RESEARCH REPORT

BRENNAN CENTER FOR JUSTICE

Conviction, Imprisonment, and Lost Earnings

How Involvement with the Criminal Justice System Deepens Inequality

By Terry-Ann Craigie, Ames Grawert, and Cameron Kimble
With a foreword by Joseph E. Stiglitz PUBLISHED SEPTEMBER 15, 2020

Brennan Center for Justice at New York University School of Law

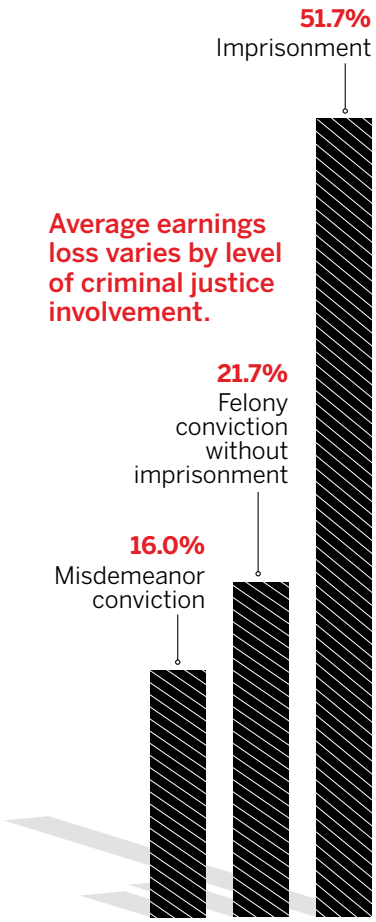
LOST EARNINGS BY THE NUMBERS

Black people with no criminal record earn less than socioeconomically similar white people with a record.

Black people without a record
$39,000

White people with a record
$49,000

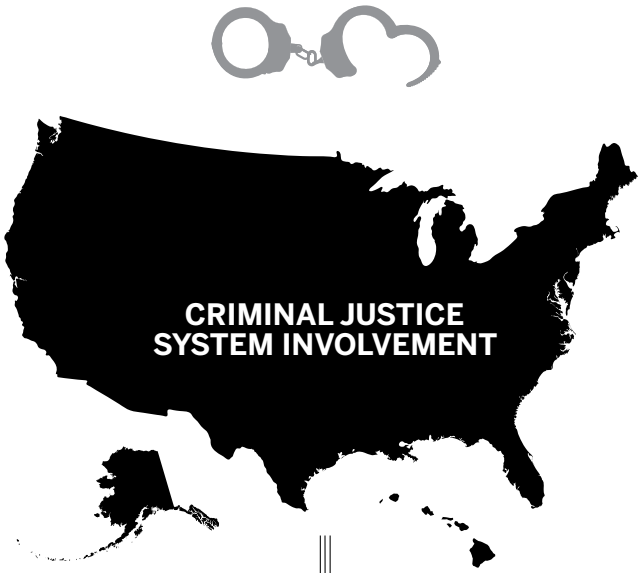
Average earnings loss varies by level of criminal justice involvement.



ONE IN FIVE

AMERICANS WHO HAVE A CRIMINAL RECORD OF SOME KIND

Source: Brennan Center analysis.



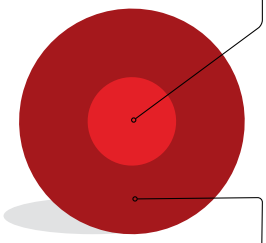
7 MILLION+ have been imprisoned

45 MILLION+ have been convicted of a misdemeanor

12 MILLION+ have been convicted of a felony without imprisonment

Annual Lost Earnings

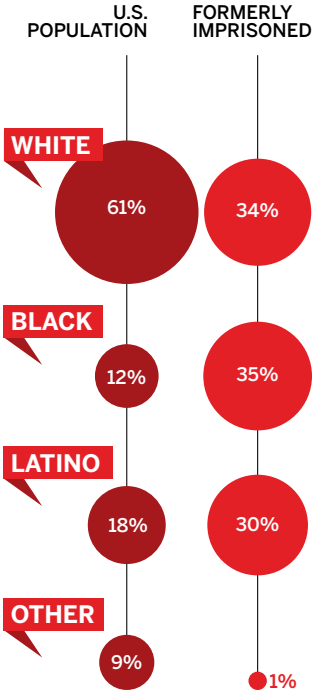
$55.2 billion
FORMERLY IMPRISONED AMERICANS



$372.3 billion
AMERICANS IMPACTED BY CONVICTION OR IMPRISONMENT

People who were imprisoned early in their lives earn about **half as much** annually as socioeconomically similar people untouched by the criminal justice system.

RACIAL DISPARITIES PERSIST AFTER RELEASE FROM PRISON



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Foreword

America is approaching a breaking point. For more than four decades, economic inequality has risen inexorably, stunting productivity, weakening our democracy, and leaving tens of millions struggling to get by in the world's most prosperous country. The crises that have rocked the United States since the spring — the coronavirus pandemic, the resulting mass unemployment, and a nationwide uprising for racial justice — have made the inequities plaguing American society more glaring than ever.

This year's intertwined emergencies have also driven home a reality that some would rather ignore: that the growing gap between rich and poor is a result not just of the market's invisible hand but of a set of deeply misguided policy choices. Among them, this groundbreaking report reveals, is our entrenched system of mass incarceration. Mass incarceration reflects and exacerbates so many dimensions of this country's divides — in income and health, in voice and power, in access to justice, and most importantly, over race.

The number of people incarcerated in America today is more than four times larger than it was in 1980, when wages began to stagnate and the social safety net began to be rolled back. We've long known that people involved in the criminal justice system — a group that's disproportionately poor and Black — face economic barriers in the form of hiring discrimination and lost job opportunities, among other factors. This report demonstrates that more people than previously believed have been caught up in the system, and it quantifies the enormous financial loss they sustain as a result; those who spend time in prison miss out on more than half the future income they might otherwise have earned.

Ascertaining through careful statistical analyses just how costly the mass incarceration system has been to the people ensnared by it is a major achievement. These findings reframe our understanding of the issue: As a perpetual drag on the earning potential of tens of millions of Americans, these costs are not only borne by individuals, their families, and their communities. They are also system-wide drivers of inequality and are so large as to have macroeconomic consequences.

That insight is vital today. The unprecedented economic contraction triggered by the pandemic, and the federal government's botched response, appears to be falling hardest on those who were already struggling, just like in past slumps. When employers cut back, employees with criminal records are all too often the first to be furloughed and the last to be rehired. And while major corporations get billions of dollars in relief, millions of the jobless are being largely left in the cold.

These costs come on top of other enormous costs imposed on society by our mass incarceration system. Some states have spent as much on prisons as on universities. The pandemic will make public funds even scarcer. More money spent on incarcerating more people will weaken our future, while the same money spent on expanding our universities will lead to a stronger 21st century economy.

Mass incarceration has been a key instrument in voter suppression, because people with criminal records are deprived of the right to vote in some states, and in many states former prisoners are responsible for re-registering once they are released. This undermines democracy: since poor and Black people suffer from mass incarceration disproportionately, they will be underrepresented in our electorate.

Meanwhile, a nationwide reckoning over deep-rooted racial injustice is forcing our country to come to terms with the ways in which these injustices have been perpetuated in the century and a half since the end of slavery. For the past four decades, mass incarceration — with the deprivation of political voice and economic opportunity that is so often associated with it — has been at the center. It renders economic mobility for so many Black Americans nearly impossible.

And yet this moment also brings a historic opportunity. By laying bare the grotesque inequities that undergird our society, the upheavals of 2020 have given us the needed room to profoundly change our course. An ambitious, democratically driven movement to create a fundamentally fairer and more resilient economy, based on a renewed and strengthened social contract, is at last gaining traction. But true progress will not occur until economic mobility is possible for our most marginalized and most vulnerable citizens. The urgent policies advocated here are a step toward ending that injustice and building a more prosperous and equal society. This report shows what needs to be done to stop mass incarceration. Equally important, it shows how to deal with its legacy: the large number of American citizens with criminal records. It was wrong that they lost so many of their formative years, often for minor infractions. It is doubly wrong that they suffer

for the rest of their lives from the stigma associated with imprisonment. For them, and for our entire society, we need to minimize the consequences of that stigma.

There is much that has to be done if our society is to fully come to terms with our long history of racial injustice. Stopping mass incarceration is an easy place to begin. This report makes a compelling case for the enormous economic benefits to be derived from doing so.

Joseph E. Stiglitz
University Professor
Columbia University

Introduction

America's 400-year history of racial injustice continues to produce profound economic inequalities — a reality our society must no longer ignore. The net worth of a typical white family, for example, is 10 times that of a typical Black family.[1] Shockingly, despite the successes of the civil rights movement, this racial wealth gap has barely changed in the last half century.[2]

At the same time, as we are all too aware, the criminal justice system subjects Americans to profoundly unequal treatment. A century ago, a Black man was four times as likely as a white man to be incarcerated. In 1980, around the height of the "war on drugs," he was 11 times as likely.[3] Black men and women are also jailed at more than triple the rate of white men and women. And nearly half of all people serving effective life sentences are Black.[4] Disparate enforcement is one reason; for example, the majority of people stopped in New York City's controversial stop-and-frisk program were Black.[5] Perhaps most disturbingly, Black men and women are far more likely to be the victims of police use of force.[6] The protests that erupted in the spring of 2020, catalyzed by the Black Lives Matter movement, revealed and reinforced a growing public understanding of these systemic racial disparities in the criminal justice system.[7]

Those two points are not unrelated. In fact, the staggering racial disparities in our criminal justice system flow directly into economic inequality. These consequences are magnified and reinforced throughout a lifetime of discrimination in employment and access to economic opportunity.[8] They are felt by individuals, of course, but also by families and communities. And they are felt in such large numbers, and in such a systemic way, that they constitute a major structural factor in economic inequality.

This report examines the long-term economic effects of conviction and imprisonment. It demonstrates that people involved in the criminal justice system tend to earn significantly less over the course of their lives than otherwise would be the case. Among other factors, missed opportunities, inadequate reentry services, and social stigma contribute to this link between imprisonment and poverty. The consequences, at both an individual and a systemic level, are dire.

To reach these conclusions, the report starts by identifying how many of the more than 70 million people with criminal records have become involved with the criminal justice system in each of three discrete ways: through imprisonment, conviction of a felony without subsequent imprisonment, and conviction of a misdemeanor.

Then it assesses how each interaction depresses individuals' earnings. Last, the report uses an innovative method to illustrate how the reduction in earnings persists over a lifetime, deepening poverty — particularly for Black and Latino people.

Specifically, this report finds the following:

- **Conviction and imprisonment affect more people, in more serious ways, than was previously realized.** Using data through 2017, this report concludes that about 7.7 million living Americans have at some point been imprisoned, about 12.1 million have been convicted of a felony without being imprisoned for it, and about 45 million have been convicted of at least one misdemeanor. (Due to data limitations, some overlap may exist between these categories.)

- **Conviction and imprisonment experienced early in life lower individuals' annual earnings**.
  - People who have spent time in prison suffer the greatest losses, with their subsequent annual earnings reduced by an average of 52 percent.
  - People convicted of a felony but not imprisoned for it see their annual earnings reduced by an average of 22 percent.
  - People convicted of a misdemeanor see their annual earnings reduced by an average of 16 percent.

- **These earnings losses entrench poverty.** The reduced earnings compound over the course of a lifetime. On average, formerly imprisoned people earn nearly half a million dollars less over their careers than they might have otherwise. These losses are borne disproportionately by people already living in poverty, and they help perpetuate it.

- **These earnings losses worsen economic disparities between Black, Latino, and white communities.** White people who have a prison record see their earnings trend upwards, while formerly imprisoned Black and Latino people experience a relatively flat earnings trajectory. Because Black and Latino people are also overrepresented in the criminal justice system, these economic effects are concentrated in their communities and exacerbate the racial wealth gap.

Throughout this report, estimates of the effects of criminal justice involvement were produced by comparing people who have experienced imprisonment, felony conviction without prison, or misdemeanor conviction with people who have had no such experience but other-

TABLE 1

Lost Earning Potential Due to Involvement in the Criminal Justice System (2017)

	NUMBER OF PEOPLE	ANNUAL AVERAGE EARNINGS LOSS	AVERAGE LIFETIME EARNINGS LOSS	AGGREGATE ANNUAL EARNINGS LOSS
Formerly imprisoned people	**7.7 million**	**52%**	**$484,400**	**$55.2 billion**
White	2.7 million	—	$267,000	—
Black	2.7 million	—	$358,900	—
Latino	2.3 million	—	$511,500	—
People convicted but not imprisoned			**$98,800***	
Felonies	12.1 million	22%	—	$77.1 billion
Misdemeanors	46.8 million	16%	—	$240.0 billion
Total				**$372.3 billion†**

* In this table, $98,800 represents lifetime earnings lost due to a conviction in general, whether for a felony, a misdemeanor, or another offense. Because of data limitations, this report is not able to offer a more precise estimate.

† Because of potential overlap between categories, the actual annual aggregate loss may be smaller than $372.3 billion.

wise closely resemble them. Members of these comparison groups are referred to intermittently as "similarly situated people" or "peers" of justice-involved people.

Table 1 summarizes this report's quantitative findings. The average annual wage loss experienced by each group is multiplied by the size of its population to demonstrate the aggregate effect of conviction and imprisonment.

As this table shows, the losses reach into the hundreds of billions of dollars, but even that likely underestimates the true economic impact of the criminal justice system, for two reasons. First, this report does not study the effect of *jail* on earnings. Reliable information on the jail population is hard to find, but the jail system's sprawling size makes the issue an important area for future research. Second, this report does not quantify the secondary costs of involvement in the criminal justice system, such as the earnings lost to a family when a parent must leave a job to care for a child during a partner's incarceration, transportation costs to visit loved ones in prison, money sent to commissary accounts or spent on phone and video calls during a loved one's incarceration, money spent on court costs and criminal justice debt, or the cost of a private attorney, to name just a few. (A full cost-benefit analysis of current criminal justice policies is beyond the scope of this report.)

Given the devastating financial consequences of contact with the criminal justice system, policymakers should, first and foremost, shrink its overall size and reduce the use of conviction and imprisonment. For those who are subjected to either sanction, steps to counter discrimination and bolster the social safety net can mitigate subsequent harm to their livelihoods.

Specifically, the authors recommend the following policy changes to confront the devastating and inequitable consequences of conviction and incarceration:

- Jurisdictions should **reclassify some felonies as misdemeanors and decriminalize other offenses**. This step would reduce the prevalence of all three criminal sanctions explored in this report.

- Policymakers should **invest in paths away from arrest and prosecution**, such as programs that provide people at risk of arrest with drug or mental health treatment. Similar programs could allow criminal charges that have already been filed to be dismissed and sealed upon completion. Aside from reducing convictions, these changes could reduce the risk of violent interactions with police.

- States and the federal government should **invest in alternatives to incarceration**. Probation, community service, or other sanctions are more appropriate than prison in many cases and would reduce the harms experienced by people with convictions.

- Policymakers should expand opportunities for justice-involved people to secure well-paying jobs. First, they should **reduce barriers to employment**, such as occupational licensing rules that exclude people with criminal records. Second, jurisdictions that have yet to do so should **adopt "ban-the-box" rules** for job applications. These rules, which defer inquiries about a criminal record in the hiring process, expand employment opportunities and reduce the long-term consequences of a criminal record. The private sector can also help: Businesses should **expand their hiring of people with criminal records** by, among other things, limiting the scope of criminal background checks.

- Jurisdictions should **prevent employment and housing discrimination based on criminal history**. People returning from prison often find themselves turned away from jobs and housing without a second look. While criminal records may be relevant to some inquiries, they need not operate as automatic disqualifications.

- Policymakers should strengthen the social safety net to help keep people with a criminal record out of poverty, despair, and recidivism. For one thing, cities should **remove barriers to public housing** and help families living in such communities reunite after a family member's incarceration. Relatedly, the federal government should **repeal barriers to government benefits**. Until Congress does so, states can act on their own to blunt the impact of these punitive rules. And finally, correctional administrators should **connect people leaving incarceration with government benefits**. This can help prevent hunger and recidivism in the first days after release.

I. The Scope of America's Criminal Justice System

This analysis starts by estimating the number of people who have been affected by the criminal justice system in each of three distinct ways: previous imprisonment, conviction of a felony that did not result in imprisonment, and conviction of a misdemeanor. Each of these sanctions is highly likely to reduce earnings, making it important to understand how widespread they are.

There are many other ways that people can encounter the criminal justice system. According to the FBI, more than 70 million people in the United States have a criminal record of some kind, meaning they have at least been arrested.[9] Millions of people cycle through American jails annually. And tens of millions of people have a family member who has been involved in the criminal justice system in some way.[10] All of these interactions may disrupt earnings and result in other long-lasting, serious harms. This report's focus on conviction and imprisonment should not be read as trivializing or ignoring the costs of these other types of criminal justice involvement.

Previous analyses have studied the impact of incarceration on subsequent earnings but have examined the effect of conviction only rarely. Few analyses have attempted to disaggregate the effect of conviction from the effect of incarceration, or the impact of being convicted of a felony from that of a misdemeanor conviction. This report aims to fill those research gaps.

Modeling the Number of Formerly Imprisoned People

>> **The size of each of the three populations** studied in this report was derived from data on the number of people affected by each part of the criminal justice system in a given year, reducing that figure to account for recidivism and mortality, and then repeating the process for all subsequent years for which there is available data.

>> **For formerly imprisoned people,** the model starts with the following data points:

- **People leaving incarceration.** Data on people released from prison for the years 1965 through 2017 was obtained from the U.S. Department of Justice's Bureau of Justice Statistics (BJS).[11] This report's model starts at 1965 because — due to high rates of mortality among the imprisoned population and the average age at which people are incarcerated — the number of formerly imprisoned people released before 1965 and still alive today was found to be negligible.

- **Recidivism data.** Government reports normally provide recidivism data based on how many people are rearrested, reconvicted, or reincarcerated within a certain period (e.g., five years).[12] What is relevant to this report, though, is the likelihood that someone has returned to prison at any point up to 2017, the end of this report's study period. Rather than using conventional recidivism rates, then, for each year studied, the authors calculated the likelihood that someone released that year would have returned to prison by 2017. Estimates were calculated using data from the National Corrections Reporting Program, drawing on previous research in the field.[13]

- **Mortality data.** Prisons are uniquely damaging to the physical and mental health of people incarcerated there.[14] Therefore, the authors made the sobering assumption that formerly imprisoned people suffer higher mortality rates than the general population.[15]

>> **For each year,** the model then matches annual releases with that year's corresponding mortality and recidivism estimates.

>> **To visualize this process,** start with a representative year, 2005. In that year, 701,632 people were released from prison. The authors estimated that, given 12 years to recidivate before 2017, 63 percent would return to prison. Of the 37 percent of people who did not return to prison — 259,899 people — the authors estimated that 90 percent have survived to the current day. As a result, of the people released from prison in 2005 who did not return, an estimated 234,914 are alive today.

>> **The results from each year** were then added together.

A. Formerly Imprisoned People

Estimate: 7.7 million

Since no government source tracks the number of formerly imprisoned people, the authors devised a model to calculate an estimate. The authors started by entering (or interpolating, where necessary to bridge data gaps) the number of people released from prison in each year in the study period. Next, these totals were adjusted for recidivism rates to ensure that the model did not double count people who, according to the dataset, later returned to prison. Last, the data was adjusted for mortality rates to remove the number of formerly imprisoned people who likely have not survived to the present day. This process broadly conforms to the structure of previous research but includes more recent data.

According to this process, an estimated 7.7 million people alive today — a little less than the population of Virginia — have been to prison at some point in their lives.[16] Interestingly, more than 75 percent of these people were released in 2000 or later, meaning their prison terms likely began in the late 1990s.[17] Therefore, while it may be tempting to attribute the size of the formerly imprisoned population to archaic policies that have since been repealed, that does not appear to be entirely accurate.

This estimate is broadly consistent with prior research. Some smaller estimates cover just the working-age population or are now out of date.[18] More recent research has estimated that in 2010 there were roughly 7.3 million currently or formerly imprisoned people in the United States.[19] Because this report's estimate uses data from 1965 through 2017 — sufficient data on 2018 was not yet available at the time of publication — a higher estimate is to be expected here. This report's estimate would be even higher but for the relatively high mortality estimates used here.[20]

As shown in table 2, men vastly outnumber women among the formerly imprisoned population. Black and Latino people also make up a majority of the formerly

TABLE 2

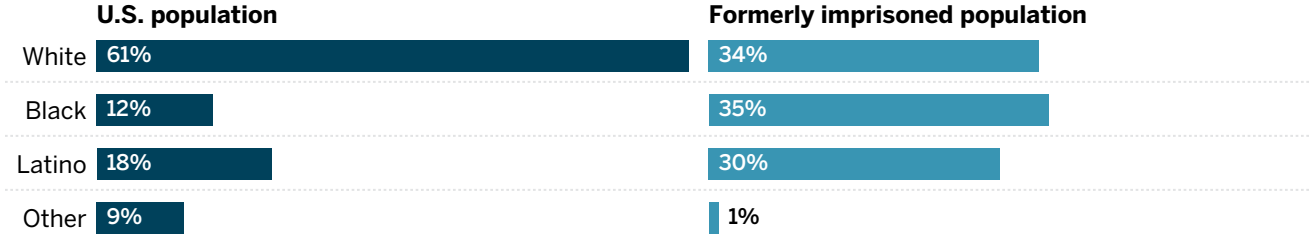
Demographics of the Formerly Imprisoned Population (2017)

	TOTAL	MEN	WOMEN
White	2,660,000	2,280,000	380,000
Black	2,690,000	2,410,000	280,000
Latino	2,300,000	2,130,000	160,000
Other	78,000	—	—
Total	**7,730,000**	**—**	**—**

Source: Brennan Center analysis.

FIGURE 1

Racial Disparities Persist After Release from Prison (2017)



Source: Brennan Center analysis.

imprisoned population, with formerly imprisoned Black men and women outnumbering their white peers.

As depicted in figure 1, that is wildly out of proportion with the general population. But the disproportionate representation of Black and Latino people in the formerly imprisoned population should not be surprising, given the well-documented, continued existence of racial disparities in prison populations.[21] Indeed, according to the most recently available data, the number of Black men and women behind bars continues to exceed the number of imprisoned white men and women.[22] It would be surprising if these persistent disparities were not reflected in the formerly imprisoned population.

B. People with a Felony Conviction Not Sentenced to Imprisonment

Estimate: 12.1 million

While imprisonment is a serious sanction, formerly imprisoned people represent just a small slice of the justice-involved population. Those who have been to prison or are currently imprisoned — around 10 million people in total — compose just 15 percent of the estimated 70 million Americans with a criminal record of some kind.[23]

Felony convictions are on their own a serious sanction likely to impact earning potential. Understanding their prevalence and effect is vital to developing a full picture of the economic impact of the criminal justice system. However, isolating the number of people with felony records who have not been sentenced to imprisonment is difficult, as many people convicted of felonies do spend time in prison.[24]

Most people convicted of felonies are sentenced to prison, probation (a form of supervised release generally imposed as an alternative to incarceration), or a split sentence combining the two.[25] To estimate the number of people who have been convicted of a felony but not sentenced to prison, then, this report starts with data on the annual number of people entering probation every year.

As in the last section, this data was then adjusted to account for recidivism and mortality. Recidivism data was drawn from reports on people put on probation in the federal system.[26] For mortality estimates, the authors assumed that people convicted of felonies but not sentenced to prison face mortality risks higher than the general population's but lower than the formerly imprisoned population's. The authors also added other variables to ensure, to the extent possible, that the model captured only people who were sentenced to probation without having also been imprisoned. The total number of probationers was then reduced by half because, according to BJS data, half of people sentenced to probation receive that sentence for a *misdemeanor* conviction.[27]

Repeating this process for each year's cohort of people entering probation, the authors estimate that approximately 12.1 million people alive today have been convicted of a felony offense without being imprisoned for it. Unfortunately, BJS does not track the racial breakdown of people entering or exiting probation.[28] As a result, it is not possible to estimate the demographic makeup of this population.

There is a risk that this figure is an overestimate, since it may include some people who have spent time in prison. For example, someone who entered prison for a separate offense *after* probation was terminated would be counted in both groups. The patchwork nature of criminal justice data makes it impossible to fully eliminate such a risk.

However, two additional limitations suggest that this model might produce an *under*estimate. First, the data necessary for this method goes back only as far as 1980, so this model covers a shorter period than the model for the formerly imprisoned population. Second, many people convicted of felonies are sentenced to incarceration in local jails, a population that neither this model nor the previous section's analysis captures.[29] As a rough estimate, though, this method helps develop a broader understanding of the justice-involved population.

C. People with a Misdemeanor Conviction

Estimate: 45 million

Though less severe than felonies, misdemeanors also have a long-term impact on earning potential. Convictions for these generally lower-level crimes may show up on background checks, disqualify someone from holding a professional license, or come with other burdensome conditions. Any estimate of the prevalence of a criminal conviction and its effects must reckon with the sprawling misdemeanor justice system.

Most Americans are familiar from popular culture with the classic model of the criminal case: refereed by a judge, the prosecutor and defense attorney present evidence and examine and cross-examine witnesses, with guilt or innocence decided by an impartial jury. But this model describes only a vanishingly small percentage of cases.[30] It fails to capture the reality of the misdemeanor system. People accused of such crimes face a streamlined and, in many cases, stripped-down form of justice.[31]

While this field of study is an evolving one, researchers have documented more than 13 million annual misdemeanor *cases* in recent years.[32] However, estimating the number of people with a misdemeanor *conviction* is a difficult task. Conviction rates and even the meaning of a misdemeanor conviction vary from state to state. Some lower-level offenses will qualify as a misdemeanor in some states but not in others.[33]

To estimate annual misdemeanor convictions, then, this report employs a novel method that starts with FBI arrest data and then calculates how many of those arrests ended in conviction, using conviction rates estimated from a longitudinal survey.

Next, to avoid double counting people, the authors sought to estimate misdemeanor recidivism. But recidivism poses its own challenge: unlike felony sentences and prison terms, people routinely receive multiple misdemeanor convictions within a single year.[34] To solve this problem, repeat jail admissions were used as a proxy for intra-year misdemeanor recidivism.[35] That figure — suggesting that the average person admitted to a major-city jail is admitted roughly 1.4 times per year — was then used to estimate how many unique people were convicted of a misdemeanor in a given year. As in the preceding sections, estimated inter-year recidivism and mortality rates were then applied. Following this method, the authors estimate that nearly 46.8 million currently living people — one in seven Americans — have a misdemeanor conviction and, therefore, a nontrivial criminal record.

This estimate comes with some limitations. For one thing, it likely includes people already counted in previous sections. That is, some of the 46.8 million people identified using this model may have also spent time in prison, or been convicted of a felony, before or after incurring their misdemeanor conviction. This double counting risk is unavoidable. This model's recidivism metrics theoretically guard against double counting people who have been convicted of two *misdemeanors* but cannot, given the limits of existing data, eliminate people who have recidivated in other ways. Furthermore, the authors were able to obtain enough data to run this model over only 23 years, from 1995 through 2017. Rates of actual intra-year recidivism may also be higher than indicated by the limited research that was available to build this model.

These limitations cannot be overcome given the significant gaps in data on the criminal justice system. Extensive original research, including large-scale data collection, would be necessary to develop a more precise understanding of the number of people who have been convicted of a misdemeanor. Given these limitations, it might be better to understand the total offered in this report as a rough estimate, rather than a precise one: *around* 45 million people, rather than *precisely* 46.8 million people, have been convicted of a misdemeanor.

Jail Incarceration's Vast Reach

>> **One significant group** goes uncounted in this analysis: people who have been detained or incarcerated in a jail. Because jails process more than 10 million admissions annually, the number of people who have been to jail at some point must be vast.[36]

>> **It is difficult to estimate** the size of this population, however. Part of the problem is that jails serve two purposes: they detain people for short periods as they wait for trial, and they incarcerate people who have already been convicted of a crime — typically a low-level one. Generally, though, jail recidivism data tracks only the latter group.[37] Without a solid understanding of the rate at which people return to jail *for any reason*, a reasonable estimate of the formerly jailed population is impossible. This is especially true given that 54 percent of the jail population turns over every week, magnifying the impact of any error in estimating recidivism.[38]

>> **The length of a jail stay** also varies sharply. While the average jail stay is just 26 days, it is longer in larger jurisdictions such as New York City.[39] And years-long jail stays are well documented.[40] As a result, it is difficult to say that everyone who spends time in jail is affected in a similar way. Earnings loss and even job loss are certainly common experiences.[41] But longer-term effects and how they are distributed are more complicated questions.

>> **Research conducted** for this report did allow the authors to conclude, on the basis of one important case, that the number of people affected by jails is very large indeed. Before the coronavirus pandemic, the New York City Department of Correction — which oversees the Rikers Island jail complex — held an average daily population of around 8,000 people and admitted around 40,000 annually, down from more than 120,000 in fiscal year (FY) 2001.[42] That means it held roughly 1 percent of the average daily population of *all* the jails in America.[43]

>> **According to data** obtained through a Freedom of Information Law request, New York City's Department of Correction admitted 949,919 individuals into custody between 1983 and June 14, 2019.[44] (A forthcoming study by a team of sociologists will explore the lifetime risk of jail incarceration for New Yorkers of different demographic groups.) If New York City alone jailed nearly 1 million unique people over a 36-year period, then the number of people who have ever been incarcerated in *any* jail must run into the tens of millions.

How Conviction and Imprisonment May Affect Earnings

>> **America's sprawling** criminal justice system can affect someone's life, directly or indirectly, in any number of ways. This report focuses on misdemeanor convictions, felony convictions, and imprisonment, presuming that these interactions are likely to affect someone's long-term earnings. Why, though, do conviction and imprisonment affect earnings? And why does imprisonment have a particularly strong effect? Researchers have suggested the following theories, among others:

- **Stigma.** A criminal record may deter employers from making a job offer or even conducting an interview. According to one 2018 survey, 95 percent of employers conduct some form of background check on job candidates.[45] Perhaps as a result, applicants with a criminal record are around 50 percent less likely to receive a callback interview, depriving them of even the chance to explain their history.[46] Some research suggests that the type of criminal conviction determines the severity of the stigma.[47] Even so, conviction or incarceration no matter the cause may contribute to extended periods of joblessness, resulting in a high unemployment rate among the justice-involved population (estimated at 27 percent for formerly imprisoned people).[48] They may also lead people to accept jobs that pay less or offer fewer advancement opportunities than positions they might have otherwise found.[49]

- **Legal barriers to work.** As explored in more detail below, some jobs require occupational licenses, and thousands of rules limit access to licenses for people with a criminal record.[50] These rules may prevent formerly justice-involved people from securing work in lucrative fields and in fields where they have expertise. For example, California trains imprisoned people to be elite firefighters, but legal restrictions bar many from joining that profession upon release.[51]

- **Missed opportunities.** The preceding two factors describe challenges faced by anyone with a criminal record. But people returning from prison or prolonged jail incarceration encounter additional hurdles. For one, time spent incarcerated means time out of the workforce and time not spent accumulating the skills or social connections needed to find or succeed in a job (what economists call "human capital").[52] And those effects stack over time: according to one analysis, each additional year of imprisonment reduces by nearly 4 percentage points the likelihood that a person will find post-release employment.[53] While research in this field tends to focus on the effects of prison, one new study suggests that jails may have similarly damaging effects.[54]

- **Mental and physical health.** Incarceration jeopardizes health and well-being.[55] People who need health care while in prison, for example, may not receive high-quality treatment or any treatment at all.[56] Health conditions and problems often persist after release, making it that much harder to find and keep a stable job.[57] The dehumanizing experience of prison itself, and the behaviors people must adopt to survive, may also make it difficult to succeed in the workforce.[58]

That said, none of these caveats undercut this central finding: a surprisingly large number of Americans have a misdemeanor conviction, with (as this report will show) serious consequences. Even if the misdemeanor population were half as high as is estimated here — in the 20 million range, for example, due to a higher than expected rate of intra-year recidivism — the total would remain shocking, and the policy implications would be unchanged. Research on the misdemeanor system is in its earliest phases. Hopefully, this estimate will lead people to undertake the data collection efforts needed to support further research and will be refined in future studies.

■ ■ ■

This analysis offers a way of understanding the scale of mass incarceration in the United States that is more detailed than past research. Of the more than 70 million people with a criminal record today, tens of millions have experienced some of the most severe sanctions known to the criminal justice system — imprisonment or conviction of a felony. And tens of millions more must contend with the stigma of a misdemeanor conviction, which, while less severe, still harms one's ability to find a stable job.

II. The Effect of Conviction and Imprisonment on Annual Earnings

This report now evaluates how the earnings of these three populations are affected by involvement with the criminal justice system. Drawing on survey data, it finds that misdemeanor convictions are associated with a small earnings reduction, felony convictions are associated with a moderate reduction, and imprisonment is associated with a severe one.[59]

Many researchers have studied the effect of incarceration on earnings. This report adds to that understanding by also estimating the effect of felony and misdemeanor convictions. First, this section estimates the effect of conviction and imprisonment on annual earnings. The next section explores how these effects add up over a lifetime.

How This Report Estimates Lost Earnings

>> To produce these estimates, the authors drew on data from the National Longitudinal Survey of Youth's 1979 and 1997 cohorts (NLSY79 and NLSY97, respectively). They then used a statistical technique called propensity-score matching (PSM) to match people who have become involved with the criminal justice system with people who are comparable to them in terms of certain key traits. Given a close enough match, the earnings differential between justice-involved people and this comparison group can be attributed to the effect of criminal justice involvement.

>> Specifically, for this report, people who became involved with the criminal justice system in early adulthood (on average, in their late teens or early twenties) were compared with people who had no such history but were similar in demographic characteristics (age, gender, race-ethnicity, and education) and regional indicators (unemployment and poverty rates).[60] The gap between the two groups' annual earnings could then be explored.

>> Any study of the criminal justice system's effects must reckon with the risk that there are deeper, unobserved differences between those who become convicted or incarcerated and those who do not. Indeed, research suggests that people who enter prison earned significantly less than their peers prior to incarceration.[61] To limit the effect of these unobserved traits, this report's results were validated using additional statistical techniques. For details on these approaches, see appendix B.

A. Formerly Imprisoned People

Estimate: 52 percent reduction

This report estimates that formerly imprisoned people earn around $6,700 annually, while their peers earn around $13,800. The latter figure is slightly less than what a full-time worker earning the federal minimum wage would earn over the course of a year.[62] The disparity between the two groups translates to an annual income reduction of around 52 percent.

B. People with a Felony Conviction Not Sentenced to Imprisonment

Estimate: 22 percent reduction

Felony convictions imply serious crimes and have a significant effect on earning potential. But without imprisonment, the effect may be very different from the one felt by people returning home from prison. Therefore, this report presents a new model to estimate how a felony conviction, even without imprisonment, affects earnings.

Here the authors used the NLSY97, which specifically asked participants whether they had been convicted of a felony.[63] Studying this group of people using the PSM method (described in appendix B) suggests that felony convictions without imprisonment also have a significant effect on annual earnings: about a 22 percent reduction.

The large effect identified here is consistent with theories about how a criminal record affects earning capacity. People convicted of felonies may also be more likely to have spent time in pretrial detention. As a result, it is possible that the 22 percent estimate described here includes the effect of pretrial detention, which has also been linked to reduced earnings.[64]

C. People with a Misdemeanor Conviction

Estimate: 16 percent reduction

Based on the same methodology, a non-felony conviction — assumed for the purposes of this analysis to be a misdemeanor conviction — reduces annual earnings by about 16 percent. As in the previous section, time spent in pretrial detention may partially account for this effect.

It may seem surprising that a misdemeanor conviction would have such a significant impact on earnings. But research suggests that even misdemeanor arrests may lead to reduced employment.[65] Misdemeanor charges

TABLE 3

Aggregate Annual Earnings Lost Due to Criminal Justice System Involvement (2017)

	FORMERLY IMPRISONED PEOPLE	PEOPLE WITH FELONY CONVICTIONS	PEOPLE WITH MISDEMEANOR CONVICTIONS
Average earnings	$6,700	$23,000	$26,900
Average earnings of peers	$13,800	$29,400	$32,000
Earnings effect	–51.7%	–21.7%	–16.0%
Size of group	7.7 million	12.1 million	46.8 million
Annual earnings lost	**$55.2 billion**	**$77.1 billion**	**$240.0 billion**

Note: All data points were computed from unrounded estimates.

Source: Brennan Center analysis.

often entail pretrial detention. Misdemeanor prosecutions also increase the risk of future conviction and justice involvement, even when they do not end in conviction. According to one scholar, even when a case ends in dismissal it allows prosecutors to begin building a file that will inform future interactions with law enforcement. Thus, being charged with a misdemeanor, even if it does not end with conviction, may single someone out — or "mark" them — for closer scrutiny during subsequent prosecutions, potentially increasing the risk of conviction and, by extension, lowering earnings.[66] Taken together, these factors make it unsurprising that a misdemeanor conviction has some effect on earnings.

The nebulous nature of the misdemeanor category means that the misdemeanor effect likely varies significantly from person to person and from charge to charge. For example, a conviction for driving while intoxicated likely affects someone's earnings differently from a conviction for simple assault — even though both are misdemeanors under New York State law.[67] But the average effect described here helps develop our understanding of the effects of lower-level criminal justice involvement.

D. Aggregate Annual Effects

Each of the estimates above describes annual earnings lost by an average member of each group. These effects are keenly felt by formerly imprisoned or convicted people, their families, and their communities. As the next section will demonstrate, these effects do not fade with time. They are experienced by people at all phases of their lives and careers.

Even in a single year, these lost earnings, in the aggregate, constitute an enormous sum of money. To quantify that loss, table 3 presents each annual earnings loss estimate from the preceding section, in dollars, and multiplies it by the size of the group, as identified in section I.

For example, the average formerly imprisoned person will earn 52 percent less than a similarly situated person who was never imprisoned. From the previous section, we know there are at least 7.7 million formerly imprisoned people in the United States. Applying the average earnings penalty to this entire group suggests that, in the aggregate, formerly imprisoned people lose out on an estimated $55.2 billion annually.

Assuming that people are not counted twice in separate categories, then underemployment related to imprisonment or conviction reduces people's wages by as much as $372.3 billion annually. Because incarceration and criminal justice involvement already disproportionately ensnare poor communities, this sum represents money that largely goes unearned and uninvested in communities that need it most. For context, consider what $372.3 billion would be enough to do:

- close New York City's poverty gap 60 times over;[68]
- give every homeless person in the United States a house worth $500,000, outright, with money to spare;[69]
- fund NASA for roughly 15 years at the level NASA believes would put it on track to return to the moon by 2024;[70] or
- fund the Justice Department's Office of Community Oriented Policing Services — which supports community policing initiatives — at FY 2020 levels for more than 1,000 years.[71]

The losses described in this report are, first and foremost, felt by impacted individuals and their communities. But given the scale of these losses, there are macroeconomic implications as well. Indeed, other researchers, using different methods and studying different metrics, have argued that mass incarceration has a broad economic impact. For example, according to sociologists Bruce Western and Becky Pettit, much of the damage caused by overincarceration "is invisible in standard data sources" because "prison and jail inmates have no status in official employment statistics." In a 2000 study, they attempted to correct this omission and found that accounting for incarcerated persons reduced the employment-to-population ratio of Black men more than white men.[72] Building on their findings, in 2016 the *Washington Post* reported that, after accounting for incarceration, the unemployment rate for Black working-age men in 2014 was 7.2 percentage points higher than officially reported.[73] This report adds to the evidence of mass incarceration's society-wide collateral costs.

Does Prison Labor Offset This Earnings Loss? No.

>> **Theoretically,** the economic impact of imprisonment might be mitigated by opportunities to work while imprisoned. Skills learned through prison labor might offset the loss of what economists call "human capital" behind bars, and earnings might help people amass savings to help them begin new lives after release.

>> **The reality is very different.** First, wages from prison labor do not come anywhere close to replacing what people can earn outside of prison. If any pay is offered at all, it is generally low — around $1 per hour.[74] Many jurisdictions then deduct costs from that paycheck, whether to satisfy court fees and fines or to pay fees associated with imprisonment, such as room and board (that is, the cost of someone's own incarceration).[75] Some prisons also recoup the wages they pay through marked-up commissary products.[76] Prison programming could help people retain and develop skills, but there is little evidence that current programs provide those benefits.[77]

The findings here suggest that imprisonment remains a major driver of economic loss, severely depressing the earnings of those affected by it. But it is not the only factor. Roughly two-thirds of the aggregate $372.3 billion loss identified here is the result of misdemeanor convictions. The repercussions of even a relatively minor criminal record represent a serious drain on earnings, and top-to-bottom reform is necessary to blunt this effect.

III. The Effect of Conviction and Imprisonment on Lifetime Earnings

Annual lost earnings are a helpful metric for analyzing the macroeconomic impact of mass incarceration. But for people living through the effects of a criminal conviction or incarceration, these losses are most notable for how they compound annually.

Building on the last section's analysis of annual lost earnings, this section presents a lifetime analysis, showing that formerly imprisoned people earn less than half of what their peers earn over their careers. As shown in figure 2, the value of these lost earnings for formerly imprisoned people approaches half a million dollars per person, an amount that could easily make the difference between escapable and inescapable poverty.

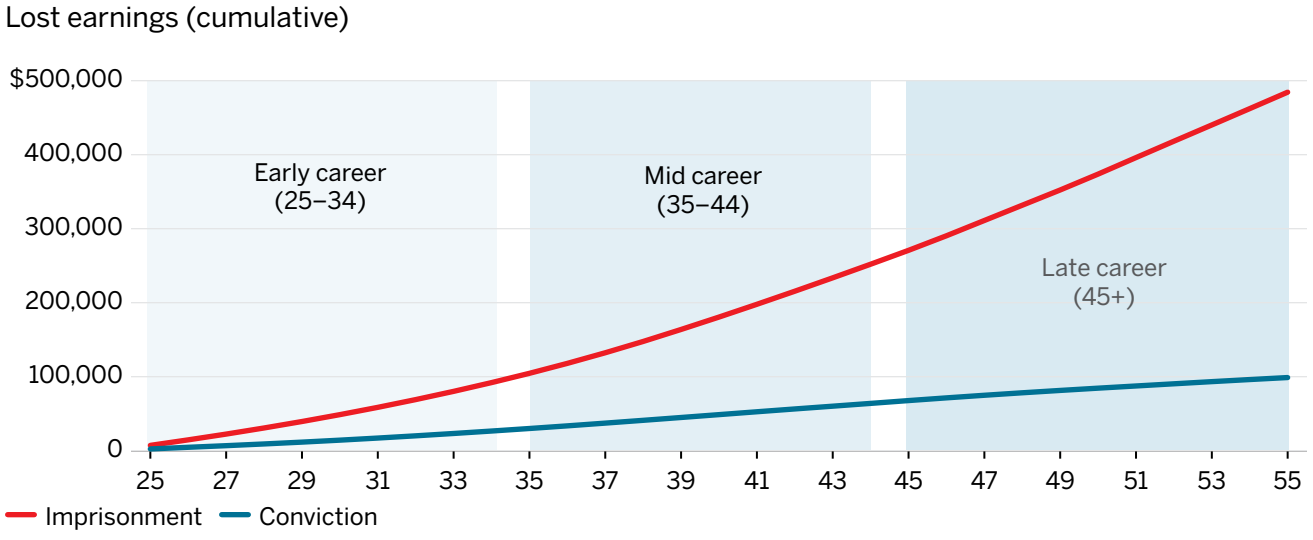
PSM was again used to produce these findings. People with involvement in the justice system were again matched with highly similar people who had no such experience.

This section's analysis defines the cohort's prime working years as running from their twenties to fifties, because earnings growth is typically most stable over this period. For simplicity, when describing results, this 30-year period is divided into three stages, based on the average age of NLSY participants in the sample in each stage: early career (ages 25–34), mid career (35–44), and late career (45+). Due to data limitations, this section does not distinguish between misdemeanor and felony convictions.[78]

The damage done by conviction alone is significant. Over the course of a lifetime, cumulative earnings losses reach nearly $100,000 for the average person with a conviction. These results pale in comparison to the effect of imprisonment, however. By the end of a career, someone who was imprisoned as a young adult — regardless of what offense led to incarceration — suffers an average of about $484,400 in lost earnings.

FIGURE 2

People Who Have Been Convicted or Imprisoned Lose Up to Half a Million Dollars in Earnings Over the Course of a Career



Source: Brennan Center analysis.

A. Consequences for Poverty and Income Inequality

Some researchers have argued that the effects of a criminal record are "eternal," due to the prevalence of law enforcement and screening databases.[79] This report's findings provide strong support for that claim. Over the long term, the effect of incarceration on earnings appears to grow as justice-involved people miss out on the wage growth their peers benefit from — a surprising and troubling conclusion. As shown in figure 3, average formerly imprisoned people will start their careers earning roughly $7,100 less than their peers annually, and end them trailing their peers by more than $20,000 annually.

Socioeconomic disadvantage tends to compound itself, and that principle appears to be at work here.[80] Generally, as people progress in their career and gain experience, they make more money, peaking in their late forties or early fifties.[81] Several mechanisms likely impede that growth for formerly imprisoned people. For one, a criminal history may make their career prospects more fragile. Jobs available to them will often provide fewer opportunities for earnings growth and career advancement; they may also be more vulnerable to layoffs. Opportunities for licensure or credentialing (and the higher income both can bring) are also limited and may provide weaker returns on investment. Some professional licenses and credentials are off-limits to people who have spent time in prison; in other cases, since jobs in general are harder to come by for formerly justice-involved people, those credentials do not always translate to higher pay.

Previous research provides strong evidence that these mechanisms are at work. First, 45 percent of formerly imprisoned people are unemployed during the entire year following their release.[82] Unemployment becomes a spiral, depriving people of opportunities to develop skills and weakening their connections to potential employers.[83] Additionally, when work is secured, it is often temporary, part-time, and low paying; in one study of people released from Indiana prisons, about half of those who did find post-release employment had an annual income of less than $5,000.[84] Such low-wage jobs tend to be characterized by less upward mobility and a higher risk of future unemployment.[85] Criminal records, in other words, trap formerly imprisoned people in low-paying work, which in turn places them on a lower income-growth trajectory.

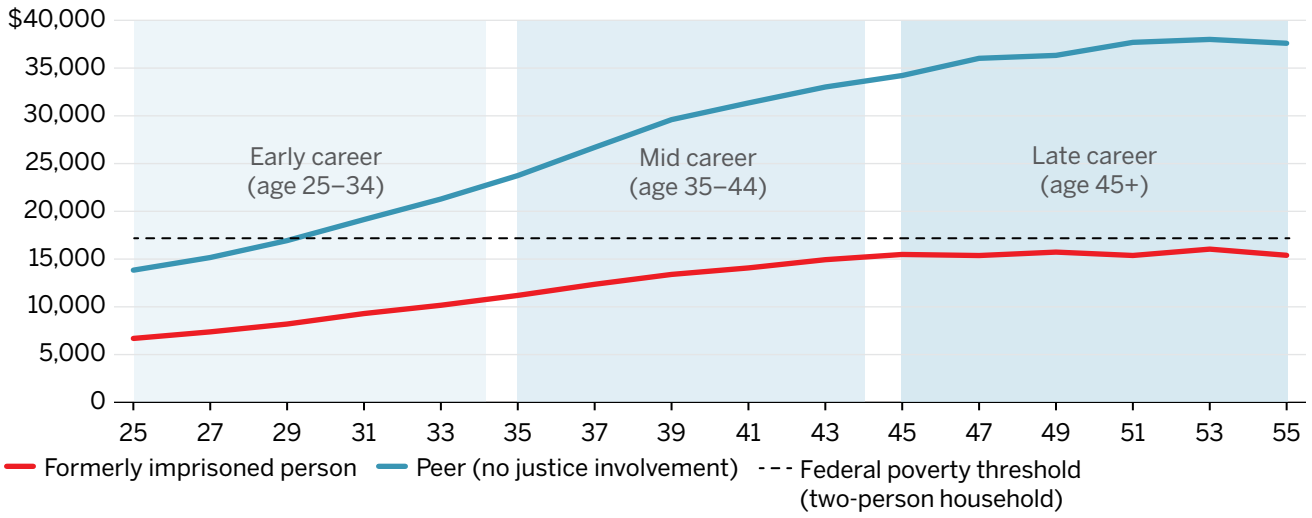
Notably, these findings suggest that earnings losses among the formerly imprisoned population may not be due entirely to the prison experience itself or the time spent removed from the workforce. Instead, at least part of the earnings gap can be ascribed to the shadow that imprisonment casts over *subsequent* economic opportunities. This distinction has serious consequences for policymakers, which are discussed in section IV.

This report's results are also consistent with research on intractable "deep poverty," a chronic form of poverty

FIGURE 3

Formerly Imprisoned People Experience Little Earnings Growth

Annual earnings (average)



Source: Brennan Center analysis.

that tends to persist generation after generation.[86] As shown in figure 3, above, the average early-career wages of formerly imprisoned people hover at around half of the federal poverty threshold for a family of two. Indeed, they never exceed it.[87]

The lifetime effects of this earnings loss are staggering. The roughly half-million dollars lost by the average formerly imprisoned person is more than the entire lifetime earnings of someone who spends his or her life at the poverty line ($382,000).[88] And this loss does not account for missed opportunities for additional wealth generation, from Social Security benefits to accrued interest on retirement accounts to forgone investment opportunities. These factors, taken together, demonstrate that imprisonment sets up people who are already disadvantaged for a profound loss of wealth and closes off pathways to upward economic mobility.

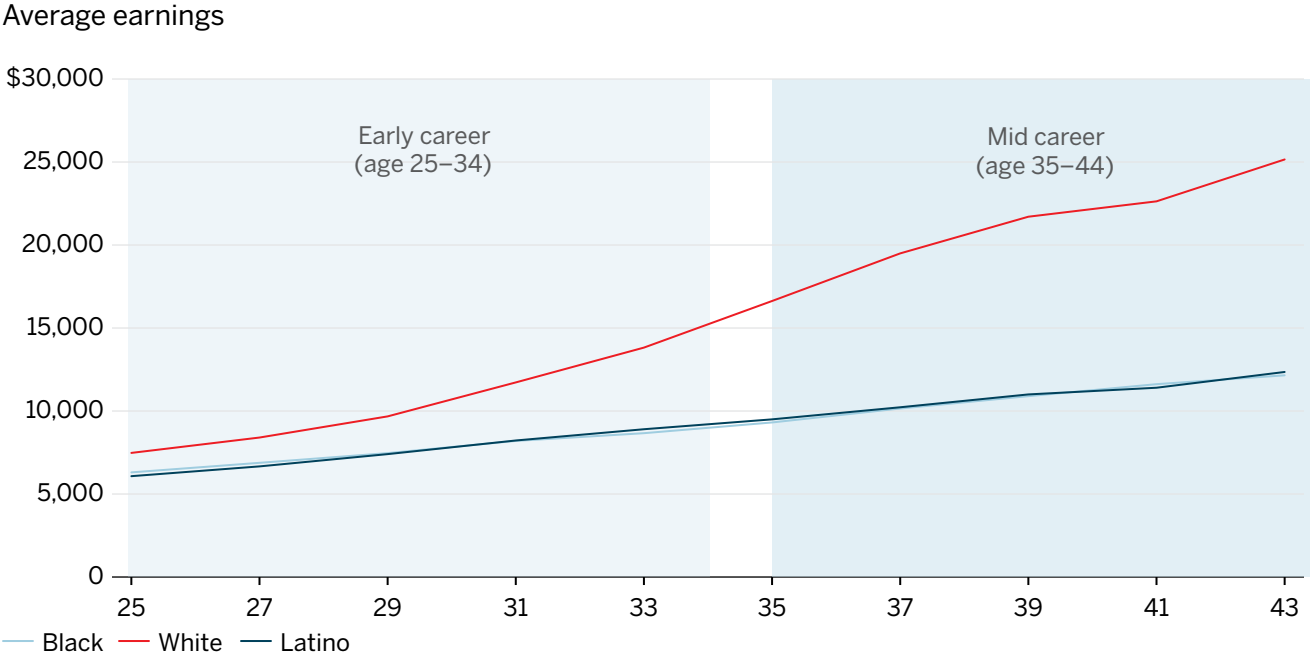
B. Consequences for Racial Inequality

This report has already shown that Black and Latino people are overrepresented in the formerly imprisoned population. It appears that their long-term earning potential is also more deeply affected by imprisonment. As shown in figure 4, white people who have experienced prison earn significantly more annually than Black or Latino people with similar histories.

Formerly imprisoned Black and Latino people suffer greater lifetime earnings losses — $358,900 and $511,500, respectively — than their white counterparts, whose losses amount to $267,000. Given the overrepresentation of Black and Latino people among the formerly imprisoned population, these findings suggest that the American prison system has a profoundly negative impact on Black and Latino wealth. Of course, there is already a vast racial wealth gap that has persisted with little change over the past 50 years.[89] In 2016, the median wealth of white families ($171,000) exceeded the median wealth of Black families ($17,409) and Latino families ($20,920) by factors of around 10 and 8, respectively.[90] Continued disparities in yearly earning power — like the ones identified in this report — likely exacerbate that gap.[91] Other research suggests that low wealth is itself associated with an increase in imprisonment, potentially setting up a vicious cycle in which criminal justice involvement perpetuates wealth disparity, which in turn raises the risk of imprisonment.[92]

FIGURE 4

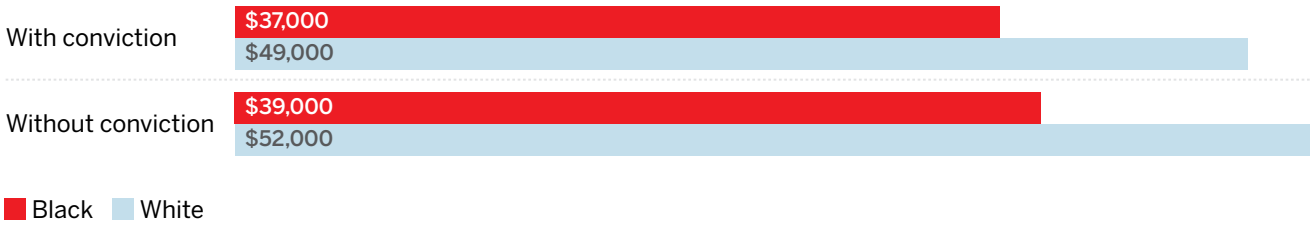
Racial Disparities in Post-prison Earnings Are Severe and Grow Over Time



Source: Brennan Center analysis.

FIGURE 5

Black People with No Criminal Record Earn Less Annually than Socioeconomically Similar White People with a Record



Source: Brennan Center analysis.

Last, this report's estimates suggest that, for those who are otherwise socioeconomically similar, Black men and women with *no* history of conviction or imprisonment earn less than white men and women *with* a conviction record. By the end of a career, as shown in figure 5, white men and women with a conviction earn about $49,000 a year on average, eclipsing the $39,000 a year that Black people with *no* conviction earn over the same period. These findings corroborate conclusions first drawn by sociologist Devah Pager. As she wrote, "race continues to play a dominant role in shaping employment opportunities, equal to or greater than the impact of a criminal record."[93]

Apart from the effects of justice involvement, racial discrimination in general continues to contribute to earnings disparities. While ending mass incarceration is critically important to rectifying these disparities, it cannot by itself resolve them.

IV. Policy Recommendations

This report demonstrates that the effects of conviction and imprisonment persist for decades, entrenching inequality and perpetuating poverty. Even people convicted of minor offenses see their earning potential reduced. Because poor people are more likely to become involved in the criminal justice system in the first place, conviction and incarceration can all too easily become poverty traps. Policy interventions are needed to help break that cycle — and to effect transformative change.

A. States should reduce penalties, reclassify some felonies as misdemeanors, and decriminalize other offenses altogether.

Even minor convictions appear to entail long-term economic harm. Confronting this problem requires shrinking every aspect of the criminal justice system — from prisons to misdemeanor courts. Some states have made progress toward this goal through felony reclassification, reducing some felony crimes to misdemeanors.[94] Other offenses can be safely decriminalized entirely, meaning that they would be handled (if at all) outside the criminal justice system.[95] The Covid-19 public health crisis has already inspired many police departments to temporarily rethink who is arrested and why.[96] Looking beyond the pandemic, broader decriminalization efforts — targeting misdemeanors and infractions for resolution outside the criminal justice system or, at a minimum, eliminating arrests and jail time for them — can preserve public safety while reducing the collateral costs this report identifies.[97]

B. Jurisdictions should invest in paths away from arrest and prosecution.

Providing early off-ramps from the criminal justice system can spare people the effects of incarceration and conviction and shrink the size of the justice system. Pre-arrest diversion programs accomplish these goals by identifying people who might be arrested and intervening in other ways, such as by connecting them with drug or mental health treatment.[98] Some such programs embed social workers or clinicians with police so that these professionals can respond immediately where necessary.[99] Other diversion programs work by identifying people who may be charged with certain types of crimes, offering alternative resolution options and dismissing criminal charges upon their successful completion.[100] Expanding these programs would help reduce the number of people with conviction records of any type. Critically, policymakers should also ensure that successfully completing a diversion program seals or expunges all record of the interaction, since even dismissed cases can, in some circumstances, remain a part of someone's court records and encourage prosecutors and judges to be less lenient in future cases.[101]

C. Policymakers should expand the use of alternatives to incarceration.

Imprisonment creates and deepens economic disadvantage. Judges and prosecutors should be given tools that allow them to impose noncarceral sanctions that better meet the needs of people who enter their courtrooms. Probation, drug treatment, community service, counseling, and even fines tailored to a person's ability to pay are more appropriate than prison in many situations and allow people to avoid the long-term consequences of imprisonment.[102] But all such alternatives to incarceration (ATIs) must be implemented with care. Some diversion programs come with a price tag, trapping defendants who are unable to pay in the very cycle of poverty and incarceration that ATIs are designed to prevent.[103] Furthermore, people sentenced to an ATI generally still exit the courtroom with a criminal conviction, a serious sanction that will still depress their earning potential.

D. States should eliminate unnecessary barriers to employment.

Nearly 30 percent of workers need a state license to practice their occupations. These policies hinder job growth and limit opportunities for people with criminal records.[104] States have imposed at least 12,000 licensing restrictions on individuals with a felony record, and 6,000 on people with a misdemeanor record.[105] By removing these barriers, occupational licensing reform would open up a broader array of jobs to people with criminal records. First, blanket bans — automatic disqualification for individuals with a criminal record — should be repealed.[106] Second, policymakers and licensing bodies should remove vague and overbroad standards, such as "good moral character," from qualification lists.[107] And third, regulators should provide clear guides to applicants about potential barriers to licensure.[108]

E. The private and public sectors should expand opportunities for people returning to the workforce after conviction.

Job applications frequently ask about an applicant's criminal record up front, allowing employers to screen out

people with a record without meeting them or considering their qualifications. Ban-the-box policies require employers to remove such conviction inquiries from initial job applications. Records are disclosed later in the hiring process — before a final decision is made, but after applicants have had a chance to advocate for themselves and explain their past.

These policies encourage hiring managers to look at someone's application holistically. Many companies — including some of the country's largest employers — have banned the box on their own initiative.[109] Cities, states, and the federal government have adopted similar policies for their own hiring and in some cases require it of the private sector as well.[110] Early evidence is promising, showing, for example, increased hiring in high-crime neighborhoods and increased public-sector hiring of people with criminal records. Other jurisdictions should adopt or expand ban-the-box policies.[111]

F. Cities and states should prevent landlords and employers from discriminating against people with criminal records.

Even in ban-the-box jurisdictions, some employers will automatically reject applicants once they learn of a criminal record. States should repeal laws that permit the blanket denial of jobs to people with a criminal record.[112] They should also consider adopting rules, like those in New York State, that make it illegal for employers to turn away job applicants based solely on their criminal record.[113] Under New York's law, employers may still consider criminal history, but only as part of a holistic inquiry, and they may only reject an applicant on the basis of a conviction for a specific, enumerated reason — such as if the conviction has a direct relationship to the job, presents a licensing concern, or suggests a risk to the general public.[114]

Some landlords will also automatically deny a lease to people with a criminal record, contributing to an increased risk of homelessness among formerly justice-involved people.[115] As with employment, states and municipalities should pass laws to prohibit such discrimination. Seattle's Fair Chance Housing legislation of 2017, for example, prevents landlords from unfairly rejecting applicants based on justice involvement and prohibits the use in advertising of language that categorically excludes formerly justice-involved individuals.[116]

G. Public housing authorities should relax or eliminate rules that exclude people with a criminal record.

Public housing is often the only affordable option for people returning from prison, but many public housing authorities (PHAs), taking a cue from federal laws, exclude people with a criminal record. These rules often separate families and make it impossible for people to return home.[117]

PHAs should relax these rules. Some have begun doing so, with promising results. Following a pilot program that saw low recidivism and a majority of participants successfully reaching other milestones, the New York City Housing Authority now partners with reentry organizations to help people with conviction records transition into housing.[118] Similarly, due to a recent policy change, a criminal conviction is no longer an automatic disqualification for public housing in New Orleans.[119]

H. Corrections authorities should proactively connect people to health-care benefits.

Justice-involved people experience chronic health conditions, including substance-use disorders and mental illness, at higher rates than the general population.[120] Poor health increases the risk of job loss and unemployment — effects surely felt by the justice-involved population.[121] Therefore, corrections officials should ensure that people being released from jail or prison understand how to make use of services available to them, including federal benefits and state-sponsored health insurance.[122] Before their release, individuals should be provided with all the documentation necessary to access health-care benefits.[123]

I. State and federal policymakers should expand the social safety net.

Government assistance programs are proven and effective means of reducing poverty.[124] They may also reduce recidivism by keeping people out of poverty and despair.[125] A 1990s federal welfare reform law permits states to deny important food and cash assistance benefits to people convicted of some drug offenses.[126] This provision is an outdated and unnecessarily punitive relic of the "war on drugs," and Congress should repeal it outright.

Until Congress is poised to act, states should, as a stopgap measure, exercise their statutory right to opt out of the exclusion.[127] Many have already done so, but around half still exclude some formerly justice-involved people from benefits.[128] All states should opt out of the provision in its entirety.

Correctional administrators should also work with all levels of government to ensure that people being released from incarceration are connected immediately with anti-poverty programs and benefits. As one example, New York City preemptively enrolls people in the Supplemental Nutritional Assistance Program (SNAP) as they approach their release from city jails, ensuring that they do not wait an unnecessarily long time for food benefits. More jurisdictions should do the same.[129]

V. Conclusion

More than 70 million Americans have a criminal record of some kind. This report is the first to demonstrate that more than half of them have at least one conviction for a misdemeanor or a more serious crime. Nearly 8 million of them have been imprisoned at some point in their lives, testament to the sprawling reach of incarceration.

This exposure to the criminal justice system, however long or however brief, carries consequences that extend far beyond a guilty plea, trial verdict, or release from prison. People who have been convicted of a crime can expect to earn at least 16 percent less, on average, than their peers. And those who have been to prison will lose around half of their earning potential. Over the course of a lifetime, that loss, on average, approaches half a million dollars — easily the difference between escapable and inescapable poverty.

These lost wages, in aggregate, cost people touched by the criminal justice system more than $372 billion annually. And this loss is not evenly distributed. It is felt most keenly by Black and Latino communities, which disproportionately lose their members and their wealth to incarceration and its effects.

Taken together, these findings demonstrate that ending mass incarceration is an economic imperative as much as a moral one. It is a vital step toward restoring prosperity to underserved communities across the country, and toward closing the racial wealth gap.

Appendix A: Literature Review

I. Estimates of Population Size

Formerly Imprisoned People

Scholars have repeatedly attempted to estimate the number of people who have been to prison. The government does not publicly track this information. However, data available from the Bureau of Justice Statistics (BJS) and its National Prisoner Statistics Program generally provides a solid starting point for estimating the size of this population. Historically, scholars approached the task by collecting data on annual prison releases, adding them up over the study period, and then controlling for mortality and recidivism. Findings from some of the most recent studies, shown in table 4, suggest that around 5 to 7 million people in the United States who are alive today were imprisoned at some point in their lives.[130]

People with Felony Convictions

BJS has not reported the number of felony convictions entered annually since 2007, significantly complicating any effort to estimate the number of people with a felony conviction today.[131] Previous BJS data suggests that around 2 million felony convictions occur annually.[132]

To bridge this gap in the data, researchers have developed creative techniques. Perhaps the best-known papers in this field were produced by the Center for Economic and Policy Research (CEPR) in 2010 and 2016. The first, by economist John Schmitt and researcher Kris Warner, started with BJS estimates of the number of people entering and leaving prison and then used data on the ratio of felony convictions to prison sentences to extrapolate the number of felony offenders convicted annually. Estimates of recidivism and mortality were then applied.[133] Researchers Cherrie Bucknor and Alan Barber updated this paper in 2016, following the same methodology.[134] A 2017 study by sociologist Sarah Shannon and colleagues, building on a 2011 paper, followed a similar methodology and incorporated a broader set of data.[135] As shown in table 4, all four studies concluded that more than 10 million living people in the United States have a felony record.

TABLE 4

Previous Studies of the Justice-Involved Population

AUTHORS	DATA THROUGH	ESTIMATE OF FORMERLY IMPRISONED PEOPLE	ESTIMATE OF PEOPLE WITH A FELONY CONVICTION
Schmitt and Warner (2010)	2008	5.4–6.1 million	12.3–13.9 million
Shannon et al. (2011)	2010	4.9 million	19.8 million
Bucknor and Barber (2016)	2014	6.1–6.9 million	14.0–15.8 million
Shannon et al. (2017)	2010*	7.3 million	19.0 million

*Totals include those subject to correctional control during the survey year.

Source: John Schmitt and Kris Warner, *Ex-offenders and the Labor Market*, Center for Economic and Policy Research, 2010, http://cepr.net/documents/publications/ex-offenders-2010-11.pdf; Sarah Shannon et al., "Growth in the U.S. Ex-felon and Ex-prisoner Population, 1948 to 2010" (conference paper, 2011), http://paa2011.princeton.edu/papers/111687; Cherrie Bucknor and Alan Barber, *The Price We Pay: Economic Costs of Barriers to Employment for Former Prisoners and People Convicted of Felonies*, Center for Economic and Policy Research, 2016, 1, https://cepr.net/report/the-price-we-pay-economic-costs-of-barriers-to-employment-for-former-prisoners-and-people-convicted-of-felonies; Sarah Shannon et al., "The Growth, Scope, and Spatial Distribution of People with Felony Records in the United States, 1948–2010," *Demography* 54, no. 5 (2017): 1804–5 and table 1.

Significantly, though, none of these papers sought to identify the number of people who were convicted of a felony but not imprisoned. Imprisonment is, of course, a more severe sanction than conviction alone. It is also far less common. Attempting to differentiate among the various levels of criminal justice involvement is one of this paper's major contributions.

People with Misdemeanor Convictions

National information on misdemeanor cases is difficult to obtain for a number of reasons. For one, some jurisdictions do not keep track of the number of minor cases.[136] Further, the term *misdemeanor* is an amorphous one; the definition differs among states, making it that much harder to study in the aggregate.[137]

Early efforts to fill this gap struggled with incomplete data.[138] But misdemeanor data availability is improving. The National Center for State Courts (NCSC), a repository of information that relies on individual states to provide their caseload data, began reporting detailed information on state court dockets online in 2012. Not all states participate in the NCSC every year; for those that do not, data can often be found online in state annual reports.[139]

Drawing on these resources, scholars have come closer to estimating the number of misdemeanor cases filed annually — around 13 million. Researchers Megan Stevenson and Sandra Mayson used publicly available caseload statistics from 45 states — imputing missing data based on misdemeanor case-filing rates in states that had similar characteristics — to calculate that there were 13.2 million misdemeanor cases filed in 2016.[140] Law professor Alexandra Natapoff, using a related methodology, arrived at a similar estimate for misdemeanor cases filed in 2015.[141] These figures exceed the number of *all* arrests made in those years.[142]

Estimating the number of those cases that result in convictions proves more difficult. Conviction rates appear highly variable from one state to the next. BJS briefly reported these figures; national misdemeanor conviction rates for state prosecutors, according to one report series, were 77 percent in 1996 and 88.7 percent in 2001.[143] Law professors Nancy King and Michael Heise have also estimated misdemeanor conviction rates for 25 states. They estimated a national rate of 73 percent. Calculation methods for each state, however, differed significantly, and fewer than half of all states had enough available data from which to derive an estimate.[144]

State-by-state canvassing of available criminal justice records is not adequate to fill gaps in this data, however, as some jurisdictions do not report misdemeanor conviction rates in any form.

II. Estimates of Wage Effects

People in Prisons

Relatively few studies have identified what people in prison could have earned but for their incarceration. This report does not directly analyze what wages are "lost" during someone's incarceration. But research in this area provides helpful context, underscoring that people who become imprisoned — and those who are highly similar to them — tend to have preexisting disadvantages.

In 1999, economist David A. Anderson offered one estimate of this figure as part of a broader study aimed at quantifying the total economic cost of crime. While previous researchers had found that incarcerating a single person "costs society $5,700 in lost productivity per year," he wrote, that estimate was "based on the observation that many prisoners did not work in the legal market prior to their offense." Moving past that assumption, and assuming instead that people in prison could have earned about as much as the average hourly worker, Anderson found that "the average incarcerated worker is estimated to represent $23,286 in lost productivity per year."[145]

Subsequent researchers have built on Anderson's work to calculate their own estimates of the wages that people in prison miss out on while incarcerated. In 2006, economist Jens Ludwig used Anderson's research in testimony on the "costs of crime" before the Senate Judiciary Committee. The "lost productivity associated with time that incarcerated criminals spend behind bars," he concluded, was around $35 billion annually.[146] Updating Anderson's work to 2014 dollars, a 2016 study by economists at Washington University in St. Louis found that people lose just over $33,000 per year while imprisoned. Over the length of an average prison term (roughly 2.25 years in this paper), the study concluded, those entering prison in 2014 could expect to lose a total of $70.5 billion during their incarceration.[147]

Another study, by health economists Kathryn E. McCollister, Michael T. French, and Hai Fang, employed a different method to calculate lost wages. Using data on prison populations and assuming that each incarcerated person could earn at least the minimum wage, McCollister's team found that the average person convicted of murder would face around $150,000 in lost wages while incarcerated, while the average person convicted of larceny would lose less than $200.[148] (Significantly, their calculations accounted only for time spent in prison, not time spent in jail, where many larceny defendants will serve their sentences.)

Formerly Imprisoned People

Economists and sociologists have consistently shown that time behind bars decreases both the likelihood of being employed post-release and the wages earned. This problem was dramatically illustrated by the late sociologist Devah Pager in a series of real-world experiments.

In the first, published in 2003, job candidates applied for actual positions in Milwaukee using résumés indicating a drug conviction and an 18-month prison term. Pager's findings showed that even this relatively short prison term presented "a major barrier" to employment, especially for Black applicants.[149] She repeated the study in New York City in 2009, with similar results.[150]

Some researchers have used novel study designs to evaluate the impact of prison on earnings. Criminologist Naomi Sugie, a professor at the University of California, Irvine, explored this topic in a 2014 dissertation. She followed 156 recently released parolees via smartphones, finding that returning citizens faced "a reentry period characterized by very short-term, irregular, and poor-quality work." Sugie suggested that stigma and "low social connectivity and low emotional wellbeing about searching" were jointly to blame and that this situation tended to make illegitimate (criminal) earning opportunities more attractive for those who feel shut out of the conventional labor market.[151]

The U.S. Department of Labor does not track the unemployment rate for the formerly incarcerated, but it appears to be high. Around 40 percent of formerly imprisoned people released from Indiana state prisons in 2005 reported being unemployed in the years following their release, according to the director of education of the Indiana Department of Correction, John M. Nally, and coauthors, writing in the *Journal of Correctional Education* in 2011. According to the study, that figure rose to roughly 65 percent in the late 2000s, potentially due to worsening economic conditions.[152]

Putting a dollar value to this lost productivity, as this report seeks to do, is another matter. In a 2001 paper, sociologist Bruce Western, along with economists David Weiman and Jeffrey R. Kling, found that prison time had a significant negative effect on subsequent earnings, on the order of a 10 to 30 percent reduction. But they stopped short of separating this effect into individual causes of reduced job prospects — such as arrest, conviction, and time served behind bars — finding that more data was needed and that "studying the effects of contact with the criminal justice system is a hard scientific problem."[153] In a 2002 paper, Western reached a similar result, writing that incarceration disrupts key "life transitions," causing slow wage growth among returning citizens and leading to a 10 to 20 percent reduction in wages.[154]

One might expect this effect to be proportional with the length of sentence, if time behind bars conveys more than a stigma — for example, if prison causes people to lose some of the skills necessary for success in the workplace or prevents them from gaining new skills. In fact, one recent paper by economist Michael Mueller-Smith concluded that formerly incarcerated people do earn less after release, and that the effect increases based on how long the person spent behind bars. Mueller-Smith used administrative data from both Harris County and the state of Texas to compare the economic outcomes for defendants who, despite being similarly situated, were randomly assigned to different judges in Houston. This method revealed that each additional year of incarceration reduced the likelihood of future employment by 3.6 percentage points. He wrote that "among felony defendants with stable pre-charge income incarcerated for one or more years, reemployment drops by at least 24 percent in the 5 years after being released."[155]

Many other researchers have used longitudinal data — studies that track a group of individuals over time — to examine how incarceration affects earnings over the long term. Sociologists Bruce Western and Katherine Beckett in 1999,[156] Western again in a 2006 book,[157] sociologist Amanda Geller and coauthors in 2006,[158] economist Steven Raphael in 2007,[159] and the Pew Charitable Trusts in 2010[160] all used this research method, finding a significant negative employment effect.

People with a Felony Conviction

While there is little doubt that incarceration negatively impacts lifetime earnings, researchers have yet to determine how much of this impact is due to imprisonment — which entails prolonged separation from the job market and (research shows) a severe social stigma — and how much stems from the stigmatizing effect of a criminal conviction alone. This is an important question because, as noted above, previous research showed that the number of people with a felony conviction is likely to be very large.

While several scholars have used longitudinal data to study the effect of imprisonment, few have done the same to estimate the effect of conviction. The authors of this study found only one such study, by economist Richard B. Freeman in 1991. Freeman estimated that a criminal conviction translates to a 10–15 percent reduction in weeks worked annually, compared with 25–30 percent for incarceration.[161]

Other studies have simply assumed that conviction and imprisonment affect someone equally. The CEPR studies discussed in the previous section also reviewed the literature to find an average penalty paid by formerly incarcerated workers and then, assuming that people with a conviction alone would face the same penalty, applied it to the entire justice-involved population. Ultimately, CEPR's 2010 report estimated that conviction and incarceration lowered male employment by more than 1.5 percentage points and resulted in a loss to the U.S. economy of $57–$65 billion in economic output.[162] The 2016 update, working under the same assumption, found that incarceration reduced the labor pool by 1.7 to 1.9 million workers in 2014, translating to $78–$87 billion in annual lost economic output.[163]

People with a Misdemeanor Conviction

The authors of this report found no study specifically analyzing the effect of a misdemeanor conviction. However, some studies have found that even a minor criminal record can have profound employment implications. In one 2014 paper, sociologist and legal scholar Christopher Uggen concluded that there is a "much broader range of impropriety" that can impact employment opportunities. Uggen identified a 4 percentage point reduction in employer callbacks for people with only a minor *arrest* record. Uggen also observed that the effect of conviction alone was an understudied problem in sociology.[164]

Even today, few researchers have investigated these "lesser boundaries of stigma."[165] Where they have, the results suggest a wide variety of experiences. A study by criminologist and statistician Daniel Nagin and economist Joel Waldfogel, for example, tied labor outcomes to the *type* of conviction, concluding that fraud convictions, which imply a breach of trust, create serious economic consequences, while convictions implying no breach of trust may not.[166] All told, this makes the effect of a misdemeanor conviction an important area for analysis.

Other developing research investigates whether an arrest has its own effect on wages, potentially explaining misdemeanor effects on wages or confounding attempts to analyze them. Uggen's research, mentioned above, suggested that people with an arrest record were slightly less likely to receive callback interviews.[167] Using longitudinal data, one recent paper by economist Amanda Sheely argues that arrest, rather than conviction or incarceration, is in fact what drives economic loss.[168] However, others disagree, finding that "entry-level contacts in the form of arrest are largely uncorrelated with wages."[169] Another paper, forthcoming from Mueller-Smith, also explores this issue using U.S. Census Bureau data.[170]

Appendix B: Methodology

All models of population size relied on data on the number of people who interact with each level of the criminal justice system, combined with internally developed models of recidivism and mortality. The National Longitudinal Survey of Youth (NLSY) was used to supplement data gaps on misdemeanors.

NLSY data also underpins this report's analyses of the earnings effects of justice involvement; as described below, the authors used a propensity-score matching model to compare justice-involved people with highly similar, non-justice-involved people. In early drafts of the report, NLSY Geocode data, which provides information on the location of NLSY participants, was also used under agreement with the Bureau of Labor Statistics to refine these estimates. Unfortunately, due to the Covid-19 pandemic, the authors were unable to access the computer where Geocode data was stored (and, contractually, the only place where the authors were permitted to access it). Therefore, in the final draft, regional data was used as a substitute.

The sources of data for each factor are explained in turn below.

I. Estimates of Population Size

Formerly Incarcerated Individuals

To estimate the formerly incarcerated population, for each year studied, this report sums the total number of people released from prison, subtracts people who have likely recidivated, and then controls for mortality. The following data was used for each step of this analysis:

Data on people leaving prison. Data on prison releases for the years 1960 through 2016 was obtained from the Bureau of Justice Statistics (BJS). Yearly reports provide data as far back as 1978; for the remaining years, a BJS historical report stretches back to 1850.[171] Prison release data was incorporated going back to 1965 only, because mortality figures suggest that the number of formerly imprisoned people still living but released before 1965 is negligible.

Recidivism data. Rates tracking recidivism in three- and five-year increments are among those most commonly referred to by criminal justice researchers, making them an obvious choice when designing a study.[172] But recidivism rates vary widely based on how long someone has been out of prison, rising quickly in the period immediately after release and ultimately reaching a plateau.[173] That makes generally used recidivism rates, on their own, inadequate to estimate how many people have left prison but have since returned. Applying a five-year recidivism rate to a group of people released in 1980, for example, would not accurately estimate how many returned between 1980 and 2017.

Drawing from previous research, the authors calculated new recidivism rates that vary based on how long someone has been out of prison. This calculation was performed using the National Corrections Reporting Program (NCRP) dataset.[174] While the NCRP does not include recidivism rates, it does have unique identifying variables ("Inmate_ID") for each person entering or leaving prison, which allowed us to calculate recidivism rates based on when a person leaves prison and when he or she reenters it. For example, the results show that someone released in 2017 has a 3 percent chance of returning to prison during the study period. But someone released 20 years prior, in 1997, has a 65 percent chance of recidivating before 2017.

Because of limitations on the data in the NCRP dataset, rates used in this report were constructed for roughly 25 years — specifically, for each cohort of releases from 1991 to 2016 — and then extrapolated backwards. These recidivism rates were then matched to each cohort of released prisoners; for example, someone released in 1991 was matched with a 25-year recidivism rate. Theoretically, this method should model the ebb and flow of prison populations.

Numerous states inconsistently report prison information to the NCRP, which may confound any recidivism estimates. The authors followed the Neal and Rick (2014) recommendation and restricted the report's recidivism analyses to 11 states that are identified as having consistent reports: California, Colorado, Illinois, Kentucky, Michigan, Minnesota, Nebraska, New Jersey, South Dakota, Virginia, and Washington.[175]

Mortality data. Prisons are uniquely harmful to the physical and mental health of people incarcerated there.[176] To calculate a realistic mortality estimate, the authors combined data from several sources, creating a new mortality estimate designed to model the unique health problems faced by previously incarcerated people.

Starting with a 2007 study by physician Ingrid Binswanger, the authors conclude that people released from prison face mortality rates 3.5 times higher than the general public.[177] Binswanger's study focused only on Washington State, but lacking any satisfactory alternative, the authors felt more comfortable generalizing it to the rest of the population than working with mortality data that failed to take into account the effect of prison. With those results in hand, mortality figures were derived by starting with figures from the Centers for Disease Control and Prevention (CDC), and mortality rates were multiplied by 3.5 to calculate new survival rates.[178]

Demographic data. Last, the authors turned again to the BJS and NCRP datasets for this report's demographic estimate of the formerly imprisoned population. Drawing

from the NCRP, the authors used the 11 consistent state reports identified in Neal and Rick (2014) to construct a demographic breakdown of prison releases from 1991 to 2016, noting the proportions of each gender and race. White women, for example, represent 6 percent of the people released from state prison from 1991 to 2016. More than 700,000 individuals were released from prison in 2010, according to BJS data, and the authors assumed that approximately 26,600, or about 6 percent, were white women. The authors then applied race- and gender-specific mortality rates from the CDC and kept only non-recidivist released prisoners in the sample.

Tables illustrating this process are available in supplemental data online.

Felony Conviction

The majority of people convicted of a felony offense will be sentenced to either a term of imprisonment or probation. Therefore, probation is used as a proxy for felony convictions not ending in imprisonment. This is an imprecise proxy for the reasons laid out in the report; specifically, some people convicted of felonies will serve a term of incarceration in jail or be ordered to pay a fine. As a result, the figure presented here may represent an underestimate.

Like the preceding model, this estimate operates by starting with the average "flow" of people affected by the criminal justice system in a particular way, then discounting that population using recidivism and mortality estimates. The model proceeds with this data:

Probation entries. Entry into probation is used as a proxy for conviction of a felony without imprisonment. Data on probation entries for the years 1980 through 2016 was obtained from BJS. The authors were not able to extend the Bureau's estimate back through 1965 to match the previous model.[179]

Probation recidivism data. For recidivism rates within the first five years of probation, the authors used a BJS report that tracked individuals placed on federal probation in 2005 until 2010. Within five years, 43 percent of those placed on federal probation in 2005 were rearrested for a new offense.[180] For recidivism after that point, drawing from the NCRP, the authors used the same recidivism rates constructed for estimating the formerly imprisoned population.[181]

The authors also subtracted people who entered probation from prison, relying on the National Prisoner Statistics Program, to ensure that people accounted for in the previous section would not be double counted. Specifically, the authors used the variables RLCOPROM and RLCOPROF, which track conditional releases to probation or shock probation.[182]

Mortality data. The authors assumed that the mortality rates of individuals who have been placed on probation are higher than the mortality rates of individuals with no criminal record or justice involvement, but lower than the formerly imprisoned population. To estimate mortality, the authors drew from the CDC's most recent National Vital Statistics Report.[183] Black male mortality, being above average, is used as a proxy for mortality rates of people who have entered probation at some point in their lives.

Nature of offense. Following this process so far would produce an estimate of the number of people who have served a term of probation without being incarcerated for the offense that led to their probation. To identify how many entered probation due to a felony conviction, rather than a misdemeanor, the authors relied on a series of BJS reports that include the ratio of felony to misdemeanor offenses for adults on probation in each year.[184]

As with the preceding model, tables illustrating this process are available in the supplemental data online.

Misdemeanor Conviction

Like the preceding models, this analysis estimates the number of people annually affected by the misdemeanor system and then controls for recidivism and mortality. Due to the nature of the misdemeanor system, this process required intermediate steps.

Annual misdemeanor convictions. To estimate the number of misdemeanor convictions annually, the authors initially sought data on the number of misdemeanor cases filed annually. In reviewing existing literature, the authors found estimates concluding that more than 13 million misdemeanor cases were filed in both 2015 and 2016.[185] But these two data points were insufficient to build a full estimate of the misdemeanor caseload. To fill in the gaps, the authors opted for a different approach: calculating the number of misdemeanor *arrests* and then estimating how often they convert to conviction. That process started by tallying arrests according to the FBI's Uniform Crime Reports (UCR) for offenses that are likely to be misdemeanors.

The offenses counted as misdemeanors were as follows: "other assaults," stolen property, vandalism, prostitution, gambling, driving under the influence (DUI), liquor law violations, drunkenness, disorderly conduct, vagrancy, and "all other offenses," with each arrest representing one individual case. This closely parallels a process used by previous researchers.[186] Arrest data was available through 1995.

There are several reasons why this method might understate the number of misdemeanor convictions annually. For one, the UCR does not include arrests for non-DUI traffic offenses, some of which, depending on state law, may be misdemeanors. Further, some number of misdemeanor cases begin as felony arrests, and not all misdemeanor cases begin with an arrest. However, after extensive research, the authors concluded that this method was the best of imperfect alternatives.[187]

To calculate how many of these arrests convert to convictions, the authors turned to the NLSY, a survey that followed a group of nationally representative young people starting in both 1979 (the NLSY79 cohort) and 1997 (the NLSY97 cohort). Critically, the NLSY97 provides data on whether, in a given year, respondents were arrested and offers a few broadly defined categories of criminal offenses. The NLSY97 recorded individual arrests and convictions for three offenses likely to correspond to misdemeanors or lower-level offenses: theft, major traffic offenses, and public order offenses. The authors assumed that the average conviction rate for these three offenses was likely to be statistically similar to the conviction rate for misdemeanor offenses in general. Therefore, finding the percentage of arrestees who were convicted of these three offenses would produce a fairly accurate estimate of the conviction rate for all misdemeanor offenses.

The authors estimated misdemeanor conviction rates for the years 1995 through 2015 and calculated an average misdemeanor conviction rate of 72 percent — roughly in line with past literature on this subject.[188] Multiplying each year's conviction rate by the number of arrests identified in the previous step yielded a rough estimate of the number of misdemeanor convictions in a year.

Recidivism data. Misdemeanors typically result in fines, alternatives to incarceration, or short sentences typically served in jails rather than prisons. Therefore, this report's model had to control for something new: the possibility of multiple misdemeanor convictions *within a single year*. The authors found only one analysis discussing intra-year recidivism: a public health paper that studied jails in several large jurisdictions, concluding that each person admitted to a jail in these jurisdictions entered 1.4 times annually.[189] Using multiple jail admissions as a rough proxy for multiple misdemeanor convictions, the authors controlled for recidivism by first dividing the conviction estimate in every year by 1.4. Recidivism data from an Illinois Sentencing Policy Advisory Council report, which included nine-year reconviction rates for people released from probation for a misdemeanor offense, was then applied.[190]

Mortality data. The authors assumed that people convicted of only a misdemeanor have lower mortality rates than people who experience extended incarceration. With that in mind, Black male mortality rates were again used as an estimate for the mortality rates of Americans with misdemeanor convictions.

Data Limitations

Data on America's sprawling criminal justice system is surprisingly sparse. Gaps must at times be filled by interpolation or approximations based on limited available research. As a result, the authors note that the estimates in this study are subject to the following limitations:

- As noted above, this report's estimate of the formerly imprisoned population is based on data spanning from 1965 through 2017. But the other two estimates provided in this report cover a more limited range of time: the estimate of the felony-convicted population relies on data that reaches back only as far as 1980, and data used to estimate the misdemeanor-convicted population is available only through 1995.

- Estimates of the formerly imprisoned population, and the population that has been convicted of a felony but not imprisoned, were designed to overlap as little as possible. But without better data, the authors cannot entirely rule out the possibility that some people were counted twice, once in each estimate.

- Additionally, this report's estimate of those who have been convicted of felonies but not imprisoned is likely a lower bound, as it does not account for those who have been convicted of felonies and sentenced to some sanction other than probation or prison (e.g., jail or a fine).

- Relatedly, due to a lack of data, the misdemeanor-convicted population estimate almost certainly includes people who have been convicted of a more serious offense or even spent time in prison. As a result, this estimate should be understood to overlap with the other population estimates presented in this report.

- Data on the misdemeanor system is very sparse. The estimate of the misdemeanor-convicted population presented in this report was built using what is, to the best of the authors' knowledge, the best available data on this group. However, this report's estimate may ultimately prove high as this field of research grows and a better understanding of the model's key elements — for example, intra-year misdemeanor recidivism — develops.

Some of these limitations are discussed further in the main body of the report.

II. Estimates of Earnings Effects

This report's primary goal was to evaluate the effect of criminal justice involvement on someone's ability to earn a living wage. This report accomplishes that goal by using a statistical method to compare people who are highly similar to each other except in one way: criminal justice involvement (and degree of involvement).

Note that while these methods study the effects of conviction and incarceration, they cannot exclude the possibility that earnings reductions were at least partially caused by other types of justice involvement incidental to those events — e.g., arrest and pretrial incarceration.

Survey Data

To accomplish this goal, the authors again started with the NLSY. As noted above, NLSY Geocode data was initially used, pursuant to an agreement with the Bureau of Labor Statistics, but due to the intervening pandemic it could not be relied on to develop final estimates for this report.

National Longitudinal Survey of Youth, 1979

The NLSY79 is a nationally representative sample of 12,686 men and women, initially surveyed in 1979. At the time of the baseline survey, the sample respondents were 14 to 22 years old. Sample respondents were interviewed annually through 1994 and then biennially thereafter until 2014. Thus, the NLSY79 provides information on a large, nationally representative sample aged 14 to 57.

NLSY79 data has an event history format. The start and end of important life events are recorded, especially labor market behavior, enabling users to ascertain the respondents' annual earnings and education level in each survey year. At baseline, the NLSY79 provides demographic information on age, gender, and race or ethnicity. In follow-up survey interviews, the NLSY79 asked an extensive set of questions on criminal activity and criminal justice involvement. From this, the authors were able to acquire data on the following:

- **Demographic characteristics.** NLSY79 data enabled the authors to track the broad demographic status of sample participants, i.e., age, gender, racial-ethnic identity, and educational attainment.

- **Earning potential.** In the NLSY79, the authors focused on earnings data supplied in each interview year. Earnings were measured as total earnings over the prior 12 months. There were numerous outliers in the earnings data, so the authors removed the top 2 percent of earners from the sample.

- **Criminal justice contact.** The authors defined criminal justice contact in two distinct ways: (1) conviction without incarceration, and (2) incarceration. The NLSY79 provides data on both, but not for every survey year. The authors therefore focused on the 1980 survey year, in which respondents were asked whether they were convicted of a crime. But the NLSY79 did not ask respondents explicitly whether they were incarcerated. Instead, this information had to be gleaned from the type of residence the respondent reported. If the respondent stated that he or she was living in a jail or prison, the authors considered the respondent incarcerated for that survey year.

  The clear limitation of the NLSY79 data is that survey participants were likely to understate justice involvement in any given year. And, undoubtedly, some respondents could become convicted or arrested for a crime after the 1980 surveys. Similarly, a respondent could have been incarcerated between survey years.

- **Geography of residence.** The NLSY79 data adds information on a survey respondent's region of residence. Regional identifiers enabled the authors to incorporate key measures related to both earnings and justice involvement (unemployment and poverty rates). The original analyses used state of residence, based on NLSY Geocode data, as the geographical identifier for these measures.

National Longitudinal Survey of Youth, 1997

Like the NLSY79, the NLSY97 followed a cohort of participants annually or biannually, from 1997 to 2015. There were approximately 9,000 participants born between 1980 and 1984, and at the initial interview in 1997, the participants' ages ranged from 12 to 17. As with the NLSY79, the later survey again enabled the authors to track demographic status, earning potential, and geography of residence.

The NLSY97 also added more comprehensive criminal justice variables. In contrast to the NLSY79, the NLSY97 provides data on arrest, conviction, and incarceration in every survey year. For each survey year, the NLSY97 asked respondents whether they had ever been arrested, convicted of a crime, or incarcerated. It also offers some granularity on the nature of the arrest and conviction. The NLSY97 data on criminal justice contact is thus richer than that provided by the NLSY79.

The limitation of the NLSY97 data rests with the age of the sample population. Because respondents were teenagers at the time of the initial interview, this means that they were no older than 35 years at the time of the last survey, in 2015.

Statistical Methods

Using this survey data, the authors sought to compare people who become involved in the criminal justice system with each other and with other similarly situated people in the survey dataset.

Propensity-Score Matching

To do so, the authors used propensity-score matching (PSM). This approach compares those in contact with the criminal justice system with others who have no criminal justice contact, focusing on people who are "similar" in terms of demographic and regional characteristics. Propensity-score matching uses control variables to calculate the probability that someone who has had no criminal justice contact *could* have been justice involved.

PSM calculates a "propensity score" based on how similar those in the comparison group look to those in the treatment group. The higher the propensity score, the

more similar the individuals in the comparison group look to those in the treatment group.

The authors compared justice-involved and non-justice-involved groups based on their similarities in these traits:

- demographic characteristics (age, race-ethnicity, gender, and education),
- regional characteristics (poverty rates and unemployment rates), and
- interview-year fixed effects (i.e., indicators for each interview year).

The authors used the PSM method to analyze earnings loss over time due to incarceration or conviction in early adulthood (i.e., early 20s on average). To do this, the authors evaluated earnings among similarly matched groups in the year the respondent was interviewed and up to 30 years thereafter. This enabled the authors to plot the trajectory of earnings for justice-involved and non-justice-involved individuals over a 30-year working period. This 30-year analysis begins in the individuals' late 20s and therefore represents the prime working years of people in the analysis sample. For the sake of clarity, the authors split the 30-year period into 10-year blocks and defined years 1–9 as "early career," years 10–19 as "mid career," and years 20–30 as "late career."

The authors also conducted numerous sensitivity checks using additional control variables, including gaps in employment, engagement in criminal or delinquent activities, and other regional characteristics (such as crime, arrest, and incarceration rates). The results from these analyses were statistically similar to the ones presented in this report. However, the authors wanted to maintain the integrity of the PSM model by ensuring that the means and the variances of the PSM-balanced sample were close to 0 and 1, respectively. Our specification, albeit sparse in controls, characterized a fully balanced sample (in contrast to other specifications with numerous control variables).

Heckman Correction

Although the PSM method helps minimize bias from omitted variables, there is another problem that could bias incarceration and conviction estimates. PSM estimations can observe and account for earnings only of individuals who are employed. People who are not working may have a different earning potential, such that if the authors could observe their earnings outcomes they would likely be significantly lower than the earnings of people who are employed. This inability to observe the outcomes of people who are not working could bias the report's estimates.

To remedy this sample selection problem, the authors used a Heckman two-step correction procedure.[191] In the first step, the model uses an instrumental variable (i.e., region- and year-specific minimum wage rates) to predict which individuals are employed (versus not), thereby producing an inverse Mills ratio. The inverse Mills ratio measures what the authors cannot observe — the probability of being employed over the cumulative probability of employment. In the second step, the inverse Mills ratio is then included in the general earnings equation along with the incarceration and conviction indicators and individual- and region-level characteristics. The estimates on incarceration and conviction should now be purged of the bias from sample selection.

The authors found that after accounting for bias from sample selection using the Heckman two-step procedure, the lifetime earnings losses from incarceration and conviction remained statistically significant and negative. These estimates are substantially larger than the PSM results for both incarceration and conviction, suggesting that the sample selection bias from zero-earners understated the general findings.

Alternative Approaches

Ideally, analyses of the economic impact of incarceration and conviction would also be performed using fixed effects (FE) estimation. This method would not only account for observed differences between justice-involved and non-justice-involved individuals, but also control for unobserved differences (such as productivity, values, and propensity to commit crimes) that bias the estimated effects of incarceration and conviction.

However, longitudinal data is unavailable for the number of convictions in the NLSY79, preventing the authors from producing FE estimates on the impact of conviction (without incarceration) on earnings. While the NLSY79 does provide longitudinal data on incarceration, it notes that status only in the year that someone reported actual incarceration; comparing people within that single year would rely on an incarcerated sample of less than 1 percent of the overall sample population. This limits the report's ability to present robust FE lifetime earnings trajectories as there are relatively few incarcerated respondents to compute "within-individual" differences over time.[192]

To address this limitation, the study relied on the PSM method to measure the effects of conviction and incarceration as well as establish lifetime earning trajectories for the justice-involved. PSM does not rely on within-individual differences and thus provides more efficient estimators of conviction and incarceration effects.

The study also used two strategies to account for bias from omitted variables. The first strategy employed proxy variables for unobserved factors such as attitudes, work ethic, and cognitive ability. A simple strategy to mitigate omitted variable bias is to use the *proxy variable – ordinary*

least squares solution.[193] This approach simply controls for observed variables that might be good substitutes for factors the authors cannot observe.

Both the NLSY79 and NLSY97 datasets provide suitable proxy variables for key unobserved variables. In the NLSY79, the authors used as proxy variables indicators that explicitly measure the respondent's attitude toward school and work, cognitive ability (Armed Forces Qualification Test), and locus of control (Rotter scale score).[194] For the NLSY97, proxy variables the authors used for unobserved factors included the number of days absent from school, percentage of peers belonging to a gang, what the respondent thinks is the percent chance she or he would be arrested after stealing a car, and cognitive ability (Armed Services Vocational Aptitude Battery).

Accounting for these proxy variables in the lifetime earnings model generally lowered the estimated effects of incarceration and conviction. However, this approach did not erase the robust effects of incarceration and conviction on lifetime earnings, which remained both significant and substantive.

Some critics argue that the *proxy variable – ordinary least squares solution* is inadequate because proxies may not fully capture the effects of unobserved variables. In light of this concern, the authors implemented another strategy that bound the estimated incarceration and conviction effects based on the proportionality of the selection on observables to the selection on unobservables.[195] Simply put, the approach makes assumptions about the degree to which the selection on observables is proportional to the selection on unobservables, then shows how estimated effects change based on this proportionality. Oster (2019) formalizes this theory and provides an accompanying STATA command (*psacalc*) to execute the procedure.[196] The findings show that selection on unobservables would have to be stronger than the selection on observables to completely explain away or erase the effects of incarceration and conviction on lifetime earnings.

Additionally, the authors performed analyses using the logged form of earnings. This conveniently produces estimates that can be interpreted as percentages (rather than dollar amounts). However, logging the earnings outcome also had the side effect of condensing the data, which inadvertently made the lifetime earnings effects appear flatter over time. Given this, the authors used annual earnings (adjusted for inflation) as the preferred outcome measure. Further, the authors also accounted for pre-incarceration/conviction earnings, and the results remained consistent.

Data Limitations

To summarize points made elsewhere, the wage loss estimates in this report are subject to the following limitations:

- The authors cannot exclude the possibility that experiences incidental to conviction and imprisonment — that is, arrest and pretrial imprisonment — contribute to the effects identified here.
- PSM cannot fully account for unobserved differences between treatment and control groups. As noted above, these concerns were addressed by employing additional methods to confirm the results. Further sensitivity checks were also performed.
- Because this report evaluates justice involvement in the 1980 survey year, it cannot account for the possibility that survey participants would become involved in the justice system again, at a later date.
- All justice involvement in the NLSY is self-reported. Therefore, there is a risk of measurement error, as people may misrepresent their criminal history.

Endnotes

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