

Sustaining employment: factors associated with job retention among ex-offenders

**A report to Mindy Tarlow, Executive Director of the Center for Employment Opportunities
from Dylan Conger, The Vera Institute of Justice
October 1999**

This report was made possible through support from Bell Atlantic

SUMMARY

At CEO's request, the Vera Institute of Justice examined a group of participants that CEO placed in jobs during 1996, 1997, and 1998 to identify the factors that correlate with their length of time employed. While CEO is satisfied with its high job placement rates of between 65 and 70 percent, it is concerned with other measures of success, most importantly job retention. To that end, the study examined the relationship between participants' demographic characteristics, such as race and age, their performance in the transitional work program (attendance rate and length of stay), and the characteristics of the jobs they received (wage and industry). The primary purpose of the study was to identify factors associated with remaining on the job for six months. The secondary purpose was to determine, among those who do not reach the sixth month, the factors that correlate with their length of time employed.

The results of the analysis, resembling studies of other populations, suggest two important influences on job retention: the offender work ethic and the quality of the job. Having a high attendance rate and a short length of stay in transitional work before the first job placement, a reflection of high motivation and work ethic, is positively associated with job retention. Moreover, having a good job, that is one that is in industries with good benefits and one that pays higher than the minimum wage, improves retention. Additionally, graduates of the program from 1998 have lower retention than graduates in earlier years, suggesting unfavorable changes in the economy for participants in the program. The influence of each of these factors is significant, controlling for the others. These results provide information on how the program could strengthen retention, for example, by targeting resources to participants who demonstrate low motivation or increasing efforts to locate good jobs.

There were also several factors that were not related to job retention. Most of the participants' background characteristics, including age, race, gender, marital status, and criminal justice status prior to CEO (e.g. boot camp, other parole) were not related to how long they stayed on the job. However, some of these variables, particularly participation in boot camp, may be positively associated with job placement. Additionally, reading and math scores did not correlate with retention,

but the extensive amounts of missing data suggest that this finding should be interpreted with caution. Individuals who received referrals to social services had the same retention rates as those who received no referrals and the characteristics of the job developers (age, gender, ethnicity, and job tenure) were also not correlated with length of stay on the job.

DATA AND METHODS

This study used a large sample of CEO participants gathered from CEO's MIS system. Since data from more recent years are more reliable, the sample consists of participants who were placed in jobs between July 1996 and June 1998.

The primary purpose of the analysis was to examine the influence of a host of factors on participants' ability to remain employed in their first jobs for six months after leaving transitional work. Employment for six months was used as the primary outcome because prior research suggests that employment at the fourth to sixth month is a strong predictor of later success in the labor market (Rangarajan, Schochet and Chu, 1998; Lane, Jinping, and Stevens, 1998). The secondary purpose was to determine the factors associated with the length of stay in this job, for those who did not reach the sixth month.

The study examined the relationship between job retention and three groups of factors: participant background characteristics, program characteristics, and job characteristics. Participant background characteristics include demographics, such as ethnicity, age, and gender. Also included in participant characteristics are their experiences in transitional work, namely, their attendance rates and their lengths of stay. The second set of factors includes program services, such as the number of social service referrals received and the characteristics of the job developers.¹ The third set of characteristics relates to the jobs themselves, including the wage level, industry, and whether the job was subsidized. The analysis also examined whether the year that participants were placed in jobs—covering the last half of 1996 to the first half of 1998—was in any way related to their retention, indicating changes in the economy, the program, or the participants.

To examine the influence of these variables, multivariate regression analysis was used. This technique makes it possible to isolate the influence of each factor on retention, controlling for the others. For example, an analysis of gender, controlling for age, essentially takes two people with the same age and determines whether being female increases or decreases one's likelihood of reaching the sixth month. A more complete description of the sample, variables, and analytic techniques is provided in Appendix A.

¹ Other program services, including enrollment in life skills and receipt of job development services, could not be examined since the overwhelming majority of participants received these services.

PREVIOUS RESEARCH

The literature on job retention among ex-offenders is scarce and disparate. The majority of studies focus on job placement and criminal recidivism rates, not job retention. Most of these studies examine offender personality characteristics and skills, and neglect job-related variables. Those studies that do examine the influence of the demographic characteristics also offer conflicting findings. And there is very little on the influence of job characteristics on retention. However, research on the general and welfare populations is less uncertain, suggesting strong influences of job factors, such as wage and benefits, and less influence of individual characteristics.

Studies that examine the impact of offenders' demographic and other background characteristics on retention vary in their findings. Results regarding the influence of race and age on employment retention, for example, have been mixed. Some studies assert that minority ex-offenders have worse employment retention than their white counterparts (Menon, Blakely, Carmichael and Silver, 1992; Markley, Flynn, Bercaw-Dooen, 1983; Knox and Stacey, 1978), while other studies find no differences in race (Finn and Willoughby, 1996; Needles, 1996). Research has also found positive correlations between age and employment retention (Markely et al., 1983) as well as negative or no correlations (Finn and Willoughby, 1996; Menon et al., 1992; Knox and Stacey, 1978). The impact of the type and extent of criminal involvement and education on employment retention is also inconclusive (Needles, 1996; Piliavin and Gartner, 1981; Markely et al., 1983; Knox and Stacey, 1978). One study found that having a driver's license and a car, or being a veteran or a union member are significantly related to job retention (Knox and Stacey, 1978). This same study was the only one found that examined the influence of the wage of the job on employment among ex-offenders: wage was a positive determinant of employment 90 days after participation in a job placement program (Knox and Stacey, 1978).

The results on the relationship between individual and job characteristics and retention in the general population are less inconclusive. And the influence of job factors has proven to be more important than the individual characteristics for some groups. Among the general population, youth, women, the less educated, and blacks and Latinos tend to have higher unemployment rates and longer periods of unemployment than other groups (e.g. Holzer and LaLonde, 1999; Royalty, 1998; Kirschenman and Neckerman, 1991; Holzer, 1994; Osterman, 1980). Explanations for such findings vary by subpopulation. Youth, for example, are more likely to leave jobs than adults because they have their guardians to rely upon for support. People of color face employer discrimination in hiring and firing, while women leave the labor force for child bearing and rearing. For some of these populations wages, benefits, and other job characteristics predict job stability even when controlling for individual

characteristics (Holzer and LaLonde, 1999). The dominance of job factors over individual characteristics also holds true in research on the employment patterns of the welfare population (Rangarajan et. al, 1998).

JOB RETENTION

There are several ways to examine job retention among the sample, from very narrow definitions to broader ones. The narrowest definition of retention is continuous employment in the first job after transitional work for six months. Thirty-three percent of the sample met this definition of retention.

The second measure captures continuous employment in *any job* for six months. Some participants contact their job developers after leaving their first jobs and are placed in subsequent jobs and their job developers track these subsequent placements for up to 180 days. Although an underestimate of the true number of subsequent jobs, 37 percent of the sample were reportedly employed in their first, second, third or fourth job after transitional work for 180 days. This indicates that while some individuals were not retained for the full 180 days in the first job, they did reach this point in subsequent jobs. In published reports on employment programs for ex-offenders, CEO is often compared to a handful of other programs, such as the Safer Foundation in Chicago and Project RIO in Texas. Only the Safer Foundation has reported six month retention rates; the comparison is not perfect because the Safer Foundation program offers training and places a lower proportion of its clients into jobs. Nevertheless, its six month retention rate in any job, at approximately 34 percent, is comparable to CEO's retention rate (Finn, 1998a).²

The third measure of retention is the broadest definition of the three. It refers to continuous employment in any job for 180 days, excluding spells of unemployment that lasted less than 30 days. By this definition, someone who works in two jobs for a total of 180 days, with a ten-day spell of unemployment, would be considered working for the full six months. Approximately 38 percent of the sample met this definition (see Table 1). We could find no other programs for ex-offenders that measured employment retention in this way but a study of welfare recipients that tracked their employment spells, defined as number of consecutive weeks employed excluding time spent unemployed that lasted for less than one month, found that approximately 40 percent of the employment spells lasted for six months (Rangarajan et al., 1998).

² In order to approximate this figure we had to manipulate data provided in the report on this program. The report provides the following information: 1) 41% of 2,688 participants were placed in jobs (n=1,102); 2) 59% of those who found jobs reached the 30th day (n=650); 3) of those who reached the 30th day, 57% were in the same or another job after 6 months (n=371). The 34% retention rate was calculated by dividing the number of participants who reached the sixth month (371) by the total number placed (1,102).

Table 1	
Employment Retention Measured in Three Ways	
	(N=1,145) ^a
Employment in first job for 180 days	33%
Employment in any job for 180 days	37%
Employment for 180 days, excluding unemployment for less than one month	38%

^aThe number of days employed was not available for 12 individuals.

Among those who do not work for the full six months, there is a range of early, middle and late leavers. The distribution in number of days employed in the first 180 days shows a large proportion of early leavers (within the first 30 days), then the remainder leave the labor force at lower and lower rates as the days increase (see Table 2). Once those who leave within the first 30 days are eliminated from the analysis, the 180-day retention rate of the remaining individuals increases to 49 percent.

Table 2	
Days Employed in First Job Only	
	(N=1,145) ^a
	N %
Days employed	
Up to 29 days	341 30%
30 to 59 Days	184 16%
60 to 89 Days	108 9%
90 to 119 days	57 5%
120 to 149 days	42 4%
150 to 179 days	34 3%
180 days	379 33%
Mean	92
Median	74
Standard deviation	72

^aThe number of days employed was not available for 12 individuals.

PARTICIPANT, PROGRAM, AND JOB CHARACTERISTICS

The majority of the participants who were placed in jobs were male (89 percent), single (88 percent), and black or Hispanic (96 percent). Additionally, most participants were on parole from the state boot camp (64 percent). Most participants

were 35 years old or younger (88 percent) when they were placed in their first job after transitional work, with the youngest at age 17. The average age for the sample was 28 years old (see Table 3).

Table 3
Participant Characteristics

		(N=1,157)	
		n	%
Gender	Male	1,031	89%
	Female	126	11%
Age	20 and under	173	15%
	21 to 30	610	53%
	31 to 40	305	27%
	41 to 50	47	4%
	51 and over	16	2%
	Mean age	28	
Marital status	Single	1,019	88%
	Married	137	12%
Ethnicity	Black	562	52%
	Hispanic	474	44%
	White	39	4%
	Native-American	7	0.6%
	Asian-American	2	0.2%
Residence borough	Bronx	363	31%
	Manhattan	324	28%
	Brooklyn	288	25%
	Queens	131	11%
	Staten Island	37	3%
Most recent prior status	Shock parole	745	64%
	Other parole	153	13%
	Work release	176	15%
	Probation	83	7%

Note: columns do not always add to 100% due to rounding.

These distributions reflect the larger CEO population (including those who are not placed in jobs), although there are fewer shock parolees in the entire population than there are among the subsample who were placed in jobs, 53 percent and 64 percent respectively.

Although CEO does not track participants' educational achievement, they administer a reading and math literacy test to some participants.³ The Test of Basic Education (TABE) is a normed test of adult skills in several areas, including reading and mathematics. There are also TABE tests in language and spelling, which the CEO participants did not receive. The reading test measures basic reading skills, such as vocabulary, and some life skills, such as the ability to read a map or a dictionary. The math test captures the respondents' basic computational skills (addition, subtraction, division, and multiplication) and some higher level skills, such as percents. The grade-equivalent scores indicate how the test-taker's achievement fits into the standard grading system. Thus, the scores range from 1 (Kindergarten) to 13 (12th grade).

According to the TABE, the CEO test-takers are reading at the 6th grade level and are mathematically proficient at the 5th grade level (see Table 4). All the test-takers are older than 16 years of age and would traditionally be completing or finished with high school. These reading and math levels suggest a severe lack of educational and basic skills for this population, which correlates with other studies of offenders' educational attainment (e.g. Finn and Willoughby, 1996; Needles, 1996; Evans, 1968).

Table 4
Reading and Math Skills

	n	mean	range	median	grade level
TABE reading score	310	7.5	1 to 13	7	6 th
TABE math score	313	6.7	1 to 13	6	5 th

The average attendance rate in transitional employment (the Neighborhood Work Project, or NWP) for the group was 81 percent with a median of 83 percent, revealing that most participants had very high rates of attendance, and a small number had poor attendance rates. Conversely, the average number of days spent in NWP was 41 and the median was 23 days. Most people worked short amounts of time in transitional work—under 30 days—with fewer having long stays in NWP (see Table 5).

³ Since CEO just started administering its own tests and in the past has relied on scores administered by the prisons and Parole, most sample members do not have data.

Table 5
Services Information

	mean	range	median
NWP attendance rate	81%	20% to 100%	83%
Total number of days in NWP	41	1 to 323	23

Most of the participants took the life skills course (94 percent) and everyone received job development services. Additionally, 18 percent received referrals to support services, such as housing, medical care, and food vouchers (not shown in Table).

There were 16 job developers who worked with this group of participants. Eight were black, four white and four Hispanic. There were six men and 10 women. Forty-five percent of the participants were of the same ethnicity as their job developer and 58 percent were of the same gender. Table 6 provides the average, median, and ranges of job developers' ages and length of time employed with CEO at the time the participants were placed in jobs.

Table 6
Job Developers' Age and Months Employed at Time of Placements

	mean	range	median
Age (in years)	44	25 to 62	43
Months employed at CEO	50	0 to 110	56

Note: Zero means less than one full month employed.

Most (88 percent) of the participants were placed in unsubsidized jobs. The remaining 12 percent of the participants were placed in a subsidized job—Adult Work Experience (AWE) or On-the-Job Training (OJT). OJT subsidizes private sector employers for up to half of CEO participants' wages for a maximum of eight weeks on the condition that the employers provide training, meet certain wage requirements, and agree to hire participants full-time if they perform well on the job. By contrast, AWE subsidizes 100 percent of minimum wage positions in public sector jobs for up to 12 weeks with no other conditions.

While individuals in OJT jobs received higher wages than those in unsubsidized jobs, the majority of all participants received jobs that paid higher than minimum wage, with the average wage for the group at \$6.00 an hour. Participants were also working in several industries, with food service having the highest percentage—22 percent (see Table 7).

Table 7
Characteristics of First Job

		(N=1,157)	
		n	%
Type of job placement	Unsubsidized	1,017	88%
	On-the-job Training (OJT)	81	7%
	Adult Work Experience (AWE)	55	5%
Industry ^a	Food Service	233	22%
	Service	166	16%
	Manufacturing	158	15%
	Retail/Wholesale	135	13%
	Human Services	127	12%
	Construction	91	9%
	Printing	82	8%
	Maintenance	46	4%
	Warehouse	13	1%
Hourly wage	Minimum wage ^b	176	16%
	Up to \$1 over minimum	463	42%
	Between \$1 and \$2 over minimum	253	23%
	Between \$2 and \$3 over minimum	134	12%
	At least \$3 greater than minimum	76	7%
	Mean	\$6.00	

Note: columns do not always add to 100% due to rounding.

^aThe industry categories in the table are subcategories of the standard industry codes provided by the Census. CEO creates these subcategories because they offer more information. Most of the categories reflect the standard industry categories, with a few exceptions. The service industry refers to direct customer service jobs, for example, in a copier company, or a dry cleaners. Human service jobs are those in social service organizations, such as God's Love We Deliver, a program that provides warm meals to AIDS patients in their homes.

^b The AWE jobs were excluded from the analysis because they are automatically set at minimum wage and CEO considers them work experience jobs. Excluding AWE jobs the N=1,102. When these jobs are included, the percent receiving minimum wage increases to 20.

The growth in the federal minimum wage during the three-year time period must be considered when examining the average wages of participants in CEO. In October 1996, the minimum wage increased from \$4.25 to \$4.75 and in September 1997, it increased again to \$5.15. During these three years, the average wage for CEO graduates was far above the minimum. When the federal minimum wage was \$4.25, for example, CEO graduates were earning \$5.62 on average. Excluding the small group of CEO participants who received minimum wage, the average wages for CEO participants exceeded the minimum wage by \$1.35 to \$1.71 (see Table 8).

Table 8
CEO Participants' Average Wages Compared to Federal Minimum

Federal wage	CEO average wage	CEO average wage above minimum
\$4.25	\$5.62	\$5.96
\$4.75	\$5.92	\$6.10
\$5.15	\$6.20	\$6.59

Another important aspect of wage is the industry differences. Some industries paid higher wages than others. Yet just comparing the average wage by industry will not suffice, since the study covers two years when the minimum wage was increased twice by a total of 21 percent and the wages industries paid in these years may have fluctuated. Instead, the following table offers a look at the percentage of individuals employed in each sector who were offered an above minimum hourly wage and the average wage offered to those who received above minimum. This information gives some indication of how many people received good wages (above minimum) and just how high those wages really were.

The industry with the poorest performance on both measures—low proportion receiving good wages and low above minimum wages—is the warehouse sector, which offered only 54 percent of the CEO employees salaries above the minimum wage. When the AWE jobs are removed from this group, the percentage receiving above minimum wage increases to 70 percent, still below the average for the sample. In addition, the wage offered to this group was lower than the average received by everyone in the sample that received higher than minimum wage (\$5.63 versus \$6.28). In these respects, this is a low wage industry across the board.

On the opposite extreme is the construction industry. Ninety-two percent of the CEO participants received higher than minimum wage jobs. The average hourly wage for those who got the higher pay was \$6.81, which is higher than the average above minimum wage for the whole group (\$6.28).

Between these two extremes are two groups: 1) industries that paid a high proportion of people above minimum wages, but that were only slightly higher than the mean wage for the group; and 2) industries that paid a low proportion of people

good wages, but those wages were very high. For example, the majority of employees in printing received above minimum (99 percent), but their average wage was lower than the average for the whole sample (\$5.91 versus \$6.28). On the other hand, while only 70 percent of those with maintenance jobs were offered higher wages, the average wage was extremely high (\$8.31) in comparison to the standard for the group. This could be due to a strong organized labor force in the maintenance sector, demanding higher wages for unionized employees. Additionally, the maintenance sector provides many AWE jobs, which are set at the minimum wage for those receiving the work experience. When these jobs are excluded, 94 percent of the maintenance sector jobs offered above minimum wage (see Table 9).

Table 9
Wages by Industry

		Percent above minimum	Range of wages above minimum	Average wage above minimum
All industries		80%	\$4.75 to \$25.00	\$6.28
Industry	Food Service	84%	\$4.75 to \$25.00	\$6.03
	Service	87%	\$5.00 to \$12.00	\$6.48
	Manufacturing	75%	\$5.00 to \$12.00	\$6.28
	Retail/Wholesale	85%	\$5.00 to \$10.00	\$6.11
	Human Services	55%	\$5.00 to \$13.75	\$6.35
	Construction	92%	\$5.00 to \$12.00	\$6.81
	Printing	99%	\$5.00 to \$8.00	\$5.91
	Maintenance	70%	\$5.00 to \$13.50	\$8.31
	Warehouse	54%	\$5.25 to \$6.75	\$5.63

Upon follow-up with the employers, CEO job developers record the reasons why an employee left the job. Although the true reasons could be very different from what the employers report—for example, some employees are reported to have quit when they were soon to be fired anyway—the reasons do provide some idea of the problems encountered in the workplace. Table 10 provides the various reasons why participants left their first jobs. Reasons categorized as “employer decision” are those related to the employer terminating the employment, such as the employee’s poor time management, poor performance, substance abuse, attitude problem, theft, or inadequate skills. The most frequent reason within the employer decision category was simply “laid off,” which does not indicate whether the lay off occurred due to the employee’s poor performance or a company downsize. The category “employee decision” refers to reasons that the employee chose to leave, such as, another job, lack

of interest in the job, health problems, a need to take care of family members, or a move from the area. The biggest category within employees' decision was "quit" without further explanation. Those reasons under "system reason" include the parole officer's disapproval of the job, an uncontrollable lockdown in the facility in which the employee was living (for those on work release), or a temporary job that was due to end anyway. Finally, the category "criminal reason" includes two reasons for leaving the job that are related to involvement in the criminal justice system—getting rearrested and violating parole or probation. Only five percent of the CEO graduates who find jobs were rearrested or violated parole or probation within six months after starting their first jobs.

Table 10
Reasons for Leaving First Job

		(N=769)	
		n	%
Category	Employer decision	411	53%
	Employee decision	303	39%
	Criminal reason	38	5%
	System reason	17	2%

Note: column does not add to 100% due to rounding.

FINDINGS

The results from the multivariate analyses indicate that CEO participants' length of stay in their first job after transitional work is influenced primarily by two things: their own work ethic and motivation—measured by their attendance rate and length of stay in NWP—and the quality of the jobs in which they are placed.

A host of other factors were not related to CEO participants' job retention, including most of the participants' background characteristics, such as age, race, gender, and marital status. Criminal justice status prior to CEO (e.g. boot camp, other parole) was also not associated with job retention, although a higher proportion of boot camp graduates were placed in jobs. Additionally, reading and math scores on the TABE did not correlate with retention for this group, but the extensive amounts of missing data suggest that this finding should be interpreted with caution. Individuals who received referrals to social services had the same retention rates as those who received no referrals. This is possibly explained by the fact that many of those individuals who do not receive social service referrals from CEO get referrals and services from other agencies. The age, gender, ethnicity, and job tenure of the job developers did not relate to retention, suggesting perhaps relatively consistent training among staff and the way they work with clients. Finally, since most

participants received life skills training and job development, the impact of these services on retention could not be reasonably estimated. Many of these variables, although not correlated with length of stay, could be related to CEO's ability to place participants, a subject of further study.

One offender characteristic that was correlated with job retention was attendance rates in NWP. Participants with good attendance rates in NWP are likely to have other characteristics associated with job retention, such as stronger work ethics, higher motivation, and better attitudes. It is not surprising then that the NWP attendance rate is related to length of stay on the job. The average rate for participants who reached the sixth month was 83 percent, compared to 80 for those who did not (a statistically significant difference, $p < 0.001$). The difference was larger between those who reached the sixth month in their jobs and those who left within the first 30 days (83 percent and 78 percent, respectively $p < 0.001$). While these attendance rates appear high, most employers expect perfect or near perfect attendance, so participants with less than perfect attendance in transitional employment are less likely to succeed in permanent employment. CEO's approach through transitional employment is to improve time management skills to the level that is expected when a participant is placed in a full time job.

Participants' length of stay in NWP was not related to whether they reached the sixth month, but it was negatively associated with their length of stay before that date. In other words, among those who left their jobs before the sixth month, people with longer stays in NWP (reflecting more time to job placement) had shorter lengths of stay on their job when they found it. Much like the offenders' attendance rates in NWP, their length of stay in NWP could reflect other characteristics, such as their motivation and attitudes.

Other than participation in NWP, job characteristics proved to be correlates of job retention. Having a job in the printing industry, holding the impact of a good wage constant, was positively associated with length of stay on the job. There are several possible explanations for this finding. First, all of the printing companies offered vacation, pension, sick leave and health benefits to their employees. Although CEO did not yet have benefits information on the other industries during the study period, it is unlikely that other industries will offer benefits across all companies. Second, it is possible that the printing jobs offer exceptionally comfortable working conditions, additional training, union membership, or other opportunities for advancement that encourage employees to perform well and remain with the company.

Holding a minimum wage job reduces one's likelihood of reaching the sixth month in the job, although the effect is modest and does not influence retention prior to the sixth month. It is important to note that the effect of the job is still important, even controlling for the influence of the offender attendance rate in NWP.

This finding is consistent with other studies that wage is an important factor in job retention, in some cases more important than the individual characteristics. Having a subsidized job was not related to six-month job retention. It was, however, associated with an individual's time on the job before the sixth month. What this reveals is that participants who work in subsidized jobs often last longer in those jobs because they have a required time commitment, sometimes lasting up to 12 weeks. But they do not remain on these jobs for up to six months.

The question of causality, that is, whether good workers get good jobs or good jobs produce good workers, can be partially addressed by examining the characteristics of the participants in the better jobs versus the others. The only significant difference between those who get minimum wage jobs and those who receive above minimum wage is gender: men are more likely to receive a better wage. And participants who get jobs in the printing industry tend to have shorter lengths of stay in NWP than those in other industries, 31 days versus 42 days, respectively. But even when these characteristics are controlled, the industry effect remains. It is still likely that these models exclude participant characteristics that correlate with both the jobs received and the length of stay. For example, one of the printing companies requires employees to have a General Education Diploma or high school degree. If participants' education predicts the type of jobs they receive and also how long they remain on the jobs, the relationship between the jobs and retention, when education is controlled, could be weak or nonexistent.

The year that CEO placed a participant in a job proves to be an important predictor of how long the participant remains on that job. Namely, those who were placed in the first half of 1998 perform more poorly than those who found jobs in 1997 and the second half of 1996, with quarter differences proving insignificant. This could reflect changes in the participants from year to year: more motivated, skilled participants could be entering the program in one year than others. However, there is no evidence to support this explanation. Over the three-year period, the participants changed in the following ways: more men, fewer shock parolees, and longer stays and higher attendance rates in transitional work.⁴ Since those variables that are related to job retention, namely attendance rate and length of stay in transitional work, are already controlled in the model, the effect of the year cannot be attributed to changes in the participant traits that have been measured. Moreover, the changes reflect an increase in participants' motivation (as measured by the attendance rate) if anything over the years.

⁴ These were the four variables that were significantly different. Percentage of men: 1996=88%, 1997=88%, 1998=93%; Percentage of shock parolees: 1996=75%, 1997=62%, 1998=60%; Average attendance rate in NWP: 1996=76%, 1997=81%, 1998=85%; Average length of stay in NWP: 1996=29 days, 1997=44 days, 1998=45 days.

Instead, a look at changes in the local labor market conditions offers some explanation of this finding. During these three years, the employment prospects for low-skill laborers declined. The number of entrants into the labor force consistently increased due to changes in welfare laws, which require recipients to find employment; increases in immigration; and a booming economy, which encourages individuals who would otherwise not seek jobs to enter the labor force. Although employment grew over these years, the growth was not large enough to accommodate the new labor force participants, leading to increases in unemployment (Office of the State Deputy Comptroller, 1998).⁵ Since the majority of participants left their jobs as a result of the employers' decisions, it is possible that over the years, ex-offender employees became more easily replaceable, thereby reducing employers' incentives to keep them.

CONCLUSION

The purpose of this study was to examine the factors related to job retention among a sample of participants in the CEO job development and transitional work program. The results offer several interesting conclusions. Most offender characteristics, including age, gender, and race did not correlate with employment after transitional work. Characteristics reflecting offenders' motivation and reliability, as well as the jobs that they received did influence retention. Offenders with high attendance rates and lower lengths of stay in transitional work remain on the job longer than others. A job in the printing industry, perhaps reflecting higher benefits or other positive characteristics, also correlate with longer lengths of stay. And having a higher than minimum wage improves retention, although the effect is small and inconsistent. Finally, there is some indication that the nature of the economy—that is the number of jobs, the quality of the jobs, and the number of other equally skilled people in the labor force—are associated with offenders' job retention.

There are also several factors not included in the study that might help to explain why participants stay or leave their jobs. For example, human capital theory suggests that education and prior work experience should be important predictors of job success. Although the influence of the TABE score was examined and not correlated with job retention, this may not be a valid measure of education. And although age was not correlated with job retention, age may not be a good proxy for work experience since CEO participants tend to experience high unemployment. It is also reasonable to expect that one's social support system, such as family members or community organizations, would have some relation to job retention. In addition, it

⁵ The unemployment rate for New York City increased from 7.8 percent in the fourth quarter of 1994 to 9.8 percent in the second quarter of 1997 (Federal Reserve Bank of New York, 1997).

is likely that the offer of fringe benefits—vacation, sick leave, and pension—is positively correlated with retention. The influence of the printing industry suggests this may be the case. Finally, while attendance in transitional work appears to be a measure of attitude, work ethic, and motivation, future research should attempt to uncover these latent variables. To supplement this data analysis, CEO conducted several focus groups with parole officers, employers, staff, and former participants that confirm these suggestions for further study.

The study also does not provide information on retention after six months. Future research on this population should extend the follow-up period and add the variables that are missing. In-depth interviews with offenders about their employment experiences and interviews with employers about the CEO participants will also provide some more qualitative answers to the questions posed.

Despite these limitations, the analysis provides some insight into this population's ability to achieve steady employment. The study rules out several factors that are unchangeable, such as ethnicity and age, and provides evidence that jobs, the economy, and employee motivation matter. To the extent that CEO participants can be extrapolated to the larger offender population, these findings contribute to our understanding of what does and does not lead to employment success.

References

- Evans Jr., R. "The Labor Market and Parole Success." *Journal of Human Resources* 3, (Spring, 1968.): 201-212.
- Federal Reserve Bank of New York. Current Issues in Economics and Finance. New York City's Unemployment Picture. December 1997. Vol 3, no. 14.
- Finn, P. *Chicago's Safer Foundation: A road back for ex-offenders*. U.S. Department of Justice. National Institute of Justice, 1998a.
- Finn, P. "Job Placement for Offenders in Relation to Recidivism." *Journal of Offender Rehabilitation* 28.5, (1998b): 89-106.
- Finn, Mary A. and Katherine G. Willoughby. "Employment Outcomes of Ex-offender Job Training Partnership Act (JTPA) Trainees." *Evaluation Review* 20, (1996): 67-83.
- Fishman, M., B.S. Barnow, K.N. Gardiner, B.J. Murphy, and S.A. Laud. *Job Retention and Advancement among Welfare Recipients: Challenges and Opportunities*. Research synthesis prepared by The Lewin Group, Johns Hopkins University, for the Administration for Children and Families, United States Department of Health and Human Services. January 1999.
- Holzer, H. and R. LaLonde. "Job Change and Job Stability among Less-Skilled Young Workers." *Institute for Research on Poverty*, Discussion paper no. 1191-99, May 1999. On-line.10 June 1999. <http://www.ssc.wisc.edu/irp/>
- Holzer, H. "Black Employment Problems: New Evidence, Old Questions." *Journal of Policy Analysis and Management* 13, (1994): 699-722.
- Kirschenman, J. and K.M. Neckerman. "'We'd Love to Hire Them, But...' The Meaning of Race for Employers." In *The Urban Underclass*, edited by C. Jencks and P. Peterson. Washington D.C.: The Brookings Institute, 1991.
- Knox, G. W. and W.A. Stacey. "Determinants of Employment Success Among Ex-offenders." *Offender Rehabilitation* 3, no. 2 (1978): 205-214.

- Lane, J., S. Jinping, and D. Stevens. "New Uses of Administrative Records In Welfare-To-Work Policy and Program Management Decisions: Employer Hiring and Retention of Former Welfare Recipients. (Working Paper) Northwestern University/University of Chicago Joint Center for Poverty Research, January, 1998.
- Markley, H., K. Flynn, and S. Bercaw-Dooen. "Offender skills training and employment success: An evaluation of outcomes." *Correction and Social Psychiatry and Journal of Behavioral Technology Therapy* 29, (1983): 1-11.
- Menon, R., C. Blakely, D. Charmichael, and L. Silver. *An Evaluation of Project RIO Outcomes: An Evaluative Report*. College Station, TX: Texas A&M University, Public Policy Resources Laboratory, 1992.
- Needels, Karen. "Go Directly to Jail and Do Not Collect? A Long-Term Study of Recidivism, Employment and Earnings Patterns Among Prison Releases." *Journal of Research on Crime and Delinquency* 33, (1996): 471-496.
- Office of the State Deputy Comptroller for the City of New York. *Report 10-99*. March 25, 1999. On-line. 25 June 1999.
<http://www.osc.state.ny.us/divisions/osdc/rpt1099.htm>
- Osterman, P. *Getting Started The Youth Labor Market*. Cambridge MA: The MIT Press, 1980.
- Piliavin, I. and R. Gartner. *Assumptions and Achievements of Manpower Programs for Offenders: Implications for Supported Work*. Report prepared by the Institute for Research on Poverty, Discussion paper #541-79. University of Wisconsin. 1979.
- Rangarajan, A., P. Schochet, and D. Chu. *Employment Experiences of Welfare Recipients who Find Jobs: Is Targeting Possible?* Prepared for Administration for Children and Families in collaboration with Mathematica Policy Research, Inc. Princeton, NJ. August 1998.
- Royalty, A. "Job-to-Job and Job-to-Nonemployment Turnover by Gender and Education Level." *Journal of Labor Economics* 16, (1998): 392-443.

APPENDIX A

Sample, Variables and Methods

Sample

A total of 1,580 participants found jobs during this time period. However, CEO did not have follow-up information for approximately 25 percent of the sample (398 people). These 398 individuals differed from their counterparts in one very important way. The great majority of them (n=395) were “self”-placements, meaning they found their own jobs rather than being sent on an interview by their job developers. Within the group that did have follow-up information, there were only 25 self-placements because most were in the group without follow-up information. To make valid comparisons, we removed all self-placements from the analysis, including the 25 who had follow-up information. Since self-placements probably benefited from the program, dropping these participants lends a conservative bias to the job retention of CEO participants. Since the goal of the analysis is not necessarily to estimate overall retention, but rather differences in retention among subgroups, this bias does not influence the original purpose. It is worth noting that the self-placements did not differ significantly from the other placement groups on any of the variables used in the analysis. Excluding the 423 self-placements yields a final sample of 1,157 cases.

Independent Variables

The independent variables in the model measure participant background characteristics, participation in NWP, program services, job developer characteristics, job characteristics, and the year of employment (See Table A1).

Table A1
Independent Variables

Category	Variables
Participant characteristics	age (17 to 65) marital status (1=married, 0=single) gender (1=female, 0=male) ethnicity (black, hispanic, white, other) borough of residence (manhattan, brooklyn, bronx, queens, staten island) status prior to CEO (shock, parole, probation, work release) TABE reading score (1 to 13) TABE math score (1 to 13)
Participant in NWP	attendance rate in NWP (20 to 100) number of days in NWP (1 to 323)
Program services	number of referrals to social services (0=none, 1= 1 or more)
Job developer characteristics	number of months worked for CEO (15 to 138) age (25 to 62) gender (1=female, 0=male) ethnicity (black, white, hispanic)
Job characteristics	minimum wage (1=yes, 0=no) industry (printing, manufacturing, human services, retail/wholesale, services, food services, construction, maintenance, warehouse) whether subsidized (1=yes, 0=no)
Year of employment	year (1996, 1997, 1998)

Analytic Methods

Job retention is examined in two stages. In the first stage, the relationship between all the aforementioned predictors and whether or not a participant achieved employment for 180 days in his or her first job (1=employed for 180 days; 0=not employed for 180 days) is estimated using a standard logistic regression in the following form:

$$\ln[p/(1-p)]_i = \alpha + \beta_1 X_i + \beta_2 W_i + \beta_3 Z_i$$

where p is the probability of reaching the sixth month; X is a set of participant related characteristics (e.g. gender and ethnicity); W is a set of program characteristics (e.g. attendance rate in NWP, number of visits to job developer); Z is a set of job-related characteristics (e.g. hourly wage, industry); and subscript i identifies the individuals in the analysis.

In the second stage of the analysis, an ordinary least squares (OLS) regression model is used to examine a continuous measure of the number of days employed in the first job, for those participants who were not employed for six months. The OLS models are similar to the logistic model provided above, with the same independent characteristics, only in these models, the outcome is continuous. Furthermore, in OLS regression models, an error term (ϵ_i) is included to account for the differences between the actual and predicted values of the target variable. The target variable for the OLS regression is transformed for a better fitting model of the following form.

$$\ln Y_i = \alpha + \beta_1 X_i + \beta_2 W_i + \beta_3 Z_i + \epsilon_i$$

The estimated impact for each of the sets of independent variables (X , W and Z) is represented by β_1 , β_2 and β_3 . The researcher's hypothesis is that each of the independent variables will have coefficients with a high magnitude, suggesting a strong influence on the outcome of interest. This hypothesis could also be confirmed using statistical tests of significance. Although the sample is not randomly drawn from the larger population of CEO participants, statistically significant betas would suggest that were it drawn in such a way, the differences identified would not have been due to chance. Thus, both the magnitude and the statistical significance are examined to determine which factors influence job retention in the two stages of the analysis.

APPENDIX B

Results of Multivariate Analyses

Model 1

The odds ratios and p-values of those variables that were significant predictors of six-month job retention are presented in Table B1. A predictor that is found to be significantly correlated with the outcome (retention at six months) is one that has a p-value of less than five percent, meaning that there is less than a five percent chance that the relationship observed is due to chance. Given each other factor in the model, having a high attendance rate in NWP, a job in the printing industry, and an above minimum wage job are associated with a better chance of reaching the sixth month. Additionally, net of these effects, participants who found jobs in 1998 have lower

probabilities of reaching the sixth month than those who found jobs in the latter half of 1996 and all of 1997.

Table B1
Logistic Regression of Retention to the Sixth Month

Independent Variable	Coefficient	Odds Ratio	p-value
Attendance rate in NWP	0.017	1.017	0.001
Job in printing	0.925	2.252	0.000
Minimum Wage	-0.383	0.682	0.031
Started job in 1998	-0.533	0.587	0.001
Intercept	-1.932		
Number of Individuals	1065		
Chi-square	42.07		

The odds-ratio in Table B1 is the estimated ratio of the odds of an event (reaching the sixth month) occurring in one group (e.g. people in printing jobs) to the odds of it occurring in another group (people in non-printing jobs), holding the effects of all other variables constant.¹ An odds-ratio higher than one indicates an increase in the odds, while an odds-ratio below one indicates a decrease. So, for example, controlling for the other variables in the model, getting a job in the printing industry more than doubles the chances of reaching the sixth month. Conversely, moving from an above minimum wage job to a minimum wage job is associated with reducing one's likelihood of reaching the sixth month by approximately 32 percent, in other words multiplying the odds by 0.68. Note that the odds-ratio on the attendance variable is small but significant (odds ratio=1.017). This is because the ratio refers to a one-percentage point change in attendance rate, a small incremental change. Changes of five and ten percentage points would yield greater improvements in the odds of reaching the sixth month on the job. For example, an increase of five percentage points in attendance is associated with an eight percent increase in the odds and an increase of ten percentage points in attendance is associated with an 18 percent increase in the odds.

Tests of the predictive power of the model indicate that the variables included do not sufficiently explain why individuals do or do not remain employed on the job for the full six months. One way to examine the predictive power of the model is to compare the percentage of observations that were correctly predicted by the model to the percentage one would achieve by assuming that everyone falls into the most

¹ Odds-ratios are derived from the coefficient by exponentiating. Conversely, the odds-ratio is the natural log of the coefficient.

frequent category. This model correctly classifies approximately 67 percent of the observations. If one assumed that everyone failed to reach the sixth month, the success rate would be 67 percent (778/1157). This comparison suggests that there are several important variables missing from the model that might help better explain retention at the sixth-month.

Model 2

To determine the factors that correlate with length of employment prior to the 180th day, a series of linear regression models were estimated, with the number of days transformed into natural log for a better fitting model. Weighted least squares was also tested to correct for non-constant variance in the independent variables but it did not improve the model. Therefore, Table A2 contains the significant predictors from the OLS model.

Table B2
OLS regression for number of days employed in first job, for those who did not reach the sixth month

Independent Variable	Coefficient	p-value
Attendance rate in NWP	0.012	0.000
Total number of days in NWP	-0.003	0.001
Job in printing	0.822	0.001
Subsidized job	0.762	0.000
Started job in 1996	0.296	0.012
Intercept	2.214	
Number of individuals	703	
R-square	9%	
Adjusted R-square	8%	

The coefficient provided in the table can be transformed by exponentiating to determine the estimated expected change in the outcome (number of days employed) that is associated with a one-unit change in the predicting variable (e.g. subsidized job). A negative coefficient indicates a decrease in the number of days employed, while a positive coefficient suggests an increase. The coefficient for subsidized job given all other variables suggests that the estimated length of employment is 2.14 ($e^{0.762}$) times higher for those in subsidized jobs than for those in non-subsidized jobs.

Again, a measure of the predictive power of this analysis, that is the degree to which these set of characteristics explain or predict one's length of stay on the job

before the six-month cutoff, suggests that there are several other important variables missing from the model. Specifically, the adjusted R-square suggests that 91 to 92 percent of the variation in the dependent variable is unexplained by the factors that are included in this model.