text message reminders increased appearance rates 10 percentage points, a 26 percent increase. The researchers concluded that more than 30,000 new bench warrants could be avoided in New York City alone if the new summons form and the text message reminders were implemented across the city.

Behavioral nudges such as text message reminders and redesigned summons forms are also inexpensive to implement at scale. Cooke et al. (2018) estimate that each text message cost less than one cent, with the citywide implementation of text message reminders and the new summons forms costing less than $7,500 per year. The benefits of these nudges are large given the substantial costs of pretrial detention, as well as the costs of failures to appear. The combination of low implementation costs and high expected benefits means that these behavioral nudges are likely to pass any cost-benefit analysis.

Increased Use of Citations and Release on Recognizance (ROR)

Our second proposal is to shift the default criminal justice approach away from cash bail and pretrial detention and toward citations and ROR among low-risk defendants. As described above, there is substantial evidence that pretrial detention generates large net costs to defendants and society, and there are minimal costs of shifting the default behavior toward citations and ROR.

Recall that the total net cost of pretrial detention is between $55,143 and $99,124 for the marginal defendant in Miami-Dade and Philadelphia, with even higher net costs for low-risk defendants. One straightforward way to decrease the net costs of pretrial detention is to move away from money bail and pretrial detention and toward citations and ROR, much as New Jersey did in 2017 when it amended the state constitution to reduce the use of monetary bail, require the use of risk assessment tools, and expand the use of citations. Following these amendments to the state constitution, approximately 70 percent of arrested defendants now receive a citation instead of being booked, and the pretrial jail population fell by 20 percent (Rabner 2017). While more research on the New Jersey reform is needed, particularly regarding its effects on pretrial misconduct, these statistics suggest that jurisdictions can successfully reduce their reliance on pretrial detention and money bail.

Shifting the default away from cash bail and pretrial detention and toward citations and ROR is also relatively inexpensive and easy to implement at scale, suggesting that these interventions should pass a cost-benefit analysis. Pretrial detention is more expensive than simply releasing a defendant or issuing a summons, and targeting low-risk defendants should minimize any increase in pretrial misconduct. Perhaps most importantly, reducing the number of defendants detained before trial will mitigate the significant long-term economic costs associated with having a criminal conviction as well as the long-term criminogenic effects of detention.

Increased Use of Noncash and Nondetention Alternatives

Our third proposal is to shift the default away from cash bail and pretrial detention toward less-restrictive pretrial alternatives such as supervised release, electronic monitoring, and enhanced pretrial services among higher-risk defendants, for whom citations and ROR are perhaps inappropriate. For high-risk defendants as well as low-risk defendants, there is substantial evidence that pretrial detention generates large net costs to defendants and society, and there is at least some evidence that less-restrictive alternatives can accomplish criminal justice objectives for this population.

The evidence in support of less-restrictive pretrial alternatives such as supervised release, electronic monitoring, and enhanced pretrial services also comes from the quasi-experimental evidence from the Dobbie, Goldin, and Yang (2018) study described above, which found substantial costs of pretrial detention even among higher-risk defendants who would otherwise be released under one of these conditions. There is also evidence from nonexperimental studies that electronic monitoring can effectively reduce pretrial misconduct in the United States (Bales et al. 2010; Cadigan 1991) and that pretrial supervision can increase court appearances (Lowenkamp and VanNostrand 2013; VanNostrand, Rose, and Weibrecht 2011), and one quasi-experimental study in Argentina (Di Tella and Schargrodsky 2013) that supports the use of electronic monitoring as an alternative to pretrial detention. There is more-limited evidence on the causal effects of providing pretrial services, but both the District of Columbia and some charitable bail organizations (e.g., The Bail Project and Bronx Freedom Fund) have used these services to seemingly great effect. In the District of Columbia, for example, pretrial misconduct rates are below the national average despite nearly all defendants being released without monetary conditions (Pretrial Services Agency for the District of Columbia 2016).

As with the increased use of citations and ROR among low-risk defendants, shifting the default away from pretrial detention and toward less-restrictive alternatives among higher-risk defendants is relatively inexpensive and easy to implement at scale. Cash bail, and the associated high levels of pretrial detention, are again more expensive for most jurisdictions than supervised release or electronic monitoring. The costs of providing pretrial services are more uncertain, however, and

additional research is needed to know if these services would pass a cost-benefit analysis.

There are several practical steps we also propose when shifting the default away from pretrial detention and toward less-restrictive alternatives. The first is for jurisdictions to place clear limits on what offenses (or which defendants) are appropriate candidates for pretrial detention. A recent cautionary tale is provided by Senate Bill 10 (California Legislative Information 2018) in California, where the state eliminated monetary bail and replaced it with mandatory standardized risk assessments of individuals and nonmonetary conditions of release (California Legislative Information 2018). If implemented as planned, defendants in California will be subject to a pretrial risk assessment conducted by each court's Pretrial Assessment Services starting in late 2020. The system is designed both to release low- and medium-risk defendants on their own recognizance or with the least-restrictive nonmonetary conditions, and to detain high-risk defendants without bail. However, what constitutes a high-risk defendant is largely left to the discretion of courts, leading the ACLU and other organizations to claim that the reform can lead to many defendants being detained for weeks while they await a hearing to challenge the preventive detention (Koseff 2018). In an extreme case, Senate Bill 10 may simply replace the money bail system with a system based on preventive detention.

A second important step is for jurisdictions to avoid imposing unnecessary financial costs and time burdens when assigning supervised release, electronic monitoring, and enhanced pretrial services. There are again a number of cautionary tales that illustrate the risks of relying on these noncash and nondetention alternatives. In many jurisdictions, for example, defendants are forced to pay for their own tracking in order to secure release (see, e.g., Markowitz 2015). In some cases, the costs of electronic tracking can even exceed the costs of paying monetary bail, with the end result being a replacement of the money bail system with a defendant-funded tracking system. We therefore strongly recommend that jurisdictions place clear limits on which defendants are eligible for pretrial detention—as well as clear limits on the costs associated with supervised release, electronic monitoring, and enhanced pretrial services—when shifting the default away from pretrial detention and toward less-restrictive alternatives.

EVIDENCE SUPPORTS PILOT TESTING

Risk Assessment Tools

Our first proposal that warrants pilot testing, followed by widespread implementation if successful, is the use of evidence-based risk assessment tools in pretrial decision making. The best evidence on risk assessments comes from the Kleinberg et al. (2018) study described above, which shows that a risk assessment tool based on a machine-learning (ML) algorithm can, at least in theory, reduce the pretrial detention rate in New York City from 60.4 to 41.9 percent (holding the pretrial crime rate constant), or reduce the pretrial crime rate from 39.1 to 24.7 percent (holding the jail rate constant). The risk assessment tool could also be used to yield a combination of those two improvements depending on how it is implemented. We find similar results in an analysis of cases from Miami-Dade and Philadelphia (see figure 6), while Berk, Sorenson, and Barnes (2016) find that a machine-learning-based risk assessment tool can accurately forecast rearrest probabilities in domestic violence cases.

There are several practical steps we recommend for jurisdictions interested in pilot testing risk assessment tools. The first is that jurisdictions should carefully consider whether to develop their own risk assessment tools or use an off-the-shelf tool such as the Laura and John Arnold Foundation Public Safety Assessment (LJAF PSA), now in use in at least 40 jurisdictions around the country. There are a number of important advantages of using an off-the-shelf tool like the LJAF PSA. First, these off-the-shelf tools are generally inexpensive and easy to implement. The LJAF provides the PSA free of charge to interested jurisdictions, and, in some cases, will provide technical assistance in setting up and maintaining the PSA. Second, many of these off-the-shelf tools, and in particular the LJAF PSA, are extremely transparent, relying on a publicly available algorithm and only nine defendant characteristics to calculate risk scores. Finally, off-the-shelf tools still allow for some flexibility because they generally provide risk scores for a range of important outcomes. The LJAF PSA, for example, predicts the likelihood that an individual will be rearrested for a new crime if released before trial, as well as the likelihood that they will not return for a future court hearing. The LJAF PSA also flags defendants with an elevated risk of being rearrested for a violent crime.

The main advantage of developing a new risk assessment tool instead of using an off-the-shelf tool is that jurisdictions can consider a wider range of outcomes, a wider range of defendant characteristics, or both. Kleinberg et al. (2018) and Kleinberg and Mullainathan (2018) show, for example, that risk assessments that use more defendant characteristics and machine-learning techniques can yield substantially higher predictive accuracy than simple risk assessment tools such as the LJAF PSA.

A second important step is for jurisdictions to balance transparency with equity and efficiency when choosing a risk assessment tool. There are many risk assessment tools lacking the appropriate level of transparency. In extreme cases, some private contractors consider their risk assessment algorithms to be proprietary, keeping them secret even from

the jurisdictions that use them. This lack of transparency means that defendants may be unable to challenge the recommendations made by these risk assessment tools, raising due process concerns. There is also the related problem that the risk scores generated by complex machine-learning algorithms may be opaque even when the algorithms and data are publicly available. These concerns have led some to suggest that jurisdictions should use risk assessment tools that rely on simple algorithms and only a handful of factors, much like the LJAF PSA. On the other hand, there is significant evidence that the recommendations made by these kinds of simple risk assessment tools are less accurate and less fair than the recommendations generated by machine-learning algorithms (Kleinberg et al. 2018; Kleinberg and Mullainathan 2018). We strongly recommend that, at a minimum, jurisdictions use risk assessment tools that are built on formulas and data that are available to the public, while also considering how to balance transparency with equity and efficiency when choosing a risk assessment tool.

Each jurisdiction should also empirically calibrate its risk assessment tool using up-to-date information from its own population, maximizing the tool's usefulness for predicting defendant outcomes. Off-the-shelf risk assessments are typically developed using information from other jurisdictions. The predictions generated by these risk assessments will be most accurate, however, if they are recalibrated using local, up-to-date information. Risk assessments will also need to be periodically recalibrated using more-recent information as it becomes available. We also recommend that jurisdictions develop separate risk assessments for prediction of each relevant outcome, including failure to reappear, rearrest for a new crime, rearrest for a new violent crime, and so on, because these outcomes will generally lead to different predicted risk scores.

A final recommendation is for jurisdictions to regularly monitor pretrial outcomes such as pretrial release rates, pretrial misconduct rates, and socioeconomic and racial disparities in pretrial outcomes to identify any potential problems with either the risk assessment tool itself or the way in which judges are using the risk assessments.

There are also a number of concerns surrounding the use of risk assessment tools, leading us to recommend pilot testing these tools rather than immediately implementing them nationwide. The first concern is that there is still a substantial degree of judicial discretion when using risk assessment tools, with the very real possibility that judges may choose to ignore valid risk assessment information or only use the risk assessment recommendation when it conforms with their own judgment.[11] Judges may also ignore the risk assessment tool because of algorithmic aversion, meaning an unwillingness to trust decisions or recommendations made by algorithms (Dietvorst, Simmons, and Massey 2015, 2016). These types of human responses could impair the usefulness and fairness of risk assessment tools. We believe that additional work is needed to understand exactly how judges use different types of risk assessment tools before we can confidently suggest widespread implementation.

A second concern is that these tools may differentially impact white and minority defendants. The most commonly used risk assessment tools do not directly incorporate information about race, but do use many defendant characteristics that may be correlated with race, such as neighborhood, education, and prior criminal history. By including these factors, risk assessment tools may be inadvertently reinforcing historical biases in opportunities and policing. On the other hand, even imperfect risk assessment tools can improve on the current pretrial system based on judicial discretion, which is also likely to incorporate factors such as education and prior criminal history (and even defendant race). Kleinberg et al. (2018) show, for example, that a machine-learning risk prediction that uses factors such as criminal history can simultaneously reduce both overall predetention rates and racial disparities in pretrial detention. These results indicate that risk assessment tools can, at least in theory, generate both efficiency and equity gains, even when using imperfect input data. Future work on this topic will help us understand exactly how different types of risk assessment tools impact white and minority defendants, allowing us to provide more-concrete guidance on how to best increase both efficiency and equity in the pretrial system.

Judge Feedback and Learning

Our second proposal that warrants pilot testing is for jurisdictions to provide feedback on pretrial detention and misconduct rates, both overall and by race and gender, to all judges working in the pretrial system. In most jurisdictions, there is no systematic feedback provided to judges working in the pretrial system. It can also be extremely difficult for judges to learn about their own performance, because most jurisdictions do not track, say, pretrial detention rates by judge. Yet there is growing evidence that learning and experience may mitigate both racial bias and behavioral errors in judicial decision making (Arnold, Dobbie, and Yang 2018; Chen, Moskowitz, and Shue 2016), suggesting that improved feedback mechanisms can help all judges make better decisions.

Improved feedback mechanisms, such as regular reports on the status of defendants assigned to each judge, might allow judges to learn more quickly what does and does not work in the courtroom. These report cards are also relatively inexpensive to implement, because most jurisdictions already collect the necessary information as part of their case management systems. Though costs would be low, it remains

to be determined just how effective these interventions would be. We therefore recommend that jurisdictions pilot interventions that provide judges with their overall pretrial detention rates, their overall pretrial misconduct rates, and their racial disparities in both pretrial detention and misconduct.

Public Report Cards

Our third proposal that warrants pilot testing is for jurisdictions to provide feedback on pretrial detention rates and racial disparities to the general public, not just judges. There is growing evidence that these kinds of public report cards can improve outcomes in other contexts. For example, there is evidence that public report cards for surgeons increase quality and performance in the health-care system (e.g., Kolstad 2013), and that providing principals with teacher report cards increases teacher quality and test scores in the education system (e.g., Rockoff et al. 2012).

Similar interventions in bail hearings may lead to improved outcomes by highlighting the highest and lowest performers in each court and creating pressure for "bad apples" to change their behavior. We recommend that these public report cards compare each judge's performance to the performance of other judges in the same court, as well as to objective performance metrics such as the equal treatment of observably identical black and white defendants. These public report cards could also compare each judge's performance to metrics calculated using machine-learning tools that identify the best possible combinations of release and pretrial misconduct outcomes (e.g., figure 6). We also note that these report cards are, like the feedback provided to judges, extremely inexpensive to implement in the pretrial system because most jurisdictions already collect the necessary information. However, as with the previous proposal, direct evidence on the effectiveness of this type of intervention does not yet exist.[12]

Judge Decision-Aids

Our final proposal warranting pilot testing is to use judge decision-aids such as bench cards that force judges to slow down their thinking and rely less on heuristics and stereotypes. The best evidence on judge decision-aids come from Russell and Summers (2013), who find that judicial bench cards, when coupled with implicit bias training where participants viewed the documentary series *Race: The Power of an Illusion* and participated in listening and discussion groups, led to sustained improvements in child placement in juvenile preliminary protection hearings. Russell and Summers (2013) demonstrated the efficacy of this intervention by providing six laminated cards to judges that included a checklist of all persons who should be present at the hearing, a checklist of tasks to ensure that key parties and witnesses are present, a checklist of the important factors to consider in the petition or complaint, an extensive list of questions to ask and assess (e.g., What is the current and immediate safety threat that is preventing the child from returning home today?), and a set of questions aimed at mitigating institutional bias (e.g., What assumptions have I made about the cultural identity, genders, and background of this family?).

Similar interventions in bail hearings may also lead to improved outcomes and reductions in racial bias, and are extremely inexpensive to implement. For example, a pretrial bench card may ask judges to carefully consider the risk of flight and danger to public safety if the defendant were to be released, the range of pretrial options and the least-restrictive alternative, the defendant's ability to pay, and what pretrial conditions were assigned to similar past defendants, both of the same and of different race and gender.

Questions and Concerns

1. Should the cash bail system be eliminated entirely?

While the current research strongly supports limiting the use of cash bail at the margin, existing evidence does not yet support the wholesale elimination of the cash bail system, in part because of the lack of natural experiments where cash bail has been eradicated. But there are potential opportunities to study this question moving forward, given the recent bail reforms in New Jersey and California, among other states. We view this research as an important area for future inquiry.

2. Do risk-assessment algorithms introduce bias into bail decision making?

As this paper has helped to document, racial bias in the bail system is a real problem. Risk-assessment tools are not immune to this issue, and there is valid concern that risk-assessment tools may treat white and minority defendants differently. Risk assessment tools generally do not use information about race, but they do use information that may be correlated with race, such as neighborhood, education, and prior criminal history. By including these factors, risk assessment tools may be inadvertently reinforcing historical biases in opportunities and policing; policymakers will need to be vigilant about this possibility as these tools are used. It is important to note that, based on research on the problems with the status quo, even imperfect risk assessment tools can improve on the current pretrial system based on judicial discretion, which is also likely to incorporate factors such as education and prior criminal history (and even a defendant's race). Risk assessment tools can, at least in theory, generate both efficiency and equity gains, even when using imperfect input data. Future work on this topic will help us understand exactly how different types of risk assessment tools impact white and minority defendants, allowing us to provide more-concrete guidance on how to best increase both efficiency and equity in the pretrial system.

Conclusion

The U.S. pretrial system is designed to balance the rights of defendants to be released prior to trial against the societal goals of ensuring court appearances and public safety, while achieving fairness and consistency for defendants. We have argued that in practice, however, the current bail system fails to achieve many of these stated objectives. In this paper, we have presented evidence documenting the presence of economically large net costs of pretrial detention to both individual defendants and society at large. We have also shown that there is considerable inconsistency in the way that the pretrial detention system treats similar defendants, with significant across- and within-judge differences in the use of monetary bail and ROR, and significant racial bias in pretrial detention.

In light of this evidence, we believe that our policy proposals—to use behavioral nudges to decrease pre-trial violations, to change the default away from pre-trial detention, to improve the pretrial decision-making process through risk assessment tools and judge decision-aids, and to provide additional information on judge performance—provide a blueprint for improving the U.S. pretrial system. A reformed pretrial system has the potential to substantially increase social welfare, while simultaneously ensuring that defendants are treated equitably and fairly.

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Endnotes

1. The counties with the largest racial disparities in bail conditions and pretrial detention also exhibit other problems associated with racial injustice, such as high wrongful conviction rates. See, for example, recent work by Hattery and Smith (2018).
2. The research design does not distinguish whether extra detentions are accidental (e.g., a judge sets bail at a level they deem to be reasonable, but the defendant is unable to pay) or deliberate (not allowing bail or raising bail to unfeasible levels to ensure that the defendant is held prior to trial), but rather focuses simply on whether or not people are being held prior to trial.
3. Throughout, we characterize treatment effects in terms of both percentage point changes and percent changes. Percentage point changes are obtained by subtracting one rate from another. Percent changes are obtained by dividing percentage point changes by a baseline rate (e.g., the baseline rate for individuals who are not detained before trial).
4. Given these contrasting estimates in the current literature, estimation of the short-run incapacitation effects and medium-run criminogenic effects in additional data sets is an important area for future work.
5. We again focus on the Dobbie, Goldin, and Yang (2018) estimates from Miami-Dade and Philadelphia, where the largest range of outcomes is available for a consistent sample. See Dobbie, Goldin, and Yang for more details and assumptions underlying this exercise.
6. For example, then attorney general Robert H. Jackson once explained, "It is obviously repugnant to one's sense of justice that the judgment meted out to an offender should depend in large part on a purely fortuitous circumstance; namely the personality of the particular judge before whom the case happens to come for disposition" (U.S. Government Printing Office [GPO] 1940, 5–6). Concerns regarding inter-judge disparities in the criminal justice system also led to the passage of the Sentencing Reform Act of 1984, which led to the establishment of the Federal Sentencing Guidelines, and, in many jurisdictions, the creation of bail guidelines.
7. We control for court-by-time fixed effects following Yang (2017) and Dobbie, Goldin, and Yang (2018).
8. Following Kleinberg et al. (2018), we use a randomly selected subset of the data to train the model using all individuals who are released. Following common practice, we choose the smallest shrinkage parameter (i.e., 0.005) that allows the training process to run in a reasonable time frame. We use a five-fold cross-validation on the training sample in order to choose the optimal number of trees for the predictions. The interaction depth is set to five, which allows each tree to use at most five variables. Using the optimal number of trees from the cross-validation step, predicted outcomes are then created for the full sample. See Kleinberg et al. (2018) for additional details on the algorithm.
9. One important challenge is that we observe pretrial crime outcomes only for those defendants who are released by the bail judge, creating a missing data problem that makes it difficult to evaluate counterfactual decision rules based on algorithmic predictions or to identify the implicit decision-rule used by judges. To overcome this missing data problem, we again follow Kleinberg et al. (2018) and start with the set of defendants released by the most lenient judges. From this set of defendants, we then choose additional defendants to hypothetically detain according to the predictions obtained using our machine-learning algorithms. Each additional hypothetical defendant who is detained allows us to calculate the hypothetical change in pretrial crime for the now smaller set of defendants that would have been released. Importantly, the hypothetical change in pretrial crime can be compared to the outcomes produced by the stricter judges because defendant characteristics are, on average, similar across judges due to the quasi-random assignment of defendants to judges in Miami-Dade and Philadelphia.
10. Specifically, their empirical test uses the standard instrumental variables (IV) framework to identify differences in the local average treatment effects for white and black defendants near the margin of release. The authors build on the insight of Becker (1957, 1993), who proposed an outcome test that compares the success or failure of decisions across groups at the margin. In the context of the pretrial system, the outcome test is based on the idea that rates of pretrial misconduct will be identical for marginal white and marginal black defendants if bail judges are racially unbiased and the disparities in bail setting are solely due to accurate statistical discrimination. In contrast, marginal white defendants will have higher rates of pretrial misconduct than marginal black defendants if bail judges are racially biased against blacks. In practice, however, the outcome test has been difficult to implement because comparisons based on average defendant outcomes are biased when whites and blacks have different risk distributions—the well-known infra-marginality problem (e.g., Ayres 2002).
11. This possibility may help explain why early studies have found little long-term effect of risk assessment tools on release rates. Stevenson (2018b) finds, for example, that the adoption of a risk assessment tool designed by the Laura and John Arnold Foundation led to only a short-run spike in the nonfinancial release rate in Kentucky, with the release rate declining soon after. Stevenson (2018b) also finds no effect of the adoption of the risk assessment tool on failure-to-appear rates or rates of new crime.
12. One potential concern is that elected judges may use the report cards to signal their attitudes towards crime, which could lead to higher pre-trial detention rates. There is as yet no evidence on this possibility, making it especially important to carefully evaluate this proposal in a pilot setting.

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Highlights

In their paper, Will Dobbie of Princeton University and Crystal Yang of Harvard Law School review the empirical evidence documenting the costs, benefits, and distributional consequences of the current pretrial system. They conclude that the current pretrial system contributes to inequalities and inefficiencies in the criminal justice system. In addition, they propose a suite of policy proposals—for both immediate and long-term implementation—to reduce our nation's reliance on cash bail and pretrial detention while also improving pretrial release decisions more generally.

The Proposal

For immediate implementation:

- **Use behavioral nudges** such as text message reminders or user-friendly summons forms to improve appearance rates for defendants released pretrial.
- **Increase the use of citations and release on recognizance for low-risk defendants.** This entails shifting the default criminal justice approach away from cash bail and pretrial detention.
- **Increase the use of noncash and nondetention alternatives for high-risk defendants.** There should be clear limits as to which offenses are appropriate for pretrial detention. Courts will need to take extra steps to ensure that defendants do not absorb unnecessary financial costs.

For pilot testing and implementation upon success:

- **Use risk assessment tools in pretrial decision-making** while ensuring that these tools are sufficiently transparent.
- **Provide feedback on pretrial detention and misconduct rates to judges** to allow them to learn about the effectiveness and impact of their different decisions.
- **Publish public judicial report cards** to enable accountability and comparability among judges.
- **Use judge decision-aids** such as bench cards that can remind judges to slow down their thinking and to rely less on heuristics and stereotypes.

Benefits

The authors argue that there are economically large costs and significant inequalities attached to pretrial detention and the use of cash bail. They estimate that the total net cost of pretrial detention for three or more days for the marginal defendant is between $55,143 and $99,124, with even higher costs for marginal defendants with no prior criminal history. Considering these costs, a reformed pretrial system has the potential to increase social welfare substantially, while also ensuring that defendants are treated fairly.

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