ABSTRACT

Title of Thesis: FROM BAIL TO JAIL? EXPLORING THE UNINTENDED CONSEQUENCES OF A CASH BAIL REFORM

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In 2017, Maryland implemented a cash bail reform that sought to reduce the state's reliance on financial means of pretrial release. This research explores the relationship between the reform and pretrial detention, highlighting shifts in court actor decision-making and trends in defendants' ability to secure pretrial release. Ultimately, this study finds that the reform resulted in a staggering increase in the proportion of defendants who are held without bail. However, the reform simultaneously resulted in a larger portion of defendants released on recognizance and decreased bail amounts for those assigned financial bail. This study also looks beyond the reform's influence on court actor decision-making to determine whether defendants' release outcomes changed, finding that the likelihood of pretrial release increase increased along with average detention lengths. Finally, as bail reforms often seek to reduce racial disparities in pretrial processes, this study inspects the differential effect of the reform on Black and White defendants. Findings from this study contribute to the field's understanding of the complex pretrial process and underscore critical considerations for the architects of pretrial policy.

FROM BAIL TO JAIL? EXPLORING THE UNINTENDED CONSEQUENCES OF A CASH BAIL REFORM

by

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Chapter 1: Introduction

Pretrial detention, a complex process that impacts countless lives, interns around 500,000 individuals daily in the United States (U.S. Department of Justice, 2021). Despite not having been convicted of a crime, individuals who are detained pretrial can experience incredible strain, including loss of income, removal from family and the community, the psychological harms of incarceration, and numerous collateral consequences associated with increased criminal justice system involvement (Dobbie et al., 2018; Goulette & Wooldredge, 2018). Defendants who are detained are more likely to plead guilty (Stevenson, 2018), be convicted of their charges (Leslie & Pope, 2017; Lee, 2019) and receive an incarceration sentence (Heaton et al., 2017), compared to individuals who are released. Overall, prior research has established that pretrial detention significantly increases the likelihood of negative future outcomes for defendants.

During a defendants' pretrial hearing, a judge can make one of three decisions: (1) to release the defendant on their own recognizance, (2) to set a bail amount, which is a monetary form of collateral used to ensure future court appearance, or (3) to summarily detain a defendant who is deemed a flight risk or a threat to public safety. These pretrial hearing decisions shape defendants' pretrial release outcomes, including whether and how long they are detained. Importantly, pretrial hearing decisions are not synonymous with pretrial release outcomes. For example, just because a judge decides to set a bail amount does not mean that the defendant will be able to afford bail and secure their release. In fact, the majority of individuals held in pretrial detention at any given time are there because they cannot afford bail (Leslie & Pope, 2017). The decision to hold a defendant on bail could result in indefinite detention until the case's disposition if the defendant is unable to pay. This distinct, but not mutually exclusive, relationship between judges' pretrial hearing decisions and defendants' release outcomes complicates pretrial research, especially when exploring phenomena related to cash bail.

Through the use of cash bail, release or detention is directly connected to wealth, which raises concerns over disparities that may be generated by the pretrial process. Research suggests that racial disparities operate both through pretrial hearing decisions, such as higher bail amounts (Martinez et al., 2020; Peterson & Omori, 2020), and through defendants' pretrial release outcomes, such as longer detention times (Omori & Peterson, 2020; Martinez et al., 2020). Pretrial hearing decisions are often influenced by risk assessments or pretrial surveys that consider purportedly "race-neutral" institutional factors, such as employment, housing, or criminal history that are intrinsically related to race through historic and systemic patterns of discrimination and unequal access to opportunity (Skeem et al., 2023). Disparities in pretrial release outcomes can operate through differences in ability to pay the same bail amounts (Martinez et al, 2020). This is because race and socioeconomic status are inextricably linked through a series of historical influences involving persistent structural disadvantages tied to segregation, concentrated poverty, and discrimination (Massey, 1990; Wilson, 2012; Sampson & Wilson, 1995). Thus, it is important to assess how disparities may arise through both the pretrial hearing decisions of judges and the pretrial release outcomes of defendants. Additionally, pretrial processes that rely on wealth-based mechanisms of release may contribute to the criminalization of poverty in which poor individuals are unfairly trapped in the criminal justice system (Gustafson, 2008; Pager et al., 2022). The criminalization of poverty may operate through laws that criminalize homelessness, such as making it illegal for individuals to sleep in public places, or through economic sanctions, such as court fines and fees or cash bail.

To reduce the otiose consequences and disparities produced by pretrial processes, numerous jurisdictions have implemented cash bail reforms. Cash bail reforms seek to improve pretrial release outcomes for defendants by reducing reliance on monetary release mechanisms that disadvantage defendants with fewer resources. This is often accomplished by instructing judges to alter their pretrial hearing decisions by releasing more defendants on recognizance, setting lower bail amounts, or both. Studies have found that these reforms may successfully alter pretrial hearing decisions by decreasing the average bail amounts that judges set; yet, pretrial release outcomes are often little changed, with defendants being no more likely to be released from jail (Ouss & Stevenson, 2023; Van Brunt & Bowman, 2018; Stemen & Olson, 2020). Some reports have identified that these reforms may even increase the proportion of defendants who are preventatively detained without the opportunity to pay bail (Glazener et al., 2022). These findings may be discouraging for advocates of cash bail reforms (Wiggins, 2017; Bui, 2018), but they also reveal the complex relationship between bail reforms, pretrial hearing decisions, and release outcomes.

The countervailing effects of bail reforms on pretrial hearing decisions and release outcomes necessitates an in-depth analysis of the mechanisms through which these reforms operate. Prior research often oversimplifies the complex range of pretrial hearing decisions that judges may impose. For example, some studies do not examine all possible decisions, which include (1) releasing on recognizance, (2) setting financial bail, (3) and assigning preventative detention; other studies disregard varying bail amounts within "financial bail" categories (e.g., St. Louis, 2022; Koppel et al., 2022). Prior research also oversimplifies the measurement of pretrial release outcomes by relying on simplistic, binary measures (e.g., Sacks & Ackerman, 2014; Stevenson, 2018; Cadoff et al., 2021; Omori & Peterson, 2020). Studies have defined "pretrial release" in a myriad of ways, such as immediate pretrial release (Cadoff et al., 2021), release within three days (Ouss & Stevenson, 2023; Stevenson, 2018), or any pretrial release prior to the case's disposition (Petersen, 2020). These widely varying measures of release may yield significantly different results when attempting to study bail outcomes. They also ignore the temporal dimensions of pretrial release, in which negative detention consequences often operate through amount of time detained.

Longer detention stays, which are often a product of decreased ability to pay bail (Martinez et al., 2020), exacerbate the consequences of pretrial detention. Studies have shown that more time detained increases a defendant's likelihood of conviction and incarceration (Martinez et al., 2020) and future criminal activity (Lowenkamp et al., 2013). These findings are consistent with prior research on the temporal influences of various court processes, such as the impacts of varying lengths of incarceration on outcomes like employment (Kling, 2006; Ramakers et a., 2014) and recidivism (Mears et al., 2016; Roach & Schazenbach, 2015). Even studies that frame pretrial detention as a discrete predictor have explored its influence on the timing of future court processes, finding that defendants who are detained plead guilty faster (Stevenson, 2018) and receive longer sentences of incarceration (Williams, 2003). Thus, the consequences of pretrial detention function in a time-graded manner through both judges' pretrial hearing decisions and defendants' pretrial release outcomes.

To address these issues, the current work navigates the complex influence of a Maryland cash bail reform on both judges' pretrial decisions and defendants' release outcomes. It utilizes criminal case data from Baltimore, Maryland before and after the 2017 Maryland cash bail reform to examine whether the reform successfully decreased judges' reliance on financial conditions of release in their pretrial decisions, as well as whether the reform decreased detention time for defendants. Additionally, this study is the first empirical examination to explore how cash bail reform shapes detention time across demographic groups. This research is guided by both individual-level perspectives on judicial decision-making (Steffensmeier et al., 1993; Steffensmeier et al., 1998; Ulmer et al., 2007) and macro-level perspectives on structural racism and criminal courts as inhabited institutions (Eisenstein & Jacob, 1977; Ulmer & Kramer, 1998; Bonilla-Silva, 2006). By encompassing the full range of pretrial decisions and by measuring release outcomes using detention time in its analyses, this study demonstrates that pretrial processes are much more complex than portrayed in prior studies. Findings from these analyses are discussed in terms of their relevance for policymakers to understand the potential effects of pretrial reforms and promote future scientific research on pretrial processes.

Chapter 2: Literature Review

Pretrial detention is a complex system that has evolved over time. This chapter delves into the intricacies of pretrial detention and its consequences, offering a comprehensive understanding of its history, relevant empirical research, and emergent cash bail reforms. The first section briefly describes the origins of pretrial detention in the United States and significant historical influences that have shaped current practices. The second section outlines relevant empirical research on pretrial detention, examining its impact on future case outcomes and disparities. The third section gives a detailed description of the Maryland Cash Bail Reform, outlining policy changes as well as prior research on the reform's effects.

Overview of Pretrial Detention in the United States

During the colonial era, pretrial detention practices in the United States were derived heavily from English common law in which bail was solely used to ensure a defendant's appearance at trial. Transitioning from its colonial roots, the United States Constitution employed a critical examination of legal principles, culminating in the protection of individual rights against excessive judicial powers. The Eighth Amendment to the Bill of Rights (ratified in 1791) established that “Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.” Notably, the Constitution did not establish an explicit right to pretrial release. Individuals could have financial bail set or be “preventatively detained” for capital offenses, meaning the offender was deemed too dangerous to the community to release. However, during this time, many states adopted a presumption of release for most non-capital offenses upon the securement of “sufficient sureties” (Frame of the Government of Pennsylvania, 1682). The original bail system did not rely on the prepayment of such sureties. Instead, these sureties were written assurances from a third party to either pay the defendant’s bail amount or arrest the defendant themselves if the defendant failed to appear in court.

As the United States became more urbanized, reliance on close community ties for ensuring appearance in court was insufficient. Courts began to shift their reliance on personal sureties to a system of secured monetary bail and commercial securities through bond agencies. By the early 20th Century, inability to afford prepaid bail became the most common reason for pretrial detention, compared to preventative detention for capital crimes (Beeley, 1927). Arthur L. Beeley conducted one of the first studies of pretrial detention in Cook County, Illinois in 1927. From a random sample of 170 individuals detained pretrial in the local jail, Beeley found that most defendants were detained due to their inability to pay bail, which was largely the result of judges setting unreasonably high bail amounts.

In *Stack v. Boyle* (1951), The Supreme Court addressed unaffordable bail by establishing the “reasonableness standard” for setting bail amounts. The Court determined that a judge may not set a bail amount higher than necessary to reasonably ensure a defendant's appearance in court unless the court is able to produce evidence demonstrating that the defendant is a flight risk. While *Stack v. Boyle* reaffirmed that bail amounts should be reasonable, it did not directly address the right to bail or pretrial release. In 1961, the Vera Institute implemented the Manhattan Bail Project, which demonstrated that individuals could be released without bail, or "on their own recognizance," and still return to court (Ares et al., 1963). The project utilized a risk assessment with measures of family ties and employment to guide judges' decision-making. They found that while judges typically only released 14% of people when not using the risk assessment, they released 60% of those whom the risk assessment recommended for release, 98.4% of whom appeared at their scheduled court date (Smith, 2018). The findings from the Manhattan Bail Project sparked the use of pretrial risk assessments in other New York City boroughs and ignited national interest in pretrial reform.

This culminated in the Bail Reform Act of 1966, which outlined certain presumptions of release in pretrial detention processes. This act was also prompted by public concern about inequalities in the justice system raised by the Civil Rights Movement. The 1966 reform established that "all persons, regardless of their financial status, shall not needlessly be detained, pending their appearance to answer charges, to testify, or pending appeal, when detention serves neither the ends of justice nor the public interest" (Public Law 89-465, 1966: 214). The goal of the 1966 reform was to reduce the number of defendants who were detained due to their inability to pay bail. As such, the law was expected to establish a presumption of pretrial release for all defendants. However, throughout the next several years, numerous jurisdictions reported concerns that judges were circumventing the reform by continuing to set excessive bail amounts that effectively detained individuals (*United States v. Melville*, 1969). This was the result of ambiguous language that failed to explicitly prohibit the pretrial detention of an individual who lacked sufficient funds to afford bail.

Nearly two decades later, in response to emerging "tough on crime" attitudes in the United States, the Bail Reform Act of 1984 was passed as part of the Comprehensive Crime Control Act of 1984 to address the practice of preventative detention. Previously, the use of preventative detention had been restricted to certain capital offenses. The 1984 reform expanded preventative detention by instructing judges to consider "the nature and seriousness of the danger to any person or the community that would be posed by the person's release" in all pretrial detention hearings (Bail Reform Act of 1984). The Constitutionality of preventative detention was challenged in *U.S. v. Salerno* (1987), but the Supreme Court upheld that the Constitution does not explicitly guarantee the right to bail. The Court held that preventative detention was Constitutional, but that it should be reserved for the most severe cases in which the court can prove that the defendant is potentially dangerous to the community. The expansion of preventative detention in federal courts was followed by a nation-wide increase in the use of cash bail. The use of money bail increased by 32% between 1992 and 2006 (Eaglin & Solomon, 2015) and bail amounts generally doubled during this time (Hood & Schneider, 2019). Additionally, the share of individuals in jail who were detained pretrial (compared to convicted) rose from 50% in 1990 to 65% in 2016 (Liu et al., 2018). This increase suggests that bail reforms in the late 20^{th} Century did not decrease the use of bail as expected, but rather contributed to increased use of preventative detention. Moreover, modern reforms may have also had a "net-widening" effect by sweeping more individuals into the "financial bail" category.

In sum, while bail originated as a form of collateral to ensure defendants' future appearance in court, it evolved into a practice that promotes preventative detention and disadvantages defendants who are unable to afford bail. The expansion of preventative detention in the 1990s appears to have justified the practice of setting excessive bail amounts, as bail amounts dramatically increased while jurisdictions across the country began to codify judge's ability to preventatively detain defendants. However, mounting evidence of the negative outcomes and disparities caused by pretrial detention have sparked the reconsideration of pretrial practices in recent years.

Presently, the U.S. is entering a reform era for pretrial detention (Van Brunt & Bowman, 2018). The overuse of pretrial detention, particularly the practice of utilizing cash bail as a monetary mechanism for defendants to secure their release, has faced heavy scrutiny in numerous jurisdictions. Illinois was the first state to outlaw cash bail entirely in 2023, and cash bail is almost entirely eliminated in New York, New Jersey, Washington, D.C., and New Mexico (World Population Review, 2024). Several states have followed close behind with heavy restrictions on the use of cash bail, such as California, Kentucky, Nebraska, and Indiana (MDRC, 2022). Numerous county-level jurisdictions have also limited the use of cash bail for certain low-level crimes (Philadelphia DAO, 2018; Harris County Office of Justice and Safety, 2023). Additionally, many non-profit bail fund organizations have been established to raise money for indigent defendants who cannot afford their bail amounts. For example, The National Bail Fund Network comprises over ninety community bail funds across the country and advocates for the eradication of cash bail practices (National Bail Fund Network, 2024). To generate research that guides these burgeoning reform efforts, it is essential to understand how pretrial detention practices originated and evolved, and to examine the existing empirical literature on the causes and consequences of pretrial detention.

Empirical Research on Pretrial Detention

Pretrial Hearing Decision-Making

Following an arrest, pretrial hearings are one of the first decision-points in criminal case processing. The decisions made at these hearings present an early opportunity to shape subsequent criminal case outcomes. Therefore, it is necessary to explore the various factors that pretrial decision-makers may consider when deciding whether to release defendants on their own recognizance, set bail amounts, or preventatively detain defendants. This decision-making may be highly structured or completely discretionary. Bail schedules are one example of attempts to improve uniformity through structured pretrial decision-making. Like sentencing guidelines, bail schedules outline an amount, or a range of amounts, that guide pretrial decisions based on the seriousness of charges in a defendant's case. Bail schedules are often criticized for their restriction of judicial discretion, as well as their ignorance to the defendant's financial capabilities (Carlson, 2011; Allen, 2016). Risk assessments represent another structured format for guiding pretrial decisions and consider a broader range of factors than solely offense severity. Risk assessments may incorporate aspects of a defendant's prior criminal history, employment status, family responsibilities, or a myriad of other items into their calculations. Often, risk assessments are proposed as alternatives in jurisdictions that are considering reducing their reliance on cash bail. However, this tradeoff should be approached with caution, as it may produce "hollow victories in which wealth-based detention is merely exchanged for a system of pretrial detention of the same indigent defendants—now because they are explicitly deemed too dangerous, too controversial, too unattractive, or too risky to release" (Van Brunt & Bowman, 2018: 771).

Factors such as employment, criminal history, or housing that are included in some risk assessments may be intrinsically tied to race through institutional bias. Therefore, when these factors are integrated into pretrial release decisions, they could generate racial disparities. For example, in a study of around 150,000 federal defendants across 81 different jurisdictions, Skeem, Montoya, and Lowenkamp (2023) identified that 79% of racial disparities in pretrial release recommendations operate through institutionalized factors in surveys intended to assess defendant risk. Disparities may also operate through the biases of the pretrial judge. Pretrial decisions are often made swiftly and with little information about the defendant or alleged crime. When a judge lacks sufficient information to make a pretrial decision, they may resort to cultural stereotypes to fill these cognitive gaps (Steffensmeier, Kramer, & Streifel 1993). It is crucial to examine relevant research on disparities pretrial decision-making to guide equitable reforms and inform the present research. For example, Demuth (2003) finds that Hispanic defendants are most likely to be given financial bail and have the highest bail amounts. Similarly, a study of 975 defendants in New Jersey found that Black and Hispanic defendants are more likely to be detained pretrial (Sacks et al., 2014). Overall, prior research has identified significant racial disparities in pretrial detention decisions and highlights that a large portion of these disparities may operate through institutionalized factors rather than personal biases.

In addition to defendants' race, pretrial detention decision-making can be influenced by numerous external factors. Hood and Schneider (2019) drew data from the State Court Processing Statistics that is collected on the 75 largest counties in the United States. They determined that there is significant variation between counties' bail practices. Some counties released as many as 50% of defendants on non-financial conditions, while others released as few as 5% of defendants on non-financial conditions. Average bail amounts across counties varied from $10,000 to $100,000. The authors determined that the political affiliations of district attorneys, the size of the Black population, and the pervasiveness of politics in judicial offices were significantly related to patterns of pretrial detention procedures. Contextual influences within different jurisdictions influence criminal case outcomes (Ulmer & Johnson, 2004; Johnson, 2006) and may condition disparities in pretrial detention decisions (Ranson et al. 2023). Research has suggested that state-level analyses of pretrial-detention trends experience significant variation in racial disparities within pretrial decisions and recommends more micro-level analyses (Tartaro & Sedelmaier, 2009) supporting the present study's use of city-level data.

In sum, pretrial decision-making can be influenced by factors relating to the case, such as offense severity, or the defendant's characteristics, such as race. For the purposes of this research, it is important to think through how cash bail reforms influence pretrial decisions in the context of these factors. For example, changing case compositions across time could confound the effects of a cash bail reform if they both influence pretrial decisions. Importantly, these decisions do not necessarily reflect pretrial release outcomes, such as whether an individual is able to pay the set bail amount to secure their release. When examining the impacts of a cash bail reform, these pretrial hearing decisions and release outcomes should be explored separately.

Pretrial Release Outcomes

The decision to set bail complicates the measurement of pretrial release. Releasing a defendant on their recognizance implies immediate release, while holding a defendant preventatively implies detention until the case's disposition. However, those who are given financial bail may or may not be released at any point during the processing of their case, dependent on their ability to secure sufficient payment. Much like how disparities in pretrial decisions may emerge through the consideration of racialized concepts such as criminal history, disparities may also emerge indirectly in pretrial release outcomes through socioeconomic status, which is linked to race through institutional disadvantage. For example, Demuth (2003) finds that Hispanic defendants are least likely to be able to pay bail. Additionally, Black and Hispanic defendants are more likely to experience pretrial detention because they are disadvantaged in their ability to pay bail amounts (Sacks et al., 2014). Racial disparities in pretrial release can be extremely consequential for exacerbating disparities that occur in later stages of criminal case processing (Kutateladze et al., 2014; Spohn, 2013; Oleson, 2016). Disparities arising in pretrial release have been estimated to contribute 30% to 40% of the explained Black-White disparity in court dispositions (Donnelly & Macdonald, 2018).

It is critical that researchers consider both pretrial decisions and release outcomes in their analyses. Failure to do so limits our ability to identify the critical mechanisms of our findings. For example, Arnold et al. (2018) utilized the difference in pretrial judges' leniency to conduct an instrumental variables analysis attempting to identify racial bias in pretrial decisions. The authors proposed that if there were no disparities in pretrial release decisions, we could expect to see identical rates of pretrial misconduct for both Black and White defendants. This study found that marginal White defendants, or individuals who would have been released if given a more lenient judge, are 22.2 percentage points more likely to be rearrested prior to disposition compared to marginal Black defendants. The authors conclude that these findings suggest racial bias against Black defendants in pretrial decisions. However, they also acknowledge that these findings could be driven by risk-related differences in who can secure their release by paying bail between Black and White defendants. Distinguishing between the mechanisms of racial bias in pretrial decisions and racial differences in release outcomes via the ability to pay bail is extremely important for informing pretrial policy, as these two explanations carry vastly different implications.

Pretrial release outcomes not only include whether or not a defendant was released, they include the amount of time a defendant spent detained. In some cases, defendants may even be detained for a longer period of time than their imposed sentence. A study on Cook County, Illinois described these detainees as “turnarounds” because they arrive at the prison, are photographed, fingerprinted, booked, and then immediately released because they accrued more pretrial detention credit days than sentenced incarceration days (Ata & Hannigan, 2021). The same study estimated that in 2016, the extra days that defendants spent in pretrial detention past their incarceration sentence totaled 675 years and cost the county over $35 million in extra housing expenditures. Increases in pretrial detention days are not only consequential for local governments, but detained defendants as well. Some legal scholars have argued that lengthy stays in pretrial detention may be a violation of due process or habeas corpus rights (Einesman, 1992; Rodriguez, 2000).

The amount of time that a defendant spends detained can be influenced by numerous factors, including the total time to disposition and the bail amount that a pretrial judge sets. Through a study of pretrial detainees in Miami-Dade County, Florida, researchers found that a 1% increase in bail amount corresponds with an 11% increase in detention time (Martinez et al., 2020). This is especially relevant information for cash bail reforms, which seek to decrease bail amounts, potentially resulting in shorter detention stays.

In sum, pretrial release outcomes can provide information that is distinct from pretrial hearing decisions. Whether or not a defendant secures their release is influenced by the bail amounts set in pretrial hearing decisions, and higher bail amounts can lead to longer detention stays. Comprehensive release outcome measures are necessary for understanding how pretrial detention can influence future consequences for defendants. Most studies utilize a simplistic binary measure of whether or not a defendant was released pretrial to explore the negative outcomes of pretrial detention. Few studies explicitly consider how the effects of pretrial detention might vary depending on the amount of time that a person is held in pretrial detention – a factor that recent work highlights as an essential element of the pretrial detention process. Still, exploring existing research on the downstream consequences of pretrial detention can help underscore the gravity of the pretrial process and its far-reaching impacts.

Downstream Consequences of Pretrial Detention

Extant research has well-established that divergences in earlier stages of criminal case processing can impact future case outcomes by generating "downstream consequences" (Johnson & Larroulet, 2019; Heaton et al., 2017). Many studies have attempted to isolate the impacts of pretrial detention on specific points in future case processing, including plea bargaining, conviction, sentence type, and sentence length. Moreover, some related work suggests that being detained pretrial can also impact post-disposition outcomes, such as employment and recidivism. The vast majority of this work has relied on simple binary indicators that separate released and detained defendants rather than considering more refined bail decision categories or examining measures of detainment time.

A number of studies find that pretrial detention shapes guilty plea decisions in consequential ways (Heaton et al., 2017; Sacks & Ackerman, 2012; Petersen, 2020; Petersen, 2019; Thomas et al., 2022). Using data on hundreds of thousands of misdemeanor cases in Texas, Heaton et al. (2017) found that detained defendants were 25% more likely to plead guilty than released defendants. Not only are detained defendants more likely to plead guilty, they are also more likely to plead guilty faster. For example, in an early study that tracked 975 defendants in New Jersey from initial hearings to disposition, Sacks and Ackerman (2012) found that defendants who were detained pretrial pled guilty faster than defendants who were released. These findings are corroborated by Petersen's (2020) study of Miami-Dade County which found that defendants who are detained pretrial plead guilty 2.86 times faster. The influence of pretrial detention on the timing of guilty pleas is also conditioned by the type of criminal case. Research has demonstrated that pretrial detention is especially consequential for guilty plea timing in misdemeanor cases, compared to felony cases (Petersen, 2019; Thomas et al., 2022). Overall, these studies suggest that defendants who are detained pretrial may experience undue pressure to plead guilty more often and more quickly. In the worst of scenarios, innocent defendants may even be coerced into pleading guilty through pretrial practices (Zottoli et al., 2016; Euvrard & Leclerc, 2017).

Research on pretrial detention also reveals that defendants who are detained pretrial are more likely to be convicted (Rankin, 1964; Williams, 2003; Leslie & Pope, 2017; Lee, 2019; Dobbie et al., 2018; Stevenson, 2018). For instance, in a study of criminal cases in New York City from 2009-2013, Leslie and Pope (2017) used judicial leniency as an instrumental variable to identify whether pretrial detention increased a defendant's likelihood of conviction. They found that being detained led to a 13-percentage point increase in the likelihood of conviction, compared to defendants who were not detained. Additionally, Lee (2019) used propensity score methods to compare detained defendants to released defendants and found that detained defendants were more likely to be convicted, even after matching on relevant covariates. Researchers have identified that this increase in likelihood of conviction primarily operates through an increase in guilty pleas from detained defendants who otherwise would have been acquitted or had their charges dropped if released (Dobbie et al., 2018; Stevenson, 2018) Amongst defendants who are convicted, research also indicates that those who were detained pretrial are more likely to experience downstream consequences during sentencing (Alexander et al., 1958; Williams, 2003; Sacks & Ackerman, 2014; Heaton et al., 2017). To illustrate, Heaton et al. (2017) find that detained defendants are 43% more likely to receive a sentence of incarceration, and typically receive sentences that are twice as long. Additionally, Sacks and Ackerman (2014) did not find a significant relationship between pretrial detention and likelihood of incarceration, but defendants who were able to post bail received shorter lengths of incarceration than defendants who were detained. Researchers have posited that judges may perceive defendants who were detained as more dangerous than defendants who were released, potentially viewing pretrial incarceration as a measure to protect the community instead of an inability to afford bail (Williams, 2003).

A small number of studies has demonstrated that pretrial detention can impact other dimensions of punishment imposition. Employing data from 71 federal district courts, Didwania (2020) used a judge instrumental variables analysis to find that pretrial release lessened the probability that a defendant would receive a mandatory minimum sentence when charged, and also increased the probability that a sentencing judge would depart below the recommended guidelines. The author suggests that these findings are due to an increase in released defendants' ability to gather and present evidence during sentencing, as well as additional opportunities to receive a reduced sentence by providing substantial assistance to the government. Further, a defendant who was released on bail may have the ability to demonstrate to a judge that they do not pose a threat to the community by staying out of trouble or participating in programming, such as substance abuse treatment or mental health treatment (VanNostrand & Keebler, 2009). Overall, research has identified that pretrial detention has numerous negative effects on future case outcomes.

In addition to its impact on case outcomes, pretrial detention can have consequences for life outcomes that occur after the disposition of a criminal case (Wakefield & Anderson, 2020; Dobbie et al., 2018). For example, pretrial detention decreases formal sector employment and the receipt of employment and tax-related government benefits (Dobbie et al., 2018). Additionally, a study examining defendant's employment and earnings after their case dispositions found that men who are detained pretrial experience worse labor market trajectories than men who have been convicted of a crime, but not incarcerated (Wakefield & Anderson, 2020). These findings also held for men who were detained pretrial but who were not convicted of a crime. In addition to its adverse effects on future employment, research suggests that pretrial detention also increases a defendant's likelihood of recidivism following their case's disposition (Loeffler & Nagin, 2022; Walker & Herting, 2020; Lowenkamp et al., 2013). For example, one study found that pretrial detention increases a defendant's likelihood of recidivism within the first year by 33% for felony defendants and by 11% for misdemeanor defendants (Walker & Herting, 2020). The consequences of pretrial detention on life outcomes may even extend past defendants themselves. The detainment of an individual may place undue pressure and strain on family members who can experience stress from separation from a loved one, or who may even have to bear the burden of childcare or related responsibilities while the defendant is detained (Pogrebin et al., 2001; Baughman, 2017).

The consequences of pretrial detention are influenced by longer detention stays. The time that defendants spend detained pretrial can generate significant consequences over and above the estimates generated by a binary indicator of pretrial release. This is consistent with related research on time spent behind bars for other outcomes like total sentence time (e.g. Green & Winik, 2010) or time spent in solitary confinement (e.g. Wildeman & Anderson, 2020). Several studies have demonstrated that the length of time spent in pretrial detention can significantly exacerbate its negative consequences, including worse case outcomes and racial disparities (Lowenkamp et al., 2013; Martinez et al., 2020). One study found that defendants who are detained longer are more likely to receive a sentence of incarceration as well as a lengthier sentence (Martinez et al., 2020).

Pretrial detention time can also exacerbate negative post-disposition outcomes for defendants. For example, a study of prison inmates found that individuals who had spent more time detained pretrial were more likely to commit misconduct while in prison (Toman et al., 2018). Additionally, a study of 153,000 defendants in Kentucky jail between 2009 and 2010 found that low-risk defendants who were detained for 2-3 days were 17% more likely to commit a crime within two years after disposition than defendants who were released within 24 hours of arrest (Lowenkamp et al., 2013). However, defendants who were detained for 4-7 days were 35% more likely to recidivate within two years, and defendants who were detained for 8-14 days were 51% more likely. This study demonstrates that just a few more days in pretrial detention can dramatically increase a person's likelihood of recidivism. It is possible that this increased risk operates through the additional strain that is placed on defendants' personal and professional ties (Wakefield & Anderson, 2020).

Increased detention times may interact with defendants' race to exacerbate inequalities. For example, Martinez et al. (2020) found that Black defendants receive higher bond amounts than White defendants, leading to increased detention time and more negative case outcomes for

Black defendants. Small differences in these bond amounts compounded over time to create a wider gap between Black and White defendants in detention times, and subsequently, conviction and incarceration outcomes. The authors state that "although time detained pretrial is not an explicit decision made by court actors… detention time represents a structural component through which we can see the reinforcement and growth of inequality in the criminal justice system" (Martinez et al., 2020: 855). These findings demonstrate that time spent detained is an important factor for assessing disparities in pretrial processes. Although a primary goal of modern bail reform efforts is reduced reliance on financial release mechanisms, little is known about whether or how bail reforms might impact time spent in pretrial detention. This is important because significant decreases in detention time that are generated by bail reforms may vastly improve future outcomes for defendants.

In sum, since most defendants in pretrial detention are held simply because they cannot afford bail (Leslie & Pope, 2017), relying on a monetary mechanism for pretrial release can significantly disadvantage defendants who are unable to afford bail by increasing their detention time. Increased detention time can then exacerbate the disparities and downstream consequences that defendants experience from detainment, such as an increased probability of pleading guilty, faster guilty pleas, being incarcerated, and receiving a longer sentence. Pretrial detention can also generate negative future outcomes after a defendant's disposition, including decreased future employment prospects and a higher likelihood of recidivism. These processes may also generate negative impacts for family members who are separated from their loved one and who may incur extra burdens. Pretrial detention decisions and release operate in a complex fashion that influence future outcomes, yet relatively little work considers how these processes are conditioned by recent bail reform efforts. Therefore, this research will explore how cash bail reforms impact the distinct processes related to both judicial bail decisions and pretrial detention outcomes. A review of the literature on cash bail reforms will help inform and guide this work.

Cash Bail Reform Literature

Cash bail reforms have become increasingly popular in the past decade. They have been led by prosecutors, grass-roots organizations, and lawyers' associations. These reforms have produced unique opportunities to study the impacts of cash bail policies and have inspired evaluations of pre-existing policies. An overview of the empirical literature regarding cash bail reforms provides valuable context for the current analysis of the impacts of a bail reform on pretrial hearing decisions and pretrial release outcomes.

One type of cash bail reform is replacing judicial discretion in setting bail amounts with bail schedules. Bail schedules are an attempt to guarantee equal treatment for defendants through uniform bail amounts assigned to certain charges. Research shows that even when bail schedules are implemented on a voluntary basis, judges will overwhelmingly defer to the recommendations of these schedules and rarely consider the ability of the defendant to pay bail when bail schedules are in use, which may disadvantage defendants of a lower socioeconomic status (Ottone & Scott-Hayward, 2018). Bail schedules are directly related to the charges that a defendant faces, thus empowering prosecutors to influence bail amounts. Defendants who are detained pretrial are more likely to plead guilty and to plead guilty more quickly than defendants who are released (Sacks & Ackerman, 2012; Peterson, 2020; Heaton et al., 2017), which may present an incentive for prosecutors to overcharge defendants or to use lower bail amounts as a bargaining chip. Due to the fast-paced nature of pretrial detention hearings, judges "cannot carefully or confidently determine whether defendants will harm others if released; therefore, it makes practical sense to err on the side of (political) safety and side with prosecutors' recommendations regarding pretrial detention and high financial bail" (Page & Scott-Hayward, 2022; 96). Therefore, the implementation of bail schedules in an attempt to reduce disparities produced by the cash bail system should be approached with caution (Carlson, 2011; Allen, 2016).

Perhaps the most common type of emerging cash bail reform is reducing reliance on cash bail without eliminating it entirely. In July of 2017, the Attorney General of Illinois signed a letter that criticized the cash bail practices in Cook County, Illinois. This letter resulted in a new rule instructing judges to set bail within a defendant's ability to pay. Following the implementation of this rule, Cook County experienced a decline in the average cash bail amount from $75,000 one year before the reform to $8,500 two months after the reform (Van Brunt & Bowman, 2018). Cook County also experienced an uptick in the percent of defendants held without bail and a corresponding decrease in defendants with financial bail. Even though judges were required to inquire about a defendant's ability to pay bail, 204 of 648 sampled defendants were never asked, and jail populations were not significantly impacted (Van Brunt & Bowman, 2018). Another study of the same Cook County reform reported that the percent of defendants released pretrial increased from "slightly below 80 percent to slightly above 80 percent" (Stemen & Olson, 2020), concluding that the reform did not dramatically increase the number of individuals who were released, but it did affect *how* people were released. Less individuals were required to post monetary bonds to secure their release. However, more defendants were also denied the opportunity to pay bail and were preventatively detained instead. Stemen and Olson (2020) also found that Black defendants were less likely to be released generally, although the authors did not specify whether this disparity was impacted by the reform. Overall, these findings suggest that after the reform, judges were releasing more individuals without bail who would have been able to pay their bail amounts before the reform.

Some cash bail reforms have sought to eliminate the use of cash bail entirely, or at least eliminate the use of cash bail for certain offenses. Illinois passed the Pretrial Fairness Act on September 18, 2023, which statutorily abolished the use of cash bail in the state (Pretrial Fairness Act, 2023). The Pretrial Fairness Act also restricted the list of offenses that are eligible for pretrial detention, requiring the release of defendants charged with offenses not found on this list. Due to the recency of this reform, little is known about its effects. However, this reform will provide a unique setting for future analyses on cash bail reform policies.

In February 2018, Philadelphia District Attorney Larry Krasner announced his prosecutor-led bail reform and stated he would not be seeking cash bail for a list of lower-level offenses. This list encompassed around two-thirds of cases handled by Krasner's office. Researchers utilized a difference-in-differences design and found that this reform led to a 22% increase in likelihood of being granted release on recognizance for defendants charged with applicable offenses (Ouss & Stevenson, 2023). However, the same study found no impact on pretrial detention rates, suggesting that the discretionary implementation by judges resulted in the release of mostly individuals who would have otherwise been able to pay their set bail amount. Much like the 2017 Cook County bail reform, this implies that non-mandated cash bail reform policies may not achieve their intended outcomes.

Ouss and Stevenson also conducted an instrumental variables (IV) and differences-in-differences (DiD) analysis of pretrial detention outcomes, capitalizing on variation in judicial leniency for the IV and the stable pretrial trends of charges that were not included in the bail reform for the DiD. They found no evidence that financial incentives decrease pretrial misconduct. These findings provide evidence that cash bail may not always be necessary for preventing pretrial misconduct (Monaghan et al., 2022; Zotolla & Desmarais, 2022). The limited research on Maryland's recent bail reform effort suggests similar conclusions. Thus, an in-depth exploration of the Maryland bail reform can provide valuable context for this study.

Maryland Cash Bail Reform

The pretrial detention process in Maryland begins with an initial hearing. Following an individual's arrest, initial hearings are required to occur within 24 hours and are led by a District Court commissioner. Commissioners are judicial officers appointed by the Chief Judge in the District Court of Maryland. Notably, unlike judges, commissioners are not required to have a law degree. During initial hearings, commissioners review each individual's charging documents and determine whether probable cause exists to proceed with the case. If probable cause is determined, commissioners set the pretrial conditions for defendants. Commissioners then determine whether the defendant is eligible to receive the services of the Office of the Public Defender. Public defense attorneys are not guaranteed for the initial hearing and pretrial determinations because it is not yet legally considered a "critical stage" of criminal case processing (The Constitution Project, 2015). Finally, defendants who are detained pretrial (either through preventative detention or the inability to post bail) are entitled to a judicial pretrial reconsideration hearing. During a pretrial reconsideration, a judge reviews the commissioner's pretrial decision from the initial hearing and has the discretion to adjust the defendant's conditions of release for any reason.

On October 25, 2016, the Attorney General of Maryland Brian Frosh sent a letter to five members of the Maryland General Assembly urging them to consider amending Maryland Rule 4-216 of the Maryland Court Rules relating to pretrial detention determinations. The Attorney General's letter opined that "setting the bail in an amount not affordable to the defendant, thus effectively denying release, raises a significant risk that the Court of Appeals would find it violates due process." The letter suggested amendments to ensure that defendants are not held in pretrial detention solely because they lack the financial resources to pay bail. The Attorney General also urged commissioners to utilize the least onerous conditions of release for defendants when making their pretrial determinations.

The Rules Committee of the Maryland General Assembly began a review process of Maryland's codified pretrial release procedures and made suggested revisions. The Maryland Court of Appeals adopted Rule 4-216.1 (herein "Rule") in February, 2017 and set the Rule to go into effect on July 1, 2017. The Rule was primarily designed to prevent the detention of individuals solely because they are unable to afford bail. It established that additional conditions of pretrial release should only be imposed when necessary to ensure future court appearance or to protect the community, and a subsection instructs commissioners to use the "least onerous" conditions of release possible, given these considerations (Subsection 4-216.1(b)(3): Maryland Court Rules, 2023). The Rule stated that commissioners should generally give preference to non-financial conditions of release. The Rule also instructs commissioners to consider the financial capabilities of the defendant when setting bail amounts (Subsection 4-216.1(b)(2): Maryland Court Rules, 2023). Overall, if the Rule had achieved its desired goal of reducing the number of individuals who were detained solely because of financial inability to pay bail, we may expect to see an increase in individuals released on their own recognizance, lower bail amounts, and shorter detention times across defendants.

This language is reminiscent of the 1951 Supreme Court ruling in *Stack v. Boyle* that instructed pretrial decision-makers not to set bail higher than reasonably necessary to ensure a defendant's appearance in court, as well as the Bail Reform Act of 1966 that established a preference for release in pretrial hearings. Following *Stack v. Boyle* and the Bail Reform Act of

1966, many jurisdictions continued to detain defendants on excessive bail amounts (United States v. Melville, 1969), suggesting that these reform efforts did not achieve their intended effect of reducing the pretrial detention population who cannot afford bail. Similarly, several research reports have been published on pretrial trends in Maryland following the 2017 Rule suggesting that while average bail amounts decreased, the proportion of individuals held without bail increased.

A study by the Maryland Crime Research and Innovation Center (MCRIC) found that the average bail amount in Baltimore City decreased from $70,085 in 2015 to $17,611 in 2018 (Glazener et al., 2022). However, the same report also found that the percentage of individuals given financial bail decreased from 47% in 2015 to 24% in 2018 while the percentage of individuals held *without* bail increased from 6% in 2015 to 29% in 2018 (with release on recognizance remaining relatively stable during this time). These findings suggest that the Rule's efforts to decrease the use of bail may have resulted in an increased reliance on preventative detention.

Another study identified that Black defendants were disproportionately held without bail for lower-level charges after the Rule was implemented, compared to White defendants (Blumauer et al., 2018). The same study found that Black defendants are held without bail for Seriousness Category VI offenses at a rate that is 8.8 percentage points higher than White defendants. Before the Rule, the average bail amount for Black defendants was $45,000, 15% higher than the average for White defendants. After the Rule, the average bail amount for Black defendants was reduced to $13,000 but was 22% higher than the average bail amount for White defendants. Additionally, the two zip codes that paid the most bail from 2011 to 2015 had a population that was over 90% Black. These two zip codes combined were charged over $22.6

million dollars in bail. This suggests that Black individuals have historically been disadvantaged in Maryland's pretrial system, meriting further analysis to determine whether the 2017 Rule had a disproportionate impact on this population.

These prior studies on the 2017 Maryland Cash Bail reform have been primarily descriptive in nature. They are limited in their ability to draw statistical conclusions regarding the relationship between the reform, pretrial trends, and race. However, the information that these studies uncovered suggests that the Rule may not have had its intended effect. These studies showed that average bail amounts decreased, while more defendants were held without bail. These trends are reminiscent of outcomes from Cook County, Illinois' 2017 reform (Van Brunt & Bowman, 2018; Stemen & Olsen, 2020) and Philadelphia, Pennsylvania's 2018 reform (Ouss & Stevenson, 2023), suggesting that further analyses may also reveal that the Maryland reform did not increase defendants' likelihood of pretrial release.

Summary of Prior Research and Contributions of Current Study

Pretrial detention has numerous negative impacts on future case outcomes, such as plea bargaining, conviction, and sentencing. Detention can also generate consequences for future life outcomes such as employment and recidivism and can negatively impact close family and friends of detained individuals who may experience increased stress or be burdened with extra responsibilities. Disparate consequences for minority defendants may operate through institutional factors that are intrinsically related to race and sometimes explicitly considered in pretrial decisions, such as employment, prior record, or socioeconomic status. Though influence of pretrial detention differentially impacts defendants by race through both judicial bail decisions and pretrial release outcomes, most prior research only examines one or the other. Additionally, most prior research on the negative impacts of pretrial detention oversimplifies pretrial decisions (e.g., conflating cash bail and preventative detention) and release outcomes (e.g., using binary measures of release versus detainment). Emerging research has demonstrated that the negative influences of pretrial detention are stratified across detainment time, which is also related to the determinations of pretrial decision-makers. Consequently, increased detainment time can significantly exacerbate the negative impacts and disparities associated with pretrial detention.

In an effort to reduce the undue consequences generated by pretrial detention, numerous jurisdictions have implemented cash bail reforms. Extant research on these reforms suggests that oftentimes, these reforms decrease average bail amounts but may not significantly influence a defendant's likelihood of pretrial release. However, research is limited on the decision-making mechanisms through which these reforms operate. Additionally, no research has been conducted on whether cash bail reforms can decrease the amount of *time* defendants spend detained pretrial, even if they do not increase defendants' likelihood of release. Time detained is influenced by pretrial decisions, such as set bail amounts (Martinez et al., 2020) and can have significant consequences for defendants' future outcomes (Lowenkamp et al., 2013; Martinez et al., 2020). Therefore, if these cash bail reforms succeed in influencing decision-makers to decrease average bail amounts, they may also successfully decrease the amount of time defendants spend detained pretrial, saving defendants from unnecessary downstream consequences and potentially reducing racial disparities in the pretrial process (Demuth, 2003; Donnelly & Macdonald, 2018; Sacks et al., 2014). This research offers the first examination of the impact of a recent bail reform on time detained, and it provides a rare examination of the potential consequences of the law on racial inequality in the initial bail decisions of District Court commissioners and final pretrial release outcomes.

Chapter 3: Guiding Perspectives and Hypotheses

Case outcomes are shaped by the actions of individual court actors and by broader organizational influences. Judges, prosecutors, defense attorneys, and other court actors exert influence in a case in ways that are conditioned by their personal experiences and biases, but these individuals are also beholden to and operate within a larger organizational structure. Such macro-level forces are *sui generis*, uniquely shaping case outcomes beyond the contributions of each court actor. Thus, this study will utilize multiple guiding perspectives to understand both individual-level and macro-level influences on pretrial detention processes, and how they are potentially impacted by recent bail reform.

On an individual-level, the focal concerns perspective is useful for understanding how the concerns of court actors shape case outcomes. This perspective draws on psychological attribution theory, which provides a framework for understanding how individuals perceive the causes of behaviors and events. On a macro-level, institutional perspectives of courts as organizations and of institutional racism are utilized. Framing courts as functioning organizations can help contextualize broader patterns and priorities that manifest in case outcomes. Concepts of institutional racism aid the interpretation of racial differences that appear in case outcomes and the forces that may produce such disparities. Each of these perspectives are also useful for understanding how a cash bail reform may operate through individuals and organizations to impact pretrial decisions and outcomes. This section will conclude with a set of research hypotheses that have been shaped by these interrelated guiding perspectives.

Focal Concerns Perspective

The focal concerns perspective provides a framework for understanding the decision-making processes of judges and other court actors. It posits that judges weigh three primary considerations in their decisions: (1) a defendant's blameworthiness, (2) community protection, and (3) practical constraints (Steffensmeier et al., 1993; Steffensmeier et al., 1998; Ulmer et al., 2007). Each focal concern operates through two distinct dimensions. A defendant's blameworthiness operates through wrongfulness and harmfulness. Wrongfulness refers to the degree to which a defendant's actions violate legal and moral norms while harmfulness pertains to the harm suffered by the victim or community as a result of the defendant's actions. The concern of community protection operates through dangerousness, which refers to the degree of harm that the defendant poses to the community if released, and risk, which refers to the probability of the defendant committing harmful events in the future. Finally, the concern of practical constraints operates through both individual and organizational constraints. Individual constraints relate to the defendant's personal circumstances, such as their ability to serve incarceration time or their physical or psychological needs. Organizational constraints include limitations imposed by institutional resources or courtroom norms and expectations. These may include concerns regarding jail capacities, jurisdictional caseloads, or maintaining relationships with other court actors. Recent scholars have since introduced a fourth focal concern of "salvageability," referring to a defendant's amenability towards rehabilitation (Ulmer et al., 2023; Galvin & Ulmer, 2022).

Though typically employed in sentencing research, the focal concerns perspective is also applicable to pretrial detention decision-making (Demuth & Steffensmeier, 2004). When prescribing pretrial detention status and setting bail amounts, judges consider whether a defendant is likely to commit pretrial misconduct through engaging in subsequent crime or failing to appear in court. Judges' focal concern of "community protection" may operate through preventatively detaining individuals who pose a threat to the community. The focal concern of "salvageability" may relate to the defendant's perceived rehabilitative potential, increasing a judge's likelihood of granting an individual pretrial release. Interestingly, judges typically set higher bail amounts for defendants who face more serious charges, even though the majority of individuals who fail to appear in court have been charged with less serious crimes (Angel, 1970; Landes, 1974). One possible explanation for this phenomenon is that judges are conflating the use of bail as a mechanism to ensure future appearance with bail as a mechanism for preventative detention, or community protection.

The use of bail to address the focal concern of community protection can create a concerning situation in which individuals who may be a danger to the community or be at high-risk for reoffending have the opportunity to be released if they have the financial capability. As stated by a judge in Los Angeles, California, "No arrested individual who is judicially determined to pose a substantial threat should ever be allowed to buy their unconditional release. Similarly, no arrested person should ever be detained simply because they cannot afford monetary bail" (Alldredge, 2023). Though it is difficult to determine whether a judge meant to set a bail amount that preventatively detains a defendant, this concept may help explain the use of extremely large bail amounts. Finally, judges are also concerned with "practical constraints," which may include the additional resources required by the court and the police to issue and execute a warrant if a defendant fails to appear, or the release of more defendants if jails are overcrowded.

The focal concerns perspective is rooted in attribution theories, which focus on how individuals explain the causes of behaviors and events when making predictions about future criminal behavior (Weiner, 1972; Kelley & Michela, 1980; Albonetti, 1989; Albonetti, 1991). Attribution theories suggest that when judges do not have sufficient time or information to make fully informed decisions, they may employ racial heuristics in their pretrial decision-making

(Demuth & Steffensmeier, 2004; Rachlinski et al., 2009). Bail decisions are made quickly, and pretrial decision-makers often have minimal information about the defendant or the alleged crime, affording them a great deal of discretion in making bail determinations. Over time, these court actors are likely to develop "patterned responses" tied to habitual patterns in pretrial decision-making (Albonetti, 1989; Albonetti, 1991). This may codify the use of heuristics to act as shortcuts that simplify decision-making when predicting the probability of outcomes (Tversky & Kahneman, 1974). Employing heuristics may allow pretrial detention decision-makers to focus on just a few relevant defendant or case characteristics to streamline processes that are cognitively demanding. Although heuristics can greatly improve the efficiency of decision-making, they can also lead to systematic biases. For example, the representativeness heuristic can lead to racial bias if decision-makers consciously or unconsciously link certain defendant characteristics like race and ethnicity to stereotypes associated with criminality. Additionally, attributional biases may cause decision-makers to attribute a minority defendant's alleged criminal behavior to internal characteristics (such as assuming inherent aggression or low self-control) rather than external circumstances (such as socioeconomic status or systemic discrimination), or stable characteristics (long-lasting) rather than unstable characteristics (easily subject to change) (Weiner, 1972). Therefore, employing attributional biases or relying on racial heuristics as a substitute for missing information or inadequate time may help court actors make decisions regarding their focal concerns more efficiently, but they can also lead to inequalities in pretrial outcomes (Albonetti, 1991; Steffensmeier et al., 1998).

Notably, while Maryland's pretrial decisions are made by court commissioners and not judges, these commissioners are appointed by the Chief Judge in the District Court of Maryland and are beholden to procedures put forth by the Maryland Judiciary. Commissioners are likely to follow the same decision-making framework as judges because they report to the same sponsoring agency and carry out many of the same duties that judges typically perform in other states, such as issuing warrants, making probable cause determinations, and deciding pretrial detention status. Therefore, it is reasonable to utilize the focal concerns perspective to understand the pretrial decision-making of Maryland commissioners.

The Maryland bail reform instructed commissioners to make pretrial determinations based on the least onerous conditions necessary to ensure future court appearance. The Rule's implementation was likely filtered through commissioners' focal concerns. Commissioners had to balance the practical constraint of abiding by this new Rule with their concerns of defendant blameworthiness, community protection, and salvageability. For example, if a commissioner had previously set extremely high bail amounts in an effort to preventatively detain certain individuals, the new Rule may influence commissioners to hold these types of defendants without bail instead. Thus, commissioners are still able to consider a defendant's danger to others and risk of reoffending, but the new Rule requires them to achieve community protection in a manner other than setting excessive bail amounts. Additionally, if the reform compels commissioners to release more defendants on their own recognizance instead of setting bail, commissioners may rely on attributional biases or racial heuristics to identify low-risk individuals whom they trust to return to court. Alternatively, because the reform instructs commissioners to consider defendants' ability to pay, and ability to pay is significantly associated with race (Demuth, 2003; Sacks et al., 2014), adherence to the Rule could disproportionately decrease the bail amounts of minority defendants, thus reducing inequality. In sum, the reform may generate differential impacts by race that could operate through commissioners' attributional biases or racial heuristics, or through consideration of defendants' ability to pay which is often associated with race.

Institutional Perspectives of Criminal Courts

Institutional perspectives are broadly utilized to understand how organizational structures, rules, norms, and patterns of personal relationships develop and maintain their own inertia as individual actors cycle through systems. Institutional perspectives of criminal courts have often been conceptualized as either a "due process" model or a "crime control" model (Packer, 1964). While the primary goal of crime control models is the swift conviction and punishment of criminals, the primary goal of due process models is to ensure fair processing by relying on an adversarial, formal, fact-finding process. Institutional perspectives of criminal courts following the crime control model became popular in the 1960s following Abraham Blumberg's (1966) conceptualization of courts as bureaucracies. This institutional perspective posited that instead of adversarial approaches to criminal justice processing, courts follow systems of negotiation and bargaining that resemble that of a bureaucracy (Blumberg, 1966; Brickey & Miller, 1975). This viewpoint gained popularity and inspired future research framing court processes as bureaucratic, such as Nardulli et al's (1985) multijurisdictional study that emphasizes the due process shortcomings of excessive case disposal through guilty pleas, which is facilitated by a bureaucratic court framework.

Einstein and Jacob (1977) rejected the purely crime control bureaucratic perspective, suggesting that criminal courts were much more complex and cannot be neatly categorized as only crime control or due process. Eisenstein and Jacob proposed the institutional perspective of the "courtroom workgroup," in which court actors navigate tensions between efficiency (which is valued in the crime control model) and the imperative to do justice (which is valued in the due process model). The courtroom workgroup, like other organizations, exhibits authority and influences relationships amongst actors, common goals, specialized roles, a variety of work techniques and tasks, and different degrees of stability and familiarity (Eisenstein & Jacob, 1977). Defendants do not encounter courtroom actors operating in isolation from one another, but rather as an interconnected network of individuals who follow certain norms and act in anticipation of others.

Each member of the courtroom workgroup is influenced by the networks of others with whom they interact on a case and their sponsoring organization, such as the state's attorney's office, judiciary, or public defender's office. More distantly, court actors can be influenced by the legislature and appellate courts. While both of these bodies share certain functions, the greatest influence of the appellate courts rests in their ability to impose standards and procedures, and subsequently reverse any decisions that do not meet such requirements (Eisenstein & Jacob, 1977). Since every criminal case can be appealed and potentially overturned if these requirements are not met, the dynamics of the courtroom workgroup must anticipate these actions from the appellate courts.

The Maryland Court of Appeals passed Rule 4-216.1 in 2017, which instructs judges to consider defendants' ability to pay and to utilize the least onerous type of bail in pretrial decisions. The Maryland Court of Appeals draws its power from the ability to overturn decisions. Thus, if a new rule contains ambiguous language, or does not employ certain policy levers for enforcement, it may risk circumvention by court actors (Van Brunt & Bowman, 2018). Such rules may be at higher risk for circumvention if they conflict with expectations of the courtroom workgroup. Established norms and habits of organizations are difficult to change, thus circumvention of policies that impact these norms and habits is likely to occur when filtered through individual decision-makers. For example, Ulmer and Kramer (1998) identified that the implementation of new criminal court policy was highly dependent on local relationships, activities, and informal decision-making criteria. These scholars argue that courts are local policy arenas in which formally rational rules codified under law often conflict with the substantively rational decision-making criteria of local court actors (Kramer & Ulmer, 1996). This suggests bail reforms are filtered through local decision-makers in ways that may subvert their original intent. Notably, pretrial processes involve different actors than are typically involved in courtroom workgroups (e.g,. pretrial service agents), but pretrial decisions still involve broader institutional considerations (e.g., jail capacities) that shape responses to pretrial policies.

Macro perspectives of institutional racism may also coexist with institutional perspectives of criminal courts. Racial disparities may be generated by structural aspects of the courtroom workgroup in addition to personal biases explicated in the focal concerns perspective (Haney López, 1999). Even seemingly race-neutral policies or procedures can reinforce or create disparities that become institutionalized in formal practices (Bonilla-Silva, 2006). For example, including criminal history in risk assessments, which is influenced by racial trends in policing, can reinforce preexisting ideas about race and criminality and perpetuate inequality (Goddard & Myers, 2017). Much like the inertia of norms in the courtroom workgroup, institutionalized racism generates self-reinforcing patterns that are also *sui generis* from the biases of individual court actors.

Overall, macro-level policy changes (the Rule) are filtered through individual-level court actors (commissioners) who must balance organization expectations (the courtroom workgroup) as well as their personal beliefs and attributional processes (focal concerns) in their interpretation and enactment of these policies. Micro-level perspectives, such as the focal concerns perspective which is rooted in attributional theories, can explain how attributional biases and racial heuristics can impact the decision-making of criminal justice actors. This is especially true when court actors are faced with limited time and information, as is often the case in pretrial detention decision-making. Moreover, macro-level perspectives such as institutional racism and courts as inhabited institutions can provide context for patterns that extend past the cumulative decisions of individual actors. These patterns may include the historical inertia of minority disadvantage or the circumvention of policies to preserve organizational norms. These macro and micro perspectives can guide research on the impacts of a cash bail reform. Thus, these perspectives will serve as the foundation for the following hypotheses.

Hypotheses

This research will address five hypotheses related to the impacts of the Maryland bail reform on pretrial detention. The Rule intends to decrease commissioners' reliance on cash bail and improve release outcomes for defendants. As a result of the Rule, commissioners may be inclined to use financial bail less frequently. This is consistent with the courtroom workgroup perspective in which commissioners recognize their obligation to the Maryland Court of Appeals by following the new Rule's instruction to reduce their reliance on financial conditions of release. Therefore, the first hypothesis is that:

H1: Commissioners will be less likely to set financial conditions of release following the reform.

Additionally, the reform instructs commissioners to set the lowest bail amount necessary to prevent pretrial misconduct when they decide to set bail for a defendant. Again, commissioners' decisions to obey this instruction is consistent with the courtroom workgroup perspective regarding their obeisance to the Maryland Court of Appeals. Descriptive reports on the 2017 bail reform in Maryland also report a decrease in average bail amounts. Therefore, the second hypothesis is that:

H2: Conditional on cash bail being set, commissioners will set lower bail amounts, on average, for defendants.

Prior research on the effects of cash bail reforms that restrict the use of cash bail without eliminating it entirely has often found that, although the cash bail reforms decreased average bail amounts, they did not significantly increase the likelihood of pretrial release across defendants. (Ouss & Stevenson, 2023; Van Brunt & Bowman, 2018; Stemen & Olson, 2020). This can be interpreted through focal concerns theory, which suggests that commissioners would still demonstrate their concern of protecting the community by only releasing low-risk defendants, but now they must do so without using excessive or unnecessary cash bail. This could result in commissioners changing their tactics for detaining defendants by using summary detention in lieu of excessive bail, or by selectively reducing use of cash bail for defendants who would have been able to afford bail prior to the reform. However, in line with prior research, it is unlikely that the reform would lead to a substantial shift in overall pretrial release patterns. Therefore, the third hypothesis is that.

H3: The reform will not have significantly increased defendants' likelihood of pretrial release.

Prior research has exclusively examined the effects of cash bail reforms on pretrial release outcomes through the simplistic binary measure of release versus detainment. However, as decreased bail amounts are associated with shorter detention time (Martinez et al., 2020), it is possible that these reforms allowed defendants to be released from pretrial detention *more quickly*, even if their overall likelihood of release did not change. This is important because time spent in pretrial detention can have significant future consequences for defendants (Lowenkamp et al., 2013; Wakefield & Anderson, 2020; Martinez et al., 2020). Therefore, the fourth hypothesis is that:

H4: The reform will have significantly decreased pretrial detention time for defendants.

Finally, a plethora of research has highlighted the racial disparities that permeate pretrial decisions and outcomes. The focal concerns perspective suggests that if commissioners alter their behavior in accordance with practical constraints of following the new Rule, they may increasingly rely on attributional biases or racial heuristics that could result in preferencing “less-risky” or “less-dangerous” White defendants for reduced bail amounts (and subsequently improved pretrial outcomes). Theories of institutionalized racism also suggest that perceptions of risk may be racialized when operating through seemingly race-neutral considerations like criminal history, employment, or socio-economic status, which would also be expected to exacerbate racial inequalities. Therefore, the reform may have had an interacting effect with defendants’ race that further exacerbates inequalities in pretrial decisions following the Rule’s implementation. Therefore, the next hypothesis is:

H5a: The reform will increase racial inequalities in pretrial decisions and outcomes.

Conversely, because the new Rule instructs judges to specifically consider the defendant’s ability to pay bail, and ability to pay is tied to race through institutional racism and accumulated socioeconomic disadvantage, minority defendants could actually disproportionately benefit from commissioners’ considerations of ability to pay bail (Demuth, 2003; Sacks et al., 2014). Therefore, the final hypothesis offers a competing prediction to hypothesis 5a:

H5b: The reform will decrease racial inequalities in pretrial decisions and outcomes.

Chapter 4: Data and Methods

Data

The data used for these analyses come from Case Harvester, which is a web-scraped repository of the Maryland Judiciary Case Search website. Certain precautions must be taken in using web-scraped data, such as ensuring the legality of collecting such data and demonstrating its accuracy (Farley & Pierotte, 2017; Levi, 2017). As such, the Case Harvester data were developed by Open Justice Baltimore and only provide case information that is already publicly available. Additionally, web-scraped data that is composed from existing administrative datasets should undergo quality assurance checks to determine whether certain observations are systematically undercounted or missed by the parser (Luscombe et al., 2022). In a 2023 report published by the Maryland Crime Research and Innovation Center (MCRIC), the Case Harvester data were compared to another web-scraped dataset referred to as the Client Legal Utility Engine (CLUE) data (Jelveh et al., 2023). The datasets appear to have generally captured the same groups of cases, with the exception of cases filed in smaller counties and cases filed before 2013 or after 2019. The report then compared these web-scraped datasets to other sources of administrative data, such as Maryland Judiciary publications, finding that the numbers in these publications generally matched those of the web-scraped databases for the largest Maryland counties. Overall, this report improves our confidence that the Case Harvester data are an accurate representation of the Maryland Judiciary's database.

The Case Harvester data contain information on approximately 1,650,000 criminal cases filed in Baltimore City district courts between 1980 and early 2023.[1] This study uses Maryland

[1] Cases that originated in Baltimore City circuit courts are not included in the analyses. The large majority of criminal cases in Maryland originate in the district courts, and if eligible, are transferred to the circuit courts. Cases that originate in the circuit courts have unique pretrial detention processes that are not comparable to the district

Judiciary Case Search's indicators for a "criminal case" in determining which cases to exclude from the sample, such as civil cases and non-criminal traffic offenses. Baltimore City was chosen for these analyses for multiple reasons. First, the large caseload in Baltimore City allows for more detailed analyses of pretrial detention trends by certain case or defendant characteristics, such as crime type. Second, the MCRIC report identified that web-scraped data from larger jurisdictions, including Baltimore City, match better with administrative reports (Jelveh et al., 2023) compared to smaller counties. Additionally, the data quality for Baltimore City cases is substantially better than in other large Maryland counties, such as Montgomery County (Johnson et al., 2023). Third, pretrial procedures are well-documented in Baltimore City, enabling a better understanding of Baltimore's pretrial processes. While some jurisdictions only provide the date of a case's initial hearing, Baltimore City also records the pretrial determinations made at the initial hearing, as well as subsequent commitment and release dates.

Baltimore City has a population of around 600,000 individuals and is quite diverse, with 70% of the city's population identifying as non-White (U.S. Census Bureau, 2017). The city also boasts a unique landscape for criminal justice research. For example, in 2017, Baltimore had a homicide rate of 55.8 per 100,000 residents, compared to a nation-wide average of 5.3 (FBI, 2017). Additionally, Baltimore City is home to only 9% of the state's residents but includes 40% of the state's incarcerated population (Prison Policy Initiative, 2022). In turn, Baltimore City has a large number of criminal cases that may be utilized for pretrial detention research. Out of all

courts' pretrial processes. For context, there were less than 2,000 criminal cases that originated in Baltimore City circuit courts during the selected timeframe (compared to 51,872 district court criminal cases). Additionally, cases that were filed as summons are excluded from these analyses. In contrast to cases that originate as a statement of charges (which typically reference on-site arrests) or warrants, summons cases only receive an initial hearing on the condition that a defendant has already failed to appear for a court date and was subsequently arrested after a following warrant was issued. These cases are relatively rare (n=667) and have a unique influence on initial hearing detention decisions since the commissioner is aware of the defendant's prior failure to appear in court. Therefore, cases that are filed as summons are not included in these analyses.

cases filed in Baltimore City district courts, 1,312,874 were bail-eligible (80.6%). Cases that are not bail eligible typically include low-level offenses, such as criminal citations.

Bail determinations are made during a defendant's initial hearing. After selecting cases with an initial hearing between October 1, 2015, and September 30, 2018, there were 51,872 criminal cases available for analysis. The research begins in October of 2015 to avoid the impacts of the death of Freddie Gray earlier in that year. Gray was a black man who sustained fatal injuries while in the custody of Baltimore police. After the incident, arrests rates in the city plummeted (Midgette & LaFree, 2024), though they stabilized by early October. The Rule's implementation on July 1, 2017, is used to identify the beginning of post-reform pretrial trends. The study timeframe ends on September 30, 2018, to avoid the impact of a procedural change related to the use of risk instruments during pretrial hearings.[2] The full timeframe for the study, then, captures three full years of data surrounding the bail reform.

The date of each case's initial hearing is used to identify whether the case falls within the designated time frame for this study. Notably, the case's filing date is not the determinant of selection into the sample. This is because cases may be filed earlier than the date of the initial hearing, especially if the case originated from an arrest warrant. As the Rule's effective date was July 1, 2017, the effects of the reform should, in theory, only apply to initial hearings that occurred after this time. Additionally, these analyses exclude defendants in the "other" race category, only comparing Black and White defendants. This is because the "other" race category represents a multitude of other heterogeneous racial groups, and this group is very small, which

[2] In the final months of 2018, Robert Wisengoff, Director of Pretrial Services in Baltimore, made a public statement that Baltimore City's risk instrument would no longer incorporate arrests that did not end in conviction (Roberts & Eckert, 2018). Altering this risk assessment changes the decision-making process for district court commissioners. To avoid capturing potential effects from this change in risk assessment, the study period ends prior to this announcement.

may also lead to unreliable estimates.[3] Finally, 40 cases were given a "temporary commitment order" in which the initial hearing could not occur as scheduled, such as for defendants suffering from an illness or disability that requires immediate attention (MD Rules 4-216, 2017). These cases were also excluded from the sample as they are particularly atypical and comprise a very small number of cases. The final sample size after these restrictions includes 50,442 cases that involve Black and White defendants. The unit of analysis for this study is a criminal case, which can include multiple criminal charges.

Dependent Variable

The first dependent variable is a three-category measure of judicial decision-making, comprised of mutually exclusive categories for "released on recognizance," "financial bail," and "held without bail." The second dependent variable is the bail amount set for defendants with financial bail. Cases that are released on recognizance or held without bail do not have a bail amount. All cases that were given financial bail (N=16,627) have an entry for their bail amounts. This variable is log transformed because the dollar amounts are strongly, positively skewed, and log transformation reduces the impact of particularly large values and stabilizes the variance of the distribution of dollar amounts.[4] These two measures are used to address the first two hypotheses related to judicial decision-making before and after the reform.

The third dependent variable is whether or not a defendant was released at any point prior to the disposition of their case, with "release" coded as 1 and "detained" coded as 0 (Petersen,

[3] "Other" race observations comprised 1,390 of the 51,872 cases, or 2.7% of the sample, prior to their removal. There were no available measures of ethnicity in the data.
[4] The bail amount variable has a skewness statistic of 11.5, indicating that bail amounts are positively skewed. Since OLS models assume normally distributed residuals, log transforming bail amounts brings this variable closer to a normal distribution, resulting in better predictive accuracy of the model.

2020). To investigate potential variation in time to release, supplemental analyses are conducted using alternate indicators of release within 3 days (Ouss and Stevenson, 2023), and any pretrial detention prior to the case's disposition (Cadoff et al., 2021). The fourth dependent variable is the actual length of time until a defendant is released from pretrial detention, which is captured as the number of days between the initial pretrial hearing and the date the defendant is released, the date their case is closed, or the date their case is transferred to a different court, as we do not observe pretrial detention status past these times.

Notably, it is legislatively required that the initial hearing occurs within 24 hours of arrest. As it is not possible to identify differences in the amount of time (in hours) a defendant may have spent in pretrial detention between arrest and the initial hearing, the initial hearing date is used as the starting point for these analyses. The impact of Maryland's pretrial detention reform should operate through pretrial determinations during initial hearings and not influence the time a defendant spends between arrest and the initial hearing.

Independent Variables

There are two key independent variables in this study. The first is a binary indicator of whether the initial hearing occurred after the Rule's July 1, 2017, implementation date. The Rule's instructions for commissioners to lower cash bail amounts and release more defendants on their own recognizance was intended to take effect on this date. However, descriptive trends show that there may have been a strong anticipatory effect of the reform stemming from the Attorney General's letter that admonished commissioners for their excessive bail practices that was released on October 26, 2016 (see Figure 1). Therefore, additional, supplemental analyses are conducted that use a binary indicator of whether the initial hearing occurred after the October 26, 2016, letter.

The second key independent variable is a binary variable for the race of the defendant. The variable is coded as 0 for "White" and 1 for "Black." Individuals who belong to a different racial group are not considered in these analyses because the number of cases is too small to conduct meaningful analyses.[5] Additionally, information on defendants' race is collected from arrest data, which does not include an ethnicity category. Therefore, a significant limitation of this study is the inability to distinguish between defendant race and ethnicity, as well as the comparison of only two racial groups. However, prior research using Hispanic surnames to examine ethnic identity in Baltimore finds that less than 2% of individuals facing criminal charges in Baltimore are Hispanic (Johnson et al., 2022), so they are likely a very small proportion of defendants in the current study as well.

Control Variables

The statistical analyses in this study control for several case and defendant characteristics. The severity of a criminal case is measured on a scale ranging from 0 to 16, with 16 being the most severe. These severity levels were determined based on the penalties for each charge found in the Code of Maryland Regulations (COMAR). Charges with a certain maximum fine or sentence length were sorted into their respective severity categories (see Appendix A). It is important to control for the severity of a case because more severe cases may receive harsher pretrial treatment. The most severe charge within each case is used to determine the severity of the case. Notably, this charge may not be the top charge at conviction for the case.

[5] Ibid 3.

However, because the initial bail decisions are made based on arrest charges, the top severity level at arrest is used to determine the overall case severity level.

The analysis also controls for the type of offense that is listed as the most severe charge. Offense type is coded categorically from 1 to 10 for "murder," "sexual crimes," "robbery," "assault," "firearms/weapons," "burglary/theft," "drug," "other violent crime," "other property crimes," and "other crimes," respectively. "Drug" was chosen as the reference category as it is the modal category and frequently a moderate-level, non-violent offense. These offense types were identified using the categorization system within the Maryland Sentencing Guidelines Manual (MSGM, 2023). Around 3% of cases were missing offense types (N=1,653). After looking at the corresponding charge descriptions and statutory maximum penalties for these offenses, it was determined that the low-level nature of these offenses falls within the "other" category. Thus, cases missing an offense type were coded as "other" offenses. The type of offense may be an important factor in pretrial decision-making, even if two cases have the same severity-level. For example, a defendant who faces charges for a severity category "10" assault may be viewed as greater risk of pretrial misconduct than a defendant who faces a severity category "10" drug crime.

Defendant's sex is controlled for and coded as 1 for "female" and 0 for all remaining cases (including 38 observations that were missing defendant sex). The age of the defendant is continuous and is recorded as the defendant's age at the time of the initial hearing, when the pretrial decision is made. There were around 7% of cases missing age (N=3,749). The mean age was substituted for these cases (32 years).[6] These analyses also control for whether the case

[6] Due to the large number of cases missing age, a binary indicator variable was created to control for missing age, where "1" indicated that age was originally missing and "0" indicated that age was observed to help the model adjust for potential bias through systematic differences in outcomes for defendants whose age was missing

originated with an on-site arrest or an arrest warrant, coding "on-site arrest" as 1 and a "warrant arrest" as 0. Warrants instruct officers to make an arrest for a specific person, whereas on-site arrests typically occur when a police officer finds probable cause to make an arrest in an incident. Additionally, the number of days between each case's filing date and initial hearing are controlled for as a continuous variable. This is because commissioners may treat defendants differently if they were arrested on the same day that a warrant was filed or several months after a warrant was filed. Finally, this study uses a criminal history measure that is generated from the same web-scraped data source by matching defendant names and birthdates across cases.[7] This produces a measure of the number of criminal cases that had been filed for each defendant prior to the filing date for the current criminal case.

Methods

Analytical Plan

To address the first hypothesis that commissioners will be less likely to set financial conditions of release following the reform, this research utilizes a multinomial logistic regression model. This model was selected due to the nature of the first dependent variable, in which judicial decision-making is measured in three mutually exclusive categories. "Financial bail" is utilized as the reference category and compared to "released on recognizance" and "held without bail." For the second hypothesis that bail amounts decrease following the reform, ordinary least squares (OLS) regression is utilized to examine the log-transformed bail amount dependent

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compared to those whose age was observed. However, estimates for models in which this binary indicator of age missingness was included do not differ from models in which it was excluded. Therefore, the analyses in this study present the models without the missing age indicator for parsimony.

[7] Defendants' first names, last names, and birth dates were matched to prior cases with identical personal information to identify prior cases that involved the same defendant. The cases used for matching include all criminal cases filed in Baltimore dating back to 1997.

variable. Additional analyses are conducted using propensity score matching to improve our confidence that individuals with financial bail amounts are comparable before and after the reform. This method assigns each case in the dataset a propensity score, which represents the probability of being given financial bail in the post-reform period based on observed covariates. Then, cases in the pre-reform are matched to cases in the post-reform with similar propensity scores to create pairs that are comparable based on their observed characteristics. After matching, the outcomes of the pre-reform and post-reform groups are compared to estimate the effect of the reform on bail amounts. For the third hypothesis that the reform will not have significantly increased defendants' likelihood of pretrial release, a logistic regression model is utilized for the corresponding binary dependent variable for pretrial release.

The fourth hypothesis that the reform will have decreased time to release for defendants is addressed using survival analyses to model the time it takes for an event, such as pretrial release, to occur. This research utilizes the accelerated failure time (AFT) model to test hypotheses related to detention time. The accelerated failure time model is a parametric model that calculates how the relationship between two variables affects time-to-failure across different conditions. In other words, the model directly estimates how the cash bail reform may have accelerated or decelerated the time a defendant spends in pretrial detention by some constant.

The general form of the AFT model can be specified as:

$$\mathrm{Log}(T) = \alpha + \mathrm{B}_{x} + \sigma\epsilon \qquad (1)$$

Where T indicates survival time, α indicates the intercept, B is a vector of regression coefficients and x is a vector of covariates, σ indicates the scale parameter, and ϵ indicates the error term. AFT models assume a certain distribution. Thus, the scale parameter is dependent on the distribution that is selected for the AFT model, such as the Weibull, log-normal, or log-logistic distributions. These analyses use the Weibull distribution, as it is the most flexible in modeling various types of data distributions and in handling right-censored data. The Weibull distribution can take on different forms based on the shape parameter, meaning it can transform the distribution from one indicating decreasing risk of pretrial release over time, constant risk, or increasing risk. A simplified version of the model specification for these analyses is as follows:

$$\textit{Days to release} = e^{\alpha + \mathrm{B}_{Post\_Reform} + \mathrm{Bx} + (1/\mathrm{p})\epsilon} \quad (2)$$

In this specification, "days to release" is the number of days in pretrial detention dependent on the model constant (α), the reform period in which the initial hearing occurred (B_{Post_Reform}), a vector of other specified covariates (B_x), the Weibull shape parameter (p), and the error term (ϵ). Overall, an AFT model is appropriate for assessing the impact of a cash bail reform on time spent in pretrial detention. Further discussion of how the AFT model compares to negative binomial models and Cox proportional hazard models that have been utilized in extant pretrial detention time research is contained in Appendix B. Findings from these alternative model specifications produce similar results as the AFT model though with varying levels of statistical significance.

For the final two hypotheses regarding the reform's disproportionate impact on pretrial detention by defendants' race, each of the earlier models are estimated after including an additional interaction term between the reform and defendants' race, as shown in equation 3:

$$\textit{Pretrial Detention} = \alpha + \mathrm{B}_{Black*Post\_Reform} + \mathrm{B}_\mathrm{x} + (1/\mathrm{p})\epsilon \quad (3)$$

In this specification, "pretrial detention" refers to the pretrial decision or release outcome of interest dependent on the model constant (α), the interaction between the reform period and defendant race ($\mathrm{B}_{Black*Post\_Reform}$), other specified covariates (B_x), the Weibull shape parameter (p), and the error term (ϵ). The impact of the reform on pretrial detention by race will be explored through both pretrial decisions and release outcomes as they are measured in the first through fourth hypothesis. In other words, to understand whether there was a differential impact of the reform by defendants' race, we explore both the likelihood of being assigned financial bail as well as the likelihood of release and detention time. Overall, the application of these various approaches to a unique web-scraped database on bail hearings in Baltimore provides valuable insights into changes in judicial pretrial decisions, release outcomes, and racial disparities before and after a cash bail reform in Maryland.

Chapter 5: Results

This chapter begins by presenting descriptive statistics of the measures utilized in this study. By presenting descriptive information about these variables and illustrating how pretrial detention decisions and related measures change over time, this chapter establishes a baseline understanding of the broader trends associated with the cash bail reform. This chapter then reports results from the analyses utilized in this study, which employ statistical techniques to isolate the relationship between the reform and the pretrial outcomes, controlling for relevant covariates. These analyses allow for a more precise estimation of the reform's relationship with key measures, such as differential release decisions and pretrial detention outcomes.

Descriptive Statistics

Table 1 below reports descriptive statistics for the measures used in these analyses. Out of the full sample (N=50,442), 61.5% of cases in the sample have an initial hearing between October 1, 2015, and June 30, 2017, or prior to the Rule's implementation; 38.5% of cases have an initial hearing between July 1, 2017, and September 30, 2018, which is after the Rule's implementation.

--Insert Table 1 Here--

The descriptive results suggest that pretrial detention decisions changed after the reform, with release on recognizance increasing from 39.9% to 44.7%, financial bail dramatically decreasing from 44.5% to 14.6%, and held without bail dramatically increasing from 15.6% to 40.7%. Figure 1 shows a more detailed breakdown of how these decisions changed over time. While the Rule's implementation date occurred on July 1, 2017, there appear to be potential anticipatory effects of the reform around the time of the Attorney General's letter to the Maryland Judiciary on October 26, 2016.

--Insert Figure 1 Here--

Average bail amounts also appear to have descriptively changed after the reform. For defendants who were assigned financial bail (excluding individuals who were released on recognizance or held without bail), the geometric mean bail amount before the reform was \$20,836.44 and decreased to \$10,011.47 after the reform.[8] These geometric means are presented in lieu of the arithmetic means due to the log transformation of the bail amounts. Figure 2 shows how the arithmetic distribution of bail amounts changed after reform. The median bail amount before the reform was \$20,000 but decreased to \$10,000 after the reform. The 25th percentile of bail amounts was \$5,000, and did not change before and after the reform, but the 75th percentile shifted from \$50,000 before the reform to \$25,000 after the reform. This suggests that the decrease in average bail amounts after the reform was mostly driven by large decreases in the upper quartile of bail amounts.

[8]Geometric mean bail amounts were calculated from the mean log bail amounts (presented in Table 1) using the following formula: Bail Amount=$e^{\text{Log Bail Amount}}$.

--Insert Figure 2 Here--

Table 1 also reports that the average number of days detained across the entire sample (for all pretrial categories) increased from 11.06 days before the reform to 12.99 days after the reform, which is contrary to the hypothesis that detention time would decrease following the reform. Pretrial release at any point prior to disposition increased modestly from 58.3% to 60.5% of cases following the reform. The percent of Black defendants remained relatively stable at 87.0% before the reform and 86.6% after the reform.

Across the entire sample, the severity level for the top charge in each case is 8.79. The most common offenses are drug offense (32.4%) followed by assaults (22.8%). The sample is 83.1% male, and the average defendant age is 32. Most cases originate as a statement of charges (65.8%) which typically refers to an on-site arrest, compared to warrants (34.2%). The average number of days from filing to initial hearing is 36.6,[9] and the average number of prior criminal cases filed for defendants is 1.7. Analyses reveal that these confounders appear relatively stable before and after the reform.[10]

Multivariate Analyses

Table 2 shows the multinomial logistic regression results for the relationship between the reform and commissioners' pretrial decisions with relationship estimates presented as relative risk ratios.[11] This model uses "financial bail" as the baseline category, which allows for two sets

[9] For cases that originated as a statement of charges (on-site arrests), the average number of days from filing to initial hearing was 0.26. This makes sense as initial hearings are mandated to occur within 24 hours of arrest. For cases that originated as a warrant, the average number of days from filing to initial hearing 106, largely driven by outliers from warrants that had been open for over a year.

[10] Additional discussion of how variables change before and after the reform, as well as a correlation matrix, is provided in Appendix C.

[11] Relative risk ratios express the risk of an outcome occurring compared to the reference category (financial bail), given a one-unit change in predictor variables.

of comparisons across the reform: (1) the relative risk of "release on recognizance" compared to "financial bail" and (2) the relative risk of "held without bail" compared with "financial bail." Results demonstrate that following the reform, the risk of being released on recognizance as opposed to being given financial bail was 3.21 times the risk of those in the pre-reform group ($p<0.001$). Additionally, for observations in the post-reform era, the risk of being held without bail as opposed to being given financial bail was 9.54 times the risk of those in the pre-reform group ($p<0.001$).

Figure 3 presents a more intuitive interpretation of these results as the average marginal effects of the reform on pretrial decisions.[12] These estimates suggest that the reform increased commissioners' likelihood of releasing defendants on their own recognizance by 7.6 percentage points, decreased their likelihood of setting financial bail by 28.9 percentage points, and increased their likelihood of holding defendants without bail by 22.0 percentage points. Each of these results is significant at the $p<0.001$-level. These findings provide strong support for the first hypothesis that commissioners became far less likely to rely on financial conditions for release following the reform. In particular, these results suggest that commissioners became more likely both to release defendants on their own recognizance and to summarily detain defendants, relative to the use of cash bail.

--Insert Table 2 and Figure 3 Here--

The relationships between other covariates and release decisions generally align with expectations. Cases with more serious severity levels have a higher relative risk of being held without bail and a lower relative risk of being released on recognizance, compared to financial bail. Regarding offense types, murder has by far the highest relative risk of being held without

[12] Average marginal effects represent the average change in the predicted probability of the outcome (release decisions) for a one-unit change in the predictor variable, calculated across the entire sample.

bail instead of given financial bail, compared to all other offense types. This relationship is not as strong in the release on recognizance category, which is likely due to the near-zero number of murder cases that are released on recognizance. Men have a higher relative risk of being held without bail and a lower relative risk of being released on recognizance, as do individuals with more extensive criminal histories. Interestingly, no statistically significant differences emerge in type of bail for Black and White individuals.

To investigate theoretical expectations regarding shifts in bail amounts, Table 3 reports results from an OLS regression that identifies changes in log bail amounts relative to the reform. These findings suggest that there was a 48.0% decrease in log bail amounts following the reform, on average, which corresponds to a 38.2% decrease in average bail amounts.[13] This finding is statistically significant at the $p<0.001$-level. However, this decrease in bail amounts may be driven by changes in the characteristics of individuals who were given financial bail before and after the reform. Findings from the previous analyses on pretrial detention decisions show that a defendant's likelihood of being given financial bail following the reform decreases significantly and is related to certain case and defendant characteristics. In other words, individuals who would have received financial bail before the reform became more likely to be held without bail or released on recognizance after the reform. The fact that the sample of individuals receiving financial bail shifted after the reform could be driving the finding that average bail amounts decreased by 38.2% after the reform.

--Insert Table 3 Here--

Therefore, additional analyses were conducted to further explore whether the reform decreased bail amounts specifically for comparable individuals who were held on financial bail.

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[13] The change in log bail amounts was converted to the change in actual bail amounts using the formula $(e^{\beta}-1)*10$, where β is the coefficient for the change in log bail amounts.

To improve our confidence that the financial bail samples being compared before and after the reform have similar characteristics, propensity score analysis is employed. Findings from the propensity score matching analyses suggest that log bail amounts, conditional on similar types of defendants, actually decreased by 65% ($p<0.001$) on average after the reform.[14] Additionally, since bail amounts are highly positively skewed, supplemental analyses are conducted using capped bail amounts. This approach is used to reduce the influence of cases that may have had particularly large bail amounts set before the reform that would likely have been held without bail after the reform. To identify a proper value at which to cap bail amounts, the inter-quartile range of all bail amounts in the sample was multiplied by 1.5 to return an amount of $67,500.[15] An OLS regression that utilizes bail amounts capped at $67,500 finds that log bail amounts decreased by 33% ($p<0.001$) on average after the reform. Table 4 reports abbreviated results using the main variables that compares findings from the original OLS approach, the propensity score matching approach, and the capped bail OLS approach.

--Insert Table 4 Here--

These supplementary analyses improve confidence that bail amounts decreased following the reform in accordance with the second hypothesis. However, differences in the magnitude of bail amount decreases suggest these estimates are sensitive to both shifts in the types of defendants receiving financial bail before and after the reform and to a small number of unusually large bail values.

[14] Before matching, the standardized mean difference for the probability of being held on financial bail in the post-period was 0.35, indicating substantial imbalance. After matching, the standardized difference dropped to -0.00006, indicating substantially reduced bias. The variance ratio improved from 1.0991 before matching to 0.9998 after matching, indicating successful covariate balance.

[15] The formula of 1.5*IQR (Inter-Quartile Range, which is the 25th percentile amount subtracted from the 75th percentile amount) represents the upper whisker of a box and whisker plot. Observations that fall above this upper whisker are considered outliers.

To investigate the third hypothesis about the relationship between the reform and defendants' overall likelihood of pretrial release a logistic regression model is employed that utilizes a binary measure of pretrial release. Table 5 presents results from this model. Notably, this binary measure of pretrial release captures "release at any time prior to disposition" and is distinct from release on recognizance, as a defendant could be initially detained on financial bail but later released once they are able to pay bail.

--Insert Table 5 Here--

Following the reform, defendants' odds of being released from pretrial detention any time prior to the disposition of their case ("any release") increased by 17% ($p<0.01$), on average. Contrary to hypothesis 3, this finding suggests we should reject the null hypothesis that defendants were not more likely to be released following the reform. However, prior research has operationalized "pretrial release" in several other ways that may produce different results. To investigate the robustness of this result, additional analyses are conducted using different cutoff values that define pretrial release as "any release within 3 days" and "immediate release" (Ouss & Stevenson, 2023; Cadoff et al., 2021). Table 5 includes the results of these additional models. While defendants' odds of "any release" increased by 17% on average, their odds of release within 3 days *decreased* by 14%. By contrast, defendants' odds of immediate release increased by 37% (all statistically significant at the $p<0.01$-level).

The positive association between "immediate release" (essentially release on recognizance) and the reform likely benefitted defendants who would have been able to pay bail within three days before the reform. This, combined with the increased likelihood of defendants being held without bail, helps explain the negative relationship between the reform and "release within 3 days." In other words, defendants who were shifted into release on recognizance likely would have been able to pay their bail within three days anyways, and those who were not released on recognizance likely faced longer detention times due to being placed in the held without bail category. However, this must be reconciled with the finding that "any release" increased, which implies that despite more individuals being held without bail, more defendants were eventually released, even if they spend more time detained pretrial. These findings demonstrate why a single, binary measure of release is inadequate for explaining the nuanced effects of the reform on pretrial release.

Thus, the next step in this research is to test the fourth hypothesis that the reform decreased average detention times. Table 6 presents results from the AFT model that compares pretrial detention lengths before and after the reform.

--Insert Table 6 Here--

The estimates in Table 6 suggest that the reform is associated with a 5% increase in detention time, on average, which is statistically significant ($p<0.05$). However, when the model is restricted to only include cases that were given financial bail, detention time decreased by 42% ($p<0.01$) on average after the reform. This suggests that conditional on receiving financial bail, average time spent detained was reduced following the reform. This is likely because individuals who were given particularly large financial bail amounts before the reform in order to preventatively detain them became more likely to be held without bail after the reform.[16] Overall, the findings indicate that the reform led to shorter periods of detention for those who received financial bail, but it also increased the number of people receiving summary detention and

[16] This argument is supported by the data. When the model is restricted to cases that were either given financial bail or held without bail, detention time increases by 42% ($p<0.01$) following the reform. Conversely, when the model is restricted to cases that were either given financial bail or release on recognizance, detention time decreases by 53% ($p<0.01$) after the reform. This suggests overall increases in average time spent in pretrial detention is driven largely by the post-reform increase in use of summary detainment.

release on recognizance, resulting in a slight increase in average post-reform detention time among all defendants.

To explore the fifth hypothesis which address racial inequality in bail reform, Table 7 presents results from multivariate regressions of the reform and race interaction, including a multinomial logistic regression of decision types and an OLS regression of log bail amounts. These estimates are derived from the same multinomial logistic regression and OLS regression approaches used to test the first two hypotheses, but with an added interaction term between the reform and defendant race. Figure 4 presents the average marginal effects of the reform on pretrial decisions as they differ across defendant race. Notably, the average marginal effects are calculated based on the average characteristics of the full sample (both Black and White defendants), even though the average Black defendant may have different characteristics (e.g., average age, average criminal history) than the average White defendant.

--Insert Table 7 and Figure 4 Here--

These results in Table 7 show that the reform disproportionately increased Black defendants' likelihood of being released on recognizance, compared to White defendants ($p<0.001$). However, the reform also disproportionately increased Black defendants' likelihood of being held without bail, compared to White defendants ($p<0.001$). Finally, the reform disproportionately decreased Black defendants' average bail amounts, compared to White defendants ($p<0.05$). The average marginal effects presented in figure 4 show that following the reform, Black defendants' probability of being released on recognizance increased by 6 percentage points, but only increased White defendants' likelihood of being released on recognizance by 1 percentage point. Additionally, the reform increased the likelihood of being held without bail by 24 percentage points for Black defendants and by 22 percentage points for

White defendants. These results suggest that the differential impact of the reform by race may decrease disparities in some circumstances (Black defendants benefited more from increased likelihoods of release on recognizance than White defendants) but potentially exacerbate racial disparities in other circumstances (Black defendants disproportionately experienced shifts into held without bail, compared to White defendants).

Table 8 shows the differential impact of the reform on release outcomes for Black versus White defendants, including changes in “any release,” “release within 3 days,” “immediate release,” and detention time by defendants’ race. These results show that there is not a statistically significant interaction between race and the reform for “any release,” “release within 3 days,” or detention time. However, there is a significant relationship between the reform and race for immediate release ($p<0.01$). This is consistent with the previous finding that Black defendants were more likely to benefit from increased use of release on recognizance following the reform (Figure 5).

--Insert Table 8 Here—

In sum, the analyses of the reform’s relationship with defendants’ race for pretrial decisions and release outcomes reveals important differential impacts. Black defendants experienced a greater increase in the likelihood of release on, along with larger reductions in bail amounts, compared to White defendants. However, Black defendants were also disproportionately shifted into the held without bail category, suggesting that the reform has a mixed relationship with racial disparities. These findings highlight the complex effects of the reform on racial differences in pretrial outcomes.

Chapter 6: Discussion

The final chapter summarizes the main findings from this study and evaluates the level of support for the guiding theoretical hypotheses. This chapter also discusses the unique interplay of pretrial decisions and detention outcomes, as well as their differential results by race. Then, relevant limitations of this study are addressed. Finally, this chapter contextualizes findings from this study within the existing literature on pretrial detention and bail reform and explores their broader implications for future research and criminal justice practices.

Summary of Findings and Support for Theoretical Hypotheses

The 2017 Maryland Cash Bail reform sought to decrease Commissioners' use of financial bail and lower cash bail amounts for defendants to decrease their exposure to pretrial detention. However, media reports suggest that the reform may have worsened defendants' detention outcomes by resulting in more defendants being held without bail (Bui, 2018). These concerns are supported by descriptive reports that identify a large increase in the proportion of defendants who are held without bail following the reform (Glazener et al., 2022). To fully explore the reform's impacts, the present research makes an important distinction between the pretrial decisions made by commissioners (such as release on recognizance, financial bail, held without bail, and bail amounts) and defendants' detention outcomes (such as whether and how long they were detained).

This study found support for its first hypothesis that the reform is associated with commissioners' reduced use of financial bail. However, this decreased reliance on financial bail manifested in both a slight increase in the likelihood of release on recognizance, as well as a much larger increase in the likelihood of being held without bail. This study also found support for its second hypothesis that average bail amounts would decrease following the reform. Notably, this decrease in average bail amounts is related to individuals being shifted from the financial bail category into both the "release on recognizance" and "held without bail" categories, the latter of which would have had particularly high bail amounts before the reform, as explored by supplemental analyses. While these supplemental analyses consistently reported that bail amounts decreased following the reform, the magnitude of this decrease varied across different statistical modeling strategies and should thus be interpreted with caution.

Findings did not support the third hypothesis that the reform would not have a significant impact on pretrial release. When pretrial release was measured as "immediate release" defendants were more likely to be released following the reform, which is consistent with the finding that the likelihood of release on recognizance increased following the reform. When measured as "release within 3 days," defendants were *less likely* to be released following the reform. This may be because commissioners chose to selectively shift individuals who would have been able to pay lower bail amounts within 3 days anyways into the "release on recognizance" category (Ouss & Stevenson, 2023). These findings also suggest an interesting relationship between the reform and detention time. Overall, commissioners' increased use of release on recognizance resulted in an increased likelihood of immediate release, while the remaining defendants may have experienced longer detention times, making them less likely to be released within three days. This proposition is supported by findings from a survival analysis in which detention times increased following the reform, which contradicts the fourth hypothesis that detention times would decrease. These findings may also suggest that the detention-lengthening effects of shifts into the "held without bail" category following the reform may outweigh the detention-shortening effects of decreased bail amounts (Martinez et al., 2020) and/or shifts into the “release on recognizance” category. These findings are particularly concerning, as they cast doubt on the reform’s ability to successfully decrease defendants’ exposure to pretrial detention. This complex pattern of results for how the reform was related to pretrial release demonstrates that a single, binary measure of release (as utilized in most pretrial detention research) fails to capture the full picture of the pretrial process and potentially omits valuable insights.

Results from these analyses can be interpreted through focal concerns and courtroom workgroup perspectives in which court actors recognize their obeisance to the Maryland Court of Appeals instructions regarding the reform yet are still invested in maintaining the status quo of who is released or detained. If commissioners selectively increased release on recognizance for select low-risk defendants who would have been able to pay their bail amounts within three days anyways (as suggested by results from this study), then have effectively maintained this status quo of release while still obeying the reform’s instructions. The same is true for shifting defendants into the held without bail category who likely would not have been able to pay their bail amounts before the reform. Thus, while more defendants are being released on recognizance and bail amounts decreased, defendants release outcomes did not dramatically improve. This is also consistent with the idea that “circumvention” techniques may be employed when policies are filtered through court actors who are invested in maintaining the norms that these policies seek to alter.

Finally, a goal of many cash bail reforms is to reduce racial disparities in the pretrial process. Cash bail reforms are thought to address disparities that arise as a product of financial mechanisms of release, as race and socioeconomic status are historically intertwined (Massey, 1990; Wilson, 2012; Sampson & Wilson, 1995). Therefore, the fifth hypothesis of this study explored whether there was an interacting effect of the reform with defendants' race that could potentially increase or decrease disparities in pretrial detention. Analyses revealed that Black defendants disproportionately benefited from increases in release on recognizance and decreased bail amounts following the reform, compared to White defendants. These findings could be a result of the reform's instruction for commissioners to explicitly consider defendants' financial ability to pay bail. Prior research has found that Black defendants are less likely to be able to afford their bail amounts than White defendants, even when these bail amounts are relatively similar (Demuth, 2003; Sacks et al., 2014). However, Black defendants were also disproportionately more likely to suffer from increased likelihoods of being held without bail after the reform, compared to White defendants. This could be related to the employment of attributional biases or racial heuristics in commissioners' decision-making. In sum, the reform had both a disproportionately positive and negative relationship with defendants' race.

Limitations

There are several limitations in this study that are important to acknowledge. To begin, the generalizability of this study is limited. Baltimore is a unique city and its pretrial procedures, defendant demographics, and case characteristics may differ significantly from that of other cities. For example, Baltimore has a majority Black population, which may influence findings related to the disproportionate relationship between race and the reform differently than in majority White jurisdictions. The timeframe for the study (2015-2018) may also limit this research in its ability to make claims about contemporary pretrial processes, as policies or trends may have since changed. The study was also limited to cases that originated in district court, and thus cannot be compared to the small number of cases that originate in circuit court. Future research may benefit from exploring the impacts of cash bail reforms across different geographic community compositions (e.g., poverty levels, ethnic heterogeneity, residential mobility) to examine whether the reform had differential impacts on these communities. Overall, the unique context of this study should be considered when interpreting its conclusions.

The study also has noteworthy limitations related to the data and measures that are used. In general, the use of web-scraped data may not be as reliable as administrative data. Web-scraped data could systematically undercount or omit relevant variables that could bias findings. There are also several variables that this study was unable to include that could potentially generate omitted variables bias. This study was unable to measure the socioeconomic status of defendants. If defendants were systematically in a higher or lower socioeconomic group following the reform, it may influence their ability to pay bail and secure pretrial release. Other potentially relevant variables that were not used in this study may include defendants' employment status, family responsibilities (such as parenthood or caregiving), trends in policing, or commissioner characteristics.

The criminal history measure is particularly limited in this study, as it was only able to capture the number of times an individual had a criminal case filed prior to the controlling case. An ideal measure of criminal history would also capture the severity of the record, differentiate between case fillings and convictions, and identify whether a person was under correctional or community supervision at the time of the case. The measure of defendants' race is also limited to a binary indicator of "Black" versus "White." Because 97.3% of defendants in Baltimore fall into these two categories, this is defensible in the current study. Still, future research should attempt to capture more detailed race and ethnicity information, as the impacts of pretrial reforms could differentially impact other groups. Such research could also further explore the unique relationship between the reform and other defendant characteristics such as sex or age, as well as more detailed case characteristics.

Another limitation of this research is that it does not capture information on pretrial reconsideration hearings. Under Maryland law, individuals who are held in pretrial detention are entitled to a reconsideration hearing in front of a judge. During this reconsideration hearing, the judge reviews the district court commissioner's pretrial decision from the initial hearing. The judge determines whether the defendant should continue to be held under the same conditions set by the district court commissioner or whether new conditions of release should be imposed. It is possible that the reform impacted the decisions of judges in a way that was unique to its impact on district court commissioners. Differential impacts of the reform on judges may be related to their unique qualifications (judges are required to have a law degree while commissioners are not) or job experience (judges typically hold longer terms than commissioners). Therefore, future research should explore both the initial pretrial decisions of district court commissioners as well as subsequent pretrial decisions from judges at pretrial reconsideration hearings.

Finally, this study is not meant to be a causal analysis of the pretrial reform. The "effects" of the reform are interpreted as its relationship with dependent variables of interest, controlling for relevant covariates. Future research could benefit from quasi-experimental research designs, such as a differences-in-differences analysis of multiple cities during a pretrial reform or a commissioner leniency instrumental variables design.

Implications for Research and Policy

This research yields several insights that are useful for researchers and policymakers. For researchers, this study highlights the complexity of pretrial processes. As such, researchers should always distinguish between the pretrial decisions of court officials during initial hearings (release on recognizance, financial bail, held without bail, and bail amounts) and release outcomes secured by defendants when studying pretrial detention. Pretrial decision and release outcomes are related, yet each has a unique influence on pretrial phenomena that necessitates the study of both individually. Additionally, this study encourages researchers to employ more detailed measures of release outcomes, such as multiple binary indicators of release and measures of overall time detained, to fully understand phenomena related to pretrial detention. Relying on a single, binary measure of pretrial release is insufficient and may lead researchers to overlook important effects or form incorrect conclusions. Future research should also strive to incorporate more advanced statistical methods to improve the reliability and accuracy of estimates. Particularly for temporal court processes, negative binomial models may be insufficient, as the exploration of criminal cases frequently requires censoring due to dropped cases or court transfers that may be better addressed by survival models.

For policymakers, this research demonstrates the need for a thorough consideration of how court actors may be inclined to circumvent new policy, as well as potential enforcement levers that ensure compliance with the spirit of the policy, not just the letter of the policy. This may include a specific list of crimes that are mandated to be released on recognizance, preventing court actors from selectively benefitting defendants who would have been able to pay bail anyways. Without explicitly considering the priorities of court actors, policymakers risk generating unintended consequences for defendants who experience these circumvention efforts, such as increased reliance on holding defendants without bail. This research also demonstrates that cash bail reforms are promising for reducing sources of racial bias in pretrial processes by reducing reliance on financial mechanisms of release and decreasing bail amounts, as long as these reforms do not cause circumvention methods that are detrimental to defendants, such as the increased use of holding defendants without bail.

Conclusion

The findings of this study highlight the complex and often conflicting effects of Maryland's 2017 cash bail reform on pretrial outcomes. While the reform successfully reduced average bail amounts and increased the likelihood of release on recognizance, it also led to a substantial rise in defendants being held without bail. These countervailing effects suggest that court actors adapted to the reform in ways that both aligned with its instruction and circumvented its intent. Moreover, the differential impacts of the reform by race underscore the persistent influence of systemic disparities in pretrial processes, with Black defendants experiencing both greater benefits (through increased likelihoods of release on recognizance and lower bail amounts) and greater harms (through increased likelihoods of being held without bail) than White defendants. These findings carry significant implications for future research and policy suggestions. Researchers should explore both the pretrial detention decisions of judges, as well as the pretrial release outcomes of defendants when assessing the impacts of pretrial reforms. Additionally, researchers should avoid relying on a single, binary measure of pretrial release, as this oversimplification of a complex process can lead to incomplete or misleading results. Future reforms should include mechanisms to monitor and address unintended consequences, such as increases in preventive detention, while also prioritizing equity in pretrial decision-making. By providing a nuanced understanding of how a bail reform operates, this study contributes to ongoing efforts to reduce the far-reaching consequences of pretrial detention.

Tables and Figures

Table 1: Descriptive Statistics, Baltimore City Case Harvester Data (N=50,442)

VARIABLES	Pre-Reform	Post-Reform	Total
N	31,015 (61.5%)	19,427 (38.5%)	50,442 (100.0%)
Pretrial Decision Type			
Release on Recognizance	12,378 (39.9%)	8,687 (44.7%)	21,065 (41.8%)
Financial Bail	13,787 (44.5%)	2,840 (14.6%)	16,627 (33.0%)
Hold Without Bail	4,850 (15.6%)	7,900 (40.7%)	12,750 (25.3%)
Log Bail Amount	9.94 (1.51)	9.21 (1.10)	9.82 (1.48)
Detention Days	11.06 (19.68)	12.99 (26.00)	11.80 (22.35)
Any Pretrial Release			
No	12,923 (41.7%)	7,667 (39.5%)	20,590 (40.8%)
Yes	18,092 (58.3%)	11,760 (60.5%)	29,852 (59.2%)
Race			
White	4,035 (13.0%)	2,598 (13.4%)	6,633 (13.1%)
Black	26,980 (87.0%)	16,829 (86.6%)	43,809 (86.9%)
Top Charge Severity Level	8.89 (3.96)	8.65 (4.30)	8.79 (4.10)
Offense Type			
Murder	163 (0.5%)	130 (0.7%)	293 (0.6%)
Sexual Crimes	129 (0.4%)	93 (0.5%)	222 (0.4%)
Robbery	321 (1.0%)	199 (1.0%)	520 (1.0%)
Assault	6,984 (22.5%)	4,514 (23.2%)	11,498 (22.8%)
Firearm/Weapon	3,029 (9.8%)	2,063 (10.6%)	5,092 (10.1%)
Burglary/Theft	3,591 (11.6%)	2,343 (12.1%)	5,934 (11.8%)
Drug	10,236 (33.0%)	6,096 (31.4%)	16,332 (32.4%)
Other Violent	506 (1.6%)	280 (1.4%)	786 (1.6%)
Other Property	1,957 (6.3%)	1,229 (6.3%)	3,186 (6.3%)
Other	4,099 (13.2%)	2,480 (12.8%)	6,579 (13.0%)
Sex			
Male	25,890 (83.5%)	16,033 (82.5%)	41,923 (83.1%)
Female	5,125 (16.5%)	3,394 (17.5%)	8,519 (16.9%)
Age	32.30 (10.93)	32.42 (10.99)	32.35 (10.95)
Document Type			
Warrant	10,105 (32.6%)	7,157 (36.8%)	17,262 (34.2%)
Statement of Charges	20,910 (67.4%)	12,270 (63.2%)	33,180 (65.8%)
Days from Filing	33.29 (251.06)	41.84 (261.74)	36.59 (255.26)
Criminal History	1.64 (2.38)	1.89 (2.66)	1.74 (2.50)

N(%) reported in parentheses for categorical variables.
Standard deviation reported in parentheses for numeric variables.

Figure 1: Baltimore Pretrial Decision Types Over Time

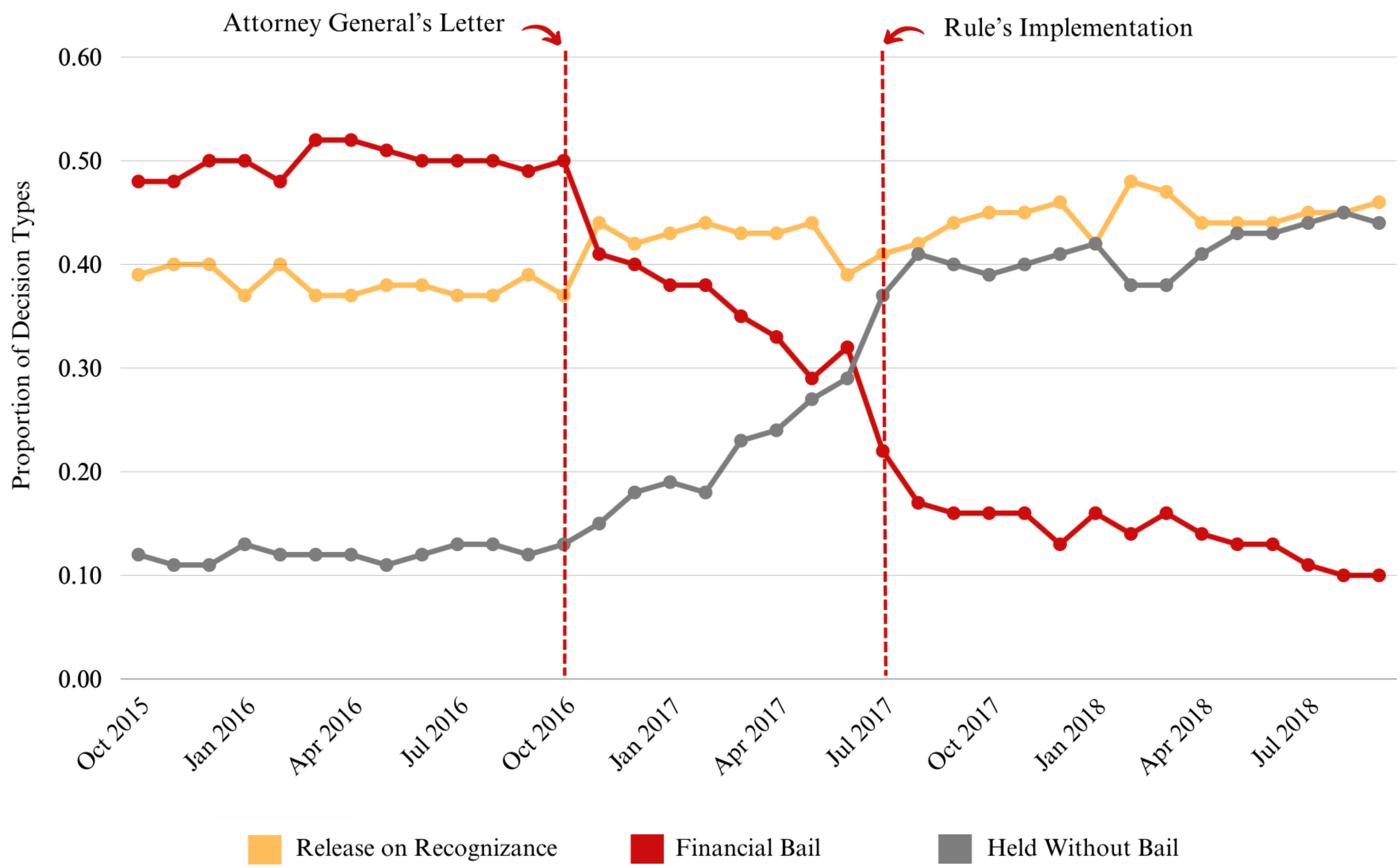


Figure 2: Bail Amount Distributions Pre- and Post-Reform

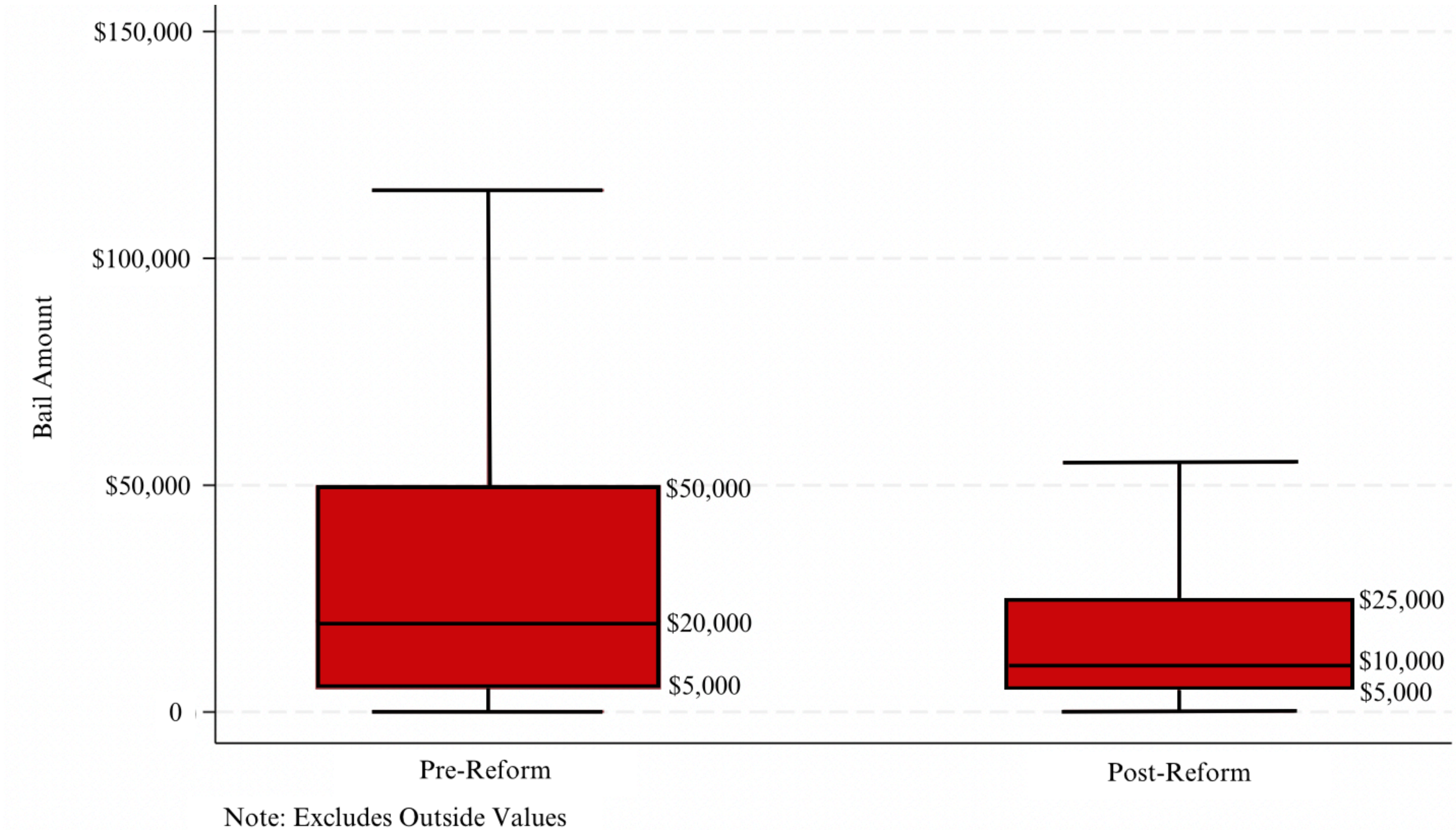


Table 2: Multinomial Logistic Regression of Pretrial Decision Types (Baseline: Financial Bail)

	Release on Recognizance		Hold Without Bail	
VARIABLES	**RRR**	**Robust SE**	**RRR**	**Robust SE**
Post Reform	3.21***	(0.09)	9.54***	(0.28)
Top Charge Severity Level	0.81***	(0.00)	1.11***	(0.01)
Offense Type (Baseline: Drug)				
Murder	0.22	(0.24)	61.11***	(20.23)
Sexual Crimes	0.55*	(0.14)	4.90***	(0.83)
Robbery	0.13***	(0.03)	4.38***	(0.49)
Assault	0.48***	(0.02)	1.93***	(0.09)
Firearm/Weapon	0.17***	(0.01)	5.34***	(0.26)
Burglary/Theft	0.47***	(0.02)	1.11	(0.06)
Other Violent	0.63***	(0.06)	2.52***	(0.27)
Other Property	0.47***	(0.02)	1.25**	(0.09)
Other	0.30***	(0.02)	7.62***	(0.44)
Female	1.88***	(0.06)	0.52***	(0.02)
Black	0.94	(0.03)	0.97	(0.04)
Age	1.01***	(0.00)	1.00	(0.00)
Statement of Charges	1.79***	(0.06)	0.45***	(0.01)
Days from Filing	1.00***	(0.00)	1.00***	(0.00)
Criminal History	0.91***	(0.00)	1.01*	(0.01)
N		50,442		
Pseudo R^2		0.26		

*** $p<0.001$, ** $p<0.01$, * $p<0.05$

RRR: Relative Risk Ratio; SE: Standard Error

Figure 3: Average Marginal Effects of the Reform on Pretrial Decision Type

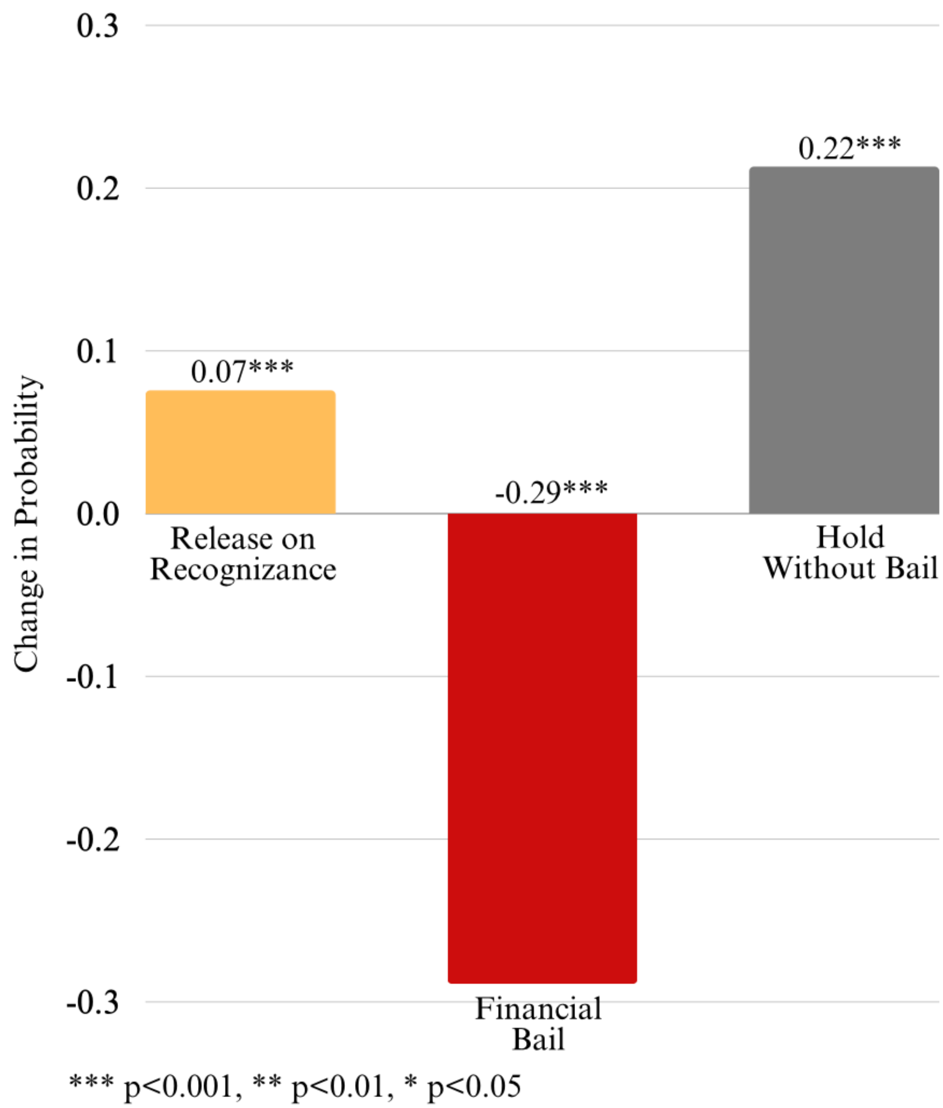


Table 3: OLS Regression of Log Bail Amounts for Financial Bail

VARIABLES	β	Robust SE
Post Reform	-0.48***	(0.02)
Top Charge Severity Level	0.18***	(0.00)
Offense Type (Baseline: Drug)		
Murder	2.97***	(0.44)
Sexual Crimes	1.37***	(0.18)
Robbery	1.50***	(0.07)
Assault	0.29***	(0.03)
Firearm/Weapon	1.56***	(0.04)
Burglary/Theft	0.16***	(0.03)
Other Violent	0.58***	(0.09)
Other Property	0.27***	(0.04)
Other	0.91***	(0.04)
Female	-0.53***	(0.03)
Black	0.21***	(0.03)
Age	-0.01***	(0.00)
Statement of Charges	-0.17***	(0.02)
Days from Filing	-0.00	(0.00)
Criminal History	-0.01*	(0.00)
N	16,627	
R^2	0.30	

*** $p<0.001$, ** $p<0.01$, * $p<0.05$
β: Coefficient; SE: Standard Error

Table 4: Comparison of Alternative Model Specifications Examining Log Bail Amount

	Model 1		Model 2		Model 3	
	OLS		*Propensity Score Matching*		*Capped OLS*	
VARIABLES	β	**Robust SE**	**ATET**	**Robust SE**	β	**Robust SE**
Post Reform	-0.48***	(0.02)	-0.65***	(0.03)	-0.33***	(0.02)
N	16,627		16,627		16,627	
R^2	0.30		0.30		0.27	

*** p<0.001, ** p<0.01, * p<0.05

Note: All models contain the same predictors as Table 3.

β: Coefficient; SE: Standard Error; ATET: Average Treatment Effect on the Treated

Table 5: Logistic Regression of Pretrial Release

	Model 1		Model 2		Model 3	
	Any Pretrial Release		*Release Within 3 Days*		*Immediate Release*	
VARIABLES	**OR**	**Robust SE**	**OR**	**Robust SE**	**OR**	**Robust SE**
Post Reform	1.17**	(0.02)	0.86**	(0.02)	1.37**	(0.03)
Top Charge Severity Level	0.83**	(0.00)	0.83**	(0.00)	0.79**	(0.00)
Offense Type (Baseline: Drug)						
Murder	0.08**	(0.02)	0.02**	(0.01)	0.01**	(0.01)
Sexual Crimes	0.40**	(0.06)	0.15**	(0.02)	0.27**	(0.06)
Robbery	0.30**	(0.03)	0.08**	(0.01)	0.07**	(0.02)
Assault	0.65**	(0.02)	0.39**	(0.01)	0.40**	(0.01)
Firearm/Weapon	0.21**	(0.01)	0.11**	(0.00)	0.09**	(0.00)
Burglary/Theft	0.57**	(0.02)	0.28**	(0.01)	0.47**	(0.02)
Other Violent	0.58**	(0.04)	0.34**	(0.03)	0.48**	(0.04)
Other Property	0.63**	(0.03)	0.34**	(0.02)	0.46**	(0.02)
Other	0.22**	(0.01)	0.11**	(0.01)	0.16**	(0.01)
Female	2.05**	(0.06)	2.46**	(0.08)	2.32**	(0.07)
Black	1.04	(0.03)	1.17**	(0.04)	0.96	(0.03)
Age	1.00**	(0.00)	1.00**	(0.00)	1.00**	(0.00)
Statement of Charges	2.03**	(0.05)	1.89**	(0.05)	2.44**	(0.07)
Days from Filing	1.00**	(0.00)	1.00**	(0.00)	1.00**	(0.00)
Criminal History	0.92**	(0.00)	0.90**	(0.00)	0.91**	(0.00)
N	50,442		50,442		50,442	
Pseudo R^2	0.16		0.20		0.24	

*** p<0.001, ** p<0.01, * p<0.05

OR: Odds Ratio; SE: Standard Error

Table 6: Accelerated Failure Time (AFT) Models of Detention Time

	Model 1		Model 2		Model 3		Model 4	
	All Cases		*Only Financial Bail Cases*		*Financial Bail and Held Without Bail*		*Financial Bail and Release on Recognizance*	
VARIABLES	**Time Ratio**	**Robust SE**	**Time Ratio**	**Robust SE**	**Time Ratio**	**Robust SE**	**Time Ratio**	**Robust SE**
Post Reform	1.05*	(0.03)	0.58**	(0.04)	1.42**	(0.06)	0.47**	(0.01)
Top Charge Severity Level	1.24**	(0.00)	1.03**	(0.01)	1.12**	(0.01)	1.15**	(0.00)
Offense Type (Baseline: Drug)								
Murder	128.21**	(59.68)	--	--	53.24**	(26.14)	--	--
Sexual Crimes	6.94**	(1.72)	3.06*	(1.33)	4.09**	(1.24)	4.14**	(1.27)
Robbery	11.62**	(1.82)	2.33**	(0.52)	3.41**	(0.59)	7.18**	(1.37)
Assault	2.12**	(0.08)	1.09	(0.08)	1.10	(0.07)	1.86**	(0.08)
Firearm/Weapon	13.46**	(0.72)	1.68**	(0.15)	4.13**	(0.30)	4.52**	(0.28)
Burglary/Theft	3.06**	(0.14)	2.41**	(0.20)	2.56**	(0.20)	2.95**	(0.14)
Other Violent	2.51**	(0.26)	1.53*	(0.30)	2.07**	(0.34)	1.74**	(0.18)
Other Property	2.54**	(0.14)	1.70**	(0.18)	1.75**	(0.17)	2.30**	(0.13)
Other	8.09**	(0.41)	2.23**	(0.24)	5.64**	(0.56)	2.93**	(0.16)
Female	0.43**	(0.01)	0.68**	(0.05)	0.50**	(0.03)	0.58**	(0.02)
Black	0.84**	(0.03)	0.63**	(0.05)	0.69**	(0.05)	0.81**	(0.03)
Age	1.00	(0.00)	1.01**	(0.00)	1.00	(0.00)	1.00*	(0.00)
Statement of Charges	0.34**	(0.01)	0.71**	(0.04)	0.59**	(0.03)	0.59**	(0.02)
Days from Filing	1.00**	(0.00)	1.00	(0.00)	1.00*	(0.00)	1.00**	(0.00)
Criminal History	1.15**	(0.01)	1.13**	(0.01)	1.14**	(0.01)	1.13**	(0.01)
Wald Chi^2	18,753.00		1,855.83		1,932.99		6,997.83	
N	50,442		16,627		29,377		37,692	

*** p<0.001, ** p<0.01, * p<0.05
Note: No murder cases were given financial bail following the reform.
SE: Standard Error

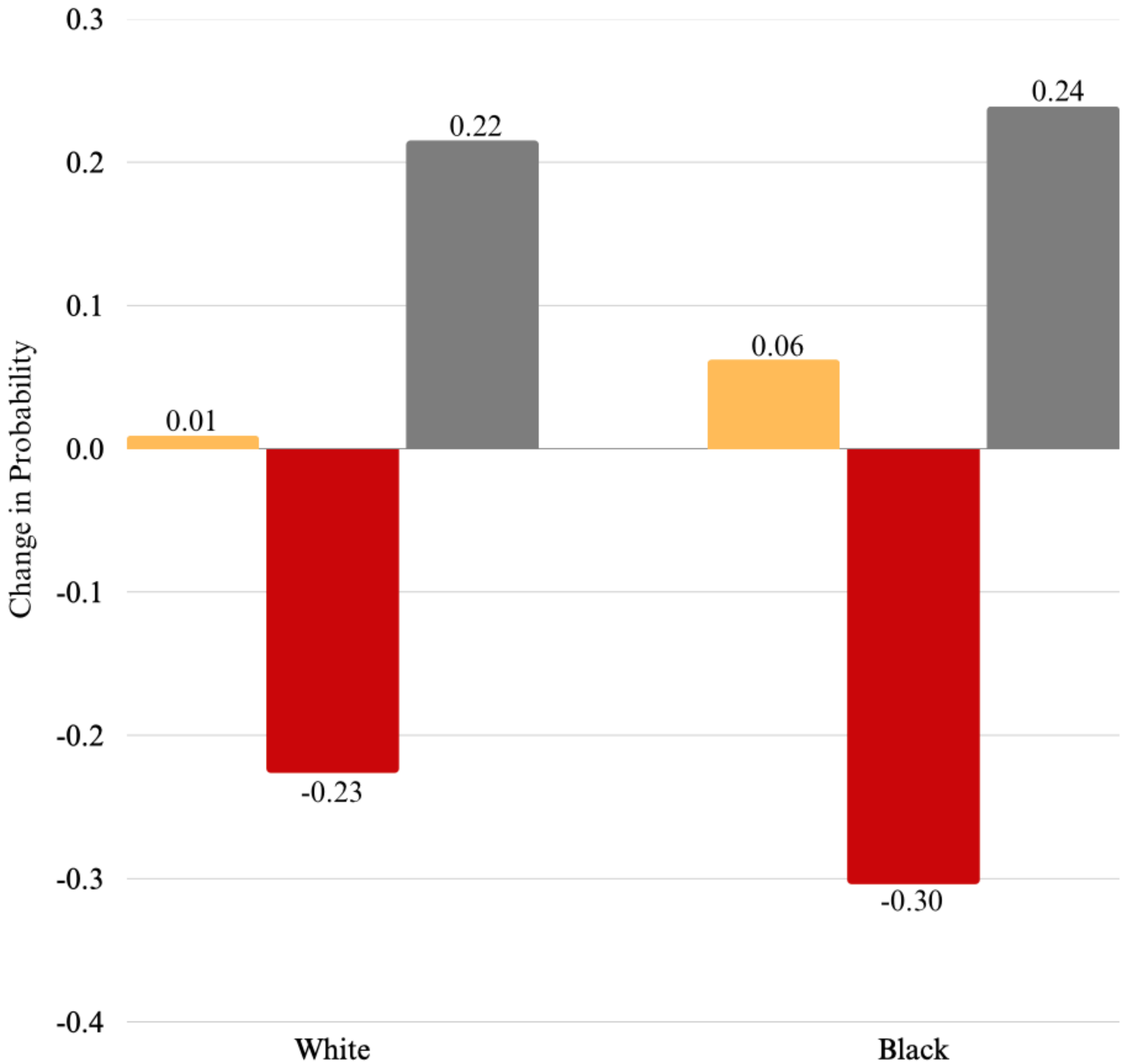
Table 7: Results for Reform*Race Interaction on Pretrial Decisions

	Model 1				Model 2	
	Multinomial Logistic Regression of Decision Type				*OLS Regression of Log Bail Amounts*	
	Release on Recognizance		**Hold Without Bail**			
VARIABLES	**RRR**	**Robust SE**	**RRR**	**Robust SE**	**β**	**Robust SE**
Post-Reform	2.08***	(0.15)	6.45***	(0.55)	-0.34***	(0.06)
Black	0.83***	(0.03)	0.86**	(0.05)	0.24***	(0.04)
Post-Reform*Black	1.65***	(0.13)	1.56***	(0.14)	-0.15*	(0.07)
Top Charge Severity Level	0.81***	(0.00)	1.11***	(0.01)	0.18***	(0.00)
Offense Type (Baseline: Drug)						
Murder	0.23	(0.24)	61.49***	(21.33)	2.97***	(0.44)
Sexual Crimes	0.55*	(0.14)	4.90***	(0.89)	1.37***	(0.18)
Robbery	0.13***	(0.03)	4.38***	(0.48)	1.50***	(0.07)
Assault	0.48***	(0.02)	1.93***	(0.09)	0.29***	(0.03)
Firearm/Weapon	0.17***	(0.01)	5.35***	(0.26)	1.56***	(0.04)
Burglary/Theft	0.47***	(0.02)	1.11	(0.06)	0.16***	(0.03)
Other Violent	0.63***	(0.06)	2.53***	(0.28)	0.58***	(0.09)
Other Property	0.47***	(0.02)	1.26**	(0.09)	0.27***	(0.04)
Other	0.30***	(0.01)	7.64***	(0.45)	0.91***	(0.04)
Female	1.88***	(0.06)	0.52***	(0.02)	-0.53***	(0.03)
Age	1.01***	(0.00)	1.00	(0.00)	-0.01***	(0.00)
Statement of Charges	1.79***	(0.05)	0.45***	(0.01)	-0.17***	(0.02)
Days from Filing	1.00***	(0.00)	1.00***	(0.00)	-0.00	(0.00)
Criminal History	0.92***	(0.00)	1.01**	(0.01)	-0.01*	(0.00)
N	50,442				16,627	
Pseudo R^2	0.26					
R^2					0.30	

*** p<0.001, ** p<0.01, * p<0.05

β: Coefficient; RRR: Relative Rate Ratio; SE: Standard Error

Figure 4: **Average Marginal Effects of the Reform on Detention Time by Race**



*** p<0.001, ** p<0.01, * p<0.05
SE in parentheses

Release on Recognizance
AME Difference: 0.05*** (0.01)

Financial Bail
AME Difference: -0.12*** (0.01)

Hold Without Bail
AME Difference: 0.08*** (0.01)

Table 8: **Results for Reform*Race Interaction on Release Outcomes**

	Logistic Regressions of Pretrial Release						*Accelerated Failure Time Model of Detention Time*	
	Any Pretrial Release		**Release Within 3 Days**		**Immediate Release**			
VARIABLES	**OR**	**Robust SE**	**OR**	**Robust SE**	**OR**	**Robust SE**	**Time Ratio**	**Robust SE**
Post-Reform	1.05	(0.06)	0.82**	(0.05)	1.09	(0.07)	1.15	(0.08)
Black	1.00	(0.04)	1.15**	(0.05)	0.87**	(0.04)	0.88**	(0.04)
Post-Reform*Black	1.13	(0.07)	1.05	(0.07)	1.30**	(0.09)	0.91	(0.07)
Top Charge Severity Level	0.83**	(0.00)	0.83**	(0.00)	0.79**	(0.00)	1.24**	(0.00)
Offense Type (Baseline: Drug)								
Murder	0.08**	(0.02)	0.02**	(0.01)	0.01**	(0.01)	128.22**	(59.67)
Sexual Crimes	0.40**	(0.06)	0.15**	(0.02)	0.27**	(0.06)	6.95**	(1.73)
Robbery	0.30**	(0.03)	0.08**	(0.01)	0.07**	(0.02)	11.62**	(1.82)
Assault	0.65**	(0.02)	0.39**	(0.01)	0.40**	(0.01)	2.12**	(0.08)
Firearm/Weapon	0.21**	(0.01)	0.11**	(0.00)	0.09**	(0.00)	13.47**	(0.72)
Burglary/Theft	0.57**	(0.02)	0.28**	(0.01)	0.47**	(0.02)	3.06**	(0.14)
Other Violent	0.58**	(0.04)	0.34**	(0.03)	0.48**	(0.04)	2.51**	(0.26)
Other Property	0.63**	(0.03)	0.34**	(0.02)	0.46**	(0.02)	2.54**	(0.14)
Other	0.22**	(0.01)	0.11**	(0.01)	0.16**	(0.01)	8.08**	(0.41)
Female	2.05**	(0.06)	2.46**	(0.08)	2.32**	(0.07)	0.43**	(0.01)
Age	1.00**	(0.00)	1.00**	(0.00)	1.00**	(0.00)	1.00	(0.00)
Statement of Charges	2.03**	(0.05)	1.89**	(0.05)	2.44**	(0.07)	0.34**	(0.01)
Days from Filing	1.00**	(0.00)	1.00**	(0.00)	1.00**	(0.00)	1.00**	(0.00)
Criminal History	0.92**	(0.00)	0.90**	(0.00)	0.91**	(0.00)	1.15**	(0.01)
N	50,442		50,442		50,442		50,442	
Pseudo R^2	0.16		0.20		0.24			
Wald Chi^2							18,755.72	

*** $p<0.001$, ** $p<0.01$, * $p<0.05$
OR: Odds Ratio; SE: Standard Error

Appendices

Appendix A

Charge Severity Categories

Severity Level	Incarceration Range	Fine Range	Percent of Cases
0	Not eligible for Incarceration	N/A	6.2%
1	6 to 90 days	$50 to $1,500	11.1%
2	6 months to 12 months	$0 to $2,500	7.0%
3	12 months	$5,000 to $25,000	4.4%
4	18 months to 2 years	$0 to $5,000	3.0%
5	3 years	$0 to $1,000	6.9%
6	3 years	$1,500 to $5,000	4.5%
7	4 years	$0 to $25,000	14.9%
8	5 years	$0 to $5,000	2.4%
9	5 years	$10,000 to $100,000	3.9%
10	9 years to 10 years	$0 to $100,000	22.9%
11	12 years to 15 years	$0 to $25,000	2.5%
12	20 years	$0	1.7%
13	20 years	$10,000 to $100,000	5.9%
14	25 years	$0 to $250,000	2.1%
15	30 years to 40 years	$0 to $50,000	0.4%
16	Life	N/A	0.4%

Appendix B

Prior studies have utilized the negative binomial model for count data to explore detention times (Martines et al., 2020). However, this model is not well-suited for handling censored data. Censored data can be particularly concerning for analyses involving pretrial detention days, as many cases will be dropped before adjudication or transferred to different courts. While there are techniques for addressing censored data in negative binomial models, they are not as well-suited to handle censoring as survival analyses that incorporate censoring directly into their model estimations. Whereas negative binomial models are designed to work with the number of events occurring in a fixed period, survival analyses account for censored data by adjusting survival probabilities at each time point. Thus, each case only contributes to the survival probability up to the point of censoring, but no further.

Other research has utilized a Cox proportional hazard model to assess differences in detention time (Petersen, 2020). The Cox model is a semi-parametric model that estimates a hazard rate which captures an individual's likelihood of release at any time, given that the individual has survived until that time. The Cox model relies on a proportionality assumption, which states that the hazard ratio between the treatment and control groups is constant over time. This model is best suited for understanding the impact of an intervention on the risk of an event occurring.

However, when the proportionality assumption is violated, utilizing an accelerated failure time (AFT) model is preferable to a Cox model for these analyses because it does not assume proportional hazards and directly models the effect of the explanatory variables on survival time instead of a hazard rate, allowing for a clearer interpretation of results. Additionally, research has demonstrated that Cox and AFT models produce comparable results when the proportionality assumption holds, but the AFT model outperforms the Cox model when this assumption is violated by providing more precise estimates (Orbe et al., 2002).

Additional analyses were conducted to assess how results from a negative binomial model and a Cox model would differ from the AFT model used in this study. Table 9 presents results from a negative binomial regression and a Cox proportional hazard model that explore the relationship between the reform and the number of days that an individual was detained.

Table 9: Alternate Detention Time Models

	Model 1		**Model 2**	
	Negative Binomial		*Cox Proportional Hazard*	
VARIABLES	**IRR**	**Robust SE**	**Hazard Ratio**	**Robust SE**
Post Reform	1.13**	(0.02)	1.01	(0.01)
Top Charge Severity Level	1.11**	(0.00)	0.92**	(0.00)
Offense Type (Baseline: Drug)				
Murder	2.45**	(0.10)	0.09**	(0.02)
Sexual Crimes	2.61**	(0.20)	0.47**	(0.05)
Robbery	2.94**	(0.14)	0.35**	(0.03)
Assault	1.98**	(0.06)	0.78**	(0.01)
Firearm/Weapon	3.25**	(0.09)	0.34**	(0.01)
Burglary/Theft	2.42**	(0.10)	0.71**	(0.01)
Other Violent	2.02**	(0.14)	0.73**	(0.03)
Other Property	2.20**	(0.10)	0.74**	(0.01)
Other	3.73**	(0.19)	0.46**	(0.01)
Female	0.63**	(0.02)	1.40**	(0.02)
Black	0.89**	(0.03)	1.05**	(0.01)
Age	1.00**	(0.00)	1.00	(0.00)
Statement of Charges	0.70**	(0.02)	1.58**	(0.02)
Days from Filing to Initial Hearing	1.00**	(0.00)	1.00**	(0.00)
Criminal History	1.08**	(0.00)	0.95**	(0.00)
N	50,442		50,442	
Pseudo R^2	0.04			
Wald Chi^2			15,740.11	

*** p<0.001, ** p<0.01, * p<0.05

IRR: Incident Rate Ratio; SE: Standard Error

Findings from the negative binomial model suggest that the reform is associated with a 13% higher rate of detention days. In the Cox model, the estimated hazard ratio of 1.01 suggests that the reform might be associated with slightly longer detention times, but this finding is not statistically significant. Additionally, a Schoenfeld residuals test of the proportional hazards assumption using the Maryland pretrial detention data from these analyses returns a chi-squared statistic of 387.41 with 17 degrees of freedom ($p<0.001$), indicating that the proportional hazards assumption is violated for detention time and that the model may be returning biased estimates.

Findings from the negative binomial model and the Cox proportional hazards model are similar to results from the AFT model in that they report longer detention times with varying levels of significance. As discussed in this Appendix, given the assumptions of the different models, AFT estimates are preferred in this case.

Appendix C

Table 10: Correlation Matrix

	1	2	3	4	5	6	7	8
1. Black	1.00							
2. Severity Level	0.15	1.00						
3. Sex	0.14	0.07	1.00					
4. Age	-0.10	-0.08	-0.01	1.00				
5. Document Type	0.02	0.17	0.00	0.01	1.00			
6. Days from Filing to Initial Hearing	0.01	0.03	-0.00	0.01	0.20	1.00		
7. Criminal History	0.11	0.01	0.15	0.01	-0.01	-0.05	1.00	
8. Reform	-0.01	-0.03	-0.01	0.01	0.04	0.02	0.05	1.00

Table 11: Chi^2 and Z-Tests for Changes in Sample Characteristics Before and After the Reform

	Chi^2 Test		Z-Test		
VARIABLES	**Pearson Chi^2**	**P**	**Mean Difference**	**SE**	**P**
Black	1.38	0.24	-	-	-
Severity Level	-	-	0.24	0.01	0.00
Offense Type	31.74	0.00	-	-	-
Sex	7.77	0.01	-	-	-
Age	-	-	-0.14	0.01	0.00
Document Type	96.28	0.00	-	-	-
Days from Filing to Initial Hearing	-	-	-8.55	0.01	0.00
Criminal History	-	-	-0.25	0.01	0.01
Case Processing Lengths			-0.38	0.01	0.00

Note: While some of the variables appear to have significantly changed, this magnitude of this change is particularly small. The largest shift in the Offense Type was for drug crimes, which comprised 34.2% of offenses before the reform, and 32.4% of offenses after the reform. Statements of charges comprised 67.4% of cases before the reform and 63.2% of cases after the reform, which also likely explains the difference in Days from Filing to Initial Hearing. The average time from initial hearing to disposition before the reform remained around 135 days. Though the 0.38-day average difference is statistically significant, it is very small. This improves our confidence that case lengths remained relatively stable across the reform.

Appendix D. Supplemental Analyses

Additional analyses were also conducted to investigate potential threats to the validity of the current findings. Descriptive findings reveal that there may have been an anticipatory effect of the reform around the time that the Maryland Attorney General released a letter admonishing district court commissioners for their use of excessive bail and encouraging the Maryland Court of Appeals to adopt a new cash bail policy (See Figure 1). Therefore, supplemental analyses were conducted using the release of the Attorney General's letter on October 25, 2016, as an alternative starting date for the reform. Table 10 shows results from the same models that were used to test the original six hypotheses, but instead uses the Attorney General's letter as a starting point for the reform.

--Insert Table 10 Here—

These findings show that even when using the Attorney General's letter as a starting point for the reform, commissioners were less likely to hold defendants on bail compared to holding defendants without bail or releasing on recognizance. The magnitude of these estimates is smaller when using the Attorney General's letter as a cutoff date compared to the reform implementation date. This is consistent with the idea that there was a gradual shift in Commissioner's behavior following the Attorney General's letter, which was followed by a more pronounced shift in decision-making after the Rule's implementation. This supports the use of July 1, 2017, as the reform cutoff date in our primary analyses.

Table 10: Alternative Model Specifications with Attorney General's letter on October 25, 2016 as start of the Reform

	Model 1				Model 2		Model 3		Model 4	
	Multinomial Logistic Regression of Pretrial Decision Types				*OLS Regression of Bail Amounts*		*Logit Model of Any Pretrial Release*		*AFT Model of Detention Time*	
	Release on Recognizance		**Hold Without Bail**		**Log Bail Amount**		**Any Pretrial Release**		**Time to Failure**	
	RRR	Robust SE	RRR	Robust SE	β	Robust SE	OR	Robust SE	Time Ratio	Robust SE
Post Letter	2.56***	(0.06)	7.16***	(0.22)	-0.39***	(0.02)	1.25***	(0.03)	0.86***	(0.02)
N	50,442				16,627		50,442		50,442	
Pseudo R^2	0.24									
R^2					0.31		0.16			
Wald chi^2									18,730.01	

*** p<0.001, ** p<0.01, * p<0.05

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