

Place and punishment: the spatial context of incarceration

J Simes. "Place and Punishment: The Spatial Context of Incarceration." *Journal of Quantitative Criminology*, pp. 1 - 21. <https://doi.org/10.1007/s10940-017-9344-y>

<https://hdl.handle.net/2144/35984>

"Downloaded from OpenBU. Boston University's institutional repository."

PLACE AND PUNISHMENT: THE SPATIAL CONTEXT OF MASS INCARCERATION

ABSTRACT

OBJECTIVES: Research on race and urban poverty views incarceration as a new and important aspect of social disadvantage in inner-city neighborhoods. However, in quantitative studies of the spatial distribution of imprisonment across neighborhoods, the pattern outside urban areas has not been examined. This paper offers a unique analysis of disaggregated prison admissions and investigates the spatial concentrations and levels of admissions for the entire state of Massachusetts.

METHODS: Spatial regressions estimate census tract-level prison admission rates in relation to racial demographics, social and economic disadvantage, arrest rates, and violent crime; an analysis of outlier neighborhoods examines the surprisingly high admission rates in small cities.

FINDINGS: Regression analysis yields three findings. First, incarceration is highly spatially concentrated: census tracts covering 15 percent of the state's population account for half of all prison admissions. Second, across urban and non-urban areas, incarceration is strongly related to concentrated disadvantage and the share of the black population, even after controlling for arrest and crime rates. Third, the analysis shows admission rates in small urban satellite cities and suburbs comprise the highest rates in the sample and far exceed model predictions.

CONCLUSION: Mass incarceration emerged not just to manage distinctively urban social problems but was characteristic of a broader mode of governance evident in communities often far-removed from deep inner-city poverty. These notably high levels and concentrations in small cities should be accounted for when developing theories of concentrated disadvantage or policies designed to ameliorate the impacts of mass incarceration on communities.

KEYWORDS: incarceration; neighborhoods; race and ethnicity; poverty; spatial regression

1. INTRODUCTION

Under current conditions of historically high incarceration rates, researchers have observed that prison and jail inmates are drawn overwhelmingly from poor and minority urban neighborhoods (Cadora et al., 2003; Sampson and Loeffler, 2010; Travis et al., 2014: Chapter 10). In this context, the U.S. penal system has come to be viewed as a distinctively urban institution, closely connected to the lives of poor young men in American inner cities.

Despite work that broadens the scope of place in the study of punishment (Weidner and Frase, 2003; Eason, 2012; 2017), two main perspectives have emerged to explain the spatial character of incarceration. First, the *urban inequality perspective* observes that a small number of poor, contiguous neighborhoods in large urban cities experience very high incarceration rates, a pattern highly correlated with the spatial distribution of crime (Clear, 2007; Sampson and Loeffler, 2010; Travis et al., 2014: Chapter 10). A second, related, *social control perspective* also observes high rates of incarceration in poor neighborhoods in large American cities, but attributes this pattern to a process of social control and confinement of racial minorities who are residentially segregated and dislocated from mainstream social and economic opportunities (Alexander, 2010; Goffman, 2014; Garland, 2001; Wacquant, 2001). Two empirical assumptions follow from these theoretical perspectives. First, incarceration will be significantly associated with socio-economic disadvantage in urban neighborhoods even after taking account of the spatial distribution of crime. Prior research often finds that poverty, race, crime, and incarceration are highly correlated, but few studies have assessed the inequalities in incarceration after controlling for the spatial distribution of crime. A second implication is that prison admissions largely originate from poor and segregated urban neighborhoods within metropolitan areas.

The analysis provided in this article calls attention to rates of prison admissions in small cities and suburbs that have been largely overlooked by researchers. Earlier quantitative work relies on single, large-city case studies and neglects incarceration in tertiary cities and suburbs. Thus, excluding county-level studies (Weidner and Frase, 2003; Subramanian et al., 2015; Keller and Pearce, 2016) or research on rural prison communities (Eason, 2017), the urban character of mass imprisonment has become a substantive assumption built into the study of local rates of imprisonment. The picture that comes out of this research can mislead scholars and policymakers who might be given the impression that mass incarceration is best understood through close examination of the conditions of disadvantaged neighborhoods of large American cities. My analysis of prison admissions for the state of Massachusetts suggests a need for shifting the focus on mass incarceration in America from *deep inner-city poverty* to a broader conceptualization of *disadvantaged urban and suburban areas*. A main goal of this paper is to study the full distribution comprising the spatial context of mass incarceration, rather than truncate the sample to a single city or community area. In doing so, this paper offers a spatial analysis of mass imprisonment in its full geographic extent—an institution unconstrained by city boundaries.

The paper is structured as follows. I present the first broad demographic approach to study the links between place and punishment. Regression models estimate prison admissions in census tracts, accounting for crime and socio-economic disadvantage across an entire state. To do so, I analyze a rare dataset of prison admissions for the state of Massachusetts (2009–2014), providing a complete map of the spatial distribution of incarceration in large cities, suburbs, satellite cities, and rural towns. Findings indicate that prison admissions are related to conditions of extreme socio-economic disadvantage in urban places, but the analysis calls into question the idea that concentrated imprisonment is solely experienced in the core of disadvantage in large

cities like Boston. Findings show the *highest* prison admission rates are located in small cities and suburbs with populations under 90,000, where high levels of imprisonment are the norm. These findings point to important new places for studying the local conditions of formal social control.

2. EXPLAINING THE SPATIAL PATTERN OF PRISON ADMISSIONS

The spatial distribution of incarceration has attracted increased attention of policymakers and researchers (Morenoff and Harding, 2014). Criminal justice mapping by Cadora and collaborators shows in several major cities that prison admissions are drawn from a small number of “million-dollar blocks,” a stylized way to indicate a neighborhood’s share in a state’s prison budget (Spatial Information Design Lab, 2007). Clear (2007) refers to the handful of high-incarceration neighborhoods in Tallahassee as “prison places” (p. 68); Sampson and Loeffler (2010) call the small number of segregated, impoverished neighborhoods with very high incarceration rates in Chicago “punishment’s place.” These case studies have demonstrated the extreme spatial inequality of urban incarceration rates, but these general labels imply that community-level effects and conditions of mass imprisonment are felt entirely within large cities.

Excluding a few recent works (Eason, 2012; 2017; Keller and Pearce, 2016; Weidner and Frase, 2003), these studies of neighborhood imprisonment rates have been used as the main empirical evidence for understanding the relationship between neighborhood conditions and rates of imprisonment. Driven in large part by the contributions of urban inequality and social control scholars, researchers argue that incarceration became a facet of spatially concentrated disadvantage in urban neighborhoods marked by poverty, joblessness, population turnover, racial

segregation, heightened surveillance, and violent crime. The *urban inequality perspective* includes high imprisonment rates among the many social disadvantages spatially clustering within urban areas (Clear, 2007; Sampson, 2012; Goffman, 2014). In this description of urban inequality, concentrated disadvantage and, in particular, violent crime are the strongest predictors of neighborhood incarceration rates. In a recent examination of the association between incarceration and crime rates in Chicago community areas, the correlation is near unity (0.96), indicating there are virtually no high crime–low incarceration neighborhoods in the city of Chicago (Travis et al., 2014: Chapter 10). Scholars of urban inequality consistently find patterns of offending and arrest to be highly concentrated in poor and segregated urban areas (Peterson and Krivo, 2010; Sampson, 2012; Shihadeh and Steffensmeier, 1994; Shihadeh and Flynn, 1996; Stuart, 2016; Velez, Krivo, and Peterson, 2003). These inputs, or how people are brought into the criminal justice system through spatially organized policing, constitutes part of the spatial structure of the deep end of the criminal justice system: imprisonment. Further, the ecological structure of formal social control has been theorized to diffuse to surrounding neighborhoods, spilling over into contiguous areas and influencing patterns of criminal justice contact independent of the internal neighborhood context (Sampson, 2012). This spatial diffusion suggests that prison admissions will be highly spatially correlated in contiguous areas.

The urban inequality perspective describes a multifaceted urban ecology in which rates of incarceration and violence are highest in neighborhoods of concentrated disadvantage. The *social control perspective* provides a more explicitly causal account of the association between incarceration and social disadvantage. The social control perspective attributes the spatial concentration of incarceration to urban policing strategies aimed at controlling threats to social order—beyond violent crime—under historical conditions of the jobless ghetto. In this view,

mass imprisonment represents a regime of racialized urban poverty created through a series of shifts in sentencing policy and police practices directed at social problems associated with the urban poor (Garland, 1991; Beckett and Herbert, 2010). The public character of urban disorder led to the proliferation of codes and ordinances that criminalize the activities of poor city residents, framing urban homelessness, possession, drug use and vagrancy as matters of security and criminality (Anderson, 1990; Cohen, 1999; Dubber, 2001; Duneier, 1992; Herbert, 1997; Lynch et al., 2013; Mauer, 2006; Stuart, 2016; Tonry, 1995). Hot spots policing (see Braga et al. 2012 for a review) and civil gang injunctions represent strategies aimed at particular locations to curb behaviors associated with urban marginality, such as gang activities deemed dangerous though not explicitly criminal (Hennigan and Sloane, 2013; O’Deane 2011). The pattern of concentrated incarceration emerged from the activities of police to govern urban social marginality beyond crime (Beckett and Western, 2001; Goffman, 2014; Kane, 2002; Lynch et al., 2013; Stuart, 2016).

These criminal and civil disorder codes, police practices, and economic blight fell upon the U.S. urban population, and as a result, many scholars either implicitly or explicitly defined the social problem of spatially concentrated incarceration entirely within the bounds of urban inequality. To illustrate, Goffman (2014) reflects, “the United States embarked on a new and highly punitive era in regard to poor communities of color—a profound change in how American society governs segregated urban areas and those living within them” (p. 195). As a result, this research program has mostly provided case studies of individual cities (e.g., Cadora et al., 2003; Clear, 2007; Sampson, 2012; Sampson and Loeffler, 2010; Travis et al., 2014). The urban focus of this research promotes an unstated assumption that modeling prison admissions and neighborhood disadvantage within large cities reflects most of the variation in the spatial

distribution of penal confinement. Implicitly, contemporary incarceration is thus confined to urban areas. By limiting samples to large urban cities, scholars truncate the distribution of concentrated disadvantage and obtain potentially biased estimates of the social disadvantage-incarceration association. While prior research has demonstrated the role of major urban cities in mass imprisonment as a matter of crime and conditions of concentrated disadvantage, little scholarly work has examined whether contemporary spatial patterns of imprisonment outside major urban cities are explained by crime alone, or whether other factors must be examined as well.

Theorizing Place and Punishment Beyond the Urban Core

Recent research has begun to examine patterns of punishment beyond large cities. Eason's (2012; 2017) research on what he calls the "rural ghetto" brings places outside of the urban core into focus within the study of the prison: he argues that the rural ghetto is a critical mechanism driving prison proliferation (Eason 2010; 2012; 2017). In particular, his work draws a link between the prison, deep and systemic poverty, race and stigma to explain the consequences of expansive proliferation in impoverished rural areas. Rural ghettos, much like urban ghettos, are comprised of stigmatized areas with high levels of racial segregation and poverty. Other recent work supports further inquiry into spatial patterns of imprisonment outside of large cities. A 2015 report by the Vera Institute found that the growth in the U.S. jail population between 1970 and 2014 has been driven by the growth of jails in small counties (population less than 200,000), while the share of the U.S. jail population in the largest counties has declined (Subramanian et al., 2015). A 2016 article published in the *New York Times* based on work by John Pfaff showed profound levels of incarceration in non-urban or less populous

counties (Keller and Pearce, 2016). Considering these and Eason's crucial contributions to the study of the spatial distribution of criminal justice institutions into rural areas, other important questions remain. Do prison admissions spatially concentrate in rural areas? What conditions of other localities such as isolated, urban satellite cities or suburbs explain high levels of incarceration in these areas?

The experience of poverty and social marginality in rural, suburban and smaller urban areas may take unique forms as compared to large metropolitan cities. Suburbs and rural areas experience a dearth of organizations, particularly poverty-oriented social programs (Murphy and Wallace, 2010; Burton et al., 2013). Drug use and violent crime, and the policing of such activities outside of the urban core, is a relatively new phenomenon facing rural, suburban and small city areas. Methamphetamine use and production has been found to be greatest in rural areas and small cities with high numbers of young, low-income whites (Dobkin and Nicosia, 2009; Gruenwald et al., 2010; Garriott, 2011; Mauer, 2013; Reding, 2010). In Massachusetts, a recent uptick in opioid related deaths has brought significant attention to drug trafficking, with local news heavily covering opioid drug enforcement in smaller cities and suburbs (Kalter, 2016; Planas, 2016; Grillo and Gawley, 2016; Dwyer, 2016; Fraga, 2016). As one police spokesperson from Chicopee, Massachusetts, a suburb of Springfield with a population of about 50,000, recently stated after a major heroin bust in October 2016: "The more we can confiscate, the more dealers we can arrest, we understand that it will help save lives. That's our goal to save lives and to get this stuff off the street" (Planas, 2016).

While urban violence rates have historically far exceeded rural and suburban rates (Clinard, 1944; Steffensmeier and Jordan, 1978; Bureau of Justice Statistics, 2012), this disparity has recently decreased dramatically across the United States (Blumfield, 2006). By 2011, urban

areas had a violent crime rate of 27.4 per 1,000 inhabitants, while the rate for suburban and rural places was about 20 per 1,000, representing a closing gap that less than ten years prior was nearly twice as large (Bureau of Justice Statistics, 2012). The increases in crime and drug use in suburbs, rural towns, and smaller urban cities can be explained by shifts in population and the economy of small cities and suburbs in the latter part of the 20th century (Bacon and Chen, 2013). While some larger cities like Boston have partially recovered from economic decline driven by deindustrialization (Glaeser, 2011), the smaller working-class cities in New England, the Northeast and Midwest continue to experience decline (Bacon and Chen, 2013). In addition, the suburbanization of poverty and rapid central city gentrification represents a significant shift in the geography of social inequality (Kneebone and Berube, 2013; Murphy, 2007). But in addition to economic blight, these areas point to new sites for investigating racial threat and formal social control beyond the conditions of inner-city neighborhoods. For example, prosecutors from less populous counties have been shown to pursue harsher sentences, particularly in the latter part of the prison boom, than their urban counterparts (Pfaff, 2015; Subramanian et al., 2015).

What differentiates these areas from large urban cities like Boston or Chicago is not their demography or levels of concentrated disadvantage; in fact, many of these small cities experience very similar conditions of poor inner-city neighborhoods. Rather, their uniqueness is their continued and growing role in the persistence of mass incarceration and socio-economic decline. In 1973, Boston accounted for nearly half of all admissions to prison despite only accounting for about 18 percent of the state's population. By 2014, about 18 percent of the prison population came from Boston, though the city population has remained stable since 1970s. Tertiary cities account for the vast majority of prison admissions today, but this is historically

new. While these trends have recently received scholarly attention, studies of the spatial pattern of incarceration beyond large-city case studies (Subramanian et al., 2015; Keller and Pearce, 2016) have to date only provided a descriptive account without a statistical model considering a variety of community-level conditions (e.g. arrest and violent crime rates, concentrated disadvantage, segregation).

Going beyond earlier research on the spatial distribution of incarceration relies on two innovations. First, I specify a model that writes spatial variation in prison admissions as a function of crime, concentrated disadvantage, minority concentration, and spatial conditions. Second, I estimate this model with spatial data disaggregated to census tracts, with the explicit inclusion of all municipalities across urban and non-urban areas. The urban inequality and social control perspectives would hypothesize that even in a statewide analysis, the overwhelming majority of places marked by extreme levels of prison admissions should be not only in major cities, but be significantly limited to poor, segregated neighborhoods within them. I test these hypotheses by analyzing statewide prison admission data from Massachusetts. This analysis unifies a fractured literature that identifies a strong relationship between the conditions of urban life and imprisonment on the one hand, and the proliferation of penal institutions and rural poverty on the other. Indeed, mass imprisonment was a broad mode of governance affecting isolated post-industrial satellite cities, rural towns, declining suburbs, and inner city neighborhoods. Across the spatial spectrum, I explore how local conditions shape prison admission rates in the wake of a broadening spatial distribution of social and economic disadvantage, particularly in the twilight of the prison boom. Taken together, a statistical model using disaggregated data across the spatial distribution (as opposed to a single city or community area) can more accurately assess the model put forth by urban inequality and social control

scholars, while attending to potential outliers or places largely unexamined by the mass incarceration literature.

3. THE SPATIAL DISTRIBUTION OF INCARCERATION IN MASSACHUSETTS

The incarceration rate in Massachusetts is low compared to the national average but, similar to the national trend, the rate of imprisonment has grown substantially over the last four decades. In 1978, the incarceration rate in Massachusetts was about 50 per 100,000 inhabitants. By 2015, the incarceration rate had risen to 146 per 100,000, declining from a historic peak of 192 in 1997 (Bureau of Justice Statistics, 2013; 2017).

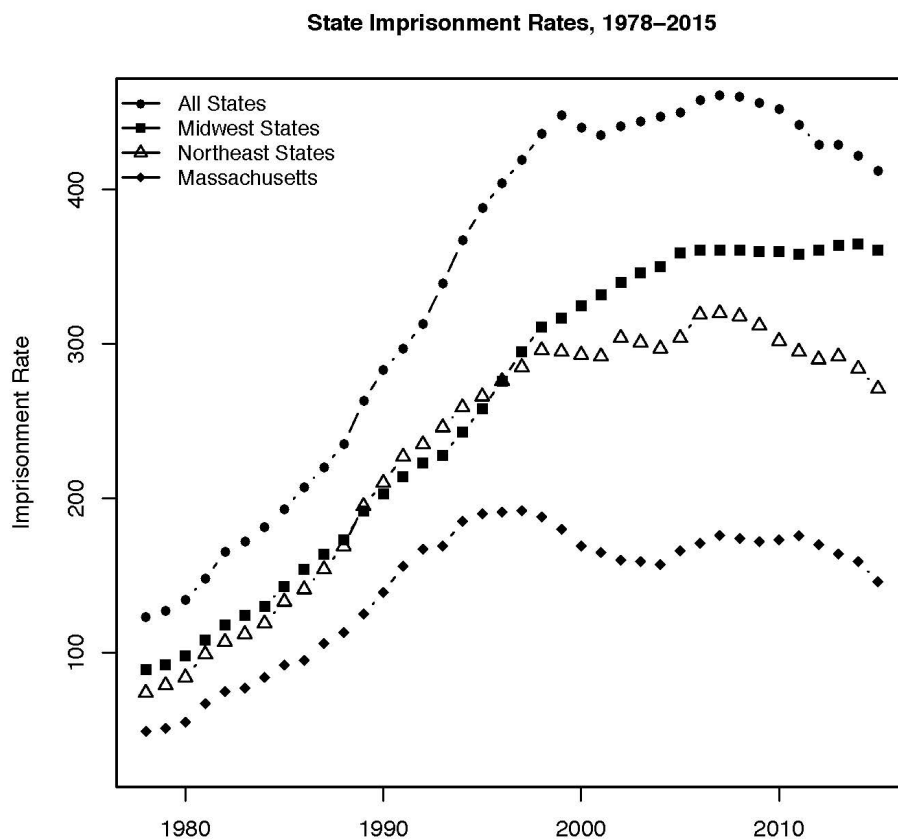


Figure 1. Imprisonment rates in state jurisdictions per 100,000 inhabitants, 1978–2015. Source: Carson and Mulako-Wangota, Bureau of Justice Statistics.

Figure 1 displays this growth from 1978 to 2015, demonstrating the precipitous increase in the rate of imprisonment through the 1980s and 1990s, following the national trend. In many respects, Massachusetts's penal history in the context of twentieth century industrialization is typical of prison systems of the Northeast and Midwest (Jacobs, 1977; Rothman 2002).

While Massachusetts maintained a relatively low rate of imprisonment in comparison to national standards, racial and ethnic disparities in Massachusetts are higher than the national average. In 2013, the black to white ratio of imprisonment rates in Massachusetts was 7.5 compared to a national black-white ratio of 5.1 (Nellis, 2016). Massachusetts has the highest Hispanic to white ratio of incarceration in the nation, 4.3, in comparison to a national ratio of 1.4 (Nellis, 2016). Muller and Wildeman (2016) find that Latino children had a relatively high risk of having a parent imprisoned in the Northeast. The high racial disparities given the state's small black and Hispanic populations—6.4 percent and 9.5 percent respectively—are consistent with Bridges and Crutchfield's (1988) findings that racial disparities are higher where the minority population is predominantly urban and a small percentage of the total state population.

I study the spatial distribution of incarceration with data on all prison admissions to Massachusetts state prisons for 2009–2014, a six-year admission rate. Figure 2 displays a map of prison admission rates in Massachusetts cities and towns. Admissions indeed cluster within the three largest cities: Boston, Worcester, and Springfield. These cities account for 14.5 percent of the state's population (U.S. Bureau of the Census, 2010b), but 34 percent of the state's prison admissions. Prison admission rates are high in the impoverished small cities around Boston such as Lawrence and Brockton, as well in the southeast in the cities Fall River and New Bedford. This map describes a pattern of high prison admission rates within a wide range of local contexts, from large metropolitan cities, outward to suburbs and satellite cities. Moreover, it

indicates the extreme spatial concentration of incarceration, where whole sections of the state contain little to no prison admissions. The average prison admission rate in Massachusetts's census tracts is 2.7 per 1,000 residents, but in Boston, the average tract has a rate of 4.5. In several other cities, the rates are much higher: in Springfield, the average census tract had a prison admission rate of 9.7 per 1,000, and in Pittsfield, the average tract had a six-year prison admission rate of 9.9 per 1,000 residents. This initial descriptive account of the statewide pattern of prison admission rates across a diverse set of municipalities show the broad range of spatial contexts in which high incarceration rates may arise.

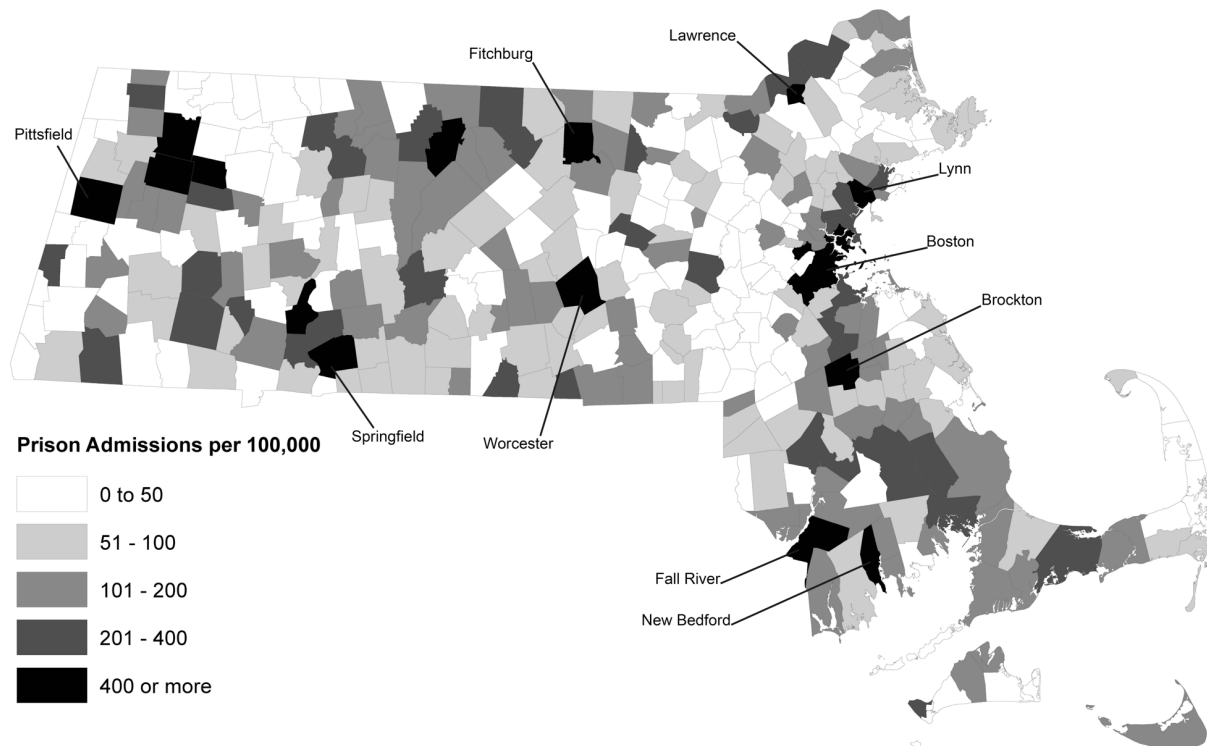


Figure 2. Prison admissions per 100,000 inhabitants in Massachusetts cities and towns, 2009–2014.

How do admission rates vary across localities? Table 1 displays low, medium and high prison admission rates in Massachusetts census tracts within the ten cities with the highest six-year prison admission rates (2009–2014). The admission rate is the number of people residing in a tract who were sentenced to state prison in 2009–2014 for a new criminal court commitment per 1,000 inhabitants. There were 14,339 prison admissions in Massachusetts during the study period. While the cities reported in Table 1 account for 23 percent of the Massachusetts population, they account for 53 percent of prison admissions. Disaggregating further to the level of tracts shows that neighborhoods containing just 15 percent of the state’s population account for over half (52 percent) of all prison admissions.

Table 1. Percentage distribution of prison admission rates for Massachusetts selected cities and towns, 2009–2014.

	Admission Rates (per 1,000)			Admission	
	Low	Medium	High	Count	<i>N</i> tracts
Massachusetts	25.0	50.0	25.0	14,339	1359
Boston	8.3	40.4	51.3	2,564	156
Worcester	14.6	29.3	56.1	865	41
Springfield	2.9	8.6	88.5	1,420	35
New Bedford	.0	25.8	74.2	514	31
Fall River	4.4	13.0	82.6	482	23
Lynn	.0	27.3	72.7	465	22
Brockton	.0	14.3	85.7	513	21
Lawrence	.0	.0	100.0	525	18
Pittsfield	.0	50.0	50.0	286	12
Fitchburg	10.0	20.0	70.0	181	10

Note: The first three columns display the percentage distribution of tracts within each admission rate range. Low, medium and high levels correspond to prison admission rate terciles for the state: low = .5 per 1,000 residents or fewer; medium = .5 to 3.2 per 1,000 residents; high = more than 3.2 per 1,000. The fourth column is the total prison admission count for the given geographical area, and the fifth column is the number of census tracts in the geographic area.

Table 1 reveals high prison admission rates outside of large cities. Roughly a quarter of Massachusetts census tracts have a prison admission rate in the highest tercile of the distribution. About twice the portion of Boston census tracts (51.3 percent) experienced this high rate of prison admission. However, in many other cities reported, high rates of admission are the norm. In the former manufacturing and textile mill towns of Lynn and New Bedford, over 70 percent of census tracts fall in the highest tercile of prison admissions in the state. All 18 census tracts in Lawrence, and over 82 percent of tracts in Fall River, Brockton, and Springfield experience the highest rates of prison admission in the state. The top one percent of prison admission rates in tracts has rates of 16 to 46 per 1,000 in the six-year study period (2009–2014). Of the thirteen census tracts comprising the 99th percentile in prison admissions, eleven are found in tertiary cities and suburbs; two tracts are in Boston. The average population is smaller in these census tracts (2,486 as compared to 4,788 average for the entire sample), which may partially explain very high prison admission rates in smaller city census tracts.

The cities with populations at or below 90,000 displayed in Table 1 (New Bedford, Fall River, Fitchburg, Lynn, Brockton, Lawrence, and Pittsfield), experienced dramatic shifts in economic conditions since 1960, including rapid growth in poverty during that time period (Bacon and Chen, 2013; Foreman et al., 2007). Compounding economic decline with consistently low educational attainment among residents and high rates of population turnover, these small towns in many ways typify urban decline, and yet are geographically isolated, resource deprived, and demographically distinct from major metropolitan cities. The Massachusetts Executive Office of Housing and Economic Development named these places “gateway cities” in an effort to draw attention to small and medium sized cities experiencing

severe economic decline (Foreman et al., 2007). Finally, note that nearly half of the state prison admissions (47 percent) came from places outside of the cities reported in Table 1.

4. METHODS AND DATA

To test hypotheses outlined in the social control and urban inequality perspectives, the analysis writes census tract-level prison admission rates as a function of local crime rates, drug arrest rates, spatial dependence in prison admissions, and other social and economic predictors. For census tract i , I fit the following regression to the count of prison admissions, Y_i ,

$$\log \hat{Y}_i = \log P_i + \beta_0 + \beta_1 \log \bar{y}_i + \beta_2 \log C_i + \beta_3 \log A_i + \beta_4 N_i + \mathbf{r}_i' \beta_5 + \mathbf{s}_i' \beta_6,$$

where the regression contains an offset term for the tract total population, P , and thus the coefficients can be interpreted as the association of the predictors with the log admission rate (e.g. McCullagh and Nelder, 1989: 199). Predictors include a spatial lag, \bar{y} , a measure of crime, C , a measure of arrests, A , a concentrated disadvantage factor regression score, N , a vector of racial and ethnic characteristics, \mathbf{r} , and a vector of spatial characteristics, \mathbf{s} . Because prison admissions represents counts of individuals incarcerated in a given tract and are distributed with substantial over-dispersion, prison admissions were fit with negative binomial regressions (Long, 1997). This over-dispersed model tends to increase standard errors as compared to the Poisson regression (Berk and MacDonald, 2008).

The spatial lag, \bar{y} , records the average log admission rate in contiguous census tracts. A Moran's I score of 0.30 ($p < .001$) for tract-level prison admissions indicates significant spatial autocorrelation. I hypothesized that the spatial organization of formal social control will induce a

correlation among contiguous tracts net of other predictors. Similar to lagged dependent variables in time series analysis, the spatial lag coefficient indicates the correlation of neighboring prison admissions net of other predictors in the model.

In the urban inequality perspective, prison admissions are clustered in high-crime areas. The analysis estimates the effects of crime C , with two measures of violence. Detailed below, violent crime measures include data from the National Incident-Based Reporting System, the Boston Police Department, and the FBI Uniform Crime Reports. The analysis checks the sensitivity of estimates to alternative measures of violent crime and to different subsets of the data.

In the social control perspective, prison admissions are strongly related to a pattern of policing, beyond patterns of crime. The analysis estimates the effects of drug arrests, A , on rates of prison admissions, and these data were derived from the National Incident-Based Reporting System and Boston Police Department arrest records.

The predictors measuring concentrated disadvantage, N , and racial minority concentration, r , are motivated by prior research both in the urban inequality and social control perspectives, and test for the presence of punishment beyond that attributable to crime within a given neighborhood context. Measure of racial, ethnic and immigrant composition include the proportion non-Hispanic black, Hispanic, Non-Hispanic Asian, and the proportion foreign born.

Finally, the spatial characteristics of tracts, s , record two separate measures relating to urbanicity and residential instability. Residential instability is measured as the proportion new residents in the tract (see Hipp and Boessen, 2012). Second, as derived from the theoretical discussion, the prison should draw overwhelmingly from Boston tracts. The analysis includes indicators of a tracts location in particular community areas to address this hypothesis,

identifying tracts in Boston, Greater Boston suburbs and cities, urban satellite cities, and other suburbs and rural towns.

The regressions should be interpreted as describing the spatial structure of prison admission and its relationship to crime and socio-economic disadvantage. One feature of this analysis is an examination of outliers and model fit. Outliers in this case are substantively interesting because they may point to important places where social control is undertheorized. Following the regression analysis, I provide a discussion of model outliers and small census tracts making up some of the highest prison admission rates, mostly found in small Massachusetts cities.

Regression analysis of the spatial distribution of incarceration across urban and non-urban places is based on a unique dataset constructed from Massachusetts prison records. Corrections data provided by the Massachusetts Department of Correction (DOC) include the last known street address for anyone committed to the state prison system for a new criminal offense from January 1, 2009 to December 31, 2014.¹ The analysis is restricted to those who were previously living at a Massachusetts address, and therefore removes anyone admitted who reported their last known address in other states or countries. The prison record data required significant data cleaning, and two percent of the admissions address data were erroneous or missing (323 out of 14,663 prison admission records). A portion of these missing or incorrect addresses may be due to admitted persons who were homeless or weakly tied to a single address; others may result from a refusal to report or data entry error. Subtracting these missing addresses yields 14,339 men and women admitted to Massachusetts state prison for a new court commitment during 2009–2014. Slightly more than one-quarter (27 percent) of the sample was convicted of a drug crime as their governing offense, and 11 percent were convicted of a

property crime. Over half (51 percent) of the admissions were for person or sex offenses, and 11 percent committed some other type of crime. Of those admitted for a new court commitment, 96 percent were male, and four percent were female. The data were geocoded using ArcGIS software, and all results and maps reported here display the data aggregated to census tracts. Following Sampson and Loeffler (2010), the six years (2009–2014) of prison admission data are pooled to increase variation and improve precision of admission rates at the census tract level. The six-year count of adults committed to state prison forms the dependent variable for this analysis.

To estimate the relationship between violent crime, drug arrest rates and prison admissions, the analysis uses three sets of crime data. First, a measure of tract-level violent crime was created merging data from the National Incident-Based Reporting System (NIBRS), provided by the Massachusetts State Crime Reporting Unit, and data from the Boston Police Department (BPD). The NIBRS data provided included all Part I violent crimes² (murder and non-negligent manslaughter, forcible rape, robbery and aggravated assault) known to police agencies participating in the NIBRS data program. Because data were provided at the address level, they were geocoded to yield tract-level crime rates. In order to include Boston in the analysis, additional data mirroring the NIBRS data was gathered from the BPD (Boston does not participate in NIBRS). In addition to a measure of violent crime, the Massachusetts Crime Reporting Unit provided a measure of drug arrest data, also at the address level, for the 302 agencies that participate in the NIBRS reporting program. The BPD provided data identical to the NIBRS measures. These combined data, violent crime and drug arrest rates per 1,000 inhabitants, are observed at the census tract level for 93 percent of census tracts in Massachusetts.

A second measure is a municipal violent crime rate (complaints of violent crime per 100,000 residents) from the 2008 Uniform Crime Reports (UCR); thus, each census tract is assigned its respective city violent crime rate.³ The UCR violent crime rate includes murder and non-negligent manslaughter, forcible rape, robbery and aggravated assault (limited to Part I crimes to mirror the tract-level crime measure). Data are missing for 192, or 14 percent of all census tracts, though the UCR data provides coverage of all major municipalities and central cities in Massachusetts. Ideally for this model, crime should be measured at the level of the census tract, not the municipality; thus the city-level UCR crime rate measures crime in census tracts with error. On average there are 6.5 census tracts within a municipality, (SD = 14.3). Measurement error due to aggregation tends to attenuate the estimated effects, in this case—of violent crime.

Data from the 2005–2009 American Community Survey are used to measure the demographic and socio-economic characteristics of census tracts (U.S. Bureau of the Census, 2010a). To measure concentrated disadvantage in tracts, I conducted a principal component analysis of five key measures of concentrated disadvantage in neighborhoods (Sampson et al., 1997; Wodke et al., 2011): the proportion of families living in poverty, the proportion of civilians age 16 and over who are unemployed, the proportion of female-headed family households, the proportion of individuals over the age of 25 without a high school degree, and the proportion of households receiving public assistance. Consistent with prior research, these poverty-related conditions are highly correlated and load on the same factor (see Table 2). With an eigenvalue greater than 3, the first factor is dominated by high loadings (>0.75) for family poverty, female-headed households, low educational attainment, and public assistance receipt. I

calculated a factor regression score that weights each variable by its factor loading, and joined this measure to the associated census tract.

Table 2. Orthogonal rotated factor pattern of concentrated disadvantage in Massachusetts census tracts.

Variable	Factor
Family poverty	0.85
Adults less than HS degree	0.77
Female-headed family households	0.84
Civilians unemployed	0.63
Households with public assistance income	0.90

Note: Reported loadings >0.60. Data are from the 2005–2009 American Community Survey.

Table 3 reports descriptive statistics of the variables used in regression analyses of prison admission rates and describes the social and economic characteristics of Massachusetts census tracts. The tract-level violent crime rate in census tracts averages 4.7 per 1,000, and the tract-level drug arrest rate in census tracts is 3.3 per 1,000 inhabitants. The average municipal violent crime rate for each municipality is 585 per 100,000 persons. The non-Hispanic black population averages 6.4 percent in the sample and is lower than the national percentage, which is 12.6 percent (U.S. Bureau of the Census, 2010b). Similarly, the average Hispanic population within census tracts is 9.5 percent, which is 6.7 percentage points less than the national percentage (U.S. Bureau of the Census, 2010b). On average, one quarter of a tract’s population identified as having recently moved into the tract.

Table 3. Social and economic characteristics of Massachusetts census tracts used in regression analysis of prison admission rates, 2009–2014.

	Mean	Median	S.D.
Tract violent crime rate (per 1,000)	4.7	2.2	6.6
Tract drug arrest rate (per 1,000)	3.3	1.7	5.9
UCR violent crime rate (per 100,000)	585.4	374.3	493.4
Concentrated disadvantage (score)	0.0	-0.4	1.0
Family poverty (%)	8.7	4.4	11.1
Adults less than HS degree (%)	13.1	9.2	11.4
Female-headed family households (%)	25.5	20.5	18.4
Civilians unemployed (%)	7.2	5.9	5.1
Households with public assistance income (%)	16.0	8.8	18.3
Foreign born (%)	14.7	11.4	11.5
Hispanic (%)	9.5	3.6	15.2
Non-Hispanic black (%)	6.4	1.9	12.6
Non-Hispanic Asian (%)	4.8	2.4	6.7
New residents (%)	24.7	22.3	11.6

Note: Units are census tracts. $N=1359$.

Table 4 describes the key spatial indicators for various types of localities in the state. Regional indicators are used to contextualize tract-level prison admission rates in regression analyses. Tracts are indicated as residing in the following regions of the state: (1) Boston, (2) Greater Boston suburbs and towns, (3) urban satellite cities outside Greater Boston, and (4) suburban and rural towns outside Greater Boston. For the analysis, Boston serves as the reference category.

Table 4. Regional distribution of Massachusetts census tracts used in regression analysis of prison admission rates, 2009–2014.

Variable	%
Boston	11.5
Greater Boston	17.3
Urban satellites	20.8
Suburbs and rural towns	50.4

Note: Units are census tracts. $N=1359$.

About 12 percent of tracts are in Boston, and 17 percent are part of Greater Boston suburbs and towns. Twenty percent of the rest of the state’s census tracts reside in urban satellites outside of Greater Boston. Half of Massachusetts tracts are suburbs or rural towns surrounding the state’s urban satellites and extending beyond Greater Boston. These measures will allow the analysis to directly test in a statewide analysis how localities vary in prison admissions in comparison to Boston.

5. REGRESSION ANALYSIS

Table 5 shows the results of negative binomial regression models of statewide prison admissions on measures of socio-economic disadvantage, racial segregation, arrests, and crime. Models were determined by the type of crime and arrest data used for the analysis: Model 1 uses the combined violent crime and drug arrest data from NIBRS and Boston Police Department, Model 2 uses the municipal violent crime data from the UCR, and for comparison, Model 3 produces Model 1 in the joint crime data sample coverage. The results of each of the three models show that concentrated neighborhood disadvantage such as poverty, unemployment and low schooling among adults, and the non-Hispanic black population are associated with higher rates of prison admissions, net of arrest rates and multiple measures of crime. These results offer some support for hypotheses linking formal social control efforts to the spatial concentration of social and economic disadvantage, net of the local conditions of crime and arrest.

Table 5. Negative binomial regression analysis of log prison admission rates in Massachusetts census tracts, 2009-2014.

	Tract-level Crime and arrests	Municipal-level crime rate	Tract-level data in joint coverage
	(1)	(2)	(3)
Log tract violent crime rate	0.52*** (11.66)	- -	0.50*** (10.77)
Log tract drug arrest rate	0.10** (2.74)	- -	0.12** (3.07)
Log municipal crime rate	- -	0.15*** (5.85)	- -
Concentrated disadvantage	0.27*** (7.62)	0.46*** (13.64)	0.25*** (6.98)
Foreign born	-0.34 (1.31)	0.34 (1.26)	-0.36 (1.42)
Hispanic	0.22 (1.11)	0.14 (0.71)	0.28 (1.41)
Non-Hispanic black	0.81*** (4.53)	1.31*** (6.84)	0.86*** (4.80)
Non-Hispanic Asian	-1.44*** (4.17)	-1.53*** (4.11)	-1.37*** (3.99)
New residents	0.69** (3.05)	1.49*** (6.35)	0.66** (2.91)
Greater Boston	0.31*** (3.71)	0.10 (1.13)	0.31*** (3.74)
Urban satellites	0.51*** (7.02)	0.50*** (6.47)	0.51*** (7.14)
Suburbs and rural towns	0.11 (1.28)	0.17† (1.82)	0.13 (1.53)
Log \bar{y}	0.23*** (4.65)	0.21*** (3.91)	0.23*** (4.54)
Constant	-7.80*** (60.85)	-8.11*** (38.81)	-7.78*** (59.49)
Pseudo R ²	69.8	62.2	69.9
Population coverage (%)	92.6	85.6	80.6
N census tracts	1,259	1,163	1,096

Note: Absolute z-statistics in parentheses. Significance codes: ***p<0.001 **p<0.01 *p<.05 †p<.10.

Model 1 indicates the close association between prison admissions, crime, race, and poverty. The crime coefficient indicates a one percent change in the log violent crime rate is

associated with over half a percentage point (.52) increase in the expected admission rate, showing that high crime tracts have significantly higher rates of prison admission. A one percent change in the log drug arrest rate in tracts is associated with a .1 percent increase in the expected admission rate.

Concentrated neighborhood disadvantage is strongly associated with prison admissions. In Model 1, net of crime, arrest and prison admission spatial autocorrelation, a one point increase in neighborhood disadvantage is associated with a 31 percent increase in the admission rate ($\exp[.27]=1.31$). Residential instability, or the proportion of the tract that are new residents, is significantly related to higher prison admissions. Model 1 also indicates the positive association between prison admissions and the non-Hispanic black population of tracts, net of other controls. In Model 1, two hypothetical census tracts that differ by 20 percentage points in the share of the black population would differ on average by 18 percent in prison admissions ($\exp[.2 \times 0.81] = 1.18$). The positive association between these racial characteristics of neighborhoods and imprisonment supports the social control hypothesis that the presence of racial minorities is associated with greater prison admissions, controlling for multiple measures of crime, concentrated disadvantage, and spatial autocorrelation in prison admissions. The proportion of Hispanics and foreign born populations in a tract is not associated with prison admissions, but prison admissions are significantly lower as the proportion of a given tract's non-Hispanic Asian population increases.

Beyond the patterns of crime and socio-economic disadvantage, the results also show that imprisonment is spatially clustered. The spatial autocorrelation for Model 1 indicates a one percent increase in the log average prison admission rate of contiguous tracts is associated with a .23 percent increase in a given tract's expected admission rate. In this statewide analysis, all

three models indicate significant spatial autocorrelation net of crime, socio-economic and racial characteristics of tracts. These results offer evidence for the diffusion of punishment, suggested by the urban inequality perspective—an ecological condition of social control that cannot be fully explained by the internal characteristics of a neighborhood.

A set of regional spatial dummies indicates whether or not a tract resides in one of four key areas: Boston (omitted as reference category), Greater Boston, urban satellite cities of Massachusetts, and suburbs and rural towns. Model 1 indicates that tracts in both Greater Boston suburbs and towns as well as urban satellites have significantly higher rates of prison admissions than those found in Boston. In this model, suburbs and rural towns outside of Greater Boston do not show higher rates of admissions as compared to Boston.

Expectedly, Model 2 using the municipal-level measure of violent crime shows smaller effects of crime on prison admissions than the tract level measures, likely due to the bias introduced by aggregation. In Model 2, a one percent change in log municipal violent crime rate is associated with a .15 percent increase in the expected rate of prison admissions. Because crime is measured in this model at the municipal level, we interpret this finding to suggest cities and towns with the highest rates of violent crime are predicted to produce the highest rate of prison admissions in tracts. As in the first specification, concentrated disadvantage and the non-Hispanic black population are significantly associated with higher prison admissions. In the absence of a tract-level measure of crime, Greater Boston tracts are not significantly higher in prison admissions than Boston, but suburbs and rural towns show a slightly ($p < .10$) higher rate than in Boston. Urban satellites also have significantly higher rates of prison admissions than Boston according to Model 2.

To compare sample differences, I report additional estimates confining the analysis to tracts in which both UCR and tract-level data are available—80 percent of tracts in Massachusetts. Analyzing the joint coverage of tracts with the NIBRS-BPD crime and arrest data (Model 3) yields very similar results to Model 1. Concentrated disadvantage, drug arrest rates, violent crime, and the non-Hispanic black population in tracts are all positively and significantly associated with prison admissions in Model 3. Similarly to Model 1, Model 3 reports that tracts found in Greater Boston suburbs and towns and urban satellites have significantly higher prison admissions than Boston tracts.

In sum, the regression analysis offers strong evidence of the link between race, crime, concentrated disadvantage and prison admissions. The results show prison admissions spatially concentrate in highly disadvantaged minority tracts and within high-violent crime municipalities and neighborhoods with heightened levels of arrests for drug crimes. There is substantial spatial structure in all models, net of concentrated disadvantage, crime, and residential instability. Places with high crime and drug arrest rates report significantly higher prison admissions rates. The strong association between prison admissions and the non-Hispanic black population shows that in all spatial contexts in the state, the presence of African Americans strongly predicts the spatial pattern of prison admissions. Significant to the theoretical discussion is that in a statewide analysis of tract-level prison admissions, isolated urban satellite cities, and suburbs and towns surrounding Boston show higher levels of prison admissions than Boston, net of a variety of tract conditions. The following section explores Model 1 to understand the distribution of predicted and observed prison admissions.

6. ASSESSING PRISON ADMISSION RATE OUTLIERS

Although regression estimates show incarceration is closely associated with race and poverty, we can learn more about the utility of the theory across geographic space by studying outliers.

Outlier analysis allows us to study the goodness of fit in a qualitative way. Here, I examine the regression residuals from Model 1, the model with the broadest population coverage. Figure 3 displays a plot of observed and predicted prison admission rates with each unit (census tract) indicated by circles drawn in proportion to the size of the city population in which the tract resides.

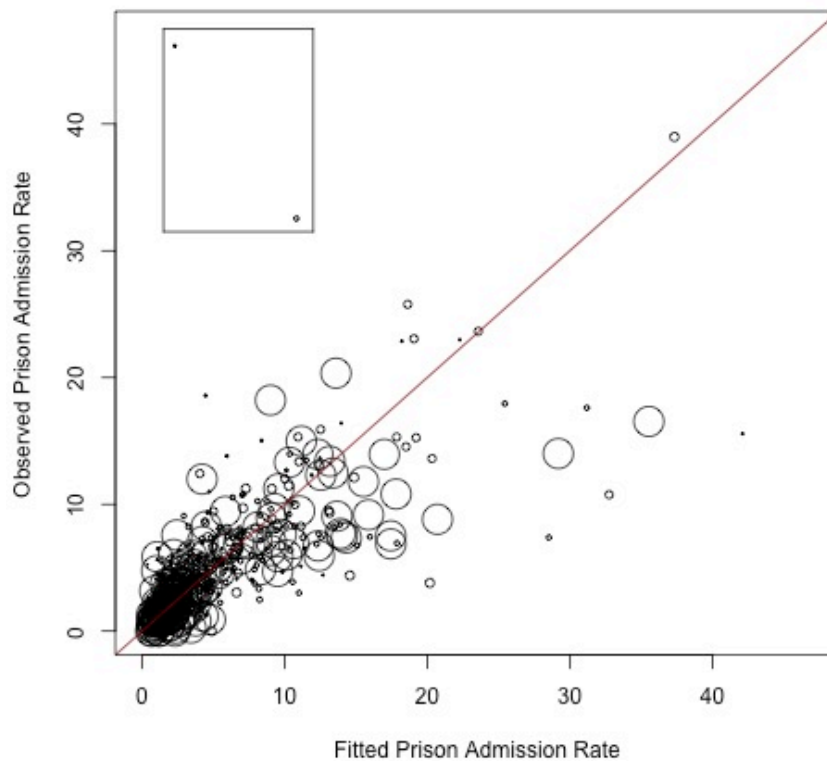


Figure 3. Observed prison admission rates against fitted prison admission rates from Model 1 regression results of log prison admissions in Massachusetts census tracts, 2009–2014. Circles drawn in proportion to the population size of the city where the tract resides.

The residual plot shows two tracts with large positive residuals (and thus very high observed admission rates) drawn from small cities (Fall River and Pittsfield). Notably, negative residuals, where imprisonment is over-predicted, tend to cluster in the three largest cities in Massachusetts, particularly Boston. In other words, some census tracts with social conditions associated with prison admissions—crime, large black populations, and concentrated disadvantage—have prison admission rates much lower than expected. However, if we only considered Boston tracts, this study would not observe the highest rates of incarceration in the state.⁴ From observations in this residual analysis and findings in the regression analysis, it appears “prison places” emerge from a diverse set of communities, many of which have not been studied by researchers. From this regression diagnostic, we can observe that indeed the model motivated by the theoretical discussion fits prison admissions well in many areas; what is surprising is how absent isolated tertiary cities are from discussions of place and punishment.

The outlier tracts in Model 1 with large positive residuals—where the model grossly under predicts the prison admission rate—are located in small satellite cities (Pittsfield and Fall River, populations 44,057 and 88,857) where between 86 and 88 percent of the population is non-Hispanic white. The majority-white racial composition could explain why these tracts are not fit well by the model. These cities have relatively low poverty rates (about 17 percent), but nevertheless sustained significant economic collapse in the mid-twentieth century and have since not recovered (Bacon and Chen, 2013; Foreman et al., 2007). While substantial racial disparities remain in incarceration, white towns experiencing significant poverty, low education, and drug use may be important contexts of concentrated incarceration outside of the urban core.

7. DISCUSSION

Research on the spatial pattern of incarceration has mainly focused on poor inner-city neighborhoods, analysis has been largely descriptive, and few studies have strayed beyond case studies of metropolitan cities. A statewide analysis of the spatial distribution of prison admissions extends earlier research in three ways. First, I find evidence that prison admissions are profoundly spatially concentrated—far beyond what a single analysis of Boston neighborhoods would indicate. Ten cities account for over half of prison admissions during the study period though less than a quarter of the total state population, and the regression analyses show significant, localized spatial structure of prison admissions across Massachusetts. Indeed, over half of all prison admissions were drawn from tracts accounting for just 15 percent of the state’s population.

Second, the analysis indicates prison admissions are concentrated in communities characterized by concentrated disadvantage and the presence of racial minorities, particularly non-Hispanic blacks, even after controlling for different measures of crime, drug arrest, and spatial autocorrelation. The main empirical expectation that imprisonment clusters in poor minority communities is largely supported. Neighborhood crime and prison admissions were consistently associated after controlling for arrest rates, race, socio-economic, and spatial factors. The analysis offers strong evidence of community-level punishment in which a small number of poor, minority neighborhoods experience very high rates of imprisonment across the state that are not fully explained by the level of crime. In this analysis, rural communities do not experience very high levels of prison admissions; rather, small, satellite cities throughout the state and poor suburbs of Boston have the highest rates of imprisonment. The current theoretical

model presented by urban and social control scholars does not account for patterns of incarceration in these areas.

Third, an outlier analysis provides further evidence of high prison admission rates in small cities and suburbs. Smaller cities may be experiencing concentrated disadvantage like their large urban counterparts or, in some cases, experiencing entirely different social conditions, including majority non-Hispanic white populations with relatively low poverty rates. The outlier analysis suggests that in order to account for the highest incarceration areas in this state, which are found in spatially isolated suburbs and regional cities, a theory of the spatial context of incarceration must be broadened from one of deep inner-city poverty to one of disadvantaged urban and suburban areas.

While the results demonstrate a strong empirical association between prison admissions and neighborhood disadvantage, future research could usefully address limitations of measurement. Researchers could study intermediate stages of criminal processing such as filings, arraignments and sentencing that are more causally proximate to crime. The urban focus of previous research is driven in large part by a dearth of available prison or crime data at the geographic granularity of zip codes, tracts, or neighborhoods for all jurisdictions. Making data of this sort available to researchers could greatly expand the scope of analysis in studies of place and punishment.

The current study contributes to a growing body of research that analyzes social disadvantage and social control *with geographic variation* (Eason, 2017; Marrow, 2011; Murphy, 2007; Murphy and Wallace, 2010; Lichter et al., 2007; Sharkey, 2014). Extensions of this analysis could consider the historical changes in demography, economy, and policy that might explain the emergence of high-incarceration rates in the small cities identified as outliers.

A more complete explanation of the outliers may involve detailed analysis of regional deindustrialization, the suburbanization of poverty, rapid gentrification in large metropolitan cities, rural drug epidemics, the availability of treatment services, and the migration of minority and highly-surveilled immigrant groups to non-urban areas. More generally, 97 percent of cities in the U.S. have a population of fewer than 50,000 residents (Brennan et al., 2005), but they have largely been absent from theory and research on urban inequality and criminal punishment.

The results of this analysis suggest mass incarceration has broad effects on community life that extend beyond poor inner-city neighborhoods of large metro areas. If the concentration of incarceration among the most marginal members of society represents a type of social exclusion from full membership in American community life (Alexander, 2010; Goffman, 2014; Uggen and Manza, 2002; Wacquant, 2001; Weaver, 2007; Western, 2006), analyzing various forms of social disadvantage and formal social control entirely within metropolitan areas underestimates the inequalities associated with incarceration. An urban bias mistakenly suggests that deep social inequalities emerge only in inner cities, and that it is only within large cities that incarceration has its effects. In the perspective of the current analysis and the work of Eason (2012; 2017), imprisonment closely follows the contours of race, poverty, and other forms of disadvantage both in large cities and in the surrounding cities and towns that have become centers of regional economic decline, untreated health and social problems, and a punitive policy response.

NOTES

¹ The data has current institutional review board (IRB) approval from the Massachusetts Department of Correction and the author's institution.

² For this analysis, indicators of crime rates are limited to Part I crimes due to the availability of statewide data and desired consistency across datasets. The Massachusetts State Crime Reporting Unit and Boston Police Department only provided tract-level data on Part I violent crimes. Part I crimes are serious offenses likely to be reported to police agencies. As such, they tend to be higher quality than other types of official crime records.

³ This type of spatial joining is possible because all census tracts in Massachusetts fall within a municipality. This data is used to include a model containing tracts from Lawrence, Massachusetts, which does not participate in NIBRS.

⁴ The same outliers exist in all three models.

REFERENCES

- Alexander M (2010) *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: The New Press.
- Anderson E (1990) *Streetwise: Race, Class and Change in an Urban Community*. Chicago: University of Chicago Press.
- Bacon N and Chen X (2013) Introduction: Once prosperous and now challenged. In: Chen X and Bacon N (eds) *Confronting Urban Legacy: Rediscovering Hartford and New England's Forgotten Cities*. Lanham, MD: Lexington Books, pp. 1–18.
- Beckett K and Herbert S (2010) *Banished: The New Social Control in Urban America*. Oxford: Oxford University Press.
- Beckett K and Western B (2001) Governing social marginality: Welfare, incarceration, and the transformation of state policy. In Garland D (ed) *Mass Imprisonment*. London: Sage Publications, pp. 35–50.
- Berk R and MacDonald JM (2008) Overdispersion and Poisson regression. *Journal of Quantitative Criminology* 24:269–84.
- Blumstein A (2006) Disaggregating the violence trends. In *The Crime Drop in America*, edited by Alfred Blumstein and Joel Wallman, pp. 13–44. Cambridge University Press, revised edition.
- Braga AA, Papachristos AV and Hureau DM (2012) The effects of hot spots policing on crime: An updated systematic review and meta-analysis. *Justice Quarterly* 1–31.
- Brennan C, Hackler D and Hoene C (2005) Demographic change in small cities, 1990 to 2000. *Urban Affairs Review* 40:342–61.
- Bridges GS and Crutchfield RD (1988) Law, social standing and racial disparities in imprisonment. *Social Forces* 66:699–724.
- Bureau of Justice Statistics (2012) *Criminal victimization, 2011*. Washington D.C.: U.S. Department of Justice. NCJ 239437.
- Bureau of Justice Statistics (2013) *Prisoners in 2012 - Advance Counts*. Washington D.C.: U.S. Department of Justice. NCJ 242467.
- Cadora E, Swartz C and Gordon M (2003) Criminal justice and health and human services: An exploration of overlapping needs, resources, and interests in Brooklyn neighborhoods. In Travis J and Waul M (eds) *Prisoners Once Removed: The Impact of Incarceration and Reentry on Children, Families, and Communities*. Washington, DC: The Urban Institute Press, pp. 285–312.

- Carson, E. Ann and Mulako-Wangota, Joseph. Imprisonment rates of total jurisdiction population. Generated using the Bureau of Justice Statistics Corrections Statistical Analysis Tool (CSAT)-Prisoners at www.bjs.gov.
- Clear TR (2007) *Imprisoning Communities: How Mass Incarceration Makes Disadvantaged Neighborhoods Worse*. New York: Oxford University Press.
- Clinard M (1944) Rural criminal offenders. *American Journal of Sociology* 48:202–13.
- Cohen B (1999) Police enforcement of quality-of-life offending: A critique. In Laufer WS and Adler F (eds) *The Criminology of Criminal Law*. New Brunswick, NJ: Transaction, pp. 107–34.
- Cohen LE and Felson M (1979) Social change and crime rate trends: A routine activities approach. *American Sociological Review* 44:588–608.
- Dobkin C and Nicosia N (2009) The war on drugs: Methamphetamine, public health, and crime. *American Economic Review* 99:324—49.
- Dubber MD (2001) Policing possession: The war on crime and the end of criminal law. *The Journal of Criminal Law and Criminology* 91:829–996.
- Duneier M (1992) *Sidewalk*. New York: Farrar, Straus, and Giroux.
- Dwyer D (2016, September 23) Lawrence man stopped on I-93 charged with heroin trafficking. *The Boston Globe*. Retrieved from <http://www.boston.com>
- Eason JM (2012) Extending the hyperghetto: Toward a theory of punishment, race, and rural disadvantage. *Journal of Poverty* 16:274–95.
- Eason JM (2017) *Big House on the Prairie: Rise of the Rural Ghetto and Prison Proliferation*. Chicago: University of Chicago Press.
- Foreman B, Lambert E, Schneider J, et al. (2007) *Reconnecting Massachusetts Gateway Cities: Lessons Learned and an Agenda for Renewal*. Boston: Mass INC.
- Fraga B (2016, June 30) New Bedford-Fall River heroin and cocaine ring busted; Nine charged. *Herald News*. Retrieved from <http://heraldnews.com>
- Garland D (1991) Sociological perspectives on punishment. *Crime and Justice* 14:115–65.
- Garland D (2001) Introduction. In Garland D (ed) *Mass Imprisonment*. London: Sage Publications, pp. 1–3.

- Garriott WC (2011) *Policing Methamphetamine: Narcopolitics in Rural America*. New York: New York University Press.
- Glaeser E (2011) *Triumph of the City*. New York: Penguin Press.
- Goffman A (2014) *On the Run: Fugitive Life in an American City*. Chicago: University of Chicago Press.
- Grillo T and Cawley G (2016, October 22) Lynn has prescription to fight drugs. *ItemLive*. Retrieved from <http://www.itemlive.com>
- Gruenewald PJ, Johnson FW, Ponicki WR, et al. (2010) Assessing correlates of the growth and extent of methamphetamine abuse and dependence in California. *Substance Use and Misuse* 45:1948–1970.
- Hennigan KM and Sloane D (2013) Improving civil gang injunctions: How implementation can affect gang dynamics, crime, and violence. *Criminology & Public Policy* 12:7–41.
- Herbert S (1997) *Policing Space: Territoriality and the Los Angeles Police Department*. Minneapolis, MN: University of Minnesota Press.
- Hipp JR and Boessen A (2012) Immigrants and social distance: Examining the social consequences of immigration for southern California neighbors over fifty years.” *Annals of the American Academy of Political and Social Science* 641:192–219.
- Jacobs JB (1977) *Stateville: The Penitentiary in Mass Society*. Chicago: University of Chicago Press.
- Kalter L (2016, October 28) Attleboro beset by ODs: Responders handle four calls in an hour. *Boston Herald*. Retrieved from <http://www.bostonherald.com>
- Kane RJ (2002) The social ecology of police misconduct. *Criminology* 40:867–96.
- Keller J and Pearce A (2016, September 2) This small Indiana county sends more people to prison than San Francisco and Durham N.C., combined. Why? *New York Times*. Retrieved from <http://www.nytimes.com>
- Kneebone E and Berube A (2013). *Confronting Suburban Poverty in America*. Washington, D.C.: Brookings Institution Press.
- Lichter DT, Parisi D, Grice SM, et al. (2007) National estimates of racial segregation in rural and small-town America. *Demography* 44:563–81.
- Long JS (1997) *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage Publications.

- Lynch M, Omori M, Roussell A, and Valasik M (2013) Policing the “progressive” city: The racialized geography of drug law enforcement.” *Theoretical Criminology* 17:335–57.
- Marrow H (2011) *New Destination Dreaming: Immigration, Race, and Legal Status in the Rural American South*. Stanford, CA: Stanford University Press.
- Mauer M (2006) *Race to Incarcerate*. New York: The New Press.
- Mauer M (2013) *The Changing Racial Dynamics of Women’s Incarceration*. Washington, DC: The Sentencing Project.
- McCullagh P and Nelder JA (1989) *Generalized Linear Models*. Boca Raton, FL: CRC Press, second edition.
- Morenoff JD and Harding DJ (2014) Incarceration, prisoner reentry, and communities. *Annual Review of Sociology* 40:1–20.
- Muller C and Wildeman C (2016) Geographic variation in the cumulative risk of imprisonment and parental imprisonment in the United States. *Demography* 53:1499–1509.
- Murphy AK (2007) The suburban ghetto: The legacy of Herbert Gans in understanding the experience of poverty in recently impoverished American suburbs. *City & Community* 6:21–37.
- Murphy AK and Wallace D (2010) Opportunities for making ends meet and upward mobility: Differences in organizational deprivation across urban and suburban poor neighborhoods. *Social Science Quarterly* 91:1164–86.
- Nellis, A (2016) *The Color of Justice: Racial and Ethnic Disparity in State Prisons*. Washington, DC: The Sentencing Project.
- O’Deane MD (2011) *Gang Injunctions and Abatement*. Boca Raton, FL: CRC Press.
- Peterson RD and Krivo LJ (2010) *Divergent Social Worlds: Neighborhood Crime and the Racial-Spatial Divide*. New York: Russell Sage Foundation.
- Pfaff JF (2015) The causes of growth in prison admissions and populations. Working Paper.
- Planas A (2016, October 28) Suspect: 2,000 bags of heroin help pay bills. *Boston Herald*. Retrieved from <http://www.bostonherald.com>
- Reding N (2010) *Methland: The Death and Life of an American Small Town*. New York: Bloomsbury USA.
- Rothman DJ (2002) *Conscience and Convenience: The Asylum and Its Alternatives in Progressive America*. New York: Aldine de Gruyter, revised edition.

- Sampson RJ (2012) *Great American City*. Chicago: University of Chicago Press.
- Sampson RJ and Loeffler C (2010) Punishment's place: The local concentration of mass incarceration. *Daedalus* pp. 20–31.
- Sampson RJ, Raudenbush SW, and Earls F (1997) Neighborhoods and violent crime: A multi-level study of collective efficacy. *Science* 277:918–924.
- Sharkey P (2014) Spatial segmentation and the black middle class. *American Journal of Sociology* 119:903–54.
- Shihadeh ES and Flynn N (1996) Segregation and crime: The effect of black social isolation on the rates of black urban violence. *Social Forces* 74:1325–52.
- Shihadeh ES and Steffensmeier DJ (1994) Economic inequality, family disruption, and urban black violence: Cities as units of stratification and social control. *Social Forces* 73:729–51.
- Spatial Information Design Lab (2007) *The Pattern*. Justice Mapping Center. New York: Columbia University.
- Steffensmeier DJ and Jordan C (1978) Changing patterns of female crime in rural America. *Rural Sociology* 43:87–102.
- Stuart F (2016) *Down, Out, and Under Arrest: Policing and Everyday Life in Skid Row*. Chicago: University of Chicago Press.
- Subramanian R, Henrichson C and Kang-Brown J (2015) *In Our Own Backyard: Confronting Growth and Disparities in American Jails*. New York, NY: Vera Institute of Justice.
- Tonry M (1995) *Malign Neglect: Race, Crime, and Punishment in America*. New York: Oxford University Press.
- Travis J, Western B and Redburn S (eds.) (2014) *The Growth of Incarceration in the United States: Exploring Causes and Consequences*. Washington, DC: National Academies Press.
- Uggen C and Manza J (2002) Democratic contraction? Political consequences of felon disenfranchisement in the United States. *American Sociological Review* 67:777–803.
- U.S. Bureau of the Census (2010a) *2005–2009 American Community Survey Summary File*.
- U.S. Bureau of the Census (2010b) *Census 2010: Summary File 1*.
- Velez MB, Krivo LJ and Peterson RD (2003) Structural inequality and homicide: An assessment of the black-white gap in killings. *Criminology* 41:645–72.

- Wacquant L (2001) Deadly symbiosis: When ghetto and prison meet and mesh. *Punishment and Society* 3:95–133.
- Wacquant L (2008) *Urban Outcasts*. Malden, MA: Polity Press.
- Weaver V (2007) Frontlash: Race and the development of punitive crime policy. *Studies in American Political Development* 21:230–65.
- Weidner RR and Frase RS (2003) Legal and extralegal determinants of intercountry differences in prison use. *Criminal Justice Policy Review* 14(3): 377–400.
- Western B (2006) *Punishment and Inequality in America*. New York: Russell Sage Foundation.
- Wodke GT and Harding DJ and Elwert F (2011) Neighborhood effects in temporal perspective: The impact of long-term exposure to concentrated disadvantage on high school graduation. *American Sociological Review* 76(5): 713–36.