Recidivism Effects of the Center for Employment Opportunities (CEO) Program Vary by Former Prisoners' Risk of Reoffending

Janine Zweig
Jennifer Yahner
(The Urban Institute)

Cindy Redcross
(MDRC)

October 2010

MDRC is conducting the Enhanced Services for the Hard-to-Employ Demonstration and Evaluation Project under a contract with the Administration for Children and Families (ACF) and the Office of the Assistant Secretary for Planning and Evaluation (ASPE) in the U.S. Department of Health and Human Services (HHS), funded by HHS under a competitive award, Contract No. HHS-233-01-0012. Additional funding has been provided by the U.S. Department of Labor (DOL). The Urban Institute, our partner organization, assisted with site development and implementation research. HumRRO, a subcontractor, fielded the 15-month client survey.

The findings and conclusions in this report do not necessarily represent the official positions or policies of the funders.

Dissemination of MDRC publications is supported by the following funders that help finance MDRC's public policy outreach and expanding efforts to communicate the results and implications of our work to policymakers, practitioners, and others: The Ambrose Monell Foundation, The Annie E. Casey Foundation, Carnegie Corporation of New York, The Kresge Foundation, Sandler Foundation, and The Starr Foundation.

In addition, earnings from the MDRC Endowment help sustain our dissemination efforts. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Lizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.

Acknowledgments

The authors thank David Butler, Dan Bloom, and Charles Michalopoulos of MDRC; reviewers from the Office of Planning, Research, and Evaluation in the Administration for Children and Families; and reviewers from the Office of the Assistant Secretary for Planning and Evaluation.

For information about MDRC and copies of our publications, see our Web site: www.mdrc.org.
For information about the Urban Institute and copies of its publications, see www.urban.org.

Copyright © 2010 by MDRC.® All rights reserved.

Abstract

The New York City-based Center for Employment Opportunities (CEO) is a transitional jobs program designed to help former prisoners increase longer-term employment and, consequently, reduce recidivism. Interim results from MDRC's rigorous impact evaluation of CEO show reduced recidivism in both the first and the second year of follow-up. This research brief expands on those results by using regression-based analysis to identify whether CEO had its greatest impact among low-, medium-, or high-risk offenders — with risk levels being defined by participants' characteristics before random assignment that are associated with recidivism after random assignment. CEO had its strongest reductions in recidivism for former prisoners who were at highest risk of recidivism, for whom CEO reduced the probability of rearrest, the number of rearrests, and the probability of reconviction two years after random assignment. If confirmed by other studies, these findings suggest that the limited resources available to transitional jobs programs for former prisoners should be targeted toward the people at highest risk of recidivating, because they are helped most by this intervention.

Contents

Acknowledgments ii
Abstract iii
List of Exhibits vii

Background 1
The Center for Employment Opportunities Program Evaluation 2
Current Research Questions 4
The Analytic Approach 7
What Predicts Risk of Recidivism? 8
Does CEO's Impact on Recidivism Vary by Low, Medium, or High Risk of Reoffending? 10
Conclusion 13

References 15

List of Exhibits

Table

1	Impacts on Recidivism in Year 1 and Year 2	6
2	Impacts on Recidivism Outcomes, by Risk of Recidivism	11

Figure

1	Quarterly Impacts on Employment	5
2	Definition of Risk Subgroups, by Age and Number of Prior Arrests	10

Background

Each year, more than 700,000 individuals are released from prisons nationwide (Sabol, West, and Cooper, 2009). Many former prisoners have extensive criminal backgrounds and must struggle to avoid recidivating while reintegrating into the communities to which they return. Younger males with extensive criminal histories are often at greatest risk of future recidivism (Gendreau, Little, and Goggin, 2006; Levinson, 2002).

Research has shown that stable employment can be an important predictor of reentry success (Visher, Winterfield, and Coggeshall, 2005; Visher and Travis 2003). It is also widely believed that program intervention soon after prison release can be critical to long-term reentry outcomes (see, for example, Solomon et al., 2008; Johnston-Listwan, Cullen, and Latessa, 2006; Baer et al., 2006); and there is evidence that postrelease employment programs, in particular, may benefit some former prisoners more than others. For example, Uggen (2000) reanalyzed data from the National Supported Work (NSW) Demonstration and found that randomly assigned employment reduced self-reported recidivism among older former prisoners (over age 26) but not among younger ones.[1] Notably, the average age of the NSW sample was 25 — about eight years younger than former prisoners in the present sample; however, Uggen's findings are consistent with those reported below, to the extent that his measure of age is a proxy for prior arrests.[2]

Accordingly, transitional jobs programs have emerged as one promising intervention for reducing recidivism among the growing population of adult former prisoners. Since 2008, President Obama has specifically cited transitional jobs as a priority in his efforts to reduce poverty (Obama and Biden, 2008). Earlier that same year, President Bush signed the Second Chance Act, which will provide substantial funding for issues related to prisoner reentry in the coming years — including funding for transitional jobs programs.

Given the national attention on transitional jobs programs, the evaluation of the New York City-based Center for Employment Opportunities (CEO) is particularly relevant and important. CEO is a transitional jobs program designed to help former prisoners obtain earnings and work experience soon after release and to obtain permanent unsubsidized employment, in order to improve longer-term recidivism outcomes. CEO has been part of a long-term, random assignment study funded by the Administration for Children and Families (ACF) in the U.S. Department of Health and Human Services (HHS) and led by MDRC, along with a partner, the Urban Institute. Two-year interim results show that CEO reduced recidivism for program

[1]This research brief focuses on reentry of male former prisoners from the year 2000 forward, while NSW focused primarily on female welfare recipients and was completed in the 1970s.

[2]Age and prior arrests are typically highly correlated, with older offenders having had greater opportunity to accumulate a higher number of prior arrests.

participants, compared with control group participants; three-year results will be released in late 2010.

This research brief expands on results for Years 1 and 2 by identifying whether CEO had its greatest impact among low-, medium-, or high-risk offenders — with risk levels being defined by participants' characteristics before random assignment that are associated with recidivism after random assignment.

The Center for Employment Opportunities Program Evaluation

Description of the CEO Program

The goal of the CEO program model is to provide former prisoners with (1) immediate work and pay through a day-labor approach, (2) necessary work experience for finding more permanent jobs, and (3) a way to build work-related soft skills (Redcross et al., 2009). The CEO program model includes a four-day preemployment life skills class to prepare participants for the transitional job, for job searches, and for employment after the transitional job. Participants begin their transitional jobs after they finish the class; they are assigned to daily work crews for four days a week, each with its own CEO supervisor. Transitional jobs consist mostly of maintenance and repair work conducted for city and state agencies at several dozen sites around New York City.

Along with daily work, the CEO program helps build soft skills to facilitate long-term employability in two ways. First, it provides on-the-job coaching at the work site, by work site supervisors. Second, it provides support and guidance through office-based job coaches, with whom participants formally meet once a week on the day that they are not assigned to a work crew. Once a participant is considered job-ready, he or she begins meeting with a job developer once a week, while maintaining the position in the transitional job work crew. In an effort to find clients permanent employment, job developers link employers who have open positions with clients who have the skill sets that fit the positions. After being placed into a permanent unsubsidized position, a participant becomes eligible for CEO's job retention incentive program, which offers noncash incentives for continued employment — such incentives as gift certificates from various stores and Metrocards for use in the city's mass transit system. CEO tracks participants' continued employment via pay stubs, which they can bring to the CEO offices for a reward every 30 days through one year, at which point they are eligible for a $250 gift certificate for retaining their position.

The Evaluation's Design

In 2004 and 2005, a total of 977 former prisoners on parole who reported to CEO each week were assigned, at random, to a program group (n = 568) or to a control group (n = 409).[3] At this time, participants completed initial baseline information forms that included a limited set of questions about their demographic information and about their employment and education histories. Life skills classes for members of both research groups started immediately on their being assigned to either the program or the control condition.

The program group received CEO's full service package, as described above. Almost 80 percent of the program group completed their four-day preemployment life skills class, and almost everyone who completed the class — about 72 percent of the full program group — worked at least one day in a work crew in the transitional jobs program. Of the participants who worked in a work crew, 29 percent worked one to four weeks; 40 percent worked five to twelve weeks; and 24 percent worked thirteen weeks or more. The average length of time in a work crew was eight weeks. Further, 60 percent of the total program group met with a job coach at least once, and 22 percent of the group met with a job coach more than four times. Similarly, 57 percent met with a job developer at least once, and about 20 percent met with a job developer more than four times.

The control group received limited services compared with those of the CEO program model, including a 1.5-day preemployment life skills class that focused on securing identification documents needed for employment, job search strategies, and interview concepts. About 37 percent of control group members completed the class. Participants were then given access to a resource room monitored by a staff person from whom they could seek help and where they could use such equipment as computers, fax machines, and phones with voicemail accounts to engage in job search activities. Few control group members visited the resource room more than two or three times.

Characteristics of the Research Sample

Participants came to the CEO program through a referral from a parole officer, although the parolees in this study were not mandated by parole orders to participate in the CEO program (Redcross et al., 2009).[4] The sample is mostly male (93 percent); 64 percent are black, and 31 percent are Hispanic. The average age of the group at baseline was 33 years. Based on adminis-

[3]This research sample was a portion of the approximately 2,000 parolees whom CEO serves each year and is representative of the regular parolee population.

[4]Some criminal justice populations that CEO serves are mandated to participate in the program — for example, New York State's Shock Incarceration (boot camp) participants. Because they were mandated to receive CEO's full service package, they were not eligible to be included in this study sample.

trative records from the New York State Division of Criminal Justice Services, the sample had an average of 7.5 arrests (including 4.5 felony arrests), 6.7 convictions (including 2.6 felony convictions), and 60 months spent in state prisons. There were very few differences between the program and control groups at baseline.

Interim Findings from the Evaluation

Interim results from MDRC's rigorous impact evaluation of CEO show that the program had a short-term effect on employment, mostly driven by the subsidized transitional jobs that participants received (Bloom, Redcross, Zweig, and Azurdia, 2007; Redcross et al., 2009). However, the program did not affect whether clients obtained unsubsidized employment. Figure 1 demonstrates these findings. It presents quarterly employment rates over the follow-up period for jobs covered by unemployment insurance. In Quarter 1, for example, 66 percent of the program group worked for at least one day, compared with only 26 percent of the control group — for an impact of 40 percentage points, mostly represented by the subsidized jobs that CEO provided. Differences between the groups diminished over time as a result of a decline in employment among the program group. These findings are in line with research showing that subsidized work programs tend to have large increases in employment for their clients during their time in transitional jobs but that these programs tend not to have long-term effects on employment (Bushway and Reuter, 2002).

Despite the limited employment effects, CEO had long-lasting effects on the rate of recidivism for program participants, which raises the question: By what mechanism did the CEO program work to reduce recidivism? As shown in Table 1, the CEO group had lower rates of recidivism in both Year 1 and Year 2 of follow-up, compared with the control group. More specifically, the program group members were less likely to be convicted of a felony and were less likely to be incarcerated in prison for a new crime during the first year after random assignment, and they were less likely to be arrested and less likely to be convicted of a misdemeanor during the second year. Although the mechanism through which CEO reduced recidivism is unclear, the fact that CEO had significant effects on recidivism is unusual, given that research on employment programs has shown limited effects on crime (Bushway and Reuter, 2002; Visher, Winterfield, and Coggeshall, 2005). The subgroup analysis described below was conducted as part of an effort to better understand the nature of CEO's impacts on recidivism.

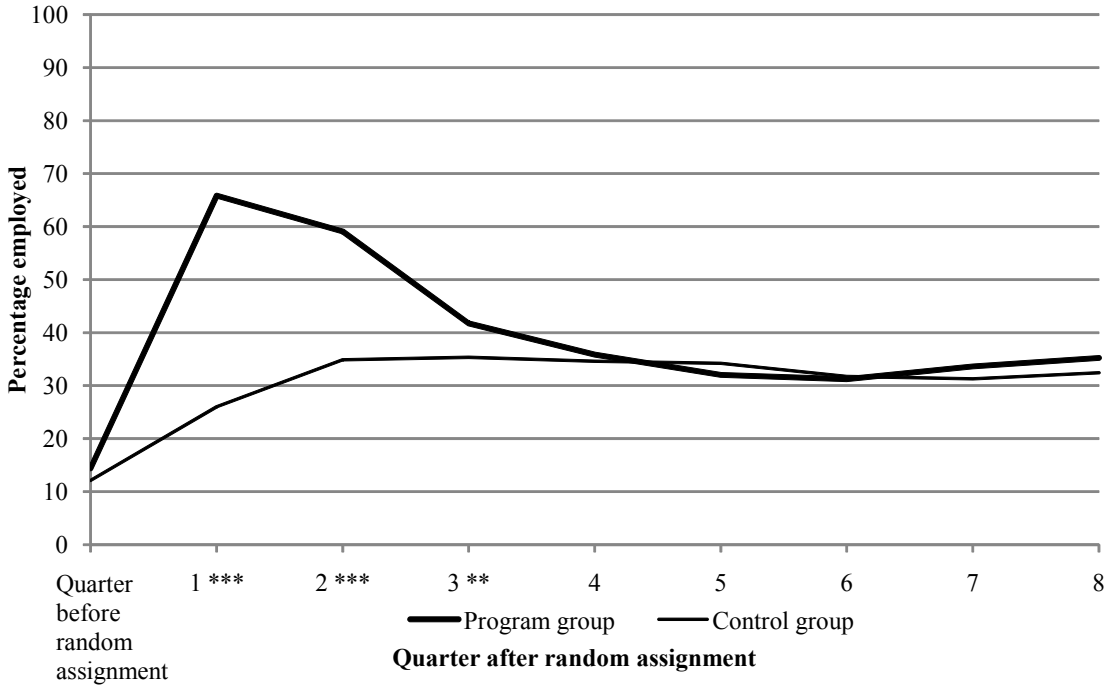
Current Research Questions

The CEO impact evaluation is an important first step in helping to identify what works for former prisoners as a whole. Although the evaluation includes some subgroup analyses, this research brief seeks to expand on those efforts by using a regression-based analytic approach to

The Enhanced Services for the Hard-to-Employ Demonstration

Figure 1

Quarterly Impacts on Employment



SOURCES: MDRC calculations based on the National Directory of New Hires (NDNH) database and unemployment insurance (UI) wage records from New York State.

NOTES: Results in this table are weighted by week of random assignment and adjusted for pre-random assignment characteristics.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. The significance level indicates the probability that one would incorrectly conclude that a difference exists between research groups for the corresponding variable.

The sample size is 973. Four sample members are missing Social Security numbers and therefore could not be matched to UI data.

identify subgroups of former prisoners for whom CEO had its greatest impact. Specifically, the primary research questions are:

1. Which types of former prisoners were most likely to recidivate — as measured by rearrest, reconviction, and reincarceration — after participation in the CEO evaluation, based on their characteristics before random assignment?

The Enhanced Services for the Hard-to-Employ Demonstration

Table 1

CEO's Impact on Recidivism in Year 1 and Year 2

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Arrested[a] (%)				
Year 1	21.7	22.9	-1.3	0.638
Year 2	22.8	27.5	-4.6 *	0.098
Convicted of a felony (%)				
Year 1	1.4	3.1	-1.7 *	0.071
Year 2	5.2	4.5	0.7	0.630
Convicted of a misdemeanor (%)				
Year 1	11.8	12.1	-0.3	0.897
Year 2	14.5	21.5	-7.1 ***	0.004
Convicted of a violent crime (%)				
Year 1	1.9	1.4	0.5	0.542
Year 2	2.5	4.5	-1.9	0.106
Admitted to state prison[b] (%)				
Year 1	11.0	14.0	-3.0	0.166
Year 2	16.7	17.5	-0.8	0.733
Incarcerated in prison for a new crime (%)				
Year 1	0.8	3.0	-2.2 **	0.012
Year 2	3.4	3.8	-0.4	0.742
Incarcerated in prison for a technical parole violation (%)				
Year 1	8.0	9.5	-1.5	0.412
Year 2	11.2	9.5	1.7	0.395
Total days incarcerated in prison				
Year 1	12	13	-1	0.583
Year 2	34	40	-7	0.228
Sample size	568	409		

SOURCE: MDRC calculations using data from the New York State Division of Criminal Justice Services.

NOTES: Results in this table are weighted by week of random assignment and adjusted for pre-random assignment characteristics.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. The significance level indicates the probability that one would incorrectly conclude that a difference exists between research groups for the corresponding variable.

[a]Each arrest date is counted only as a single event. If there are multiple crimes or charges on the same date, only the most serious charge is recorded in the analysis.

[b]This measure includes all reasons for incarceration, such as sentences for new crimes, technical violations of parole, detainee (jail), and other reasons. Therefore, the data below on incarcerations for new crimes and for technical parole violations do not sum to the percentages incarcerated shown here.

2. Did participation in CEO reduce recidivism more among former prisoners who were at low, medium, or high risk of reoffending?[5]

The Analytic Approach

The methodological approach used for answering the research questions above is based on that described in Kemple and Snipes (2001). It focuses on former prisoners' probability of rearrest, reconviction, and reincarceration in the two years following random assignment.[6] The research goal is to differentiate former prisoners into low-, medium-, and high-risk subgroups, depending on their risk of recidivism as predicted prior to study participation, and then to examine, within each subgroup, where CEO had its greatest impact on recidivism.

Given the random assignment research design of the evaluation, the baseline characteristics of former prisoners assigned to the control group reflect, on average, those of former prisoners assigned to the program group as well, and this should be true of both observed and unobserved traits. The evaluation capitalizes on the opportunity presented by experimental data to estimate the risk of recidivism for former prisoners in the program group, using characteristics measured prior to program participation, based on observations of such risk in the control group. It then classifies participants into low-, medium-, and high-risk subgroups based on these risk scores and evaluates the impact of CEO on recidivism within each subgroup.[7]

Toward this end, the analytic strategy is threefold. The first step is to examine the predictive associations between all baseline characteristics and recidivism two years after random assignment, measured only within a random half of the control group.[8] This step culminates in

[5]This research brief focuses on CEO's recidivism effects because of the program's limited impact on unsubsidized employment. However, an exploratory test investigated whether CEO had significant employment impacts for any of the subgroups defined by risk of recidivism, and no significant effects were found in follow-up Years 1 or 2 or in the two years combined. These results confirm CEO's overall lack of long-term employment impacts as described in the two-year evaluation report (Redcross et al., 2009).

[6]Recidivism outcomes were defined using data from the New York State Division of Criminal Justice Services and the New York City Department of Correction. "Rearrest" includes any "unsealed" arrest after random assignment. (An *unsealed arrest* either was not adjudicated or was disposed before trial, or the arrest resulted in conviction.) "Reconviction" refers to any conviction with a disposition date after random assignment. "Reincarceration" includes any admission after random assignment to a New York State prison facility or detention at Rikers Island, New York City's large jail facility, regardless of length of stay.

[7]In all analyses, weights were used to adjust for the differential proportion of people who were randomly assigned to the program and control groups from week to week (Bloom, Redcross, Zweig, and Azurdia 2007; Redcross et al., 2009).

[8]Had the analysis followed Kemple and Snipes (2001) exactly, it would have relied on the entire control group. A key limitation of their approach, however, is the potential that this creates for overestimating positive program effects among the high-risk group or for overestimating negative program effects (continued)

the derivation of the best-fitting, most parsimonious logistic regression model predicting the probability of recidivism — absent programmatic influences — that can be specified, given the data available.

The second step is to estimate the probability (risk) of recidivism for both the program participants and the control participants, by applying the regression coefficients from the model run on the randomly selected half of control participants to the other half of the control group and to the program group. For each study participant, a risk-of-recidivism score is generated and used to create subgroups of low-, medium-, and high-risk offenders.[9] The cutoffs for low and high risks are the 25th and 75th percentile risk scores among the ranked distribution for the control group (following Kemple and Snipes, 2001). Thus, low-risk participants have risk scores below the 25th percentile; high-risk participants have scores above the 75th percentile; and medium-risk participants have scores between the 25th and the 75th percentiles.

The third step is to analyze the impact of CEO within each subgroup by estimating a series of regression models — both logistic and ordinary least squares, depending on the nature of the outcome analyzed. Each outcome model uses the same predictors as those in the model estimating risk scores but includes an additional variable measuring CEO program group status. From each model's output, adjusted outcomes are generated for the program and control participants to show the size of CEO's impact, while determining the significance of the impact by the p-value associated with the program variable's coefficient in each outcome model.

What Predicts Risk of Recidivism?

The analysis culminated in identifying age, gender, and prior arrests as important predictors of recidivism, with statistical controls for race/ethnicity and time since release.[10] *Older former prisoners were less likely to recidivate than younger former prisoners, all else equal.*

---

among the low-risk group — by misclassifying some program participants into a higher- or lower-risk group than is true for them. To address and overcome this limitation, the analysis instead randomly selected one-half of the individuals in the control group and estimated the model predicting recidivism among those individuals only. These associations represent, theoretically, those that would have been found in any similar sample of former prisoners and, especially, those that would have been observed in the program group, had they not participated in CEO and, equally as likely, those that also would have been observed in the other half of the control group. By applying coefficient estimates from a random subsample to both the unselected control group participants and the program participants alike, the potential for misclassification bias is avoided — because the likelihood of such misclassification is distributed equally across the control and program group participants who remained in the final analysis.

[9]So that results can be more easily interpreted and presented for use by practitioners, the study takes a subgroup-based approach rather than using the continuous risk-score index.

[10]Although race/ethnicity and time since release are not significant in the model, they are included as controls to determine contributions to recidivism less the effects of these two constructs.

Also, former prisoners who were male and those with a higher number of prior arrests were more likely to recidivate than females and those with a lower number of prior arrests.

Although the analysis examined crime type, the measure of all prior arrests emerged as the strongest predictor of the study's general measure of recidivism (that is, rearrest, reconviction, or reincarceration for any crime). Additionally, despite testing several measures of employment before random assignment, none of them remained significant predictors of recidivism in the final models, perhaps in part because the employment measures available are indicators of employment status rather than quality, which many criminologists argue is more strongly associated with criminal behavior (for example, Uggen, 1999; Sampson and Laub, 1993).[11]

The parameter estimates from this analysis were then used to compute estimated risks of recidivism for both the program and the control group participants. The distribution of risk scores for the control group were examined to identify the 25th (lowest) and the 75th (highest) percentile scores. These scores are cutoffs to divide the study participants into low-, medium-, and high-risk subgroups. Participants whose scores are below the 25th percentile (0.495) are said to be at lowest risk of recidivism (n = 194), and those whose scores are above the 75th percentile (0.756) are said to be at highest risk of recidivism (n = 210).[12] All scores between these two are classified as medium risk (n = 369).

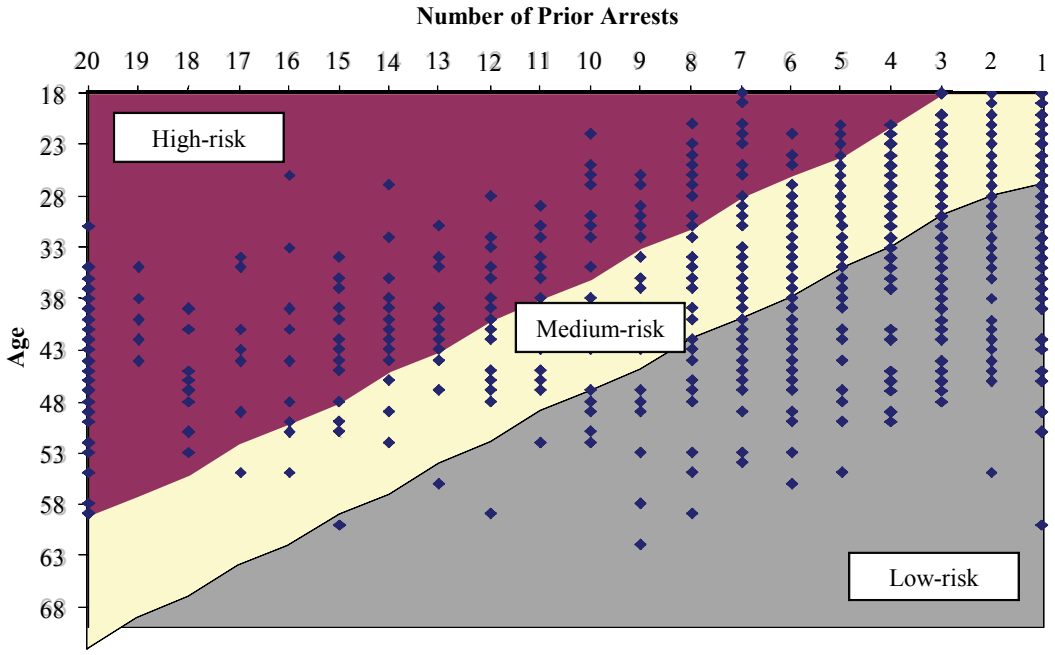
More specifically, Figure 2 illustrates how study participants fall into each of the risk subgroups, based on their age and arrest history, while holding constant at the sample means gender, race/ethnicity, and time since release. As shown in the figure, for the average-aged participant (who was 33 years old), those with nine or more prior arrests are placed in the high-risk subgroup; those with five to eight prior arrests are categorized as medium risk; and those with one to four prior arrests are categorized as low risk. Similarly, for participants who have the sample average of seven prior arrests, those who were age 28 or younger are categorized as high risk; those who were ages 29 to 40 are categorized as medium risk; and those who were age 41 or older are categorized as low risk.

[11]The employment measures tested include "ever employed," "employed six consecutive months," "number of quarters employed," "employed in quarter prior to random assignment," and "employed in year prior to random assignment."

[12]The average probability of recidivism among participants in the low-risk subgroup is 0.321, while the average probability in the high-risk subgroup is 0.864.

Figure 2

Definition of Risk Subgroups, by Age and Number of Prior Arrests



NOTES: This figure shows former prisoners in the sample and their categorization as being at high, medium, or low risk of recidivism, as determined by regression-based calculations of recidivism risk for different combinations of age and prior arrests while holding constant at the sample means gender, race/ethnicity, and time since release. As shown in the figure, for the average-aged participant (who was 33 years old), those with nine or more prior arrests are placed in the subgroup with high risk of recidivism; those with five to eight prior arrests are categorized as medium risk; and those with one to four prior arrests are categorized as low risk. Similarly, for participants who had the sample average of seven prior arrests, those who were age 28 or younger are categorized as high risk; those who were 29 to 40 are categorized as medium risk; and those who were 41 or older are categorized as low risk.

Does CEO's Impact on Recidivism Vary by Low, Medium, or High Risk of Reoffending?

Next, the analysis examined whether CEO had a differential impact on study participants' probability of recidivism in the two years after random assignment, based on their initial risk of such recidivism. The same methods employed in the larger CEO evaluation were used to estimate rates of recidivism for each of the predefined risk subgroups. The predictors included in each regression model are those that were previously identified as control variables or as predictors of recidivism risk subgroups, along with a variable measuring CEO program group status. Table 2 shows the adjusted outcomes for the average program and control participants

The Enhanced Services for the Hard-to-Employ Demonstration

Table 2

Impacts on Recidivism Outcomes, by Risk of Recidivism

	Low-Risk Subgroup				Medium-Risk Subgroup				High-Risk Subgroup				
Outcome	Program Group (n=145)	Control Group (n=49)	Difference (Impact)	P-Value	Program Group (n=275)	Control Group (n=94)	Difference (Impact)	P-Value	Program Group (n=148)	Control Group (n=62)	Difference (Impact)	P-Value	Z-Statistic
Rearrested (%)													
Year 1	12.1	13.0	-0.9	0.653	22.7	23.8	-1.1	0.825	31.2	31.6	-0.4	0.940	-0.42
Year 2	20.0	7.9	12.1 *	0.085	23.3	24.5	-1.2	0.917	26.0	42.0	-16.0 **	0.034	2.51 ††
Years 1-2	27.1	15.4	11.7	0.157	39.3	40.6	-1.2	0.815	47.7	56.2	-8.5	0.364	1.68 †
Reconvicted (%)													
Year 1	9.4	14.7	-5.3	0.208	14.6	14.3	3.0	0.943	25.6	25.1	0.5	0.772	-1.21
Year 2	16.8	6.5	10.3	0.123	21.8	28.0	-6.2	0.302	23.1	37.9	-14.7 **	0.043	2.30 ††
Years 1-2	23.0	17.2	5.8	0.507	31.5	39.9	-8.4	0.138	40.3	51.3	-11.0	0.209	1.26
Reincarcerated (%)													
Year 1	21.6	18.3	3.3	0.760	35.6	46.4	-10.8	0.106	48.5	50.4	-1.9	0.970	0.23
Year 2	31.3	17.3	14.0	0.210	42.0	46.3	-4.3	0.661	53.4	66.8	-13.4	0.111	1.94 †
Years 1-2	36.8	26.1	10.7	0.441	51.3	59.7	-8.4	0.202	60.9	72.3	-11.4	0.197	1.41
Rearrested, reconvicted or reincarcerated (%)													
Year 1	23.4	26.6	3.2	0.524	40.8	53.0	-12.2 **	0.045	54.0	52.8	1.3	0.645	-0.79
Year 2	35.8	21.0	14.8	0.172	49.1	53.1	-4.0	0.648	57.5	70.0	12.6	0.159	1.94 †
Years 1-2	40.2	32.6	7.6	0.711	59.3	67.9	-8.6	0.137	65.8	75.5	-9.7	0.315	0.94
Number of rearrests													
Year 1	0.1	0.1	0.0	0.812	0.3	0.3	0.0	0.909	0.5	0.4	0.1	0.673	-0.48
Year 2	0.3	0.1	0.2	0.186	0.3	0.3	0.0	0.939	0.5	0.9	-0.5 ***	0.007	2.99 †††
Years 1-2	0.5	0.3	0.2	0.375	0.6	0.6	0.0	0.899	1.0	1.4	-0.4 *	0.093	1.90 †
Number of felony reconvictions													
Years 1-2	0.1	0.0	0.1	0.177	0.2	0.2	0.0	0.631	0.2	0.2	0.0	0.674	1.11
Number of misdemeanor reconvictions													
Years 1-2	0.6	0.3	0.3	0.325	0.6	0.8	-0.1	0.578	1.0	1.6	-0.6	0.144	1.77 †
Number of days reincarcerated													
Year 1	21.3	16.9	4.4	0.766	38.6	38.0	0.6	0.615	54.9	48.6	6.2	0.592	-0.26
Year 2	42.1	30.4	11.8	0.509	67.3	65.9	1.4	0.589	87.1	98.6	-11.6	0.409	1.06
Years 1-2	63.4	47.2	16.2	0.557	105.9	103.9	2.0	0.548	142.0	147.3	-5.3	0.753	0.61

(continued)

Table 2 (continued)

SOURCES: Calculations using data from the MDRC baseline information form and client survey and data from the New York State Division of Criminal Justice Services and New York City Department of Correction.

NOTES: Risk of recidivism is defined as the likelihood of a new arrest, conviction, or incarceration in the two years following the date of random assignment. Probability outcomes are displayed as percentages.

Results in this table are weighted by week of random assignment and adjusted for pre-random assignment characteristics.

Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent. The statistical significance level indicates the probability that one would incorrectly conclude that a difference exists between research groups for the corresponding variable.

The Z-statistic, as used herein, measures the significance of the difference in program impacts between the low- and high-risk subgroups. (See Paternoster, Brame, Mazerolle, and Piquero, 1998; Clogg, Petkova, and Haritou, 1995.) Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

within each risk subgroup.[13] The table also shows the difference between program and control group outcomes (the impact of CEO) and its statistical significance (p-value), as derived from the "program group status" variable included in each regression model. The rightmost column of the table gives the Z-statistic, which measures the significance of the difference in program impacts between the low-risk and the high-risk subgroups. (See Paternoster, Brame, Mazerolle, and Piquero, 1998; Clogg, Petkova, and Haritou, 1995.)

The following key findings emerge from Table 2.

- **For former prisoners in the high-risk subgroup, CEO significantly reduced the probability of rearrest, the probability of reconviction, and the number of rearrests in Year 2 following random assignment.**

Also, for the high-risk subgroup, the impact of CEO in reducing the number of rearrests in Years 1 and 2 combined is marginally significant. Further, as shown by the Z-statistics, CEO's impacts on reducing several recidivism outcomes for those in the high-risk subgroup are significantly greater (better) than its impacts on those same outcomes for the low-risk subgroup. Specifically, for former prisoners in the high-risk subgroup, compared with those in the low-risk subgroup, CEO significantly reduced the probability of rearrest in Year 2 and in Years 1 and 2 combined; the probability of reconviction in Year 2; the probability of reincarceration in Year 2; the probability of rearrest, reconviction, or reincarceration in Year 2; the number of rearrests in Year 2 and in Years 1 and 2 combined; and the number of misdemeanor reconvictions in Years 1 and 2 combined.

[13]Parameters and odds ratios from all regression models estimated are available from the authors on request.

- **For those in the high-risk subgroup, there were no significant program impacts on recidivism in Year 1.**

The impact of CEO on high-risk former prisoners did not emerge until the second year following random assignment to the program.

- **For former prisoners in the low-risk and the medium-risk subgroups, there were very few program impacts on recidivism — of any type.**

For the medium-risk subgroup in the program, there is one statistically significant finding: a decrease in the probability of rearrest, reconviction, or reincarceration in Year 1. There is also a marginally significant finding for the low-risk subgroup: an increase in the probability of rearrest in Year 2.

Conclusion

The current findings have important implications for policy and practice related to transitional jobs programs for former prisoners. First, in line with previous arguments by parole and reentry experts and practitioners (for example, Petersilia, 2004; Solomon et al., 2008), this study finds that high-risk offenders benefited most from the CEO transitional jobs program. If these results are confirmed by other studies of transitional jobs programs (for example, the ongoing evaluation of the Transitional Jobs Reentry Demonstration; see Bloom, 2009), then one might conclude that limited program resources should be targeted toward those at highest risk for recidivating, because they are the people helped most by this intervention. The high-risk offenders who participated in the CEO program were less likely to be rearrested, had fewer rearrests, and were less likely to be reconvicted of crimes than high-risk offenders who did not have a chance to participate in the program. Further, those in the low-risk category who participated in CEO had outcomes that are similar to the control group's. Some have argued that offenders with a low likelihood of recidivating may not require intervention or that they may adopt crime-supportive attitudes and behaviors if they become involved in programs with other offenders (Cullen and Gendreau, 2000, as seen in Petersilia, 2004; Solomon et al., 2008). Clearly, the present analysis offers support for both types of arguments: that offenders at highest risk of recidivism should be targeted when implementing transitional jobs programs and that those at lowest risk are not likely to benefit from such programs. Importantly, however, the current study cannot determine whether program impacts would definitively differ if the program were limited to those at highest risk of recidivating.

Second, the present analysis contributes information toward future assessments of former prisoners' risk of reoffending. Program providers and supervision agencies that are focused on facilitating reentry success often use assessment tools to measure risk and to target resources.

Using assessment tools strengthens the ability of staff to make decisions about individual risk better than basing them on personal judgments alone (Cullen and Gendreau, 2000, as seen in Petersilia, 2004; see also Solomon et al., 2008). Practitioners in the criminal justice arena are often readily familiar with assessment tools designed to indicate the probability that an offender will recidivate (Gendreau, Little, and Goggin, 2006). In this sample, a person's age and number of prior arrests are most predictive of recidivism. In particular, for the average-aged person in the sample (33 years old at random assignment), the subgroup at high risk of recidivism consists of those with nine or more prior arrests. Further, for those in the sample who had seven prior arrests (the average), the high-risk subgroup includes those who were 28 or younger. These categories offer insight into the types of former prisoners who are best suited for transitional jobs programs similar to CEO's.

Finally, findings from the current study have implications for future evaluation efforts. Foremost, it is unclear how the CEO program actually works to reduce recidivism. Interim evaluation results of CEO show that program participation did not increase one's likelihood of obtaining unsubsidized employment but that it *did* reduce recidivism outcomes and, from this analysis, that the effect was concentrated among high-risk former prisoners (Bloom, Redcross, Zweig, and Azurdia, 2007; Redcross et al., 2009). Future studies of transitional jobs programs should focus on the extent to which participants' daily interactions with program staff — including support and guidance from job coaches — affect recidivism and employment outcomes. It is possible that this type of mentorship, which CEO participants were more likely than control group members to receive, can lead to changes in the behavior and outlook of participants, even without a lasting impact on unsubsidized employment (Redcross et al., 2009). Given that CEO was able to significantly reduce rearrest, reconviction, and reincarceration, understanding exactly how it accomplished this is an important direction for future research. Similarly, if future interventions are successful at improving employment outcomes, it will be interesting to see whether recidivism effects improve further in conjunction with employment impacts.

References

Baer, Demelza, Avinash Bhati, Lisa Brooks, Jennifer Castro, Nancy La Vigne, Kamala Mallik-Kane, Rebecca Naser, Jenny Osborne, Caterina Roman, John Roman, Shelli Rossman, Amy Solomon, Christy Visher, and Laura Winterfield. 2006. *Understanding the Challenges of Prisoner Reentry: Research Findings from the Urban Institute's Prisoner Reentry Portfolio.* Washington, DC: Urban Institute.

Bloom, Dan. 2009. "The Joyce Foundation's Transitional Jobs Reentry Demonstration: Testing Strategies to Help Former Prisoners Find and Keep Jobs and Stay Out of Prison." Policy Brief. Chicago: Joyce Foundation; and New York: MDRC.

Bloom, Dan, Cindy Redcross, Janine Zweig (Urban Institute), and Gilda Azurdia. 2007. "Transitional Jobs for Ex-Prisoners: Early Impacts from a Random Assignment Evaluation of the Center for Employment Opportunities (CEO) Prisoner Reentry Program." Working Paper. New York: MDRC.

Bushway, Shawn, and Peter Reuter. 2002. "Labor Markets and Crime." In Lawrence Sherman, David Farrington, Brandon Welsh, and Doris MacKenzie (eds.), *Evidence-Based Crime Prevention.* New York: Rutledge.

Clogg, Clifford C., Eva Petkova, and Adamantios Haritou. 1995. "Statistical Methods for Comparing Regression Coefficients Between Models." *American Journal of Sociology* 100: 1261-1293.

Gendreau, Paul, Tracy Little, and Claire Goggin. 2006. "A Meta-Analysis of the Predictors of Adult Offender Recidivism: What Works!" *Criminology* 34, 4: 575-608.

Johnston-Listwan, Shelley, Francis T. Cullen, and Edward J. Latessa. 2006. "How to Prevent Prisoner Re-Entry Programs from Failing: Insights from Evidence-Based Corrections." *Federal Probation* 70, 3: 19-25.

Kemple, James J., and Jason C. Snipes with Howard Bloom. 2001. *A Regression-Based Strategy for Defining Subgroups in a Social Experiment.* New York: MDRC.

Levinson, David (ed.). 2002. *Encyclopedia of Crime and Punishment,* vol. 4. Thousand Oaks, CA: Sage Publications.

Obama, Barack, and Joseph Biden. 2008. *Blueprint for Change: Obama and Biden's Plan for America.* Web site: http://www.barackobama.com/pdf/ObamaBlueprintForChange.pdf.

Paternoster, Raymond, Robert Brame, Paul Mazerolle, and Alex Piquero. 1998. "Using the Correct Statistical Test for the Equality of Regression Coefficients." *Criminology* 36, 4: 859-866.

Petersilia, Joan. (2004). "What Works for Prisoner Reentry? Reviewing and Questioning the Evidence." *Federal Probation* 68, 2: 4-8.

Redcross, Cindy, Dan Bloom, Gilda Azurdia, Janine Zweig (Urban Institute), and Nancy Pindus (Urban Institute). 2009. *Transitional Jobs for Ex-Prisoners: Implementation, Two-Year Impacts, and Costs of the Center for Employment Opportunities (CEO) Prisoner Reentry Program.* New York: MDRC.

Sabol, William J., Heather C. West, and Matthew Cooper. 2009. *Prisoners in 2008.* Bureau of Justice Statistics Bulletin. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.

Sampson, Robert J., and John H. Laub. 1993. *Crime in the Making: Pathways and Turning Points Through Life.* Cambridge, MA: Harvard University Press.

Solomon, Amy, Jesse Jannetta, Brian Elderbloom, Laura Winterfield, Jenny Osborne, Peggy Burke, Richard P. Stroker, Edward E. Rhine, and William D. Burrell. 2008. *Putting Public Safety First: 13 Strategies for Successful Supervision and Reentry.* Washington, DC: Urban Institute.

Uggen, Christopher. 1999. "Ex-Offenders and the Conformist Alternative: A Job Quality Model of Work and Crime." *Social Problems* 46, 1: 127-151.

Uggen, Christopher. 2000. "Work as a Turning Point in the Life Course of Criminals: A Duration Model of Age, Employment, and Recidivism." *American Sociological Review* 65, 4: 529-546.

Visher, Christy, and Jeremy Travis. 2003. "Transitions from Prison to Community: Understanding Individual Pathways." *Annual Review of Sociology* 29: 89-113.

Visher, Christy, Laura Winterfield, and Mark Coggeshall. 2005. "Ex-Offender Employment Programs and Recidivism: A Meta-Analysis." *Journal of Experimental Criminology* 1: 295-315.