Impact of a Work Release Program on Earnings of Ex-Convicts*

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A promising approach for the rehabilitation of felons is to increase their legal earnings potential. Work release programs include this as one of their goals. There have been, regrettably, almost no empirical studies investigating the success or failure of attempts to rehabilitate felons in our correctional systems. This lack of research is pointed out by Robert Martinussen [7] in a comprehensive survey of research on the rehabilitation of offenders and by Richard Brautigam [2] in a recent paper on work release programs. Our paper constitutes empirical reports of the impact on earnings of participation in the work release program of the Maryland Correctional System. Some of the determinants of earnings of felons after termination of incarceration are examined using multivariate techniques.

In recent years a number of economists have developed models explaining participation in legitimate earnings as a rational choice. The nature of the relationship between crime and punishment is discussed by Gary Becker [1].

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2The work release program is defined as release of a felon during the day to work in a conventional place of employment. The felon must return to the correctional facility at the end of each work day. Most participants are released for the program in the year prior to the termination of their incarceration.

3See, for example, S. Stigler [8]. A model using the framework of the economics theory of choice under uncertainty, which takes into account costs and gains (both legal and illegal activities) is developed by Isaac Erlich [3]. This model suggests that the opportunities available in both legal and illegal activities are important in determining the choice of participation and that illegitimate activity is in response to its more attractive incentives [3, p. 359]. In this context, retribution can also be understood as a best choice among available alternatives. The already low legitimate earnings potential for most convicts is extenuated by job discrimination against those with a criminal record and the effect of imprisonment on skills and experience. If, after imprisonment, nothing has happened to reduce expected costs or increase expected gains of legitimate activity, it should not be surprising if one returns to crime. An assessment of the impact of participation in a work release program on legal earnings may be made by comparing annual earnings of participants with a similar group of nonparticipants. Legal annual earnings for an individual can be explained by the wage rate and the number of hours worked. The wage rate basically depends on productivity, while the number of hours worked depends on finding and holding a job. Productivity, in turn, is a function of several factors such as age, experience, skill, education and motivation provided by marriage. Securing a job is influenced by race, prior incarcerations and length of sentence, while job tenure depends on productivity as well as the attractiveness of the wage rate to the incumbent. The interaction of these variables may determine whether the ex-convict pursues legal activities or is unemployed and/or returns to crime. A formal model of the determination of earnings is presented in the appendix.

Method

Research Setting and Subjects

The research was carried out in the Maryland Correctional System which has a work release program. We selected participants from the minimum security unit. The System has three basic subdivisions: maximum, medium, and minimum security facilities; a multi-level selection process takes place before assignment to minimum security. This process may differ according to type of crime, race, drug or alcohol use, marital status, social class, employment record and other factors. Prisoners assigned to the medium and maximum security units are categorically excluded from this study.

The correctional system's budget and systematic evaluation of all prisoners in the minimum security unit for participation in the work release program. The number in the program represented only a small proportion of the total prison population assigned to the minimum security unit. Virtually all prisoners in the minimum security unit were considered eligible for the program.

Prisoners who terminated their incarceration during a six month period in 1967 formed the data base. Two groups were selected. The first group consisted of those who had participated in the Maryland work release program prior to discharge from the correctional system. A similar group of nonparticipants was selected randomly from those discharged during the same period. The 1967 time period was chosen because the work release program that existed earlier was substantially different. All participants were males drawn from the population of minimum security inmates.

Description of the Variables

Earnings after the termination of incarceration for the years 1968 through 1970, as reported to the Social Security Administration, were used as the dependent variable. Accurate information on earnings in group data or on record was available for research purposes from the Social Security Administration. Earnings data were drawn from their records by Social Security number or by full name, date and place of birth and a parent's name. Twenty-eight of the original subjects were eliminated from the study because of incorrect numbers and/or inaccurate personal data. Those eliminated from the study were distributed evenly between work release and non-work release subjects.

Data for the independent variables were drawn from the files of the Maryland Correctional System. In other studies of this nature, the variables included are limited to those provided by the data source. In general, each prisoner's file consisted of a case worker's summary prepared at the start of incarceration which included personal data and statistics, a

4Earnings data used in this paper were derived from statistics furnished by the Social Security Administration. The authors did not, as any time have access to any information relating to specific individuals or reporting units. The authors assume full responsibility for the analysis and interpretation of the data.

Earnings to Social Security do not include all earnings. By 1966, however, they included the most forms of regular, long-term employment. We are assuming that any legitimate earnings that are unreported for randomly between the work release and non-work release groups.
A computer-assisted interaction directed analysis (AID) was employed to identify the interactions between variables in a group data format and to find the most appropriate grouping [4].

Exclusion of this variable from the final model is supported by E. Jacques [7, pp. 293-299], who found that individuals with low skill levels, education and general capacity have a relatively flat curve of progression in earnings over age. Our sample has a mean age of 34.5, with a range between 21 and 45 for 94 percent of the sample. The contention that there would be a relatively flat curve of progression in earnings over age is also supported by Hathor [4].

Marital status at the time of discharge from the system would have been preferable, but the correctional system did not collect these data, nor did they record the number of dependents, changes in marital status during the years under study.

The last grade completed by a prisoner was not contributed by any systematic testing program to determine literacy and intelligence, which would have been desirable variables. The mean grade completed was 8.25, and 95 percent had not gone beyond the ninth grade. Poor school system has needed to past problem children from grade to grade, while they remain functionally illiterate. This may account for the poor performance of the education variables in explaining earnings.

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Models for Earnings Determination

Multiple regression models are used to examine the variables related to earnings of the 236 felons in the sample, and to rate the importance of the work release variable [8] (see the appendix for a discussion of the earnings determination models). Six earnings regressions are presented. All models include five independent variables: weeks in work release program, prior incarcerations, length of sentence, race and previous income. The first model examines these five variables and includes a sixth, marital status. A.D.I. analysis, which assists in identifying interactions between variables where theoretical reasons exist for suspecting it, suggests that there is significant interaction between the work release and marital status variables. A.D.I. operates as a series of sequential steps where the data are split into groups producing the greatest reduction in the error sum of squares [8]. The sample is therefore divided into married and unmarried subjects and Models II and III examine the earnings of the groups separately. Models IV through VIII split all three years included in the study, while Models IV, V and VI consider the problem of a temporary effect, and each year is examined separately.

A major concern in this study is the possibility of a bias in the selection process for participation in the work release program toward selecting those who had higher earnings prior to incarceration. The use of multiple regression does not eliminate entirely this potential bias, although the addition of other variables may help reduce the bias [4]. To determine the extent of this bias we divided the two groups, work release and non-work release participants, on the basis of high (over $6,000 per year) and low earnings prior to incarceration. Using a contingency table to test for independence of the two characteristics, we are unable to demonstrate that selection for the work release program was dependent on previous high earnings (see Table 8).

As a further check on the possibility of selection bias we tested all independent variables for differences between means of the work release participants and the non-work release sample. There are no / values greater than 1.75 (see Table 2). Moreover, simple correlations between the work release variable and the other independent variables in the study are small, which suggests that bias is minimal (see Table 3).

Results

Average income in the 1968-70 period is used as the dependent variable in the first three models. The number of weeks in work release has a regression coefficient of $13 per annum for each work spent in the program when all

<table>
<thead>
<tr>
<th>Earnings</th>
<th>Under $6,000</th>
<th>Over $6,000</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Release</td>
<td>59 (101.4%</td>
<td>54 (31.4%)</td>
<td>133</td>
</tr>
<tr>
<td>Non-Work Release</td>
<td>61 (78.6%)</td>
<td>22 (24.4%)</td>
<td>103</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>76</td>
<td>296</td>
</tr>
</tbody>
</table>

$z = \frac{3585.2 + 2700.3}{271}$

The expected numbers are shown in parentheses.
The married men in the sample, however, have higher legal earnings whether or not they participated in the work release program. The Erikh model suggests a reason for the difference in results between the married and the unmarried groups. Marriage may provide an incentive to choose legal activities, while participation in the work release program fulfills a similar role for the unmarried group. Since the married already have an incentive, they may fail to gain further advantage from work release participation.

The separate regression equations for estimating income of the unmarried group for each year since leaving the correctional system reveal a gradual increase in the value of the coefficients for weeks in work release. The coefficient for 1968 is $38 per annum for each week in work release with a t value of 2.02. In 1969 the coefficient is $26 with a t value of 2.41 and in 1970 the coefficient is $28 with a t value of 2.40. These results suggest that the effect of the work release program lasts beyond the period during which the participant has the advantage of holding a job upon termination of incarceration. It should also be noted that data collection began with 1968, although all subjects in the sample terminated their incarceration no later than mid-1967. The results would seem to suggest that longer sentences are associated with higher incomes. It may be that felons with short sentences commit economic crimes, perhaps because they lack good work skills, while felons with longer sentences committed crimes against persons but do not necessarily lack good work skills.

Race is not a significant variable in our study. A possible explanation is that once a person has a criminal record he faces discrimination on this basis whether he is white or black. The subjects in our study may effect-
Several other variables are valuable predictors of income. Highest previous earnings is a strong predictor of future earnings for the ex-convicts. Marital status is also a good predictor of future income.

Conclusion

There are several suggestions that we would make for other studies. First, a larger sample should be drawn, using a stratified sample approach to ensure that enough subjects are included in all categories of interest. Second, some differentiation should be made for the type of work release job that was held by the participant. Jobs involving training and/or promotional possibilities may have a greater effect on earnings. Third, we suggest that the work release program should be studied in combination with other programs within the correctional facility. It may be that earnings are maximized when work release participation is combined with vocational training, remedial education, psychological counseling or some other program. Our findings strongly suggest that further study is needed.

References


Appendix

The model for determining the earnings of an ex-convict during a given time period may be described by the simultaneous equation set (1)-(7) below. The reduced form equation (8) in this study.

\[ \begin{align*}
EARN + WAGE = & \gamma_1 (MARKET, SKILL, EDUC, PERS, WKRIST) + \epsilon_1 \\
HOURS = & \gamma_2 (TOTHIRS, UNEMPL, INCARC + DRUG + ILLEG + HEALTH + LEISR) + \epsilon_2 \\
SKILL = & \gamma_3 (SKILL; WKRREL, OTIPGM) + \epsilon_3 \\
WKRIST = & \gamma_4 (WKRIST); WKRREL, OTIPGM + \epsilon_4 \\
UNEMPL = & \gamma_5 (PERS, CRMREC, WKRREL, CRMREC, + \epsilon_5 \\
CRMREC = & \gamma_6 (CRMREC) + \epsilon_6 \\
EARN = & \gamma_7 (EARN + 1), RACE, MR STAT, WKRREL, CRMREC + \epsilon_7 \\
\end{align*} \]

Earnings (EARN) are equal to the average wage during the period (WAGE) times the total hours worked (HOURS). MARKET represents the set of wages and working conditions known to the individual. SKILL is a measure of skills obtained by the individual through vocational education and on-the-job training. EDUC measures formal academic education. PERS is a vector of characteristics such as age, marital status (MRSTAT), sex, and race. WKRIST is another vector which includes characteristics such as tenure on previous jobs, type of previous jobs, quality of references, relevant experience and recent job performance. HOURS are described as the total hours in the given time period (TOTHIRS) minus the time spent for other reasons (unemployment, incarceration, drug and alcohol abuse, illegitimate activities, health reasons and leisure). WKRREL measures the number of weeks spent in a work release program. OTIPGM is a vector showing other vocational and educational programs. CRMREC is the number of previous incarcerations and CRSENT the length of the current incarceration. A negative one (-1) added to a variable means the value of that variable in a previous period. \( \epsilon_i \) through \( \epsilon_7 \) represent error terms in each equation.

The reduced form equation (8) contains only variables that we believe would change or whose effect would have changed since our measure of previous income. Previous income, of course, is also a function of the system of simultaneous equations (1) through (7) using the values of the previous period. It would be inappropriate to repeat variables such as age, sex, education, skill, family background and so forth unless there has been some change, since they are reflected in the previous income variable (EARN-1). Therefore the reduced form equation (8) is used for this statistical estimation. All variables included can be considered to be determined in a block recursive manner.