Prisoner Reentry, Parole Violations, and the Persistence of the Surveillance State

by

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ABSTRACT

The revolving door of the state and federal prison system may be the most persistent challenge faced by criminological practitioners and scholars. Following release from custody, the majority of former prisoners end up back in the system within three years, suggesting that correctional involvement is not an isolated incident for most offenders. Through its analysis of parole violations and sanctions, the current dissertation project offers important new insights on this "revolving door" between prisons and high-risk communities. To do so, each of three empirical chapters looks at a different phase in the cycle of recidivism: offending behavior, institutional responses to offending behavior, and the consequences of institutional sanctions for offenders' well-being. The first analytic chapter examines how geographical proximity to social service providers is related to the risk of recidivism. The findings suggest that the observed impact of contextual conditions on recidivism depends on how expansively one defines the "community" in which parolees are embedded and further demonstrates the importance of capturing the effect of service accessibility on offending behavior within the larger ecological context of where parolees live. The second analytic chapter explores how "supervision regimes," the legal, political, and cultural factors that shape the way supervision is practiced across jurisdictions, influence the risk of recidivism. The analysis demonstrates that regional and county-level attributes shape local templates for decision-making among parole officers in ways that affect not only whether parolees are revoked to prison, but also the use of alternative sanctions, such as stricter community supervision

and incarceration in short-term correctional facilities such as jails or detention centers. The final analytic chapter offers a rigorous assessment of the causal impact of incarceration on labor market outcomes through an examination of whether return to short-term custody interferes with the ability of parolees to find and maintain work. Findings indicate that the experience of short-term re-incarceration dramatically increases the risk of unemployment among parolees in the months during and following their incarceration. Taken as a whole, the analyses shed light on how offending behavior, institutional decision-making, and the experience of incarceration combine to perpetuate the cycle of recidivism.

CHAPTER 1
Introduction

The last four decades have been characterized by a dramatic increase in the number of people incarcerated in jails and prisons in the United States. Since the early 1970s, the rate of incarceration has more than quintupled, with over 2.2 million individuals currently behind bars (National Research Council, 2013). Although almost all of these people will eventually return home from custody, the majority will end up back in the system within three years of release. With over two-thirds of former prisoners experiencing a new arrest and one-half returning to prison in this timeframe (Langan & Levin, 2002; The Pew Center on the States, 2011), involvement in the correctional system is not an isolated incident for most offenders.

Recent research reports suggest that parole revocation, the return of parolees to prison for violating the conditions of their community supervision, is increasingly responsible for high rates of re-incarceration among former prisoners (Burke & Tonry, 2006; Grattet, Lin, & Petersilia, 2011; Petersilia et al., 2007). Amidst overall rising incarceration rates, the return of former prisoners to custody for parole violations represents a disproportionate increase in the share of prison admissions. Whereas the incarcerated population in the United States grew fourfold between 1973 and 2000, the number of people incarcerated for parole violations grew sevenfold (Travis, 2007). The increasing reliance on revocation as a standard tool of parole supervision has created a "separate path to prison for large numbers of former prisoners" (Travis & Lawrence, 2002, p. 24).

Despite the routine use of parole violations and sanctions – collectively referred to as "back-end sentencing" – as a means of surveillance and punishment, policymakers and reentry scholars are only just starting to explore the contribution of this process to the reentry recycling of offenders through the correctional system. In particular, prior research has neglected two aspects of back-end sentencing: (1) the contextual predictors of violation reports and sanction outcomes, and (2) the impact of sanctions on future measures of success. This dissertation advances the literature on reentry and recidivism through a three-part examination of these themes. The first analytic chapter examines how neighborhood contextual conditions shape the likelihood that parolees receive violation reports. The second analytic chapter investigates the impact of county contextual conditions on the sanctions issued to parolees for violations. Finally, the third analytic chapter asks how the use of custody as a parole sanction shapes the employment trajectories of former prisoners. In tandem, these analyses shed important new insights on prison's revolving door and the crisis of mass incarceration.

A Brief Introduction To Parole Violations

Parole is designed to function as a critical surveillance and rehabilitative mechanism for offenders transitioning from prison to the community. Although states differ substantially in the extent to which they utilize parole supervision and rely on revocation as a control mechanism, the general structure of parole is relatively consistent across jurisdictions (Travis & Christiansen, 2006). Upon exiting prison, individuals released onto parole are assigned a supervision level that mandates conditions to which they must adhere. The supervision level determines how often and in what form parolees must meet with their parole officers (for instance, weekly and in person, monthly and by mail, or

through electronic monitoring). In addition, supervision typically requires former prisoners to refrain from committing any new crimes, remain employed and drug-free, keep curfew, support dependents, and reside in specific types of housing. Some parolees may receive additional stipulations such as avoiding certain locations, people, or employment, or participating in treatment programs (Latessa & Smith, 2007).

When parolees fail to adhere to the conditions of their supervision by committing a new crime or otherwise breaching administrative requirements, their supervising parole officer can file a parole violation report that documents the act(s) of noncompliance and initiates the back-end sentencing process. Upon issuing a report, parole officers determine the appropriate level of review required based on the nature of the violation and any aggravating factors in a parolee's criminal history. Depending on this assessment, a sanction for the violation may be issued by the parole officer, the officer's supervisor, a regional manager, or a parole hearing board. Although the small body of literature on back-end sentencing has focused almost exclusively on whether parolees are returned to prison for violations, parole authorities, in reality, can implement a wide range of sanctions. In lieu of returning offenders to prison, for instance, authorities may send offenders to lower-security correctional facilities or add more structure to community-based oversight. Those parolees whose violations result from new crimes or arrests may face judicial proceedings to handle the new charges in addition to parole revocation proceedings.

In recent years, the number of former prisoners returned to custody for violating the conditions of their parole has increased dramatically. The reasons for this increase are twofold. First, the rapid expansion of the prison system has resulted in a vast increase in

the number of people exiting prison onto parole supervision, rising from 220,000 in 1980 to 851,000 in 2012 (Maruschak & Bonczar, 2013; Renshaw, 1982). At the same time, the shift from rehabilitative parole practices to more punitive surveillance has increased institutional reliance on parole violations and sanctions, with offenders more likely to be returned to custody for failing to adhere to their supervision conditions. Over the 20-year period starting in 1980, the proportion of prison admissions due to parole violations (as opposed to new crimes) nearly doubled, increasing from 17% to 36% (Blumstein & Beck, 2005; Travis & Lawrence, 2002).

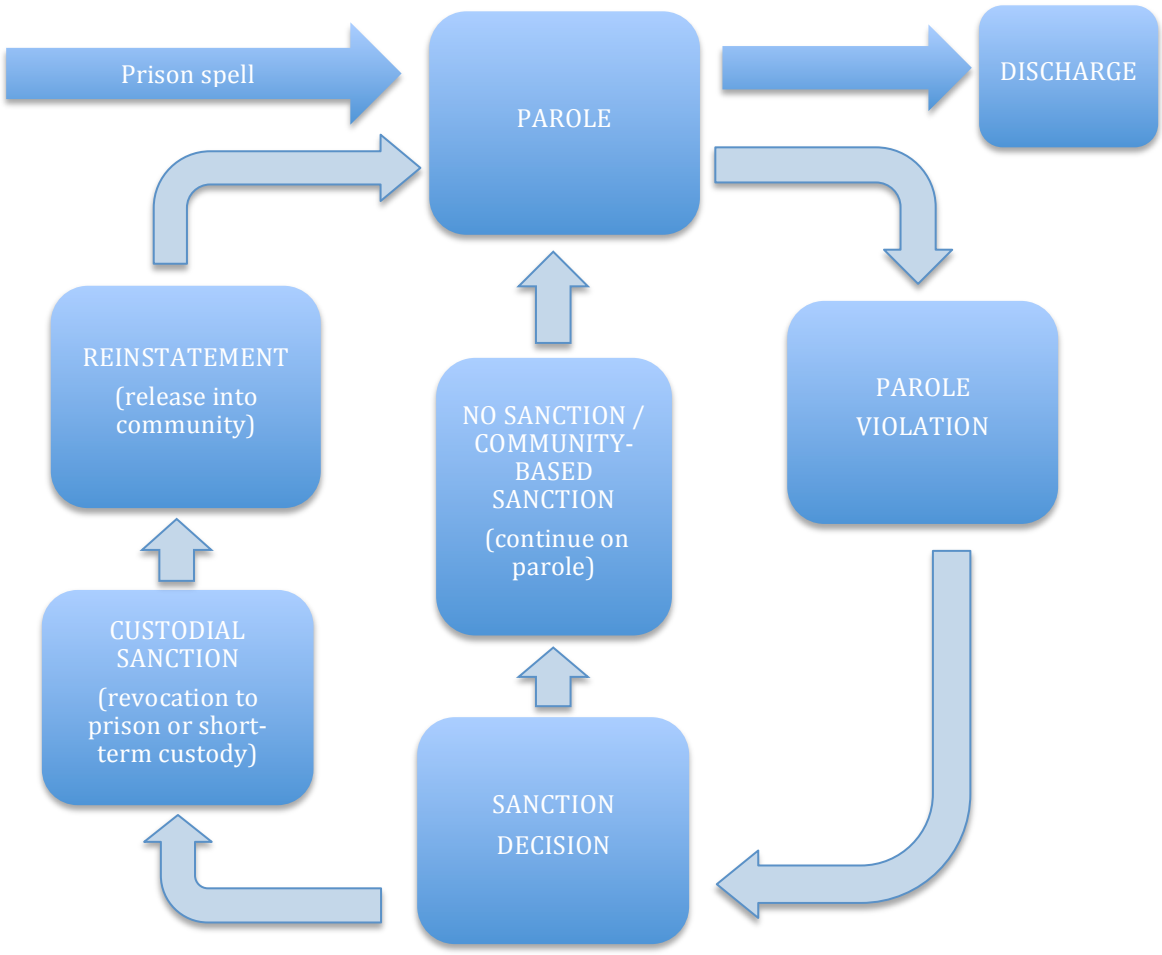
Three Stages of Prison's Revolving Door

Despite the growing number of parolees who are returned to prison for parole violations, there has been little scholarly inquiry into the role of back-end sentencing in shaping the reentry experiences of former prisoners. The current dissertation project takes a first step toward addressing this gap through an examination of how the characteristics of parolees and parole offices shape the issuance of violations and sanctions, and, in turn, how the issuance of violations and sanctions shape the reentry trajectories of parolees. In doing so, the analyses illuminate how local conditions and front line decision-making guide post-prison surveillance while also offering broader insight into the implications of custodial sanctions for successful community reintegration by former prisoners.

The project is premised on the idea that the narrow conceptualization of recidivism in prior research as a single event – typically a re-arrest or return to prison – has obscured the complexity and consequences of prisoner reentry and the revolving door of prison. This dissertation aims to more comprehensively explore recidivism as a cycle that includes offending behavior, institutional responses to offending behavior, and the

implications of those institutional responses on future offender outcomes. To do so, the chapters examine the following three aspects of parole violations and sanctions: (1) violation behavior and the filing of the violation report, (2) the subsequent issuance of a punitive response by institutional decision-makers, and (3) the impact of sanctions on parolees' future labor market outcomes. By conducting separate analyses of violations, sanctions, and the effects of sanctions on the same cohort of parolees, the current project provides a rigorous investigation of the nuances of back-end sentencing as a driver of recidivism. Figure 1.1 illustrates this cycle in its depiction of the process of supervision and sanctioning of returning prisoners.

Figure 1.1. Process of Recidivism



In order to accomplish this objective, the analyses utilize unique administrative data on former prisoners who were paroled from Michigan prisons in 2003. The dataset includes records from administrative databases maintained by the Michigan Department of Corrections (MDOC) containing measures that span the length of time each offender was in prison or on parole. The databases capture data on prior criminal history, demographics, marital status, number of minor children, education, recommitments, and MDOC assessments of health, substance use, and mental health. The administrative records also contain longitudinal data entered by parole and probation officers to track information on individuals under supervision, which include all records of parole violations and subsequent sanctions. The administrative data on parolees is combined with data on contextual conditions and employment outcomes from sources including the Michigan Unemployment Insurance Agency and the United States Census.

Using the described data, each of the three chapters explores a different facet of recidivism among parolees. In response to recent research suggesting that local context can play a critical role in either perpetuating or discouraging recidivism (Hipp, Petersilia, & Turner, 2010; Kubrin & Stewart, 2006; Mears, Wang, Hay, & Bales, 2008), the first two empirical chapters examine how contextual conditions shape (a) violation reports, and (b) institutional reactions to violation behavior. Chapter 2, "The Role of Social Service Proximity in Prisoner Reentry" examines the relationship between local contextual conditions and the incidence of violation reports among parolees. Drawing on support for the role of ecological context in shaping recidivism behavior, this analysis specifically asks how social service proximity and other dimensions of local resource availability foster recidivism or desistance. The results show that higher levels of service

proximity within 30 miles of one's residence are protective against violation, but living within immediate proximity to services increases the risk of violation reports. The findings suggest the importance of capturing the effect of provider density on violation reports within the larger ecological context of where parolees live and further demonstrate that the observed impact of contextual conditions on recidivism depends on how expansively one defines the "community" in which parolees are embedded.

Chapter 3, "Institutional Sanctions in Context: The Impact of County-Level Characteristics on Parole Outcomes" builds on Chapter 2 by exploring the impact of contextual conditions on the second stage of recidivism, institutional responses to parole violations. Building on prior research demonstrating the sensitivity of decision-making among front line bureaucrats to local constraints and pressures (Lipsky, 1980; Maynard-Moody & Musheno, 2003), this chapter offers insight into how "supervision regimes" – the legal, political, and cultural factors that shape the way supervision is practiced across different local jurisdictions – influence the risk of recidivism. This analysis advances previous research by examining whether the types of sanctions issued to parole violators are shaped by three characteristics of the geographic areas in which parolees are supervised: organizational capacity and constraints, institutional culture, and racial threat. The results demonstrate that regional and county-level attributes shape local templates for decision-making among parole officers in ways that affect not only whether parolees are revoked to prison, but also the use of alternative sanctions, such as stricter community supervision and incarceration in short-term correctional facilities.

Chapter 4, "The Effects of Short-Term Custodial Sanctions on Labor Market Outcomes Among Former Prisoners" considers the consequences of sanctions on

parolees' reentry experiences by estimating the impact of custodial spells on employment, a key predictor of success during reentry (Hagan, 1993; Petersilia, et al., 2007; Sampson & Laub, 1993; Uggen, 2000). Although previous research has inferred a causal association between incarceration and labor market struggles (Raphael, 2007; Western, 2006), data limitations have precluded a rigorous investigation into the nature of this relationship. This chapter offers a stringent assessment of the causal impact of incarceration through an examination of whether return to short-term custody (such as jail) interferes with the ability of former prisoners to find and maintain work. Findings suggest that both the occurrence and duration of short-term custody have significant implications for the labor market outcomes of former prisoners. The experience of re-incarceration in temporary correctional facilities such as jails or detention centers dramatically increases the risk of unemployment among parolees in the months during and following their incarceration.

Chapter 5 concludes the dissertation. This final chapter summarizes the contribution of the three empirical analyses to prisoner reentry research and reiterates the importance of deconstructing recidivism into multiple stages. It also reflects on the consequences of punitive post-prison surveillance practices for mass incarceration and offers directions for future research.

CHAPTER 2
The Role of Social Service Proximity in Prisoner Reentry

With a fourfold increase in the rate of incarceration over the last three decades, approximately 1.6 million Americans are currently incarcerated in state and federal prisons (Carson & Sabol, 2012). Almost all of these people will eventually return home, generating a cycle of incarceration and reentry in which roughly 1,600 prisoners are released each day (Petersilia, 2003). Hindered by low levels of education, few employment skills, high rates of mental and physical illness, and the stigma attached to a prison record, former prisoners are at high risk for criminal activity and reincarceration (Petersilia, 2003; Travis & Visher, 2005). Despite the large-scale implementation of reentry programming at the state and local levels, almost 70% of former prisoners are rearrested for a new offense and between 40% and 52% of former prisoners return to prison within three years of release (Langan & Levin, 2002; The Council of State Governments, 2012).

A growing body of research has highlighted the importance of ecological context in shaping recidivism among parolees, finding that individuals who live in more stable and resourced communities are less likely to recidivate and be re-incarcerated (Huggins, 2009; Kubrin & Stewart, 2006). Most studies of the ecological context of recidivism have focused on the impact of geographically aggregated social and economic indicators, such as the proportion of racial minorities or persons living below the poverty line within a given neighborhood or county, on post-prison success. Emerging scholarship also offers

some evidence that local networks of service providers may be an important ecological consideration in the reentry process (Grattet, Petersilia, & Lin, 2008; Hipp, et al., 2010). With extremely high levels of need among former prisoners for services related to education, employment, housing, physical and mental health treatment, and mentorship (Lattimore, Steffey, & Visher, 2009; Petersilia, 2003), the presence of services not only provides opportunities for individual treatment or engagement, but also shapes the social organization of neighborhood environments. This article explores the possibility that through their impact on local informal social control, collective efficacy, and levels of disorder, social services may have important consequences for the recidivism of *all* former offenders, even those who are not engaged in service programming.

In response, this article aims to (1) understand the spatial layout of social services in relationship to former prisoners, and (2) analyze the effects of services on recidivism among a large cohort of parolees in Michigan. Reincarceration among former prisoners is increasingly a result of criminal or technical violations of parole supervision (Grattet, et al., 2011) and, as a result, the current study specifically assesses the impact of social services on the incidence of parole violation reports, the administrative documentation of such violations. Departing from evaluation research, it asks whether the *proximity* of social service providers promotes parolee compliance with supervision conditions. In doing so, it examines multiple scales of geographic proximity to ascertain whether the impact of services on parole outcomes depends on the physical closeness of parolees to services. The analysis also integrates several other dimensions of neighborhood context, including concentrated disadvantage and residential stability, to offer a more comprehensive perspective on how community context shapes prisoner reentry.

The article proceeds as follows. I begin by laying out a conceptual framework for the potential impact of service proximity and local contextual conditions on violations. Next, I discuss the literature on the spatial distribution of service providers and the effects of availability on consumer utilization. I then briefly review empirical evidence for the effects of services and other contextual conditions on recidivism and describe the longitudinal and spatially-referenced data collected on Michigan parolees from administrative records. After reporting the results, I conclude with a discussion of the implications of the present study as well as recommendations for future research.

Conceptual Framework

Before exploring the conceptual framework for the analysis, it should be noted that the outcome examined in this study – the filing of a parole violation report – is actually the outgrowth of two highly interrelated processes that are difficult to disentangle: the behavior that gives rise to the event as well as the administrative response by institutional decision-makers. Prior research on criminal justice system events such as arrests or returns to prison have faced similar challenges in theoretically disentangling offending behavior from subsequent administrative processes. Since the second empirical chapter of this dissertation discusses the theoretical mechanisms involved in the institutional handling of parolee noncompliance, the conceptual framework in this chapter focuses on the theoretical reasons why contextual factors are likely to affect offending behavior. With that in mind, consideration of both offending behavior and institutional responses are essential in developing a comprehensive understanding of criminal justice system outcomes.

Former prisoners have a wide range of needs upon return to their communities. Many have low levels of education, little work experience, and substance abuse or mental health issues. Following release, former prisoners often struggle to find or maintain supports such as employment, housing, mental and physical health treatment services, and healthcare (Lattimore, Steffey, & Visher, 2010; Petersilia, 2003; Travis & Visher, 2005; Visher & Travis, 2003). Local institutions, particularly service organizations, can offer critical resources, motivation, skills training, and treatment to former prisoners. Although evaluations have not yielded consistent evidence for the benefits of programming—potentially a result of poor program implementation or analysis (Lattimore, et al., 2010; Lynch, 2006)—research suggests that employment, vocational training and work programs, cognitive-behavioral therapy, halfway houses, family reunification services, and drug treatment have shown to reduce the likelihood of recidivism for some former prisoners (Bouffard, MacKenzie, & Hickman, 2000; Petersilia, et al., 2007; Seiter & Kadela, 2003; Zhang, Roberts, & Callanan, 2006).

Through their influence on local social disorganization, service providers can also shape recidivism for parolees who live in surrounding areas but do not participate in any programming. The social disorganization perspective asserts that the characteristics of neighborhoods – and not just the individuals within them – collectively shape local crime and disorder (Bursik & Grasmick, 1993; Kornhauser, 1978; Shaw & McKay, 1969 [1942]). In neighborhoods characterized by stability of home ownership and high levels of resources, residents are inclined to form attachments to community institutions, build social ties, and establish trust with neighbors (Sampson, 1999; Sampson, Morenoff, & Earls, 1999; Sampson, Raudenbush, & Earls, 1997). The integration of residents into

neighborhood networks, in turn, activates informal social control, the capacity for residents to regulate each other's behavior. Without this self-regulation, neighborhoods—and their residents—are more susceptible to delinquency (Rountree, Land, & Miethe, 1995; Sampson, 1985; Sampson, Morenoff, & Gannon-Rowley, 2002).

Although there is little theoretical research on the specific effects of service providers on social disorganization, a larger body of work articulates how social institutions, more broadly speaking, shape informal social control. Institutions are believed to generate social ties, engagement, and collective efficacy among residents (Bursik & Grasmick, 1993; Gouvis Roman & Moore, 2004; Hunter, 1985; Triplett, Gainey, & Sun, 2003). Through political advocacy, program development, and community outreach, institutions can provide role models and encourage commitment to mainstream values (Peterson, Krivo, & Harris, 2000; Putnam, 2000). Institutions also provide employment and activities for local youth and adults, discouraging crime that stems from unstructured and unsupervised time (Peterson, et al., 2000). The increased foot traffic resulting from the presence of business owners and service utilization by non-residents can further facilitate informal social control and surveillance by providing "eyes on the street" (Angel, 1968; Jacobs, 1961; Peterson, et al., 2000), creating conditions conducive to desistance.

However, research on social disorganization has also provided evidence for the *detrimental* impact of institutions on recidivism. With more nonresidents entering neighborhoods to utilize institutions, residents become less likely to recognize each other, feel that they have control over local events, use common spaces, and count on neighbors in times of need (Greenberg, Rohe, & Williams, 1982; Kurtz, Koons, & Taylor, 1998; Taylor, Koons, Kurtz, Greene, & Perkins, 1995). Taylor and colleagues have argued that

every nonresidential address on a block generates a "hole in the resident-based fabric" for which residents are unlikely to take responsibility (Taylor, Gottfredson, & Brower, 1981; Taylor, et al., 1995). The increased traffic in areas with more institutions may also bring physical deterioration, such as litter, graffiti, and wear and tear (Kurtz, et al., 1998), which can create the perception of disorder or criminal activity. In turn, such perceptions may cause residents to withdraw from neighborhood life and thus lower the capacity for informal social control (Bursik & Grasmick, 1993; McCord, Ratcliffe, Garcia, & Taylor, 2007).

Recent work on the effects of nonresidential land use on crime has bridged these conflicting perspectives on the effects of institutional presence on social disorganization by suggesting that the impact of institutions on informal control may be conditioned by other local structural conditions. For instance, Wilcox and colleagues (2004) have theorized that local residential stability moderates the effect of certain types of nonresidential land use on crime. The authors speculate that more unstable or disadvantaged areas may greatly benefit from the increased supervision offered by institutions; indeed, institutions in less stable or resourced areas may make more concerted efforts at informal or formal surveillance in response to higher levels of neighborhood risk. Alternatively, institutional presence or "business-oriented land use" in advantaged neighborhoods may increase the influx of nonresidents, increase discontent among residents, and provide opportunities for crime that do not otherwise exist.

The Spatial Distribution and Utilization of Services

Prior research has documented substantial variation across communities in the concentration of social service providers. For instance, impoverished tracts and

neighborhoods are often home to higher numbers of organizations that serve low-income individuals or families near or below the poverty line (Allard, 2004; Joassart-Marcelli & Wolch, 2003; Peck, 2008), while middle- and upper-class areas tend to be characterized by more educational services, health services, and children's organizations (Bielefeld, Murdoch, & Waddell, 1997; Wolch & Geiger, 1983; Wolch, Moon, & Lee, 1998). However, due to higher levels of local demand, disadvantaged areas consistently have lower levels of accessibility across all types of services, meaning that their residents are less able to reach and utilize needed resources (Allard, 2004; Allard, Rosen, & Tolman, 2003; Hipp, Jannetta, Shah, & Turner, 2011; Joassart-Marcelli & Wolch, 2003; Peck, 2008).

Variation across space in social service proximity prompts inquiry into the impact of spatial distribution on consumer utilization. Prior research has suggested that service consumption follows a distance-decay pattern in which individuals are more likely to be aware and take advantage of nearby services (Allard, Tolman, & Rosen, 2003; Bielefeld, et al., 1997; Kissane, 2003). Proximity to providers is thought to influence service utilization through a variety of mechanisms. Both consumers and caseworkers are more likely to have information about and trust nearby providers (Allard, 2004, 2007). For consumers, the cost of accessing nearby providers is much lower, with research demonstrating that people's willingness to travel decreases exponentially as travel time increases (Grengs, Levine, Shen, & Shen, 2010). Individuals with less access to automobile transportation, in particular, are more likely to seek service providers close to home (Allard, 2007; Allard, Tolman, et al., 2003). Because agencies connect with service providers in their immediate area, caseworkers are also more likely to make referrals to

local providers (Allard, Tolman, et al., 2003). Underscoring Bielefeld and colleagues' (1997, p. 217) argument that "nonprofit service provision is primarily a localized process," research on service utilization demonstrates that the spatial distribution of services plays a critical role in the potential impact of service providers on consumers and other local residents.

Prior Research

Former prisoners return disproportionately to disadvantaged neighborhoods and communities where resources and services are already stretched thin (Cadora, Swartz, & Gordon, 2003; Clear, 2007). In addition to lower levels of service proximity, neighborhoods with high unemployment, poverty and crime rates are likely to have fewer overall resources to support the transition from prison to work, exert lower levels of social control over former prisoners, and present former prisoners with greater opportunities to return to crime (Morenoff, Sampson, & Raudenbush, 2001). Despite the risks faced by former prisoners living in disadvantaged communities, there has been relatively little prior research on the connection between social context and parole outcomes, in part because such research requires access to data collected on large samples of returning prisoners and records of their violations and sanctions.

Nevertheless, a small but growing body of literature has shown sizable neighborhood effects not only on crime but also on intermediary outcomes that might also affect recidivism, such as employment, education, and fertility and family formation (Gephart, 1997; Harding, 2003; Sampson, et al., 2002; Sampson, Morenoff, & Raudenbush, 2005). This research has consistently demonstrated that the risk of recidivism increases for parolees living in less resourced and residentially stable areas. For instance, Kubrin and

Stewart (2006) analyzed data on a sample of 5,002 former prisoners admitted to community supervision in Multnomah, Oregon during a six-month period in 2000, with arrest records collected for one year post-admission. They found that the risk of arrest was significantly higher for releases who returned to more disadvantaged census tracts, using two different measures of neighborhood economic status. In a similar study conducted on returning prisoners in Ohio over a one-year time period, Huggins (2009) examined data on arrests and parole violations coded from parole agent files. Whereas individuals living in disadvantaged tracts had a higher risk of arrest, those living in more residentially stable tracts had lower risks of both arrest and violation. Grattet and colleagues (2008; 2009) also found that parolees living in disadvantaged neighborhoods were more likely to commit technical violations that involved absconding than those living in less disadvantaged communities.

Two recent studies also provided evidence for the contribution of local social service providers to desistance among parolees. Grattet and colleagues (2008; 2009) sought to learn more about the effects of local services on parole violations among cases heard by the California Board of Parole Hearings in 2003 and 2004 (n=254,468 parolees, n=114,820 violation cases). A regression model found that parolees with higher frequencies of substance abuse and mental health treatment services within 50 miles of their tracts were less likely to receive violation reports for minor criminal violations. This study provided an important foundation for the analysis of services and offending behavior but was limited in its measurement of service proximity. By using a frequency measure of services (i.e., the number of service providers within a specified distance of parolees' residential tracts) rather than a density measure, the authors did not address

evidence for the importance of consumer *proximity* to services, wherein closer services have a larger potential impact (Allard, 2004; Allard, Tolman, et al., 2003). The measurement of services also relied on an extremely large radius (50 miles), arguably farther than most clients tend to travel for services (Allard, Tolman, et al., 2003).

In a similar study of California parolees, Hipp and colleagues (2010) examined contextual predictors of being returned to prison among 280,121 parolees released from state prisons in 2005 and 2006. Corroborating evidence from Grattet and colleagues (2008; 2009) for the benefits of services on recidivism, the authors reported that parolees surrounded by higher numbers of service providers within two miles were less likely to return to prison than parolees with fewer nearby service providers. Interestingly, in contrast to their main findings that services within two miles *decreased* parolees' risk of return to prison, the number of services within a parolee's tract or block group actually *increased* the risk of prison return. These findings suggest the importance of testing multiple geographic scales of service proximity in order to understand the contribution of services to prisoner reentry.

Current Study

Building on prior research, the current study asks how the ecological context of communities shapes the incidence of parole violation reports, focusing primarily on the proximity of social services. To explore the impact of local ecological context, the analysis tests three hypotheses. Based on evidence that the impact of services may differ based on their physical proximity to parolees, these hypotheses are first tested using a five-mile radius of service proximity (Models 1-3) and then using a thirty-mile radius (Models 4-6). Because the literature does not provide a clear indication of *how* the effects

might differ across different geographic measurements, this paper remains agnostic in its expectations for variation across nearby and distant providers.

The first hypothesis attempts to reconcile conflicting theoretical literature on the effects of service proximity on parole violation. On the one hand, institutions can provide needed social services, generate social ties and engagement among residents, offer employment and activities, and provide surveillance in the form of "eyes on the street". On the other hand, the presence of institutions is believed to create "holes in the resident-based fabric" such that residents are less likely to recognize one another and exercise informal social control. However, a small body of empirical work supports a protective effect of service providers on recidivism.

> *Hypothesis 1*: Higher levels of social service proximity within both five and thirty miles of parolees' residences will decrease their risk of parole violation.

The second hypothesis broadens the ecological lens by examining the contribution of two tract-level variables – disadvantage and residential stability – to the risk of parole violation.

> *Hypothesis 2*: High levels of disadvantage will increase the risk of parole violation, while high levels of residential stability will decrease the risk of parole violation.

The final hypothesis explores whether these tract-level variables moderate the relationship between service proximity and violation, following recent findings that this relationship may be conditioned by local ecological characteristics. By serving as proxies for local service demand, these contextual variables help shed light on how recidivism is shaped not only by geographic proximity to services but also by levels of service accessibility. Whereas increased service proximity may create needed surveillance in

less-resourced communities, the same degree of proximity may attract non-residents and create opportunities for crime that are otherwise absent in more-resourced communities.

> *Hypothesis 3*: For parolees in more disadvantaged and less residentially stable areas, higher levels of service proximity will decrease the risk of violation. In contrast, greater service proximity in less disadvantaged and more residentially stable areas will increase the risk of violation.

Data

To address these hypotheses, this study analyzes a unique data set compiled by a research team at the University of Michigan of all parolees who were paroled from Michigan prisons in 2003 to a residence within the state ($N = 11{,}031$).[1] The data set includes records from administrative databases maintained by the Michigan Department of Corrections (MDOC) containing measures that span the length of time each offender was on parole. The databases capture data on prior criminal history, demographics, marital status, number of minor children, education, recommitments, and MDOC assessments of health, substances use, and mental health. The administrative records also contain longitudinal data (updated weekly or monthly throughout the parole period) entered by parole agents to track information on individuals under supervision, which includes all records of parole violations.

Measurement

Parole Violation

To test the influence of service proximity on recidivism, I construct an indicator of whether each parolee had a violation within three years of release from prison. I adopt

[1] This analysis utilizes data from a larger research project (The Michigan Study of Life After Prison) and so much of the data used for the current study were collected and cleaned by other members of the research team. I use the phrase "the research team" or the collective "we" to refer to the cleaning of data or construction of variables resulting from this collaboration. Thirty-three parolees were removed from the original population (N=11,064) because they paroled to an address out of state.

MDOC's definition of a parole violation as occurring when the parole agent filed a violation report for either a technical or criminal violation. Agents are required to file such reports when a parolee is arrested or otherwise charged with a new crime, or when a technical violation is discovered. At times, however, parole agents may not file a violation report after each discovery of a technical violation. Instead, many agents wait until the parolee has committed multiple minor "incidents" (such as failure to report a change of residence or a positive drug test) and then condense these infractions into a single violation report. Thus, the only reliable way to measure the timing of the violation is to use the date of the official violation report. Notably, the database only records incidents included in official violation reports, so parolees with one or two minor incidents that did not result in a report are not captured by the analysis.

Service Provision

In order to determine whether a parolee's proximity to services affects his/her violation reports, I identify and geocode two types of addresses: (1) parolees' initial post-prison residential address, and (2) a list of social service providers in Michigan utilized by MDOC. Approximately 80% of these providers are drawn from a resource guide distributed by MDOC to correctional agents in 2007. The MDOC administration confirmed that parole agents largely rely on providers listed in the resource guide for referrals. To account for service providers who were utilized prior to 2007 but not included in the resource guide, I supplement this list with additional service providers retrieved from parole agent case notes.[2] The compiled list includes providers offering

[2] As part of the Michigan Study of Life After Prison, the research team coded parole agent case notes between 2003 and 2009 for a random sample of parolees. The case notes included information on all

outpatient and residential substance abuse, mental health, educational, employment, and sex offender services, among other general supports. Providers included on the list typically have contracts or other financial arrangements for services with MDOC and are known to be receptive to and experienced with serving parolees. Although the list does not represent the entire universe of providers across Michigan, it does include the range of providers typically utilized by MDOC parole agents in the course of supervision and should be representative of the overall local service environment surrounding parolees.

Next, I use the mapped addresses of parolee residences and service providers to generate kernel density measures of service proximity for each parolee, determined using the quadratic kernel function described by Silverman (1986). In contrast to a simple frequency count that identifies the number of providers within a buffer distance, the kernel density function weighs service providers based on their proximity to each parolee with closer services more heavily weighted. To measure potential variation in the impact of "nearby" and "distant" services, I create two continuous measures of service proximity: (a) the density of services within five miles of each parolee's first residential address, and (b) the density of services within 30 miles of each parolee's first residential address. All distances between parolees and service providers are measured as Euclidean (i.e., "as the crow flies"), and all measures are standardized to allow for easier interpretation.

The use of the kernel density measurement has the advantage of accounting for the serious differences in utilization between near and far services, which is consistent with prior research suggesting that consumers are more likely to know about and access

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residential service providers utilized during this time, which I retrieved and added to the resource guide. See Morenoff & Harding (2011) for details on the sampling of parolees.

proximate services. The current measure is somewhat limited by time and data constraints in that it is most accurate when proximity can be measured using means of transportation and road networks, neither of which are available for the present analysis. For instance, Euclidean distances do not reflect actual travel distance via road networks, which varies systematically throughout state geography and is highly dependent on automobile access. Specifically, short blocks on a grid system in urban settings are closest to the circle of Euclidean distance whereas rural roads with long stretches between intersections more poorly mimic the circle of Euclidean distance, meaning that the kernel density function is likely to overestimate accessibility in rural territory. Like frequency counts, the kernel density measure is also limited in that it requires a cutoff distance limit. Despite these limitations, the kernel density measure substantially improves upon prior research in its ability to capture proximity rather than only frequency.

Disadvantage and Residential Stability

To understand the impact of service proximity within a broader ecological context, this study uses data from the 2000 U.S. Census to control for two tract-level measures of parolees' residential context. Neighborhood disadvantage is an averaged scale composed of the following standardized tract-level variables: household poverty rate, unemployment rate, proportion of households that receive public assistance, median family income, proportion of families whose income exceeds $75,000, proportion of families that are female-headed, proportion of black residents, proportion of adult residents with low educational attainment, proportion of adult residents with advanced degrees, and proportion of working adults in managerial professions (where measures of

advantage were reversed in polarity). The residential stability of first post-prison neighborhoods is an averaged scale composed of home ownership and percent living in same household five years ago. These neighborhood sociodemographic factors are comparable with those found in similar neighborhood research (Morenoff et al., 2007; Morenoff, et al., 2001) and are consistent with the theoretical perspectives on social organization, neighborhood effects, and recidivism presented above.

Other Contextual Variables

In addition to disadvantage and residential stability, the models control for two contextual variables that may affect the relationship between services and violation reports. First, in an attempt to further account for local demand, tract-level population density measures the population density per square mile of land area. Second, research on willingness to travel suggests that a person's likelihood to travel far distances is dependent on the size and geographic distribution of resources within his or her region of residence (Grengs, et al., 2010). For example, a person living in a sparsely populated rural county is typically more accustomed and willing to traveling longer distances to meet household needs than a counterpart living in a dense urban core where a range of opportunities are nearby. In accordance, the analysis includes an indicator variable for whether a person was located in a metropolitan statistical area (MSA), defined by the census as all counties with a core urban area of over 50,000 people as well as any adjacent counties that have a high degree of social and economic integration with the urban core.

Individual-Level Control Variables

The analysis controls for three types of individual-level measures that could

potentially confound the relationship between service proximity and parole outcomes. First are measures of *sociodemographic characteristics*. Sex is coded 1 for female and 0 for male. Race is coded as a series of dummies for "white," "black," and "other." Age in 2003 is measured as a series of dummies for "18-25 years," "26-30 years," "31-35 years," "36-40 years," "41-45 years," "46-50 years," and "51-89 years" (reference). Education at time of sentencing is measured as a series of dummies for "8 years or less," "9-11 years with no GED or high school degree," "GED," "12 years and high school degree," and "some college or more" (reference). Marital status at time of sentencing is measured as a series of dummies for "never married," "married" (reference), "divorced or separated," and a residual category for those who are "widowed, in common law marriages, or whose marital status is unknown." Number of dependents at time of sentencing is a continuous variable. Pre-prison employment status is coded 1 for parolees who had any earnings during the calendar quarter of prison entry or the preceding quarter (for the prison spell that ended in their 2003 parole) and 0 for parolees with no earnings.[3]

Second the analysis controls for measures of *criminal history and offender status*. Number of prior prison spells (i.e., an inmate's "prefix") is measured as a series of dummies for "first prison sentence" (reference), "one prior spell," "two or three prior spells," or "four or more prior spells." Time served for the sampled prison sentence is measured in years. Type of offense corresponding to most recent prison sentence is a series of dummies for "assaultive" (reference), "drug-related," or "non-assaultive and non-drug related." Sex offender status is expressed as a dichotomous variable equal to 1 for sex-offenders and 0 for non-sex offenders. Known mental health disorder at the time

[3] Data on employment status were retrieved through a data sharing agreement with the state unemployment insurance agency. Employers report the employment status and earnings for all employees on a quarterly basis.

of prison intake is coded as 1 for mental health disorder and 0 for no known mental health disorder. Substance abuse history is categorized as a series of dummies for "no history of substance abuse" (reference), "history of alcohol abuse only," "history of tetrahydrocannabinol (THC)/marijuana abuse only," "history of alcohol and THC abuse," "history of "hard drug" abuse only," and "history of alcohol, THC, and hard drug abuse."

Finally, the analysis controls for *characteristics of parole supervision*, which are measured after release from prison and may influence parolees' risk of committing or being written up for a violation. Early release identifies parolees who were released from prison prior to his/her parole date and is coded as a series of dummies for "2000-2001 release," "2002 release," and "2003 release" (reference). An indicator of whether the parolee was transferred from prison to a community-based reentry center prior to his/her parole date is coded 1 for a center transfer and 0 for no center transfer. An indicator of whether the parolee was released prior to his/her parole date and placed on electronic monitoring is coded 1 for an early transfer to electronic monitoring and 0 for no early transfer to electronic monitoring.

Missing Data

Overall, the research team encountered very little missing data from the administrative records. In most cases, fewer than one percent of all cases were missing. Table 2.1 describes the incidence of missing data, along with descriptive statistics for the population (discussed below). To handle missing data, this study uses multiple imputation to simultaneously impute all variables and create five imputed data sets (using Stata v13 (StataCorp, 2013)). Predictors in the imputation models include all variables used in the analysis. The current analysis is performed on the multiply imputed data set.

Analytic Strategy

To test the impact of service proximity on parole violations, I estimate two sets of nested binary logistic regression models. The first set (Models 1-3) examines the impact of *nearby* service proximity (within a five-mile radius) on the likelihood of violation within three years of release, while the second set (Models 4-6) expands the service radius by estimating the effect of *distant* service proximity (within a 30-mile radius) on the likelihood of violation within three years. Within each set, the first model tests the impact of service proximity while controlling for all individual-level predictors to negotiate the conflicting bodies of literature on whether proximate services were associated with an increased or decreased risk of recidivism among parolees. The second model adds disadvantage, residential stability, population density, and MSA status to test whether additional contextual variables could explain the relationship between service proximity and parole violation. In response to recent findings that ecological conditions can moderate the impact of service proximity on recidivism, the final model includes interaction terms between service proximity and tract-level disadvantage, and service proximity and tract-level residential stability.[4]

Results

Descriptive and Spatial Characteristics

Descriptive statistics on contextual measures for the population are provided below in Table 2.1 (with individual-level control measures reported in Appendix A-1). The population is 8% female, 53% black, 45% white, and 2% other (mostly Mexican-American). With regard to age, a little more than one-third of the population is between

[4] The analysis was also run in a survival model framework and the results were consistent with those reported here.

the ages of 18 and 30, another third is between ages 31 and 40, and slightly less than a third are over the age of 40. Two-thirds of parolees either attended some high school (35%) or obtained their GED (31%), and the majority of parolees (66%) were never married. Non-assaultive crimes were the most common offense leading to the prison spells that ended in the 2003 parole period (46%), followed by assaultive offenses (29%) and drug offenses (26%). For almost half of parolees (48%), the prior prison spell was their first incarceration period, suggesting that many of the parolees had not been repeat offenders in the past. Nevertheless, rates of parole violation were very high, as 70% (N=7,695) of the population committed a parole violation within three years of release.

Table 2.1. Descriptive Statistics of Contextual Measures

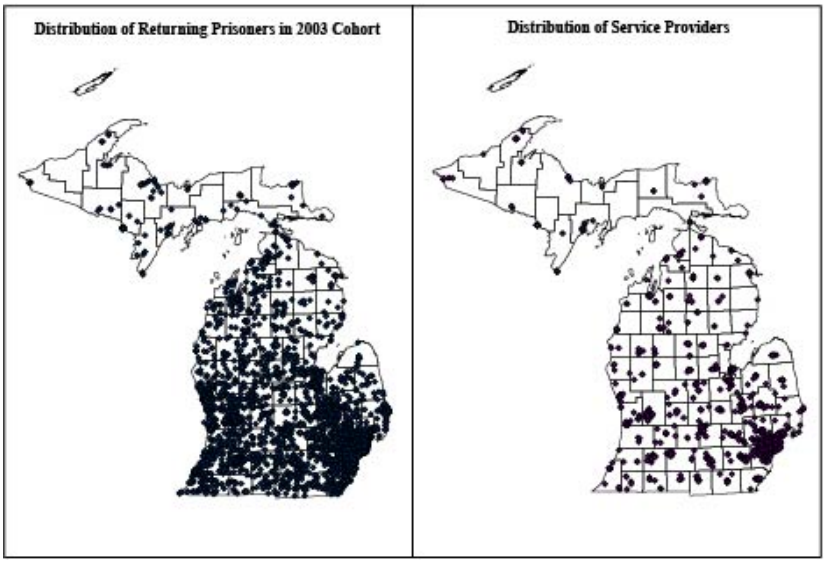
	Population (*n*=11,031)		# of Imputed Cases	
	% *(mean in italics)*	*n* (*SD in italics*)	% of pop	*n*
Nearby Service Proximity (5 mi)[a]	*0.00*	*(1.00)*	0.00	(0)
Distant Service Proximity (30 mi)[a]	*0.00*	*(1.00)*	0.00	(0)
Disadvantage	*0.83*	*(1.28)*	0.00	(0)
Residential Stability	*-0.52*	*(1.06)*	0.00	(0)
Population Density[a]	*0.00*	*(1.00)*	0.00	(0)
MSA Status				
In MSA	0.91	(10061)	0.00	(0)
Not in MSA	0.09	(970)		

[a] *Denotes standardized variable*

Figure 2.1 illustrates the spatial distribution of parolees and service providers across Michigan. Based on parolees' first residential addresses, parolees in the 2003 cohort are unequally distributed across the state, with 91% of parolees returning to an MSA and almost half of the cohort returning to the three-county metropolitan Detroit area. Parolees tend to return to census tracts that have higher-than-average levels of disadvantage and lower-than-average levels of residential stability (described in Table 2.1). For example, after standardizing disadvantage across all tracts in the state, the mean for the disadvantage scale in the population of parolees is .83 of a standard deviation higher than

the statewide average, suggesting more variability on neighborhood disadvantage in the population of parolees relative to the statewide distribution of tracts. Services tend to cluster in similar areas as parolees, namely urban and metropolitan areas. Over 70% of the service providers in the data are located in MSAs and nearly one-quarter of providers are located in the Detroit metropolitan area.

Figure 2.1. Spatial Distribution of Returning Prisoners and Service Providers



Nearby Service Proximity and Parole Violation

Table 2.2 reports findings from the first set of analytic models, which explore the likelihood of violation using a five-mile radius of service proximity (control measures reported in Appendix A-2). These models ask how the density of nearby services—i.e., those within and immediately surrounding parolees' neighborhoods—affect the log-odds of parole violation. Model 1 tests Hypothesis 1 for nearby services, assessing the impact of service proximity on violation while controlling for all individual-level predictors. In contrast to Hypothesis 1, the results show that higher nearby service proximity is associated with an *increase* in the log-odds of violation for parolees. Based on the

coefficients reported in Model 1 in Table 2.2, moving from low to high levels of nearby service proximity (one standard deviation below and above the mean, respectively) while holding all other covariates constant at their means is associated with a three percentage point increase in the predicted probability of violation.

Table 2.2. Effect of Nearby Services (5mi) on Log-Odds of Parole Violation

	Model 1			Model 2			Model 3		
	coef	(SE)		coef	(SE)		coef	(SE)	
Service Proximity	0.07	(0.03)	***	-0.02	(0.03)		0.02	(0.04)	
Disadvantage				0.02	(0.03)		0.04	(0.03)	
Residential Stability				-0.18	(0.03)	***	-0.18	(0.03)	***
Population Density				-0.10	(0.03)	***	-0.12	(0.03)	***
MSA Status				0.22	(0.09)	***	0.20	(0.09)	**
Service Prox*Disad							-0.08	(0.03)	***
Service Prox* Res Stab							-0.04	(0.03)	

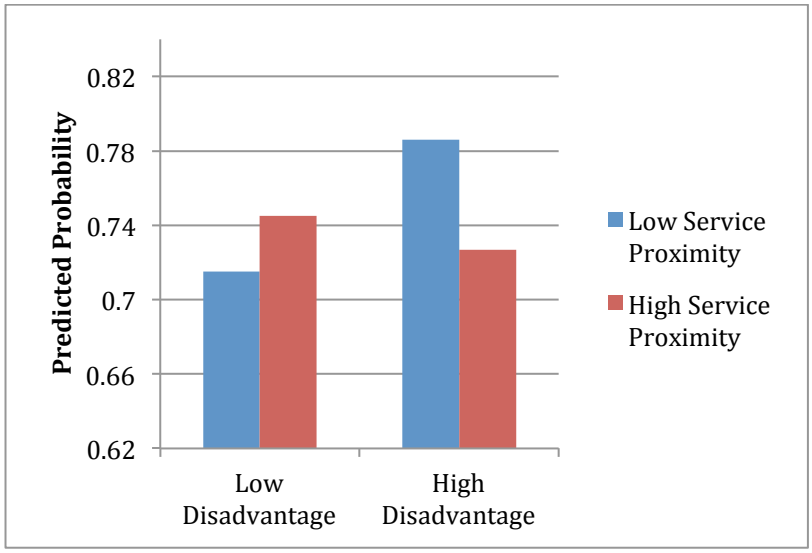
note: *** p<0.01, ** p<0.05, * p<0.1

Model 2 adds controls for four additional contextual variables: disadvantage, residential stability, population density, and MSA status. The findings partially confirm Hypothesis 2, indicating that the broader context of parolees' neighborhoods is significantly associated with the filing of violation reports. Parolees who live in more residentially stable areas are less likely to receive violations. Tract-level disadvantage, however, is not significantly associated with violation reports. With the addition of contextual covariates, the relationship between service proximity and violation is no longer significant, suggesting that these factors may partially mediate the impact of services on violation outcomes.

Finally, to examine whether the effects of nearby service proximity on violation were moderated by contextual factors as laid out in Hypothesis 3, Model 3 includes interaction terms between service proximity and disadvantage, and service proximity and residential stability. The results indicate that although disadvantage does not significantly predict violation in Model 2, it moderates the relationship between service proximity and

violation. These findings underscore the necessity of considering the broader context of service proximity in understanding recidivism. Figure 2.2 displays the predicted probabilities of violation across differing levels of service proximity and disadvantage, holding the other covariates constant at their means. Consistent with Hypothesis 3, higher service proximity is associated with a significant decrease in the log-odds of violation in areas with high levels of disadvantage. However, in areas with low levels of disadvantage, increased service proximity is associated with an *increase* in the log-odds of violation.

Figure 2.2. Predicted Probability of Violation by Levels of Service Proximity and Neighborhood Disadvantage: 5-Mile Radius



Taken as a whole, the findings demonstrate that greater proximity to nearby services among parolees increases the risk of recidivism. However, the inclusion of broader ecological characteristics generates a more nuanced interpretation of the effects of service proximity, such that the presence of services in more disadvantaged areas cultivates the conditions conducive to desistance, while their presence in less disadvantaged areas fosters the conditions that contribute to recidivism.

Distant Service Proximity and Parole Violation

To test whether service proximity matters not only within a parolee's immediate vicinity, but also within a wider radius, the second set of models tests the original three hypotheses using a 30-mile radius of service proximity. Results are reported in Table 2.3 with control measures reported in Appendix A-3. Again, Hypothesis 1 tests that impact of service proximity on parole violation without controlling for additional contextual covariates. In contrast to the first set of models, higher proximity of services within 30 miles is associated with a *decrease* in the log-odds of violation. Model 1 in Table 2.3 indicates that fixing all other covariates at their means, the predicted probability of violation for parolees with high levels of distant service proximity is three percentage points lower than the predicted probability of violation for parolees with low levels of distant service proximity.

Table 2.3. Effect of Distant Services (30mi) on Log-Odds of Parole Violation

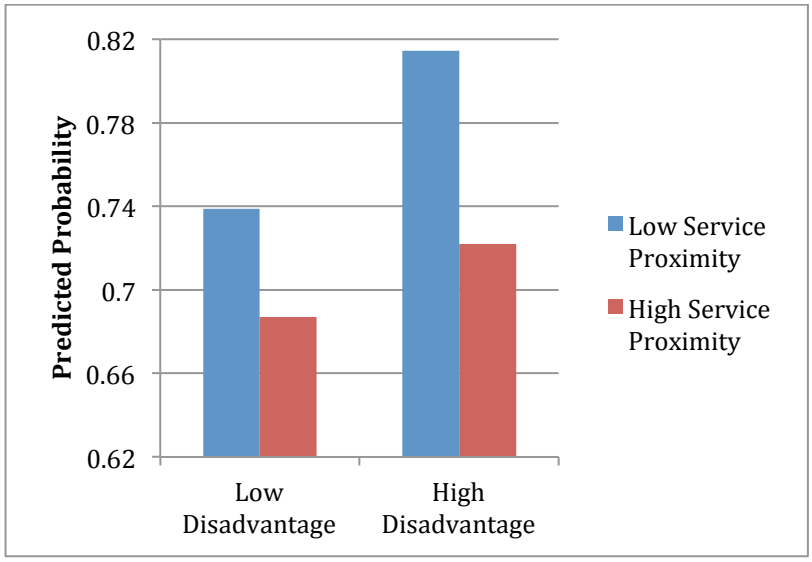
	Model 1			Model 2			Model 3		
	coef	(SE)		coef	(SE)		coef	(SE)	
Service Proximity	-0.14	(0.03)	***	-0.21	(0.03)	***	-0.21	(0.03)	***
Disadvantage				0.04	(0.03)		0.05	(0.03)	**
Residential Stability				-0.15	(0.03)	***	-0.15	(0.03)	***
Population Density				0.03	(0.04)		0.01	(0.04)	
MSA Status				0.32	(0.09)	***	0.32	(0.09)	***
Service Prox*Disad							-0.06	(0.03)	**
Service Prox* Res Stab							-0.06	(0.03)	**

note: *** p<0.01, ** p<0.05, * p<0.1

The protective effect of services on violation reports is further strengthened by the addition of disadvantage, residential stability, population density, and MSA status to Model 2. Consistent with Hypothesis 2, higher levels of residential stability are associated with a decrease in the log-odds of violation. Finally, to test Hypothesis 3, Model 3 adds the same series of interaction terms included in Model 3 in Table 2.2. The results underscore the importance of considering contextual factors in an analysis of

service proximity and recidivism. Disadvantage moderates the relationship between service proximity and violation; for parolees residing in areas of both high and low disadvantage, increasing the proximity of service providers decreases the predicted probability of parole violation. As illustrated in Figure 2.3, parolees in highly disadvantaged areas experience a decrease of almost ten percentage points in the predicted probability of violation when moving from neighborhoods with low to high service proximity.

Figure 2.3. Predicted Probability of Violation by Levels of Service Proximity and Neighborhood Disadvantage: 30-Mile Radius



Discussion

With record numbers of people leaving prison, the ability of social service providers to help offenders successfully reintegrate and remain in compliance with their parole conditions has become central to the reentry process. Engagement with social service programs has assisted many former prisoners in overcoming reentry hurdles, yet little is known about the ways in which service proximity impacts the risk of recidivism. Using administrative data on all offenders paroled in the state of Michigan in 2003, this article

examines the relationship between local service proximity and violation reports. I also evaluate whether the relationship between service proximity and parole outcomes depended on the geographic construction of service proximity. Contrary to expectations, the results indicate that high levels of service proximity are not always beneficial to desistance, as parolees surrounded by more services in their immediate vicinities are at greater risk of parole violation. The results also suggest that services are more beneficial to parolees in certain types of neighborhoods. This analysis contributes several important findings to the literature on prisoner reentry, each of which I explore in the ensuing discussion.

In contrast to prior findings on the absolute advantages of services, the results indicate that higher levels of nearby service proximity (within 5 miles) *increase* the predicted probability of violation for parolees. These findings are consistent with research suggesting that high densities of local institutions can generate local disorder and decrease informal social control among neighbors (Kurtz, et al., 1998; Taylor, et al., 1995). Similar to other institutions, organizations that work with former prisoners likely generate increased foot traffic in the community as consumers visit and congregate near providers. The influx of outsiders—particularly the at-risk populations served by providers in this study—may reduce trust and conformity among residents, fostering conditions conducive to recidivism.

Indeed, the models indicate that several contextual variables, particularly residential stability, seem to partially mediate the relationship between service proximity and recidivism. Because this study does not have access to annual data on service proximity, the direction of these mediating relationships are unclear. For instance, the research

discussed above suggests that the presence of nearby institutions may itself reduce residential stability. Alternatively, it may be the case that the types of providers captured by this study are more likely to locate in less residentially stable areas. The literature on the spatial distribution of organizations indicates that providers choose locations based on a wide range of criteria, including local need, the availability of funding, the location of partnering organizations, the existence of appropriate facilities, the supply of qualified employees, and the presence of specific client populations (Allard, 2007; Bielefeld, et al., 1997). The direction of the causal relationships between service proximity and other contextual factors is an important topic for future research.

At the same time, parolees in this study who have higher levels of distant service proximity (within 30 miles) have a *lower* predicted probability of violation. There are multiple possible explanations for these findings. Parolee participation with service providers may foster the development of new skills, reduce rates of substance abuse and mental illness, and provide other necessary supports that encourage desistance. Alternatively (or simultaneously), local service providers may offer community-building activities, increase local resources, and promote informal oversight of the neighborhood by its residents. Thus, services contribute to desistance as long as they are not located in a parolee's immediate vicinity; services close enough to create local disorder or "holes in the resident-based fabric" are detrimental to parolees' post-prison success. It is also possible that the presence of local service providers acts as a proxy for other neighborhood criminogenic factors not well captured by the contextual covariates included in the current models.

The results also reveal that neighborhood disadvantage moderates the impact of service proximity on parole violations. For parolees living in areas with higher-than-average levels of disadvantage, the presence of service providers greatly reduces the likelihood of violation. For parolees in less disadvantaged areas, service providers located within 30 miles also help reduce noncompliance with parole supervision. However, parolees immediately surrounded by the highest levels of resources—low levels of neighborhood disadvantage combined with high levels of service proximity —experience an *increase* in the log-odds of parole violation. These unintuitive findings are consistent with Wilcox et al.'s (2004) speculation that institutional presence in disadvantaged areas contributes much-needed supervision; yet institutional presence in better-resourced neighborhoods generates disorder and creates opportunity for crime. The present analysis adds an important clarification to this theory: in better-resourced areas, the presence of services is only detrimental when there is a high level of *nearby* service proximity. Service presence within a broader radius is beneficial for all parolees, regardless of local disadvantage.

In light of this paper's contributions, it is important to address two limitations of the study. While the administrative data used in this study provided an abundance of neighborhood, legal and demographic variables on a large cohort of parolees, it was also somewhat limited. For example, the data were unable to shed light on the mechanisms that shaped the relationship among service proximity and parole violation; i.e., *how* does service proximity impact recidivism? Do the effects of services operate primarily through service utilization by former prisoners or through the impact of service providers on local ecological conditions? Or, as mentioned in the earlier conceptual discussion, do services

primarily shape parole violation reports through their effects on administrative responses? The data were also unable to offer insight into potential selection bias between the spatial distribution of services and the communities to which parolees returned after prison. Parolees' decisions to live in certain neighborhoods, for instance, may be correlated with their risk of recidivism, or service providers may tend to locate in neighborhoods that are home to certain types of parolees or characterized by certain structural conditions. The current study also utilized time-invariant residential measures, based on parolees' first post-prison addresses. High rates of residential mobility among parolees suggest the importance of using time-varying residential measures in future research (Harding, Morenoff, & Herbert, 2013)

A second limitation is this study's assessment of a single cohort of parolees from one state, and therefore the findings cannot be generalized without caution to the general population. Michigan's rates of incarceration, rate of success on parole, and percentage of prison admissions who were parole violators were close to the national average during this time period (Travis & Lawrence, 2002), yet the experiences of Michigan parolees may have differed from those in other states due to sociodemographic, economic, or political differences. In addition, criminal justice system policies and practices often differ across states. For instance, during this specific time period, Michigan was embarking on the implementation of the Michigan Prisoner Reentry Initiative (MPRI), which greatly expanded the services and resources offered to individuals released on parole. It is unclear how MPRI's implementation, which occurred in stages across the state, influenced the consumption of services by parolees and the emphasis of services by parole agents across jurisdictions. The generalizability of this study's findings could be

strengthened by the inclusion of jurisdictional or organizational differences in the surveillance and sentencing of parolees.

Future scholarship can build on the current analysis by utilizing more fine-grained measures of social disorganization and service proximity. For instance, to identify the precise mechanisms by which service providers shape recidivism, subsequent research can include contextual factors associated with specific aspects of social disorganization, such as collective efficacy and informal social control. Case studies or qualitative interviews may also shed light on the extent to which former prisoners utilize local services as well as the impact of local institutions on residents. While this study focused on the overall contribution of services to parole outcomes, future studies should also examine the differential effects of specific types of service providers or specific types of parolees. Recent work suggests that certain types of institutions may be more associated with criminal behavior than others (Slocum, Rengifo, Choi, & Herrmann, 2013), and this may apply as well to parole violations. For instance, with such a high proportion of individuals involved in the criminal justice system suffering from substance abuse or dependence, separately examining the impact of substance abuse treatment on parolees may also help refine findings from the current analysis (Mumola & Karberg, 2006). As a result, future scholarship should aim to utilize more comprehensive and detailed data on service provision.

The results of this study, particularly when complemented by additional research, can offer guidance for the practice and policy of parole supervision. In contrast to common wisdom on the benefits of social services, the results suggest that the presence of service providers in one's immediate vicinity can increase the risk of violation, particularly for

parolees living in better-resourced areas. From a practice perspective, parole agents may consider evaluating a wider range of factors when both approving parolees' residences and pairing parolees with appropriate service providers. To adequately support parolees living in more disadvantaged areas, where resources tend to be less accessible, parole agents and supervisors may consider implementing additional programming or means of accountability to help parolees identify and utilize critical services. For policymakers, the results suggest the need for conscientious community planning that accounts not only for the existence of service providers and other institutions but also how their impact is influenced by broader ecological conditions.

This study substantively and methodologically builds on prior reentry research by identifying the impact of service proximity and the broader ecological context on the incidence of violation reports among parolees. Using spatial mapping and multivariate analysis, this paper offers insight into how the impact of "context" can vary across geographic scale. Future scholarship must continue to investigate how ecological context can both contribute to and reduce recidivism among former prisoners.

CHAPTER 3
Institutional Sanctions in Context: The Impact of County-Level Characteristics on Parole Outcomes

Addressing the revolving door of the state and federal prison system may be the most persistent challenge faced by criminological practitioners and scholars. Although some states have reported reductions in the past few years (The Council of State Governments, 2012), the national recidivism rate has remained between 43 and 52 percent for the past three decades (Langan & Levin, 2002; The Pew Center on the States, 2011). The social and economic costs of incarceration have been widely documented, including negative consequences for the individuals who reoffend (for instance, the risk of longer prison sentences as repeat offenders, additional family disruption, and labor market detachment), their communities, and the taxpayers who bear the cost of incarcerating repeat offenders. (e.g., Clear, 2007; Geller, Garfinkel, Cooper, & Mincy, 2009; Wakefield & Uggen, 2010; Western, 2006).

In assessing the current state of research on community supervision and recidivism, a panel of the National Research Council (Petersilia, et al., 2007) underscored the need for more rigorous research on parole practices and recidivism in general, and particularly on the role that local context plays in either perpetuating or discouraging recidivism among parolees. Although recidivism is often assumed to be exclusively a result of whether a parolee engages in offending behavior, it is concurrently driven by institutional responses to offending behavior. As a result, the panel specifically highlighted the need for more

research into how the parole system sustains the revolving door between custody and the community when it uses imprisonment – rather than community-based consequences – as a sanction for parole violations, especially those that do not involve new crimes.

Responding to this gap in the research on mass incarceration and prisoner reintegration, this paper analyzes data on a large cohort of parolees in Michigan to examine how local contextual conditions are related to institutional responses to parole violations. Specifically, the analysis asks two broad questions. First, how do the characteristics of the counties in which parolees are supervised influence the risk of being returned to prison for violation behavior, thus perpetuating the cycle of incarceration? Second, do local conditions shape the use of sanctions other than revocation, such as short-term custody and community-based sanctions? The analysis reveals that the types of sanctions issued to parole violators are significantly driven by variation in local contextual conditions. Even after controlling for the number and type of violation offenses committed, parolees supervised in "risky" areas – such as those with fewer resources – experience an increased risk of return to prison, while parolees supervised in better-resourced areas are more likely to serve their sanctions in the community. The findings also suggest that local conditions play a particularly important role in the use of short-term custodial facilities (such as jails) as alternatives to both prison and community-based sanctions.

To provide a framework for the analysis, I first articulate theoretical arguments for the impact of local context on the decision-making of criminal justice agents. Next, I review empirical evidence for the impact of contextual characteristics on sanctions issued to released prisoners. I then describe the administrative data on parole violators used to

analyze sanction outcomes. Lastly, I describe the results and discuss the implications of the study.

Conceptual Framework

Despite the considerable authority and discretion held by parole agents in the decision-making process, there exists little theoretical research that directly discusses the factors considered by agents in issuing sanctions for violations (McBride, 2009; Travis, 2007). As a result, I turn to scholarship on the decision-making processes of other criminal justice system agents and other frontline bureaucrats for insight into how local constraints and pressures can shape offender outcomes.

Decision-making in the criminal justice system has been conceptualized as a function of the "focal concerns" perspective (e.g. Huebner & Bynum, 2008; Steffensmeier & Demuth, 2000; Ulmer & Bradley, 2006), under which decision-makers balance three central concerns: (1) offender blameworthiness (how responsible should an individual be held?); (2) dangerousness and risk of future crime (what is the likelihood and community cost of an individual committing future crime?); and (3) practical constraints (what are the practical constraints and consequences of specific sentences?). Decision-makers assess focal concerns within the context of their local "court community," a "social world" composed of interdependent networks of law enforcement, judges, prosecutors, community corrections agents, and other system actors (Eisenstein, Flemming, & Nardulli, 1999; Ulmer, 1997).

Within court communities and other direct service bureaucracies, the shared workspace, ideologies, and resources among actors are hypothesized to generate local templates or "going rates" for the punishment that decision-makers enact for crimes and

can create variation in punitive norms across jurisdictions (Eisenstein, et al., 1999; Kautt, 2002; Lipsky, 1980; Ulmer, 1997; Ulmer & Johnson, 2004; Watkins-Hayes, 2009). In his discussion of the socialization of criminal court personnel, Emerson (1983) illustrates the impact of local culture on decision-making: "As the prosecutors became integrated into local office culture, familiar with its procedures, and accustomed to the shape of their caseloads, they came to see and treat offenses that had earlier struck them as 'outrageous' in more neutral, routine, and 'lenient' ways" (p. 434). The decisions of parole agents, like those of other justice system decision-makers, may be sensitive to the standards or norms that have developed within their local offices or jurisdictions. In this section, I discuss three related perspectives on how contextual factors can influence the evaluation of focal concerns and issuance of sanctions by parole agents.

Organizational Capacity and Constraints

The first perspective emphasizes the role that the capacity and constraints of organizations play in influencing the decision-making processes of frontline bureaucratic agents. Across bureaucratic environments, the "capacity to punish" is highly dependent on the availability of organizational resources (Emerson, 1983; Lipsky, 1980; McCleary, 1977; Pontell, 1984). The prioritization of organizational constraints and maintenance in decision-making is particularly vital in overcrowded, under resourced institutional contexts such as the criminal justice system (Dixon, 1995).

Research on judicial sentencing outcomes illustrates the inclination by agents in the criminal justice system to align their decisions with bureaucratic resources and needs. For instance, offenders who pursue trials rather than accepting plea bargains tend to receive harsher sanctions, presumably a response to the higher level of organizational resources

utilized for trial (Steffensmeier & Demuth, 2001; Ulmer & Bradley, 2006). The local availability of jail and prison space has also shown to impact the judicial use of incarceration, with offenders in under-resourced, overcrowded jurisdictions less likely to receive custodial penalties (Clear, Harris, & Baird, 1992; Johnson, 2006; Lin, Grattet, & Petersilia, 2010; Ulmer & Johnson, 2004).

Evidence for the impact of local resources on decision-making suggests that the local availability of alternatives-to-incarceration may reduce the reliance on custody by shaping how agents evaluate focal concerns and subsequently respond to parole violators. Agents who work in jurisdictions with more available social service providers, for instance, are inherently provided more options in the sanction process. Rather than being limited to custodial facilities, these agents have the option of utilizing social services rather than—or at least ahead of—incarceration (Grattet, et al., 2008; Grattet, et al., 2009). The presence of service providers might also create a local culture of service utilization, with agents in these areas more likely to believe that offenders deserve the opportunity for treatment. Recent research has also found that criminal justice system decision-makers view offenders from service-poor or otherwise disadvantaged communities as unreliable, more threatening, and more at risk of future offending behavior (Grattet, et al., 2008; Rodriguez, 2013). In turn, agents in under-resourced areas may be more likely to issue custodial rather than community-based sanctions to parolees.

Institutional Culture

Prior research suggests that the sanctions issued to individual offenders can be shaped by institutional culture, driven both by local politics and the development of jurisdictional standards for punitiveness. Criminal justice system policy and practice are commonly

dictated by political party affiliation, with conservative politicians and voters consistently more likely to support the increased surveillance and incapacitation of criminal offenders (e.g., Davey, 1998; Helms & Jacobs, 2002). These values can translate to frontline decision-making through a number of mechanisms. Public opinion has shown to directly influence decision-making through the election of partisan judges and lead prosecuting attorneys. Communities or regions with more conservative politicians and voters may spend more money promoting a "law-and-order" approach and are more likely to fund local advocacy groups. On the frontlines, parole agents, managers, and board members may share or be influenced by the community's political values. Like other frontline workers, parole decision-makers are likely to interpret discretionary state policies through politically-tinted lenses (Fording, Soss, & Schram, 2007; Helms & Jacobs, 2002; Lin, et al., 2010).

The process by which decision-makers across connected agencies construct and come to rely upon common understandings of "appropriate" punishments for certain types of crimes and defendants reifies decision-making norms. Over time, members of court communities increasingly turn to these standards to guide their issuance of sanctions (Eisenstein, et al., 1999). The creation of templates for punishment within and across agencies in a court community thus shape how decision-makers understand, assess, and respond to offending behavior. Under this perspective, individual offenders who are supervised or tried in jurisdictions inclined toward harsher punishment would be more at risk of receiving severe sanctions than similar offenders who are sentenced in jurisdictions with more lenient punishment standards.

Racial Threat

Stereotypes of racial minorities, particularly of black populations, as dangerous and prone to threaten public safety have prevailed for many centuries (Kennedy, 1997). Scholars have argued that the linkages between minorities and crime have become even more widespread in the post-Civil Rights era as politics are increasingly racialized and the prison system is increasingly enmeshed with the ghetto (e.g., Pickett, Chiricos, Golden, & Gertz, 2012; Wacquant, 2001; Welch, 2007). The disproportionate incarceration of blacks – and increasingly of Hispanics – has further reified and perpetuated stereotypes of minority criminality. Wacquant (2001) has suggested that today's prison system reflects the "solidification of the centuries-old association of blackness with criminality and devious violence" (p. 117).

The association between minority populations and criminal threat has individual-level implications, with black and Hispanic offenders viewed as more dangerous and less likely to respond to rehabilitation (e.g., Bridges & Steen, 1998; Spohn & Holleran, 2000; Steffensmeier & Demuth, 2000). Stereotypes about blacks and Hispanics also manifest at the aggregate level, with studies suggesting that people perceive higher levels of crime and feel more at risk for victimization in areas with higher actual or perceived proportions of minority populations (Chiricos, Hogan, & Gertz, 1997; Covington & Taylor, 1991; Quillian & Pager, 2001).

To manage perceived racial threat, members of the majority class enact discriminatory policy and develop threat-oriented ideologies, exaggerated stereotypes that justify control (Blalock, 1967). Indeed, residents in counties with larger minority populations and higher rates of perceived crime by minority offenders support more

punitive crime practices (Chiricos, Welch, & Gertz, 2004; King & Wheelock, 2007; Welch, Payne, Chiricos, & Gertz, 2011). Criminal justice system decision-makers are more likely to issue severe sanctions to offenders in counties with higher proportions of minority residents, perhaps reflecting stereotypes of such offenders as more dangerous or blameworthy (Mosher, 2001; Ulmer & Bradley, 2006; Ulmer & Johnson, 2004). Black or Hispanic offenders living within these same areas may be "doubly" punished for their own race as well as the aggregate racial composition of their communities (Bontrager, Bales, & Chiricos, 2005; Harris, Evans, & Beckett, 2011; Ulmer & Johnson, 2004). Although not all studies have found the relationships between racial composition and punishment to be significant or attributable to racial stereotyping and the enactment of discriminatory policy and practices (Kautt, 2002; Lin, et al., 2010; Pickett, et al., 2012; Ulmer, 1997), racial composition is a necessary consideration in understanding the relationship between local context and the issuance of parole sanctions.

Empirical Evidence

In recent years, scholars have used administrative records on large samples of returning prisoners to analyze the influence of local context on the punishment of offending behavior. Two recent studies examined the effects of tract- and county-level contextual conditions on whether parolees were returned to prison for offending behavior, either for new crimes or violations of parole. Hipp and colleagues (2010) used data on 280,121 parolees released from California prisons in 2005 and 2006 to analyze the contextual predictors of being returned to prison. They found that higher levels of tract disadvantage and social disorder and lower frequencies of social services predicted return to prison for new crimes among individuals paroled in California in 2005 and 2006.

Using a large sample (N=49,420) of males returning from Florida prisons between 1998 and 2001, Mears and colleagues (2008) conducted a multilevel analysis of the county-level predictors of being returned to prison on a felony conviction for violent, drug-related, and property offenses. Their contextual analysis focused on census-based measures of the resource deprivation and racial segregation of counties to which prisoners were released, and they found that returning to a more disadvantaged county was associated with a higher risk of being returned to prison for a violent or drug-related felony conviction (also see Wang, Mears, & Bales, 2010).[5]

Another study of California parolees distinguished the impact of contextual predictors on offending behavior from their effects on subsequent sanctions by including only those parolees who had already been charged with a parole violation in their analysis of sanction outcomes (Grattet, et al., 2008; Grattet, et al., 2009; Lin, et al., 2010). Grattet and colleagues analyzed all parole violation cases heard by the California Board of Parole Hearings in 2003 and 2004 (N=254,468 paroles, N=114,820 violation cases) and found that parolees living in counties with higher levels of "punitiveness"—a scale composed of political party registration and ballot proposition voting patterns related to correctional practices—were more likely to be returned to prison. They also found that the risk of revocation decreased for parolees living in tracts with greater social service availability and increased for parolees who lived in tracts with higher proportions of black residents and higher black unemployment rates. However, the effects of these latter two predictors were not replicated in a follow-up paper (Lin, et al., 2010).

[5] County-level resource deprivation was not significantly associated with property crime, and racial segregation was not significantly related to any of the outcome measures. However, the authors also found significant interactions for both resource deprivation and racial segregation for subgroups defined by race and age.

These studies provide evidence for the impact of context on whether former prisoners are revoked to prison for recidivism behavior and suggest that contextual factors can directly shape institutional responses. However, research also indicates that revocation is only one of the responses that parole agents use to manage parole violations (Taxman, 1995; White, Mellow, Englander, & Ruffinengo, 2011). Many parolees who are never revoked to prison experience other forms of sanctions—such as mandated community-based treatment or short-term spells in jail—that may be consequential to their post-prison success. The current study attempts to advance prior research by exploring how various aspects of context shape the use of these multiple forms of institutional sanctions.

Current Study

To better understand how institutional decision-making shapes the flow of offenders in and out of custody, this analysis examines the influence of local contextual factors on the sanctions issued to parolees. Drawing on theoretical and empirical evidence for the relationship between context and criminal justice system decision-making, the analysis assesses the impact of the three types of contextual conditions discussed above on parole sanctions: organizational capacity and constraints, institutional culture, and racial threat.

The current study sheds light not only on whether contextual characteristics predict return to prison among parole violators, but also on whether contextual characteristics influence the wider range of sanctions utilized by parole agents. Although parole revocation is often discussed as the most common (and most severe) institutional response to parole violation behavior, research has suggested that parole agents often draw from a wide range of potential options in their supervision of parolees that include community-based sanctions as well as short- and long-term custodial sanctions (Taxman,

1995; White, et al., 2011). Due to the lack of knowledge about decision-making among parole agents, it is unclear whether sanction options are utilized uniformly or disparately across jurisdictions as a result of local contextual characteristics. By examining the impact of context on three different types of sanctions, the current study advances our understanding of variation in the risks faced by parolees.

The analysis poses three hypotheses intended to illuminate the relationship between context and sanction outcome. Following prior research, the first hypothesis explores the influence of context on parole agent decisions between *revocation and non-revocation*, expecting that parolees will be at greater risk of revocation when supervised in areas with the following types of risk: (1) less organizational capacity and more constraints, (2) more conservative political practices, and (3) more racial threat. The second hypothesis reconstructs the sanction categories to illustrate the impact of context on decisions between *custodial and noncustodial sanctions*. Under the assumption that custodial sanctions are considered more punitive than noncustodial sanctions, this hypothesis similarly predicts that parolees will be at greater risk of custodial sanctions when supervised in areas with (1) less organizational capacity and more constraints, (2) more conservative political practices, and (3) more racial threat.

The final hypothesis examines whether the inclusion of more fine-grained sanction measurements sheds additional light on the relationship between context and post-prison outcomes. I expect that the expansion of sanction categories will reveal nuanced jurisdictional differences in sanction usage that are masked by the combined categories used in the first two models. This exploration highlights how the use of short-term custodial sanctions is dictated by context and, given the lack of theory on how contextual

factors shape the issuance of specific sanctions, is more exploratory than confirmatory in nature.

Data

To test these hypotheses, this study analyzes a unique data set compiled by a research team at the University of Michigan of all parolees who were (1) paroled from Michigan prisons in 2003 to a residence within the state, and (2) issued a parole violation within three years of their release before any other censoring event, including death, discharge, out-of-state transfer, or return to prison for reasons other than an instate parole violation (N=7,701).[6] The data set includes records from administrative databases maintained by the Michigan Department of Corrections (MDOC) containing measures that span the length of time each offender was in prison or on parole. The databases capture data on prior criminal history, demographics, marital status, number of minor children, education, recommitments, and MDOC assessments of health, substance use, and mental health. The administrative records also contain longitudinal data entered by parole and probation officers to track information on individuals under supervision, which include all records of parole violations and subsequent sanctions. The administrative data on parolees are combined with several other data sources, described in more detail below, that offer information on the local context of parole offices.

Dependent Variable

To analyze variation in the types of sanctions that parolees receive for their first post-release violation, this study defines three categories of sanctions. *Revocations* refer to

[6] This analysis utilizes data from a larger research project (The Michigan Study of Life After Prison) and so much of the data used for the current study were collected and cleaned by other members of the research team. I use the phrase "the research team" or the collective "we" to refer to the cleaning of data or construction of variables resulting from this collaboration.

violations that result in the revocation of parole by the parole board and a transfer to a prison or camp.[7] *Short-term custodial sanctions* are defined as occurring when a parolee is sent to a jail, technical rule violator center, or other temporary custodial facility as a result of the violation but is not subsequently transferred to a facility designed for longer-term commitments, such as a prison or a camp, and is not officially revoked by the parole board. *Community-based sanctions* refer to any official reaction to a violation that does not involve a period of incarceration, including verbal warnings, mandatory community-based treatment programs, electronic monitoring, and other changes in the level or type of supervision, as well as the few instances in which there was no punishment after the violation. For violators whose administrative reports contained multiple incidents and multiple sanction outcomes, I select the most severe sanction outcome for each parolee, assuming that revocation is the most severe and community-based sanctions are the least severe.

Although the MDOC database that records parole violations does not explicitly identify a sanction outcome in 41% of cases with violations, I use supplemental data to recover information on sanction outcomes for all of these cases. According to MDOC staff, parole agents often forget to update sanction outcomes in their database due to the time lapse between the filing of a violation and the determination of a sanction. However, using additional administrative data that identifies all changes in the location and supervision status of parolees, I can observe whether, where, and why parolees were transferred immediately following their violation. For example, in one common scenario, a parolee is supervised at the same parole office since release from prison. Several days after receiving a violation report, he is transferred to a technical rule violator center,

[7] In Michigan, camps are specific types of prisons run by the Department of Corrections.

suggesting the issuance of a short-term custodial sanction. In other instances, a parolee might not experience any transfer activity following a violation report, indicating the receipt of a community-based sanction. When a sanction outcome remained unclear, I cross-checked transfer information with changes in supervision level and individual parolee case notes.[8] These methods helped successfully identify sanction outcomes for all violation reports, resulting in complete data on parole sanctions. Of the 7,701 parolees who received violation reports during the study period, 20% were revoked (N=1,535), 34% received a short-term custodial sanction (N=2,599), and 46% received a community-based sanction (N=3,567).

Regional and County-Level Contextual Variables

To assess the sensitivity of decision-making to local contextual conditions, the models include five regional or county-level contextual predictors that correspond to the region or county in which each parolee's supervising office is located. Given that court communities are typically defined by county lines, much prior research on the local context of decision-making among criminal justice system agents uses the county as the unit of measurement (e.g., Helms & Jacobs, 2002; Ulmer & Bradley, 2006; Ulmer & Johnson, 2004). This holds true for the state of Michigan, where law enforcement, courts, and community corrections agencies are largely organized using county boundaries. As

[8] I utilized the following decision rules in identifying sanction outcomes: first, I examined data on all transfers that occurred under MDOC supervision. Transfers were noted in the data each time supervision was transferred from one facility or agency to another (for instance, a transfer from a parole office to a jail or from one parole office to another parole office). In most cases, information on any transfers that occurred between the time of the focal parole violation and any other offending event (such as another violation or an arrest) was sufficient to identify the sanction outcome. When the series of transfers following a parole violation did not clearly identify the sanction outcome, I cross-checked the transfer data with narrative case notes written by parole agents and data on supervision status. Each of these data sources offered clarifying information on where parolees were living and being supervised in the months following a violation report.

such, the county is an appropriate geographic level at which to measure the influence of most contextual characteristics on the exercise of formal control. Contextual characteristics were obtained from a variety of data sources, described below, and then linked to parole offices and then to parolees using state county codes.

To capture the capacity and constraints of local organizations, the analysis includes a regional measure of *social service proximity* and a county-level measure of *socioeconomic disadvantage*. *Social service proximity* is measured at the regional level using a 30-mile radius from each parole office rather than at the county-level. According to MDOC officials as well as theoretical literature on decision-making, parole agent familiarity with local resources tends to be based more on proximity to providers than on county boundaries. Using a geocoded list of social service providers utilized by MDOC agents in the supervision of parolees, I calculate a kernel density measure of service providers within 30 miles of each of the 89 parole offices across the state that supervise parolees who are paroled in 2003. The kernel density function has the advantage of weighting service providers based on proximity (with closer services more heavily weighted), thus responding to evidence that caseworkers and consumers are more likely to know about and use proximate services (Allard, Tolman, et al., 2003; Bielefeld, et al., 1997; Kissane, 2003). All distances between parole offices and service providers are measured as Euclidean (i.e., "as the crow flies"). Each parole office is assigned a kernel density measure that identifies the density of services around each parole office and is standardized across parole offices to allow for easier interpretation.[9] *Socioeconomic disadvantage* is a weighted county average of a tract-level scale composed of the

[9] Refer to Chapter 2 for more details on the identification of social service providers and the construction of the service provider proximity measure. The current analysis was also run using a count of the providers in each county, and this measure was not significantly predictive of sanction outcomes.

following tract-level variables taken from the 2000 Census: household poverty rate, unemployment rate, proportion of households that receive public assistance, proportion of adult residents with low educational attainment, proportion of families that are female-headed, median family income, proportion of families whose income exceeds $75,000, proportion of adult residents with advanced degrees, and proportion of working adults in managerial professions. The averaged scale is then standardized across counties.

To measure institutional culture, the analysis utilizes two county-level measures that reflect local political values and sentencing patterns. *Conservative political culture* is a continuous variable that measures the Republican share of the two-party presidential vote in the 2004 election (data obtained from ICPSR, 2008).[10] *Judicial sentencing severity* captures the issuance of prison sentences among a sample of felony and high misdemeanor convictions across Michigan between 2003 and 2006 based on data from the Michigan Department of Corrections. Using offenders' background demographic characteristics and a measure of the "class" of the offense (i.e., into which sentencing grid the offense is classified) as predictors, I ran an individual-level regression of sentencing outcomes (prison versus probation sentences). These regressions do not control for any variables that could explain county-level variation in the way cases are processed and decided. The residuals from those regressions are then aggregated to the county level by taking the county mean of each residual. The variable is then standardized across counties for ease of interpretation. Finally, to measure racial threat, the models follow prior research in using a measure of county-level racial composition, calculated as the

[10] Data on county-level voting outcomes were acquired from the Inter-University Consortium for Political and Social Research. Fewer than one half of one percent of all votes was cast for candidates other than Democrats or Republicans, and so these votes were excluded from the analysis.

proportion of black residents to all residents from the 2000 Census.[11]

Individual-Level Control Variables

I control for three types of individual-level measures that could potentially confound the relationship between contextual characteristics and parole outcomes. First, the analysis controls for *characteristics of parole supervision*, which are measured after release from prison for each parolee. Early release identifies parolees who were released from prison prior to his/her parole date and is coded as a series of dummies for "2000-2001 release," "2002 release," and "2003 release" (reference). An indicator of whether the parolee was transferred from prison to a community-based reentry center prior to his/her parole date is coded 1 for a center transfer and 0 for no center transfer. An indicator of whether the parolee was released prior to his/her parole date and placed on electronic monitoring is coded 1 for an early transfer to electronic monitoring and 0 for no early transfer to electronic monitoring.[12] The analysis also includes several measures that provide a more detailed characterization of each violation report. One set of measures characterizes the nature of the incident(s) that led to the violation. This includes an indicator of whether the violation was issued for a technical infraction or a criminal offense, as well as a typology of the specific condition(s) that are violated in each incident.[13] To create the typology of violated conditions, I condense the list of 153

[11] Although the county-level proportion of black residents is not a direct measure of racial threat, it does offer an indirect proxy that has been utilized in previous research on the criminal justice system. For a more in-depth discussion of the manifestation and measurement of racial threat as it relates to incarceration, see Muller (2012).

[12] Michigan's work release program ended in 2003, with the passage of truth in sentencing legislation requiring that the entire minimum sentence be served in prison. Still, some parolees in the 2003 cohort were released to reentry centers (and often placed on electronic monitoring) before 2003. In total, 10% of parolees (1,122 individuals) were paroled to centers. Nine percent of these individuals entered the community in 2000 or 2001, 59% entered in 2002, and the remaining 32% entered in 2003.

[13] The 18 offenders who were simultaneously charged with both technical and criminal offenses were categorized as criminal offenders.

reasons cited in the violation reports into 15 categories adapted from MDOC's Parole Violation Elements Guide, a document that specifies the supervision conditions under which parole agents can issue violations to parolees. Another set of variables measures characteristics of the period of time between being released on parole and the issuance of the first violation report. This includes the elapsed time (in days) bewteen release and first violation, the number of parole infractions documented in the violation report, and an indicator of whether parolees were on abscond status at the time of their violations.[14]

Second, I control for the effects of individual-level *criminal history and offender status* on sanction outcomes. Number of prior prison spells (i.e., an inmate's "prefix") is measured as a series of dummies for "first prison sentence" (reference), "one prior spell," "two or three prior spells," or "four or more prior spells." Time served for the sampled prison sentence is measured in years. Type of offense corresponding to sampled prison sentence is a series of dummies for "assaultive" (reference), "drug-related," or "non-assaultive and non-drug related." Sex offender status is expressed as a dichotomous variable equal to 1 for sex-offenders and 0 for non-sex offenders. Known mental health disorder at the time of prison intake is coded as 1 for mental health disorder and 0 for no known mental health disorder. Substance abuse history is categorized as a series of dummies for "no history of substance abuse" (reference), "history of alcohol abuse only," "history of tetrahydrocannabinol (THC)/marijuana abuse only," "history of alcohol and THC abuse," "history of "hard drug" abuse only," and "history of alcohol, THC, and hard drug abuse."

[14] The absconding indicator refers only to parolees who were on abscond status at the time of their violation report. I was unable to measure the prevalence of parolees who were on abscond status at the end of the observation period and may have received a violation once they were back under supervision. I suspect that this affects only a small number of people since most parolees either received their first violation report or discharged from parole by the end of the three-year observation period.

Finally, I constructed measures of parolee *sociodemographic characteristics*. Sex is coded 1 for female and 0 for male. Race is coded as a series of dummies for "white" (reference), "black," and "other." Age in 2003 is measured as a series of dummies for "18-25 years," "26-30 years," "31-35 years," "36-40 years," "41-45 years," "46-50 years," and "51-89 years" (reference). Education at time of sentencing is measured as a series of dummies for "8 years or less," "9-11 years with no GED or high school degree," "GED," "12 years and high school degree," and "13 or more years" (reference). Marital status at time of sentencing is measured as a series of dummies for "never married," "married" (reference), "divorced or separated," and a small residual category for those who are "widowed, in common law marriages, or whose marital status is unknown." Number of dependents at time of original sentencing is a continuous variable. Pre-prison employment status is coded 1 for parolees who had any earnings during the calendar quarter of prison entry or the preceding quarter (for the prison spell that ended in their 2003 parole) and 0 for parolees with no earnings.[15]

Missing Data

Appendix B-1 describes the incidence of missing data, along with descriptive statistics for the population (discussed below). With the exception of two variables (sanction outcomes and the reason for violation), less than one percent of all cases are missing. As described above, the sanction outcomes are filled in with the aid of other administrative records. Parolees' reasons for violation are treated as missing in half of cases, where parole agents use generic codes such as "not engage in any behavior that

[15] Data on employment status were retrieved through a data sharing agreement with the state unemployment insurance agency. Employers report the employment status and earnings for all employees on a quarterly basis.

constitutes a violation" or "must comply with special conditions". To handle data missing on the reason for violation and other variables, this study uses multiple imputation by imputing univariate conditional distributions and creating five imputed data sets (using Stata v13 (StataCorp, 2013)). Predictors in the imputation models include all variables used in the analysis. The analysis reported in this study is performed on the multiply imputed data set.

Analytic Strategy

The analysis estimates three regression models that illuminate the relationship between context and post-prison outcomes while also examining how the construction of sanction categories influences the impact of context. Following prior research, the first model estimates the impact of context on the risk of being revoked to prison following violation. This model compares the impact of contextual characteristics on "revocation" with their impact on "non-revocation," an outcome measure that combines community-based sanctions and short-term custodial sanctions into a single category. The second model shifts the analytic lens to the differential impact of context on "custodial sanctions" (a combination of revocation and short-term custodial sanctions) versus "noncustodial sanctions."

Using multinomial regression, the final model offers more nuanced insight into the effects of local context by comparing the influence of contextual characteristics between each set of fine-grained sanction contrasts: revocation versus short-term custodial sanctions, short-term custodial sanctions versus community-based sanctions, and revocation versus community-based sanctions. This model provides additional information about whether the decision to utilize each type of sanction is based on the

availability of local resources, political culture, and racial composition. All three models control for individual-level sociodemographic characteristics, measures of criminal history and offender status, and characteristics of both parole supervision and parole violation.

Results

Spatial and Descriptive Characteristics

Table 3.1 displays descriptive statistics for contextual-level variables (individual-level variables reported in Appendix B-1). Contextual conditions are described at the county or regional level. Service proximity is standardized across parole offices (mean=0; SD=1). Socioeconomic disadvantage is standardized across counties (mean=0; SD=1). The county distribution of votes cast for the Republican presidential candidate ranges from 29% to 71% with a mean of 54%. Judicial sentencing severity is standardized across counties (mean=0; SD=1). County-level racial composition varies significantly, with the proportion of black residents ranging from 1% to 42%.

At the individual level, parolees are more likely to be written up for technical violations (78%) than for criminal violations (22%), with violations most often related to failure to report for parole officer meetings or mandatory programming. On average, each violation report contains 2.82 noncompliant incidents. For one-half of parolees, the offense resulting in their 2003 parole is non-assaultive, and prior to this sentence, sixty percent of the parole violators had a previous prison spell. Over half of parole violators have been diagnosed with substance abuse or dependence. Demographically, the population of parole violators is 7% female, 55% black, 43% white, and 2% other (mostly Mexican-American). Violators are relatively young, with 37% between the ages

of 18 and 30, and also relatively uneducated, with only 28% obtaining a high school diploma.

Table 3.1. Descriptive Statistics of Contextual Measures

	Distribution		# of Imputed Cases	
	% *(mean in italics)*	*n* (*SD in italics*)	%	*n*
Contextual Measures (N=83 Counties)				
Social Service Proximity[ab]	*0.00*	*(1.00)*	0.00	(0)
Socioeconomic Disadvantage [a]	*0.00*	*(1.00)*	0.00	(0)
Republican Votes	0.54	(0.06)	0.00	(0)
Judicial Sentencing Severity[a]	*0.00*	*(1.00)*	0.00	(0)
Black Residents	0.04	(0.62)	0.00	(0)

[a] *Denotes standardized variable*
[b] *Measured at the regional level (30 miles from each of the 89 parole offices)*

Context and the Use of Custodial Sanctions

The first two models use logistic regression to evaluate how contextual characteristics shape the use of revocation over non-revocation as well as the use of custodial sanctions over noncustodial sanctions. Based on a small body of literature on bureaucratic decision-making, I speculated that parolees would be at increased risk of custodial sanctions – typically considered most punitive – in areas with (1) less organizational capacity and more constraints, (2) more conservative political values, and (3) higher levels of racial threat. The results suggest that regional and county-level characteristics are significantly associated with sanction outcomes among parole violators but that the traditional binary categorization of sanction categories may mask more fine-grained influences of context on the types of sanctions utilized by parole agents.

The Decision Between Revocation and Non-Revocation

Table 3.2 displays results from the first two models (coefficients for individual-level controls reported in Appendix B-2). The first model estimates the impact of contextual characteristics on the use of revocation. The model shows that organizational capacity

and constraints are partially predictive of revocation, with higher levels of county-level socioeconomic disadvantage associated with an increase in the likelihood of revocation to prison over other forms of sanctions. As parolees move from low to high levels of local socioeconomic disadvantage (one standard deviation below and above the mean, respectively), the predicted probability of being revoked to prison increases approximately three percentage points. The proximity of service providers within 30 miles is not significantly related to the likelihood of revocation.

The model also examines the impact of two different measures of institutional culture. The results demonstrate that neither the percentage of Republican votes in the 2004 presidential election nor the severity of judicial sentencing affect the log-odds of being revoked. However, the likelihood of revocation increases significantly in areas with higher concentrations of black residents, suggesting that racial threat is an important determinant of institutional decision-making regarding the issuance of revocations for parole violations. In comparison to parolees supervised in areas with low proportions of black residents (approximately 4%, or one standard deviation below the mean), parolees supervised in areas with high proportions of black residents (approximately 36%, or one standard deviation above the mean), are over 10 percentage points more likely to be revoked to prison.

The Decision Between Custodial Sanctions and Non-Custodial Sanctions

The second model explores whether the reconstruction of sanction categories further illuminates the observed effects of contextual characteristics on sanction outcomes. Indeed, a comparison of results from the first two models suggests that contextual characteristics do not shape the use of "more" or "less" punitive sanctions in a consistent

fashion. In contrast to the first model, the measures of organizational capacity and constraints exert a significant negative influence on the likelihood of receiving a custodial sanction, with greater service proximity and higher levels of socioeconomic disadvantage *decreasing* the risk of custodial sanctions. Also in contrast to the first model, the impact of institutional culture on sanctions is significant and negative, with a lower likelihood of custodial sanctions among parolees supervised in conservative contexts. Racial composition is not significantly associated with the risk of receiving a custodial sanction. Overall, these findings are inconsistent with the stated hypotheses, which expected that context would influence the use of revocations over non-revocations in a similar fashion to the use of custodial sanctions over non-custodial sanctions.

Table 3.2. Impact of Context on the Log-Odds of Binary Sanction Outcomes

	Model 1			Model 2		
	Rev v. Non Rev (N=1535 v. N=6166)			Cust v. Non Cust (N=4134 v. N=3567)		
	coef	(SE)		coef	(SE)	
Social Service Proximity	-0.15	(0.10)		-0.15	(0.07)	**
Socioeconomic Disadvantage	0.13	(0.07)	**	-0.11	(0.05)	**
Republican Votes	0.26	(0.70)		-1.74	(0.47)	***
Judicial Sentencing Severity	0.01	(0.48)^		-0.15	(0.03)	***
Black Residents	2.77	(0.91)	***	-0.38	(0.61)	

note: *** p<0.01, ** p<0.05, * p<0.1

^ *The coefficient and standard error for this term have each been multiplied by 10*

Context and the Use of Fine-Grained Sanction Outcomes

Table 3.3 displays the results of the next three models, which expand the construction of sanction outcomes to three distinct forms of sanctions: revocation, short-term custodial sanctions, and community-based sanctions (individual-level controls reported in Appendix B-3). The findings reported here suggest that this expansion is critical to understanding the unique impact of context on how parolees are sanctioned for parole violations, as the risk of each sanction type varies significantly based on jurisdictional

characteristics. Most notably, the impact of context on the utilization of short-term custodial sanctions appears to operate differently than its impact on revocation and community-based sanctions, a finding that sheds light on the seemingly inconsistent results observed earlier in Models 1 and 2.[16]

The Decision to Use Short-Term Custodial Sanctions

In comparison to revocation and community-based sanctions, the likelihood of receiving a short-term custodial sanction decreases for parolees supervised in areas with more proximate social services, higher levels of socioeconomic disadvantage, more conservative politics and judicial practices, and a greater proportion of black residents. These findings are significant across nine out of the ten estimates that involve short-term custodial sanctions (Models 3a and 3b), suggesting that jurisdictional characteristics play a central role in the issuance of short-term custodial sanctions to parole violators. The magnitude of the decreased risk of short-term custodial sanctions is particularly strong in counties with sizeable black populations and conservative voters. For instance, in comparison to parolees supervised in counties with a low percentage of residents voting Republican in the 2004 Presidential election (31%, or one standard deviation below the mean), parolees supervised in counties with a higher percentage of Republican voters (54%, one standard deviation above the mean) were 10 percentage points less likely to receive short-term custodial sanctions in comparison to revocation and community-based

[16] Arguably, the types of sanctions issued to parole violators should differ considerably based on the type of violation committed. To handle this issue, all reported models controlled for whether each violation was a technical infraction or a criminal offense, as well as the more specific type of violation behavior. In addition, ancillary analyses (not reported) stratified by type of offense (technical versus criminal) revealed that the impact of context on sanction outcome was comparable across types of offenses, though the effect sizes for criminal violations were, on average, larger than for technical violations. Ancillary analyses also explored residential tract-level disadvantage and residential stability as possible sources of confounding and found that their inclusion did not alter the results.

sanctions. Taken as a whole, these estimates potentially suggest a lack of short-term custodial sanction facilities in certain areas or reluctance among parole officers in more conservative and disadvantaged counties to utilize short-term custodial sanctions.

Table 3.3. Impact of Context on the Log-Odds of Fine-Grained Sanction Outcomes

	Model 1			Model 2			Model 3		
	Revocation v. Short-Term Cust (N=1535 v. N=2599)			Short-Term Cust v. Community (N=2599 v. N=3567)			Revocation v. Community (N=1535 v. N=3567)		
	coef	(SE)		coef	(SE)		coef	(SE)	
Social Service Proximity	-0.09	(0.10)		-0.13	(0.07)	*	-0.23	(0.10)	**
Socioeconomic Disadvantage	0.20	(0.07)	***	-0.15	(0.05)	***	0.05	(0.07)	
Republican Votes	1.25	(0.75)	*	-1.98	(0.50)	***	-0.73	(0.74)	
Judicial Sentencing Severity	0.10	(0.05)	*	-0.18	(0.04)	***	-0.09	(0.05)	*
Black Residents	3.52	(0.97)	***	-1.32	(0.65)	*	2.20	(0.96)	**

note: *** p<0.01, ** p<0.05, * p<0.1

The effect of county-level socioeconomic disadvantage on sanction outcomes helps illustrate the importance of measuring short-term custodial sanctions separate from both revocation and community-based sanctions. The first two models presented in Table 3.2 suggest somewhat conflicting estimates for the impact of socioeconomic disadvantage. When revocation is compared to non-revocation (Model 1), the likelihood of being revoked in more disadvantaged counties increases significantly. On the other hand, when custodial sanctions are compared to noncustodial sanctions (Model 2), the likelihood of being returned to custody decreases in comparison to the likelihood of remaining in the community. The results reported in the first two models in Table 3.3 make clear that the relationship between context and the use of short-term custodial sanctions explains the seemingly paradoxical results. In comparison to parolees supervised in areas with low levels of socioeconomic disadvantage, parolees supervised in areas with high levels of socioeconomic disadvantage are five percentage points more likely to receive community-based sanctions and three percentage points more likely to be revoked to

prison. At the same time, parolees supervised in areas with high levels of socioeconomic disadvantage are seven percentage points less likely to receive short-term custodial sanctions. The results of the multinomial models suggest that jurisdictional variation in the utilization or avoidance of temporary facilities such as jails and corrections centers plays a central role in shaping the parole outcomes of former prisoners who have violated their supervision conditions.

The Use of Other Forms of Sanction

The multinomial models help clarify potential inconsistencies in the first two models by illuminating how contextual conditions uniquely shape the use of short-term custodial sanctions. By parsing out each sanction type rather than combining sanctions into aggregated categories, the final models also offer more precise estimates of how local context shapes the use of revocation and community-based sanctions. Several notable patterns emerged in the multinomial models regarding these relationships. Echoing findings from the binary models in Table 3.2, parolees supervised in areas with a higher proportion of black residents experience an increased likelihood of being revoked to prison in comparison to all other types of sanctions. In the choice between revocation and short-term custodial sanctions, parolees in more disadvantaged and conservative counties face an increased likelihood of revocation. On the other hand, also consistent with results from Table 3.2, greater proximity of social services appear to reduce the risk of being sent to custody, with the likelihood of community-based sanctions increasing in comparison to both revocation and short-term custodial sanctions. To summarize, even after controlling for the specific violation offense committed by each offender, parolees supervised in areas characterized by more "risky" contextual conditions are more likely

to be sent back to prison as a result of their parole violation, rather than issued a short-term stay in custody or the ability to remain in the community. Specifically, higher levels of socioeconomic disadvantage, a higher proportion of black residents, and more conservative politics increase the risk of revocation. Alternatively, when social services are more locally accessible to parole agents, parolees are more likely to remain in the community following a violation.

Discussion

Persistently high rates of recidivism among former offenders have provoked inquiry into the role of institutional decision-making in perpetuating returns to custody for violations of parole supervision. This article examined whether the sanctions issued to parole violators are influenced by the contextual conditions of the parole offices at which parolees are supervised. Using administrative data from the state of Michigan, the analysis explored the contribution of local organizational capacity and constraints, institutional culture, and racial threat to sanction outcomes among offenders paroled in 2003.

Most prior studies of parole violations have focused exclusively on the predictors of parole revocation, in which parolees are returned to prison for violating the conditions of their supervision. Reflecting the broader range of sanctions that parole agents issue in response to violations, the current study examined the predictors of three distinct sanction outcomes: community-based sanctions, short-term custodial sanctions, and revocation. The results demonstrated that regional and county-level attributes shape local templates for decision-making among parole agents in ways that affect not only whether parolees

are revoked to prison, but also the more nuanced use of short-term custodial facilities and community-based sanctions.

Two central themes emerged with regard to the use of sanctions for parole violators. First, the analysis demonstrated that local contextual characteristics play a critical role in determining the extent to which parole offices sustain the revolving door between prison and the community. As expected, the contextual conditions that are typically considered more "risky" – including less resource availability, more socioeconomic disadvantage, conservative politics, and a higher proportion of black residents – place parolees at higher risk for revocation. These findings are consistent with previous research on the relationships between contextual conditions and returns to prison (e.g., Helms & Jacobs, 2002; Lin, et al., 2010; Ulmer & Bradley, 2006). Although this study cannot identify the mechanisms by which these conditions increase the risk of revocation, prior research suggests several possibilities. In regions with an abundance of service providers, parole agents have the opportunity to take advantage of community-based programming and treatment options rather than returning parolees to prison. Agents in resource-rich areas may believe that parolees will have sufficient supportive services upon reentry, and so a longer-term return to prison is deemed unnecessary and perhaps not useful by the parole agent. However, in under-resourced areas, parole agents possess fewer options for sentencing and may come to rely on prison as the only or most dependable solution.

Parolees are also at greater risk of revocation in conservative counties with higher proportions of black residents. The impact of political opinion may operate through a number of mechanisms: the direct effect of residents' political opinion on election outcomes, the passage of government and administrative policy, and the decisions of

frontline workers (who often live locally and share local values) (Lipsky, 1980; Watkins-Hayes, 2009). At the same time, the racial threat theory offers an explanation for the positive association between the county-level proportion of black residents and harsher sanction outcomes: the general threat posed by higher proportions of minority residents results in more punitive responses to violations, a response that aims to maintain the racial (im)balance of power.

A second major theme that emerges from the analysis concerns the use of short-term custodial sanctions, such as jail, corrections centers, and technical rule violator centers. The inclusion of short-term custodial sanctions in this analysis advances the current literature on recidivism and decision-making in the criminal justice system, which has largely neglected sanctions other than prison. The results indicate that certain jurisdictional qualities considerably reduce the likelihood of receiving a short-term custodial sanction in comparison to other forms of sanction. Parolees supervised in counties with greater proximity of service providers, more socioeconomic disadvantage, more conservative voters, harsher sentencing practices, and a higher proportion of black residents are less likely to receive short-term custodial sanctions than either community-based sanctions or revocation. In turn, counties in which parolees experience a lower likelihood of short-term custodial sanctions tend to rely more on both community-based sanctions and revocation.

Prior research and theory offer some insight into these findings, which may reflect either variation in access to temporary custodial facilities across jurisdictions or variation in the degree to which localized decision-making templates support the use of short-term custodial sanctions. First, increased reliance on short-term custodial sanctions occurs in

areas characterized by fewer social service providers and less disadvantage. Stereotypes of parolees from less disadvantaged areas as less dangerous or not as deserving of severe punishment may translate into the belief that revocation is not a necessary safety precaution, with short-term custodial facilities providing a more appropriate alternative. The more frequent reliance on short-term custodial facilities in less conservative counties and counties with lower proportions of black residents may be attributable to similar beliefs about the safety and deservingness of local parolees. It is also possible that these findings are partially driven by unmeasured organizational or contextual attributes such as parole agent caseload size or the availability of bed space in local jails or other facilities.

Evidence for variation in the use of sanctions across jurisdictions has significant implications for the reentry success of offenders, the well-being of communities, and the effective operation of the criminal justice system. Although there has been little research on how parole sanctions impact the future trajectories of offenders, literature consistently links incarceration with family disruption, attenuated ties to social services and employment, and mental and physical health challenges (e.g., Apel & Sweeten, 2010; Geller, et al., 2009; Massoglia, 2008; Travis & Waul, 2003; Western, 2006). Communities – particularly those that are already disadvantaged – also suffer from the churning of residents in and out of prison. The "coercive mobility" generated by both prison sentences and short-term custodial sanctions is believed to break down social cohesion and reduce the capacity for informal control among neighbors, contributing to conditions conducive to crime (Clear, 2007; Harding, et al., 2013). Finally, the use of custodial rather than community-based sanctions for parole violators has critical

implications for prison overcrowding and overspending (Burke & Tonry, 2006; Jacobson, 2005).

From a policy perspective, insight into the relationship between contextual conditions and sanction outcomes can inform evidence-based evaluations of supervision practices by policymakers and parole authorities. Local and state-level officials can assess decision-making by individual parole offices to identify how specific local characteristics shape the sanction experiences of parole violators. Understanding the mechanisms by which local conditions translate into the greater or lesser use of custody can provide frameworks for local reform; for instance, in offices that rely largely on revocation, parole authorities can facilitate enhanced relationships between parole agents and local service providers to encourage the less disruptive and more cost-effective use of community-based sanctions. The findings of this paper also offer support for place-based or community-based parole, where agents provide supervision to offenders in concentrated geographic areas. A practice that has shown to improve outcomes for offenders and communities, place-based supervision allows agents to become familiar with local resources, develop relationships with residents, and ultimately provide more locally-informed supervision to parolees (Petersilia, 2002; Reentry Policy Council, 2005; Solomon, 2006; Taxman, 2006).

Although this paper relied on administrative data on parolees released in one year within a single state, there is reason to believe that the findings may apply to parole practices in other states. At the time of the study, Michigan's rates of incarceration, rate of success on parole, and percentage of prison admissions who were parole violators were close to the national average (Travis & Lawrence, 2002). Michigan's correctional system was unique in one regard during the study period: in 2005, toward the end of the study

period, the state implemented eight pilot sites (across 18 counties) of a reentry program for parolees that aimed to transform the state's correctional approach to reentry and reduce recidivism rates. The Michigan Prisoner Reentry Initiative has been characterized by large-scale shifts in pre- and post-prison assessments and programming (Caruso, Padden, & Arnovits, 2008). However, exploratory analyses of sanctions for violations that occurred after the implementation of MPRI (only 10% of the sampled violations) showed that the sanctions issued by counties designated as pilot sites did not significantly differ from those issued by non-pilot sites. It is possible that the continued implementation of reentry initiatives in Michigan has altered sanction practices, but such recent changes are beyond the scope of this analysis.

The findings prompt several directions for future research. First, the current study offers insight into the *impact* of contextual conditions on parole sanctions but cannot provide an empirical test of the theoretical mechanisms by which local conditions shape offender outcomes. Future research that more fully explores these mechanisms can inform concrete policy and practice recommendations for the oversight of parolees. The findings also prompt questions about the relatively low predicted probabilities of community-based sanctions for parolees supervised in areas characterized by attributes including fewer service providers and higher proportions of black residents. How can parole authorities promote the use of alternatives to incarceration among parole agents working under these conditions? Qualitative exploration of individual and office-level decision-making by parole agents can help identify managerial tools that increase the use of community-based sanctions in appropriate cases. Finally, this study takes an important step in expanding the range of sanction outcomes utilized by parole agents. Future

research should examine an even wider scope of institutional responses to violation behavior—such as increased levels of supervision, residential drug treatment, electronic monitoring, technical rule violator centers, jail, and other community-based and short-term custodial options— in order to develop a more comprehensive understanding of the relationship between local context and decision-making in the reentry process.

CHAPTER 4
The Effects of Short-Term Custodial Sanctions on Labor Market Outcomes Among Former Prisoners

A broad body of literature has suggested that obtaining employment following release from prison plays an important role in the successful reintegration of offenders (Hagan, 1993; Petersilia, et al., 2007; Raphael, 2011; Sampson & Laub, 1993; Uggen, 2000). In response, much reentry research has focused on the labor market experiences of former prisoners. This scholarship has painted a bleak picture of employment among this population, indicating that the lower rates of employment and wages experienced by former prisoners in comparison to their counterparts who have never been incarcerated result in a disparity in annual earnings of up to 40 percent (Raphael, 2007; Western, 2006). Over time, former prisoners are less likely to access jobs that provide opportunities for upward mobility, severely slowing wage growth and generating long-term economic immobility (Lyons & Pettit, 2011; Western, 2006).

Based on high rates of unemployment and weak labor market attachment among former prisoners, prior research has inferred a causal relationship between incarceration and employment, arguing that incarceration hinders labor market outcomes through a number of mechanisms. For instance, custody spells – especially repeated occurrences – may send negative signals to employers about former prisoners' reliability or trustworthiness. Among former prisoners, incarceration may also lead to reductions in human or social capital or loss of motivation, both of which can impede the search for

formal employment (e.g., Pettit & Lyons, 2007; Raphael, 2007; Western, 2002). However, largely due to data limitations, prior research has been unable to adequately separate the effects of incarceration on employment from other potential causes of employment struggles experienced by former prisoners. As a result, it remains unclear whether the association between incarceration and employment is, in fact, causal.

The present analysis allows for a stringent test of the impact of incarceration on employment by using a unique longitudinal dataset of prisoners released onto parole in Michigan in 2003. All spells of re-incarceration in jails or other temporary custodial facilities and all formal employment outcomes are observed quarterly for three years following release from prison. By (1) limiting the analytic sample to parolees who have all served time in prison and have at least one prior felony conviction; (2) controlling for key factors that may contribute to the relationship between parolees' short-term re-incarceration and subsequent employment outcomes; and (3) observing incarceration temporally prior to employment, the analysis addresses many of the methodological shortcomings of prior research.

From both research and policy perspectives, the exploration of short-term re-incarceration is valuable because there is a widespread debate about whether short spells of incarceration are overused as sanctions for people who are under community supervision. While reentry research has documented the high risk of return to prison among former prisoners (Langan & Levin, 2002; The Council of State Governments, 2012), the literature has largely overlooked the prevalence and impact of short-term re-incarceration on successful reintegration. The issuance of short-term custodial spells has become particularly pervasive in the parole system, with almost half of parolees serving

short-term jail sentences and one-quarter mandated to correctional centers or custodial reentry programs within two years of release from prison (Harding, et al., 2013). Given the high rates at which former offenders cycle in and out of custody, identifying whether re-incarceration interferes with the ability of individuals to find and maintain work is critical to understanding how system involvement comprehensively shapes employment outcomes.

As such, this paper has two principle objectives: (1) to rigorously investigate the causal nature of the relationship between incarceration and employment; and (2) to identify whether current policies that support the issuance of short-term sanctions to jails, correctional centers, and other temporary facilities are disruptive to labor market outcomes among former prisoners. The results offer evidence that former prisoners' high rates of unemployment are at least partially attributable to the experience of re-incarceration and, furthermore, that even short spells of re-incarceration disrupt success in the labor market. The findings raise concerns about the implications of incarceration for successful reentry as well as the effectiveness of policies that promote the use of re-incarceration within community corrections, particularly in response to minor violations of parole.

Prior Research on Incarceration and Employment

Prior studies have focused exclusively on the relationship between incarceration in *prison* and future employment, to the neglect of research on how *short-term incarceration* shapes employment. As such, this section briefly describes prior research on the effects of prison on labor market outcomes to offer insight into the relationship between incarceration and employment more generally. Causal claims about the

relationship between incarceration and employment have been based primarily on analyses of survey data and administrative data. Survey research has utilized large-scale longitudinal surveys such as the National Longitudinal Survey of Youth (NLSY) that identify periods of incarceration in correctional facilities among respondents. In comparisons of respondents who experienced incarceration and those who did not, these studies have uniformly reported substantial negative effects of incarceration on the earnings and employment of individuals (Freeman, 1992; Grogger, 1992; Raphael, 2007; Western, 2002, 2006). Research relying on administrative data, typically from state-level departments of corrections and unemployment insurance agencies, has similarly attributed reductions in the likelihood of employment and earnings to the harmful effects of incarceration (Lyons & Pettit, 2011; Pettit & Lyons, 2007; Sabol, 2007).

Some scholars have argued that it is not the experience of incarceration itself but an array of other factors that are responsible for low rates of employment among former prisoners. For instance, the possession of a felony conviction is known to produce labor market obstacles, as individuals with felony convictions are restricted from working in professions such as childcare, healthcare, private security, and trucking under some federal, state, and local laws (Holzer, Raphael, & Stoll, 2004; Kurlychek, Brame, & Bushway, 2006). Research also suggests that due to the perceived stigma of a criminal record, employers express reluctance to hire candidates with felony convictions (Holzer, 1996; Holzer, et al., 2004; Holzer, Raphael, & Stoll, 2007) and are less likely to follow up post-interview with applicants who have criminal records (Pager, 2003; Pager, Western, & Bonikowski, 2009). Other studies have argued that the effects of incarceration on employment are spurious and likely attributable to unobserved

individual-level factors such as lack of self-control (Gottfredson & Hirschi, 1990) or neuro-psychological deficits (Caspi, Wright, Moffit, & Silva, 1998; Moffit, 1993) that put individuals at risk for both involvement in the criminal justice system and difficulty maintaining gainful employment.

Due to methodological limitations, prior research that infers a causal relationship between custody and future employment has been unable to distinguish the impact of spending time in custody on employment from alternative explanations of labor market struggles. Previous studies, for instance, have primarily compared incarcerated felons to people whose felony record is uncertain (typically missing from the data), and a substantial number of these people are likely non-felons. As a result, studies have been unable to separate the causal impact of the experience of incarceration on labor market outcomes from the policy restrictions and perceived stigma attached to criminal records. Most prior studies also compare the employment outcomes of offenders with those of non-offenders, generating concern over potentially confounding factors across individuals.

A brief description of one study illustrates the nature of data limitations in previous research. Western (2002) follows the incarceration and employment outcomes of offenders and non-offenders using longitudinal survey data that capture correctional spells in jail or prison among respondents. The study uses a number of statistical techniques to help control for the unobserved characteristics of respondents and measurement error on self-reported incarceration. However, like other survey-based and administrative studies, Western's (2002) measurement of employment outcomes in the aftermath of prison means that any effect of incarceration on employment cannot be

separated from the effect of a criminal record on employment, generating uncertainty about the causal impact of incarceration.

Theoretical Mechanisms

The current study attempts to fill this gap in the literature by providing a rigorous test of the association between short-term re-incarceration and subsequent employment. To do so, it examines the experience of short-term re-incarceration among a sample of released prisoners, all of whom possess at least one felony conviction and have served at least one prison spell. Given the limitations of prior empirical scholarship on the relationship between incarceration and employment, coupled with the lack of theoretical research specifically examining short-term re-incarceration, this section explores the potential conceptual mechanisms by which short-term re-incarceration among parolees may disrupt labor market outcomes.

From the perspective of current or potential employers, re-incarceration can act as a red flag. Current employers may be unwilling or unable to tolerate repeated, extended, or unexplained employee absences that result from recurring custody spells (Grogger, 1995; Sullivan, 1989). Prior research also suggests that criminal records send "negative signals" to employers about the skills or trustworthiness of job candidates (Holzer, 1996; Holzer, et al., 2007). For employers who have hired or are considering hiring released prisoners despite the negative signals of a criminal record, re-incarceration may heighten concerns about employees' trustworthiness, reliability, or skill sets. The inconsistent engagement in the work force that results from repeated custody spells may also raise employer concerns about lack of experience or unpredictability.

For released prisoners, re-incarceration precludes employment during the custodial

spell and can also reduce the likelihood of employment following release. Although some offenders maintain employment while incarcerated either through in-prison work or work release programs (Cheliotis, 2008; Wilson, Gallagher, & MacKenzie, 2001), the physical incapacitation caused by incarceration prevents the majority offenders from working during this time. Incarceration – particularly repeated spells – may also decrease the capacity of former offenders to find employment following release. Incarceration has been shown to reduce the human and social capital central to obtaining employment by causing workforce detachment and the dissipation of ties to friends, family members, and neighborhoods (Apel & Sweeten, 2010; Granovetter, 1973, 1995; Rees, 1966). Although the loss of capital is usually attributed to prison spells that remove offenders from the community for extended periods of time, it is possible that even short-term re-incarceration exacerbates this loss, as offenders once again become detached from the labor market and need to rebuild already-weakened networks after release. Recent research has also shown that custody spells of any length result in substantial residential mobility among offenders (Harding, et al., 2013). Such residential mobility may further weaken social ties and create spatial mismatches between old job networks and new residential communities. Short-term custodial sanctions may also generate contextual challenges for parolees, whose post-sanction residential neighborhoods tend to be characterized by higher rates of poverty and lower rates of employment than their pre-sanction neighborhoods (Harding, et al., 2013).

Even for former offenders who have maintained their social networks during incarceration, absence from the labor market can diminish job skills and reduce the ability or motivation to function in traditional work environments (Western, Kling, &

Weiman, 2001). Recurring custody spells may make it particularly hard for former offenders to complete educational programs or feel capable of succeeding in the formal work force. Indeed, recent research suggests that much of the nonemployment of former offenders results not from unemployment but from labor force nonparticipation, potentially due to either discouragement or more immediate or accessible employment in the underground economy (Apel & Sweeten, 2010).

Current Study

The current study offers a rigorous test of the causal impact of incarceration on labor market outcomes through an examination of employment among parolees following re-incarceration in short-term custodial facilities. Through the examination of two broad hypotheses, the analysis tests whether incarceration's *occurrence* and *duration* shape the likelihood of subsequent employment among former prisoners. The first hypothesis asks whether the occurrence of re-incarceration in a short-term custodial facility (such as a jail, corrections center, or other short-term institution) is disruptive to employment outcomes. Based on theoretical evidence for the implications of incarceration for maintaining a current job or seeking new employment after release, this hypothesis predicts that parolees who return to custody will experience a reduced likelihood of employment during the quarter of incarceration as well as during subsequent quarters. The second hypothesis explores the impact of length of time in short-term custody during re-incarceration on offenders' employment outcomes, predicting that longer custody stays will be more disruptive to employment than brief sentences.

Data

To test these hypotheses, this study draws on a dataset of parolees who were released from Michigan prisons in 2003 to a residence within the state and tracked for three years. From the original 2003 cohort of parolees (N=11,064), a sample was selected using a two-stage clustered sampling design in which parolees were clustered within census tracts.[17] The individual-level sampling probability was set to 1/3, resulting in an initial sample size of 3,689. The analytic sample was reduced to 3,532 after dropping 11 individuals for whom employment information was not available and 146 individuals who were excluded from the analysis after experiencing death (*N*=14) or return to prison (*N*=132) in the quarter of release or the first full quarter post-release. These parolees were excluded because they were not in the community for long enough to measure the impact of short-term custody on employment over multiple quarters.

The dataset combines records from four main sources. First, information on parolees' time-varying residences was collected from narrative electronic and paper case notes written by Michigan Department of Corrections' (MDOC) parole and probation agents. Case notes included information on move dates, residence types, and addresses. Using multiple coders to increase reliability, every mention in the case notes of a parolee move to any residence or custodial facility was entered into a customized data-entry program. Second, employment information was obtained from Michigan Unemployment Insurance (UI) records, which provided data on all legal employment reported to the state government's unemployment insurance system by employers. Third, administrative data

[17] Census tracts were first sampled with probability proportionate to their size, and then individuals within each selected tract were sampled with probability inversely proportionate to the tract selection rate. When the first- and second-stage selection rates are multiplied together, the sampling probability is equal for every individual (Groves et al., 2004). This approach also ensures that the final sample size of parolees remains the same no matter which tracts were sampled in the first stage.

was retrieved from MDOC databases that contained measures spanning the length of time each offender was on parole. These databases included longitudinal records of parole violations, sanctions, and arrests for individuals under supervision that were entered by parole and probation officers. Finally, data on county rates of unemployment were retrieved from the Michigan Department of Technology, Management & Budget (DTMB), a division of the Michigan State Government (Michigan DTMB, 2009).

The compounded data were formatted as a person-period dataset that tracked outcomes for each parolee for 12 quarters starting in their first full quarter following release from prison. Parolee-quarters were censored from the analytic sample for two reasons. Individuals who returned to prison custody (either as a result of a new crime or parole violation) were removed from the risk set starting in the quarter of their return because prison sentences precluded (a) subsequent returns to short-term custody and (b) employment for the remaining quarters within the observation period for almost all parolees. Parolees who died were also removed from the risk set starting in the quarter of death. Deaths were only recorded by MDOC when a parolee died while under MDOC custody or supervision, totaling 65 people (approximately 1.7% of the sample) during the observation period. The final analytic sample size was composed of 3,532 parolees who were observed for a total of 32,191 quarters.

Key Dependent and Independent Variables

Employment. To assess the impact of short-term re-incarceration on the employment outcomes of parolees, this study identified the employment status of all parolees in each of the 12 observed quarters. Employment status for each parolee was retrieved through a

process that matched social security numbers between MDOC and UI records.[18] Although UI records identify employment status by quarter rather than providing precise start and end dates, they have the advantage of spanning the entire three-year post-prison period rather than only time periods during which parolees were under MDOC supervision. A dummy variable was constructed to measure whether a person engaged in any formal employment during each of the 12 measured quarters.

Custody. The analysis is built around predictors that measure the occurrence and duration of short-term re-incarceration, which is defined by any residential spell in a jail, detention center, residential reentry program, or other custodial facility that falls short of return to prison. These short-term facilities, often referred to as "intermediate" or "temporary" sanctions, are commonly used in response to technical infractions of parole and other minor crimes that do not warrant prison sentences. Custody spells were obtained from the narrative residential case note files. *Current custody status* is a dummy variable coded as 1 for any quarter in which a parolee spent time in any of the above short-term custodial facilities. *Current custody days* is a continuous variable that identifies the number of total days per quarter spent in any of these facilities. In addition, four lagged variables capture the delayed effects of custody on employment. *Lagged*

[18] To match parolees with their quarterly employment statuses, all social security numbers (SSN) available in MDOC databases for the 2003 parole cohort were sent to the Michigan Unemployment Insurance Agency and Workforce Development Agency for matching. In some cases, more than one SSN was available for each subject. For 11 individuals in the sample, MDOC had no SSN, so these individuals have no UI data and are removed from the dataset. Returned UI records were matched with names from MDOC databases, including aliases, to eliminate incorrect SSNs. Approximately five percent of the sample had no UI data match their SSN, indicating they never had any formal employment in Michigan between 1997 and 2010. If more than one SSN that MDOC had recorded for the same person matched records in the UI data, project staff selected the best match by comparing employer names listed in the UI records with those listed in the MDOC records (from parole agent reports). This procedure resulted in one-to-one matches of individual records between MDOC and UI records for more than 99% of sample members. For less than one percent of the sample, a single SSN could not be selected after matching on the parolee's name and the name(s) of that person's employer(s). In such cases, UI data were retained for all SSNs listed in the MDOC records for a given individual, under the assumption that such people worked under multiple SSNs.

custody status is coded as 1 when the previous quarter (*t*-1) is characterized by a custodial spell. *2-Quarter lagged custody status* is coded as 1 when a custodial spell occurred two quarters earlier (*t* -2). *Lagged custody days* is assigned the number of days spent in custody in the previous quarter (*t*-1). *2-Quarter lagged custody days* is assigned the number of days spent in custody during a custodial spell that occurred two quarters earlier (*t* -2).

Control Variables

The analysis controls for two types of measures that may confound the relationship between short-term custody and employment. First, models include individual-level fixed effects to control for time-invariant differences across people. Second, models include time-varying characteristics that vary within individuals across quarters. Each of these variables is measured in the lagged quarter in order to capture conditions occurring before the measurement of employment. *Quarter since first parole* captures the number of quarters that have passed since the original release from prison, where the first full quarter following release is coded as 1. This variable controls for both the amount of time parolees have been in the community and also acts as an indirect proxy for calendar year. To account for seasonality in employment, I include dummies for specific *calendar quarters* corresponding to each person-quarter record, where Quarter 1 (January-March) is set as the reference category. *Local unemployment* measures the time-varying unemployment rate of the county in which each parolee resided in each quarter. County unemployment rates were calculated by averaging the monthly county unemployment rates in each quarter. Four final time-varying measures act as proxies for other potential confounders of the relationship between incarceration and employment related to parole

supervision, substance use, and offending behavior. *Number of positive substance abuse tests* is a count variable identifying the number of times a parolee tested positive for substances each quarter. *Absconding status* is a flag that identifies whether a parolee was reported as absconding at any point in the quarter. *Number of arrests* is a count variable identifying the number of arrests in each quarter. A final time-varying measure captures each individual's *discharge status* at each quarter (where 1=already discharged from the original 2003 parole sentence).

Analytic Strategy

This paper hypothesizes that the labor market difficulties faced by former prisoners will be exacerbated by the experience of short-term re-incarceration, an increasingly common experience among parolees. In order to test this hypothesis, this paper observes short-term custody spells and employment outcomes among individuals paroled in Michigan in 2003. All outcomes are measured during the first full quarter after offenders are released from prison and up to 11 subsequent quarters.

The logic of the analysis is as follows. The first part of the analysis focuses on the *occurrence* of short-term custody on employment, where custody spells are measured as dichotomous indicators of whether the person spent any time in custody during a given quarter (results from these models are reported in Table 4.2). Models were constructed in a way that (a) separates out contemporaneous from lagged effects and (b) isolates the impact of short-term custody (i.e., custody spells that were contained to only one calendar quarter). This was accomplished by using the following four-model progression. Model 1 contains current custody status (quarter *t*) and its first-order lag (quarter *t*-1) to help establish causal ordering in the relationship between custody and employment. Next, I

control for potentially confounding variables to isolate the impact of re-incarceration on employment. Model 2 adds time-varying controls that remove variation over time within individuals as well as individual-level fixed effects that "purge" the estimates of confounding influences from unmeasured factors related to variation across parolees. Model 3 adds an interaction between current custody status and its first-order lag in order to isolate the effects of custody spells that did not spill over into the current quarter. The final model adds a second-order lagged term and interacts it with the first-order lagged term to further specify the short-term effects of custody by isolating the cases in which someone was in custody during the prior quarter but was not in custody either before or after that quarter (i.e., they were in custody during quarter *t*-1 but not *t* or *t*-2).

The logic can best be illustrated by looking at the equation for the final model, which contains both first and second-quarter lags:

$$\mathbf{emp\_t = b0 + b1*cust\_t + b2*lagcust\_t\text{-}1 + b3*lagcust\_t\text{-}2 + b4*(cust\_t*lagcust\_t\text{-}1) + b5*(lagcust\_t\text{-}1*lagcust\_t\text{-}2) + e}$$

Using the above equation, the coefficients can be interpreted using the following parameters: b0 is equivalent to the log-odds of being employed in quarter *t* for someone who was not in custody during quarters *t*, *t* -1, or *t* -2; b1 is equivalent to the effect of being in custody in quarter *t* for people who were not in custody in quarter *t*-1 (regardless of their custody status at *t*-2); b2 is equivalent to the effect of being in custody in quarter *t*-1 for people who were not in custody either in quarter *t* or quarter *t*-2; b2+b3 is equivalent to the effect of being in custody in quarter *t*-1 for people who were also in custody in quarter *t* (regardless of custody status at *t*-2); and b2+b4 is equivalent to the effect of being in custody in quarter *t*-1 for those who were also in custody in quarter *t*-2 (regardless of custody status at *t*).

The second part of the analysis uses the same four-model progression to explore whether there is a dose-response relationship between the amount of time parolees spend in short-term custody during a given quarter and the likelihood of employment in the following quarter. In assessing the impact of the *duration* of re-incarceration on labor market outcomes, custody spells are measured as a count variable that identifies the number of days someone spent in custody during a given quarter. Results for the duration analysis are presented in Tables 4.3 and 4.4.

The third and final part of the analysis assesses the possibility of reciprocal causation by examining whether employment status predicts subsequent spells of short-term re-incarceration. Using a series of employment variables that are comparable to the custody variables included in Model 4 in Table 4.2, the final model (presented in Table 4.5) estimates whether employment in quarter *t*-1 predicts short-term custody in quarter *t*. As explained above, the inclusion of selected interaction terms allow for the isolation of employment, where parolees are employed in quarter *t*-1 but not in quarters *t*-2 or *t*. The absence of a relationship between lagged employment and current custody would offer additional support that the impact of incarceration in employment is causal and not reciprocal.

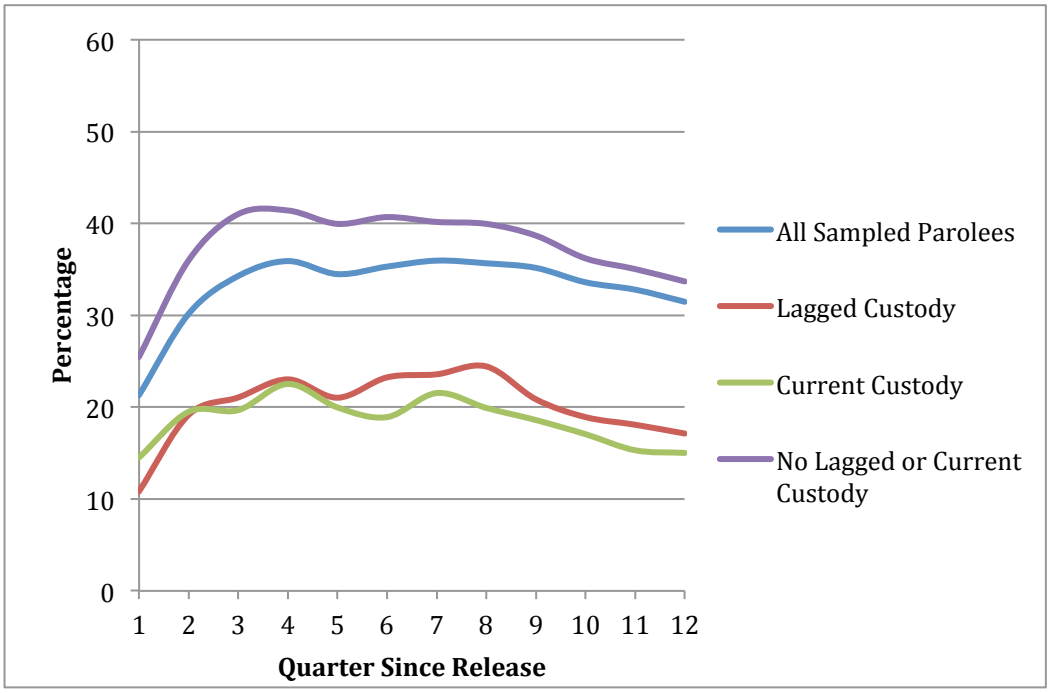
Results

Descriptive Statistics

Figure 4.1 plots rates of employment for the sample of parolees by the number of quarters since release from prison. Rates are only calculated among parolees who were not returned to long-term prison custody in the three years following release, and so quarters that were removed from the risk set following a return to prison (or death) are

not included in the calculations. The employment rate rises initially, from 21% in the first full quarter following release to 36% in the fourth quarter, levels out in quarters five through eight, and begins a slow decline starting in quarter nine. Similar declines over time in the likelihood of employment have been observed among former prisoners in other studies (Pettit & Lyons, 2007; Sabol, 2007; Tyler & Kling, 2007) and have been attributed to the eventual cessation of supervision and reentry services present immediately following release or to discouragement with the formal low wage labor market and subsequent return to the informal market or criminal activity (Morenoff & Harding, 2011).

Figure 4.1. Rates of Employment Among Parolees Following Release From Prison



This paper tests the hypothesis that the likelihood of post-prison employment will be shaped by the experience of short-term re-incarceration and, as such, Figure 4.1 also plots rates of employment among parolees based on the occurrence of re-incarceration. In comparison to parolees who do not experience re-incarceration in either the lagged or

current quarters, parolees who are re-incarcerated are considerably less likely to be employed during quarters in which they experience short-term re-incarceration (quarter *t*) as well as the quarters following a custodial spell (quarter *t*-1). The differences in Figure 4.1 between the likelihood of employment among parolees who experience custody and those who do not indicate that re-incarceration may be an important predictor of employment. The descriptive statistics provided in Table 4.1 suggest that short-term re-incarceration is not an uncommon experience among parolees, who spend time in a short-term custodial facility in approximately one-fifth of measured quarters. Most of these stays are brief, as the average length of time in custody for each quarter is less than five days. Table 4.1 also includes descriptive statistics on the time-varying controls used in the analytic models.

Table 4.1. Descriptive Statistics of Time-Varying Characteristics

N=32,191 person-quarters	% *(mean in italics)*	n *(SD in italics)*
Custodial Spells		
Custody Status	0.19	(6013)
Lagged Custody Status	0.18	(5705)
2-Quarter Lagged Custody Status	0.16	(5105)
Custody Days	*4.93*	*(15.97)*
Lagged Custody Days	*4.36*	*(14.91)*
2-Quarter Lagged Custody Days	*3.91*	*(14.22)*
Lagged Time-Varying Characteristics		
Quarters Since Release	*4.95*	*(3.46)*
Seasonal Quarter (ref=Quarter 1)		
Quarter 1 (Jan-Mar)	0.25	(8058)
Quarter 2 (Apr-Jun)	0.25	(8040)
Quarter 3 (Jul-Sept)	0.25	(8040)
Quarter 4 (Oct-Dec)	0.25	(8053)
County Unemployment	*0.04*	*(1.66)*
Absconding Status	0.12	(3720)
Number of Positive Substance Abuse Tests	*0.06*	*(0.24)*
Number of Arrests	*0.05*	*(0.21)*
Discharge Status	0.27	(8715)

Time-invariant individual-level measures (described in Appendix C-1) are not directly included in the analysis but are accounted for through individual-level fixed

effects and, as such, provide a helpful illustration of the distribution of parolees in the study. The analytic sample is 8% female, 53% black, 45% white, and 2% other (mostly Mexican-American). With regard to age, a little more than one-third of the sample is between the ages of 18 and 30, another third is between ages 31 and 40, and slightly less than a third are over the age of 40. Two-thirds of parolees either attended some high school (35%) or obtained their GED (31%), but just one-quarter graduated from high school or had some college education (26%). For almost half of parolees (48%), the prior prison spell was their first incarceration period, and over two-thirds of parolees (70%) spent fewer than three years incarcerated during the prior prison spell.

The Occurrence of Short-Term Custody and Subsequent Employment

Logistic regression models were used to estimate the relationship between the occurrence of short-term re-incarceration and quarterly employment. Table 4.2 reports coefficients for four regression models that identify the associations between current custody and employment and between lagged custody and employment. Model 1 tests the hypothesis that the experience of short-term re-incarceration will impede the ability of parolees to find and maintain employment both during the quarter(s) in which they are incarcerated as well as in the following quarter. In comparison to parolees who do not experience short-term re-incarceration, parolees who spend time incarcerated have 49% lower odds of employment in the quarter of incarceration. The lagged custody effect is particularly helpful in starting to establish a causal relationship between custody and employment, as it imposes explicit temporal ordering between custody and labor market outcomes. Short-term re-incarceration in a given quarter is significantly associated with a lower likelihood of employment in the following quarter, as parolees previously

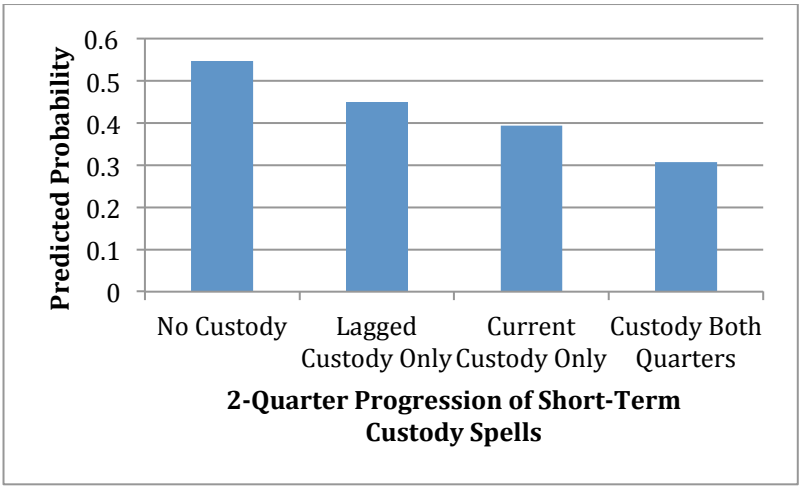
incarcerated have 58% lower odds of employment than parolees not incarcerated.

Model 2 controls for measures that may confound the impact of short-term custody on employment outcomes by adding time-varying quarterly measures as well as individual-level fixed effects that control for influences from unmeasured factors related to variation across individuals. The slight decrease in custody coefficients between Models 1 and 2 suggests that variation within and across individuals contributes to the impact of short-term re-incarceration on the likelihood of employment, but the impact of custodial spells during the current and previous quarters remains significant and large after accounting for this variation.

To illustrate this relationship with the inclusion of both time-varying controls and fixed effects, Figure 4.2 graphs the predicted probabilities of employment across different combinations of custody in quarters *t* and *t*-1. The figure suggests that the predicted probability of employment decreases rapidly as custody becomes more prevalent. While the predicted probability of employment among parolees who do not experience any custody in quarters *t* or *t*-1 is approximately 55%, the probability decreases with any experience of re-incarceration. Spending any time in short-term custody in the previous quarter (with no custody in quarter *t*) reduces the probability of employment to 45%. Custody in the current quarter further decreases the probability to 39%, and parolees who experience re-incarceration in both the lagged and current quarters only have a 30% predicted probability of employment. Again, focusing here specifically on the relationship between lagged custody and employment can offer some insight into the nature of a causal association. The 10% difference in predicted probability of employment between parolees who do not experience any short-term custody in either

quarters *t*-1 or *t* (55%) and those who were incarcerated in quarter t-1 (45%) offers temporal support for the impact of re-incarceration on future employment.

Figure 4.2. Predicted Probability of Employment Across Custodial Spells in Quarters *t* and *t*-1



Models 3 and 4 in Table 4.2 add interaction terms to the analytic models to more rigorously isolate the effects of short-term re-incarceration on employment. Model 3 builds on Model 2 by adding a single interaction term between current and lagged custody. The results indicate that parolees who experience short-term re-incarceration in quarter *t*-1 (but not in quarter *t*) have 75% lower odds of employment than parolees who were not incarcerated.

Model 4 attempts to further specify the effect of short-term re-incarceration on employment by isolating short-term custody spells that lasted fewer than 90 days and occurred entirely within the confines of a single quarter. To do so, the model adds a second-order lag variable and an interaction between lagged custody and the second-order lag to Model 3. Referring back to the equation discussed earlier, b2 in this model isolates the effect of being in custody only during quarter *t*-1 when quarters *t* and *t*-2 are characterized by no incarceration (Q(*t*-2)=no custody, Q(*t*-1)=custody, Q(*t*)=no custody).

Table 4.2. Effect of Short-Term Custody Status on Employment

	M1			M2†			M3†			M4†		
	coef	(SE)		coef	(SE)		coef	(SE)		coef	(SE)	
Custodial Characteristics												
Current Custody Status	-0.70	(0.04)	***	-0.61	(0.05)	***	-0.52	(0.06)	***	-0.52	(0.06)	***
1-Quarter Lagged Custody Status	-0.55	(0.04)	***	-0.39	(0.05)	***	-0.29	(0.07)	***	-0.26	(0.08)	***
2-Quarter Lagged Custody Status										-0.04	(0.06)	
1-Quarter Lag*Current Custody							-0.28	(0.11)	***	-0.29	(0.11)	***
1-Quarter Lag*2-Quarter Lag										-0.04	(0.11)	
Time-Varying Characteristics												
Quarters Since Release				0.07	(0.01)	***	0.07	(0.01)	***	0.07	(0.01)	***
Seasonal Quarter (ref=Jan-Mar)												
Apr-Jun				0.14	(0.05)	***	0.14	(0.05)	***	0.14	(0.05)	***
Jul-Sept				0.25	(0.05)	***	0.25	(0.05)	***	0.25	(0.05)	***
Oct-Dec				0.20	(0.05)	***	0.20	(0.05)	***	0.20	(0.05)	***
County Unemployment				0.06	(0.02)	***	0.06	(0.02)	***	0.06	(0.02)	***
Absconding Status				-0.89	(0.09)	***	-0.90	(0.09)	***	-0.91	(0.09)	***
Number of Positive Substance Abuse Tests				0.07	(0.07)		0.07	(0.07)		0.07	(0.07)	
Number of Arrests				-0.02	(0.09)		-0.02	(0.09)		-0.03	(0.09)	
Discharge Status				-0.81	(0.06)	***	-0.80	(0.06)	***	-0.81	(0.06)	***

note: *** p<0.01, ** p<0.05, * p<0.1

† Includes fixed effects

By confining the occurrence of short-term re-incarceration to a single quarter that is both preceded and followed by at least 90 days in the community, Model 4 demonstrates that the experience of short-term re-incarceration is associated with a 77% lower odds of employment in the quarter following custody. In tandem, Models 3 and 4 demonstrate the detrimental impact of short-term re-incarceration on employment and offer support for the causal nature of the relationship.[19]

The Duration of Short-Term Custody and Subsequent Employment

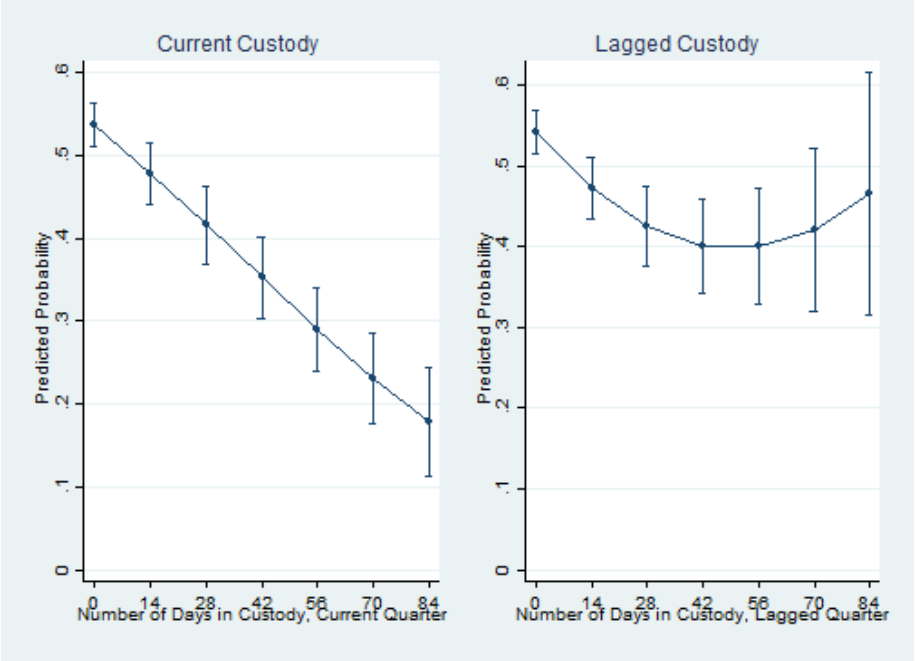
The first part of the analysis sheds light on how the *occurrence* of re-incarceration affects employment but does not offer insight into how employment is shaped by custody's *duration*. The second part of the analysis examines the hypothesis that employment is affected not only by the occurrence of short-term custody but also by the length of re-incarceration. This hypothesis predicts that parolees who spend more days in short-term custody will have a lower likelihood of employment in the quarter in which incarceration occurs as well as the quarter following the short-term custodial spell.

The results, shown in Table 4.3, suggest that the duration of re-incarceration is significantly associated with the likelihood of employment. All coefficients in Table 4.3 represent the effect of an additional *two weeks* in custody. The models indicate that the likelihood of employment during the quarter of short-term re-incarceration decreases in a linear fashion as the length of incarceration increases. The length of incarceration in the lagged quarter also shapes employment, but this relationship is non-linear, with the

[19] The four-model progression was also run using two additional outcome variables: quarterly wages and quarterly poverty status, where quarterly wages is a continuous measure of the natural log of total gross wages per quarter in 2010 dollars, and quarterly poverty status is a dichotomous indicator of whether a person's gross wages for each quarter fall below the poverty threshold for a single person under the age of 65 (1=in poverty). The findings are reported in Appendices C-2 and C-3. The results demonstrate that the experience of short-term custody is detrimental not only to the likelihood of employment but also to total wages and poverty status.

marginal effect of additional days in short-term custody decreasing over time. Figure 4.3 illustrates the respective impacts of current and lagged custody on employment outcomes.

Figure 4.3. Predicted Probability of Employment Across Varying Lengths of Custody



For reference, Table 4.3 shows the same four-model progression utilized in Table 4.2, but the discussion here primarily focuses on Model 4, which provides the sharpest interpretation of lagged custody by confining the experience of custody to quarter *t*-1. Again, by adding interaction terms between the linear and quadratic functions of lagged custody and current custody, and between lagged custody and the two-quarter lag, the lagged custody coefficient in Model 4 can be interpreted as the effect of custody length in quarter *t*-1 for those people who did not experience custody in either quarters *t* or *t*-2. The predicted probability of employment for parolees with zero days of lagged custody is approximately 54%, and this decreases to 50% after one week, 47% after two weeks, and 42% after one month. The marginal effects of additional days in custody continue to diminish over the course of the quarter. Table 4.4 shows the marginal effects (predicted at

Table 4.3. Effect of Short-Term Custody Length on Employment

	M1			M2†			M3†			M4†		
	coef	(SE)		coef	(SE)		coef	(SE)		coef	(SE)	
Custodial Characteristics												
Current Custody Days	-0.42	(0.05)	***	-0.14	(0.06)	**	-0.22	(0.07)	***	-0.22	(0.07)	***
Current Custody Days Sq	0.02	(0.01)	**	-0.04	(0.01)	***	-0.01	(0.01)		-0.01	(0.01)	
1-Quarter Lagged Custody Days	-0.49	(0.05)	***	-0.22	(0.06)	***	-0.29	(0.06)	***	-0.33	(0.07)	***
1-Quarter Lagged Custody Days Sq	0.07	(0.01)	***	0.02	(0.01)	**	0.05	(0.01)	***	0.05	(0.02)	***
2-Quarter Lagged Custody Days										-0.09	(0.06)	
2-Quarter Lagged Custody Days Sq										0.02	(0.01)	*
1-Quarter Lag*Current Custody Days							-0.01	(0.03)		0.01	(0.30)^	
1-Quarter Lag Sq*Current Custody Days Sq							-0.01	(0.01)^	*	-0.02	(0.01)^	**
1-Quarter Lag*2-Quarter Lag										0.02	(0.03)	
1-Quarter Lag Sq*2-Quarter Lag Sq										-0.01	(0.01)^	
Time-Varying Characteristics												
Quarters Since Release				0.07	(0.01)	***	0.07	(0.01)	***	0.07	(0.01)	***
Seasonal Quarter (ref=Jan-Mar)												
Apr-Jun				0.14	(0.05)	***	0.14	(0.05)	***	0.14	(0.05)	***
Jul-Sept				0.26	(0.05)	***	0.26	(0.05)	***	0.26	(0.05)	***
Oct-Dec				0.20	(0.05)	***	0.20	(0.05)	***	0.20	(0.05)	***
County Unemployment				0.06	(0.02)	***	0.06	(0.02)	***	0.06	(0.02)	***
Absconding Status				-0.97	(0.09)	***	-0.97	(0.09)	***	-0.96	(0.09)	***
Number of Positive Substance Abuse Tests				0.03	(0.07)		0.03	(0.07)		0.04	(0.07)	
Number of Arrests				-0.05	(0.09)		-0.04	(0.09)		-0.03	(0.09)	
Discharge Status				-0.76	(0.06)	***	-0.76	(0.06)	***	-0.76	(0.06)	***

note: *** p<0.01, ** p<0.05, * p<0.1

† Includes fixed effects

^ *The coefficient and standard error for this term have each been multiplied by 10*

the means of all covariates) of every additional two weeks in short-term custody on employment, which indicates that after approximately five weeks in short-term custody, there is no longer a significant effect of additional days in custody on the predicted probability of future employment. To illustrate this point, the table shows a snapshot of the marginal effects between days 36 and 38. The outlined box indicates that the decrease in the predicted probability of employment is significant through 37 days in short-term custody. After 37 days, there is not a significant marginal effect of additional custodial days on employment following release.

Table 4.4. The Marginal Effects of Days in Custody on Employment

	coef	(SE)	
Days in Custody◇			
0 Days	-0.58	(0.13)	***
14 Days (2 weeks)	-0.42	(0.09)	***
28 Days (4 weeks)	-0.25	(0.07)	***
…			
36 Days	*-0.16*	*(0.08)*	**
37 Days	*-0.15*	*(0.08)*	*
38 Days	*-0.13*	*(0.08)*	
…			
42 Days (6 weeks)	-0.09	(0.09)	
56 Days (8 weeks)	0.07	(0.14)	
70 Days (10 weeks)	0.23	(0.19)	
84 Days (12 weeks)	0.40	(0.25)	

note: *** p<0.01, ** p<0.05, * p<0.1

◇ *The coefficient and standard error for all terms have each been multiplied by 100*

An Exploration of Reciprocal Causality

The results of the first two parts of the analysis suggest a relatively consistent story about the impact of short-term custody, wherein the experience of re-incarceration is detrimental to the ability of parolees to find employment following custodial sanctions. As discussed earlier, however, unemployment insurance data are limited in that they do

not provide the precise dates or duration of employment, offering only a binary indication of whether an individual maintained formal employment for at least one day in a given quarter. In turn, the temporal ordering of short-term custody and employment within a single quarter cannot be accurately identified. To investigate the potentially causal relationship between short-term custody and employment, the current analysis has attempted to define multi-quarter progressions of custody and employment that impose a temporal ordering such that short-term custody occurs prior to potential employment. Model 1 in Table 4.5 further builds on this causal story by exploring whether there is any basis for concern over reciprocal causality, or the predictive impact of employment on short-term custody.

Table 4.5 presents the results of the final model, which is constructed using the logic followed in the fourth model in Table 4.2. Each custodial status variable used in Model 4 in Table 4.2 is re-created for employment, such that employment is measured in quarters *t*-2, *t*-1, and *t*. By switching the independent and dependent variables, the lagged custody coefficient in this final model effectively isolates the impact of employment in quarter *t*-1 on short-term custody in quarter *t* for people who did not experience any employment in quarters *t*-2 or *t*. As expected, the findings reveal a significant negative relationship between current employment status and custody status that is similar to the current custody coefficient in Model 4 in Table 4.2. These coefficients are similar because they reflect the association between custody and employment that occur in the same quarter, where the causal ordering is unclear. Most central to the causal story, the model indicates that lagged employment is not significantly associated with current short-term custody,

providing further support that reciprocal causality is not driving the relationship between re-incarceration and labor market outcomes.

Table 4.5. Effect of Employment on Short-Term Custody

	M1†		
	coef	(SE)	
Employment Characteristics			
Employment Status	-0.57	(0.07)	***
1-Quarter Lagged Employment Status	0.02	(0.08)	
2-Quarter Lagged Employment Status	-0.08	(0.08)	
1-Quarter Lag*Current Employment	-0.21	(0.11)	**
1-Quarter Lag*2-Quarter Lag	0.05	(0.11)	
Time-Varying Characteristics			
Quarters Since Release	-0.04	(0.01)	***
Seasonal Quarter (ref=Jan-Mar)			
Apr-Jun	-0.10	(0.05)	*
Jul-Sept	-0.08	(0.05)	
Oct-Dec	-0.04	(0.05)	
County Unemployment	-0.04	(0.02)	**
Absconding Status	0.81	(0.06)	***
Number of Positive Substance Abuse Tests	0.12	(0.07)	*
Number of Arrests	0.36	(0.07)	***
Discharge Status	-1.24	(0.09)	***

note: *** p<0.01, ** p<0.05, * p<0.1

† Includes fixed effects

Discussion

Prior reentry research has consistently documented labor market challenges among former prisoners. Although some scholars have attributed these challenges to the experience of incarceration, this conclusion has been largely speculative since data limitations have precluded a rigorous inquiry into the causal nature of this relationship. In response, the current analysis uses three strategies to isolate the impact of incarceration on future labor market outcomes among parolees in Michigan: (1) selecting a sample of former prisoners who all have felony convictions; (2) controlling for unmeasured variation within and across individuals; and (3) imposing a quarterly structure on the data that allows for the temporal ordering of incarceration and employment. The paper

specifically examines re-incarceration in jails and other temporary custodial facilities – an experience previously neglected in research on incarceration and employment – and, as a result, advances prior literature on how prisoner reentry is shaped by the increasingly common use of short-term custody as a tool of parole supervision.

The findings provide evidence that both the occurrence and duration of short-term custody shape labor market outcomes. Individuals on parole who experience re-incarceration in temporary correctional facilities such as jails or detention centers experience a significant reduction in the likelihood of employment in the months during and following their incarceration. Spells of incarceration that occur in the quarter of measured employment as well as the quarter before measured employment are most detrimental to success in the labor market. The analysis also demonstrates that the duration of custody matters for future labor market outcomes. Increases in the length of quarterly custody between one day and approximately five weeks are associated with a significant decrease in the likelihood of employment in the following quarter. The marginal effects of re-incarceration diminish as the length of time spent in custody during a given quarter increases, and after the five week mark, additional days in custody during the quarter do not further reduce the likelihood of employment.

The results offer preliminary evidence that the relationship between short-term re-incarceration and future employment is causal. The analysis establishes this causal link in two ways. First, the models isolate the occurrence of custody in the quarter prior to the measurement of labor market outcomes. The results indicate that lagged custody – even in the absence of current custody – negatively affects the likelihood of employment. Second, the final model in the analysis reverses the causal question, showing that there is

not a significant relationship between lagged *employment* and current *custody*. Both of these approaches provide temporal support for the impact of short-term custody on employment.

The results of the current analysis should be interpreted in light of several caveats that suggest next steps for research. First, more detailed data on the timing of labor market involvement could shed further light onto possible causality between short-term re-incarceration and employment. Although the use of lagged custodial variables and interaction terms in the present analysis offers initial support for the causal effect of short-term custody on employment, data that directly identify the chronology of custodial spells and employment by using precise incarceration and employment dates would provide more robust evidence for the nature of the relationship between incarceration and engagement in the labor market.

Subsequent research on the relationship between incarceration and employment could also more effectively establish causality through the inclusion of more time-varying individual-level variables. The current models include individual-level fixed effects and several time-varying variables related to employment, substance abuse, parole supervision, and arrest, but do not control for other time-varying measures that might contribute to either re-incarceration or struggles in the labor market. In order to effectively rule out the possibility that re-incarceration and employment challenges are both caused by a third unmeasured factor, future studies need to include more data on additional individual-level time-varying measures such as mental and physical health, involvement in offending behavior, or changing life circumstances such as marital status.

Future studies would be also enhanced by utilizing a wider range of data on

employment outcomes. While the analysis of quarterly wages reported in Appendix C-2 can serve as a proxy for duration of employment, the data utilized in this study are unable to identify the difference between a single day of work within a given quarter and 90 days of work within the same quarter. Data that include more comprehensive measures of the extent to which former prisoners are involved in the labor market would provide additional information on the nature of the relationship between short-term custody and employment. For instance, an employment continuum from economically adequate jobs to economically inadequate jobs ("underemployment") to unemployment may better capture the labor market experiences of former prisoners in the reentry process than an employment-unemployment dichotomy (Clogg, Sullivan, & Mutchler, 1986; Dooley, Prause, & Ham-Rowbottom, 2000). Data from multiple states would also help resolve any concern over the generalizability of the findings related to jurisdictionally specific characteristics of labor markets or criminal justice systems.

Finally, the study raises important questions about the process by which parole agents decide among potential sanctions for parole violators. In the current analysis, parolees who returned to prison were censored starting in the quarter of their return. As a result, the reported models illuminate the trajectories of parolees at risk of receiving either community-based sanctions or short-term custodial sanctions. However, based on the nature of the violation as well as individual and contextual-level characteristics of parolees, sanction decisions may often come down to a choice between short-term custodial sanctions and revocation, without consideration of a community-based option. In order to more comprehensively understand how the full range of agent decision-making shapes employment outcomes, future research could censor parolees who are

issued community-based sanctions in an effort to assess the impact of different types of custodial outcomes on parolees.

The findings of this study have important implications for policy and programming. Framed in the context of the literature on employment and desistance, the current analysis illustrates a paradox that shapes the post-release experiences of former prisoners as well as the interests of local communities and taxpayers. Although finding and maintaining employment has shown to play a central role in desistance (Hagan, 1993; Petersilia, et al., 2007; Raphael, 2007; Sampson & Laub, 1993; Uggen, 2000), current sentencing practices used in the supervision of former prisoners can interfere with labor market success and, in turn, place former prisoners at higher risk for recidivism. Particularly popular as a sanction for parole violations, the use of short-term custody spells further entangles many former prisoners in the criminal justice system by creating obstacles to employment. For parole authorities concerned with the impact of issued sanctions on parolees' risk of future recidivism, the analysis suggests that authorities not only consider adjusting the duration of re-incarceration but also investigate the possibility of utilizing alternatives-to-incarceration. Although shorter spells of short-term custody have less of an impact on future employment than longer ones, the benefits of reducing sanction lengths (at least with regard to labor market outcomes) diminish quickly. Exploring options other than custody may be more effective in setting parolees up for future success.

The effective reformation of policy and practice will require additional inquiry into the precise mechanisms by which re-incarceration in temporary correctional facilities hinders gainful employment. For instance, how do parolees experience and manage the transition from short-term custody back to the community, specifically with regards to

their search for employment? How does the occurrence of short-term re-incarceration – as distinct from a previous prison spell –influence employer decision-making around hiring and maintaining the employment of former prisoners? Exploration of how and why short-term custody disrupts labor market success can facilitate the implementation of parole practices that more effectively support parolees through cycles of short-term incarceration. Equally importantly, policymakers, parole authorities, and service providers may benefit from the consideration of other approaches to post-prison supervision that do not include incapacitation and therefore do not pose as severe of a disruption to successful reentry.

CHAPTER 5
Conclusion

As a result of the incarceration epidemic that has plagued the United States for the last four decades, more than 2.2 million individuals are currently incarcerated in local, state, and federal jails and prisons. For most offenders, involvement in the correctional system is a recurrent experience, as over two-thirds of former prisoners experience a new arrest and one-half return to prison in the three years following their initial release from custody (Langan & Levin, 2002; The Pew Center on the States, 2011). Although some states have reported reductions in the past few years (The Council of State Governments, 2012), the national recidivism rate has remained between 43 and 52 percent for the past three decades (Langan & Levin, 2002; The Pew Center on the States, 2011), generating a perpetual revolving door between prisons and communities.

The "reentry recycling" (Clear, Waring, & Scully, 2005, p. 179) that results from prison's revolving door has substantial implications for individuals, families, and communities. Prisoners tend to come from populations that are socially and economically disadvantaged, and the challenges to successful reentry posed by incarceration perpetuate individual-level inequalities (Visher & Travis, 2003; Western & Pettit, 2010). Disadvantaged neighborhoods, which lose more people to custody annually and have fewer foundational supports, also suffer more dramatically from the churning of residents through prison (Clear, 2007). In addition, the cycling of individuals through the

correctional system places a high burden on taxpayers who bear the financial and social cost of incarcerating repeat offenders (Ludwig, 2010)

Research has suggested that high rates of recidivism have been fueled in part by the correctional system's increased utilization of parole revocation, the return of parolees to prison for violating the conditions of their community supervision (Burke & Tonry, 2006; Grattet, et al., 2011; Petersilia, et al., 2007). Amidst overall rising rates of incarceration, the return of former prisoners to custody for parole violations represents a disproportionate increase in the share of prison admissions. (Travis, 2007). Yet despite the correctional system's growing reliance on revocation as a "crucial back-end steering mechanism" that "play[s] a critical role in determining who will receive the harsher punishment of incarceration" (Simon, 1993, p. 12) scholars have only recently turned their attention to how the parole system maintains the revolving door between prison and community.

In response, this dissertation provided a three-part exploration of how the issuance of violations and sanctions are influenced by the characteristics of parolees, their residential neighborhoods, and the context of their supervising parole offices, as well as how violations and sanctions, in turn, affect community reintegration following release from custody. To do so, each of the three analytic chapters utilized data on Michigan parolees to examine a different stage of recidivism. The first analytic chapter illuminated the relationship between neighborhood contextual conditions and offending behavior through an analysis of violation behavior and the filing of the violation report. The second analytic chapter investigated the impact of county contextual conditions on institutional responses to offending behavior through an assessment of the sanctions issued to parole

violators. The final analytic chapter inquired into the implications of correctional sanctions for successful reentry through an examination of the impact of sanctions on parolees' future labor market outcomes.

Chapter 2, "The Role of Social Service Proximity in Prisoner Reentry" uses spatial mapping and multivariate analysis to examine the association between the local density of social services and the incidence of offending behavior as measured through the issuance of violation reports. The findings suggest that the impact of local social services on recidivism depends on how expansively one defines the "community" in which parolees reside. Parolees surrounded by a higher density of social services within 30 miles of their homes are at lower risk for violation, but parolees living within close proximity to social services within five miles of their homes experience a higher risk of violation. It appears that services contribute to desistance as long as they are not located in a parolee's immediate vicinity; services close enough to create local disorder or "holes in the resident-based fabric" are detrimental to parolees' post-prison success. The results also indicate that parolees living in highly disadvantaged neighborhoods benefit more from local services than those living in less disadvantaged neighborhoods.

This chapter offers several lessons to scholars and practitioners. From a research perspective, the findings emphasize the importance of utilizing multiple measures of service accessibility or – more broadly – of neighborhood context when considering the relationship between local conditions and recidivism. The findings also provide further motivation for researchers and policymakers to consider the role of ecological context in shaping recidivism among former prisoners. For parole agents and front line managers, this analysis underscores the importance of evaluating a wide range of factors when

approving parolees' residences and pairing parolees with appropriate service providers, particularly for parolees living in disadvantaged neighborhoods.

Chapter 3, "Institutional Sanctions in Context: The Impact of County-Level Characteristics on Parole Outcomes" examines the next stage in the cycle of recidivism, institutional responses to offending behavior. Building on prior evidence for the impact of local constraints and pressures on institutional decision-making, the analysis suggests two main findings. First, the contextual conditions that are typically considered "risky" – including less resource availability, more disadvantage, conservative politics, and a higher proportion of black residents – place parolees at higher risk for revocation to prison. Second, short-term custodial sanctions tend to be utilized by parole agents in counties fitting the following profile: fewer nearby service providers, less disadvantage, and a less conservative political culture. The results suggest that short-term custody functions not as an "intermediate" punishment between community-based sanctions and revocation but rather as a distinctive option utilized in certain areas.

Although more research into the relationship between local context and front line decision-making is needed to identify specific recommendations for parole practices, the analysis of sanctions offers evidence that the experiences of parolees following noncompliant behavior are shaped by contextual characteristics of the jurisdiction in which they are supervised. State-level parole departments as well as local offices can use these findings to motivate further investigation into how their unique combinations of resources, demographics, and politics create local templates for the handling of parole violations. This knowledge can lead to evidence-based decisions about the utilization of parole sanctions to most effectively support offenders, communities and taxpayers alike.

Finally, Chapter 4, "The Effects of Short-Term Custodial Sanctions on Labor Market Outcomes Among Former Prisoners" assesses the impact of short-term custodial spells on employment to illuminate how the parole system perpetuates the revolving door between prisons and high-risk communities. The findings demonstrate that former prisoners who are re-incarcerated in short-term correctional facilities such as jails or detention centers experience a significantly lower likelihood of employment in the calendar quarter(s) during which they are incarcerated as well as the following quarter. In addition, the analysis suggests that the *length* of short-term incarceration, and not just its *occurrence*, matters for the ability of parolees to seek and maintain employment following release. The rigorous isolation of custodial spells temporally prior to employment provides support for the causal nature of the relationship between incarceration and future labor market outcomes.

The results raise important questions about the usefulness of short-term custody as a sanction for former prisoners. Despite the prevalence with which short-term sanctions are issued to former prisoners, there has been a lack of research on the impact of such sanctions. Although these so-called "intermediate sanctions" are often touted as an effective alternative to longer-term prison spells, the present analysis offers evidence that short-term custody creates obstacles to the employment prospects of former prisoners. In addition to hindering the successful reintegration of individual offenders, the increased risk of unemployment following short-term custody also likely has broader implications for local communities and labor markets. The results suggest that short-term incarceration sustains the cycle of recidivism by producing additional challenges to successful reentry among former prisoners.

Taken together, the empirical chapters that compose this dissertation offer insight into the predictors and implications of recidivism among former prisoners. Although each investigation is relatively narrow in scope, the analyses take important steps in advancing reentry research while also illuminating key policy and practice considerations for stakeholders responsible for improving the fairness and efficacy of post-prison supervision. To inform specific recommendations for reform, additional research is needed to identify the specific mechanisms by which post-prison surveillance practices sustain the revolving door of prison and, in turn, perpetuate mass incarceration.

APPENDICES

Appendix A

Table A-1. Descriptive Statistics of Individual-Level Control Variables

	Population (*n*=11,031)		# of Imputed Cases	
	% *(mean in italics)*	*n* (*SD in italics*)	% of pop	*n*
# Prior Prison Spells (ref=0)				
0	0.48	(5244)		
1	0.27	(2962)	0.00	(0)
2 or 3	0.20	(2170)		
4 or more	0.06	(655)		
Years in prison, prior spell	*2.94*	*(3.12)*	0.00	(15)
Type of Offense (ref=Assaultive)				
Assaultive offender	0.29	(3146)		
Drug offender	0.26	(2833)	0.00	(0)
Non-assaultive offender	0.46	(5052)		
Sex offender	0.07	(814)	0.00	(0)
Substance Abuse History (ref=None)				
None	0.51	(5619)		
Alcohol only	0.04	(462)		
THC only	0.08	(865)	0.00	(0)
Hard drugs only	0.05	(550)		
Alcohol & THC	0.06	(714)		
Hard drugs & alcohol/THC	0.26	(2821)		
Known mental illness status	0.21	(2280)	0.01	(76)
Conditions of Release				
Released on elec monitoring	0.08	(848)	0.00	(0)
Released to reentry center	0.10	(1122)	0.00	(0)
Year of release (ref=2003)				
2000-2001	0.01	(110)		
2002	0.06	(658)	0.00	(0)
2003	0.93	(10263)		
Age (ref=51-89)				
18-25	0.19	(2070)		
26-30	0.17	(1843)		
31-35	0.18	(2017)		
36-40	0.16	(1772)	0.00	(0)
41-45	0.14	(1564)		
46-50	0.10	(1064)		
51-89	0.06	(701)		
Education (ref=Some college or more)				
8 years or less	0.07	(786)		
Some high school	0.35	(3894)		
GED	0.31	(3438)	0.01	(123)
High school graduate	0.20	(2227)		
Some college or more	0.06	(686)		
Female offender	0.08	(856)	0.00	(0)
Race (ref=White)				
White	0.45	(4933)	0.00	(0)
Black	0.53	(5900)		

Other	0.02	(198)		
Marital Status (ref=Married)				
Never married	0.66	(7314)		
Married	0.12	(1365)	0.00	(0)
Divorced or separated	0.20	(2228)		
Widowed, common law, unk	0.01	(124)		
Number of dependents	*1.24*	*(1.32)*	0.00	(0)
Pre-prison employment	0.17	(1836)	0.14	(1512)

[a] *Denotes standardized variable*

Table A-2. Effect of Nearby Services (5mi) on Log-Odds of Parole Violation (Individual-Level Controls)

	Model 1			Model 2			Model 3		
	coef	(SE)		coef	(SE)		coef	(SE)	
# Prior Prison Spells									
1	0.64	(0.06)	***	0.65	(0.06)	***	0.64	(0.06)	***
2 or 3	1.09	(0.07)	***	1.10	(0.07)	***	1.09	(0.07)	***
4 or more	1.37	(0.13)	***	1.36	(0.13)	***	1.36	(0.13)	***
Years in prison, prior spell	-0.08	(0.01)	***	-0.08	(0.01)	***	-0.08	(0.01)	***
Type of Offense									
Drug offender	-0.12	(0.06)	*	-0.12	(0.06)	*	-0.12	(0.06)	*
Non-assaultive offender	0.24	(0.06)	***	0.24	(0.06)	***	0.24	(0.06)	***
Sex offender	0.21	(0.09)	**	0.19	(0.09)	**	0.19	(0.09)	**
Substance Abuse History									
Alcohol only	0.36	(0.11)	***	0.37	(0.11)	***	0.38	(0.11)	***
THC only	0.34	(0.09)	***	0.33	(0.09)	***	0.33	(0.09)	***
Hard drugs only	1.09	(0.13)	***	1.11	(0.13)	***	1.12	(0.13)	***
Alcohol & THC	0.39	(0.10)	***	0.41	(0.10)	***	0.41	(0.10)	***
Hard drugs & alcohol/THC	1.01	(0.06)	***	1.01	(0.06)	***	1.02	(0.06)	***
Known mental illness status	0.19	(0.06)	***	0.18	(0.06)	***	0.18	(0.06)	***
Conditions of Release									
Released on elec. monitoring	-0.33	(0.16)	**	-0.35	(0.16)	**	-0.35	(0.16)	**
Released to reentry center	-0.19	(0.17)		-0.34	(0.17)	**	-0.44	(0.17)	**
Year of Release									
2000-2001	-1.04	(0.25)	***	-0.95	(0.25)	***	-0.94	(0.25)	***
2002	-0.35	(0.15)	**	-0.32	(0.15)	**	-0.32	(0.15)	**
Age									
18-25	1.42	(0.12)	***	1.43	(0.12)	***	1.43	(0.12)	***
26-30	0.89	(0.11)	***	0.90	(0.11)	***	0.89	(0.11)	***
31-35	0.83	(0.11)	***	0.84	(0.11)	***	0.83	(0.11)	***
36-40	0.79	(0.11)	***	0.80	(0.11)	***	0.80	(0.11)	***
41-45	0.77	(0.11)	***	0.77	(0.11)	***	0.77	(0.11)	***
46-50	0.46	(0.11)	***	0.46	(0.11)	***	0.45	(0.11)	***
Education (ref=Some college or more)									
8 years or less	0.31	(0.12)	**	0.33	(0.12)	***	0.32	(0.12)	***
Some high school	0.33	(0.10)	***	0.33	(0.10)	***	0.33	(0.10)	***
GED	0.45	(0.10)	***	0.44	(0.10)	***	0.44	(0.10)	***
High school graduate	0.07	(0.10)		0.07	(0.10)		0.07	(0.10)	
Female offender	-0.32	(0.08)	***	-0.29	(0.09)	***	-0.30	(0.09)	***
Race (ref=White)									
Black	0.29	(0.05)	***	0.28	(0.06)	***	0.26	(0.06)	***
Other	-0.23	(0.17)		-0.23	(0.17)		-0.25	(0.17)	
Marital Status (ref=Married)									
Single	0.17	(0.07)	**	0.17	(0.07)	**	0.17	(0.07)	**
Divorced or separated	0.30	(0.08)	***	0.29	(0.08)	***	0.29	(0.08)	***
Widowed, common law, unk.	0.46	(0.24)	**	0.47	(0.24)	**	0.48	(0.24)	**
Number of dependents	0.01	(0.02)		0.02	(0.02)		0.01	(0.02)	
Pre-prison employment	-0.13	(0.10)		-0.13	(0.10)		-0.13	(0.10)	
cons	-1.11	(0.15)	***	-1.41	(0.17)	***	-1.35	(0.17)	***

note: *** p<0.01, ** p<0.05, * p<0.1

Table A-3. Effect of Distant Services (30mi) on Log-Odds of Parole Violation (Individual-Level Controls)

	Model 1			Model 2			Model 3		
	coef	(SE)		coef	(SE)		coef	(SE)	
# Prior Prison Spells									
1	0.63	(0.06)	***	0.63	(0.06)	***	0.63	(0.06)	***
2 or 3	1.10	(0.07)	***	1.09	(0.07)	***	1.09	(0.07)	***
4 or more	1.38	(0.13)	***	1.35	(0.13)	***	1.36	(0.13)	***
Years in prison, prior spell	-0.08	(0.01)	***	-0.08	(0.01)	***	-0.08	(0.01)	***
Type of Offense									
Drug offender	-0.14	(0.06)	**	-0.13	(0.06)	**	-0.13	(0.06)	**
Non-assaultive offender	0.22	(0.06)	***	0.22	(0.06)	***	0.22	(0.06)	***
Sex offender	0.18	(0.09)	**	0.17	(0.09)	*	0.17	(0.09)	*
Substance Abuse History									
Alcohol only	0.37	(0.11)	***	0.40	(0.11)	***	0.40	(0.11)	***
THC only	0.36	(0.09)	***	0.36	(0.09)	***	0.36	(0.09)	***
Hard drugs only	1.15	(0.13)	***	1.14	(0.13)	***	1.15	(0.13)	***
Alcohol & THC	0.39	(0.10)	***	0.42	(0.10)	***	0.43	(0.10)	***
Hard drugs & alcohol/THC	1.02	(0.06)	***	1.02	(0.06)	***	1.03	(0.06)	***
Known mental illness status	0.17	(0.06)	***	0.17	(0.06)	***	0.17	(0.06)	***
Conditions of Release									
Released on elec. monitoring	-0.30	(0.16)	*	-0.33	(0.16)	**	-0.33	(0.16)	**
Released to reentry center	-0.08	(0.16)		-0.29	(0.17)	*	-0.37	(0.17)	**
Year of Release									
2000-2001	-1.13	(0.25)	***	-1.02	(0.25)	***	-0.99	(0.26)	***
2002	-0.38	(0.15)	***	-0.34	(0.15)	**	-0.34	(0.15)	**
Age									
18-25	1.34	(0.12)	***	1.39	(0.12)	***	1.39	(0.12)	***
26-30	0.84	(0.11)	***	0.88	(0.11)	***	0.87	(0.11)	***
31-35	0.81	(0.11)	***	0.83	(0.11)	***	0.83	(0.11)	***
36-40	0.77	(0.11)	***	0.80	(0.11)	***	0.80	(0.11)	***
41-45	0.75	(0.11)	***	0.76	(0.11)	***	0.77	(0.11)	***
46-50	0.46	(0.11)	***	0.46	(0.11)	***	0.46	(0.11)	***
Education (ref=Some college or more)									
8 years or less	0.34	(0.12)	***	0.32	(0.12)	***	0.31	(0.12)	**
Some high school	0.35	(0.10)	***	0.32	(0.10)	***	0.32	(0.10)	***
GED	0.45	(0.10)	***	0.43	(0.10)	***	0.43	(0.10)	***
High school graduate	0.06	(0.10)		0.05	(0.10)		0.05	(0.10)	
Female offender	-0.33	(0.08)	***	-0.32	(0.09)	***	-0.31	(0.09)	***
Race (ref=White)									
Black	0.44	(0.06)	***	0.29	(0.06)	***	0.28	(0.06)	***
Other	-0.22	(0.17)		-0.26	(0.17)		-0.27	(0.17)	
Marital Status (ref=Married)									
Single	0.20	(0.07)	***	0.18	(0.07)	**	0.18	(0.07)	**
Divorced or separated	0.31	(0.08)	***	0.30	(0.08)	***	0.30	(0.08)	***
Widowed, common law, unk.	0.50	(0.24)	**	0.47	(0.24)	**	0.48	(0.24)	**
Number of dependents	0.01	(0.02)		0.01	(0.02)		0.01	(0.02)	
Pre-prison employment	-0.13	(0.10)		-0.13	(0.10)		-0.13	(0.10)	
cons	-1.17	(0.15)	***	-1.47	(0.17)	***	-1.46	(0.17)	***

note: *** p<0.01, ** p<0.05, * p<0.1

Appendix B

Table B-1. Descriptive Statistics of Individual-Level Control Variables

	Distribution		# of Imputed Cases	
	% (mean in italics)	*n* (*SD in italics*)	%	*n*
Year of release (ref=2003)				
2000-2001	0.01	(46)		
2002	0.05	(359)	0.00	(0)
2003	0.95	(7296)		
Conditions of Release				
Released on elec monitoring	0.06	(462)	0.00	(0)
Released to reentry center	0.08	(634)	0.00	(0)
Types of Violation				
Technical[c]	0.78	(6023)	0.00	(0)
Criminal[c]	0.22	(1678)	0.00	(0)
Reporting[c]	0.73	(5626)		
Residence[c]	0.50	(3853)		
Conduct[c]	0.03	(254)		
Substance abuse testing[c]	0.18	(1420)		
Association[c]	0.29	(2262)		
Firearms[c]	0.03	(196)		
Other weapons[c]	0.29	(2205)		
Employment[c]	0.08	(578)	0.49	(3776)
Sex offense[d]	0.09	(661)		
Substance abuse[d]	0.51	(3957)		
Programming[d]	0.61	(4666)		
Movement restriction[d]	0.49	(3770)		
Driving[d]	0.22	(1658)		
Financial[d]	0.03	(243)		
Employment[d]	0.02	(167)		
Number of incidents in violation	*2.82*	*2.85*	0.00	(0)
Days between parole and violation	*227.99*	*201.72*	0.00	(0)
Absconder status	0.17	(1295)	0.00	(0)
# Prior Prison Spells (ref=0)				
0	0.40	(3067)		
1	0.29	(2264)	0.00	(0)
2 or 3	0.24	(1813)		
4 or more	0.07	(557)		
Years in prison, prior spell	*2.58*	*(2.71)*	0.00	(9)
Type of Offense (ref=Assaultive)				
Assaultive offender	0.26	(1972)		
Drug offender	0.24	(1889)	0.00	(0)
Non-assaultive offender	0.50	(3840)		
Sex offender	0.07	(571)	0.00	(0)
Substance Abuse History (ref=None)				
None	0.43	(3286)		
Alcohol only	0.04	(334)		
THC only	0.08	(649)	0.00	(0)
Hard drugs only	0.06	(474)		
Alcohol & THC	0.07	(539)		
Hard drugs & alcohol/THC	0.31	(2419)		
Known mental illness status	0.22	(1664)	0.00	(54)
Age (ref=51-89)				
18-25	0.21	(1628)		
26-30	0.16	(1237)	0.00	(0)
31-35	0.18	(1379)		
36-40	0.16	(1255)		

41-45	0.15	(1123)		
46-50	0.09	(704)		
51-89	0.05	(375)		
Education (ref=Some college or more)				
8 years or less	0.07	(544)		
Some high school	0.35	(2717)		
GED	0.35	(2669)	0.01	(94)
High school graduate	0.18	(1370)		
Some college or more	0.05	(401)		
Female offender	0.07	(540)	0.00	(0)
Race (ref=White)				
White	0.43	(3321)		
Black	0.55	(4261)	0.00	(0)
Other	0.02	(119)		
Marital status (ref=Married)				
Never married	0.68	(5219)		
Married	0.11	(850)	0.00	(0)
Divorced or separated	0.20	(1542)		
Widowed, common law, unk	0.01	(90)		
Number of dependents	*1.24*	*(1.32)*	0.00	(0)
Pre-prison employment	0.13	(995)	0.10	(790)

[a] *Denotes standardized variable*
[b] *Measured at the regional level (30 miles from each of the 89 parole offices)*
[c] *Denotes standard condition of supervision*
[d] *Denotes specialized condition of supervision*

Table B-2. Impact of Context on the Log-Odds of Binary Sanction Outcomes (Individual-Level Controls)

	Model 1			Model 2		
	Rev v. Non Rev (N=1535 v. N=6166)			Cust v. Non Cust (N=4134 v. N=3567)		
	coef	(SE)		coef	(SE)	
Year of release (ref=2003)						
2000-2001	-0.14	(0.63)		0.02	(0.45)	
2002	0.03	(0.28)		-0.23	(0.19)	
Conditions of Release						
Released on elec monitoring	-0.04	(0.30)		-0.20	(0.20)	
Released to reentry center	-0.01	(0.29)		0.22	(0.20)	
Types of Violation						
Reporting	0.05	(0.09)		0.21	(0.06)	***
Residence	0.19	(0.08)	**	0.01	(0.06)	
Conduct	0.01	(0.20)		0.02	(0.16)	
Substance abuse testing	0.02	(0.09)		0.02	(0.07)	
Association	0.07	(0.08)		0.03	(0.06)	
Firearms	0.12	(0.19)		0.10	(0.18)	
Other weapons	0.49	(0.08)	***	0.25	(0.07)	***
Employment	0.03	(0.13)		-0.19	(0.10)	*
Sex offense	0.64	(0.13)	***	0.40	(0.11)	***
Substance abuse	0.17	(0.09)	**	-0.15	(0.06)	**
Programming	0.09	(0.09)		0.14	(0.06)	**
Movement restriction	0.13	(0.08)		0.06	(0.06)	
Driving	0.20	(0.09)	**	-0.03	(0.07)	
Financial	0.11	(0.19)		-0.18	(0.17)	
Employment	0.26	(0.27)		-0.16	(0.21)	
Number of incidents in violation	0.09	(0.02)	***	0.27	(0.02)	***
Days between parole and violation	0.02	(0.02)◇		0.03	(0.01)◇	**
Absconder status	0.02	(0.12)		0.71	(0.08)	***
Criminal violation	2.01	(0.08)	***	1.13	(0.07)	***
# Prior Prison Spells (ref=0)						
1	0.72	(0.09)	***	0.23	(0.06)	***
2 or 3	1.05	(0.11)	***	0.35	(0.08)	***
4 or more	1.08	(0.16)	***	0.23	(0.12)	*
Years in prison, prior spell	-0.04	(0.20)^		-0.05	(0.01)	***
Type of Offense (ref=Assaultive)						
Drug offender	-0.49	(0.11)	***	-0.17	(0.08)	**
Non-assaultive offender	-0.42	(0.09)	***	-0.12	(0.07)	*
Sex offender	0.43	(0.14)	***	-0.20	(0.11)	*
Substance Abuse History (ref=None)						
Alcohol only	0.03	(0.17)		0.07	(0.13)	
THC only	0.07	(0.13)		-0.13	(0.10)	
Hard drugs only	-0.27	(0.15)	*	0.12	(0.11)	
Alcohol & THC	-0.09	(0.15)		0.01	(1.06)^	
Hard drugs & alcohol/THC	-0.11	(0.09)		0.03	(0.06)	
Known mental illness status	0.19	(0.09)	**	0.05	(0.63)^	
Age (ref=51-89)						
18-25	0.46	(0.21)	**	0.09	(0.15)	
26-30	0.30	(0.21)		0.06	(0.14)	
31-35	0.30	(0.20)		0.17	(0.14)	
36-40	0.31	(0.20)		0.09	(0.14)	
41-45	0.27	(0.20)		0.11	(0.13)	
46-50	-0.08	(0.21)		-0.07	(0.14)	
Education (ref=Some college or more)						
8 years or less	0.30	(0.21)		-0.12	(0.15)	
Some high school	0.30	(0.17)	*	0.04	(0.12)	

GED	0.08	(0.17)		0.03	(0.12)
High school graduate	0.22	(0.18)		-0.07	(0.13)
Female offender	-0.29	(0.17)	*	-0.10	(0.10)
Race (ref=White)					
Black	-0.06	(0.09)		0.04	(0.64)^
Other	-0.03	(0.30)		0.13	(0.21)
Marital status (ref=Never married)					
Married	-0.12	(0.12)		0.09	(0.09)
Divorced or separated	0.08	(0.13)		0.14	(0.10)
Widowed, common law, unk	0.24	(0.33)		-0.02	(0.25)
Number of dependents	-0.02	(0.03)		-0.03	(0.02)
Pre-prison employment	0.19	(0.17)		0.03	(0.12)
cons	-4.52	(0.51)	***	-0.51	(0.34)

note: *** p<0.01, ** p<0.05, * p<0.1

^ *The coefficient and standard error for this term have each been multiplied by 10*

◇ *The coefficient and standard error for this term have each been multiplied by 100*

Table B-3. Impact of Context on the Log-Odds of Fine-Grained Sanction Outcomes (Individual-Level Controls)

	Model 1			Model 2			Model 3		
	Revocation v. Short-Term Cust (N=1535 v. N=2599)			Short-Term Cust v. Community (N=2599 v. N=3567)			Revocation v. Community (N=1535 v. N=3567)		
	coef	(SE)		coef	(SE)		coef	(SE)	
Year of release (ref=2003)									
2000-2001	-0.22	(0.67)		0.10	(0.48)		-0.12	(0.68)	
2002	0.16	(0.30)		-0.25	(0.21)		-0.10	(0.30)	
Conditions of Release									
Released on elec monitoring	0.07	(0.32)		-0.23	(0.22)		-0.16	(0.32)	
Released to reentry center	-0.11	(0.31)		0.22	(0.21)		0.11	(0.31)	
Types of Violation									
Reporting	-0.18	(0.10)	*	0.26	(0.07)	***	0.08	(0.10)	
Residence	0.17	(0.09)	**	-0.03	(0.06)		0.14	(0.08)	*
Conduct	0.02	(0.22)		0.04	(0.18)		0.02	(0.22)	
Substance abuse testing	-0.02	(0.10)		0.05	(0.08)		0.03	(0.10)	
Association	0.02	(0.09)		0.03	(0.07)		0.05	(0.09)	
Firearms	0.09	(0.21)		0.05	(0.21)		0.13	(0.22)	
Other weapons	0.41	(0.09)	***	0.10	(0.07)		0.51	(0.09)	***
Employment	0.14	(0.14)		-0.24	(0.11)	**	-0.10	(0.14)	
Sex offense	0.50	(0.15)	***	0.22	(0.13)	*	0.72	(0.15)	***
Substance abuse	0.26	(0.09)	***	-0.21	(0.07)	***	0.05	(0.09)	
Programming	-0.03	(0.09)		0.15	(0.06)	**	0.12	(0.09)	
Movement restriction	0.06	(0.09)		0.06	(0.07)		0.12	(0.09)	
Driving	0.24	(0.10)	**	-0.12	(0.08)		0.12	(0.09)	
Financial	0.22	(0.21)		-0.27	(0.19)		-0.05	(0.21)	
Employment	0.37	(0.30)		-0.25	(0.23)		0.12	(0.29)	
Number of incidents in violation	0.02	(0.02)		0.26	(0.02)	***	0.29	(0.02)	***
Days between parole and violation	0.01	(0.02)◇		0.03	(0.01)◇	*	0.03	(0.02)◇	*
Absconder status	-0.38	(0.13)	***	0.78	(0.08)	***	0.40	(0.13)	***
Criminal violation	1.89	(0.09)	***	0.26	(0.09)	***	2.14	(0.09)	***
# Prior Prison Spells (ref=0)									
1	0.70	(0.10)	***	0.06	(0.07)		0.76	(0.10)	***
2 or 3	1.02	(0.12)	***	0.08	(0.08)		1.09	(0.11)	***
4 or more	1.12	(0.18)	***	-0.06	(0.13)		1.06	(0.17)	***
Years in prison, prior spell	0.03	(0.02)		-0.06	(0.02)	***	-0.03	(0.02)	
Type of Offense (ref=Assaultive)									
Drug offender	-0.45	(0.12)	***	-0.05	(0.08)		-0.50	(0.11)	***
Non-assaultive offender	-0.45	(0.10)	***	-0.01	(0.07)		-0.42	(0.10)	***
Sex offender	0.66	(0.16)	***	-0.41	(0.13)	***	0.24	(0.15)	
Substance Abuse History (ref=None)									
Alcohol only	-0.02	(0.19)		0.07	(0.14)		0.05	(0.19)	
THC only	0.18	(0.15)		-0.20	(0.11)	*	-0.02	(0.14)	
Hard drugs only	-0.40	(0.16)	**	0.24	(0.12)	**	-0.16	(0.17)	
Alcohol & THC	-0.12	(0.16)		0.02	(0.12)		-0.10	(0.16)	
Hard drugs & alcohol/THC	-0.16	(0.10)	*	0.08	(0.07)		-0.08	(0.09)	
Known mental illness status	0.23	(0.09)	**	-0.06	(0.07)		0.17	(0.09)	*
Age (ref=51-89)									
18-25	0.47	(0.23)	**	-0.04	(0.16)		0.43	(0.23)	*
26-30	0.32	(0.23)		-0.04	(0.16)		0.28	(0.22)	
31-35	0.24	(0.22)		0.10	(0.15)		0.34	(0.21)	
36-40	0.30	(0.21)		0.02	(1.47)^		0.30	(0.21)	
41-45	0.25	(0.21)		0.03	(0.15)		0.28	(0.21)	
46-50	-0.06	(0.23)		-0.06	(0.15)		-0.12	(0.22)	

Education (ref=Some college or more)									
8 years or less	0.44	(0.23)	*	-0.25	(0.16)		0.18	(0.22)	
Some high school	0.34	(0.19)	*	-0.06	(0.13)		0.28	(0.18)	
GED	0.08	(0.19)		0.31	(1.30)^		0.08	(0.18)	
High school graduate	0.31	(0.20)		-0.17	(0.14)		0.15	(0.19)	
Female offender	-0.26	(0.18)		-0.05	(0.11)		-0.32	(0.17)	*
Race (ref=White)									
Black	-0.09	(0.10)		0.03	(0.07)		-0.06	(0.10)	
Other	-0.15	(0.31)		0.19	(0.22)		0.04	(0.32)	
Marital status (ref=Never married)									
Married	-0.22	(0.13)	*	0.17	(0.10)	*	-0.05	(0.13)	
Divorced or separated	-0.01	(0.15)		0.14	(0.11)		0.13	(0.14)	
Widowed, common law, unk	0.31	(0.37)		-0.12	(0.28)		0.19	(0.35)	
Number of dependents	0.02	0.31)^		-0.03	(0.02)		-0.03	(0.03)	
Pre-prison employment	0.23	(0.19)		-0.05	(0.13)		0.18	(0.17)	
cons	-3.63	(0.54)	***	-0.21	(0.36)		-3.85	(0.53)	***

note: *** p<0.01, ** p<0.05, * p<0.1

^ *The coefficient and standard error for this term have each been multiplied by 10*

◇ *The coefficient and standard error for this term have each been multiplied by 100*

Appendix C

Table C-1. Descriptive Statistics of Time-Invariant Individual-Level Characteristics

N=3,532 parolees	% *(mean in italics)*	*n* (*SD in italics*)
Female offender	0.08	(273)
Race		
White	0.45	(1584)
Black	0.53	(1876)
Other	0.02	(72)
Age		
18-25	0.19	(659)
26-30	0.17	(594)
31-35	0.17	(620)
36-40	0.17	(584)
41-45	0.14	(479)
46-50	0.10	(371)
51-89	0.06	(225)
Education		
8 years or less	0.07	(257)
Some high school	0.35	(1228)
GED	0.31	(1074)
High school graduate	0.20	(714)
Some college or more	0.06	(216)
Educational status unknown	0.01	(43)
Marital Status		
Married	0.12	(425)
Never married	0.66	(2341)
Divorced or separated	0.21	(724)
Widowed, common law, unk	0.01	(42)
Number of dependents	*1.26*	*(1.31)*
Pre-Prison Employment		
Employed in pre-prison quarter	0.05	(178)
Unemployed in pre-prison quarter	0.82	(2884)
Employment status unknown	0.13	(480)
# Prior Prison Spells		
0	0.48	(1707)
1	0.26	(909)
2 or 3	0.20	(705)
4 or more	0.06	(211)
Years in Prison, Prior Spell		
Less than one year in prison	0.29	(1026)
Between one and three years in prison	0.41	(1443)
More than three years in prison	0.30	(1063)
Prison time unknown	0.00	(10)
Type of Offense		
Assaultive offender	0.28	(982)
Drug offender	0.26	(924)
Non-assaultive offender	0.46	(1626)
Sex offender	0.07	(260)

Known Mental Illness Status		
No known mental illness	0.78	(2773)
Known mental illness	0.21	(733)
Mental illness status unknown	0.01	(26)
Substance Abuse History		
None	0.51	(1710)
Alcohol only	0.04	(144)
THC only	0.08	(268)
Hard drugs only	0.05	(180)
Alcohol & THC	0.06	(214)
Hard drugs & alcohol/THC	0.26	(904)
Early release (pre-2003)	0.05	(160)

Table C-2. Effect of Short-Term Custody on Quarterly Wages[ʊ]

	M1			M2†			M3†			M4†		
	coef	(SE)		coef	(SE)		coef	(SE)		coef	(SE)	
Custodial Characteristics												
Current Custody Status	-1.15	(0.06)	***	-0.60	(0.05)	***	-0.57	(0.06)	***	-0.57	(0.06)	***
1-Quarter Lagged Custody Status	-0.88	(0.06)	***	-0.40	(0.05)	***	-0.36	(0.06)	***	-0.33	(0.07)	***
2-Quarter Lagged Custody Status										-0.06	(0.06)	
1-Quarter Lag*Current Custody							-0.09	(0.09)		-0.09	(0.09)	
1-Quarter Lag*2-Quarter Lag										-0.06	(0.10)	
Time-Varying Characteristics												
Quarters Since Release				0.08	(0.01)	***	0.08	(0.01)	***	0.08	(0.01)	***
Seasonal Quarter (ref=Jan-Mar)												
Apr-Jun				0.12	(0.04)	***	0.12	(0.04)	***	0.12	(0.04)	***
Jul-Sept				0.22	(0.04)	***	0.22	(0.04)	***	0.22	(0.04)	***
Oct-Dec				0.13	(0.05)	***	0.14	(0.05)	***	0.13	(0.05)	***
County Unemployment				0.06	(0.02)	***	0.06	(0.02)	***	0.06	(0.02)	***
Absconding Status				-0.64	(0.07)	***	-0.65	(0.07)	***	-0.66	(0.07)	***
Number of Positive Substance Abuse Tests				0.05	(0.07)		0.05	(0.07)		0.05	(0.07)	
Number of Arrests				-0.02	(0.08)		-0.02	(0.08)		-0.03	(0.08)	
Discharge Status				-0.78	(0.06)	***	-0.77	(0.06)	***	-0.78	(0.06)	***

note: *** p<0.01, ** p<0.05, * p<0.1

[ʊ] *The outcome variable "wages" is a measure of the natural log of total gross wages per quarter in 2010 dollars*

† Includes fixed effects

Table C-3. Effect of Short-Term Custody on Poverty Status[σ]

	M1			M2†			M3†			M4†		
	coef	(SE)		coef	(SE)		coef	(SE)		coef	(SE)	
Custodial Characteristics												
Current Custody Status	1.38	(0.06)	***	1.13	(0.09)	***	1.14	(0.11)	***	1.15	(0.11)	***
1-Quarter Lagged Custody Status	0.94	(0.06)	***	0.61	(0.09)	***	0.61	(0.10)	***	0.64	(0.12)	***
2-Quarter Lagged Custody Status										0.20	(0.09)	**
1-Quarter Lag*Current Custody							-0.03	(0.19)		-0.03	(0.19)	
1-Quarter Lag*2-Quarter Lag										-0.16	(0.17)	
Time-Varying Characteristics												
Quarters Since Release				-0.11	(0.01)	***	-0.11	(0.01)	***	-0.11	(0.01)	***
Seasonal Quarter (ref=Jan-Mar)												
Apr-Jun				-0.05	(0.07)		-0.05	(0.07)		-0.05	(0.07)	
Jul-Sept				-0.22	(0.06)	***	-0.22	(0.06)	***	-0.22	(0.06)	***
Oct-Dec				0.06	(0.07)		0.06	(0.07)		0.06	(0.07)	
County Unemployment				-0.05	(0.02)	**	-0.05	(0.02)	**	-0.05	(0.03)	**
Absconding Status				0.69	(0.17)	***	0.69	(0.17)	***	0.69	(0.17)	***
Number of Positive Substance Abuse Tests				0.19	(0.11)		0.19	(0.11)		0.19	(0.11)	
Number of Arrests				0.07	(0.14)		0.07	(0.14)		0.08	(0.14)	
Discharge Status				0.86	(0.08)	***	0.87	(0.08)	***	0.88	(0.08)	***

note: *** p<0.01, ** p<0.05, * p<0.1

[σ] *The outcome variable "poverty status" is a dichotomous indicator of whether a person's gross wages for each quarter are below the poverty threshold for a single person under the age of 65, where 1=in poverty*

† Includes fixed effects

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