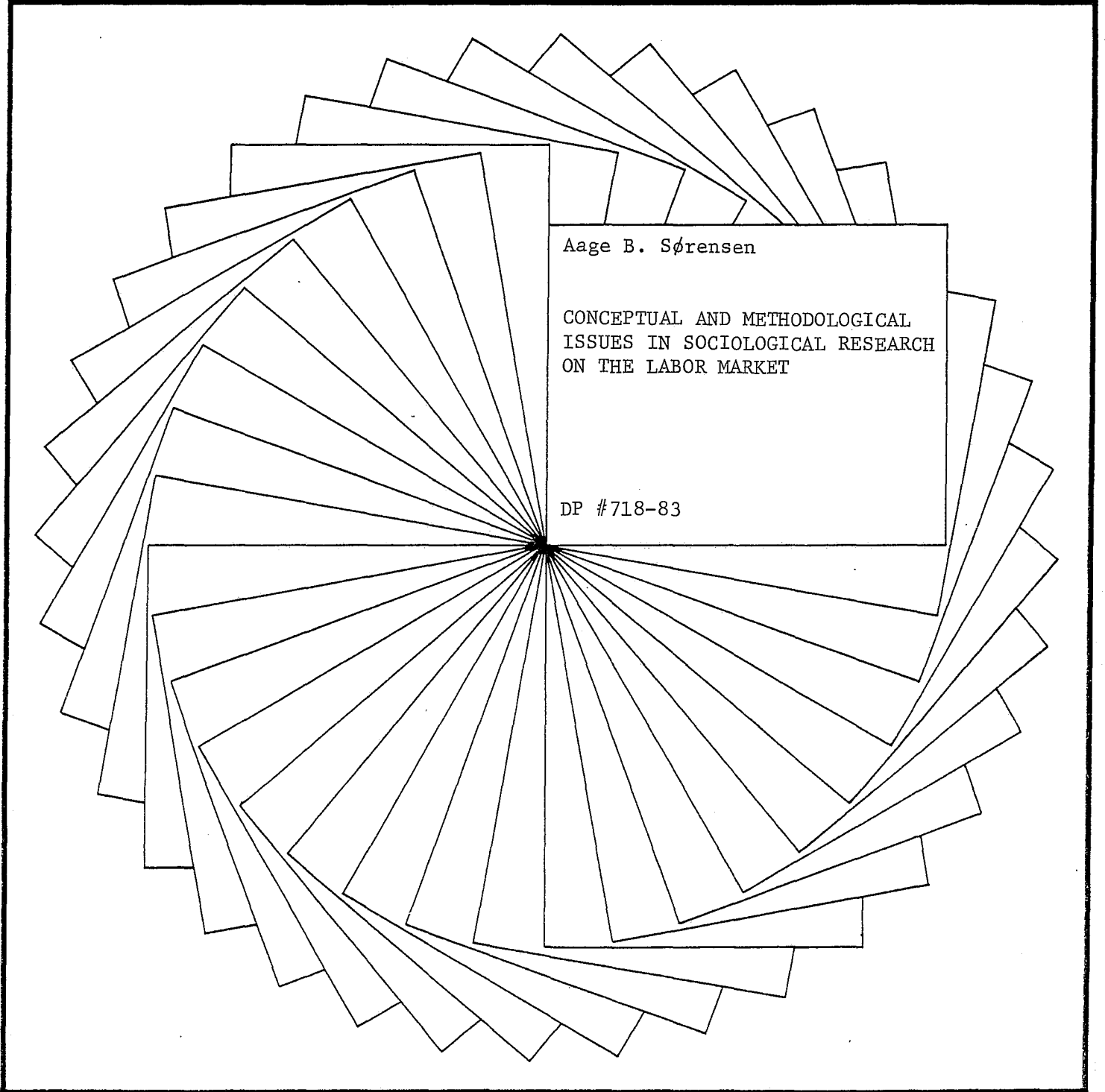

IRP Discussion Papers



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CONCEPTUAL AND METHODOLOGICAL
ISSUES IN SOCIOLOGICAL RESEARCH
ON THE LABOR MARKET

DP #718-83

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ON THE LABOR MARKET

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January 1983

This paper was completed while the author was a guest Professor at the Zentrum für Umfragen, Methoden und Analysen in Mannheim, West Germany. Additional support was obtained from the Graduate School Research Committee at the University of Wisconsin-Madison. For many useful discussions of the topics covered by this paper, the author is grateful to the participants in the Seminar on the Sociology of Labor Markets, Department of Sociology, University of Wisconsin, Spring 1982. Valuable comments on an earlier draft were provided by Larry Griffin, Arne Kalleberg, Karl Ulrich Mayer, and Annemette Sørensen. Jutta Flachs and Jutta Allmendinger provided expert assistance.

Abstract

This paper critically reviews recent contributions to the sociology of labor markets. A number of "structural effects" on labor market outcomes have been reported in this literature. It is shown that the evidence presented for these effects is not always persuasive, owing to methodological problems. The interpretation of these effects is often ambiguous. In particular, the "dual economy" literature that has been developed by sociologists confounds the various mechanisms that may account for structural effects on labor market outcomes.

Introduction

Since the mid-seventies, the sociology of labor markets has become the subject of vigorous quantitative research. The research is concerned primarily with establishing structural determinants of various labor market outcomes, earnings and income in particular. Sociologists of the labor market often claim that their emphasis on structural variables contrasts sharply with "individualistic" status attainment research and human capital theory. "Structure" here refers to a number of factors related to the economic and social organization of labor markets. The sociologists' emphasis on structure is shared by neo-institutional and radical economists, who inspired much of the sociological research, and sociologists have in turn incorporated into their efforts the assumptions and policy implications of neoclassical economic labor market theory.

Neoclassical economic theory proposes a specific set of mechanisms to account for observed variations in labor market outcomes. Despite frequent assertions in the sociological literature that this theory is inadequate, sociologists have provided few alternative theories concerning mechanisms for such outcomes. A number of "structural" effects on outcomes have been reported, but no guides have been offered for interpreting these effects.

This paper discusses various interpretations of the sociological research on labor market outcomes. The main focus is on earnings attainment; discussions of employment and career processes are incorporated when appropriate. Earnings (or income) attainment is the dominant concern in the literature, and is also the outcome that is subject to sharply contrasting theories.

The main object of this paper is to evaluate how accurately sociological labor market research identifies the various mechanisms that may account for observed structural effects on earnings. At least three such mechanisms can be proposed. One is the classic mechanism of labor supply and demand, as found in standard economic theory. Another is the administrative arrangement of pricing and allocation of labor, as described by "internal labor market" theory. Finally, Marxist theory has proposed a separate set of labor market mechanisms that are claimed to form alternatives to other theories.

Recent studies by Grannovetter (1981) and by Baron and Bielby (1980) also argue that most research concerning "structural" effects on labor market outcomes provides little understanding of the operative processes. Their diagnoses and solutions differ somewhat from my approach here. In contrast to Grannovetter, I emphasize the fundamental difference between market (supply and demand) mechanisms and nonmarket (internal labor market) mechanisms. Baron and Bielby propose, as a solution to ambiguities in existing research, the direct study of interrelationships among variables that reflect characteristics of business firms. This is clearly a valuable and important research agenda, but such efforts may not directly answer a dominant concern: to account for individual differences in earnings and employment behavior.

Before I discuss the various treatments of structural effects and their implications for both research and the interpretation of research results, there is merit in discussing certain problems of methodology.

METHODOLOGICAL PROBLEMS

The literature developed by sociologists has recently been reviewed by Kalleberg and Sørensen (1979) and by Baron and Bielby (1980). A range of variables has been used to measure "structure" in this literature. Economic sector variables, identified by industrial classifications, are perhaps the most common. Industry classifications are sometimes said to identify labor market segments, but the distinction between economic sectors and labor market is now generally recognized, and shall be retained here. In some cases, occupational groupings have been used to identify segments, and class and authority have been employed by a number of scholars working in the Marxist tradition. Finally, there are studies that use organizational characteristics of firms, but the main approach of sociologists remains one of identifying sectors or segments in national labor markets.

Despite the diversity of approaches and orientations, there are common features. All studies of earnings attainment use individual-level regressions, usually on large cross-sectional samples. In these regressions, annual earnings (in some cases income) or the logarithm of annual earnings is the dependent variable. Independent variables are a set of measures of individual attributes, often referred to as "human capital" variables: education, sex, race, age or work experience, and socioeconomic background. In some instances occupational status is also introduced as a "human capital" variable. To these variables are added "structural" variables that are measures of economic sector, characteristics of the firm, or class position of the worker. At times the structural variables are interacted with the human capital variables,

because education and other individual attributes are believed to have different effects in different segments, firms, or class positions.

The standard criterion used to test for the existence of effects of structural variables is addition to the amount of variance explained. Sociologists generally refrain from formulating hypotheses about the sizes of coefficients; at most, hypotheses about signs are presented. Using the criterion of explained variance, there is no doubt that structural effects have been detected, given the specification of the earnings equations. However, there are problems both with the logic and the evidence when establishing structural effects by this criterion. The problem of logic will be dealt with later; I will here briefly address the question of evidence. The issue arises because of certain methodological problems that are common to most sociological labor market research--problems serious enough that critics may claim with justification that sociological research has failed to provide convincing evidence for the existence of major variations in earnings due to structural variables.

Consider first the dependent variable. Using annual income, as does for example Wright (1979), confounds labor market outcomes with public support, nonlabor incomes, and contributions of other family members. Earnings should better reflect the operation of labor market structures. The convention is to use annual earnings, and most survey data provide this variable as a retrospective measure for the year preceding the survey date. This means that the earnings may not derive from the position held at the survey date. More important, these earnings are a function of wages per unit time and amount of time worked and are therefore

heavily influenced by variation in hours and weeks worked. A number of studies do not control for weeks worked (e.g., Beck et al., 1978; Wright 1979; Kalleberg et al., 1981; Bibb and Form, 1977). None controls for hours worked. This is not a trivial problem. The target in most of these studies is neoclassical economic theory: a price theory for wage rates. There is, of course, also a neoclassical theory of labor supply, but the two are kept separate. It should be difficult to provide convincing empirical evidence against a theory when the dependent variable is not the one dealt with in the theory.

Weeks worked "explains" quite a bit of variance in earnings equations. Mincer (1974), using Census data, shows that it adds about 25% to explained variance in an equation with only two other independent variables (education and experience), for a total of 56% of the variance explained. This addition to the variance is primarily an accounting relation, but some endogeneity to human capital and structural variables can be argued. Such endogeneity is used by Beck et al. (1980) as a rationale for not including weeks worked, but this is not a convincing argument. Just as it is difficult to believe that employment differences are completely due to supply, it is difficult to believe that employment differences are completely endogenous to the structural variables that cause wage rate differences. In any event, as shown by Hauser (1980) in his replication of analysis by Beck et al., including weeks worked makes a great deal of difference for the results. The role of amount of time worked is an empirical question to be investigated in a simultaneous equation framework. It would be of considerable interest to determine the extent to which structural effects are mediated by employment differences, but no one has attempted the task.

The form of the dependent variable is relevant. Interaction effects established when logarithms of earnings are used may not appear when only earnings are used, and vice versa. There are good mathematical reasons for this, and their empirical importance has been shown by Hauser (1980) in his critique of Beck et al. (1978). There are good statistical reasons for using log earnings because of the approximate log normal distribution of earnings. Statistics should cede, however, to a conceptual rationale if a reason for not using log earnings is established. However, the sociological literature provides no such conceptual rationale.

Turning to the other side of the equation, it is of course important that the "human capital" variables be well-specified if they are to be shown inadequate to explain earnings differences. The main human capital variables are education and experience. Human capital theory provides a rationale for measuring education in years of schooling, but nonlinearities can be justified without having to resort to alternative theories. In any event, education does not, by itself, explain a lot of variance, even in the human capital literature.

Such is not the case with experience, used in human capital theories to measure skills acquired on the job. In Mincer's earnings equations (1974), experience--measured as time since completion of schooling--adds 23% to the variance explained by education (which by itself accounts for 13%). Clearly, using the sociological standard (variance explained) for what is important, experience is a very important variable for earnings differences, yet sociologists mistreat or ignore this variable (e.g., Bibb and Form, 1977, ignore it). A number of other studies include a linear term for age as a proxy, but it is a very poor one. The rela-

tionship between age and experience depends on amount of schooling, and it can easily be shown that using age rather than experience introduces serious bias in schooling coefficients. Sociologists, further, do not allow for nonlinear effects of experience in earnings equations, though their existence is well documented. Mincer (1974) used a Gompertz curve to capture the nonlinearity, but a squared term in experience does almost as well.

Sociologists often add other measures of individual attributes to the human capital variables. Some of these, like race and sex, are difficult to interpret as human capital variables. Occupational characteristics may be used as a measure of skills (as in Bibb and Form, 1977), but they should then be interacted with tenure in the occupational category to justify a human capital interpretation, and this has not been done. Some or all of the human capital variables are, as mentioned, at times interacted with the structural variables. The rationale for doing so is often vague. One interpretation of structural effects, the operation of internal labor markets, predicts such interactions, as I will show later, but the internal labor market interpretation is otherwise usually not clearly reflected in sociological earnings models. A methodological problem concerning such interaction effects has been discussed by Cain (1976). Structural variables which wholly or partly reflect the outcome variables (low versus high wage markets) may produce spurious interaction effects by simply reflecting the truncation of the dependent variable. The structural variables that are implied by internal labor market theory usually do not present this problem, but those implied by dual economy conceptions often do so.

The treatment of experience and the omission of measures of amount of

time worked are probably the most serious specification problems in those sociological earnings models that are designed to test the limitations of human capital theory. The simplest way to illustrate the shortcomings of sociological models is probably to use Mincer (1974) as a standard.

Using three variables, he reports a total of 56% of the variance explained in annual earnings. This is about the same explanatory power reported by most sociologists of the labor market using a much larger number of variables, including numerous measures of structural variables.

Using Mincer as the standard does not imply that human capital models are superior, for their most important variables justify more than human capital theory alone. Weeks worked represents primarily an (important) accounting relation; the effect of experience can be explained without resorting to human capital theory; and there are numerous other interpretations of the schooling effect. But if sociologists insist on using amount of variance explained as the criterion of importance, sociological models should explain more variance when structural variables are added. This has not been demonstrated.

The point is that amount of variance explained is a poor criterion for determining theoretical importance. Much depends on population variances and measurement strategies. A variable may contribute little to variance explained and yet its operation in the earnings attainment process may still be of major theoretical significance.

The common strategy of establishing structural effects by using additions to amount of variance explained is not without theoretical implications. The procedure suggests that structural factors add to the influence of human capital variables in producing earnings. This assumes that human capital theory has some validity and that supply and demand

mechanisms generate earnings--structural variables being used to measure demand variables. But supply and demand is only one mechanism to account for the earnings attainment process. Other theories, such as internal labor market theory, do not suggest that structural variables add to human capital variables, and therefore indicate that other criteria need to be considered for establishing the existence of structural effects (such as interactions of individual attributes with organizational variables).

The common methodological practice for establishing structural effects suggests that sociologists believe in the operation of supply and demand. One should then expect that sociological earnings models reflect supply and demand mechanisms with respect to measurement and specification. This is not the case, as the next section will argue.

STRUCTURAL EFFECTS AS DIFFERENCES IN DEMAND

Most empirical sociological research on the labor market has attempted to show that labor markets are segmented. The idea of a dual (primary and secondary) labor market, introduced by Doeringer and Piore (1971) is often applied. The dominant approach, however, has been to use the idea of a division into economic sectors, there being at least two sectors--the monopoly, duopoly or core sector; and the periphery or competitive sector. This is an industry classification inspired by institutional and Marxist economists (e.g., Averitt, 1968; O'Connor, 1973). It is not generally recognized that a dual economy and dual labor markets are now perfectly associated (e.g., Wallace and Kalleberg, 1981). In any event, the notion of primary and secondary labor markets is closely linked to internal labor markets by Doeringer and Piore, and internal

labor market theory does not inform the dual economy research that has generated most of the empirical findings concerning structural effects on labor market outcomes.

A number of highly collinear industry indicators of economic organization are used to identify economic sectors. This usually results in a categorical variable (Hodson, 1978; Beck et al., 1978) but, because of the collinearity, factor analysis has also been employed to obtain a dimension of dualism (Tolbert et al., 1980). There is considerable discussion about the number and nature of sectors (Wallace and Kalleberg, 1981; Hodson and Kaufman, 1981). With the reservations indicated by the methodological discussion in the preceding section, it is accepted here that, however measured, indicators of economic organization have an effect on observed earnings. The question is, what do these effects mean?

Most economists would assert that sociological studies demonstrate demand effects on earnings. This is also what is said to take place in one of the few explicit statements on the subject, provided by Berg (1981), and, as noted above, it is the interpretation that follows from the usual methodological practices of sociologists. The substantive rationale for this interpretation is that human capital theory (the target for most sociological efforts) is embedded in a price theory of wages. Human capital theory accounts only for the supply side in the supply and demand mechanisms that generate wage rates for people in a competitive labor market. To predict earnings from human capital theory, it is necessary to assume that demand differences are relatively unimportant for observed earnings variations. It is therefore this assumption of the homogeneity of labor markets that is questioned when structural variables are shown to have an effect.

Its assumption of the homogeneity of labor markets is not the only reason to question human capital theory. Several interpretations of the earnings effect of education, other than that provided by human capital theory, are available (Arrow, 1973; Spence, 1974); and empirical human capital research employs heroic assumptions other than the one about labor markets. Mincer's (1974) much-used earnings model is, for example, only a structural model of the schooling-earnings relationship, if it is assumed that all differences of education in lifetime earnings are equalized (Rosen, 1977). These problems have not occupied sociologists of the labor market working in the dual economy tradition, despite their eagerness to improve on human capital theory.

The interpretation of sector effects as demand differences poses considerable difficulty, given the way economic sectors are measured by sociologists. The dual economy literature has not proposed a theory of labor demand that differs from neoclassical theory, in which demand enters wage determination through marginal productivity theory, stating that a firm will be in competitive equilibrium when wages are set equal to the increase in productivity added by the last hired employee. Product demand, substitution in production, capital intensity, and organizational factors are among the many variables that enter into this determination. Measures of these variables should be employed.

The variables used to measure economic sectors vary, but among those most frequently employed are (1) concentration, (2) economic scale, (3) firm size, (4) capital intensity, (5) the state as a market, and (6) the state as regulator. Of these, only capital intensity seems clearly to measure a demand variable as represented in orthodox theory. The other variables may indirectly reflect demand factors; Grannovetter (1981)

interprets some results this way. But these variables seem more directly to measure economic "bigness." The problem is that "bigness" does not tell us which mechanism for wage determination is operational. Though it often is taken for granted that bigger is better with respect to wages, more concrete specifications are needed to interpret results.

Monopolies in product markets can exist in competitive and homogeneous labor markets, and there is no automatic presumption that their existence invalidates the concept of labor markets as used in human capital theory. Nevertheless, assuming that economic size does have effects, there are, in addition to demand differences, two other possible interpretations. One is that large firms are associated with the existence of internal labor markets, and that they use nonmarket mechanisms for the determination of earnings. Another possibility is that big firms have a greater ability to pay. This does not necessarily mean that they are benevolent. If labor markets are competitive, they need not share their riches; collective organizations in the form of unions are needed to take advantage of the employer's ability to pay. This mechanism is again a nonmarket mechanism, though there are other interpretations of union effects, to be discussed later. Both internal labor markets and unions can be conceived of as market imperfections; but, I shall argue, this is not an informative way of viewing the matter.

Identifying structural effects as market demand calls for proper structural models specifying how demand variables interact with human capital and other supply variables. This has not been attempted in sociological research. The task would involve application of economic concepts and theory that would risk obscuring the professional identity of the sociologists. It does not follow, however, that sociologists have

nothing to contribute to the question of homogeneity of labor markets.

The existence of demand differences, causing cross-sectional variations in earnings, would not challenge neoclassical theory. The important issue is the persistence of these differences; that is, whether or not they are transient and in the longer run unimportant for earnings differences among individuals. Homogeneous markets mean that high earnings in a segment act as a signal to attract workers and reestablish the competitive wage; persistent market imperfections therefore imply barriers to job mobility and point to labor market segments.

Barriers to mobility would also be produced by internal labor markets and unions. The existence of those barriers does not necessarily identify persistent demand differences as causes of variations in earnings. It is, however, first necessary to identify these barriers. Knowledge concerning their existence and persistence would have major importance in the continuing debate over the degree of homogeneity of labor markets. This knowledge is unlikely to be produced by cross-sectional earnings models.

Estimation of earnings equations, however properly specified, on cross-sectional data cannot show whether or not observed structural effects are persistent, unless one is willing to argue that big effects are persistent effects. But this only leads to the question of what constitutes big effects: the dubious validity of an amount-of-variance-explained criterion has already been mentioned. What is needed is the direct study of job mobility, and sociologists have acquired considerable expertise in analyzing mobility processes. Nevertheless, very little has

been done by them to identify permanent barriers to job mobility in the economy that would reveal persistent market segments.

STRUCTURAL EFFECTS AS INTERNAL LABOR MARKET EFFECTS

An internal labor market means that the mechanisms for providing employees with wage rates inside the firm are different from the market mechanisms governing wages and earnings in external labor markets. In other words, in internal labor markets the interaction between marginal productivity and individual supply characteristics does not determine the specific wage rate an individual obtains. Instead, non-market, administrative mechanisms are responsible for the observed earnings attainment process.

The concept of an internal labor market has a long tradition in the institutional economic literature. Recent contributions of particular importance are provided by Doeringer and Piore (1971) and Williamson (1975). Williamson stresses the fundamental importance of the nature of the employment contract in internal labor markets and the efficiency gains obtained by the establishment of internal labor markets in certain production systems. With production tasks that are rather complex or embedded in fairly complex technological and organizational arrangements, individual market contracts are subject to considerable transaction costs because of uncertainty and unenforceability. Williamson argues for the emergence of internal labor markets in such production systems. They are defined as collective employment contracts between a firm and a set of employees. Internal labor markets are characterized by (1) non-individual wage bargaining--i.e., wages become characteristics of jobs

and not of individual employees; (2) grievance and arbitration procedures; and (3) internal promotion and the restriction of entry to lower-level jobs. Williamson argues that all of these characteristics provide efficiency gains. Their establishment is reinforced by competition among firms; and the establishment of internal labor markets should not necessarily be seen as a trade-off between profits and the need to maintain a certain labor force.

Two characteristics of internal labor markets are especially crucial in analysis of the earnings attainment process. Wages are a characteristic of jobs and not of people, and promotion systems are used as incentive devices. The two features are linked, for individual wage bargaining would weaken the incentive effect of promotion.

That wages are attached to jobs and not to individuals is a consequence of the insulation of the employment relationship from competition. Both neoclassical economists and their critics agree that in jobs involving specific training and knowledge, persons are not paid in relation to their marginal product. In the case of jobs requiring specific training, the employer pays training costs, employees will not be paid the competitive wage, and the employer has an incentive to retain the employee (Becker, 1975). A more extreme formulation of this idea is presented by Thurow (1975), who advocates the notion that almost all productive skills are created on the job: the distinction between individuals and jobs becomes meaningless, and marginal productivity is purely a job characteristic (i.e., supply equals demand). A broader formulation stressing the insulation from competition or the "closed" nature of certain (internal labor market) jobs is presented by Sørensen and Kalleberg (1981).

The absence of individual wage bargaining poses an incentive problem. To some extent this problem can be overcome by supervision, but supervision is a cost that increases in proportion to the opportunity for job shirking and perfunctory performance. The creation of job ladders and promotion incentives reduces the need for direct supervision and increases the likelihood for high quality and loyal performance. Internal labor markets therefore develop hierarchical job structures where higher-level jobs (with the possible exception of the highest level) are filled from within. As a result, the earnings attainment process is a promotion process. Wage rates are attached to job levels and the wage variation in a firm is a function of the number of levels. There appear to be very definite relationships between wages at different levels, and these are the differences that are established when sociologists find "authority effects" on earnings (e.g., Wright, 1979; Kalleberg and Griffin, 1980).

The relationship between earnings and individual characteristics is of fundamental consequence. The wages a person obtains will depend on which job he or she has access to. Changes in wages over time, and hence the earnings trajectory, will be determined by the mobility system that characterizes particular internal labor markets. Access and change will be a question of the availability of vacant positions, which are created when employees leave for better jobs or for retirement, or when new jobs are added to the firm. The timing of these events has no necessary relationship to changes in a person's skills and knowledge obtained from on-the-job training and experience. The earnings attainment process will, in other words, be governed by vacancy chains (White, 1970; Sørensen, 1977) that create a mobility system operating quite independently of

whatever changes take place in the human capital distribution of a firm's labor force.

Individual attributes affect earnings attainment in internal labor markets, but they do not measure human capital variables as conceived of by the theory of competitive markets. Education and other attributes are important for the individual's ability to obtain access to better jobs and hence for the rate of promotion to higher wage levels, but they define mobility potential, not the actual productivity of a person. This potential is established by comparison to the resources of others competing for the same jobs in a labor queue (Thurow, 1975). Employees with similar characteristics will be paid differently depending on the distribution of mobility opportunities, in turn determined by the number of job levels, their sizes, and the rate at which new vacancies are created.

Experience was the main variable in Mincer's earnings models (1974). Experience is time, and time will of course also bear a relation to earnings in internal labor markets; promotions take time. In fact, it can be shown (Sørensen, 1977) that the shape of the relationship between experience and earnings in promotion systems is the same as the one derived from human capital theory. Time, individual attributes, and promotion opportunities interact in producing earnings trajectories in internal labor markets. This means that it is the interaction between structural variables and individual attributes that identify how "structure" affects earnings.

The typical sociological earnings models used in the dual economy tradition do not capture this interaction between individual attributes and mobility systems. Measures of individual attributes are not human capital variables in an internal labor market interpretation, where

structural variables do not add money to the amount provided for by individual characteristics. Structural variables instead determine the association between individual characteristics and the earnings trajectories. The typical sociological earnings model suggests that individuals earn some of their wages in competitive labor markets, some in internal labor markets. This is not a comprehensible way of looking at the world.

The main effects of structural variables do not lend themselves to an internal labor market interpretation. Nothing concerning internal labor market mechanisms implies that individuals will always earn more or less than the competitive wage. Interaction effects do, however, suggest such an interpretation. Since dual economy measures seem to capture "bigness," there may be some justification for interpreting observed interaction effects as internal labor market effects. The variable of importance is, in that case, simply firm size. Concentration ratios, involvement with the state, and similar industry-level variables do not clearly measure anything connected with the mobility systems of firms or with how individual characteristics are used in promotion decisions.

Stolzenberg (1978) presents an analysis of the interaction between firm size and the effect of education on earnings that warrants an internal labor market interpretation. His results follow from the operation of promotion systems, if one assumes that education is relevant for one's promotion chances and that large firms have more job levels than small firms (as is necessarily the case with hierarchically organized jobs). Reference to different personnel policies in small and large firms, used by Stolzenberg to interpret the interaction, are quite unnecessary.

Several studies of the effect of authority on earnings also reflect the operation of internal labor markets. They are of course not usually

presented in this framework; instead the effects are attributed to class. However, I shall argue in the next section that nothing differentiates Marxist class theory from internal labor market theory insofar as the earnings attainment process is concerned. The Marxist attribution of the earnings effect to "authority" seems somewhat misleading. The effects are due to job levels. For example, staff and line positions may coexist at the same level and return the same wages. Staff positions may have few, if any, subordinates, and therefore have less authority (as this variable usually is measured) than those at the same level in line positions. Employees in staff positions also need to be motivated by promotions. This accounts for the job-level effects, not their power.

Job-level effects reflect pay scales. Firms often have elaborate pay scales attached to job levels (the scales in fact often define job levels) that determine the rewards of promotions. Mobility among these pay levels is what forms the earnings attainment process in internal labor markets. These pay scales may, but need not, be established by collective bargaining. They are usually quite stable over time for a particular firm or in a particular type of firm. Pay scales may vary considerably, as they do for example among industries. Rather than continuing the use of a misspecified individual-level regression suggesting that earnings represent some combination of individual attributes and authority, it would seem more fruitful to engage in firm-level analysis of the variations in pay scales and their determinants. This may be implied by the program of research proposed by Baron and Bielby (1980), but no actual efforts seem to have been undertaken. The firm-level analysis of the wage distribution attached to job levels also may be more

informative of the consequences of economic organization than the individual-level analysis proposed by dual economy research.

In addition to the development of a sociology of pay scales, internal labor market theory suggests the need for sociological research on the determinants of mobility systems and the earnings trajectories they imply. To do so requires longitudinal data and the linking of mobility research to attainment research. Examples of this type of work are provided by Rosenbaum (1979), Halaby (1978), and Sørensen and Tuma (1981).

STRUCTURAL EFFECTS AS CLASS EFFECTS

Sociological labor market research has been inspired by Marxist theory in several important ways. Some of the original authors of the dual economy literature use Marxist theory to argue for a dual or tripartite structure (e.g., O'Connor, 1973), and these ideas have heavily influenced the sociological literature (e.g., Hodson, 1978). There is also a Marxist literature that explicitly focuses on labor market processes. Particularly influential has been the work of Wright (1979), which has inspired most of the research concerning the effects of authority on earnings or income, as discussed in the preceding section. Important also are contributions by Stone (1975) and Edwards (1979) on systems of labor control.

The application of Marxist theory to the study of labor market processes, in particular earnings attainment, is not completely straightforward. The increased concentration of capital that creates a dual economy clearly follows from Marxist theory, but a dual labor market is not implied. Marx's conception of the job structure of capitalist labor

markets in the highest development of capitalist production can be seen as a description of the structure assumed in the basic price theory contained in the neoclassical economic theory of wages. It is a job structure with no differentiation and with open mobility (i.e., a nonstructured labor market) where labor is treated as a commodity. This should imply a sympathetic treatment, if not application, of competitive economic theory in the Marxist analysis of earnings determination. The importance of market competition has been admitted, at least for certain labor market segments (Wright, 1979). Less sophisticated treatments usually see Marxist and competitive theories of the labor market as antithetical.

The class structure of capitalist society as defined by the exploitation of surplus, in particular the structure of domination, is the key device used by Wright (1979) and others to derive a set of hypotheses about the income and earnings determination process. These hypotheses are tested in models very similar to other sociological earnings models.

Wright obtains his concept of the class structure of capitalist society by cross-classifying the two basic relations of capitalist society: (1) domination, determined by authority--i.e., control over supervision and discipline within the labor process; and (2) exploitation, obtained by social relations of control over money and physical capital (Wright, 1979). Among the various class positions these relations produce, of chief interest for labor market research are the pure working class and the contradictory positions of managers and of semiautonomous employees.

Because Wright's research on income attainment differs from other sociological research on earnings attainment by providing explicit

hypotheses and rationales for the specification of models, the interpretational difficulties are much less serious than in dual economy research. His argument is that the need to control labor power produces higher incomes for semiautonomous employees and managers, and produces higher income returns on education for these contradictory class positions. His predictions seem borne out by the evidence.

The logic behind Wright's hypotheses is difficult, if not impossible, to distinguish from internal labor market theory. As noted above, the development of job ladders and promotion systems is seen by internal labor market theory as a method of motivating employees in the absence of market competition. The reasoning, but not the terminology, is the same as that of Wright if the need to control the labor process in his theory is replaced by the efficiency gains of the incentives provided by promotion systems in internal labor market theory. Of course, Wright emphasizes authority as power or control, but the rationale he offers for the earnings effect consists of incentives--quis custodiet ipsos custodes. Hence, as already pointed out, the operative variable is job level. Wright does suggest lower returns to education for semiautonomous employees (staff) than for managers (line), which might assign a special effect to authority, but it is not clear whether or not the prediction is borne out. Wright does not use experience in his income equations, and the resulting specification problems are serious enough that precise comparisons are difficult to make. Managers may have longer job ladders than semiautonomous employees, but it is not a direct authority "effect." Empirical research on earnings trajectories is needed to resolve the issue.

It is generally difficult to distinguish between Marxist labor control theory and internal labor market theory. The emergence of labor control systems has received historical Marxist treatment (Stone 1975; Edwards, 1979) which, in its logic, is very similar to internal labor market theory. Stone (1975) and Williamson (1975) agree that technology is not the primary determinant of work organization in internal labor markets. The efficiency gains of internal labor markets in certain production systems, as argued by Williamson, are impossible to distinguish from the profit concerns of capitalists in Marxist treatments. It is possible that a distinction can be made empirically according to whether or not internal labor markets are introduced to avoid class action, even when additional production costs result. Although qualitative evidence for the capitalists' wish to control class action does play a part in the historical Marxist literature, it is nevertheless difficult to see how the two perspectives differ in implications for the earnings attainment process.

The similarity, if not the identity, of Marxist theory of labor control and earnings with internal labor market theory could benefit Marxist research on earnings attainment. While the incentive reasons for the higher returns to individual attributes for managers and semiautonomous employees are made explicit by Wright (1979) and others, the exact mechanism through which this effect is created is not specified. These mechanisms are the interactions between individual attributes and mobility systems discussed in the preceding section. Much improvement in the specification of Marxist earnings models would be obtained if this were recognized.

Exploitation and manifestations of class conflicts would seem to be a direct Marxist concern in the sociological study of labor markets, yet almost nothing in the recent sociological literature pertains to collective actions or movements to realize class interests. Unions may not be very revolutionary, but they are the realization of--perhaps imperfect--class actions. There is almost no discussion of the effect of unions either in the dual economy or the Marxist literature on earnings attainment. There is an extensive literature on unions in institutional economics and industrial relations, and there is considerable controversy over the existence and the consequences of union effects on wages (for a review of some of these issues, see Freeman and Medoff, 1981).

Unions may affect wages for at least three different reasons. First, they may simply pose a barrier to entry and a labor market monopoly; this is the interpretation given by neoclassical economists, if they admit union effects at all. This concept implies that unions benefit members and hurt everyone else. The second concept argues that unions affect wages because they create and maintain internal labor markets; union effects are therefore internal labor market effects. There are theoretical reasons for expecting a close association between unions and internal labor markets--Williamson (1975), for example, emphasizes the collective nature of employment relationships in internal labor markets. These are, at least in larger firms, likely to involve unions for their realization.

Unions may exist outside of internal labor markets and have an effect on wages that is not simply a reflection of their possible role as a labor monopoly. Depending on the employer's ability to pay and the union's ability to organize, unions may extract wage benefits that also

benefit nonunion members and do not come about through internal labor market mechanisms. This is another nonmarket mechanism for a "structural" effect on earnings, different from both the demand and the internal labor market mechanisms discussed previously. Because of its political nature, it would be a mechanism of considerable sociological interest.

Some of the structural effects reported in the dual economy literature are probably union effects. To what extent it is impossible to say, because unions tend to be seen as just another attribute of the core or monopoly sector. Even when they are introduced as a separate variable, it is impossible to tell which mechanisms account for the coefficient of the dummy variable that is used to measure union membership. Closest to the concept of what is involved may be the notion of "worker power" introduced by Kalleberg et al. (1981). But this research attributes both union effects and internal labor market effects (as well as skill effects) to "worker power." There is no attempt to distinguish between the various reasons for the union effects. Kalleberg et al. do find that union and other "worker power" variables are not closely related to economic organization, as has been suggested by the dual economy literature.

CONCLUSION

Sociological analysis of the labor market is a young, vigorous, and diversified field whose results have now gained acceptance in the major journals of the profession. In a few years it is likely that a new generation of researchers will find faults with its conceptual and methodological equipment, just as sociologists of the labor market have

justified their endeavors by finding faults in status attainment and human capital research. This paper has been a preview of some of these criticisms.

There are methodological problems with much of the research, and the most serious of these cannot be dismissed as merely theoretical disputes. Because of these problems, no sociological earnings models have surpassed simple human capital models in terms of the amount of variance explained, the criterion adhered to by sociologists.

Variance explained is a poor criterion by which to judge theoretical importance. The main task for the sociology of labor markets, as argued here, is to identify how and where alternative mechanisms for labor market outcomes operate. The main mechanisms proposed are those of the market (supply and demand), the internal labor market, and collective action by unions. Research based on the dual economy theory confounds these mechanisms. The practice of establishing structural effects, using the criterion of increased variance explained by "human capital" variables, suggests that structural effects are conceived of as reflecting demand differences. But cross-sectional variation in labor market outcomes due to variables that are believed to measure demand provides little challenge to neoclassical theory. The issue is whether market segments are persistent over time. Research on job mobility would be of major importance for resolving this issue, and sociologists have a great deal of expertise in studying mobility processes. This expertise, unfortunately, has rarely been applied to the study of labor mobility among market segments.

There are difficulties to overcome in carrying out such studies. Job mobility is strongly dependent on labor market experience and other career characteristics (Sørensen, 1975; Spilerman, 1977), and thus interacts in complicated ways with the very attainment processes to be explained by hypothesized labor market barriers. Job mobility data by industry and other market classifications are more scarce than the intergenerational data that have dominated mobility research by sociologists. But such data exist, and considerable progress has been made in the development of techniques for the analysis of job mobility processes (e.g., Tuma et al., 1979).

The structural variables employed by dual economy research are in fact less straightforward measures of demand. They seem primarily to capture economic "bigness." Their effect therefore suggests the operation of internal labor market mechanisms. Research on such mechanisms should be of considerable interest to sociologists, and, in fact, research inspired by Marxist theory (indistinguishable from internal labor market theory in this area) has a more convincing and straightforward interpretation than dual economy research. However, much remains to be done. I have argued that two tasks are especially important. One is to specify the interaction between individual attributes and mobility systems that generates earnings trajectories in internal labor markets. This interaction is very poorly specified in the conventionally used sociological earnings models. Dynamic models and explicit attention to how organizational variables shape the earnings process are needed.

The second task inspired by internal labor market theory is research on pay scales. This means firm-level analysis of the determinants of the number of pay (or job) levels in a firm and the pay differentials between

different levels. Considerable variation may exist in pay scales by industry and other forms of economic organization. Understanding what determines pay scales should increase our understanding of what accounts for structural effects. It is pay scales that account for observed effects of job-level measures such as authority and class, not, as it sometimes seems implied, access to petty cash by people in power. Further, differences in pay scales probably account for many observed effects of economic sector variables.

The effects of labor unions should also be of considerable interest to research. They have largely been ignored in the sociological literature, where unions tend to be seen as an attribute of economic organization, not actors confronting employers. Recent articles have called for bringing into analysis of the labor market a consideration of firms (Baron and Bielby, 1980) and bosses (Stolzenberg, 1978). If researchers can also bring in the men and women that engage in collective action and the measures and models that specify how earnings are generated, the sociology of labor markets will have a bright future.

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