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ABSTRACT

THE IMPACT OF INCARCERATION ON INCOME INEQUALITY
IN THE UNITED STATES, 1962 – 2014

BY

EDWARD AARON CHILDREE

April 15, 2020

Committee Chair: Dr. K. Juree Capers

Major Department: Public Management and Policy

Income inequality in the United States has been rising significantly in recent decades, and there is a growing body of research that examines the economic, political, and policy factors influencing this phenomenon. Criminal justice policy and mass incarceration are critical but understudied elements of the relationship between public policy decisions and economic inequality. Crime policy may have a significant impact on the income distribution because its effects reach far beyond those who have direct contact with the criminal justice system. This paper seeks a better understanding of this relationship by examining the impact of the incarceration rate on the share of income going to the bottom 50 percent of earners in the United States from 1962 – 2014. Through time series regression analysis, I find that increases in the incarceration rate lead to significant decreases in the share of income going to the bottom 50 percent, even after controlling for other critical factors, including the crime rate, unemployment rate, union membership, partisan composition of Congress, and percentage of Americans with a college degree. This finding demonstrates that criminal justice policy should play a more prominent role in the conversation surrounding income inequality and shows that policies seeking to reduce the incarceration rate can create a more equitable income distribution.

THE IMPACT OF INCARCERATION ON INCOME INEQUALITY
IN THE UNITED STATES, 1962 – 2014

BY

EDWARD AARON CHILDREE

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree
of
Master of Public Policy
in the
Andrew Young School of Policy Studies
Of
Georgia State University

GEORGIA STATE UNIVERSITY
2020

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Edward Aaron Childree

2020

ACCEPTANCE

This thesis was prepared under the direction of the candidate's Thesis Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Master of Public Policy in the Andrew Young School of Policy Studies of Georgia State University.

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I. Introduction

Since the early 1980s, there has been a significant increase in the amount of income inequality in the United States (Picketty, 2014; Picketty and Saez, 2003). From 1962 to 1982, the share of national income going to the top 10 percent of earners never wavered far from 35 percent (World Inequality Database, 2019). Then something changed. Between 1983 and 2014, the share of income going to the top 10 percent shot up from 35 percent to 47 percent. With such a large proportion of income going to the wealthiest Americans, exactly the opposite trend appeared in the share of income going to the bottom 50 percent of earners. In 1980, the bottom 50 percent captured 20 percent of national income; however, by 2014, this number was down to just 12.5 percent.

This sharp divergence in the fortunes of the most and least advantaged is a troubling trend in American society, and a variety of economic, political, and policy factors have led to this soaring inequality, including criminal justice policy. During roughly the same period that inequality was increasing, the incarceration rate has skyrocketed. The federal and state incarceration rate hovered close to 100 people per 100,000 from 1962 to 1975 (Bureau of Justice Statistics, 2019). It then rose steeply to 506 people per 100,000 in 2008. The number of incarcerated individuals has decreased slightly since 2008, but the incarceration rate in the United States remains several times higher than the typical OECD country (Kearney et al., 2014). In fact, the U.S. incarcerates a higher percentage of its population than any other nation in the world (Lee, 2015; Gramlich, 2018)

While scholars in the social sciences have studied both of these phenomena separately, there is much less research on the link between criminal justice policy and economic inequality.

Yet for those impacted by the criminal justice system, these policy decisions have a profound effect on many aspects of their lives.

Incarceration disproportionately affects those toward the bottom of the income distribution. More than 98 percent of inmates were making \$25,000 a year or less immediately before they were incarcerated (Looney & Turner, 2018). The disadvantages that accumulate to current and former inmates in many facets of life then serve to keep them at the bottom of the economic ladder, and are likely to push them even further down the rungs.

Incarceration impacts individuals in a multitude of ways. Criminal defendants often incur substantial legal fees (De Vuono-Powell et al., 2015). If they are sentenced to prison, inmates receive little or no income while they are incarcerated (Sawyer, 2017). Formerly incarcerated individuals then face enormous barriers upon release, including disenfranchisement as well as difficulty finding housing and employment (Looney and Turner, 2018; Uggen, Larsen, and Shannon, 2016). Not being able to find employment after release would clearly have a direct and significant impact on the economic fortunes of former inmates. Legal fees may cause formerly incarcerated individuals to accumulate debt that puts them at a disadvantage when trying to get back on their feet, and a lack of stable housing makes obtaining and keeping a job more difficult. Losing the right to vote takes away an individual's ability to cast a ballot for leaders that will govern in their interests.

The financial and social disadvantages of incarceration can also extend to the friends, family, and neighbors of those incarcerated (Grinstead et al., 2001). Family members or friends of incarcerated individuals may take time off of work to visit their loved ones in prison, leading to a drop in income, or even a loss of employment in extreme circumstances. They may also loan money or provide housing to people who have experienced incarceration, potentially putting

their own housing and financial situation in jeopardy. Scholarship also shows that children with at least once parent serving time in prison tend to have worse educational and behavioral outcomes. This combination of effects on individuals in the criminal justice system, their families, and others in their communities reveals how mass incarceration economically disadvantages a significant proportion of the population and can have a substantial impact on the distribution of income.

Economic inequality and mass incarceration have negative impacts on those who have had no contact with the criminal justice system as well. First, the costs of incarceration in the United States impose an enormous burden on taxpayers. Operating the nation's correctional facilities costs \$81 billion annually (Wagner & Rabuy, 2017). Additionally, there is a large body of research showing that societies with higher levels of inequality tend to experience lower growth rates (see for example Cingano, 2014; Stiglitz, 2015; Bivens 2017). This demonstrates the ways economic inequality harms the economic fortunes of society as a whole.

This paper seeks a better understanding of the relationship between criminal justice policy and economic inequality by analyzing the impact of mass incarceration on the percentage of income going to the American lower class. Using a time-series regression analysis of national data from 1962 to 2014, I show that the incarceration rate has played a significant role in the erosion of the share of income going to the bottom 50 percent of earners in the United States. In general, these findings add to the growing body of research on inequality by providing evidence that policy decisions, not just market forces, influence income inequality. More specifically, this study shows that crime policy has an important impact on the income distribution and should feature more prominently in the discussion of the policy determinants of income inequality. The results also point to several policy measures or programs that could help mitigate the related

issues of mass incarceration and economic inequality, including less punitive penalties for drug crimes, increased educational opportunities for current and former inmates, and removing voting restrictions on those with a criminal record.

This paper begins with a review of the literature on economic inequality and criminal justice policy that lays the foundation for a theory of the link between these two areas of research. I then proceed to test this theory through a time series regression analysis. Finally, the paper concludes with a discussion of the implications of the findings, policy proposals, limitations of the analysis, and opportunities for future research.

II. Income Inequality in the United States

As the global trend of rising economic inequality has taken hold, scholars in a variety of disciplines have documented and analyzed the phenomenon. This has led to a body of scholarship across the social sciences that examines the economic, political, and policy forces that impact inequality. Each area of focus provides a valuable contribution to what is clearly a large and complex issue.

The Economics Literature

In *The Affluent Society*, Galbraith (1998) calls for a shift in the way that economists view societal prosperity. With society experiencing an unparalleled amount of wealth, it is no longer sufficient to consider private-sector production as the sole gauge of economic health. He calls for scholars and policymakers to instead look to public sector investment and focus on creating a society that benefits everyone, with a particular focus on the least advantaged. Galbraith concludes that governments should increase investment in areas such as education. This influential work, first published in 1958, sets the stage for the current literature on income inequality and the impact of relative poverty.

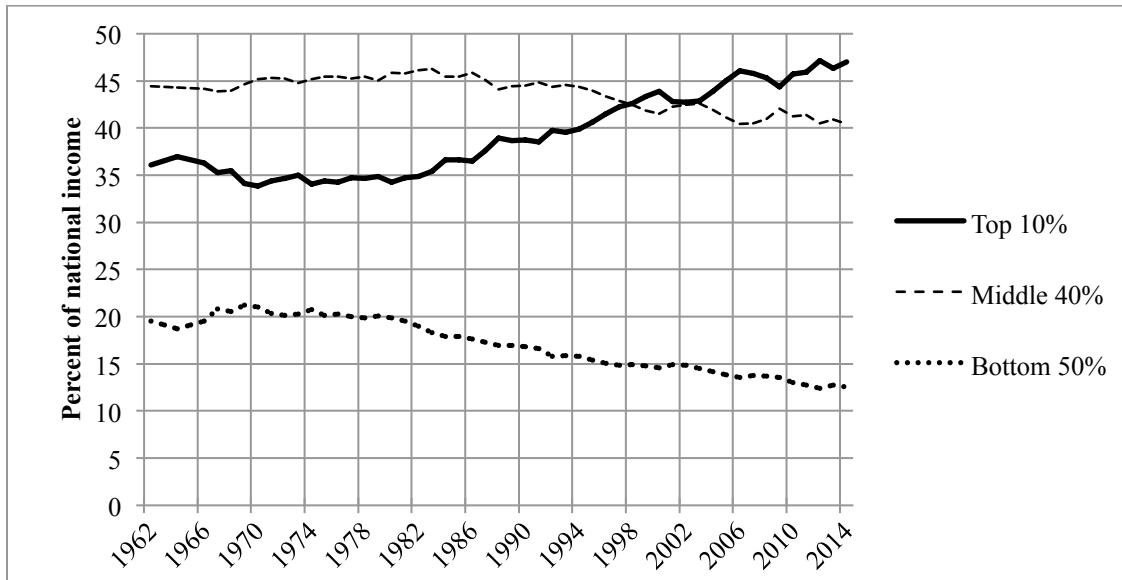
Present-day economists have taken up Galbraith's mantle with studies that develop new ways to measure economic inequality and evaluate the causal mechanisms leading to an unequal distribution of income. Picketty (2014) shows that while income inequality was relatively low in the United States in the decades following World War II, it has increased significantly since 1980. In 1980, the top ten percent of income earners took home 34.2 percent of national income. By 2014, this number increased to 47 percent. This trend continues unabated, with preliminary data from 2018 showing that the top 10 percent are now bringing in more than 50 percent of all income in the United States (Picketty and Saez, 2003, data updated to 2018).

As a part of their exploration of the dynamics of economic inequality, Picketty and Saez created the World Inequality Database (WID). This database collects data on economic inequality from countries around the world. To visually represent shifts in the entire income distribution, the WID divides the distribution into an upper class that includes the top 10 percent of income earners, a middle class composed of the next 40 percent, and a lower class of the bottom 50 percent (World Inequality Database, 2019).¹ While these cutoff points are inevitably somewhat arbitrary, they provide a helpful way to look at changes in inequality at different income levels and are fairly representative of the dynamics in many developed countries.

Figure 1 below shows changes in the income share of the top 10 percent, middle 40 percent, and bottom 50 percent in the United States from 1962 through 2014. After staying relatively stable from 1962 – 1980, inequality began to surge in 1980. From 1980 to 2014, the share of income going to the top 10 percent increased by 37 percent. During this same period, the share of income going to the middle 40 percent decreased by 12 percent, and the bottom 50 percent share decreased by 37 percent.

¹ Picketty (2014) uses these same definitions in his seminal work *Capital in the Twenty-First Century*.

Figure 1. Income Distribution in the United States by Class, 1962 – 2014



Source: World Inequality Database

In reaction to these large increases in inequality, scholars have researched the causes of these shifts. Piketty (2014) shows that capitalist market forces do not necessarily create an upper bound on inequality, and that government intervention may be necessary to stymie the current trend. He demonstrates that anytime the rate of return on capital is higher than the rate of growth for a sustained period of time, the economic fortunes of the richest members of society can diverge sharply from the wealth of the poorest.

Similarly, Stiglitz (2013) points out that economic forces have played a role in increasing economic inequality, but government policies that distort markets in favor of the wealthy have had an impact as well, and have likely been the most prominent factor contributing to rising inequality. He also argues that “the magnitude of America’s inequality today and the way it is generated actually undermine growth and impair efficiency” (Stiglitz, 2013, 7). He cites America’s stingy unemployment insurance as one example of a program that creates inequality while hindering economic growth.

Educational attainment also features prominently in the economics literature on inequality. For example, Goldin and Katz (2007) argue that changes in the supply and demand for highly-educated, highly-skilled workers explain a significant portion of wage inequality. They show that this theory can help us understand why wage differentials decreased from 1915 to 1980 but then began to increase.

The Politics Literature

A growing body of research in political science looks at how political forces and decisions impact the income distribution. Many studies show that liberal or progressive political parties (the Democratic party in the context of the United States) can play a critical role in mitigating economic inequality (Bartels, 2016; Kelly, 2009; Kelly & Volscho, 2012). Bartels (2016) gives evidence that Democratic control of the presidency tends to lead to decreases in income inequality, while Republican control exacerbates the issue. He finds that these results hold even after controlling for the economic environment. Bartels finds that one of the factors fueling this phenomenon is distortions in the democratic process that encroach on political equality. Similarly, Kelly (2009) and Volscho and Kelly (2012) use power resources theory, a theory focused on the impact of class struggle, to show that Democratic governance is associated with decreasing levels of inequality.

McCarty, Poole, and Rosenthal (2016) argue that there is a link between political polarization and income inequality. Using DW-Nominate scores, they show a strong correlation between the polarization of the two parties in Congress and economic inequality over time. They describe the relationship between polarization and inequality as a “dance” that works in both directions. Inequality leads to increased political polarization by class, and this increasing polarization leads to more extreme policy decisions. Because Republicans have moved further to

the right than Democrats have to the left, these extreme policies have trended in the conservative direction in recent decades.²

Another way that politics affects income inequality is through the distortion of representative institutions. Bartels (2016) studies how income inequality affects political representation in the U.S. Senate and finds that Senators tend to be much more responsive to the policy preferences of their wealthier constituents. He concludes that these differences in responsiveness are partly due to the increased contact that affluent individuals tend to have with their Senators and mentions that campaign contributions likely play a role as well (although he is quick to point out that these factors are far from the only ones influencing responsiveness). Similarly, Gilens (2005, 2012) concludes that when the preferences of the wealthy diverge with those of the less well-off, the views of the wealthy are more likely to win out. Electoral dynamics may also play a powerful role in this area as well. For example, in evaluating the failures of democratic institutions to stop rising inequality, Bonica et al. (2013) list low levels of voter turnout and the increasing influence of money in electoral campaigns as reasons why the mass public has not been able to assert itself over the preferences of the wealthy.

The Policy Literature

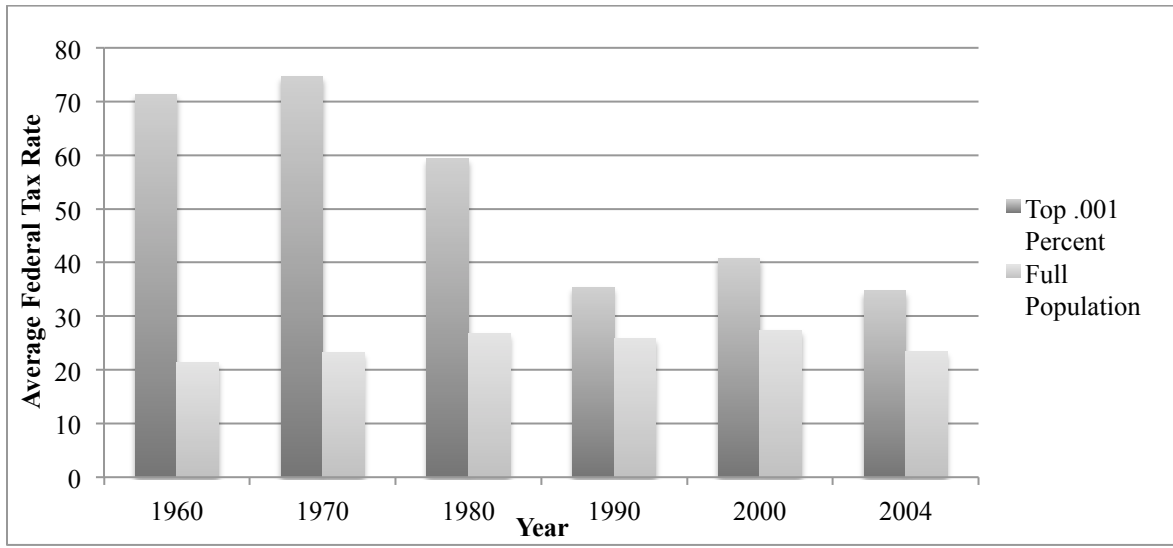
Several specific policy areas reveal that a move toward more conservative policies has played a role in increasing inequality. In part due to a lack of government protections, labor union membership in the United States has been dropping precipitously, and this shift has grave implications for the prospects of creating a more equitable society (Volscho & Kelly, 2012; Hacker & Pierson, 2010). In 1980, the union membership rate stood at 24 percent. In 2014, it was down to just 11 percent (Kimball and Mishel, 2015; Bureau of Labor Statistics, 2019). This

² See McCarty, Poole, and Rosenthal (2016), p.28, Figure 2.3.

decline in unionization gives workers less negotiating power and fewer resources to counteract corporate lobbying effects with lobbyists of their own. In this way, “the ability of workers to unionize and cooperate with one another once unionized should influence employers’ private-market decisions” (Kelly, 2009, 83). This cooperation should then allow workers to receive incomes higher than they would without the ability to unionize (Kelly, 2009).

Another area that scholars point to as a contributor to income inequality is tax policy. Tax rates for the wealthy have been trending downwards, leading to a decrease in overall redistribution within American society. Picketty and Saez (2007) show that the US tax system has become less progressive over time through the lowering of top marginal tax rates on income and the decrease in corporate taxes as a share of GDP. Their analysis of data from tax returns shows that the average federal tax rate for the top .001 percent of earners decreased from 71.4 percent in 1960 to 34.7 percent in 2004. During that same time, the average federal tax rate for the entire population rose from 21.4 percent to 23.4 percent. These decreases in tax rates for the wealthiest members of society can exacerbate inequality by limiting redistribution.

Figure 2. Average Federal Tax Rate for Top .001 Percent and Full Population, 1960 – 2004



Source: Picketty and Saez, 2007

The stagnating minimum wage also has the potential to impact the income distribution (Bartels, 2016; Hacker & Pierson, 2010). Because the minimum wage in the United States is not indexed to inflation and is not increased very often, the value of the minimum wage in real dollars has decreased over time. In 1968, the minimum wage was worth \$10.96 in 2015 dollars. By 2015, inflation and irregular increases had eroded the real value of the wage to \$7.50 (Bartels, 2016). While the decreased real value of the minimum wage does not affect those at the top of the income distribution, it drives down income for many at the bottom. If the minimum wage had kept its real value of 10.96 in 2015, that would mean an extra \$138 dollars per week in pre-tax income for an employee working 40 hours a week.

Interestingly, Kelly (2009) finds evidence of a trade-off between pre-tax, pre-transfer inequality and redistribution when tackling income inequality. He finds that increases in income inequality lead to more redistribution as social safety net programs kick in to help those at the bottom of the income distribution. Additionally, when redistribution increases, pre-redistribution

inequality then tends to rise in response. This reveals the complexity and potential for unintended consequences when designing policies to address economic inequality.

Income Inequality at the State Level

While the research above focuses primarily on national political dynamics, political scientists have also analyzed the impact of politics and policy on economic inequality at the state level. Hatch and Rigby (2015) conclude that state-level policies have an effect on the equality of the income distribution. They find that decreasing taxes on the poor, increasing taxes on the rich, and enacting labor-friendly policies all decrease the share of income going to the top 1 percent in states that implement these policies. Interestingly, Hatch and Rigby (2015) find evidence that increased spending on the poor tends to lead to more inequality. They argue that this may be due to changes in behavior that may occur when states spend more money on social safety net programs. In another state-level study, Barrilleaux and Davis (2003) confirm this finding. They find little evidence that state redistributive policies are able to decrease economic inequality, and in some cases, these policies lead to a more unequal income distribution. This conclusion lines up with Kelly's (2009) assertion that there is a connection between pre-tax inequality and the amount of government spending on redistributive policies.

Widestrom, Hayes, and Dennis (2018) study the effect of political control on inequality at the state level. They find that unified control of a state legislature for a political party does not have a significant impact on the share of income going to the top 1 percent. However, at the national level, they confirm the findings of Bartels (2016) and Volscho and Kelly (2012) that Democratic control leads to less inequality, and Republican control leads to more inequality. It appears that when it comes to inequality, state policies matter in different ways, and some aspects of the problem may be best dealt with at the national level.

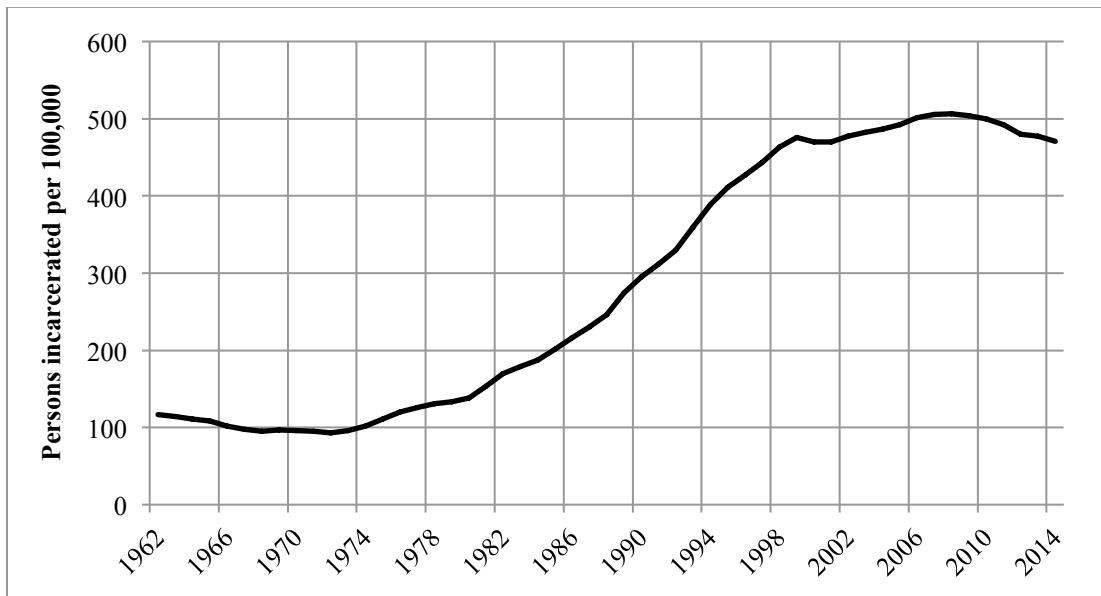
Because income inequality is a critical and complex issue, there is a range of scholarship on the topic that looks at the problem from several different perspectives. If there is a common theme to emerge from the literature, it is that politics and policy play a large role in the discussion. Anyone looking for the mechanisms behind the rising levels of inequality in the United States will have to consider the political environment and government decisions alongside economic factors.

When it comes to economic inequality, one important area that has not been as thoroughly examined is social policy. Many social policies, including welfare and criminal justice policy, play a prominent role in the lives of the economically disadvantaged. Policymakers have the opportunity to use social policy as a tool to help lift up those at the bottom of the economic ladder, leading to a more equal distribution of income. However, if social policy is harsh and punitive, it can exacerbate the disadvantages of those at the bottom, leading to more inequality. Criminal justice policy and incarceration are an important part of this calculation.

III. Criminal Justice Policy in the United States

In the 1970s, just before the United States began to experience a significant rise in income inequality, the country underwent significant changes in crime policy, including an increased focus on mandatory minimum sentences, the stricter enforcement of drug laws, and harsher penalties for drug offenders. These changes laid the foundation for an enormous increase in the incarceration rate. Figure 3 below shows the incarceration rate for federal and state prisons from 1962 to 2014. After hitting a low of 93 inmates per 100,000 residents in 1972, incarceration increased rapidly until it reached 506 inmates per 100,000 residents in 2008. The incarceration rate has decreased slightly since then but remains close to historic highs.

Figure 3. Incarceration Rate for Federal and State Prisons, 1962 – 2014



Source: Bureau of Justice Statistics

To put these statistics in perspective, the incarceration rate in the United States is exponentially higher than in any other OECD country. In 2013, the incarceration rate in the U.S. for federal, state, and local facilities stood at 710 inmates per 100,000 residents (Kearney et al., 2014).³ The OECD country closest to the United States was Chile, with a rate of 266 inmates per 100,000, and the incarceration rate of the typical OECD country was 115. This amounts to an incarcerated population in the U.S that numbered 2.2 million in 2013.

The History of Criminal Justice Policy from the 1970s

In 1970, President Nixon signed the Comprehensive Drug Abuse Prevention and Control Act into law. This legislation gave the federal government jurisdiction over certain drugs and provided the framework for the categorization of drugs into different schedules (Sacco, 2014). During a 1971 press conference, President Nixon referred to drug abuse as “public enemy number one,” marking the official beginning of the war on drugs (Barber, 2016; National Research Council, 2014). Two years later, Nixon acted on this declaration by creating the Drug Enforcement Agency. Given these developments, it is notable that 1973 is the year when the incarceration rate begins to rise.

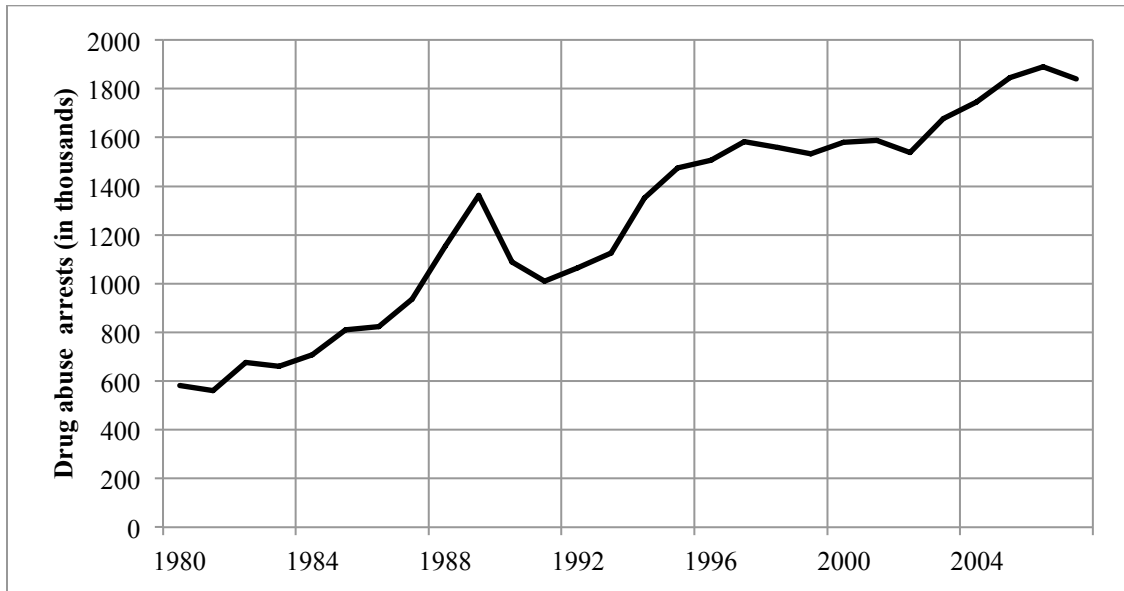
While Nixon’s policies began the increased focus on punitive drug policies, it is Ronald Reagan who is responsible for bringing it into a new, more expansive phase. In 1982, Reagan echoed Nixon's language by declaring the beginning of a new war on drugs (Glass, 2010). Two years later, he signed the Sentencing Reform Act of 1984, followed another two years later by the Anti-Drug Abuse Act of 1986. The Sentencing Reform Act created federal sentencing guidelines and mandatory minimum sentences and also established the Sentencing Reform Commission. The Anti-Drug Abuse Act built on these changes by implementing mandatory

³ This number includes incarcerated individuals at the local, state, and federal levels. Note that the data I use in my primary regression analysis includes only state and federal prisoners, due to the data availability issues mentioned in the Data section. See the included appendix for robustness checks that include data from local jails.

minimum sentences for certain drug crimes, including a minimum 5-year sentence for the possession of 5 grams of crack cocaine (Cullen, 2018).

The war on drugs played a significant role in increasing the incarceration rate in the United States. We can trace a large portion of the increases in incarceration to the rise in drug arrests. Figure 4 below shows the number of drug abuse arrests per year from 1980 to 2007. In 1980, drug arrests numbered approximately 581,000. By 2007, the number had risen to just over 1.84 million, an increase of over 200 percent.

Figure 4. Drug Abuse Arrests Per Year, 1980 – 2007



Source: Bureau of Justice Statistics

While the conventional wisdom is that these policies were a direct response to increases in drug use, most notably the crack cocaine epidemic, Alexander (2012) shows that Reagan’s push for a war on drugs began before the crack epidemic began. She points out that President Reagan began speaking about a war on drugs in 1982, but news outlets did not begin reporting

on the widening use of crack cocaine until 1985. Once the crack epidemic became a prominent issue in the media, the Reagan administration pushed this narrative as a justification for more punitive drug policies.

This timeline points to a significant theme in the conversation surrounding criminal justice policy and incarceration: the incarceration rate is much more a factor of political and policy decisions than it is a simple function of the crime rate. A 2014 National Research Council report summarizes this idea by pointing out that “criminal offending determines the number of people who might be arrested and then serve time in prison, while criminal justice policy determines the likelihood and duration of incarceration for those arrested” (National Research Council, 2014, 44).

Political and Policy Factors Leading to Mass Incarceration

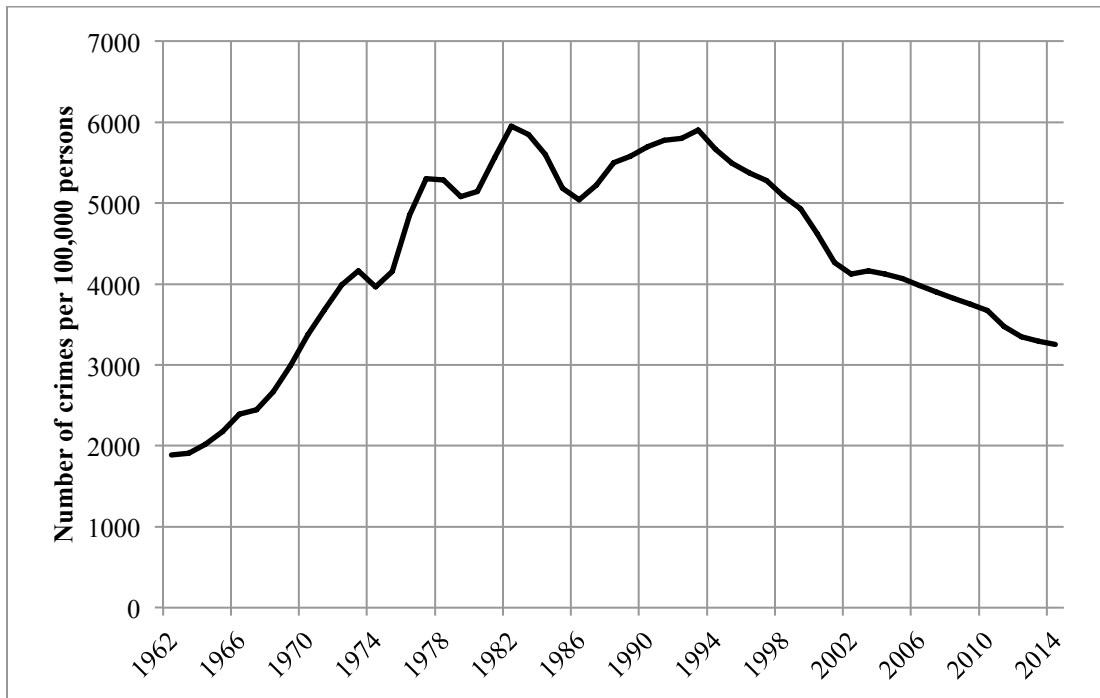
In a study of the political factors that influence incarceration, Jacobs and Carmichael (2004) point out that the Republican party has become known as the party of “law and order” and find that the strength of the Republican party in a state leads to a statistically significant increase in the imprisonment rate in that state. In a similar study with data spanning from 1980-1995, Smith (2004) confirms Jacobs and Carmichael’s findings with evidence that Democratic control of state legislatures is associated with lower incarceration rates.

An initial look at the data I use for this paper gives credence to the idea that there is not a strong connection between crime rates and incarceration. The correlation coefficient between the incarceration rate and the crime rate from 1962 – 2014 is a relatively low .15. The incarceration rate is much more strongly correlated with the percent of Democrats in Congress (-.75). This underscores the important point that incarceration is a policy decision. These correlations also

support the association of the Republican party with a focus on law and order and an increased willingness to use the mechanism of incarceration in criminal cases.

In a similar argument, some proponents of incarceration as a crime control mechanism seek to credit the increase in incarceration rates with the subsequent decline in the crime rate. Figure 5 below shows the total crime rate in the United States from 1962 – 2014.⁴ The total crime rate in the United States reached a high of 5,950 offenses per 100,000 residents in 1982. The rate then dipped slightly before peaking at 5,898 in 1993. By 2014 the rate had declined to 3,256, a 45 percent drop from the 1993 rate (FBI Uniform Crime Reporting Statistics). However, increases in the incarceration rate continued long after crime began to abate (see Figure 3).

Figure 5. Total Crimes Committed Per 100,000 Persons, 1962 – 2014



Source: FBI Uniform Crime Reporting Statistics

⁴ I calculate the total crime rate by adding the violent crime rate and property crime rate.

Western (2006) studies this phenomenon and concludes that the increased use of incarceration as a crime deterrent accounts for only 10 percent of the decrease in crime rates that took place from 1993 to 2001. He also notes that one of the primary arguments for the ability of the prison system to reduce crime is that prisons serve as rehabilitation facilities. However, rehabilitation has become a less prominent focus of the criminal justice system. For example, Western finds that the number of prisoners participating in educational programming dropped by 50 percent from 1979 to 1995. This decreased focus on education is an example of the shift from viewing incarceration as a means of rehabilitation to a means of punishment and also gives a reason why individuals with a history of incarceration have a hard time finding employment once they are released.

As the scholarship above shows, much of the research on mass incarceration rightly focuses on the policy decisions of elected officials and the effects of these policies on the number of arrests and incarcerated individuals. However, it is also possible to trace these changes back to shifts in public opinion. Enns (2016) shows that when government leaders in the U.S. began implementing harsher criminal justice policies, they were responding to an electorate whose views were shifting toward a preference for a greater focus on punitiveness. He shows that the public's shift toward greater punitiveness began in the mid-to-late 1960s and argues that we begin to see U.S. Presidents take note of this shift shortly thereafter, beginning with President Johnson's second term, even before the Nixon administration. While these findings do not absolve elected officials of the responsibility for imposing harsher punishments and increasing incarceration to such high levels, they do serve as a reminder that public opinion is a part of this equation as well, and that in a representative government, politicians may be responding, at least in part, to the views of their constituents.

The Impact of Mass Incarceration

Incarceration affects society in both direct and indirect ways. I will begin with a discussion of the literature showing the direct effect on individuals in the criminal justice system and then proceed to outline research on how the impact of incarceration expands to the point where it can have a significant effect on society-wide inequality in the United States.

Incarceration leads to many barriers that individuals must overcome both during their time in prison as well as once they have completed their sentences. Looney and Turner (2018) show the difficulties that many former prisoners face finding work after release. They find that four years after being released from prison, 49 percent of former prisoners are unemployed. They also highlight the low-wages that those who are able to obtain employment receive. Among those who had jobs, the median income for a prisoner who had been released in the last year was \$5,898, and the median income was still only \$13,601 four years after release. Less than 14 percent of the entire sample was making more than \$25,000 a year four years after release. Contrasting these data points with the 2018 median income of \$33,706 shows the enormous economic burden placed on the incarcerated population in the United States (U.S Census Bureau, 2020).

In 2015, The Ella Baker Center for Human Rights published a national study on the costs associated with incarceration that gives a comprehensive picture of the burdens individuals face in these circumstances. In the area of employment, the study found that 76 percent of those surveyed found it difficult or nearly impossible to find work after release. The survey also finds that formerly incarcerated individuals have an extremely difficult time finding housing. Seventy-nine percent of participants reported being either denied or ineligible for housing because of their criminal record (De Vuono-Powell et al., 2015).

Disenfranchisement is another burden many incarcerated individuals face. Losing the right to vote affects people in at least two ways. First, disenfranchised individuals lose the right to cast a vote for the political candidates that they believe will govern in their best interests. Second, not having the right to vote disincentivizes political engagement and active citizenship, likely leading disenfranchised individuals to feel disconnected from society. This could then have negative impacts on their ability to build networks, an important aspect of finding employment. Uggen, Larson, and Shannon (2016) find that in 2016, 6.1 million Americans did not have the right to vote due to a felony conviction. This is nearly five times higher than the 1.17 million disenfranchised for this reason in 1976.

Zooming out and looking at the entirety of the criminal justice system, it becomes clear that crime policy and incarceration can have sizeable effects on society as a whole. Including those who are on probation or parole, the total number of people in the criminal justice system is much larger than just the number of incarcerated individuals. In 2013, there were 6.9 million people in the criminal justice system, which is slightly lower than the high of 7.3 million in 2007 (Bureau of Justice Statistics, 2019). In 2014, over 77.7 million individuals had a criminal record of some kind (Fields and Emshwiller, 2014). Even among those without a criminal record, the United States has experienced a sharp increase in the size of what Lerman and Weaver (2014) refer to as “custodial citizens.” These are citizens who come into regular contact with law enforcement or the legal system, often without committing or being arrested for a crime, and whose views of American democracy are negatively shaped by these interactions (Lerman & Vesta, 2014). This demonstrates some of the ways that the negative impacts of the criminal justice system stretch far beyond the incarcerated population.

The large number of people that come into direct contact with the criminal justice system through incarceration, probation, parole, and policing is staggering in and of itself. However, as Lerman and Weaver (2014) show, we must also account for the indirect effects of the criminal justice system on the family, friends, and communities of those incarcerated. In one example of these costs, Grinstead et al. (2001) conducted a survey of women who came to visit male prisoners. The majority of the women they surveyed were visiting a husband, fiancé, or boyfriend, but some were there to visit a friend or relative. The study finds that the women were spending an average of \$292 a month to keep in touch with their incarcerated loved one through in-person visits, phone calls, and care packages. Because this study was published in 2001, it is reasonable to expect that these costs have gone up at least due to inflation, and potentially due to an increase in for-profit prisons concerned with making profits from the services they provide (Stephan 2008; Gotsch and Basti, 2018). Not surprisingly, these costs burdened lower-income visitors more than those with higher incomes. Those making less than \$10,000 a year spent an average of 26 percent of their income keeping in touch with the incarcerated individual, and the number jumps to 36 percent for those making between \$10,000 and \$20,000 a year. The percentage was much lower for those making \$20,000 a year or more.

Similarly, De Vuono-Powell et al. (2015) find that incarcerated individuals and their families incurred an average of \$13,607 in court-related costs such as attorney's fees. This led 65 percent of the families with an incarcerated family member to respond that they had trouble acquiring essentials such as food, clothing, or transportation.

Criminal justice scholarship has also shown the intergenerational effects of mass incarceration. Having a parent in prison can have a significant impact on a child's development. Morsy and Rothstein (2016) find that children with an incarcerated parent suffer educational

disadvantages. Those with at least one parent imprisoned tend to have lower grade point averages and a higher probability of having behavioral problems in school.

While this study focuses on income inequality, a relative measure of poverty, previous research has found that the incarceration rate has an impact on the poverty rate as well. Using state-level data from 1980 – 2005, Defina and Hannon (2013) use several different poverty measures that measure the poverty rate, the gap between a poor household's income and the poverty threshold (referred to as the "poverty gap"), and the variation of income among households experiencing poverty. For all three measures, they find that increases in the incarceration rate lead to increases in poverty. They estimate that the poverty rate would be 2.5 percentage points lower if the incarceration rate had not risen from its level in 1980.

The literature on crime policy and incarceration clearly documents the recent rise in incarceration and shows the role that the war on drugs has played in creating this trend. Research also points to the significant societal impacts of incarceration and involvement with the criminal justice system. Similar to the rise in inequality, scholarship makes it clear that policy decisions have a significant impact on the incarceration rate, and that these decisions have far-reaching consequences.

IV. The Link Between the Incarceration Rate and Income Inequality

As evidenced by the literature review above, there is an extensive body of research on both income inequality and criminal justice policy. However, there are not nearly as many studies that look at the interaction between these two fields. One of the contributions of this paper is to bridge the gap between two interconnected and highly relevant issues and build a theory of the ways that shifts in crime policy have played a prominent role in increasing income inequality. In the overview above, I have outlined the evidence showing that policy decisions impact the income distribution. I have also summarized both the direct and indirect effects of incarceration on society. These theoretical connections shift the conceptualization of criminal justice policy from an important policy area that nonetheless impacts a relatively small proportion of the population to a society-wide issue that can affect economic inequality in significant ways. In this section, I outline the many ways that incarceration impacts how income is distributed in the United States, beginning with the effects on current and former inmates and expanding outward until I arrive at the society-wide implications.

First, criminal defendants often incur significant financial burdens from legal fees. While anyone charged with a crime has the constitutional right to an attorney, many states can still charge an application fee to use a public defender, and these fees can be as high as \$480 (Anderson, 2009; De Vuono-Powell et al., 2015). In order to secure adequate representation, many criminal defendants incur costs that are significantly higher than the public defender fee. The Ella Baker Center for Human Rights found that the average cost of all court-related fees for a defendant was \$13,607 (De Vuono-Powell et al., 2015).

Once the legal process is complete, those who are sentenced to time in prison make little to no income while incarcerated, making them unable to provide for their family or make payments on any debt obligations they may have. In addition to the legal debts those in prison often incur, child support payments are another significant form of debt for many incarcerated individuals. A study of inmates who owe child support in Maryland found that inmates and former inmates account for a disproportionate amount of child support debt. The average amount owed in arrears for the sample was \$11,852 for current inmates and \$10,282 for former inmates (Ovwigbo, Saunders & Born, 2005).

Not all inmates have jobs while they are incarcerated. For those who do, the pay is minimal or, in some cases, nonexistent. A 2017 report found that the type of jobs that most working inmates obtain pay an average of 14 cents per hour for the lower-paying projects and 63 cents per hour for higher-paying projects (Sawyer, 2017). Even the highest paying jobs that a small number of inmates are able to secure pay far below the minimum wage. Several states, including Arkansas, Alabama, Georgia, and Florida, do not pay inmates wages at all.

Once inmates are released from prison, their criminal record impacts their earning potential in myriad ways. They are likely to have a difficult time finding a job, and the jobs they are able to get will be more likely to pay low wages. Looney and Turner (2018) find that 49 percent of formerly incarcerated individuals in their study had no earnings four years after release. The median salary for those that are able to find work is a mere \$13,601. De Vuono-Powell et al. (2015) add that barriers such as a lack of training and the requirement to report their conviction history led three out of four survey respondents to say that they had a difficult or near impossible time finding work.

Incarceration also affects the general wellbeing and social capital of former inmates in ways that may negatively impact their ability to find and keep a good job. In many states, individuals with a felony conviction also lose the right to vote, even after serving their sentences (Uggen, Larsen, and Shannon, 2016). As of 2018, there were more than six million Americans that did not have the right to vote because of their criminal record (McLeod, 2018). Felon disenfranchisement denies a significant share of the population the right to vote for federal, state, and local representatives that will govern in their best interest. Because incarceration, and therefore felon disenfranchisement, disproportionately impacts those toward the bottom of the income distribution, this means that those who are most in need of government assistance are less likely to have the right to vote for policies that would help lift them out of poverty.

The number of people on parole or probation is even larger than the incarcerated population, and these individuals may face many of the same difficulties. In 2014, the total correctional population (inmates as well as those on probation or parole) included 6.86 million people (Bureau of Justice Statistics). Many states charge a supervision fee to those on probation, and these fees can be as high as \$150 a month (Ruhland, 2016; Finkel, 2019). For example, in Louisiana, more than two-thirds of those on probation make less than \$20,000 a year, and probation fees range from \$71 to \$121 per month. To make matters worse, the average length of a probation sentence in the state was three years (Finkel, 2019).

Expanding outward, incarceration has far-reaching effects on the friends, families, and communities of those in the criminal justice system. Because many people who are convicted of a crime are low-income, the legal fees and other financial burdens they accumulate fall to friends and family in many cases. The survey by the Ella Baker Center for Human Rights found that in 63 percent of cases, family members were primarily responsible for covering the costs associated

with an individual's criminal conviction (De Vuono-Powell et al., 2015). Twenty percent of families had to take out a loan to cover these costs.

It is also expensive to maintain contact with a loved one who is incarcerated, and many people who make a commitment to keep in touch through visits, phone calls, and care packages spend a large portion of their income doing so (Grinstead et al., 2001). The De Vuono-Powell et al. (2015) survey cited above also found that 16 percent of respondents took time off of work to support their family member who was dealing with a criminal conviction and lost wages in the process. When someone is released from prison and faces the difficulties I have outlined above, friends and family may again expend time, money, or social capital helping the formerly incarcerated individual find housing, obtain employment, and reenter society.

Incarceration also has intergenerational effects, impacting the educational outcomes, chances of incarceration, and therefore the employment prospects of children with parents who have been imprisoned. Children with at least one incarcerated parent are more likely to have speech and language problems, tend to have lower GPAs, experience behavioral issues at higher rates, and are more likely to drop out before finishing high school (Morsy & Rothstein, 2016). Research has also found that children with a parent that experienced incarceration are six times more likely to be incarcerated at some point in their lives (Martin, 2017). These disadvantages create a generational poverty and inequality trap that makes it harder for the economically disadvantaged to escape their place at the bottom of the income distribution.

Even those who have no contact with the criminal justice system and do not have an incarcerated family member pay for mass incarceration. Correctional facilities and other related costs impose a significant tax burden on citizens. The operation of correctional facilities alone costs \$81 billion annually, and once related expenses such as courts, law enforcement, and health

care are added, the price tag balloons to \$182 billion annually (Wagner & Rabuy, 2017). In a study of the cost of mass incarceration at the state level, The Vera Institute of Justice found that in 2015 the average annual cost to house one inmate in a state correctional facility was \$33,274 (Mai & Subramanian, 2017). Because the tax system in the United States has become less progressive in recent decades (Picketty & Saez, 2007; see Figure 2 above), middle and lower class Americans are now shouldering more of this burden than they were previously.

Economic inequality also has broad implications for societal wellbeing. Scholarship has shown that societies with high levels of income inequality tend to experience less economic growth than they would otherwise (Cingano, 2014). Nobel Laureate Joseph Stiglitz points out that in contrast to the theory that policies benefitting the rich will trickle down to all levels of society, inequality tends to weaken overall economic strength (Stiglitz, 2015). From an economic perspective, one reason for this is that as income inequality increases, a larger share of income goes to the wealthy, who tend to have higher than average savings rates. This shift toward saving reduces aggregate demand and can lead to slower economic growth as a result (Bivens, 2017).

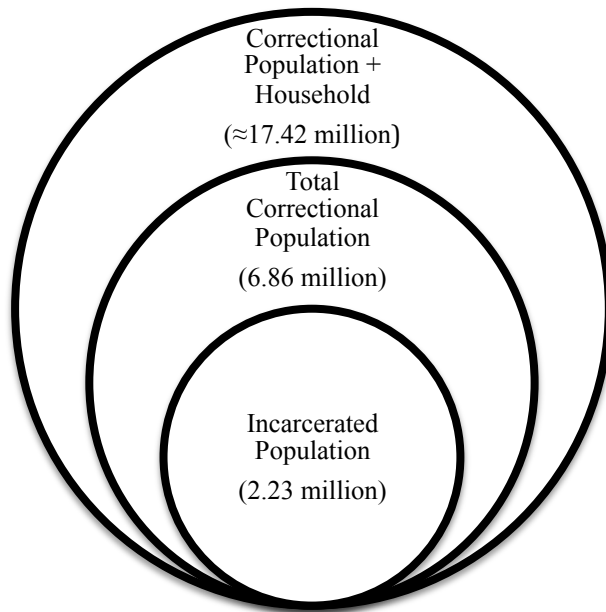
All of these disadvantages accumulate to create an environment where it is difficult for those affected by mass incarceration to obtain and keep the kind of employment that offers a path to the middle or upper class. The criminal justice system disproportionately impacts those toward the bottom of the income distribution, making it less likely that they will be able to improve their financial situation. Family members and friends often accumulate debts or lose wages in the process of supporting incarcerated loved ones. These burdens extend to all taxpayers through the costs associated with incarceration and the negative economic consequences of increasing income inequality. In this way, mass incarceration has the potential to exacerbate economic inequality by placing additional burdens on those who are already among the most vulnerable.

Therefore, it is quite possible that a rising incarceration rate would be one of the reasons why the bottom half of the country has been receiving a smaller and smaller piece of the economic pie in recent decades.

To better illustrate the magnitude of the effects of mass incarceration and the groups of people that are impacted, it is helpful to think of these groups as constituting a series of concentric circles. In the middle is the incarcerated population. The number of inmates housed in local jails or state and federal prisons was 2.23 million in 2014 (Bureau of Justice Statistics, 2019). The second circle comprises the total correctional population. This includes incarcerated individuals as well as those on parole or probation. The total correctional population stood at 6.86 million in 2014 (Bureau of Justice Statistics, 2019). In the third circle, I add friends, family, and community members that are impacted by the incarceration of those in their lives. It is much more difficult to quantify the size of this group, but a rough (and likely conservative) estimate is that this circle includes at least 17.42 million.⁵ Outside of this circle are those who are not directly affected by the criminal justice system, but are still negatively impacted through the costs of incarceration and the downward pull of the economic inequality on the economy as a whole.

⁵ I calculated this figure by taking the average household size of 2.54 in 2014 (U.S. Census Bureau, 2019) and multiplying it by the total correctional population of 6.86 million in 2014. By making the simplifying assumption that only those in the household of someone who is a member of the correctional population are economically impacted by their incarceration, probation, or parole, I am likely underestimating the number of people in this group.

Figure 6. The Scope of the Criminal Justice System and Its Impact



Source: Bureau of Justice Statistics and U.S. Census Bureau

It is also important to remember that these numbers represent the people affected by the criminal justice system *at any given time*; it does not account for the fact that many people who were formally incarcerated or formerly on probation still face significant economic burdens, and that these burdens may continue to impact their friends and family as well. Viewing the problem in this way reveals the massive scope of the impact of the criminal justice system in the United States on the economic fortunes of its residents.

This leads to the primary hypothesis for my analysis. Due to the society-wide effects of incarceration that disproportionately impact those toward the bottom of the income distribution, I hypothesize that increases in the incarceration rate will lead to significant decreases in the percentage of income going to the bottom 50 percent of earners. I expect these results to hold after controlling for a variety of important factors, including the crime rate, unemployment rate,

political climate, labor union membership rate, and percentage of Americans with a college degree.

V. Data

This study uses an original data set on economic inequality and criminal justice policy compiled by combining national-level time series on income inequality, incarceration, educational attainment, unemployment, labor union membership, and the political environment. Data for these measures originate from the World Inequality Database and publicly available government databases.

The dependent variable in this analysis is the pretax share of income going to the bottom 50 percent of the income distribution in the United States. This data is from the World Inequality Database, and I use the entire time series available in this dataset, beginning in 1962 and ending in 2014. Many studies of income inequality focus on the top-end of the income distribution, using the top one percent or top 10 percent. However, using Piketty's (2014) definition of the lower class, the bottom 50 percent, makes more theoretical sense in this case. The main focus of this paper is criminal justice policy and the incarceration rate. As the discussion above shows, these are policy factors that affect the bottom end of the income distribution much more than the top.

Using the bottom 50 percent of earners may seem like a broad definition of the lower class. However, in 2014, the last year of my time series, the median income per adult in the United States was \$27,658, which equates to \$29,365 in 2018 dollars (United States Census Bureau, 2019; Denavas-Walt, 2014).⁶ In general, we can think of the bottom 50 percent as those making approximately \$30,000 or less per year in 2018 dollars. Additionally, looking at the bottom 50 percent of the income distribution captures almost the entirety of the population directly affected by incarceration. Looney and Turner (2018) find that 98.6 percent of those

⁶ I calculated the median income for an individual by dividing the median household income by the average number of adults per household.

incarcerated were earning less than \$25,000 per year at the time of their incarceration. Two years after leaving prison, 91 percent of previously incarcerated individuals were still in this income category.

I have chosen to focus on income inequality, a relative measure of economic status, instead of the poverty rate, an absolute measure. Much of the conversation around economic policy has focused on which groups benefit most from economic growth and which groups are burdened during economic downturns. Measuring the share of income going to different sections of the income distribution allows me to speak to this ongoing conversation about who economic growth benefits and why, following Galbraith's (1998) call for a focus on distributional equity over productivity.

The primary explanatory variable is the incarceration rate, operationalized as the number of individuals incarcerated in federal and state prisons per 100,000 residents. This serves as the best proxy for crime policy at the national level as lawmakers at all levels of government have significant influence over what crimes carry a prison sentence as well as the length of those sentences. This data comes from the Bureau of Justice Statistics.

Data that includes incarceration rates in local jails are available from the Bureau of Justice statistics for more recent years, but would not allow me to go back to 1962. Because of the relatively small number of observations in my time series, it is important to operationalize crime policy in a way that allows for a longer time horizon. See the included appendix for a robustness check using data that includes those in local jails.

As I have outlined in the previous section, the incarceration rate is not the only criminal justice factor that has the potential to influence income inequality. Those on parole and probation may face many of the same economic hardships that incarcerated individuals do. However, as

with the incarceration rate for state and local jails, data on the total correctional population is only available beginning in 1980, leading to the same problem of not having enough data points for a credible time series analysis. I also include an analysis of the impact of the total correctional population on income inequality in the appendix.

When considering the incarceration rate, it is also important to include the crime rate as a control variable. Controlling for the crime level allows us to separate shifts in criminal justice policy from changes in the crime rate. As I have outlined in the literature review above, this is an important distinction to make. The crime rate I use in this analysis is the sum of the violent crime rate and property crime rate, taken from the FBI's Uniform Crime Reporting Statistics.

I include the average annual unemployment rate as a proxy for the economic environment. This data comes from the Federal Reserve Bank of St. Louis's Economic Research Division. When considering the bottom 50 percent of the income distribution, unemployment is likely to be a better measure of economic factors than GDP because those with low income and smaller savings will be hit harder by unemployment than those with higher incomes. In fact, a 2018 report by the Federal Reserve Bank of New York found that in the current environment, low-wage workers are more likely to become unemployed than they are to move to a better-paying job (Gabe, Abel, and Florida, 2018).

I investigate and control for the effect of politics on income inequality with three variables that measure different aspects of the political environment, following Kelly and Volscho (2012). The first variable is the percentage of Democrats in Congress (combining both the House and Senate). This data is publicly available on the official web pages for the U.S. Senate and House of Representatives. The second variable is a dummy variable indicating the party of the president, coded one for a Democrat and zero for a Republican. The third is a

dummy variable for unified government, coded one when both chambers of Congress and the White House are controlled by the same party and zero otherwise. Unified control of the legislative and executive branch allows for a significant amount of agenda control that is not present during periods of divided government, so this is an important aspect of the American political landscape to control for.

Because educational attainment plays a large role in the discussion of income inequality, I include the percentage of the U.S. population over 25 with a college degree in my analysis. This data comes from the U.S. Census Bureau's Historical Time Series Tables. The data point for 1963 was missing, and I imputed a value for this year using the line of best fit for the time series.

I also include the union membership rate, as research on income inequality in the United States (Volscho & Kelly, 2012) has found that the declining strength of labor unions is a prominent factor leading to more inequality. Due to limits on data availability, this data comes from two different sources. For the years 1967 to 1982, it comes from an Economic Policy Institute report that compiled data from the U.S. Census Bureau (Kimball & Mishel, 2015). From 1983 to 2014, it is from the Bureau of Labor Statistics (Bureau of Labor Statistics, 2019). The two data series differ slightly; however, the discrepancies are very small and should not impact the analysis in any significant way.

Table 1 below gives descriptive statistics for the variables in my analysis. I provide the number of observations, mean, standard deviation, minimum, and maximum for each variable. The data spans from 1962 to 2014, leading to a time series with 53 observations.⁷

⁷ Note that in the regression analysis, there are 52 observations reported. This is due to the observations lost in implementing the lags.

Table 1. Descriptive Statistics

Variable	N	Mean	St. Dev.	Min	Max
Bottom 50 Percent	53	17.05	2.78	12.38	21.20
Incarceration Rate per 100,000	53	286.05	165.43	93.00	506.14
Crime Rate per 100,000	53	4335.68	1175.11	1887.20	5949.90
Unemployment Rate	53	6.19	1.63	3.56	9.86
Percent with College Degree	53	20.06	7.10	8.90	32.00
Union Membership Rate	53	19.22	6.50	11.10	29.10
Percent Democrats in Congress	53	55.82	6.56	45.98	67.85
Democratic President	53	.47	.50	0	1
Unified Government	53	.28	.45	0	1

VI. Methodology

This paper analyzes the effect of crime policy on income inequality in the United States through a time series regression analysis spanning from 1962 – 2014. The regression model makes use of a variation of the general error correction model advocated for by De Boef and Keele (2008) as well as Enns et al. (2016). Two advantages of this method are that it can handle both stationary and nonstationary data, and it works well with a small number of observations (Kelly, 2009). With a total of 53 observations in the time series, it is especially important that I employ a method that can handle a dataset with a small n . The length of the time series is restricted primarily by the availability of data.

The specific regression equation I use follows the model employed by Kelly (2009) and Volscho and Kelly (2012) to study income inequality with aggregate time-series data. As these articles show, a bivariate version of this equation takes the following form:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \beta_1 X_{t-1} + \beta_2 \Delta X_t + \varepsilon_t$$

In this equation, the dependent variable is in first differences, and the lagged level of the dependent variable is included as one of the independent variables. The error correction rate is the absolute value of the coefficient on the lagged dependent variable, $|\alpha_1|$. Each of the independent variables is initially added to the analysis as the first lag and first difference. The lagged independent variables represent the long-term effect of the variable on the dependent variable, and the differenced variables represent the short-term effect. Because I am most concerned with the long-term equilibrium effects of the independent variables on income inequality, the differenced explanatory variables will be dropped in some of the models I estimate when they are shown to be insignificant. This will remove noise from the regression and

make sure that the model is as efficient as possible, an important consideration when dealing with a relatively small number of observations. In some models, I also follow this practice with any of the lagged independent variables that are clearly insignificant. In the interpretation of coefficients in this model, the impact of a one-unit change in X on the long-term equilibrium of Y is $\frac{\beta_1}{|\alpha_1|}$ (the coefficient on that independent variable divided by the error correction rate).

I report my results using a combination of OLS regression and Prais-Winsten regression. I employ the Prais-Winsten regression when there is a high level of autocorrelation in the model, specifically when the p-value for the Breusch-Godfrey test for autocorrelation is less than .10. For the OLS models, I report the Breusch-Godfrey p-value, and for the Prais-Winsten models, I report the rho statistic. For a more comprehensive discussion of this specific model as well as the general methodological approach, see Kelly (2009, 103-106), De Boef and Keele (2008), and Enns et al. (2016).

VII. Results

In Table 2, I report the results of three specific models. The dependent variable in each model is the change in the percentage of pretax national income going to the bottom 50 percent of the income distribution. The first model tests the foundational variables — the incarceration rate, crime rate, unemployment rate, percentage of Americans with a college degree, and labor union participation rate — in both first differences and lagged levels. The second model includes the significant variables from the first model and adds the political variables as differences and lags. I have left the lagged crime rate in the model even though it did not reach the level of statistical significance because the crime rate is a vital part of the analysis for the theoretical reasons I have mentioned in earlier sections. The third model includes all of the variables of interest. I will focus primarily on this model, as it has the highest adjusted r-squared and contains all of the variables of theoretical importance for my analysis. The first two models use OLS regression, and the third model uses Prais-Winsten regression due to the increased presence of autocorrelation (see Breusch-Godfrey p-values and rho statistic).

Table 2. Time Series Regression Analysis

	(1) OLS	(2) OLS	(3) Prais
Bottom 50% _{t-1}	-0.4033** (0.1173)	-0.5438*** (0.1193)	-0.2403* (0.1098)
Δ Incarceration Rate _t	0.0065 (0.0087)		0.0147 (0.0079)
Incarceration Rate _{t-1}	-0.0051*** (0.0014)	-0.0043** (0.0016)	-0.0030* (0.0013)
Δ Crime Rate _t	-0.0002 (0.0003)		-0.0005* (0.0002)
Crime Rate _{t-1}	0.0001 (0.0001)	0.0002* (0.0001)	-0.0001 (0.0001)
Δ Unemployment Rate _t	-0.0449 (0.0451)		-0.0492 (0.0404)
Unemployment Rate _{t-1}	-0.1659*** (0.0374)	-0.1704*** (0.0358)	-0.1401*** (0.0326)
Δ Union Membership Rate _t	0.2093* (0.1065)		0.1072 (0.1117)
Union Membership Rate _{t-1}	0.1742** (0.0575)	0.2023** (0.0615)	0.1285* (0.0536)
Δ % College Degree _t	0.2105 (0.1645)		0.3967* (0.1555)
% College Degree _{t-1}	0.1109* (0.0420)	0.0775* (0.0325)	0.1019** (0.0326)
Δ % Dems in Congress _t		-0.0240 (0.0143)	-0.0209 (0.0136)
% Dems in Congress _{t-1}		0.0216 (0.0155)	0.0344* (0.0153)
Δ Dem President _t		-0.4260 (0.2111)	-0.5153* (0.2020)
Dem President _{t-1}		-0.0661 (0.1555)	0.0756 (0.1215)
Δ Unified Government _t		0.3168 (0.2296)	0.4060 (0.2089)
Unified Government _{t-1}		-0.1650 (0.2195)	-0.2952 (0.2037)
Constant	3.1208 (2.2481)	4.0205 (2.0437)	-0.4887 (2.4133)
Observations	52	52	52
Adj. R-squared	0.477	0.493	0.661
Breusch-Godfrey p-value	.298	.708	
Rho-statistic			-.366

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

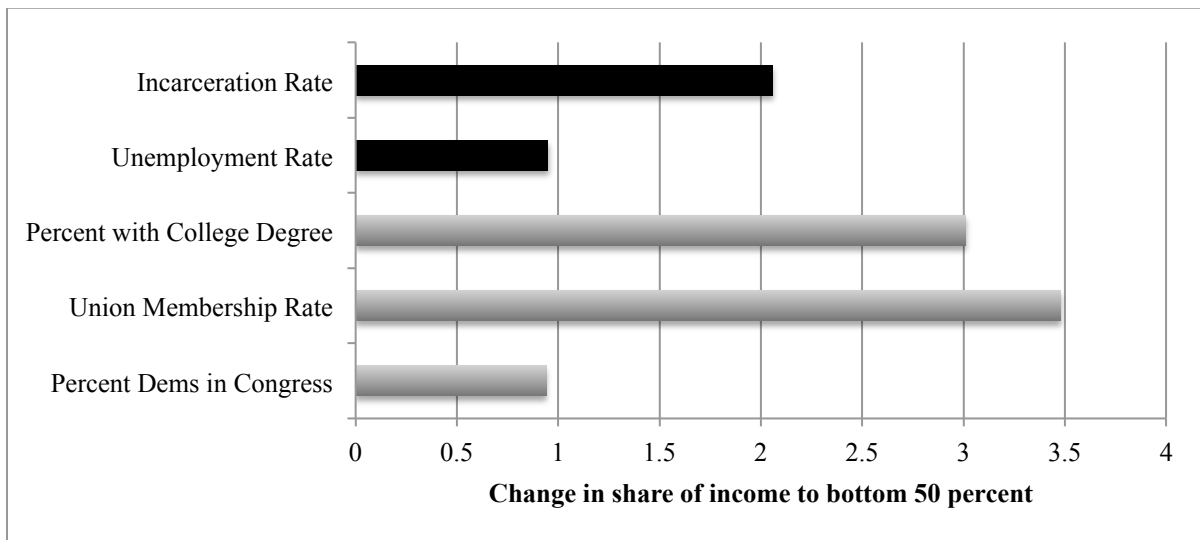
In examining the results for my primary explanatory variable, I find strong support for my hypothesis that increases in the incarceration rate lead to a decrease in the share of income going to the bottom 50 percent of the income distribution. The long-term impact of the incarceration rate is negative and significant at the 5 percent level in all three specifications. In model three, the long-term effect of a 100 person-increase in the incarceration rate is a 1.25 percentage point decrease in the share of income going to the bottom 50 percent. This amounts to a large impact given that between 1972 and 2007, the federal and state incarceration rate rose by more than 400 people per 100,000.

The estimations of the long-term impacts of the control variables from model three provide useful information as well and largely lend support to prominent theories in the literature on economic inequality. First, it is notable that the long-term effect of the crime rate is not statistically significant. As expected, increases in the unemployment rate have a negative impact on the share of income going to the bottom 50 percent. In model three, a one percentage point increase in unemployment leads to a .6 percentage point drop in the income going to the bottom half of the distribution. The variable testing the impact of the political makeup of Congress operates as expected as well. A ten percentage point increase in the percentage of Democrats in Congress leads to a 1.4 percentage point decrease in the share of income going to the bottom 50 percent. The labor union membership rate proves to be another important factor influencing income inequality. The impact of a one percentage point decrease in union membership is a .5 percentage point decrease in income for the bottom 50 percent. Finally, we see that the percentage of Americans with a college degree has a positive impact on the share of income going to the bottom 50 percent. A one percentage point increase in the attainment of college

degrees leads to a .4 percentage point increase in the income going to the bottom half of the income distribution.

In a similar fashion to Volscho and Kelly (2012), I also analyze the relative strength of each of the significant long-term determinants of income inequality. Figure 7 below shows the impact on the proportion of income going to the bottom 50 percent of a one standard deviation shift in each independent variable, taken from model three (see Table 1 for standard deviations). The long-term impact of a one standard deviation increase in the incarceration rate is a 2.06 percentage point decrease in the share of income going to the bottom 50 percent. The only variables that cause a larger shift are union membership and educational attainment.

Figure 7. Long-term Impact on Share of Income to Bottom 50 Percent of a Standard Deviation Increase*



**A black bar represents a negative impact. A grey bar represents a positive impact.*

In the appendix, I repeat my time series analysis, first using the total incarceration rate and then the total correctional population in place of the federal and state incarceration rate used

in Table 2. The total incarceration rate includes those in local jails in addition to federal and state prisons. The correctional population includes inmates plus those on probation or parole. Only thirty-five years of data are available for those measures; however, the results do largely confirm my finding that incarceration is a significant factor leading to rising income inequality.

The results of this time series analysis provide evidence that the incarceration rate is an important determinant of income inequality. Using a variety of model specifications, I have shown that increases in the incarceration rate have a negative impact on the share of income that goes to the bottom half of the income distribution. I also find additional support for many prominent theories concerning income inequality, including the role of politics, union membership, and educational attainment. By looking at the relative strength of the impact of each of these variables, I show that incarceration is an important part of the conversation regarding the economic, political, and policy determinants of economic inequality in the United States.

VIII. Discussion

The results of this study show the significant effect that the incarceration rate has on the income distribution in the United States. This gives empirical support to the theory that the impacts of criminal justice policy flow beyond current and former inmates to their families, communities, and even society as a whole. These findings have implications for both scholars and policymakers seeking a better understanding of the causes of income inequality, the effects of criminal justice policy and mass incarceration, and how these interrelated issues might be addressed.

Implications and Policy Proposals

For scholars studying income inequality, this study provides additional evidence that economic inequality is not simply a function of invisible market forces, but the result of political outcomes and policy decisions. My findings show that in order to gain a comprehensive understanding of the determinants of income inequality in the United States, criminal justice policy must take a more prominent place in the conversation. The incarceration rate is a significant predictor of income inequality even after controlling for many of the other relevant explanations for economic inequality in the literature.

The results of my analysis also provide additional evidence for the theory that Democratic control of the levers of power leads to decreases in income inequality (Bartels, 2016; Volscho and Kelly, 2012). While I find that Democratic control of Congress tends to equalize the income distribution, it is notable that, contrary to Bartels' findings in *Unequal Democracy*, I do not find evidence that Democratic control of the presidency had a long-term effect. I hypothesize that this is partly due to the constitutional powers of Congress as the lawmaking body, but there may also be certain aspects of the particular period of my time series that influence this finding.

The only Democratic presidents that served during the period of increasing inequality that began in approximately 1980 were President Clinton and President Obama. In the area of crime policy, President Clinton did not govern like a typical Democrat, passing the Violent Crime Control and Law Enforcement Act of 1994 that led to more punitive crime policies (Eisen, 2019).

In the area of criminal justice research, the findings in this paper provide further confirmation of the negative effects that mass incarceration is having on American society. Due to the negative impacts of mass incarceration on economic fairness, it is likely that the incarcerated population as well as those indirectly affected by incarceration are not able to share in the productivity gains during periods of economic growth, and are just as likely to be disproportionately burdened during economic downturns.

Additionally, this research may prove useful to policymakers looking to increase economic equity or decrease the incarcerated population by providing evidence that governments can address both problems at once. Implementing criminal justice policies that focus more on rehabilitation than punishment can provide more equality in the income distribution and lead to a more prosperous society.

This study points to three specific policies that could be important initial steps toward reducing incarceration and mitigating economic inequality. First, because the increase in drug abuse arrests has been a prominent factor in the rising incarceration rate, policies that focus more on treatment and less on imprisonment for drug offenses could be an important part of the solution. Many governments are making progress in this area. Twenty-six states now have now implemented some form of marijuana legalization or decriminalization (National Conference of State Legislatures). These policy changes are a step toward decreasing drug arrests for

nonviolent offenses and shifting the focus away from punishment for drug crimes and toward treatment for those who need it.

In the area of treatment, there are now more than 3,000 drug courts in the United States that are designed to provide rehabilitative services for those struggling with substance abuse and reduce the incarcerated population in the process (U.S. Department of Justice, 2020). While these programs are still fairly new and research on their effectiveness is in its early stages, there are signs that drug courts may be effectively meeting these goals (Office of Justice Programs, 2020; Emigh, 2017; National Institute of Justice, 2008). The effectiveness of drug courts should be continually monitored to make sure that they are serving the needs of the individuals involved. That being said, any measures that have the potential to reduce the incarceration rate and put more resources toward rehabilitation can be an important step toward a more equitable society.

Also, given the sharp decrease in educational opportunities for inmates that Western (2006) takes note of, reinstating and expanding educational programming for incarcerated individuals could increase the chances that former inmates will have the qualifications to obtain employment upon release and could also increase their earning potential once they have a job. As just one example of a program that provides educational opportunities to those in prison, Cornell's Prison Education Program provides classes for inmates that give them credit toward a college degree (Cornell Prison Education Program, n.d.).

Removing policies that disenfranchise those with a criminal record is another avenue through which policymakers could increase economic equity. As the size of the incarcerated population has increased, so has the number of people who have lost the right to vote because of their criminal record. As of 2016, only two states had no restrictions on voting due to criminal

conviction, and 12 states had laws that disenfranchised those with a felony conviction even after serving their sentence (Uggen, Larsen, and Shannon, 2016). This adds up to over 6 million individuals that did not have the right to vote in 2016 because of felon disenfranchisement. Because those in this group also tend to be economically disadvantaged, implementing policies that extend the franchise in this way would allow for a more representative government that better reflects the preferences of those in the bottom half of the income distribution.

Limitations and Opportunities for Further Research

As with any study, there are several limitations of my analysis to consider. First, it is critical to consider the reverse causality hypothesis. It is possible that increases in income inequality are causing incarceration rates to rise as a decrease in financial stability forces more people to resort to illegal means of obtaining income. For theoretical as well as empirical reasons, I believe there is a much stronger case for incarceration impacting income inequality than the reverse. First, as I have outlined above, there is not a very strong connection between crime rates and incarceration rates. The government affects the incarceration rate through explicit policy decisions. Second, while income inequality may have some effect on the crime rate, it is much more difficult to make the link from inequality to imprisonment. I address the potential effect of changes in the amount of crime by including the crime rate as a control variable in my analysis. Third, I lag all of my independent variables, including the incarceration rate, by one year as another way to assure the correct time-order relationship.

Previous studies also provide evidence that the reverse causality hypothesis is not likely valid in this case. In the state-level studies mentioned in the literature review above, Jacobs and Carmichael (2001) and Smith (2004) include a measure of economic inequality as an independent variable in their analysis of the factors impacting incarceration rates. Neither study

finds this to be a statistically significant determinant of incarceration. Additionally, in their finding that incarceration rates have a significant impact on poverty rates, Defina and Hannon (2013) use instrumental variables to rule out reverse causality.

Other limitations of this study primarily stem from the high level of aggregation of the data. In using national data, some level of nuance will inevitably be lost. For example, using a smaller unit of analysis would allow for the consideration of crime policy beyond the federal level. Because many criminal justice policies are set at the state and local levels, there could be a significant benefit in studying how these policies vary across states and how these variations impact economic inequality. The small number of observations in my time series is another reason for caution. This limitation is due to the availability of the data, and I have chosen a methodology designed for time series with a smaller number of observations, but conducting a state-level panel analysis would allow for a much larger sample size.

However, using national data has its benefits as well. Because many of the prominent studies on economic inequality use data for the country as a whole, this allows for easier comparison. There is also evidence that national political actors have a larger impact on the income distribution than state-level actors. Widestrom, Hayes, and Dennis (2018) find that Democratic control of the federal government tended to produce lower levels of economic inequality, but that this was not true when looking at state governments. Party control at the state level did not have a significant effect on the income distribution in their analysis.

Using a national-level time series also makes it difficult to study racial disparities in the criminal justice system. The variations in the racial and ethnic makeup of the country are much less clear at the national level than it would be when comparing different geographical regions within the country. However, when it comes to criminal justice and economic inequality, racial

disparities are clearly a crucial part of the story. In 2000, 7.9 percent of black males between the ages of 18 to 65 were in jail or prison, while the corresponding number for white males was 1 percent (Western, 2006). The statistics are even more startling when we stratify the data by education levels. In the year 2000, 32.4 percent of black males between the ages of 20 and 40 who dropped out of high school were incarcerated (Western, 2006). Building on this finding, Kearney et al. (2014) find that black male high school dropouts born between 1975 and 1979 had a nearly 70 percent chance of spending time in prison by age 34. In addition to their conclusion that Republican party strength leads to higher rates of incarceration, Jacobs and Carmichael (2001) also find that the percentage of black individuals in a state is a significant predictor of the rate of imprisonment. In *The New Jim Crow*, Alexander (2012) chronicles the ways that the criminal justice system in general, and the war on drugs in particular, operate in racially discriminatory ways. It is important to keep these racial disparities in mind as we search for solutions to mass incarceration and economic inequality.

I also acknowledge that using the incarceration rate as my primary explanatory variable provides a somewhat narrow view of the effects of the criminal justice system on economic inequality. As I have shown, crime policy impacts society in ways that go beyond incarceration. As more data becomes available, future research will have the opportunity to better examine the effects of changes in the size of the total correctional population on income inequality. I provide results for a time series analysis using the total correctional population in the appendix. However, with only 35 years of data, I am cautious about drawing any conclusions from this data alone. This analysis does provide an important robustness check for my results, and largely lines up with my main findings, providing confirmation of the strength of the incarceration rate measure as a proxy for criminal justice policy.

The findings of this paper point to several opportunities for further research. Because the data in my analysis is at the national level, disaggregating the data and looking at differences across states could provide an opportunity to study different aspects of the relationship between crime policy and economic inequality and to greatly increase the number of observations available for analysis. As mentioned above, while much of the research on inequality focuses on national data, certain aspects of the issue can be best explored at the state level. For example, do differences in crime policy across states lead to differences in the income distribution?

Because of the significant role that racial inequities play in this discussion, a state-level analysis would also allow researchers to examine how differences in the racial composition of states impact income inequality. There is an opportunity to reexamine some of the other theories of economic inequality while adding incarceration as a potential causal mechanism as well. For instance, how might mass incarceration play a role in McCarty, Poole, and Rosenthal's (2016) "dance" between polarization and inequality?

IX. Conclusion

In 2003, the American Political Science Association responded to rising inequality in the United States by convening the Task Force on Inequality and American Democracy. The report from this task force examined the ways that inequalities of all kinds, including economic inequality, have distorted America's democratic ideals (Task Force on Inequality and American Democracy, 2004). One of the results of this task force was an increase in the number of political scientists examining the factors affecting income inequality in the United States. During this same period, many criminal justice scholars were studying the equally troubling rise in incarceration stemming from the punitive policies of the war on drugs. Both of these examples show the academic community responding to relevant crises and looking for solutions to society's most pressing problems.

However, in many ways these two bodies of research developed in their own silos. I see rising inequality and rising incarceration as two interconnected phenomena and seek to provide a theoretical and empirical link between these two areas. I begin by outlining the complex system of economic, political, and policy factors that influence inequality and showing how criminal justice policy fits into this web. I then test my theory with a time series analysis of the data. I find that an increase in the incarceration rate leads to a decrease in the percent of income going to the bottom 50 percent of the income distribution, even after controlling for many of the important determinants of crime policy and income inequality, including the crime rate, the partisan composition of Congress, the unemployment rate, union membership, and educational attainment.

This study provides important foundations for further work on the connection between criminal justice policy and economic inequality. The finding that the incarceration rate impacts

the income distribution in a meaningful way has broad implications for social scientists, and the current data show that these complex issues are not going away any time soon. As political scientists partner with scholars in related fields to ask some of the biggest questions facing society today, this topic should not be far from the top of the list.

X. Appendix

In this appendix, I provide a time series analysis using both the total incarceration rate and total correctional rate as my main explanatory variable. The total incarceration rate includes those incarcerated at the federal, state, and local levels. The correctional rate statistic includes the total incarceration rate and adds those on probation and parole at all levels. Both are measured as rates per 100,000 population.

These measures capture important aspects of criminal justice policy not present in the federal and state incarceration rate that I use in my primary time series regression analysis (see Table 2). However, only 35 years of data are available, which makes it more difficult to conduct a reliable estimation. Table A1 below provides the number of observations, mean, standard deviation, minimum and maximum for these two time series. The data comes from the Bureau of Justice Statistics.

Table A1. Descriptive Statistics for Total Incarceration Rate and Corrections Rate

Variable	N	Mean	St. Dev.	Min	Max
Total Incarceration Rate	35	563.43	182.43	220	760
Corrections Rate	35	1898	508.47	810	2420

In Table A2, I repeat my analysis using these two additional measures in place of the federal and state incarceration rate. The first two models include the total incarceration rate as the main explanatory variable, and the third and fourth models use the total correctional rate. To account for the smaller number of observations, I employ some modifications to the process I used for my primary analysis. First, I am careful not to use too many independent variables in

any of my models. I rely on my findings from Table 2 to focus on the most important factors. I also shift my significance levels to allow for a p-value of .1 to be noted in my regression results.

Table A2. Time Series Regression with Total Incarceration Rate and Corrections Rate

	(1) Prais	(2) OLS	(3) OLS	(4) Prais
Bottom 50% _{t-1}	-0.3263** (0.1265)	-0.4973*** (0.1084)	-0.3881** (0.1581)	-0.2208*** (0.0587)
Δ Total Incarceration Rate _t	0.0005 (0.0034)			
Total Incarceration Rate _{t-1}	-0.0024*** (0.0007)	-0.0024*** (0.0007)		
Δ Corrections Rate _t			-0.0007 (0.0011)	
Corrections Rate _{t-1}			-0.0007* (0.0003)	-0.0010*** (0.0002)
Δ Crime Rate _t	-0.0006*** (0.0002)	-0.0005*** (0.0002)	-0.0006** (0.0002)	-0.0004*** (0.0001)
Crime Rate _{t-1}	-0.0001 (0.0001)		-0.0002 (0.0002)	
Δ Unemployment Rate _t	-0.0061 (0.0404)		-0.0059 (0.0452)	
Unemployment Rate _{t-1}	-0.1132*** (0.0254)	-0.1232*** (0.0321)	-0.1042*** (0.0337)	-0.1166*** (0.0313)
Δ Union Membership Rate _t	0.4209** (0.1696)	0.3488** (0.1508)	0.4198** (0.1776)	0.2084 (0.1489)
Union Membership Rate _{t-1}	0.1464** (0.0540)	0.2006*** (0.0591)	0.1034 (0.0793)	
Δ % College Degree _t	0.0920 (0.1122)		0.0879 (0.1297)	
% College Degree _{t-1}	0.0154 (0.0691)		-0.0874 (0.0814)	
Δ % Dems in Congress _t		0.0082 (0.0084)		0.0031 (0.0079)
% Dems in Congress _{t-1}		0.0051 (0.0089)		0.0038 (0.0080)
Constant	4.8612 (3.7554)	6.4988*** (1.5503)	9.3371* (4.5137)	5.6455*** (1.2380)
Observations	34	34	34	34
Adj. R-squared	0.6954	0.6073	0.5575	0.6498
Breusch-Godfrey p-value		.290	.235	
Rho-statistic	-.383			-.359

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.10

These results provide additional evidence for the impact of criminal justice policy and incarceration on the share of income going to those in the bottom half of the income distribution. The long-term impact of the total incarceration rate is statistically significant and negative at the 1 percent level in both models. The corrections rate is negative and statistically significant only at the 10 percent level in the third model, but at the one percent level in the fourth model.

References

- Alexander, Michelle. 2012. *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: New Press.
- Anderson, Helen A. 2009. "Penalizing Poverty: Making Criminal Defendants Pay for Their Court-Appointed Counsel Through Recoupment and Contribution." *University of Michigan Journal of Law Reform*. 42 (3). repository.law.umich.edu/mjlr/vol42/iss2/3
- Barber, Chris. 2016. "Public Enemy Number One: A Pragmatic Approach to America's Drug Problem " Richard Nixon Foundation." *Richard Nixon Foundation*.
www.nixonfoundation.org/2016/06/26404/.
- Barrilleaux, Charles, and Belinda C. Davis. 2003 "Explaining State-Level Variations In Levels And Change In The Distribution Of Income In The United States, 1978-1990." *American Politics Research* 31 (3): 280–300. doi:10.1177/1532673X03251380.
- Bartels, Larry M. 2016. *Unequal Democracy: The Political Economy of the New Gilded Age*. 2nd Ed. New York : Princeton: Russell Sage Foundation.
- Bivens, Josh. 2017. "Inequality is slowing US economic growth." *Economic Policy Institute*.
<https://www.epi.org/files/pdf/136654.pdf>
- Bonica, Adam, Nolan McCarty, Keith T. Poole, and Howard Rosenthal. 2013. "Why Hasn't Democracy Slowed Rising Inequality?" *Journal of Economic Perspectives*. 27 (3): 103-24. doi: 10.1257/jep.27.3.103.
- Bureau of Justice Statistics. "Key Statistics." www.bjs.gov/index.cfm?ty=kfa.
- Bureau of Labor Statistics. 2019. "Union Membership Rate 10.5 Percent in 2018, down from 20.1 Percent in 1983." www.bls.gov/opub/ted/2019/union-membership-rate-10-point-5-percent-in-2018-down-from-20-point-1-percent-in-1983.htm?view_full.
- Cingano, Federico. 2014. "Trends in Income Inequality and its Impact on Economic Growth." *OECD Social, Employment and Migration Working Papers*. No. 163.
<https://doi.org/10.1787/5jxrjncwxv6j-en>.
- Claudia Goldin & Lawrence F. Katz, 2007. "The Race between Education and Technology: The Evolution of U.S. Educational Wage Differentials, 1890 to 2005." *National Bureau of Economic Research*. <https://www.nber.org/papers/w12984.pdf>.
- Cornell Prison Education Program. "Our Mission." Accessed March 8, 2020.
<https://experience.cornell.edu/opportunities/cornell-prison-education-program>

- Cullen, James. 2018. "Sentencing Laws and How They Contribute to Mass Incarceration." *Brennan Center for Justice*. www.brennancenter.org/our-work/analysis-opinion/sentencing-laws-and-how-they-contribute-mass-incarceration.
- De Vuono-Powell, Saneta, Chris Schweidler, Alicia Walters, and Azadeh Zohrabi. 2015. "Who Pays? The True Cost of Incarceration on Families." *Ella Baker Center for Human Rights*.
- DeFina, Robert, and Lance Hannon. 2013. "The Impact of Mass Incarceration on Poverty." *Crime & Delinquency*. 59 (4): 562–86. doi:10.1177/001128708328864.
- Denavas-Walt, Carmen, and Bernadette D. Proctor. 2018. "Income and Poverty in the United States: 2014." *The United States Census Bureau*. www.census.gov/library/publications/2015/demo/p60-252.html.
- Eisen, Lauren-Brooke. 2019. "The 1994 Crime Bill and Beyond: How Federal Funding Shapes the Criminal Justice System." *Brennan Center for Justice*. www.brennancenter.org/our-work/analysis-opinion/1994-crime-bill-and-beyond-how-federal-funding-shapes-criminal-justice.
- Emigh, Meredith. 2017. "The Efficacy of Drug Courts." *Society for Evidence-Based Professionals*. www.ebpsociety.org/blog/education/271-efficacy-drug-courts.
- Enns, Peter K., Nathan J. Kelly, Takaaki Masaki, and Patrick C. Wohlfarth. "Don't Jettison the General Error Correction Model Just yet: A Practical Guide to Avoiding Spurious Regression with the GECM." *Research & Politics*, (April 2016). doi:10.1177/2053168016643345.
- FBI Uniform Crime Reporting Statistics. Accessed November 2019. www.ucrdatatool.gov.
- Fields, Gary, and John R. Emshwiller. August 19, 2014. "As Arrest Records Rise, Americans Find Consequences Can Last a Lifetime." *The Wall Street Journal*. <https://www.wsj.com/articles/as-arrest-records-rise-americans-find-consequences-can-last-a-lifetime-1408415402>.
- Finkel, Mack. 2019. "New Data: Low Incomes – but High Fees – for People on Probation." *Prison Policy Initiative*. www.prisonpolicy.org/blog/2019/04/09/probation_income/.
- Gabe, Todd, Jaison R. Abel, and Richard Florida. 2018. "Can Low-Wage Workers Find Better Jobs?" *Federal Reserve Bank of New York*. Staff Report No. 846. www.newyorkfed.org/medialibrary/media/research/staff_reports/sr846.pdf
- Galbraith, John Kenneth. 1998. *The Affluent Society*. 40th Anniversary Ed. Boston: Houghton Mifflin.
- Gilens, Martin. 2005. "Inequality and Democratic Responsiveness." *The Public Opinion Quarterly* 69(5): 778-796.

- Gilens, Martin. 2012. *Affluence and Influence: Economic Inequality and Political Power in America*. Princeton, N.J.: New York: Princeton University Press.
- Glass, Andrew. October 14, 2010. "Reagan Declares 'War on Drugs,' October 14, 1982." *Politico*. <https://www.politico.com/story/2010/10/reagan-declares-war-on-drugs-october-14-1982-043552>.
- Gotsch, Kara, and Vinay Basti. "Capitalizing on Mass Incarceration: U.S. Growth in Private Prisons." The Sentencing Project, August 2, 2018. <https://www.sentencingproject.org/publications/capitalizing-on-mass-incarceration-u-s-growth-in-private-prisons/>.
- Gramlich, John. 2018. "U.S. Incarceration Rate Is at Its Lowest in 20 Years." Pew Research Center. *Pew Research Center*. www.pewresearch.org/fact-tank/2018/05/02/americas-incarceration-rate-is-at-a-two-decade-low/.
- Grinstead, Olga, Bonnie Faigeles, Carrie Bancroft, and Barry Zack. 2001. "The Financial Cost of Maintaining Relationships with Incarcerated African American Men: A Survey of Women Prison Visitors." *Journal of African American Men* 6 (1): 59-69. link.springer.com/content/pdf/10.1007/s12111-001-1014-2.pdf.
- Hacker, Jacob S and Paul. Pierson. 2010. *Winner-Take-All Politics: How Washington Made the Rich Richer and Turned Its Back On the Middle Class*. New York: Simon & Schuster.
- Hatch, Megan E., and Elizabeth Rigby. 2015. "Laboratories of (In)Equality? Redistributive Policy and Income Inequality in the American States." *Policy Studies Journal* 43 (2): 163–87.
- Jacobs, David, and Jason T. Carmichael. 2001. "The Politics of Punishment across Time and Space: A Pooled Time-Series Analysis of Imprisonment Rates." *Social Forces* 80 (1): 61–89. <https://doi.org/10.1353/sof.2001.0070>.
- Kearney, Melissa S., Benjamin H. Harris, Elisa Jácome, and Lucie Parker. 2014. "Ten Economic Facts about Crime and Incarceration in the United States." *The Hamilton Project*. www.hamiltonproject.org/assets/legacy/files/downloads_and_links/v8_THP_10CrimeFacts.pdf
- Kelly, Nathan J. 2009. *The Politics of Income Inequality in the United States*. Cambridge: New York: Cambridge University Press.
- Kimball, Will, and Lawrence Mishel. 2015. "Unions Decline and the Rise of the Top 10 Percent Share of Income." *Economic Policy Institute*. <https://www.epi.org/publication/unions-decline-and-the-rise-of-the-top-10-percents-share-of-income/>.

- Lee, Michelle. 2015. "Yes, U.S. Locks People up at a Higher Rate than Any Other Country." *The Washington Post*. www.washingtonpost.com/news/fact-checker/wp/2015/07/07/yes-u-s-locks-people-up-at-a-higher-rate-than-any-other-country/.
- Lerman, Amy, and Vesla Weaver. 2014. *Arresting Citizenship: The Democratic Consequences of American Crime Control*. Chicago, IL: University of Chicago Press.
- Looney, Adam, and Nicholas Turner. 2018. "Work and Opportunity before and after Incarceration." *Brookings Institution*. https://www.brookings.edu/wp-content/uploads/2018/03/es_20180314_looneyincarceration_final.pdf.
- Mai, Chris, and Ram Subramanian. 2017. "Price of Prisons 2015: Examining State Spending Trends, 2010-2015." *Vera Institute of Justice*. <https://www.vera.org/downloads/publications/the-price-of-prisons-2015-state-spending-trends.pdf>
- Martin, Eric. 2017. "Hidden Consequences: The Impact of Incarceration on Dependent Children," *National Institute of Justice Journal*. 278. nij.gov/journals/278/Pages/impact-of-incarceration-on-dependent-children.aspx.
- McCarty, Nolan M, Keith T. Poole and Howard Rosenthal. 2016. *Polarized America: The Dance of Ideology and Unequal Riches*. 2nd Ed. Cambridge, Mass.: MIT Press.
- McLeod, Morgan. 2018. Expanding the Vote: "Two Decades of Felony Disenfranchisement Reform." *The Sentencing Project*. www.sentencingproject.org/wp-content/uploads/2018/10/Expanding-the-Vote-1997-2018.pdf?eType=EmailBlastContent&eId=59298010-0bed-4783-9ade-23e215ad6df4
- Morsy, Leila, and Richard Rothstein. 2016. "Mass incarceration and children's outcomes: Criminal justice policy is education policy." *Economic Policy Institute*. <https://www.epi.org/files/pdf/118615.pdf>
- National Conference of State Legislatures. Marijuana Overview. Accessed March 8, 2020. <https://www.ncsl.org/research/civil-and-criminal-justice/marijuana-overview.aspx>.
- National Institute of Justice. 2008. "Do Drug Courts Work? Findings From Drug Court Research." nij.ojp.gov/topics/articles/do-drug-courts-work-findings-drug-court-research
- National Research Council. 2014. *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Committee on Causes and Consequences of High Rates of Incarceration, J. Travis, B. Western, and S. Redburn, Editors. Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.
- Office of Justice Programs. 2020. "Drug Courts." *U.S. Department of Justice*. <https://www.ncjrs.gov/pdffiles1/nij/238527.pdf>

- Ovwigbo, Pamela Caudill, Correne Saunders, and Catherine E. Born. 2005. "The Intersection of Incarceration & Child Support: A Snapshot of Maryland's Caseload. Baltimore: Family Welfare Research and Training Group, University of Maryland.
- Piketty, Thomas, and Emmanuel Saez. 2003. "Income Inequality in the United States, 1913-1998." *The Quarterly Journal of Economics* 118 (1): 1-39. www.jstor.org/stable/25053897. Data updated to 2018 at <https://eml.berkeley.edu/~saez/>.
- Piketty, Thomas, and Emmanuel Saez. 2007. "How Progressive is the U.S. Federal Tax System? A Historical and International Perspective." *Journal of Economic Perspectives* 21 (1): 3-24.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge Massachusetts: The Belknap Press of Harvard University Press.
- Ruhland, Ebony. 2016. "The Impact of Fees and Fines for Individuals on Probation and Parole." *Robina Institute of Criminal Law and Criminal Justice, University of Minnesota*. robinainstitute.umn.edu/news-views/impact-fees-and-fines-individuals-probation-and-parole.
- Sacco, Lisa N. 2014. "Drug Enforcement in the United States: History, Policy, and Trends." *Congressional Research Service*. <https://fas.org/sgp/crs/misc/R43749.pdf>.
- Sawyer, Wendy. 2017. "How Much Do Incarcerated People Earn in Each State?" Prison Policy Initiative. hwww.prisonpolicy.org/blog/2017/04/10/wages/.
- Smith, Kevin B. 2004. "The Politics of Punishment: Evaluating Political Explanations of Incarceration Rates." *The Journal of Politics* 66 (3): 925-938. www.journals.uchicago.edu/doi/abs/10.1111/j.1468-2508.2004.00283.x.
- Stephan, James J. 2008. "Census of State and Federal Correctional Facilities, 2005." *Bureau of Justice Statistics National Prisoner Statistics Program*. <https://www.bjs.gov/content/pub/pdf/csfcf05.pdf>
- Stiglitz, Joseph E. 2013. *The Price of Inequality*. New York: W.W. Norton & Co.
- Stiglitz, Joseph E. 2015. "Inequality and Economic Growth." *The Political Quarterly*. 86: 134-155. doi:10.1111/1467-923X.12237
- Task Force on Inequality and American Democracy. 2004. "American Democracy in an Age of Rising Inequality." *Perspectives on Politics* 2 (4): 651-66. www.jstor.org/stable/3688533.
- Uggen, Christopher, Ryan Larson, and Sarah Shannon. 2016. "6 Million Lost Voters: State-Level Estimates of Felony Disenfranchisement, 2016." *The Sentencing Project*. www.sentencingproject.org/publications/6-million-lost-voters-state-level-estimates-felony-disenfranchisement-2016/#II.

- U.S. Census Bureau. 2019. "Historical Households Tables." www.census.gov/data/tables/time-series/demo/families/households.html.
- U.S. Census Bureau. 2020. "Real Median Personal Income in the United States." Retrieved from Federal Reserve Bank of St. Louis. fred.stlouisfed.org/series/MEPAINUSA672N
- Volscho, Thomas W., and Nathan J. Kelly. 2012. "The Rise of the Super-Rich: Power Resources, Taxes, Financial Markets, and the Dynamics of the Top 1 Percent, 1949 to 2008." *American Sociological Review* 77 (5): 679–99. doi:10.1177/0003122412458508.
- Wagner, Peter, and Bernadette Rabuy. 2017. "Following the Money of Mass Incarceration." *Prison Policy Initiative*. www.prisonpolicy.org/reports/money.html.
- Western, Bruce. 2006. *Punishment and Inequality in America*. New York: Russell Sage Foundation.
- Widestrom, Amy, Thomas J. Hayes, and Christopher Dennis. 2018. "The Effect of Political Parties on the Distribution of Income in the American States: 1917–2011." *Social Science Quarterly* 99: 895-914. doi:10.1111/ssqu.12490.
- World Inequality Database. Accessed October 2019. wid.world.

Vita

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