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Economic Status and Crime: Implications for Offender Rehabilitation

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ECONOMIC STATUS AND CRIME: IMPLICATIONS FOR OFFENDER REHABILITATION

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I. INTRODUCTION

This study will evaluate the supposition that certain offender rehabilitation programs reduce recidivistic crime. The relevant programs are those that enhance an offender's economic status. Programs of this nature are highly diverse. Some are designed to effect an immediate improvement in economic status; job placement and short-term income supplements are examples. Others, such as those involving general education or job training, are designed with longer range effects in mind. Although these programs are highly diverse and have been applied to offenders at all stages within the criminal justice process from pretrial to post-release, they possess one common characteristic: they attempt to enhance an offender's economic well-being. While these programs may be justified for a variety of reasons, a major argument advanced by their proponents has always been that such programs reduce the level of future criminal activity.

Our objective is to examine the theoretical and empirical foundations for the hypothesis that a relationship exists between economic status and recidivism. This article's thesis is that while conventional rehabilitation programs aimed at enhancing an offender's economic status have not often been successful, such programs have considerable

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promise when they are carefully designed and targeted at a group of offenders who choose crime as a rational alternative to work.

II. The Formal Theory Relating Economic Status to Rehabilitation

The existence of a relation between economic status and rehabilitation can be deduced from neoclassical principles and assumptions. An individual is presumed free to choose among many options, including legal and illegal activities. The particular combination of legal and illegal activities chosen also presumably maximizes the individual's well-being. To use the classic phrase from Sutherland and Cressey, the theory is "individualistic, intellectualistic, and voluntaristic."[1]

The neoclassical theory is, of course, quite old. Becarria[2] is usually credited with providing its first formal development. In the last decade, the theory has been restated in a logically rigorous, mathematical format. Becker initiated the new development.[3] Ehrlich[4] and Sjoquist[5] provided significant refinements. The model which emerges from these three (the BES model) provides a formal connection between economic status and the crime rate.

In the BES model, well-being is functionally related to wealth. Wealth is a composite index of one's assets, present income, and the discounted value of future income, including in income both pecuniary and non-pecuniary returns. The model assumes that individual well-being is maximized by maximizing wealth. Wealth is maximized by an appropriate allocation of one's time and other resources to legitimate and illegitimate activities. Included in the model (theory) are several additional assumptions, the more important of which are: (1) the total amount of work time devoted to legitimate and illegitimate income producing activities is a constant; that is, an hour devoted to one activity must be at the expense of the other; (2) the two activities are perfect substitutes in that no explicit account is taken of possible differences in the irksomeness, ethical value, etc. of legitimate and illegitimate work; (3) wealth increases with an increase in either activity; (4) wealth obtained through legitimate activity occurs with certainty, whereas wealth obtained from illegal activity is conditioned on the offender's success or

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[1] E. Sutherland & D. Cressey, Criminology 56 (10th ed. 1978).

[2] C. Becarria, An Essay on Crimes and Punishments (1767).

[3] Becker, *Crime and Punishment: An Economic Approach*, 76 J. of Political Econ. 169 (1968).

[4] Ehrlich, *Participation in Illegitimate Activities: A Theoretical and Empirical Investigation*, 81 J. Political Econ. 521 (1973).

[5] Sjoquist, *Property Crime and Economic Behavior: Some Empirical Results*, 63 Am. Econ. Rev. 439 (1973).

failure in avoiding detection and apprehension; (5) wealth obtained through one activity is not affected by one's success or failure in the other; (6) the negative return (sanction) associated with failure in criminal activity can be reduced to a monetary equivalent; and (7) the objective values relating to sanctions and to returns are monotonically related to the potential offender's subjective assessment of these values.[6]

Given these assumptions, and the traditional assumption that individuals try to avoid uncertainty, and seek to avoid it most when they are poor, it follows that an increase in the return to legitimate activity will reduce the amount of time devoted to criminal activity. Hence, rehabilitative programs, such as job training and income or wage subsidies, that increase legitimate income should reduce recidivistic crime. The model also establishes two corollary results: (1) an increase in the rate of return to criminal activity will induce an increase in crime; and (2) an increase in the probability or severity of legal sanctions will reduce crime rates.

The BES formulation of the theory has been widely applied, most often to the property crime component of the Index offenses, but also to income tax evasion,[7] to female crime rates,[8] and even to homicide.[9] The growing interest in the BES model is easily explained. Its esoteric language and its uncommonly rigorous logic are seductive. The statements relating to economic status and to sanctions which are deduced from the theory are intuitively plausible, conform to popular opinion, and are, therefore, powerfully persuasive. Moreover, the theory has the added attraction of focusing on variables which are, or at least appear to be, capable of manipulation through deliberate public policy.

Despite its charm and the plausibility of its results, the BES model has recently been subjected to critical reexamination. Analysis indicates that the conclusions to be derived from the BES model change substantially when some of the underlying assumptions of the BES model are altered. Block and Heineke[10] rejected the assumption that the "work" involved in legitimate and criminal activity is devoid of moral/ethical content. They adopted the more realistic assumption that legitimate and illegitimate work may have different values, and indeed, that there may be no monetary equivalent for some kinds of work. Block and

6 Heineke, *Economic Models of Criminal Behavior: An Overview*, in ECONOMIC MODELS OF CRIMINAL BEHAVIOR 1 (J. Heineke ed. 1978).

7 Allingham & Sandmo, *Income Tax Evasion: A Theoretical Analysis*, 1 J. PUB. ECON. 323 (1972).

8 Bartel, *Women in Crime: An Economic Analysis*, 17 ECON. INQ. 29 (1979).

9 Ehrlich, *The Deterrent Effect of Capital Punishment: A Question of Life and Death*, 65 AM. ECON. REV. 397 (1975).

10 Block & Heineke, *A Labor Theoretic Analysis of the Criminal Choice*, 65 AM. ECON. REV. 314 (1975).

Lind[11] replaced the assumption that one's wealth can be reduced to zero through the imposition of legal sanctions with the more realistic assumption that sanctions have a strict upper limit. On constitutional grounds, the state may not reduce one's income below the subsistence level.[12] Heineke[13] rejected the assumption that total work time is a constant. In his model, leisure becomes an option; and, accordingly, one chooses an optimum combination of legitimate and criminal activity *and* leisure. Heineke also rejected the assumption that all sanctions can be expressed in monetary equivalents.

The more general theory emerging from the work of Heineke, Block, and Lind (the HBL model) carries with it an extremely important result. Adopting the more plausible axiomatic base of the HBL model precludes the categorical statement that an increase in legitimate income, through welfare, job training, work release, etc., reduces the likelihood that an individual will commit an offense. Moreover, the effect of changes in the rate of return to illegitimate activity, and of changes in the probability and severity of punishment, becomes ambiguous. Thus, the HBL model offers no clear-cut policy prescription: ". . . in the area of law enforcement . . . policy recommendations do not follow from theory but rather require empirical determination of relative magnitudes."[14] Theory becomes essentially agnostic.

III.   THE EMPIRICAL EVIDENCE RELATING ECONOMIC STATUS TO REHABILITATION

Since deductive proof for the existence of a relationship between crime and economic status is not possible, its existence depends upon a particular configuration of the model's parametric values and is, therefore, environment-specific. Thus, an evaluation of the efficacy of economic status instruments must be based upon empirical analysis. If direct measures of the model's parameters existed, the task would be quite simple. Because such measures do not exist, this evaluation shall take the form of an empirical test for the existence of a relation between economic status and crime. Accordingly, we propose to analyze four distinct groups of empirical studies for evidence showing the existence of the relation: (1) studies using aggregate data examining the relationship

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[11] Block & Lind, *Crime and Punishment Reconsidered*, 4 J. LEGAL STUD. 241, 245-247 (1975).

[12] The literature dealing with the minimal rights of convicted persons to food, clothing, housing, and medical care is extensive. *See, e.g.*, S. KRANTZ, CASES AND MATERIALS ON THE LAW OF CORRECTIONS AND PRISONERS' RIGHTS (1973); S. RUBIN, THE LAW OF CRIMINAL CORRECTIONS (2d ed. 1973); Note, *James v. Wallace: Minimum Constitutional Standards for Living Conditions in Prison*, 29 BAYLOR L. REV. 180 (1977).

[13] Heineke, *supra* note 6.

[14] Block & Heineke, *supra* note 10, at 323.

between unemployment and crime, (2) studies using aggregate data examining the relationship between income and crime, (3) studies using individual data exploring the relationship between economic viability and crime, and (4) studies evaluating the effectiveness of programs designed to improve economic viability.

A. INDIRECT EVIDENCE BASED ON AGGREGATIVE DATA

If economic status affects the decision to engage in criminal activity, crime rates should logically be higher among persons who are unemployed and among persons with lower incomes. Both hypotheses have been subjected to detailed examination.[15] The results below derive from those studies that have used a more sophisticated statistical apparatus for testing the validity of these hypotheses.

1. The Relationship Between Unemployment and Crime

In the last two decades, an extensive literature bearing upon the relationship between unemployment and crime has developed. Gillespie[16] has examined the pre-1975 literature. He reports three studies which assert the existence of a statistically significant relationship between the unemployment rate and crime, but seven studies in which no significant relation could be found.[17] Indeed, almost all of the latter studies show that, for some model specification, the coefficient of the unemployment variable is negative, though never statistically significant.

Evidence since Gillespie's survey provides no stronger support for the proposition that "unemployment causes crime." The longitudinal study by Land and Felson[18] shows that the unemployment rate has no appreciable effect on the crime rate, while Brenner[19] argues that it does.

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[15] Braithwaite, *Unemployment and Crime: An Interpretation of the International Evidence, in* PROCEEDINGS OF THE INSTITUTE OF CRIMINOLOGY (Sydney Univ. Law School, ser. 36 at 54 (1978)); R. GILLESPIE, ECONOMIC FACTORS IN CRIME AND DELINQUENCY: A CRITICAL REVIEW OF THE EMPIRICAL EVIDENCE (Dep't of Justice, Nat'l Inst. of Law Enforcement and Crim. Just. 1975); *Hearings on the Social Costs of Unemployment Before the Joint Economic Committee*, 96th Cong., 1st Sess. (1979) (Witte, *Unemployment and Crime: Insights and Research on Individuals*); [hereinafter cited as *Hearings*]; Orsagh, *Unemployment and Crime: An Objection to Professor Brenner's View*, 71 J. CRIM. L. & C. 181 (1980); LONG & WITTE, CURRENT ECONOMIC TRENDS: IMPLICATIONS FOR CRIME AND CRIMINAL JUSTICE, CRIME AND CRIMINAL JUSTICE IN A DECLINING ECONOMY (1981) (forthcoming).

[16] R. GILLESPIE, *supra* note 15.

[17] *Id.* at 55.

[18] Land & Felson, *A General Framework for Building Dynamic Macro Social Indicator Models: Including An Analysis of Changes in Crime Rates and Police Expenditures*, 82 AM. J. SOC. 565 (1976).

[19] Brenner, *Estimating the Social Costs of National Economic Policy: Implications for Mental and Physical Health, and Criminal Agression*, in 1 ACHIEVING THE GOALS OF THE EMPLOYMENT ACT OF 1946—30TH ANNIVERSARY REVIEW, Joint Economic Committee, 94th Cong., 2d Sess. (1976) (paper no. 5).

However, the Center for Econometric Studies[20] has shown that Brenner's results are extremely sensitive to changes in model specification. Hence, Brenner's results, too, should be viewed as inconclusive. Using a simultaneous equations model and data for 1950-1974, Fox also finds no relationship.[21] Orsagh, using a quite different model and the same time frame, finds a positive, non-significant relationship and observes that, at best, the magnitude of unemployment's impact on crime is quite small.[22] Finally, Leveson's data for approximately the same time period shows a statistically significant relation between crime rates and youth unemployment, but no relation to adult unemployment.[23]

The post-1975 cross-sectional evidence is equally ambiguous. Bartel reports positive coefficients for the female unemployment rate for most, but not all, specifications of her model.[24] However, none of the coefficients are statistically significant. The Center for Econometric Studies finds a relation between crime rates and long-term unemployment, but no relation to short-term unemployment.[25] Forst[26] and Wadycki and Balkin[27] find no relation for Index offenses; Vandaele reports no relation for automobile theft.[28]

2. The Relationship Between Income and Crime

According to the BES model, the propensity for crime should vary inversely with legitimate income prospects and directly with illegitimate income opportunities. Because direct empirical measures of these income variables do not exist, an acceptable test of these two hypotheses is not possible. Although a large number of studies purport to test these hypotheses, their evidence defies definitive interpretation because of the uncertain correspondence between the empirical measure actually used and the measure that theory requires. Consider, for example, the am-

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[20] CENTER FOR ECONOMETRIC STUDIES OF THE JUSTICE SYSTEM, HOOVER INSTITUTION, A REVIEW OF SOME OF THE RESULTS IN ESTIMATING THE SOCIAL COST OF NATIONAL ECONOMIC POLICY: IMPLICATIONS FOR MENTAL AND PHYSICAL HEALTH, AND CRIMINAL AGGRESSION (1979) (Mimeo.).

[21] J. FOX, FORECASTING CRIME DATA 29 (1978).

[22] Orsagh, *A Criminometric Model of the Criminal Justice System*, in MODELS IN QUANTITATIVE CRIMINOLOGY (J. Fox ed. 1981).

[23] I. LEVESON, THE GROWTH OF CRIME (1976).

[24] Bartel, *supra* note 8.

[25] CENTER FOR ECONOMETRIC STUDIES OF THE JUSTICE SYSTEM, HOOVER INSTITUTION, PROPERTY CRIME AND THE RETURNS TO LEGITIMATE AND ILLEGITIMATE ACTIVITIES (Technical Report CERDCR-2-78).

[26] Forst, *Participation in Illegitimate Activities: Further Empirical Findings*, 2 POL'Y ANALYSIS 477 (1976).

[27] Wadycki & Balkin, *Participation in Illegitimate Activities: Forst's Model Revisited*, 8 J. BEHAVIORAL ECON. 151 (1979).

[28] Vandaele, *An Econometric Model of Auto Theft in the United States*, in ECONOMIC MODELS OF CRIMINAL BEHAVIOR 303 (J. Heineke ed. 1978).

biguous treatment accorded to one common measure, per capita income. Grieson,[29] Beasley and Antunes,[30] and Swimmer[31] use per capita income as an index of legitimate income. Fleisher,[32] Weicher,[33] and Sjoquist,[34] using measures analogous to per capita income, assign the same interpretation. Vandaele interprets per capita income as an index of the demand for illegal goods.[35] But other, equally respectable authors—Reynolds, Ehrlich, McPheters and Stronge, Forst, and Bartel—use the same measure as an index of *illegitimate* income.[36] Of course, control variables are used in the above studies in an effort to force the measure to reflect either legitimate or illegitimate income, as the particular study requires; but, unfortunately, the success of this endeavor cannot be scientifically demonstrated. One's interpretation of the measure becomes largely a matter of faith.

Interpreting the empirical research relating to legitimate income is further complicated, and comparative analysis is rendered virtually meaningless, because of the many statistical proxies employed in the literature for this variable. Beasley and Antunes, Swimmer, and Vandaele use per capita income;[37] Fleisher and Weicher, the mean family income of the second lowest quartile;[38] Sjoquist, the wages of manufacturing employees;[39] Morris and Tweeten and Greenwood and Wadycki the percentage of families living in poverty;[40] Reynolds, the annual income of laborers;[41] Ehrlich and Bartel, the percentage of families earning less than one-half of median income;[42] and Forst, the percentage of income recipients having an income between the median and

[29] R. Grieson, The Determinants of Juvenile Arrests (Working Paper No. 87, Department of Economics, Massachusetts Institute of Technology, 1972).

[30] Beasley & Antunes, *The Etiology of Urban Crime: An Ecological Analysis*, 11 Criminology 439 (1974).

[31] Swimmer, *Measurement of the Effectiveness of Urban Law Enforcement—A Simultaneous Approach*, 40 S. Econ. J. 618 (1974).

[32] Fleisher, *The Effect of Income on Delinquency*, 55 Am. Econ. Rev. 118 (1966).

[33] Weicher, *The Effect of Income on Delinquency: Comment*, 60 Am. Econ. Rev. 249 (1970).

[34] Sjoquist, *supra* note 5.

[35] Vandaele, *supra* note 28.

[36] *See* Ehrlich, *supra* notes 4 and 9; Forst, *supra* note 26; Forst, *The Deterrent Effect of Capital Punishment: A Cross-State Analysis of the 1960's*, 61 Minn. L. Rev. 743 (1977) [hereinafter cited as *The Deterrent Effect*]; McPheters & Stronge, *Law Enforcement Expenditures and Urban Crime*, 27 Nat'l Tax J. 633 (1974); A. Bartel, *supra* note 8; M.O. Reynolds, Crimes for Profit: Economics of Theft (1971) (unpublished Ph.D. dissertation, University of Wisconsin).

[37] Beasley & Antunes, *supra* note 30; Swimmer, *supra* note 31; Vandaele, *supra* note 28.

[38] Fleisher, *supra* note 32 at 123; Weicher, *supra* note 33 at 250, 251.

[39] Sjoquist, *supra* note 5 at 439.

[40] Greenwood & Wadycki, *Crime Rates and Public Expenditures for Police Protection: Their Interaction*, 31 Rev. Soc. Econ. 138 (1973); Morris & Tweeten, *The Costs of Controlling Crime: A Study in Economies of City Life*, 5 Annals Regional Sci. 33 (1971).

[41] M.O. Reynolds, *supra* note 36.

[42] Ehrlich, *supra* note 4, at 539; Bartel, *supra* note 8.

poverty income levels.[43]

Given conceptual and interpretive problems such as these, and other difficulties enumerated below, it is not surprising that the surveys of this literature[44] provide exceedingly thin support for an income-crime relation. The subsequent work of Bartel, Forst, Vandaele, and others provides no stronger support.[45]

The inescapable conclusion to be reached from this survey is that the BES model's hypothesis about the relationship between unemployment and income is not confirmed by tests performed on aggregative data sets. One must conclude either that the theory is incorrect, or that the empirical tests are invalid.[46] There are substantial grounds for asserting the inadequacy of the empirical tests, some of which have been indicated above. Expansion of the litany of deficiencies is relatively easy.[47] For example, the theory has a micro-foundation, whereas the evidence is based on aggregative data. The theory applies to a population of individual potential offenders, whereas the data often relate to a much more general population. The theory assumes subjective estimates of income and of sanctions, while the data adopt objective values. The need to introduce control variables into the empirical analysis raises particularly knotty problems. In regression analysis, the common methodology of the selection of variables to include and to exclude, is often arbitrary, yet the decision often affects statistical outcome materially. Transforming a theoretical model into a correctly specified, correctly estimated empirical model raises additional problems which often find an *ad hoc*, essentially arbitrary resolution. The important fact is that the results of empirical research on aggregative data are to a very considerable extent the artifacts of discretionary research effort.[48] Hence, it is not surprising that empiricists have neither discovered a consistent, reasonably precise relationship between economic status and crime, nor reached a consensus that such a relation does not exist.

B.   EVIDENCE BASED ON INDIVIDUAL DATA

Although the crime causation theory which suggests a relationship

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[43] Forst, *The Deterrent Effect, supra* note 36.

[44] R. GILLESPIE, *supra* note 15.

[45] Bartel, *supra* note 8; Forst, *supra* notes 26 and 36.

[46] A third logical possibility exists: both the theory and the tests may be valid, but the tests may not have been powerful enough, given the inherent variation in the data, to cause the consistent rejection of a false null hypothesis. Even if the alternative hypothesis were true, the fact that the null hypothesis is so infrequently rejected implies that the magnitude of the effect must be quite small, not differing appreciably from zero.

[47] Orsagh, *Empirical Criminology: Interpreting Results Derived From Aggregate Data*, 16 J. RESEARCH CRIME & DELINQUENCY 294, 295-306 (1979).

[48] *Id.* at 294.

between economic viability and crime is a model of individual behavior, few studies have used individual data to directly explore the nature of this relationship. Although early studies of the relationship between unemployment and crime used very simple analytic techniques,[49] these tests indicate that better labor market performance was associated with parole success and lower levels of criminal activity.[50] More recently, empiricists used multivariate (often simultaneous equations) statistical techniques. The work of Cook provides an early example.[51] Cook examines the relationship between parole success and job satisfication as measured by job stability. Using profit analysis, Cook controls for a number of other factors believed to affect parole success such as prior record, type of offense, marital status. Cook found parole success and arrests significantly related to job stability. By using both single equation[52] and simultaneous equation Tobit techniques,[53] Witte, Sickles, and Schmidt explored the effect of wages and unemployment on length of sentence and conviction rates. This work provides consistent but weak support for the expected inverse relationship between higher wages and crime, but weak, if any, support for the relationship between unemployment and crime.

Taken together, the work using individual data surveyed above and the work exploring the nature of labor markets for ex-offenders[54] indicate that although offenders have little trouble finding jobs, those jobs they find are rather unattractive. The unpleasant nature of these jobs leads to high turnover rates. Offenders typically remain voluntarily unemployed for varying periods between jobs. Cook suggests that offenders will only "drop out" of crime if they are able to find relatively pleasant jobs with relatively good wages and advancement opportunities.[55] Unfortunately our knowledge of the labor market for these individuals[56] indicates that ex-offenders are unlikely to find such jobs

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[49] *See, e.g.*, G. POWNALL, EMPLOYMENT PROBLEMS OF RELEASED OFFENDERS (report to the Manpower Administration, U.S. Dep't of Labor 1969); D. GLASER, THE EFFECTIVENESS OF A PRISON AND PAROLE SYSTEM (1964); Evans, *The Labor Market and Parole Success*, 3 J. HUMAN RESOURCES 201 (1968).

[50] *See, e.g.*, the articles cited in note 49 *supra*.

[51] Cook, *The Correctional Carrot: Better Jobs for Parolees*, 1 POL'Y ANALYSIS 11, 45 (1975).

[52] Witte, *Estimating the Economic Model of Crime with Individual Da.a*, 94 Q. J. ECON. 57 (1980).

[53] P. SCHMIDT & A.D. WITTE, THE ECONOMICS OF CRIME: APPLICATIONS, THEORY AND METHODS (1981) (forthcoming); Sickles, Schmidt, and Witte, *An application of the simultaneous Tobit model: A study of the determinants of criminal recidivism*, 31 J. ECON. & BUS. 166 (1979).

[54] For a survey, see *Hearings, supra* note 15, at 25-34.

[55] Cook, *supra* note 51, at 45-47.

[56] Witte & Reid, *An Exploration of the Determinants of Labor Market Performance for Prison Releasees*, 8 J. URBAN ECON. 313 (1980).

without aid and even with aid often prove to be quite unstable employees.

Recently the Vera Institute[57] and the Rand Corporation[58] interviewed extensively prison inmates to explore the relationship between economic viability and crime. The findings indicate that the relationship between economic viability and crime is far more complex than suggested by our models.[59] Specifically, this research suggests that the nature of the relationship between unemployment and crime depends on the type of crime and individual involved.

Sviridoff and Thompson identify four distinct types of relationships between unemployment and crime.[60] First, the commission of some types of crime (white collar crime, employee theft) requires employment. For these types of crime, one would expect a decrease rather than an increase as unemployment rises. Second, some offenders mix employment and crime. These individuals either moonlight in criminal activities or use their legitimate jobs as a front (e.g., fences, drug dealers). For this group, like the first, employment and crime go hand in hand. For individuals moonlighting in crime, unemployment may increase criminal activity as predicted by our simple models; however, for those using legitimate employment as a front, unemployment may make criminal activity more difficult and may lead to decreased rather than increased illegal activity. Third, some offenders, particularly younger offenders, appear to alternate between employment and crime. For these individuals unemployment or dropping out of the labor force generally indicates a switch from legal to illegal income generating employment rather than unemployment as we normally perceive it. For individuals in this group, we would expect either a rise in unemployment or a drop in labor force participation to be associated with increased criminal activity. Apparently our simple model, "unemployment causes crime," is most relevant for this group. Finally, a small group (5 to 10 percent of property offenders) is firmly committed to crime for a primary means of support. For this group unemployment or non-participation in the labor market is a way of life and no relationship between unemployment and crime is expected.

Decreased employment is associated with decreased criminal activity only for individuals in group three, discussed above, and some individuals in group two. However, one might well expect a direct

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[57] SVIRIDOFF & THOMPSON, LINKAGES BETWEEN EMPLOYMENT AND CRIME: A QUALITATIVE STUDY OF RIKER'S RELEASEES (WORKING PAPER, VERA INSTITUTE OF JUST., 1979).

[58] J. PETERSILIA, P. GREENWOOD, & M. LAVIN, CRIMINAL CAREERS OF HABITUAL FELONS (1977).

[59] *Id*. *See also* SVIRIDOFF & THOMPSON, *supra* note 57.

[60] *Id*.

relationship between the quality of job and decreased criminal activity for some members of group one, two, and three. This expectation may provide at least a partial explanation for the stronger relationship found between job quality and crime than between unemployment and crime at the individual level.

C.   PROGRAM-SPECIFIC EMPIRICAL EVIDENCE

Gauging the effect of improved economic viability on recidivistic crime provides another method to evaluate the relationship between economic status and crime. A review of rehabilitation programs that employ economic status instruments as a means of reducing recidivism yields mixed results. Wright and Dixon's examination of 96 juvenile delinquency programs shows that, at best, vocational training and education programs produce results that are promising.[61] For example, work/study programs had no impact on recidivism or employment rates; job training and placement services had some impact on older juveniles, but not younger ones; and one work program showed positive results for black females, but no effect for white females or for males of either race.[62] Robin's analysis of one juvenile employment program[63] showed that juveniles who accepted employment were just as likely to recidivate during and after the project as those who did not.

Rovner-Pieczenik reviewed fifteen pretrial intervention programs designed to improve the economic status of younger offenders.[64] While recidivism rates based on arrests appear to have declined during the program period, the longer term employment and recidivism effects could not be evaluated. Taggart examined two programs, Project Crossroads and the Manhattan Court Employment project, and concluded that the programs were effective for adults but not for teenagers.[65]

In-prison projects produce similarly diverse results. Taggart examined 55 projects based on the Riker's Island model for in-prison vocational training and found no effect on post-prison employment experience.[66] He also reports no relation between prison-industry work experience and post-release employment rates. Twenty-five vocational training programs examined by Abt Associates showed no impact on

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[61] Wright & Dixon, *Community Prevention and Treatment of Juvenile Delinquency: A Review of Evaluation Studies*, 14 J. RESEARCH CRIME & DELINQUENCY 35 (1977).

[62] *Id.* at 48.

[63] Robin, *Anti-poverty Programs and Delinquency*, 60 J. CRIM. L.C. & P.S. 323, 331 (1969).

[64] R. ROVNER-PIECZENIK, PRETRIAL INTERVENTION STRATEGIES: AN EVALUATION OF POLICY-RELATED RESEARCH AND POLICYMAKER PERCEPTIONS, (1974).

[65] TAGGART, THE PRISON OF UNEMPLOYMENT 108 (1972).

[66] *Id.* at 41-44.

post-release employment, but a slight impact on recidivism rates.[67]

Analysis of post-release services is equally inconclusive. Taggart concludes that manpower programs for ex-offenders have been ineffective.[68] Although the lack of a uniform measure of recidivism hampered comparability across programs, Toborg and others believe that employment services reduce recidivism rates in the short run, but that the recidivistic experience of the control and experimental populations becomes similar within three years of release.[69] The one Manpower Development and Training program for ex-offenders which permits scientific evaluation showed a favorable employment effect, but no recidivism effect.[70] A sample of Job Corps programs operating in 1977 showed that six months after program completion male offenders were less likely to be arrested than non-program participants.[71] The facts that females did not do better than their comparison group and that the control groups were not randomly selected vitiate the significance of this finding.

Work release held such great promise that within a decade of its introduction, forty-two states had programs. Four of these state programs have been evaluated. Evidence suggests that the program in California substantially reduced recidivistic crime among former work-releasees.[72] North Carolina's program had no impact on overall recidivism rates, but appears to have shifted recidivistic crime toward less serious offenses.[73] On the other hand, work release programs in Massachusetts[74] and in Florida[75] had no significant effect on post-release behavior, measured in a wide variety of ways.

Despite the comprehensiveness of some of the surveys reported above, our knowledge of the effect of rehabilitative programs is based on an extremely small sample of programs. The countless programs underwritten by the once inexhaustible CETA fund have not been, and probably could not be, subjected to comprehensive evaluation. The same is

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[67] ABT ASSOCIATES, INC., AN EVALUATION OF MDTA TRAINING IN CORRECTIONAL INSTITUTIONS (1971) (vols. 1-3 and final summary, Washington, D.C.: AAI).

[68] TAGGART, *supra* note 65, at 80-83.

[69] M. TOBORG, L. CENTER, R. MILKMAN, & D. DAVIS, THE TRANSITION FROM PRISON TO EMPLOYMENT: AN ASSESSMENT OF COMMUNITY-BASED ASSISTANCE PROGRAMS (1977).

[70] ROVNER-PIECZENIK, *supra* note 64.

[71] MATHEMATICA POLICY RESEARCH, INC., EVALUATION OF THE ECONOMIC IMPACT OF THE JOB CORPS PROGRAM: FIRST FOLLOW-UP REPORT (Princeton, N.J. 1978).

[72] Jeffery & Woolpert, *Work Furlough as an Alternative to Incarceration: An Assessment of its Effects on Recidivism and Social Cost*, 65 J. CRIM. L. & C. 405, 414 (1974); Rudoff & Esselstyn, *Evaluating Work Furlough: A Followup*, 37 FED. PROBATION 48 (1973).

[73] Witte, *Work Release in North Carolina—A Program that Works!*, 41 LAW AND CONTEMP. PROB. 230 (1977).

[74] D. LECLAIR, AN EVALUATION OF THE IMPACT OF THE MCI-CONCORD DAY WORK PROGRAM, (Massachusetts Department of Corrections 1972).

[75] Waldo & Chiricos, *Work Release and Recidivism: An Empirical Evaluation of Social Policy*, 1 EVALUATION Q. 87, 102-104 (1977).

true of the slightly less ambitious Neighborhood Youth Corps program. The magnitude of the problem might be gauged by considering the review of juvenile delinquency programs by Wright and Dixon.[76] Of 6,600 programs surveyed, only 96 provided empirical data. If one imposes upon these few programs the essential condition that the program randomize its subjects and that it use a control group, the 6,600 programs probably would be reduced to a very small number, possibly zero.

IV. RECENT POLICY INITIATIVES

Two new programs, designed to enhance the economic status of prison releasees, were introduced in the early 1970s. Baltimore implemented a transitional aid program, termed LIFE (Living Insurance for Ex-Prisoners), in 1971.[77] A non-random sample of "high risk" releasees was selected. The individual selected for program participation had to be a male, less than 45 years old, with several prior convictions, at least one of which had to be a property offense. He could not be an alcoholic or drug addict, could not have participated in a work release program for more than three months, and could not have more than $400 in savings. This population was divided randomly into four groups: Group A received job placement services only; Group B received an income subsidy of $60 per week for 13 weeks; C received both job placement services and the income subsidy; D, the control group, received neither money nor services.

In the first year after project completion, the performance of Groups A and D (no income supplement) was similar. Groups B and C had lower recidivism rates (as measured by arrests) for property crime offenses, but their employment record and their non-property offense rates were similar to the control group.[78] Despite these mixed results, from a cost/benefit point of view, the LIFE program was a success.[79]

Georgia & Texas have since implemented the LIFE program, renamed TARP (Transitional Aid Research Project), with several substantive modifications. Whereas LIFE was restricted to a select population of releasees, TARP was available to all releasees applying to their state's Employment Service Office, if one existed in their area.[80] Contrary to the LIFE program, in which an ex-offender's legitimate earn-

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[76] Wright & Dixon, *supra* note 61, at 36-37.

[77] LENIHAN, WHEN MONEY COUNTS: AN EXPERIMENTAL STUDY OF PROVIDING FINANCIAL AID AND JOB PLACEMENT SERVICES TO RELEASED PRISONERS (Bureau of Social Science Research, Inc., Washington, D.C. 1976).

[78] *See* U.S. DEP'T OF LABOR, UNLOCKING THE SECOND GATE (1977).

[79] Mallar & Thornton, *Transitional Aid for Released Prisoners: Evidence from the LIFE Experiment*, 13 J. HUMAN RESOURCES 208, 233 (1978).

[80] The criteria appear to be equally non-discriminatory in areas having no Employment Office.

ings did not diminish his income subsidy, TARP reduced the income subsidy if legitimate earnings were reported. Finally, state agencies administered TARP, whereas a non-profit, non-governmental agency administered LIFE.

Given the nature of these program modifications, that TARP's experience has been disappointing is not surprising. The experimental and control groups have similar recidivism rates when measured by arrests. And, more significantly, employment rates and earnings of the experimental group are *lower* than those of the control group. However, when one controls statistically for the work disincentive of the program, individuals receiving TARP payments had significantly fewer arrests for both property and non-property offenses than individuals who received no such payments. In addition, consistent with job search theory, employed members of the treatment group earned higher weekly wages than members of the control group.[81] Considering the indiscriminant way in which TARP was administered, these results are quite encouraging.

An alternative supported work program, instituted by the Vera Institute of Justice in 1972, provided subsidized employment to selected ex-addicts. The supported work program created a "low stress" environment, involving close supervision, peer support, and a gradual increase in environmental conditions that demand responsible behavior. Cash bonuses and "psychic rewards" were offered to participants as a means of developing self-discipline and other behavior patterns conducive to a successful work life.[82] An interim evaluation of the program indicates higher earnings, fewer arrests, and less welfare benefits for participants than for the control gorup, and a favorable cost/benefit ratio.[83]

The Vera model has since been substantially revised and extended under the general direction of the Manpower Development and Research Corporation. The expanded program included four population subsets: ex-addicts (the Vera population), ex-offenders, AFDC mothers, and young school drop-outs. Program details, job characteristics, and the type of administrative agency vary from location to location, but the essential features of the Vera model are retained. Results for the program are mixed.[84] For all groups, the experimental populations did better than the control group in labor market performance during program

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[81] *See* P. ROSSI, R. BERK, & K. LENIHAN, MONEY, WORK AND CRIME (1980).

[82] This description was provided to the authors by the Vera Institute staff which ran the original program.

[83] Friedman, *An Interim Evaluation of the Supported Work Experiment*, 3 POL'Y ANALYSIS 147, 153-68 (1977).

[84] BOARD OF DIRECTORS, MANPOWER DEMONSTRATION SEARCH CORP., SUMMARY AND FINDINGS OF THE NATIONAL SUPPORTED WORK DEMONSTRATION (1980).

participation. After termination of the program, ex-offenders, but not ex-addicts, continued to show better labor market performance than the control population, although the differences between the control and experimental populations were not significant. The impact on recidivism rates, based on arrests and incarcerations, and derived largely from self-reports, was mixed: ex-addicts appeared to be favorably affected, but ex-offenders were not.

V. FUTURE RESEARCH: PROBLEMS AND PROSPECTS

In summary, the neoclassical theory of crime causation in its more general HBL formulation yields no a priori support for the relationship between economic status and crime. An enhancement of legitimate income and employment opportunities may or may not induce a shift out of criminal activity. Research using aggregate data provides only weak support for the simple proposition that unemployment causes crime. Moreover, research using such data does not provide convincing tests of the relationship between low income and crime. In contrast, research using individual data provides consistent but weak support for the proposition that higher income is associated with lower levels of criminal activity, and weak, if any support, for unemployment being significantly associated with criminal activity. Finally, the programmatic literature provides glimmers of hope among mostly insignificant program effects.

Nevertheless, we are not prepared to reject the hypothesis that crime and economic status are related. We contend that the evidence that we have presented represents at best a very imperfect test of the BES model and no test whatsoever of the more general HBL model. The theory predicts a relationship between economic status and crime only under special conditions, one of which is that the change in economic status must be significant enough to induce an exchange of illegitimate activity for legitimate activity or vice versa.

This carries several implications. First, the value of the bundle of commodities and services consumed by an individual, including the economic payoff, must exceed the value of the bundle presently being consumed. For many (most?) drug addicts and alcoholics this condition is not met. To obtain and to maintain an enhancement in economic status, this population is effectively required to substantially decrease its drug or alcohol intake, the value of which is likely to far exceed the value of the usual program payoff.

Second, the economic payoff must compensate the individual for any increase in cost associated with the expenditure of time and effort at legitimate and illegitimate activity. Thus, individuals who find the steady, routine, hard work that typifies much legitimate work to be

highly distasteful are not likely to find the programmatic payoff suffi-
cient inducement to give up illegitimate activity. Conversely, an indi-
vidual for whom a criminal act is extremely repugnant is not likely to
turn to crime because of a substantial reduction in legitimate income.

Finally, improved economic status will have little effect on that seg-
ment of the population that treats leisure time as a variable. Persons in
this group may respond to economic opportunity by accepting legiti-
mate work at the expense of leisure while maintaining their level of ille-
gitimate activity. Alternatively, an individual may simply shift between
leisure and criminal activity, devoting a constant number of hours to
legitimate activity. The latter situation would seem to be the *modus oper-
andi* underlying much violent crime, crimes against the public order,
drug offenses, and teenage "hell-raising."

Thus, a relationship between crime and economic status exists
under the HBL formulation only with reference to a particular popula-
tion: A population for whom small (marginal) differences in returns are
significant, and for whom legitimate and illegitimate activity are substi-
tutes (i.e., leisure is not variable). If this particular population, which
Zimring and Hawkins called the "marginal group,"[85] is rather small rel-
ative to the aggregate offender population, then empirical tests for the
existence of a relationship between economic status and crime that rely
upon global estimates of income levels and employment rates, such as
those described above, can be expected to yield inconclusive results.

Once the BES theory's implicit empirical assumptions are exposed
and the population is understood from a "marginal group" perspective,
the disappointing performance of so many rehabilitation programs be-
comes explicable. With few exceptions, rehabilitation programs that
employ economic status instruments have treated populations whose
members generally bear little or no resemblance to the marginal group
presupposed by theory. Individuals treated in these programs include
young teenagers, drug addicts, alcoholics, habitual felons, morals offend-
ers, and individuals who show a strong distaste for steady work at nor-
mal wage rates. Given such a clientele, disappointing results should be
the rule rather than the exception. To be effective, a program must
treat individuals that "fit" the model.

The model's abstract requirements are readily transformed into
meaningful empirical identifiers. Offenders who come closest to fitting
the model tend to be older, more educated, and married. They have no
major alcohol or drug problem; their history demonstrates a willingness
to work; their crime was motivated by a desire for monetary gain; and

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[85] Zimring & Hawkins, *Deterrence and Marginal Groups*, 5 J. RESEARCH CRIME & DELIN-
QUENCY 100, 104-105 (1968).

their economic status is quite low. An offender population that conforms to this description and is offered some form of economic incentive almost surely will respond by significantly reducing its recidivism rate.

Our confidence in this proposition is rooted in a theory of human behavior that is intuitively plausible and that obviously "works," at least with reference to microeconomic behavior. The application of this theory to offender behavior, qualified as we have indicated above, is conceptually straightforward. Although there is no record of a rehabilitation program that tests this theory by applying an economic status instrument to an appropriate offender population, two recent programs provide a partial, though admittedly a very imperfect, test of our proposition. Those are the LIFE (including TARP) and the supported work programs. Despite the inclusion in these programs of population segments that were clearly inappropriate according to our criteria, the results for these programs are quite promising.

We recommend the development and implementation of a carefully designed set of programs to improve economic viability for a group of individuals whose criminal activity appears likely to be affected by improved economic prospects. Once implemented, the program should be subjected to rigorous evaluation, involving random assignment. An experimental evaluation of such a program, when combined with detailed time-allocation information on participants, could greatly enhance our understanding of both the nature and strength of the relationship between economic viability and crime and help to develop effective rehabilitative programs.