

# Crime & Delinquency

<http://cad.sagepub.com/>

---

## How Much Do the Crimes Committed by Released Inmates Cost?

Michael Ostermann and Joel M. Caplan

*Crime & Delinquency* published online 5 November 2013

DOI: 10.1177/0011128713505482

The online version of this article can be found at:

<http://cad.sagepub.com/content/early/2013/10/30/0011128713505482>

---

Published by:



<http://www.sagepublications.com>

Additional services and information for *Crime & Delinquency* can be found at:

**Email Alerts:** <http://cad.sagepub.com/cgi/alerts>

**Subscriptions:** <http://cad.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

>> [OnlineFirst Version of Record](#) - Nov 5, 2013

[What is This?](#)

# How Much Do the Crimes Committed by Released Inmates Cost?

Crime & Delinquency

XX(X) 1–29

© The Author(s) 2013

Reprints and permissions:

sagepub.com/journalsPermissions.nav

DOI: 10.1177/001128713505482

cad.sagepub.com



**Michael Ostermann<sup>1</sup> and Joel M. Caplan<sup>1</sup>**

## **Abstract**

The goal of this study is to explore the monetary costs of crimes committed by former inmates as they attempt to transition back into their communities. We use data gathered from New Jersey prison releases from 2005 to 2007 ( $n = 31,831$ ) for our explorations. In addition to describing local-, county-, and state-level costs of crimes, we construct a series of regression models to predict costs using several predictors of recidivism. Results indicate that age, minority status, area-level deprivation, and whether the inmate was released to parole supervision were statistically significant predictors of costs in expected directions. However, strongly established predictors of recidivism such as criminal history and policy-relevant predictors such as time served are not significant predictors of postrelease costs of crimes. Our discussion presents a simple cost-benefit analysis according to two distinct policy approaches: (a) targeting evidence-based correctional principles toward high-risk former inmates and (b) incapacitating high-risk former inmates.

## **Keywords**

costs of crime, reentry, reintegration, recidivism, rearrest, corrections

It is well documented that the United States has experienced an unprecedented growth in its prison populations and, as a consequence, hundreds of thousands of former inmates are released to their communities every year (Petersilia, 2003; Travis, 2005; West, Sabol, & Greenman, 2010). Coinciding

---

<sup>1</sup>Rutgers University, Newark, NJ, USA

### **Corresponding Author:**

Michael Ostermann, Rutgers University School of Criminal Justice, Newark, NJ 07107, USA.

Email: michael.ostermann@rutgers.edu

with the increased use of incarceration throughout the nation is an increased attention to the relative costs associated with managing correctional populations as well as potential cost savings associated with engaging released prisoners in alternatives to incarceration and other rehabilitative programs (Aos, Miller, & Drake, 2006; Drake, Aos, & Miller, 2009). Nationwide, with the exception of Medicaid, state appropriations to corrections budgets have outpaced all other appropriations in recent years (Travis, 2005; Justice Policy Institute, 2002). This has resulted in a 423% increase in per capita expenditures for corrections systems between 1982 and 2003, with corrections accounting for 33% of the nation's overall US\$185 billion in justice expenditures (Hughes, 2006). Within justice expenditures, the nation's appropriation to corrections systems is second only to that of policing systems (Hughes, 2006). Correctional systems cause huge financial burdens upon the states in which they operate (Travis, 2005). For example, in New Jersey, the annual corrections budget currently exceeds US\$1 billion a year (State of New Jersey, 2010); the cost of incarcerating an offender is approaching US\$50,000 a year (Kleykamp, Rosenfeld, & Scotti, 2008); and the average time served is approaching 3 years. The study presented here uses New Jersey data to explore the costs associated with the reoffending patterns of recently released inmates; that is, after the State made large financial investments in their incarceration for the purpose of punishment but also to prevent new crimes by way of incapacitation and specific deterrence.

The monetary dilemma with incapacitation-based approaches to crime control is that the public is insulated from incurring costs associated with crime commission only when lawbreakers are imprisoned, and only if ex-prisoners abstain from crime upon their eventual release. Research has demonstrated that, on average, incarceration prevents between 6.2 and 14.1 offenses per year for a juvenile and between 4.9 and 8.4 offenses per year for an adult (Sweeten & Apel, 2007). A substantial literature has been dedicated to the exploration of potential avenues that can be pursued to improve outcomes of former inmates, as they attempt to reintegrate back into communities. These endeavors are typically accomplished through assessing risks and needs, being responsive to individual learning styles, and matching appropriate offenders to appropriate evidence-based interventions (Lowenkamp & Latessa, 2004, 2005). Some studies have analyzed how particular correctional programs translate into cost savings by lowering recidivism through connecting inmates and former inmates to rehabilitative services (e.g., Roman, Brooks, Lagerson, Chalfin, & Tereshchenko, 2007; Zhang, Roberts, & Callanan, 2006). Other research studies indicate that prison release cohorts significantly contribute to a state's crime rates (Rosenfeld, Wallman, & Fornango, 2005). The monetary costs associated with the general recidivism patterns of prison release cohorts

are understudied, but such an analysis can provide great insight about the relative return of investments to correctional systems. To date, the discussions surrounding these investments have largely focused on the occurrences of criminal recidivism rather than the relative costs associated with these occurrences. Reflecting these gaps in the current literature, this study seeks to answer two research questions:

**Research Question 1:** How much do the crimes committed by recently released inmates cost?

**Research Question 2:** What prerelease characteristics of former inmates are significantly predictive of the costs associated with their postrelease crimes?

This study builds upon the work of Cohen, Piquero, and Jennings (2010a, 2010b) and their studies of offending trajectories of members of the Second Philadelphia Birth Cohort. These researchers attached costs to arrests that were experienced by individuals during the course of their criminal careers. Through this research, Cohen et al. (2010a, 2010b) demonstrated the potential cost savings of preventing chronic juvenile offenders from engaging in a life of crime and delinquency. The current study explores the costs of crimes committed by released prisoners by attaching the cost formulas used by Cohen et al. (2010a, 2010b) to arrests that were experienced by offenders within 3 years of release from New Jersey prisons from 2005 to 2007 ( $n = 31,831$ ).

Regression modeling is used to predict postrelease costs of crimes through the use of established indicators of criminal recidivism such as age, prior criminal record, risk level, offense type, release type, minority status, area-level deprivation, and time served. Within our analyses, time served is used as an indicator of the relative investment the state made in incapacitating an individual offender. Our discussion presents a cost-benefit analysis that demonstrates the potential fiscal impact of obtaining a reasonable reduction of recidivism for high-risk offenders in the community compared with the alternative of keeping high-risk offenders in an incarcerated setting.

The following sections review research that has previously addressed the costs of crimes and prisoner reentry. After discussing the data and methodologies used for this study, we conclude with a summary of the findings and a discussion of potential policy implications.

## Costs of Crimes

Research estimating a national-level cost of crimes committed in the United States has uniformly found that criminal behavior is extremely expensive to

a variety of stakeholders. Anderson (1999) estimated aggregate annual costs to be approximately US\$1.7 trillion. This figure is comparable with annual life insurance purchases, the outstanding mortgage debt to commercial banks and savings institutions, and health expenditures (Anderson, 1999). Studies that have attached costs to individual crimes have used two different cost paradigms: *ex post* or Bottom-Up (BU) costs and *ex ante*, top-down, or Willingness to Pay (WTP) costs. The BU approach takes into account victim-related costs such as decreased productivity and pain and suffering, system-level costs such as those incurred by criminal processing through courts and prisons, and the loss of productivity of offenders due to incarceration (Cohen, 1998; Cohen et al., 2010a). This approach has been criticized, however, due to its exclusion of elements such as fear of crime and the costs associated with actions taken by the public to attempt to avoid being victimized (Cohen, 1998; Cohen et al., 2010a; Nagin, 2001).

The top-down WTP approach developed by Cohen, Rust, Steen, and Tidd (2004) estimated the costs associated with different crimes by conducting a nationally representative survey of 1,300 U.S. residents. Their approach was guided using contingent valuation methodologies to address prior criticisms of the BU approach. Contingent valuation uses stated preferences of respondents contingent on the details of the constructed market for the environmental good put forth in the survey (Carson & Hanemann, 2005). In their survey, Cohen et al. (2004) asked respondents whether they would be willing to vote for a proposal that would require each household in their community to pay an amount of money between US\$25 and US\$225 to prevent 1 in 10 of certain crime types (e.g., burglary, serious assault, robbery, rape, and murder). The cost estimates that ultimately resulted from this research were found to be between 1.5 and 10 times higher than prior BU estimates.

Both the BU and WTP approaches should be viewed as ways to organize how we think about the relative impacts of crime upon our society rather than hard costs. Both approaches use different methods to present hierarchical constructs about the scalability of crimes and how they relate to one another. To that end, the values placed on certain crimes do not necessarily translate into direct cost savings. For example, the BU and WTP estimates for murder (US\$5.0 million and US\$11.8 million, respectively) do not communicate that if one of these crimes were prevented, that society would be richer by US\$5.0 or US\$11.8 million. It simply *estimates* that a murder costs approximately US\$5.0 million according to *estimations* of the costs associated with pain and suffering, lost quality of life, criminal processing, and lost productivity (Cohen et al., 2010a) and that the public would be willing to pay an *estimated* US\$11.8 million to prevent these types of crimes from occurring. If a murder were prevented, we would not have extra money to put toward civic development,

social programs, the building of infrastructure, military expenditures, debt, campaigns, or other various things policy makers spend money on.

Much of the research applying the costs of crimes to offending patterns has been geared toward the analysis of costs associated with criminal careers (Cohen & Piquero, 2009; Cohen et al., 2010a; DeLisi & Gatling, 2003; Piquero, Jennings, & Farrington, 2011; Welsh, Loeber, Stevens, Stouthamer-Loeber, Cohen, & Farrington, 2008). The criminal careers literature has spurred many theoretical developments about the variation, prevalence, frequency, onset, and specialization of populations of offenders across various demographic, social, and societal characteristics (Blumstein, Cohen, & Farrington, 1988; Cohen et al., 2010a; Piquero, 2008). A product of this research has been the specification of developmental and typological theories that postulate the existence of distinct groups of criminals that have unique age-crime profiles as well as malleability for change (Cohen et al., 2010a; Loeber, Wei, Stouthamer-Loeber, Huizinga, & Thornberry, 1999; Moffitt, 1993). This branch of research has been primarily concerned with explaining etiological and offending differences across longitudinal progressions of criminal activity and has convincingly identified unique groups of offenders across the life course (e.g., low-level chronic offenders, late-onset offenders, high-rate life-course persistent offenders, etc.). However, the identification and exploration of noncriminal life-course outcomes such as offender costs of crimes on victims and broader society have not been primary outcomes that have been explored within the general criminal careers literature (Cohen et al., 2010a).

When costs of crimes are applied to criminal career analyses, the primary aims have been to explain the relative monetary benefits that could potentially be obtained by identifying chronic offenders early in their criminal careers, and setting them on a noncriminal life path. Studies that have used the BU approach have found that high-risk chronic offending youth cost between approximately US\$1.3 and US\$1.5 million during the course of their criminal careers (Cohen, 1998). Using Cohen's (1998) BU estimates, DeLisi and Gatling (2003) found that a cohort of 500 adult habitual offenders amassed approximately US\$416 million in victim costs, US\$137 million in criminal justice costs, and US\$15 million in lost earnings with the average habitual offender costing approximately US\$1.14 million. Cohen, Piquero, and Jennings's (2010a, 2010b) analyses of the offending patterns of the Second Philadelphia Birth Cohort used trajectory analysis to identify chronic offenders and attached costs to crimes through the more comprehensive WTP approach. The findings from this research indicate that while the frequency of offending accounted for the lion's share of costs of crimes during an offender's juvenile years, offense severity significantly increased costs during adult

offending years (Cohen et al., 2010a). In addition, upon disaggregating the data according to gender and ethnicity, Cohen et al. (2010b) found that both male and female high-rate offenders impose substantial costs on society with high-rate males costing greater than US\$1.5 million and high-rate females costing greater than US\$750,000. African American chronic offenders were found to cost the most of any of the racial/ethnic groups with a cost greater than US\$1.6 million for the average chronic offender. By comparison, Hispanic and White chronic offenders were found to cost approximately US\$200,000 and US\$100,000, respectively. These researchers found that saving high-rate chronic offenders early in their criminal career could potentially translate into total savings of more than US\$200 million.

## **Released Inmates**

The most recent statistics available from the Bureau of Justice Statistics (BJS) indicate that more than 700,000 prison inmates were released across the nation in 2009 (West, Sabol, & Greenman, 2010). The majority of offenders who are released from U.S. prisons will experience some form of future contact with the criminal justice system. Nationally representative research conducted by BJS have indicated that, within 3 years of release, more than 60% of former inmates are rearrested for a new crime, more than 45% are reconvicted, and more than 40% are returned to custody for either a new crime or a technical violation of parole (Beck & Shipley, 1989; Langan & Levin, 2002). Recidivism research conducted by the Pew Center on the States (2011), which explored returns to prison for release cohorts in 1999 and 2004, found that approximately 45.4% of those released in 1999 and 43.3% of those released in 2004 were reincarcerated within 3 years of release, either for a new crime or for a technical violation of parole. A recent study conducted with New Jersey prison data indicated that 60.3% of released inmates are rearrested and 49.1% are reconvicted within 3 years (Ostermann, 2011).

Former prisoners typically return to their communities with little pre-release preparation (Atkinson & Rostad, 2003; Braga, Piehl, & Hureau, 2009; Lynch & Sabol, 2001) and have limited work histories and educational backgrounds which hinders their abilities to pursue gainful employment (Benda, Harm, & Toombs, 2005; Benda, Tooms, & Peacock, 2003; Laub & Sampson, 2003; Sampson & Laub, 1993; Tripodi, Kim, & Bender, 2010; Uggen, 2000). The communities to which this population returns are generally exemplified as urban areas that have concentrated levels of social and economic deprivation, including high instances of unemployment, homelessness, drug activity, and crime (Braga et al., 2009). Furthermore, many returning offenders experience significant challenges with meeting even their most basic needs of

finding shelter, clothing, and food after their release from prison (Austin, 2001; Brown, 2004; Helfgott, 1997; Petersilia, 2001). This population has significant issues with substance abuse and has substantial physical and mental health needs (Petersilia, 2001). While most offenders are released to some form of community supervision (Sabol, West, & Cooper, 2009), agencies that are charged with aiding in the transition of former prisoners have a limited number of potential responses to the myriad issues that this population demonstrates.

A well-established literature has found that the likelihood of criminal recidivism can be lowered for the aforementioned population through a process of actuarially identifying criminal risks, addressing criminogenic needs, and being responsive to the individual-level learning styles of ex-prisoners (Dowden & Andrews, 1999; Lowenkamp & Latessa, 2004, 2005; Lowenkamp, Latessa, & Holsinger, 2006; Lowenkamp, Pealer, Smith, & Latessa, 2006). However, while this process is well known throughout the correctional landscape, supervision agencies have experienced significant difficulties integrating these models within their day-to-day activities. These difficulties have been associated with poorly trained staff, insufficient programming opportunities, sentencing policies that negatively impact offender motivations to participate in programming, and the funding of security over rehabilitation services for alternatives to incarceration (Paparozzi & Guy, 2009). The challenges with altering correctional practices to more closely comport with findings from established evidence persist despite a strong knowledge base that has demonstrated that programs incorporating evidenced-based practices can be highly cost-effective.

A series of studies commissioned by the Washington State Legislature and conducted by the Washington State Institute for Public Policy offer in-depth analyses of returns on taxpayer investments into evidence-based programs and policies (Aos et al., 2006; Drake et al., 2009). These reports were commissioned in reaction to long-term forecasts indicating that Washington State would need two new prisons by 2020 to accommodate the growing number of offender's entering the state corrections system. These prisons would cost approximately US\$250 million to build and US\$45 million per year to operate (Aos et al., 2006). The Institute analyzed several broad policy options as alternatives to building more prisons, including intervention programs, prevention programs, and new sentencing options.

Findings indicated that several adult and juvenile evidence-based programs were successful at reducing criminal recidivism and saving taxpayer dollars. Particular programs include drug treatment in prisons and community corrections, education in prisons, adult and juvenile drug courts, and restorative justice programs in juvenile courts. However, while the work performed in



Washington State indicates that certain programs whose practices reflect a strong evidence-base can be successful at saving money, no research to-date has addressed the costs associated with the offending patterns of former prisoners as they attempt to reintegrate back into their communities. Having knowledge of how much these crimes cost will better contextualize the fiscal impact that released prisoners have on the larger criminal justice system outside of the strict focus on prison-based costs. This study addresses these impacts in accordance with the locations these individuals return.

## **Data and Method**

### *Data*

The New Jersey State Parole Board (SPB) gathered data for this study. The SPB provided a database that highlighted individuals who were released from New Jersey state prisons from January 1, 2005 to December 31, 2007 ( $N = 35,321$ ) with attendant demographic, instant offense, and release date information attached to each individual offender. Through the use of a unique state-level identifier, each individual was processed through a criminal records information system that is maintained by the New Jersey State Police and administered by the New Jersey Department of Criminal Justice. Approximately 90% of all of the cases contained within the SPB's 2005, 2006, and 2007 release cohort databases were matched within the criminal records information system ( $n = 31,831$ ). This study uses the costs of crimes that were highlighted in Table 1 of Cohen et al. (2010a) article "Studying the Costs of Crime Across Offender Trajectories" (p. 286) and attaches these costs to arrest information contained within the New Jersey criminal record check. Arrests that occurred prior to a case's prison release date were considered criminal history and arrests that occurred after release were considered recidivism.

### **Costs**

Arrests that were attached to each released inmate's record were in the form of individual charges. Each charge is date stamped and includes the attendant statutory description as well as the county and municipality in which the arrest occurred. The current study uses several different strategies for attaching costs to crimes committed by individuals within release cohorts: both BU and WTP estimates were attached to arrest charges as well as arrest events. The BU strategy attaches costs to each individual charge contained within an arrest event, while the WTP strategy uses only the most serious (i.e., the most expensive) charge contained within the arrest event as the overall cost. The

**Table 1.** Total BU and WTP Costs of Crimes Committed by Released Inmates: State, County, and Most Populated Municipalities.

	2005		2006		2007		Total	
	BU	WTP	BU	WTP	BU	WTP	BU	WTP
State of NJ	\$892,229	\$2,044,040	\$921,384	\$2,118,739	\$681,469	\$1,570,819	\$2,495,082	\$5,733,598
Counties								
Atlantic	\$55,800	\$126,000	\$24,800	\$51,400	\$16,300	\$34,800	\$96,900	\$212,200
Bergen	\$12,500	\$30,700	\$28,600	\$68,100	\$8,557	\$20,700	\$49,657	\$119,500
Burlington	\$22,900	\$51,700	\$11,200	\$25,500	\$5,307	\$10,700	\$39,407	\$87,900
Camden	\$148,000	\$338,000	\$174,000	\$401,000	\$136,000	\$313,000	\$458,000	\$1,052,000
Cape May	\$3,951	\$8,220	\$5,911	\$11,900	\$3,409	\$7,677	\$13,271	\$27,797
Cumberland	\$22,000	\$53,000	\$50,000	\$115,000	\$63,800	\$148,000	\$135,800	\$316,000
Essex	\$222,000	\$514,000	\$158,000	\$373,000	\$128,000	\$301,000	\$508,000	\$1,188,000
Gloucester	\$15,700	\$33,600	\$9,333	\$21,300	\$5,267	\$12,400	\$30,300	\$67,300
Hudson	\$106,000	\$242,000	\$63,000	\$143,000	\$97,200	\$227,000	\$266,200	\$612,000
Hunterdon	\$577	\$1,310	\$390	\$730	\$1,265	\$2,714	\$2,232	\$4,754
Mercer	\$56,300	\$129,000	\$49,200	\$112,000	\$18,500	\$39,600	\$124,000	\$280,600
Middlesex	\$12,700	\$28,300	\$40,100	\$91,800	\$70,500	\$167,000	\$123,300	\$287,100
Monmouth	\$39,700	\$87,900	\$53,100	\$119,000	\$13,000	\$28,000	\$105,800	\$234,900
Morris	\$2,826	\$6,280	\$4,742	\$12,000	\$3,602	\$7,695	\$11,170	\$25,975
Ocean	\$6,214	\$13,200	\$11,100	\$24,000	\$4,509	\$10,700	\$21,823	\$47,900
Passaic	\$78,800	\$179,000	\$141,000	\$325,000	\$73,800	\$166,000	\$293,600	\$670,000
Salem	\$7,715	\$17,300	\$3,239	\$6,409	\$7,330	\$16,300	\$18,284	\$40,009
Somerset	\$6,970	\$16,400	\$7,003	\$16,200	\$11,000	\$25,700	\$24,973	\$58,300
Sussex	\$2,571	\$8,230	\$3,766	\$11,100	\$3,159	\$7,629	\$9,496	\$26,959
Union	\$63,400	\$146,000	\$71,100	\$163,000	\$10,500	\$23,200	\$145,000	\$332,200
Warren	\$5,605	\$13,900	\$11,800	\$27,300	\$464	\$1,004	\$17,869	\$42,204
Most populated municipalities								
Newark	\$139,000	\$319,000	\$116,000	\$270,000	\$91,900	\$217,000	\$346,900	\$806,000
Jersey City	\$83,000	\$188,000	\$55,000	\$124,000	\$82,700	\$193,000	\$220,700	\$505,000
Paterson	\$51,900	\$117,000	\$129,000	\$299,000	\$59,000	\$133,000	\$239,900	\$549,000
Elizabeth	\$32,000	\$74,000	\$63,100	\$146,000	\$5,336	\$11,700	\$100,436	\$231,700
Edison	\$527	\$1,251	\$1,096	\$2,356	\$5,314	\$12,800	\$6,937	\$16,407
Woodbridge	\$361	\$1,074	\$15,900	\$37,300	\$1,010	\$3,022	\$17,271	\$41,396
Lakewood	\$0	\$0	\$5	\$36	\$1	\$3	\$6	\$39
Hamilton	\$2,323	\$4,805	\$2,729	\$5,809	\$5,949	\$13,800	\$11,001	\$24,414
Trenton	\$47,900	\$111,000	\$43,000	\$97,500	\$12,000	\$24,400	\$102,900	\$232,900
Clifton	\$6,141	\$14,300	\$1,534	\$3,615	\$1,075	\$2,130	\$8,750	\$20,045
Camden	\$117,000	\$268,000	\$154,000	\$358,000	\$107,000	\$247,000	\$378,000	\$873,000
Brick	\$1,746	\$3,855	\$1,759	\$3,597	\$932	\$2,036	\$4,437	\$9,488
Cherry Hill	\$0	\$0	\$9	\$43	\$116	\$191	\$125	\$234
Passaic	\$18,800	\$42,900	\$3,059	\$5,779	\$7,186	\$16,300	\$29,045	\$64,979

Note. Costs are presented in thousands of U.S. dollars. Cost estimates are by arrest events. Charge-level costs are available from the author upon request. Crimes are only considered if they occurred within 3 years of release from prison. BU = Bottom-Up; WTP = Willingness to Pay.

BU estimates the costs associated with all of the granular-level circumstances that occur within an arrest event while the WTP strategy is consistent with previous costs of crimes research (A. R. Piquero, personal communication, June 7, 2011). A total of 713,233 arrest charges were attached to the 31,831 released prisoners within this study. Of the charges, 613,111 occurred prior to release and 100,122 charges occurred within 3 years after release. The charges were contained within 304,593 unique arrest events. Of the events, 262,211 occurred prior to release and 42,382 occurred after release.

We present costs of crimes for the entire state of New Jersey, for each of the state's 21 counties, and for the most populated municipalities. In addition, average costs of all postrelease arrest charges and events as well as the average costs of charges and events associated with an individual's first rearrest were calculated according to individual-level prerelease characteristics.

### *Analytic Strategy*

Established predictors of criminal recidivism were regressed on total postrelease arrest charge and arrest event costs in addition to charge and event costs for the first rearrest that was experienced by a released inmate. The goal of constructing the regression models is to present the individual-level characteristics of released inmates that are associated with statistically significant predicted increases or decreases in postrelease crime costs. Specific characteristics that are entered into the regression models have been found to consistently predict recidivism in previous research including (a) the offender's age in years at the time of their release from prison (see Benedict, Huff-Corzine, & Corzine, 1998; Hepburn & Albonetti, 1994; Spohn & Holleran, 2002), (b) minority status (minority = 1; see Hepburn & Albonetti, 1994; Spohn & Holleran, 2002), (c) gender (male = 1; see Gaine, Payne, & O'Toole, 2000; Spohn & Holleran, 2002), (d) marital status (single = 1), (e) the type of instant offense for which they were serving time prior to their release (public order crimes = reference category; see Langan & Levin, 2002), (f) the number of instant offenses for which they were serving time (one instant offense = reference category; see Langan & Levin, 2002; Ostermann, 2011), (g) the number of arrest events they experienced prior to their release (see Hepburn & Albonetti, 1994; Kruttschnitt, Uggen, & Shelton, 2000; Spohn & Holleran, 2002), (h) their level of risk on a prerelease Level of Service Inventory-Revised (LSI-R) assessment (low = 0-16, moderate = 17-23, medium = 24-30, high >30; see Schlager & Simourd, 2007), (i) the time served in prison for their instant offense in days (see Deschenes, Owen, & Crow, 2007), (j) whether they were released to parole supervision (see Ostermann, 2011), and (k) a county-level deprivation index (see Solomon, Kachnowski, & Bhati, 2005).

The deprivation index was calculated for each county through combining area-specific information gathered from the U.S. Census. The index includes county-level measures of the proportion of the population that is Black, the unemployment rate, the proportion of female-headed households, and the proportion whose income is below the poverty level. The measures were combined using factor analysis (Cronbach's  $\alpha = .763$ ).

Full models with all of the covariates are presented along with two smaller models (a) highlighting predicted postrelease costs according to time served while controlling for age and (b) a bivariate model that regressed the county-level deprivation index on rearrest costs. The first of the smaller sets of models explore whether investing in incapacitating prisoners translates into increases and/or decreases in the postrelease cost of crimes while controlling for the offender's age. The second of the smaller sets of models communicate whether area deprivation predicts costs of crimes associated with released prisoners. Discussions about relative costs associated with time served are achieved by subtracting each offender's release date from their date of sentencing and then multiplying this number of days by the average per diem cost of incarcerating an individual in New Jersey (i.e., US\$128.44; Kleykamp et al., 2008).

We conducted correlation and variance inflation factor (VIF) analyses to assess potential issues with (multi)collinearity among the covariates within our regression models. Upon entering all of the covariates into a correlation matrix, the largest *r*-value was quite small at .318 (between the covariates of age and prior arrests). The mean VIF of all the covariates that were entered into the full models was 2.41, while the mean VIF among age and time served was 1.04. The collinearity diagnostics led us to conclude that multi(collinearity) among the covariates within our regression models was not a concern.

## Results

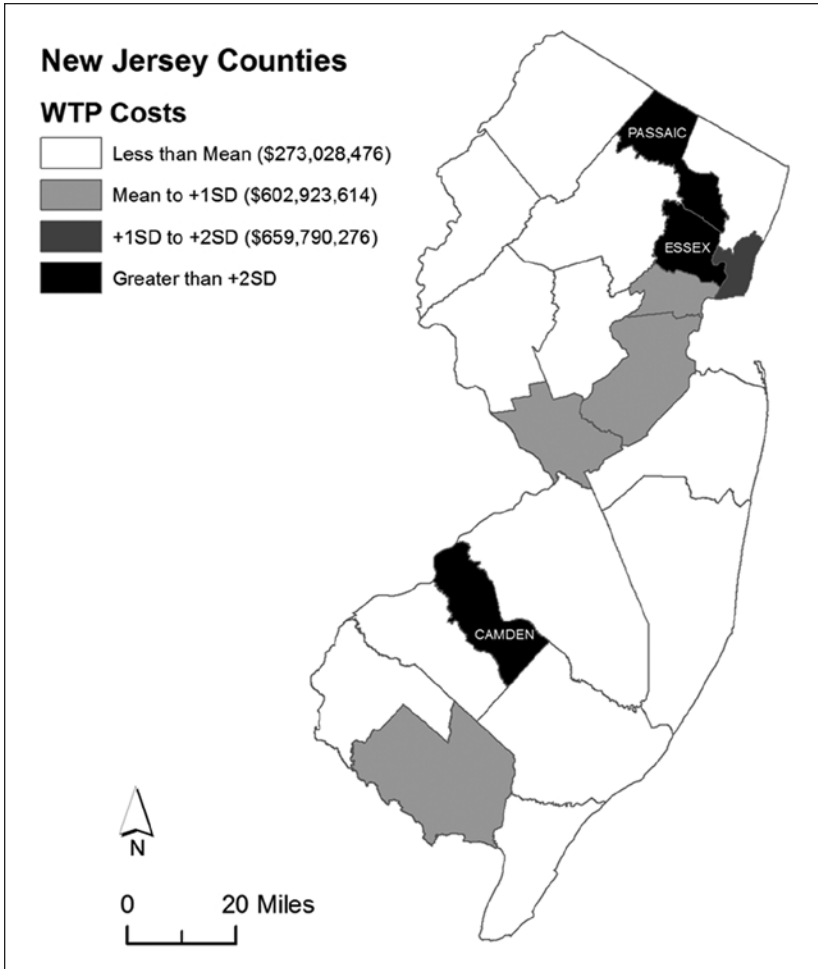
Overall, 56.32% of the former prisoners in our study were rearrested within 3 years of their release. Of those released in 2005, 57.43% were rearrested; of those released in 2006, 57.78% were rearrested, and, of those released in 2007, 53.35% were rearrested. In Table 1, costs are highlighted for the entire state of New Jersey, for each of the state's 21 counties, as well as for the state's most populated municipalities. This table highlights costs associated with arrest events rather than arrest charges, so the data presented can be viewed as conservative estimates of crime costs within areas because multiple charges can be represented within an arrest event. As shown in the table, release cohorts commit crimes that incur significant monetary costs. The state-level BU costs associated with postrelease criminal activity totaled

more than half of a billion dollars for all of the release cohorts over the course of 3-years of follow-up time. For the 2005 and 2006 release cohorts, this figure approached US\$1 billion. The BU crimes committed by those released from New Jersey state prisons between 2005 and 2007 totaled about US\$2.5 billion. The public's WTP to have these crimes prevented was almost US\$6 billion.

Figure 1 presents the spatial distribution of WTP costs of crimes experienced by New Jersey counties. Counties experienced marked differences in terms of the costs of crimes that were committed by released inmates within their borders. Thirteen of NJ's 21 counties experienced reoffending costs that were below the overall county mean cost (approximately US\$273 million). Four counties (Cumberland, Mercer, Middlesex, and Union) experienced costs of crimes between the mean and one standard deviation from the mean. Camden, Essex, and Passaic counties experienced the highest costs of crimes, with costs greater than two standard deviations above the mean county-level crime cost. The three release cohorts committed crimes totaling about US\$1 billion in both Essex and Camden counties and more than US\$500 million in Passaic County within 3 years of their release from prison. The costs of crimes committed in these 3 counties represented more than half of the total costs of crimes committed by released inmates across the entire state.

Crime costs were concentrated within the urban centers of these high-cost counties. Crimes committed in the City of Paterson accounted for about 82% of the total cost of crimes within the County of Passaic. The costs of crimes committed in the City of Camden represented approximately 83% of the total cost of crimes committed within the County of Camden. Of all of the municipalities in New Jersey, the City of Camden experienced the highest overall costs of crimes across the three release cohorts. The total WTP costs associated with crimes committed in the City of Newark, within Essex County, represented approximately 68% of the total costs of crimes committed within the county. The costs of crimes that were experienced by these three cities as a result of the reoffending patterns of former inmates represented approximately 39% of the total costs of crimes associated with the reoffending patterns of this population across the entire state.

Table 2 presents the mean BU and WTP costs of crimes committed by released inmates according to prerelease offender characteristics. When measuring costs as the most expensive charge within an arrest event, the average offender released from New Jersey prisons goes on to cost the state approximately US\$80,000 according to the public's WTP to have these crimes prevented. When all postrelease arrest charges are considered, this figure is about US\$95,000. The cost of the first rearrest event of an average former inmate is about US\$18,000; when considering every individual charge within



**Figure 1.** County-level willingness to pay costs of crimes of inmates released from New Jersey prisons from 2005 to 2007.

the first arrest, this figure is approximately US\$44,000. Those released to parole, on average, commit crimes costing approximately US\$68,000, while those who are released without supervision commit crimes costing approximately US\$102,000. On average, Blacks, males, and younger offenders commit crimes costing more money over the course of 3 years when compared with other races, females, and older offenders. Those who were released on

**Table 2.** Average BU and WTP Costs of Crimes Committed by Released Inmates According to Offender Characteristics at Time of Release.

Release type	Average costs of all postrelease arrest events			Average costs of all postrelease arrest charges			Average cost of first postrelease arrest event			Average cost of first postrelease arrest charges		
	BU	WTP		BU	WTP		BU	WTP		BU	WTP	
All releases	\$34,324.02	\$78,897.33	\$41,337.22	\$94,877.89	\$7,778.09	\$17,533.51	\$19,520.40	\$44,458.67				
Parole	\$29,777.79	\$68,241.83	\$34,335.89	\$78,489.50	\$7,542.16	\$16,940.34	\$19,197.51	\$43,684.29				
No parole	\$44,358.24	\$102,415.70	\$56,790.25	\$131,049.60	\$8,298.81	\$18,842.72	\$20,233.06	\$46,167.86				
Ethnicity												
White	\$16,590.94	\$38,679.18	\$19,479.54	\$45,171.64	\$3,444.56	\$7,559.91	\$8,400.71	\$19,063.16				
Black	\$42,612.37	\$97,621.50	\$50,752.66	\$116,087.10	\$10,455.17	\$23,681.93	\$24,440.47	\$55,647.09				
Hispanic	\$26,102.87	\$60,579.81	\$31,698.5	\$73,633.37	\$5,309.64	\$12,044.90	\$15,380.74	\$35,256.65				
Other	\$2,773.30	\$5,072.39	\$3,489.14	\$6,694.57	\$565.16	\$1,337.10	\$1,507.24	\$3,228.51				
Gender												
Males	\$36,785.04	\$84,655.59	\$44,323.86	\$101,850.40	\$8,348.27	\$18,859.01	\$20,832.04	\$47,503.12				
Females	\$5,261.21	\$10,896.58	\$6,067.203	\$12,538.23	\$1,044.63	\$1,880.28	\$4,030.91	\$8,506.04				
Age												
18-25	\$86,572.41	\$199,648.40	\$98,590.53	\$226,848.10	\$20,142.22	\$46,325.31	\$52,572.78	\$121,397.00				
26-30	\$48,452.58	\$110,722.40	\$60,106.74	\$137,156.20	\$10,662.50	\$24,174.17	\$25,771.50	\$58,450.81				
31-35	\$30,651.72	\$70,420.38	\$38,841.42	\$89,212.32	\$3,753.14	\$80,72.25	\$16,383.72	\$37,053.93				
36-40	\$13,507.57	\$30,972.87	\$16,068.62	\$36,810.19	\$5,031.13	\$11,246.90	\$8,422.90	\$18,759.72				
41+	\$10,573.50	\$24,513.44	\$13,386.22	\$31,034.37	\$3,053.46	\$6,576.12	\$5,789.60	\$12,895.15				

(continued)

**Table 2. (continued)**

	Average costs of all postrelease arrest events			Average costs of all postrelease arrest charges			Average cost of first postrelease arrest event			Average cost of first postrelease arrest charges		
	BU	WTP		BU	WTP		BU	WTP		BU	WTP	
<b>Instant offense type</b>												
Public order	\$24,436.65	\$54,225.65	\$32,515.08	\$72,138.74	\$3,744.40	\$7,037.70	\$6,159.37	\$12,170.16				
Property	\$22,353.87	\$55,052.86	\$28,715.42	\$70,560.00	\$4,983.22	\$11,988.15	\$11,662.70	\$28,268.93				
Drugs	\$29,169.70	\$66,260.39	\$34,964.34	\$79,230.41	\$5,794.71	\$12,906.22	\$15,099.90	\$33,901.15				
Sex	\$5,366.061	\$10,164.24	\$6,166.788	\$11,707.88	\$1,259.88	\$2,372.12	\$2,984.85	\$5,549.09				
Violent	\$49,882.05	\$114,356.70	\$59,520.47	\$136,294.00	\$12,905.75	\$29,181.09	\$31,499.43	\$71,904.53				
<b>Risk level</b>												
Low	\$16,993.92	\$38,094.64	\$19,773.46	\$44,292.80	\$3,114.19	\$6,516.22	\$11,113.75	\$24,631.43				
Moderate	\$32,577.67	\$74,910.71	\$39,220.40	\$89,946.25	\$9,433.71	\$21,509.22	\$22,250.92	\$50,849.49				
Medium	\$45,226.35	\$104,671.60	\$53,798.81	\$124,292.10	\$8,165.18	\$18,396.56	\$23,009.41	\$52,746.78				
High	\$33,471.40	\$76,246.05	\$43,565.41	\$99,472.49	\$8,919.39	\$20,065.96	\$20,316.57	\$46,018.09				
<b>Prior arrests</b>												
1-2	\$16,490.23	\$37,200.98	\$19,460.20	\$43,823.71	\$5,198.60	\$11,699.38	\$11,506.76	\$26,084.35				
3-4	\$44,956.07	\$103,305.50	\$52,507.99	\$120,452.80	\$10,662.38	\$24,170.59	\$27,820.69	\$63,790.79				
5-6	\$45,755.99	\$104,784.60	\$55,526.77	\$126,913.80	\$10,863.21	\$24,508.46	\$22,520.42	\$50,724.05				
7-8	\$44,227.65	\$101,013.60	\$50,463.89	\$114,812.20	\$7,815.47	\$17,410.17	\$23,088.98	\$52,185.55				
9+	\$28,220.03	\$65,601.55	\$35,773.17	\$83,118.75	\$6,180.51	\$13,949.57	\$16,480.29	\$37,800.52				

Note. Cost estimates are by arrest events. Crimes are only considered if they occurred within 3 years of release from prison. BU = Bottom-Up; WTP = Willingness to Pay.



an instant offense that was a violent crime, those who were considered medium risk, and those who had more than two prior arrests were associated with higher costs of crime commission after release when compared with other instant offense types, risk levels, and fewer prior arrests.

Results from the regression analyses are presented in Table 3. All of the models provided for statistically significant good fits to the data. In the first of the two smaller sets of models, time served was a significant predictor of postrelease recidivism costs after controlling for the offender's age within several of the two-covariate regression models. While additional years of age at release were associated with relatively large predicted decreases in the costs of crimes committed by recently released offenders, additional days of time served were generally predictive of small increases in costs. These significant effects ranged from an increase of US\$16.17 for each additional day of time served when predicting WTP costs associated with arrest charges to an increase of US\$3.54 for every additional day of time served when predicting BU costs associated with charges within the first arrest event. The bivariate regression models that used the county deprivation index to predict costs produced statistically significant effects when predicting all cost types, save for those associated with the first arrest event. These costs ranged from an increase of US\$33,793.33 for every additional unit increase on the deprivation index scale when predicting WTP costs associated with all postrelease arrest charges to an increase of US\$5,117.54 for every additional unit increase on the deprivation index scale when predicting the BU costs associated with the charges imbedded within the primary postrelease arrest.

In the sets of full models that included all of the predictor variables, age was a significant covariate that exemplified a negative relationship to predicted costs across all models. For every additional year of age at the time of release, the costs of postrelease arrest events were predicted to decrease by approximately US\$6,000 and the cost associated with the first arrest event was predicted to decrease by approximately US\$1,000 according to WTP cost estimates. The costs of all arrest charges were predicted to decrease by approximately US\$7,000 and the costs of charges attached to the primary rearrest after release were predicted to decrease by approximately US\$3,000 for every additional year of age at the time of release. Males and minorities were generally associated with significant increases in postrelease costs of crimes when compared with females and nonminorities.

Those who were classified within the medium risk category were predicted to have significantly higher crime costs within 3 years of their release when compared with those classified as low risk (approximately US\$44,000 for arrest events and US\$23,000 for arrest charges using WTP estimates). The county deprivation index was a significant predictor variable for costs of

**Table 3.** OLS Regression Coefficients: Offender Characteristics Regressed on BU and WTP Costs of Crimes Committed by Released Inmates.

	Costs of all arrest events			Costs of all arrest charges			Costs of first postrelease arrest event			Costs of first postrelease arrest charges		
	BU	WTP		BU	WTP		BU	WTP		BU	WTP	
<b>Age and time served models</b>												
Age	-2,628.87***	-6,049.65***		-3,082.17***	-7,078.75***		-583.87***	-1,354.66***		-1,547.83***	-3,575.72***	
Time served	4.92**	11.43**		6.93***	16.17***		1.38	3.20		3.54*	8.16*	
<b>Model statistics</b>												
F	67.15	63.94		61.43	58.42		15.87	15.35		32.44	31.18	
p	.000	.000		.000	.000		.000	.000		.000	.000	
R <sup>2</sup>	.0043	.0041		.0040	.0038		.0010	.0010		.0021	.0020	
<b>Deprivation index models</b>												
Deprivation index	11,089.46***	26,002.34***		14,375.51***	33,793.33***		1,430.98	3,388.00		5,117.54**	11,878.51**	
<b>Model statistics</b>												
F	27.73	27.41		30.82	30.69		2.20	2.21		8.18	7.94	
p	.000	.000		.000	.000		.138	.137		.004	.005	
R <sup>2</sup>	.0009	.0009		.0010	.0010		.0000	.000		.0003	.0003	
<b>Full models</b>												
Age	-2,592***	-5,994***		-3,085***	-7,119***		-496.4***	-1,159***		-1,447***	-3,357***	
Minority	14,281**	32,023**		17,957**	40,438**		3,631	8,338		10,930*	25,071*	
Male	17,734*	42,017*		21,146*	50,009*		4,248	9,911		8,229	19,251	
Single	-1,393	-3,375		-1,312	-3,138		-148.2	-406.0		-2,307	-5,500	
<b>Instant offense type</b>												
Property	-5,867	-8,436		-9,970	-16,307		1,681	5,959		6,035	17,620	
Drug	-11,581	-26,414		-17,106	-38,811		-824.1	-892.9		1,331	4,196	
Sex	-16,283	-37,178		-23,033	-52,388		-2,248	-3,936		-2,274	-3,802	
Violent	9,747	22,793		5,372	12,828		5,200	12,765		17,779	42,073	

(continued)

Table 3. (continued)

	Costs of all arrest events		Costs of all arrest charges		Costs of first postrelease arrest event		Costs of first postrelease arrest charges	
	BU	WTP	BU	WTP	BU	WTP	BU	WTP
Number of instant offenses								
Two	12,715**	30,111**	10,874	25,972	4,767*	11,188*	11,765**	27,766**
Three	4,670	11,707	1,919	5,350	1,950	4,728	3,191	8,071
Four+	7,619	18,665	8,266	20,496	990.4	2,374	6,943	16,473
Prior arrests	167.1	442.5	189.1	508.9	-55.07	-119.2	168.1	420.5
Risk level								
Moderate	8,271	19,678	11,569	27,235	4,353	10,378	6,124	14,561
Medium	18,738**	44,037**	22,907**	53,601**	3,413	7,988	3,990	9,481
High	8,933	19,910	15,651	35,397	3,297	7,531	4,231	9,568
Time served	-1,075	-2,283	0.308	1.131	0.630	1.589	-0.105	-0.0601
Parole	-18,225**	-42,312**	-25,707**	-59,600**	-3,730	-8,741	-3,762	-8,560
Deprivation index	4,588*	11,096*	6,215*	15,055*	68.46	239.8	657.6	1,518
Model statistics								
F	8.89	8.54	8.72	8.38	2.14	2.08	4.00	3.86
p	.000	.000	.000	.000	.003	.005	.000	.000
R <sup>2</sup>	.0071	.0068	.0062	.0059	.0017	.0017	.0032	.0031

Note. Crimes are only considered if they occurred within 3 years of release from prison. OLS = ordinary least squares; BU = Bottom-Up; WTP = Willingness to Pay.

\* $p \leq .05$ , \*\* $p \leq .01$ , \*\*\* $p \leq .001$ .

total arrest events and charges, but not with the primary arrest event or charge. For every additional unit on the deprivation index, the costs of postrelease arrest events were predicted to increase by about US\$11,000 and the cost of postrelease arrest charges were predicted to increase by about US\$15,000. The largest effect size within the full model was exemplified by the release status variable. Those who were released to parole supervision as opposed to being released without any supervision were predicted to cost approximately US\$42,000 less when considering all postrelease arrest events and about US\$60,000 less when considering all arrest charges contained within these arrest events. However, release status was not a significant predictor of costs associated with the primary rearrest after release, either when considering arrest events or arrest charges. The type of offense for which the offender was serving time prior to their release, the number of prior arrests they had on their rap sheet, and the time they served for their instant offense were not significant predictors of postrelease crime costs in any of the models using all of the covariates.

## Discussion

The goal of this study was to explore the costs of crimes associated with recidivism patterns of recently released inmates. Regression models were used to present the relative impact that prerelease characteristics of offenders had on postrelease costs of crimes. Results demonstrate that crimes committed by former inmates cost an enormous amount of money, and the burden of these costs is largely bared by a few urban areas and, by extension, the counties in which these cities are located. While several prerelease characteristics are associated with predicted increases in the costs associated with recidivism of former inmates, many are not.

Perhaps most notable among the characteristics not associated with postrelease crime costs is the time that an individual served in prison for the instant offense. Upon regressing time served and age upon postrelease crime costs, the time served exhibited statistically significant, but small, effect sizes. These effects reflected findings within prior research that has examined the deterrent effects of imprisonment by indicating a positive relationship between time served and crime costs (Gendreau, Goggin, & Cullen, 1999). Being released on parole supervision exhibited the largest effect size and was in a negative direction. This result must be cautiously consumed, however, because data reflecting technical parole violations were not available for study. Because parolees can be sent back to prison for noncriminal technical infractions and this research attached costs only to postrelease arrests, some of the parolees included in this study may not have been at risk for

experiencing new arrests—due to being in custody for technical violations. Hence, these individuals would not be able to accumulate costs associated with new arrests.

Analyses of crime costs associated with specific areas within the state demonstrate that certain urban areas bare the enormity of New Jersey's costs of crimes that are committed by returning ex-inmates. While these costs were highly related to the level of empirically derived social deprivation associated with an area, it was not necessarily reflective of a city's or county's total population size. For the most part, former prisoners both come from and return to a handful of communities within the state. For example, out of New Jersey's 21 counties, 15.0% of released prisoners return to Essex County, 14.2% return to Camden County, and 10.2% return to Hudson County. Only 0.5% return to Hunterdon County and, despite Bergen being the state's most populated county, only 4% of released inmates return there. Slightly more than 5% (5.4%) return to Middlesex, the state's second most populated county. These rates of release largely translate into increased costs of crimes and are concentrated in urban, and often resource-deprived areas. Notably, area-level deprivation does not necessarily communicate only increases in costs of crimes, but further, simultaneous decreases in an area's ability to manage the area and the crimes that occur there. For example, the City of Camden experienced approximately US\$837 billion of crimes across the three release cohorts within this study. This figure represents more than twice the amount of the cost of crimes within the counties of Bergen and Middlesex combined, despite the City of Camden having approximately 4.5% of the population of these counties. Within the past few years, Camden laid off many municipal service and public safety employees (Goldstein, 2011). Since November 2012, Camden began terminating the remaining police officers, disbanding the municipal police department, and giving control to a new county force. Law enforcement in Camden is in a state of flux, which makes managing the costs of crimes much more difficult in this resource-poor city. Zernike (2012) pointed out that the "police acknowledge that they have all but ceded these streets to crime."

Many studies have explained the direct fiscal impacts of America's fascination with incarceration (Lynch & Sabol, 2004) as well as the collateral consequences attached to spells of imprisonment at individual (Brisman, 2004), family (Hagan & Dinovitzer, 1999; Krueger, Moffitt, Caspi, Bleske, & Silva, 1998), and area-specific levels (Clear, Rose, & Ryder, 2001; Clear, Rose, Waring, & Scully, 2003). This branch of research has generally found that long prison stays are largely ineffective in deterring future criminal behaviors (Gendreau et al., 1999) and that lengthy prison stays negatively impact family cohesion (Krueger et al., 1998), job prospects (Holzer, 2007;

Sabol & Lynch, 2003), and future wages (Freeman, 1992), among other aspects of prisoners' lives that are associated with individual growth and societal reintegration. Neighborhood-level studies have demonstrated that the behaviors that correctional systems seek to deter, namely criminal offending, may be contributing to its proliferation by cycling young men into and out of areas for long periods of time, which in turn causes destabilization of informal social controls and family fragmentation (Clear et al., 2001; Clear et al., 2003).

Results from this study demonstrate the fiscal impact of the crimes committed by recently released former inmates. Upon attaching costs to arrest events, we found that the average former inmate commits crimes within 3 years of their release that the public would be willing to pay about US\$80,000 to prevent. This cost occurs after an average investment of US\$137,000 during their prison stay. Taken together, our findings echo the application of results from previous works that have emphasized the importance of early life-course interventions aimed at reducing costs associated with crime, delinquency, and other social ills (Cohen et al., 2010a, 2010b, 2010c; Piquero, Jennings, & Farrington, 2010; Piquero, Farrington, Welsh, Tremblay, & Jennings, 2009). These previous works have demonstrated the importance of well-conceived and constructed early family/parent training programs to reduce childhood behavior problems (Piquero et al., 2009); well-designed home visitation, parent training, and day care or school-based childhood intervention programs to reduce adverse health conditions, teen pregnancy, and crime and delinquency (Cohen, Piquero, & Jennings, 2010c); and increasing self-control through improving socialization and child rearing practices within the first decade of life (Piquero et al., 2009) to reduce long-term societal ills and the monetary costs associated with these ills. While we are not able to directly measure whether those within our study were exposed to these sorts of programs early within their life course, our findings offer insight into the local pockets in which high costs of crimes are especially pronounced. If early intervention programs were to be expanded in an effort to reduce the likelihood that individuals would begin a high-rate criminal career in the first place, as suggested by these previous works, the findings from the current study suggest the areas in which to potentially concentrate these resources.

Research within the "what works" literature offers more immediate application to the context of postrelease recidivism of former inmates, and potential ways in which to reduce recidivism in a cost-effective manner. This branch of research has demonstrated that substantial reductions in recidivism can be realized through gearing high-quality and intense programming toward higher risk individuals, that services should be reflective

of criminogenic needs, and that service providers should take into account individual-level learning styles and dynamically change their case management strategies to reflect these learning styles. If appropriately consumed by corrections agencies, these lessons can be used to lower costs of crimes that are committed by ex-prisoners.

Other options for lowering recidivism rates and increasing the prospects of the formerly incarcerated certainly exist. For example, Kirk's (2012) explorations into the offending patterns of former prisoners who were forced to move from their home parish after being displaced because of Hurricane Katrina present interesting policy avenues that point toward potential benefits of obliging former inmates to move to other locations far from their home communities. Kirk's (2012) findings demonstrated that, when compared with a similar group of former inmates who returned to their home parishes, movers experienced a 14% lower reincarceration rate over the course of 3 years. In addition, Clear's (2011) proposed policy structure to incentivize the private sector to invest in disadvantaged communities presents strategies that could potentially result in increased employment and skill-building opportunities for the formerly incarcerated. However, these policy avenues are likely more difficult to implement and are less politically palatable within the current corrections landscape when compared with pursuing the lessons from the more established "what works" literature.

The average former inmate who was classified as low risk within this study went on to commit crimes that cost approximately half as much as those who were classified in higher risk categories. Across the three release cohorts, high-risk former inmates were rearrested at a rate of 70%, with the crimes they committed costing approximately US\$251 million according to the WTP measure and US\$110 million according to the BU measure over the course of 3 years. These costs were accumulated after the state made an average investment exceeding US\$153,000 per high-risk offender (or US\$503,370,000 in the aggregate) according to the average time they served in prison (3.27 years). Because these former inmates represented 13% ( $n = 3,290$ ) of the total sample, significant savings could likely be realized if interventions could be targeted toward this group to lower their likelihood of reoffending. Research has demonstrated that transitioning members of this group into high impact correctional programming can lower their recidivism levels by as much as 19% (Dowden & Andrews, 1999). Using this previous finding, we conducted a simple cost-benefit analysis to approximate the potential fiscal impact of reducing the recidivism levels of members of this group.

First, we isolated the high-risk population that was rearrested during the course of our follow-up time ( $n = 2,303$ ) and randomly selected 81% ( $n = 1,865$ ) of this group to represent a hypothetical 19% reduction in recidivism.

We then performed analyses of the costs of arrest events experienced by this subset according to WTP and BU measures. The crimes for which this group was rearrested represented WTP costs totaling US\$201 million and BU costs totaling US\$88.6 million. These figures represent potential savings of approximately US\$50 million according to the WTP measure or US\$21.4 million according to the BU measure if these recidivism events could be prevented while having the former inmate remain in the community. Savings could likely be realized by a combination of using existing community programming resources more strategically and/or creating new resources closer to the areas where clients reside.

This strategy endeavors to reduce recidivism of high-risk individuals by transitioning members of this group into effective community correctional programs. In contrast, incarcerating these high-risk individuals for the entirety of the follow-up time under a hypothetical strategy to gain incapacitation effects, we could effectively guarantee that the costs of crimes associated with their recidivism patterns would not occur. However, at a cost of approximately US\$50,000 per year to incarcerate an individual in the state of New Jersey, this strategy would not be fiscally palatable. For example, it would cost approximately US\$494 million to incapacitate the 3,290 high-risk individuals within our study for the three-year follow-up time. This is almost twice as large as the costs of crimes committed by this group according to the WTP measure.

Discretionary parole systems, such as the one in New Jersey, are designed to target prisoners who are likely to succeed in the community for early release. This largely translates into the most high-risk offenders, and consequently those who would likely most benefit from the services offered through parole, being denied parole and released without any supervision and little to no prerelease preparation and programming (Petersilia, 2003). Of the 31,831 former inmates within this study, 31.2% were released without any form of supervision at the end of their sentence. Approximately 20% of this group was considered high-risk on a prerelease LSI-R as opposed to about 11% of parolees. Reflecting the results of this research, it is important that the time on parole is used to maximize the likelihood that recidivism will be reduced to both increase public safety and decrease costs (both those associated with new arrests as well as returns to incarceration). Of the 21,906 parolees within this study, 20,424 had information that reflected the time they spent on supervision. Approximately 40% were supervised for less than a year, and of those, more than half ( $n = 4,125$ ) were supervised for less than 6 months. Approximately 65% of this group was eventually rearrested. This matched the rearrest rate of those who were released without any form of supervision.



By making concerted efforts to reduce criminal recidivism, substantial cost savings can be realized. In doing so, it is important for policy makers to concentrate their efforts upon high-risk individuals because they present as both the group with the highest incidence of recidivism as well as the highest level of malleability for positive change. While research has demonstrated that quality correctional programs can reduce the recidivism levels of high-risk offenders by as much as 19% (Dowden & Andrews, 1999), gearing similar programs toward low-risk individuals has been found to have iatrogenic effects by increasing recidivism by as much as 36% (Lowenkamp & Latessa, 2002). The potential cost savings of gearing quality services informed by the evidence-based practices literature toward higher risk offenders will likely have large impacts at local levels with areas that exhibit the most social deprivation potentially realizing the greatest benefits. While the challenges ahead are substantial, communicating outcomes according to dollars and cents may greater incentivize policy makers to take serious action to address these issues.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### **References**

- Anderson, D. A. (1999). The aggregate burden of crime. *Journal of Law & Economics*, 42, 611-642.
- Aos, S., Miller, M., & Drake, E. (2006). *Evidence-based adult corrections programs: What works and what does not*. Olympia: Washington State Institute for Public Policy.
- Atkinson, R., & Rostad, K. A. (2003, May). *Can Inmates Become an Integral Part of the U.S. Workforce?* Paper presented at the Employment Dimension of Prisoner Reentry, Urban Institute Reentry Roundtable, New York, NY.
- Austin, J. (2001). Prisoner reentry: Current trends, practices, and issues. *Crime & Delinquency*, 47, 314-334.
- Beck, A., & Shipley, B. (1989). *Recidivism of prisoners released in 1983* (Bureau of Justice Statistics Special Report, NCJ 116261). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Benda, B. B., Harm, N. J., & Toombs, N. J. (2005). Survival analysis of recidivism of male and female boot camp graduates using life-course theory. *Journal of Offender Rehabilitation*, 40, 87-113.

- Benda, B. B., Toombs, N. J., & Peacock, M. (2003). An empirical examination of competing theories in predicting recidivism of adult offenders five years after graduating from boot camp. *Journal of Offender Rehabilitation, 37*, 43-75.
- Benedict, W., Huff-Corzine, L., & Corzine, J. (1998). Clean up and go straight: Effects of drug treatment on recidivism among felony probationers. *American Journal of Criminal Justice, 22*, 169-187.
- Blumstein, A., Cohen, J., & Farrington, D. P. (1988). Criminal career research: Its value for criminology. *Criminology, 26*, 1-35.
- Braga, A. A., Piehl, A. M., & Hureau, D. (2009). Controlling violent offenders released to the community: An evaluation of the Boston Reentry Initiative. *Journal of Research in Crime & Delinquency, 46*, 411-436.
- Brisman, A. (2004). Double whammy: Collateral consequences of conviction and imprisonment for sustainable communities and the environment. *William & Mary Environmental Law and Policy Review, 28*, 423-475.
- Brown, J. D. (2004). Managing the transition from institution to community: A Canadian parole officer perspective of the needs of newly released federal offenders. *Western Criminology Review, 5*, 97-107.
- Carson, R. T., & Hanemann, W. M. (2005). Contingent valuation. In K.-G. Mäler & J. R. Vincent (Eds.), *Handbook of environmental economics* (Vol. 2) (pp. 821-936). North Holland, Amsterdam: The Netherlands.
- Clear, T. R. (2011). A private-sector, incentives-based model for justice reinvestment. *Criminology & Public Policy, 10*, 585-608.
- Clear, T. R., Rose, D. R., & Ryder, J. A. (2001). Incarceration and community: The problem of removing and returning offenders. *Crime & Delinquency, 47*, 335-351.
- Clear, T. R., Rose, D. R., Waring, E., & Scully, K. (2003). Coercive mobility and crime: A preliminary examination of concentrated incarceration and social disorganization. *Justice Quarterly, 20*, 33-64.
- Cohen, M. A. (1998). The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology, 14*, 5-33.
- Cohen, M. A., & Piquero, A. R. (2009). New evidence on the monetary value of saving a high risk youth. *Journal of Quantitative Criminology, 25*, 25-49.
- Cohen, M. A., Piquero, A. R., & Jennings, W. G. (2010a). Studying the costs of crime across offender trajectories. *Criminology & Public Policy, 9*, 279-305.
- Cohen, M. A., Piquero, A. R., & Jennings, W. G. (2010b). Monetary costs of gender and ethnicity disaggregated group-based offending. *American Journal of Criminal Justice, 35*, 159-172.
- Cohen, M. A., Piquero, A. R., & Jennings, W. G. (2010c). Estimating the costs of bad outcomes for at-risk youth and the benefits of early childhood interventions to reduce them. *Criminal Justice Policy Review, 21*, 391-434.
- Cohen, M. A., Rust, R. T., Steen, S., & Tidd, S. T. (2004). Willingness-to-pay for crime control programs? *Criminology, 42*, 89-109.
- DeLisi, M., & Gatling, J. M. (2003). Who pays for a life of crime? An empirical assessment of the assorted victimization costs posed by career criminals. *Criminal Justice Studies: A Critical Journal of Crime, Law and Society, 16*, 283-293.

- Deschenes, E. P., Owen, B., & Crow, J. (2007). *Recidivism among female prisoners: Secondary analysis of the 1994 BJS recidivism data set*. Washington, DC: National Institute of Justice.
- Dowden, C., & Andrews, D. A. (1999). What works for female offenders: A meta-analytic review. *Crime & Delinquency*, 45, 438-452.
- Drake, E. K., Aos, S., & Miller, M. G. (2009). Evidence-based public policy options to reduce crime and criminal justice costs: Implications in Washington State. *Victims and Offenders*, 4, 170-196.
- Freeman, R. B. (1992). Crime and unemployment of disadvantaged youth. In A. V. Harrell & G. E. Peterson (Eds.), *Drugs, crime and social isolation: Barriers to urban opportunity*. Washington, DC: Urban Institute.
- Gainey, R. R., Payne, B. K., & O'Toole, M. (2000). The relationships between time in jail, time on electronic monitoring, and recidivism: An event history analysis of a jail-based program. *Justice Quarterly*, 17, 733-752.
- Gendreau, P., Goggin, C., & Cullen, F. (1999). *The effects of prison sentences on recidivism*. A report to the Corrections Research and Development and Aboriginal Policy Branch. Ottawa: Solicitor General of Canada.
- Goldstein, J. (2011, March 7). Police force nearly halved, Camden feels impact. *The New York Times*, p. A14.
- Hagan, J., & Dinovitzer, R. (1999). Collateral consequences of imprisonment for children, communities, and prisoners. In M. Tonry & J. Petersilia (Eds.), *Prisons: Crime and justice* (Vol. 26, pp. 121-162). Chicago, IL: University of Chicago Press.
- Helfgott, J. (1997). E-offender needs versus community opportunity in Seattle, Washington. *Federal Probation*, 61, 12-25.
- Hepburn, J. R., & Albonetti, C. A. (1994). Recidivism among drug offenders: A survival analysis of the effects of offender characteristics, type of offense, and two types of intervention. *Journal of Quantitative Criminology*, 10, 159-179.
- Holzer, H. (2007, May). *Collateral costs: The effects of incarceration on employment and earnings among young men*. Paper presented to The Russell Sage Incarceration Policy Working Group, New York, NY.
- Hughes, K. A. (2006). *Justice expenditures and employment in the United States, 2003* (Bureau of Justice Statistics Bulletin, NCJ 212260). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Justice Policy Institute. (2002). *Cellblocks or classrooms? The funding of higher education and corrections and its impact on African American men*. Washington, DC: The Justice Policy Institute.
- Kirk, D. S. (2012). Residential change as a turning point in the life course of crime: Desistance or temporary cessation? *Criminology*, 50, 329-358.
- Kleykamp, M., Rosenfeld, J., & Scotti, R. (2008). *Wasting money, wasting lives. Calculating the hidden costs of incarceration in New Jersey*. Trenton, NJ: The Drug Policy Alliance.
- Krueger, R. F., Moffitt, T. E., Caspi, A., Bleske, A. L., & Silva, P. A. (1998). Assortative mating for antisocial behavior: Developmental and methodological implications. *Behavior and Genetics*, 28, 173-186.

- Kruttschnitt, C., Uggen, C., & Shelton, K. (2000). Predictors of desistance among sex offenders: The interaction of formal and informal social controls. *Justice Quarterly, 17*, 61-88.
- Langan, P. A., & Levin, D. J. (2002). *Recidivism of prisoners released in 1994* (Bureau of Justice Statistics Special Report, NCJ 193427). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Laub, J. H., & Sampson, R. J. (2003). *Shared beginnings, divergent lives: Delinquent boys to age 70*. Cambridge, MA: Harvard University Press.
- Loeber, R., Wei, E., Stouthamer-Loeber, M., Huizinga, D., & Thornberry, T. P. (1999). Behavioral antecedents to serious and violent juvenile offending: Joint analysis from the Denver Youth Survey, Pittsburgh Youth Study, and Rochester Youth Development Study. *Studies in Crime and Crime Prevention, 8*, 245-263.
- Lowenkamp, C. T., & Latessa, E. J. (2002). *Evaluation of Ohio's community based correctional facilities and halfway house programs* [Technical report]. Cincinnati, OH: University of Cincinnati.
- Lowenkamp, C. T., & Latessa, E. J. (2004). Increasing the effectiveness of community programming through the risk principle: Identifying offenders for residential placement. *Criminology & Public Policy, 4*, 501-528.
- Lowenkamp, C. T., & Latessa, E. J. (2005, April). Developing successful reentry programs: Lessons learned from the "What Works" research. *Corrections Today, 72-77*.
- Lowenkamp, C. T., Latessa, E. J., & Holsinger, A. M. (2006). The risk principle in action: What have we learned from 13,676 offenders and 97 correctional programs? *Crime & Delinquency, 51*, 1-17.
- Lowenkamp, C. T., Pealer, J., Smith, P., & Latessa, E. J. (2006). Adhering to the risk and need principles: Does it matter for supervision-based programs? *Federal Probation, 70*(3), 3-8.
- Lynch, J., & Sabol, W. (2001). *Prisoner reentry in perspective*. Washington, DC: The Urban Institute.
- Lynch, J., & Sabol, W. (2004). Assessing the effects of mass incarceration on informal social controls in communities. *Criminology & Public Policy, 3*, 267-294.
- Moffitt, T. E. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 674-701.
- Nagin, Daniel S. 2001. Measuring economic benefits of developmental prevention programs. In (Brandon C. Welsh, David P. Farrington, and Lawrence Sherman, eds.), *Costs and Benefits of Preventing Crime*. Boulder, CO: Westview Press.
- Ostermann, M. (2011). How do former inmates perform in the community? A survival analysis of rearrests, reconvicitions, and technical parole violations. *Crime & Delinquency*. Advance online Publication. doi:10.1177/0011128710396425
- Paparozzi, M. A., & Guy, R. (2009). The giant that never woke: Parole authorities as the lynchpin to evidence-based practices and prisoner reentry. *Journal of Contemporary Criminal Justice, 25*, 397-411.
- Petersilia, J. (2001). When prisoners return to communities: Political, economic, and social consequences. *Federal Probation, 65*, 3-9.

- Petersilia, J. (2003). *When prisoners come home: Parole and prisoner reentry*. New York, NY: Oxford University Press.
- Pew Center on the States. (2011). *The state of recidivism: The revolving door of America's prisons*. Washington, DC: Pew Charitable Trusts.
- Piquero, A. R. (2008). Taking stock of developmental trajectories of criminal activity over the life course. In A. Liberman (Ed.), *The long view of crime: A synthesis of longitudinal research* (pp. 23-78). New York, NY: Springer.
- Piquero, A. R., Farrington, D. P., Welsh, B. C., Tremblay, R., & Jennings, W. G. (2009). Effects of early family/parent training programs on antisocial behavior and delinquency. *Journal of Experimental Criminology*, 5, 83-120.
- Piquero, A. R., Jennings, W. G., & Farrington, D. (2010). On the malleability of self-control: Theoretical and policy implications regarding a general theory of crime. *Justice Quarterly*, 27, 803-834.
- Piquero, A. R., Jennings, W. G., & Farrington, D. (2011). The monetary costs of crime to middle adulthood: Findings from the Cambridge Study in Delinquent Development. *Journal of Research in Crime and Delinquency*. Advance online publication. doi:10.1177/0022427811424505
- Roman, J. Brooks, L., Lagerson, E., Chalfin, A., & Tereschenko, B. (2007). *Impact and Cost Benefit Analysis of the Maryland Reentry Partnership*. Washington, DC: Urban Institute, Justice Policy Center.
- Rosenfeld, R., Wallman, J., & Fornango, R. J. (2005). The contribution of ex-prisoners to crime rates. In J. Travis & C. Visher (Eds.), *Prisoner reentry and public safety in America*. New York, NY: Cambridge University Press.
- Sabol, W. J., & Lynch, J. P. (2003). Assessing the longer-run effects of incarceration: Impact on families and employment. In D. Hawkins, Myers, Jr., & Randolph Stine (Eds.), *Crime control and social justice: The delicate balance* (pp. 3-26). Westport, CT: Greenwood Press.
- Sabol, W. J., West, H. C., & Cooper, M. (2009). *Prisoners in 2008* (Bureau of Justice Statistics Bulletin, NCJ 228417). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Sampson, R. J., & Laub, J. H. (1993). *Crime in the making*. Cambridge, MA: Harvard University Press.
- Schlager, M. D., & Simourd, D. J. (2007). The Level of Service Inventory-Revised (LSI-R) among African American and Hispanic male offenders. *Criminal Justice and Behavior*, 34, 545-554.
- Solomon, A. L., Kachnowski, V., & Bhati, A. (2005). *Does parole work? Analyzing the impact of post-prison supervision on rearrest outcomes*. Washington, DC: Urban Institute Justice Policy Center.
- Spohn, C., & Holleran, D. (2002). The effect of imprisonment on recidivism rates of felony offenders: A focus on drug offenders. *Criminology*, 40, 322-358.
- State of New Jersey. (2010). *Budget: Fiscal year 2010-2011*. Trenton, NJ: Department of the Treasury, Office of Management and Budget.
- Travis, J. (2005). *But they all come back: Facing the challenges of prisoner reentry*. Washington, DC: The Urban Institute Press.

- Tripodi, S. J., Kim, J. S., & Bender, K. (2010). Is employment associated with reduced recidivism? The complex relationship between employment and crime. *International Journal of Offender Therapy and Comparative Criminology*, *54*, 706-720.
- Uggen, C. (2000). Work as a turning point in the life course of criminals: A duration model of age, employment, and recidivism. *American Sociological Review*, *65*, 529-546.
- Welsh, Brandon C., Rolf Loeber, Bradley Stevens, Magda Stouthamer-Loeber, Mark A. Cohen, and David P. Farrington. (2008). Costs of juvenile crime in urban areas: A longitudinal perspective. *Youth Violence and Juvenile Justice*, *6*, 3-27.
- West, H. C., Sabol, W. J., & Greenman, S. J. (2010). *Prisoners in 2009* (Bureau of Justice Statistics Bulletin, NCJ 231675). Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Zernike, K. (2012, September 29). To fight crime, a poor city will trade in its police. *The New York Times*, p. A1.
- Zhang, S., Roberts, R., & Callanan, V. (2006). The cost benefits of providing community-based correctional services: An evaluation of a statewide parole program in California. *Journal of Criminal Justice*, *34*, 341-350.

### Author Biographies

**Michael Ostermann** is an assistant professor at the Rutgers University School of Criminal Justice where he serves as the director of the University's Evidence-Based Institute for Justice Policy Research. His research interests primarily lie within the fields of corrections and reentry and how they intersect with public policy.

**Joel M. Caplan** is an assistant professor at the Rutgers University School of Criminal Justice and associate director of the Rutgers Center on Public Security. His research focuses on risk assessment, spatial analysis, and computational criminology, which takes the strengths of several disciplines and builds new methods and techniques for the analysis of crime and crime patterns. He has professional experience as a police officer, 911 dispatcher, and emergency medical technician.