The Challenge of Segmented Labor Market Theories to Orthodox Theory: A Survey

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I. *Introduction*

LABOR ECONOMICS is currently a controversial field within economics, perhaps an endemic condition for a field that covers such topics as income distribution, unions, unemployment, and discrimination. Today, as in the past, the combatants are grouped by their ideological as well as their theoretical positions, and it is often difficult to sort the participants neatly into any one group. Nevertheless, since the time of Adam Smith, the classical, and then the neoclassical, school of labor economics has been a common target, representing the orthodoxy to be challenged. This paper examines the recent assault on the conventional neoclassical school by a group of labor economists in the United States who espouse what I shall refer to as theories of segmented labor markets (hereafter SLM), although the theories are diverse and go by many names.[1]

The SLM challenge to conventional theory supports a hypothesis about economic doctrines expressed by Leo Rogin [153, 1956, p. xiii]:

> . . . new systems [of economic doctrines] first emerge in the guise of arguments in the context of social reform.

[1] Among the many names given to these dissident theories of the labor market are the following: radical, dual (primary, secondary), tripartite (core, peripheral, irregular), stratified, hierarchical, and job competition. Also, the concept of a dichotomy between "internal" and "external" labor markets is related to the dual and tripartite theories. It often will be expedient to lump these different (but overlapping) theories together in focusing on their criticisms of orthodox theory.

Although it is a thesis of this paper that SLM theories are continuations of older debates, their present form began to emerge in the 1960's. It was a time of social reform connected with the "war on poverty" and the drive for full participation in the economy by minority groups, including women, who may be said to constitute an "economic minority." Dissatisfaction with the pace and direction of reform in these areas and dissatisfaction with the conventional analysis of the problems and their remedies have led to disagreements within the economics profession. The SLM economists were allied with other economists, sometimes as part of the Union of Radical Political Economists, in challenging other aspects of established economic theory and practices. No doubt the emergence of radical economists was related to the protest against many noneconomic aspects of American society in the 1960's, particularly U.S. war policies, but these connections will not be pursued.

The neoclassical theorists dominate the profession today, even within labor economics where, as will be mentioned below, they were not dominant in the 1940's and 1950's. Neoclassical labor economics consists, in brief, of the marginal productivity theory of demand—based on profit-maximizing behavior of employers—and a supply theory based on utility maximization of workers. Labor-supply theory may be more familiar when the utility maximization model takes the form of (1) the theory of investment in human capital, which determines one's skill or occupation—the *kind* of work supplied—and (2) the theory of labor/leisure choices, which determines the *amount* of one's labor supply. (Several new developments, modifications, and extensions in neoclassical theory are mentioned later.)

Theory, however, operates on at least two levels. First, as a framework for analysis: neoclassical theory implies a set of methods and techniques; in particular, marginal analysis of behavioral relations in which income and prices are key variables. Second, as a body of substantive behavioral propositions, neoclassical theory implies a large number of qualitative predictions and quantitative estimates of parameters of behavioral relationships. The SLM economists attack the method, the theory, and the collection of predictions and substantive hypotheses. These attacks inevitably carry over into policy disputes.

II. *A Classification of Issues Raised in the Literature on Segmented Labor Markets*

The issues are three-fold—empirical, theoretical, and policy-related. First, the SLM empirical argument is that the facts describing the outcomes and processes in the labor market are not reported fully and accurately, or are not interpreted in a way that reveals a number of pervasive failures in the workings of the market. Second, the theories and methods used by conventional theorists to analyze these outcomes and processes are questioned. Third, since the SLM representatives are resolutely policy-oriented, they advocate major changes in the economic system in a left-liberal or socialistic direction.

Consider the following three quotations from SLM economists.

> 1. The United States uncovered an "urban crisis" during the 1960s. . . . Ghetto residents were poor and underemployed. . . . By 1970, three principal economic perspectives were evolving to "explain" ghetto employment problems: *orthodox economic theory, dual labor market theory,* and *radical economic theory*. . . . Although the three analytical explanations of urban poverty and underemployment described and sought to explain the same reality, they drew from and implied fundamentally different theories of income determination and distribution. [69, David M. Gordon, 1972, pp. vii–viii.]

2. Towards the end of the 60s, there was a growing disillusionment with the efficacy of skill augmentation as a means of redistributing earnings. Consequently, alternative models have begun to emerge, many of which concentrate upon the demand for labor as a restrictive force upon earnings of minorities and lower class workers. In particular, such theories as the dual market and the job competition model focus attention upon the type of jobs to which disadvantaged workers are restricted, rather than the skills which such workers possess or lack. The policy implications of such models are entirely different from those of the human capital model. Rather than concentrating upon increasing the skills of certain groups, policy should be aimed at job distribution, according to these theories. One such direct proposal in this vein is the Galbraith-Kuh-Thurow quota system. [106, Robert E. B. Lucas, 1972, p. 40].[2]

3. The research of the 1960s has told us nothing about the causes of poverty which are to be found in the basic system-defining institutions of capitalism: labor markets, class, and the state. The orthodox research has merely provided estimates of the differential importance of various individual characteristics associated with the poor. This research is quite consistent with the proposition that the poor are poor because of some individual failure, and it has received widespread acceptance and support precisely because it has been conveniently supportive of existing economic arrangements and our prevailing ideology [191, Howard M. Wachtel, 1972, pp. 193–94].

Many other quotations could be used to show the pattern of, first, sharp criticism of what is going on in the labor market; second, a rejection of existing theories, which have purported to explain the labor market operations; third, a call for new and more radical policies. Let us examine these categories of challenges more closely.

[2] The quota system refers to a requirement, usually imposed by a government agency, that a specified fraction of an employer's hires and promotions be allocated to certain groups, such as blacks and women. The names mentioned refer to John K. Galbraith, Edwin Kuh, and Lester C. Thurow [64, 1971].

A. *Empirical Generalizations about Outcomes of the Labor Market*

It is useful to distinguish between two types of facts that contribute to controversy. The first are those that indicate some sort of hardship or distress, like high unemployment rates and widespread poverty. The facts about these problems may not be in dispute, and in some cases the orthodox view may deny that there is any "mystery" or anomaly about the explanation for these facts.

The second type of empirical findings are those that reflect, if not baffling puzzles to orthodox economists, at least unresolved and inadequately treated problems. The "puzzles" need not concern matters of hardship or distress, but these are usually the ones that constitute the empirical challenges in the SLM literature.

Listed below are some of the topics that have been raised as areas of controversy, along with comments indicating the challenges to the neoclassical tradition. The reader should be advised, however, that the names in citations to empirical work do not necessarily denote SLM economists. Also, the challenges are themselves matters of controversy, and the mere listing does not imply either any general or my personal agreement with the points made. Neoclassical responses to these challenges are taken up in *Section* IV.

1. *The persistence of poverty*

The most important social problem motivating the SLM economists is poverty. The economics profession was not prepared for the statistical documentation of the extent of poverty within the "affluent society" of the 1960's. Spurring the SLM economists was the persistence of poverty in spite of the political commitments to full employment and a variety of antipoverty programs during the past decade or so.[3] (See Gordon [69, 1972], especially Chapter 7.) To Michael J. Piore and other SLM economists, the problem of poverty could "be best understood in terms of a dual labor market. . . . The poor are confined to the secondary labor market. Eliminating poverty requires that they gain access to primary employment" [140, Piore, 1970, p. 55].

2. *The persistence of income inequality*

Related to the persistence of poverty is the stability of the shape of the income distribution. Statistically, the income distribution is more unequal than are the distributions of most measures of "ability" (like I.Q. or physical attributes) and educational attainment (see Lester C. Thurow [179, 1975, pp. 59–61]). Over time, particular note has been given to the narrowing of the relative variance in the distribution of educational attainments, while the relative variance of income has narrowed hardly at all. (See Thurow [178, 1972; 179, 1975] and the *Economic Report of the President* [188, 1973, chap. 5]; also Sheldon Danziger and Eugene Smolensky [40, 1975] for a useful review of recent measures of income inequality.)

3. *The failure of education and training programs*

The SLM critics of human capital theories have argued that education and training programs failed to deliver their promised cure for poverty. (See Lucas [106, 1972] and Bennett Harrison [80, 1972] among many citations that could be listed.) Gordon [69, 1972, p. 44] states:

> To some of those [SLM] economists studying ghetto labor markets in the 1960s, it often appeared that characteristics which economists had conventionally associated with "productivity"—like years of schooling and vocational training—had almost no influence on the employment prospects of large numbers of urban employees.

Support was found in the research of sociologists who reported pessimistic findings about the effect of schooling resources on educational achievement (see the "Coleman report" [37, 1967] and many contributors in Frederick Mosteller and Daniel P. Moynihan [125, 1972]).[4] More direct support is contained in Herbert Gintis's work [66, 1971] and in the widely publicized findings by Christopher Jencks [86, 1972] about the ineffectiveness of both educational resources and educational achievement on income and occupational attainment. Neoclassical labor economists, on the other hand, have consistently found a positive relation between years of schooling and earnings.

To some extent the empirical disagreement involves a divergent result regarding the intensive margin (operating on educational resources, holding years of schooling constant), rather than a refutation of the labor economists' persistent findings about the extensive margin—more years of schooling *per se*. Pessimistic findings that show educational resources having no effect on educational achievement (like test scores), however, raise suspicions about the positive relation between the *inputs* of educational resources and the ultimate *outcomes* of performance

[3] Most economists would also be taken aback by the following statistics reported by Robert J. Plotnick and Felicity Skidmore [145, 1975, p. 172]: Despite a 69 percent increase in governmental social welfare expenditures to the pretransfer poor from 1965 to 1972—from $31 billion to $52 billion in 1965 dollars—the incidence of pretransfer poverty among households declined minimally, from 26 percent to 25 percent over this period, and the incidence of posttransfer poverty among persons declined moderately, from 16 percent to 12 percent. The authors explain that adding income-in-kind benefits, like food stamps, improve this picture, but cash transfers to the pretransfer poor alone increased from $23 to $31 billion in constant dollars from 1965 to 1972.

[4] Even Henry M. Levin, a long-time and effective critic of the pessimistic reports of James S. Coleman *et al.* [37, 1967] and Christopher Jencks [86, 1972], has recently arrived at a pessimistic verdict of the record of educational programs (as antipoverty programs) to improve educational achievement and earnings [100, forth.].

in the labor market. (See Robinson G. Hollister [85, 1971].) Indeed, as the next point indicates, the relation between education and productivity is sometimes claimed to be basically spurious.

4. *The use by employers of educational and training criteria for making "irrational" and "discriminatory" hiring decisions*

Have the representatives of the human capital school mislabeled the positive relation between education and earnings as a "productivity relation"? The SLM economists argue that education instead reflects only a screening device or a certificate of a set of attitudes and traits that employers find attractive, such as skin color, cogeniality, and pliability. (This claim is explicit in Gintis [66, 1971] and Thurow [178, 1972; 179, 1975] and receives support in Ivar Berg [16, 1971].) Kenneth Arrow [7, 1973] and A. Michael Spence [166, 1973; 167, 1974] provide neoclassical models in which education is only a proxy for potential productivity; but while these models raise disturbing questions for traditional neoclassical theories, they basically *redefine* the investment component of education as "information" rather than *deny* an investment component. The nature of educational investment and the source and extent of its links to market productivity are very live issues today.

5. *Discrimination in labor markets*

Sustained discrimination against minorities is viewed in SLM theories as evidence of the failure of the neoclassical theory of competition and, to some, as evidence for Marxian-type theories of exploitation. (See Michael Reich [150, 1971].) The large and *persisting* differentials in earnings and wages between white and black males and between males and females—even when productivity indicators are apparently equal—do, indeed, challenge orthodox theory. Both Gary S. Becker [15, (1957) 1971] and Arrow [5, 1972; 6, 1973] pointed to the tendency for any discriminatory wage differential to wither away according to the neoclassical model and standard competitive assumptions. And, as Arrow comments: "Since in fact racial discrimination has survived for a long time, we must assume that the model . . . must have some limitation" [6, 1973, p. 10].

The questions raised by the general problem of discrimination are sharpened by several specific empirical findings, most of which are the products of research by non-SLM economists:

a. *The decline in black male labor force participation rates relative to white males in recent years, even on the part of prime-age males.* (See Stephan Michelson [117, 1968] and Frederick B. Siskind [163, 1975].)

b. *The near-constant ratio of black-to-white average male income (or earnings, or earnings among full-year, year-around workers) from 1950–1966 or so* [8, Orley Ashenfelter, 1970]. Before the upturn in black male incomes in the period from 1967 to 1971, these ratios indicated no *relative* improvement in black male incomes during the 17 year period, 1950 (when data became available) through 1966, despite the trends in society at large that seemed to indicate a reduction in discrimination. From 1972–74 the ratios have been relatively stable again [185, U.S. Bureau of the Census, varying dates].

c. *A decline in the ratio of black-to-white male income with higher educational attainment, consistently found in cross-section data of the census years, 1940, 1950, 1960, and 1970.* (See Herman P. Miller [119, 1955, pp. 46, 67] for 1939 and 1949 income figures, Giora Hanoch [76, 1967] for 1959, and Joan G. Haworth, James Gwartney, and Charles T. Haworth [83, 1975] for 1959 and 1969.) The 1970 Census, however, shows a much lesser decline in the black-white income ratio as education rises than was the case in the 1960 Census [83, Haworth, Gwatney, and Haworth, 1975, pp. 166, Table 5].

d. *The flat age-earnings profile of black males relative to white males as revealed by cross-section surveys.* Robert E. Hall, reported earnings gaps between black and white males and between males and females that sharply increased with age in cross-section data for 1966, and he comments that "the whole notion of a career with steady advancement is relevant only for white males" [72, 1970, pp. 393–94]. This interpretation is important to SLM economists because of their claim that discriminated groups are largely confined to the secondary labor market—dead-end jobs with excessive turnover and no opportunities for on-the-job training.

e. *The stagnant trend in earnings and occupational attainments of women relative to men during recent years.* From 1968 to 1974 the female/male income ratio for full-time, year-around workers declined from .58 to .56, with small variations in the years in between [185, U.S. Bureau of the Census, varying dates]. For a discussion of occupational relative stagnation between 1960 and 1970, see Barbara R. Bergmann and Irma Adelman [19, 1973].

6. *Levels, trends, and structure of unemployment*

Thurow declares unemployment to be "the most important deviant observation that cannot be explained by a simple marginal-productivity (microeconomic) view of the labor market," and he faults the standard macro theories as well [179, 1975, pp. 55–57]. Gordon [69, 1972, p. 109] claims that SLM theories are particularly appropriate for explaining the recent outward shift in the Phillips Curve (see G. L. Perry [136, 1970]), which was associated with greater inequality (or dispersion) in the incidence of unemployment among different demographic groups in the population.

7. *The roles of monopolies, unions, and other sources of "protected" labor markets*

Both SLM and orthodox economists could agree that equally productive workers might have persistent wage and unemployment differences in markets that are sheltered from competitive forces. In the dual labor market the primary market is said to be protected in its privileges and advantages by a combination of monopoly enterprise, "business" unionism, governmental collusion with these power groups, and an "oppressive" welfare system.[5] Disagreements with neoclassical economists mainly concern the empirical question of whether the degree of monopoly and market "imperfections" are sufficient to make untenable the assumptions of competition made by orthodox economists for most of their empirical work. Do we need a theory of "limited access" to understand labor markets and income determination, as suggested by John M. Culbertson [39, 1973]?

8. *The alienation of American workers*

A tremendous amount of attention by the popular media and by social scientists has been given to the issue of psychological dissatisfaction workers feel towards their jobs and their economic roles in society. *Work in America,* the commission report sponsored by the Department of Health, Education, and Welfare, epitomizes the combination of scholarly and popular attention [186, 1973], but books by Harold Sheppard [161, 1972], David Jenkins [87, 1974], Studs Terkel [174,

[5] See Piore [140, 1970, pp. 57–58] and Bennett Harrison [80, 1972, chap. 5] for expressions of the view that the welfare system tends to perpetuate poverty and the secondary labor market. The most sweeping indictment is given by the oft-cited book by Frances F. Piven and Richard A. Cloward [144, 1971].

1974], Sar A. Levitan and William B. Johnston [101, 1973], and Jerome M. Rosow [156, 1974] could also be mentioned.

What is the connection between this issue and the debate between SLM and orthodox theories? At one level, it could be claimed that a pervasive state of alienation by workers supports Marxian theories of industrial capitalism. This connection is explicit in Samuel Bowles and Gintis [24, 1973; 25, 1975] and in articles in Richard C. Edwards, Reich, and Gordon [50, 1975]; see, especially Katherine Stone [170, 1975] and Wachtel [192, 1975].

At a less ideological or philosophical level, a challenge to orthodox theory is the following: Why has the market not responded to the workers' tastes and preferences either by a redesign of jobs and upgrading of working conditions or simply by appropriate wage rate compensations? Workers will seek to balance nonpecuniary and pecuniary rewards from work, and search efforts and mobility by workers and employers should, over time, tend to produce the desired balance. Why, then, in a context of secular rising real wages, should the resulting total package of rewards be less satisfactory?

Perhaps it is not. A number of recent studies present arguments and empirical evidence counter to the claims that job dissatisfaction is wide-spread and increasing over time. (See Levitan and Johnston [101, 1973], Robert F. Flanagan, George Strauss, and Lloyd Ulman [56, 1974], Daniel S. Hamermesh [75, 1975], Peter Henle [84, 1974], Strauss [171, 1974], and Harold Wool [202, 1973].) In view of the doubts about the facts of the issue and because a detailed analysis of the evidence lies largely outside the jurisdiction of labor economics, I will not pursue the issue further.

Summary

The foregoing list of empirical generalization about outcomes of the workings of the labor market covers, I believe, the main bill of particulars in the SLM indictment. Let us turn now to their theories of how the labor market operates.

B. *New Theories of Segmented Labor Markets*

Unfortunately, the SLM theories are sketchy, vague, and diverse if not internally conflicting. Description, narratives, and taxonomies crowd out model development. On the positive side the theories evolve from detailed data that are often richer in historical, institutional, and qualitative aspects than is customary among the econometrically-oriented orthodox theories. The central ideas of several SLM spokesmen are briefly introduced below. My approach to understanding their theoretical content, however, consists of the following strategy: In *Section* III, I attempt to find connections between the SLM literature and previous challenges to orthodox theory. Some familiar bells may ring, and some of the strengths and weaknesses of the SLM propositions may be illuminated. Next, in *Section* IV, the specific empirical and policy problems listed above are examined.

1. *Thurow, Thurow and Lucas, and the job competition theory*[6]

Perhaps closest to the orthodox position is the "job competition" theory that these two economists propose in place of the orthodox "wage competition" theory.[7] Its main elements are: (a) the number and type of job slots are technologically determined, and (b) the workers' skills (that is,

[6] Lester C. Thurow [178, 1972; 179, 1975]; Thurow and Robert E. B. Lucas [180, 1972].

[7] The "job competition" theory is related to and evolved from a "queue theory" that Thurow had proposed earlier [176, 1968]. The idea of "queues" and "vestibules" in the labor market has appeared in the literature many times before Thurow's use of the concept. See several articles by Melvin W. Reder for substance and citations [146, 1955; 147, 1964; 148, 1969].

their human capital) and their wage offers (or their reservation wages) are nearly irrelevant in determining the number and type of job positions actually filled. Social custom and institutional factors largely determine wage rates. Thus, not only is the supply side of the labor market downplayed, but the demand side is divested of its customary focus on price (or wage) dependency. (c) Wages are, in fact, claimed to be rigid, and queues of workers at fixed wages constitute the supply of labor. (d) Employers use screening devices to hire workers based on their trainability and adaptability. Although fluctuations in macro policies change demand and lead to changes in the lengths of the queues, the theory emphasizes the within-firm (or internal) labor market as the locus of decisions about allocations, promotions, and on-the-job training—all of which are relatively insulated from the external labor market. In many respects, this theory is similar to the dual labor market theory mentioned next.

2. *Piore, Doeringer and Piore, Harrison, Bluestone, and the dual theory*[8]

The two economists most often associated with the dual labor market theory are Doeringer and Piore. Their writings provide a link to the older theories of John T. Dunlop (their teacher at Harvard) [47, 1957; 48, 1958] and Clark Kerr, who first gave prominence to the concepts of internal and external labor markets [89, 1950; 90, 1954]. Dunlop and Kerr viewed the growth of large firms and unions as promoting internal (within-firm) labor markets that were only weakly connected to the external (between-firm) labor markets.

Doeringer and Piore define a primary labor market as one composed of jobs in large firms and/or unionized jobs, which tend to be better jobs—higher paying, more promotion possibilities, better working conditions, and more stable work. The secondary labor market, which roughly overlaps large sections of the external labor market, contains the low-paid jobs that are held by workers who are discriminated against and who have unstable working patterns. The discussion of the dual labor market tends to taxonomic. Some of the theoretical ideas are similar to those mentioned above in connection with Thurow and Lucas—the demand-determined allocation of jobs, the key role of on-the-job training, employer discrimination, and the downgrading of observable human capital characteristics as determinants of wage levels. Quite distinct, on the other hand, is the attention Doeringer, Piore, Harrison, and other "dualists" give to the roles of the worker's attitudes, motivations, and work habits and the way these interact with community "variables," such as the welfare system and illegal activities.

Indeed, there are passages from the SLM literature in which low wages and unstable employment appear to be blamed on the workers' habits and attitudes ("tastes for work") that are inimical to steady employment, to the firm's output goals, and to upgrading oneself. For example, Piore speaks of secondary workers' "inability to show up for work regularly and on time," and of "the attractions of such [illegal] activity, as well as life patterns and role models . . . [that] foster behavioral traits antagonistic to primary employment" [140, 1970, pp. 55–58]. Harrison calls attention to "life styles" of workers that make them "psychologically as well as technically" unable to move out of the secondary (or ghetto) economy [82, 1974, p. 10].[9]

[8] Michael J. Piore [139, 1969]; Peter B. Doeringer and Piore [44, 1971]; Bennett Harrison [80, 1972]; Barry Bluestone [20, 1970].

[9] Also, Gordon says: "Disadvantaged workers, especially those recently off the farm, have always had trouble responding to the discipline required of them in industrial organizations" [69, 1972, p. 48]. Doeringer and Piore say: "There are distinctions between workers in the two sectors which parallel

These views are close to the school of thought, mainly developed outside of economics, that sees the poor as victims of a "culture of poverty."[10] This issue is recognized to be complex and not to be characterized by one-way causation models. Testable models are rare.[11] Moreover, the debates about "culture of poverty" theories have often turned into rancorous ideological disputes, making dispassionate analysis difficult.

The interpretation of the SLM hypotheses about "tastes for work" may be expressed, however, in a way that largely avoids the ideological controversies and that focuses on a major gap in neoclassical models of labor market behavior. Economists have traditionally viewed "tastes" as exogenous and as one of the (unexplored) causal variables explaining such labor market achievements as employment, earnings, and occupational achievement. The contribution of the SLM theorists lies not in reiterating the potential importance of tastes in this role, but rather in pointing out how tastes may be endogenous *and a result* of one's labor market achievements. Thus, the effects of discrimination, other systematic factors, or even random factors that start workers off in the secondary sector (that is, in "bad" jobs), can shape tastes in an antiwork direction and thereby reinforce the disadvantaged position of low-wage workers. The model has an aspect of the "vicious circle" or "self-fulfilling prophecy" to it. (See Elliot Liebow [105, 1967], Moynihan [127, 1968], Doeringer and Piore [44, 1971, esp. pp. 133–34; 175–77], and Piore [140, 1970].)

There have also been allusions to technology as an endogenous variable [142, Piore, 1974], and Thomas Vietorisz and Harrison suggest another type of "vicious circle," whereby technological change reinforces the low-wage status of low-skill workers [190, 1973]. However, these ideas are as yet too underdeveloped to interpret.

3. *Wachtel; Edwards, Reich, and Gordon; Franklin and Resnick; Bowles and Gintis; and the radical theory*[12]

Radical theories of labor markets express a more explicit critique of capitalism, acknowledge their ties to Marxian dialectical analysis, and emphasize class conflicts. The dual labor market idea is sometimes expressed in terms of an analogy with an underdeveloped economy or even with a colony that is exploited by an imperialistic primary economy. (See William Tabb [172, 1970] and Harrison [82, 1974; pp. 4–6].) Radical theories are similar to dual labor market theories in drawing upon sociological analysis of institutional change, but the radicals give more emphasis to historically-rooted, class-based motivations of behavior by employers and workers. Technology is viewed as an endogenous variable that is manipulated by employers to further class interests rather than profits. (See Stephen A. Marglin [113, 1974] and several authors in Edwards, Reich, and Gordon [50, 1975].) It is difficult, however, to test these ideas

those between jobs: workers in the secondary sector . . . exhibit greater turnover, higher rates of lateness and absenteeism, more insubordination . . . " [44, 1971, pp. 65–66].

[10] The following noneconomist social scientists may be referred to for expressions of the "culture of poverty" thesis: anthropologist Oscar Lewis [103, 1968], urbanist Daniel P. Moynihan [126, 1967; 127, 1968], political scientist Edwin Banfield [11, 1970], and sociologist Ben B. Seligman [160, 1968]. Among a large number of noneconomist social scientists who have been critical of this view, see Charles A. Valentine [189, 1968], Herbert J. Gans [65, 1968], and Otis Dudley Duncan [45, 1968].

[11] For an exception see O. D. Duncan [45, 1968] and O. D. Duncan, David L. Featherman, and Beverly Duncan [46, 1972, chap. 4]. See Glen G. Cain [28, 1974, p. 1508] for comments about some difficulties in interpreting these tests.

[12] Howard M. Wachtel [191, 1972]; Richard C. Edwards, Michael Reich, and David M. Gordon [50, 1975]; Raymond J. Franklin and Solomon Resnick [57, 1973]; Samuel Bowles and Herbert Gintis [25, 1975].

relative to neoclassical theory, which also may view technology as endogenous, depending on the time period analyzed, and which may hypothesize nonpecuniary aspects of "profit" maximization.

There are many names omitted from the foregoing list of three approaches to theory in the SLM literature. No systematic statement of the theories was attempted, partly because I believe a consistent statement is impossible and partly because the ideas may be conveyed by the discussion of their historical antecedents and empirical-policy content.

C. *An Overview of Policy Implications of Segmented Labor Market Theories*

One set of policies advocated in the SLM literature concentrates on the labor market itself; another deals with the larger issues of power relationships and non-labor-market institutions in society. The first set of policies is most clearly distinguished, as indicated in the Lucas quotation above, by a focus on the demand side of the labor market. Specifically, public employment, wage subsidy, and antidiscrimination programs are advocated. Intervention on the supply side of the market, particularly the human-capital–investment programs of education, training, and job search assistance, is deemphasized if not rejected. (See, for example, Doeringer *et al.* [43, 1972, pp. 38–40] and Bluestone, William M. Murphy, and Mary Stevenson [21, 1973, pp. 148–53].) The demand-side intervention is related to the importance of internal labor markets in the SLM theories. Expansive macro policies to provide full employment are often strongly advocated.

A second set of policies advocated by the radical economists is less specific. They refer to "issues of power, alienation, the quality of social relation" [49, Edwards, 1976, p. 65], and the pre-labor-market "conditioning" of the "consciousness" of people, and they call for a reorganization of schools and other community institutions. (See Bowles [23, 1971], Gintis [66, 1971], Bowles and Gintis [24, 1973; 25, 1975].) In line with a Marxian orientation, the radical economists advocate that workers gain a more dominant role in controlling their work—thereby combating alienation and partly achieving a general realignment of political power. (See Bowles and Gintis [24, 1973; 25, 1975] and Wachtel [192, 1975].)

III. *A Historical Perspective for the Segmented Labor Market Theories*

The SLM theories are stronger in their criticisms of neoclassical theory than they are in advancing a coherent self-contained theory as a replacement. Criticism of classical and neoclassical theory has a long and, in many instances, distinguished history. To the extent that the issues raised by the SLM theories have been raised before (even though in different terms) and remain unresolved, the challenge is all the more compelling. On the other hand, if the issues have been satisfactorily answered before, the challenge is less compelling. In either case, a historical perspective can be informative.

A. *The Theory of Noncompeting Groups in the Labor Market: John Stuart Mill's Criticism of the Classical Economists*

In my view, the importance and prevalence of noncompeting groups offer the single most basic criticism of the operations of the labor market and of the application of competitive assumptions by neoclassicists. This criticism is fundamental to the SLM challenge. The degree of inequality in earnings is difficult to reconcile with the neoclassical model of a competitive economy, particularly when the models assume that acquired human capital is endogenous. It is fitting that two of the greatest names in the history of economic thought, Adam Smith and John

Stuart Mill, may be referred to for an early expression of this basic problem. In Mill's words:

> A well known and very popular chapter in Adam Smith [*Wealth of Nations*, Book I, Chapter 10] contains the best exposition yet given of [wage differentials]. . . . The differences, he [Smith] says, arise partly from the policy of Europe [mercantilism], which nowhere leaves things at perfect liberty and partly "from certain circumstances in the employment themselves. . . . First, the agreeableness or disagreeableness of the employments themselves; secondly, the easiness and cheapness, or the difficulty and expense of learning them; thirdly, the constancy or inconstancy of employment in them; fourthly, the small or great trust which may be reposed in those who exercise them; and fifthly, the probability or improbability of success in them." [118, Mill, (1848) 1900, p. 369.]

With allowance for the modern theorist's elaboration of Smith's second point expressing the theory of investment in human capital and of his fifth point expressing the factor of risk-taking, and with the abandonment of the fourth point (or translation of it to a rent concept), the modern orthodox theory of the supply of labor is not very much different from Smith's. Mill's response to Smith's theory is also justly famous:

> These inequalities of remuneration, which are supposed to compensate for the disagreeable circumstances of particular employments, would under certain conditions, be natural consequences of perfectly free competition: and as between employments of about the same grade, and filled by nearly the same description of people, they are, no doubt, for the most part, realized in practice. But it is altogether a false view of the state of facts, to present this as the relation which generally exists between agreeable and disagreeable employments. The really exhausting and the really repulsive labors, instead of being better paid than others, are almost invariably paid the worst of all, because performed by those who have no choice. . . . The undesirable [laborers] must take what they can get. The more revolting the occupation, the more certain it is to receive the minimum of remuneration, because it devolves upon the most helpless and degraded, on those who from squalid poverty, or from want of skill and education, are rejected from all other employments. Partly from this cause, and partly from the natural and artificial monopolies, . . . the inequalities of wages are generally in an opposite direction to the equitable principle of compensation erroneously represented by Adam Smith as the general law of the remuneration of labor. The hardships and earnings, instead of being directly proportional, as in any just arrangements of society they would be, are generally in inverse ratio to another. [118, Mill, (1848) 1900, p. 372.]

After an absorbing discussion of the effects of educational prerequisites to favored jobs and the occupational advantages of "social rank"—"a class of considerations which Adam Smith, and most other political economists, have taken into far too little account"—Mill returns to Smith's reference to the restrictive practices of the guilds and concludes:

> So complete, indeed, has hitherto been the separation, so strongly marked the line of demarcation, between the different grades of laborers, as to be almost equivalent to a hereditary distinction of caste; each employment being chiefly recruited from the children of those already employed in it; or in employments of the same rank with it in social estimation, or from the children of persons who, if originally of a lower rank, have succeeded in raising themselves by their exertions. [118, Mill, (1848) 1900, p. 377.]

Mill ended his analysis of the problem of noncompeting groups with the hope that general education for and lower birth rates by the lower classes would bring an end to, "The inequality of remuneration between the skilled and the unskilled [which] is, without doubt, very much greater than is justified. . . ." If the SLM theories can help us determine what part of these inequalities is attributable to "artificial" monopolies and to the socialization processes that stratify society into noncompeting groups, they will have served us well.

B. *Marxist Economics*

If a significant part of occupational wage differentials are caused by the stratification of workers into noncompeting groups, as Mill argued, the basic question for orthodox economics is why the forces of competition do not erode the barriers and leave only productivity sources of stratification, with due allowance for transitory disturbances. Marxists would respond that a reserve army of unemployed makes competition injurious, and that any potential beneficial effects of competition are stifled by monopoly capitalism, allied with a compliant government. An attendant result is the growing bureaucratization of industry, which intensifies the workers' alienation and, for a time, smothers their protests.

There are several strands of Marxist economic doctrine in the SLM theories; and a number of radical economists have adopted a Marxian framework. Most of the substance, as distinct from the style, of the SLM theories is, however, closer to the institutionalists (or neoinstitutionalists), who will be discussed below. The core of Marxian economics for this discussion lies in the labor theory of value, the polarization of the economy into enemy camps of employers and workers, and a complete denial that competitive forces can check the exploitation of workers by employers. These extreme positions are seldom adopted in SLM analyses, which recognize the allocative role of factor payments (including returns to capital), heterogeneity in the work force (only one sector of which is believed to be exploited), and sources of worker alienation that stem as much from bureaucratic social institutions (*e.g.*, education and welfare) as from production.

Class conflict and collusive behavior by employers are emphasized. The radical SLM representatives reject the idea of a "*harmony* of interests among all economic actors, whether employers or employees," which is how Gordon represents the neoclassical position [69, 1972, p. 33]. Gordon's representation will be questioned later.

C. *Institutional Economics*

It is, perhaps, a small step from a neoclassical explanation of the workings of the labor market in terms that deal with "equilibrium" outcomes to rationalizing these outcomes as "natural," and from there to a justification of the process. The institutionalist school reacted against neoclassical economics partly on grounds that it served as an apologist for laissez-faire economics. (See N. Arnold Tolles, [184, 1964].) The institutionalists, like Thorstein Veblen, John R. Commons, Henry R. Seager, and Wesley C. Mitchell, were prominent from around 1890 to 1930, and their movement offers an interesting antecedent to the current SLM challenge. Then, as now, there were objections to the marginal productivity theories that determine equilibrium outcomes in models assuming perfect competition. The poverty of a large segment of the working class, a secondary sector composed mainly of the "new" immigrants from Southern and Eastern Europe, was contrasted with the advantages of "native" Americans, who sought to prevent competition from the immigrants by various discriminatory and exclusionary practices. The policy orientation of the institutionalists involved such reforms as: (1) protective legislation, intended to benefit the already arrived "secondary" labor force, (2) trade unionism, mainly beneficial to the "primary" labor force, and (3) trustbusting and governmental regulation of industry, which was presumed to benefit society as a whole.

On a methodological level, the institutional economists reacted against the orthodox position in a number of constructive ways. Their distaste for abstract theorizing led to the pioneering empirical research of Mitchell. The reaction against the narrow "economic man" models resulted in the classic critiques and scholarship of Veblen and Commons, who, although dissimilar, were alike in infusing psychological, sociological, historical, and legal materials into their economic research and in emphasizing growth and change rather than static analysis.

This thumbnail sketch of the institutionalists is offered because elements in its development are similar to that of the SLM school—a recognition of compelling social problems; a dissatisfaction with the neoclassical analysis—or lack of analysis—of these problems; a development of eclectic, alternative research approaches; and finally, advocacy of social reform. Both schools were influenced by Marxism, although for neither was it the principal component. On this dimension, the range of both schools is quite wide—the institutionalists included the anti-Marxist Commons (and later Selig Perlman) as well as the socialists Beatrice and Sidney Webb.

D. *The Neoinstitutionalists of the 1940's and 1950's*

The influence of the neoinstitutionalists of the 1940's and 1950's on the SLM economists has been noted by others (see Doeringer [41, 1967] and Ray Marshall [114, 1974]).[13] Most labor economists during the post–World War II period fell into this classification, and many of the SLM labor economists were their students. The neoinstitutionalists maintained a skeptical view of neoclassical models of perfect competition, the rational "economic man," and money-maximizing behavior by firms and households.[14] They believed that the complexity of the modern economy, the growing role of governmental regulation, and the growth of other anticompetitive institutions, such as bureaucratic corporations and unions, all served to undercut whatever basis previously existed for the application of neoclassical models. Dunlop, as noted earlier, suggested that the large firm and the union produced internal markets that operated almost independently of the external labor market. For Lloyd Fisher the competitive model was not a norm but an anomaly, illustrated by such special situations as the harvest labor market in California [54, 1953]. Kerr described a "Balkanized" labor market and doubted that wages were mainly determined by competitive market forces or that wages exerted much allocative effect on the numbers and locations of workers [89, 1950; 90, 1954]. Lester disputed the methodology of neoclassical models and denied their predictive validity in assessing the employment effects of minimum wage laws [98, 1946; 99, 1947]. Writing much later, Neil W. Chamberlain criticized the theory of human capital for its offensive ethical foundations ("Workers . . . as instruments"), implicit defense of the *status quo*, assumption of a "crude economic rationality," and inattention to the socio-political context [33, 1969]. These ideas turn up in the SLM literature.

[13] In addition to Dunlop and Kerr, the neoinstitutionalist economists of this period included E. Wight Bakke, Neil W. Chamberlain, Lloyd Fisher (sociologist), Frederick H. Harbison, Ray Marshall, Charles A. Myers, Herbert Northrup, Herbert J. Parnes, Lloyd G. Reynolds, Arthur M. Ross, Joseph Shister, George W. Taylor, and Lloyd Ulman. One labor economist of a later generation, Robert Evans, Jr. [51, 1973], has questioned the influence of the neoinstitutionalists on the SLM economists. Evans argues that the latter developed oversimplified models and failed to provide the rich empirical scholarship that is the neoinstitutionalist heritage.

[14] It might be said that the neoclassical economists, who tended not to be labor economists, had a skeptical view of the analyses of the neoinstitutionalist labor economists. In 1950 a conference of eminent general theorists examined "the impact of the labor union," to use the title of the book, edited by D. McCord Wright [203, 1951], that emerged from the conference. In his review of the book, Lloyd Reynolds recalled the saying: "War is too important to be left to generals," and he wryly remarked that the spirit of the conference seemed to indicate that "labor economics is too important to be left to labor economists" [151, 1953, p. 474].

The neoinstitutionalists also emphasized sociological and psychological aspects of the employment relationship, but their research did not deal directly with the problems of poverty and discrimination. As close students of unions, they were less outside of the established institutions of power in the labor market than are the SLM economists.

E. *Reverberations of the "Keynesian Revolution"*

The SLM criticisms of orthodox theory and applications mainly deal with microeconomics, which is one reason why the Keynesian challenge to orthodox theory has not been a major influence. Another reason is simply that Keynesianism had been incorporated into orthodox macroeconomics by the 1960's. Nevertheless, a number of Keynesian ideas that were influential on the neoinstitutionalists' thinking are sometimes found in the SLM literature.

One recurring theme is a systemic macro-instability and a tendency for the U.S. economy to operate with relatively high levels of unemployment. Contributing to macro-instability are wage and price rigidities, which have been repeatedly stressed by the SLM economists and neoinstitutionalists as reasons for rejecting neoclassical models of the labor market. A related Keynesian hypothesis is that "money illusion," particularly on the part of workers, contributes to the frictions that destabilize employment levels. "Money illusion" may also be adduced as another argument against the assumption of rational economic behavior.

F. *The Structuralist Debate of the 1960's and 1970's*

High levels of unemployment and sluggish economic growth during the 1957–64 period persuaded a group of economists, mainly labor economists who were called "structuralists," to dispute the contention of macroeconomic orthodoxy that aggregative monetary and fiscal policies could restore full employment without unacceptable levels of inflation. (See Charles C. Killingsworth [92, 1963] and Gunnar Myrdal [128, 1963]) The dissident structuralists claimed that the problems of poverty and unemployment were attributable to structural shocks and imbalances. Unemployment in depressed areas and decaying inner cities, and unemployment due to technological change[15] were held to be beyond the recuperative powers of aggregative policies. They were generally skeptical of the ability of a "free-market" competitive economy to adjust even to such gradual shocks as changes in the demographic composition of the labor force.

The structuralist position appeared to be discredited when the prosperity of 1966–70 occurred in the wake of a tax cut and expansionary monetary policies. The recent recession, combined with two-digit inflation, appears to have resurrected it.[16] But more to the point of this paper is the agreement of the structuralist and SLM positions on the inability of the free market plus conventional macro policies to (1) produce stability and (2) reward fairly the "secondary" labor force. The connection between the new group of radical econo-

[15] An extreme structuralist position was taken by the "Triple Revolution" school in the late 1950's. This group predicted that automation would proceed at a pace that threatened to create mass unemployment and disrupt the social structure. A presidential commission [129, 1965] prepared a persuasive case against the Triple R scare, and the automation specter has all but disappeared from current economic discussions.

[16] Currently (June 1976), one important manifestation of a structuralist proposal is the Full Employment Bill, H.R. 50 (the Humphrey-Hawkins Bill), which calls for substantial structural changes in managing macro policy, including more sweeping national planning and an extensive public employment program. Casual impressions suggest that the proposed legislation has received a cool reception from orthodox economists. It would be interesting to know the views of the SLM economists regarding this bill.

mists and the older structuralist position is discussed by Martin Bronfenbrenner [26, 1970, pp. 755–56].

IV. *The Modern Neoclassical Response to the Segmented Labor Market Challenge*

A. *Methodological and Theoretical Issues*

A recurring and difficult question is whether value judgments enter into neoclassical analysis and vitiate any claims of ethical neutrality. The distinction between positive and normative economics is, in principle, as clear-cut as the difference between the questions of "What is?" and "What ought to be?" Nevertheless, this distinction can be blurred when the investigator selects to emphasize certain outcomes and to downplay others or decides to express reservations or demurrers about some findings but not others, or, more basically, when selecting the questions to investigate.

Consider the question raised by SLM critics of whether it is legitimate to omit from one's model variables that define or represent preferences, laws, and institutions. The orthodox answer is that legitimacy is conferred if (1) the variables under investigation—say, income and prices—are worth studying in their own right; (2) the model is to be estimated in a context in which one can assume either that the unmeasured variables (economic or noneconomic) do not change or that they change without affecting the expected values of the variables that are under investigation; and (3) the cost of complicating the model by adding more variables exceeds the benefits of greater accuracy in the measured effects of the variables under investigation.

These issues are entirely empirical, and it is pointless to argue about them in the abstract. At the same time it should be noted that much labor-economics research examines the effects of institutions (*e.g.,* unions), laws, (*e.g.,* antidiscrimination laws), and a wide variety of "noneconomic" behavior (*e.g.,* crime, fertility). Of course, conventional economic empirical research, like all statistical research, is limited by the range of historical variation in the values of the variables in the model. To extrapolate much beyond this range of variation places heavy burdens on the theory, and most economic models are not that robust. Thus, the criticism that empirical research in economics does not examine nonmarginal or even revolutionary changes is often inappropriate.

The criticism, mentioned earlier, that neoclassical economics presumes a "harmony of interests among all economic actors, whether employers or employees" [69, Gordon, 1972] is, on one level, contradicted by the neoclassical approval of the "conflict" of competition in the market place, even though this means "losses" as well as "profits" to the individual economic agents. If harmony means only that various competitors, including workers *vis-à-vis* employers, refrain from "killing off" their adversary or confiscating all their adversary's property, then neoclassical economics presumes harmony, but surely there is scope for much conflict short of warfare. The issue points to a relativism: the old CIO unions of the 1930's accepted a harmonious relation with industry—relative to the IWW!

The neoinstitutionalists, Kerr and Fisher, defended conflict in the industrial relations system and found support for their position in the philosophical foundations of classical economics [91, 1957]. They contrasted their position with the model of industrial-relations harmony stemming from several alternative and otherwise disparate social philosophies—that of totalitarian regimes, the Catholic Church (see Frank Tannebaum [173, 1951]), "scientific management" (associated with Frederick W. Taylor), and the "human relations" school of Elton Mayo, George Homans, and William F. Whyte. An extended quotation is worth our attention:

> The chosen world of the plant sociologists [or human relationists] is peopled by non-rational workers who desire security under the leadership of skilled plant managers. The workers have a strong sense of group interest, welcome control, and feel loyalty toward their leaders. The society is a relatively static one. . . . The great triumphs of the liberal era—individualism, liberty, competition—are viewed as the great disasters which will result in social disorganization. The great apologists of liberalism —such as Ricardo—are reviled.
>
> The liberal economists have an almost opposite view of heaven on earth. Man is a reasoning being and is primarily motivated by a desire to maximize his individual welfare. Competitive markets are used to spur on managers to greater efficiency. . . . This is the open society to which the Western World has been dedicated for a century and a half. It is a society of accommodated conflict rather than universal collaboration. It is the world of Adam Smith rather than that of Plato. [91, Kerr and Fisher, 1957, p. 305.]

In matters of economic analysis, the methodological issues between the SLM and orthodox economists have not been joined, but I would expect a substantial replay of the earlier debates stimulated by the "anti-marginalist" position of the neoinstitutionalists.[17] For example, the SLM economists accuse the orthodox economists of an attachment to "a single parameter—*marginal productivity*" as the determinant of wages [69, Gordon, 1972, pp. 28–29] (see also Thurow [179, 1975]), despite the fact that the marginal productivity theory, as a theory of demand, cannot determine wages in the absence of a supply function.[18] At the same time, the SLM critics repeatedly accuse the orthodox labor economists of a single-minded attachment to the supply side of the market in their attention to human capital investments.

Actually, the orthodox view of earnings determination tends to emphasize demand conditions in short-run contexts—focusing on the derived labor demands in particular industries or areas and on unemployment in relation to aggregate demand in a macro context. The supply side tends to be emphasized for long-run problems of wage and employment determination because the above-mentioned demand factors are more or less "averaged out," and the productivity characteristics of workers, as measured by their skills, training, education, and experience, assume greater importance. Of course, there is nothing in the methodology of orthodox analyses of earnings that rules out an interaction between short-run demand and long-run productivity factors, nor the roles of "personality" characteristics, institutions, discrimination, and protectionism. I suggest, however, that until the SLM theories are formulated more explicitly and precisely, the empirical rather than methodological challenges provide more useful topics for debate.

[17] The principals in these debates were, first: Richard A. Lester [98, 1946], Fritz Machlup [109, 1946], and George J. Stigler [169, 1947]; later, Milton Friedman [59, 1953], Robert J. Lampman [93, 1956], and Simon Rottenberg [158, 1956]. Recently, Martin Bronfenbrenner has written an engaging review of part of this debate [27, 1971, pp. 177–88].

[18] Albert Rees makes a pertinent observation and explains the neoclassical position in simple terms in the following passage [149, 1973, p. 58]:

> Although the [marginal productivity] theory has been severely attacked by institutional labor economists, it survives the attacks both because the critics have often misunderstood it and because they have conspicuously failed to develop a coherent alternative theory to put in its place.
>
> Much of the misunderstanding of marginal productivity theory is summed up in the single unfortunate term "the marginal productivity theory of *wages*. . . ." A demand schedule is a functional relation between a price (in this case, a wage) and the quantity demanded. . . . [W]ages and employment are [however] jointly determined by supply and demand. . . ."

B. *Empirical-Theoretical Issues: Implications for Research and Policy*

1. *Occupational boundaries and occupational mobility*

How might one test the hypothesis that labor markets are dualistic or segmented? Two empirical questions about the occupational structure may be posed. The first is whether the static picture of the occupational structure reveals a duality. Assume that we could agree upon a unidimensional scale to measure the quality (goodness or badness) of occupations. The measure might be some weighted average of financial returns, prestige, working conditions, and employment stability. Let this measure of job quality be measured on the horizontal axis and the number of workers be measured on the vertical axis.[19] The simplest test of the dual theory is whether the resulting frequency distribution is bimodal. Correspondingly, the segmentation hypothesis would presumably predict a distribution that was distinctly multipeaked. These hypotheses about the distribution of occupations could be examined by descriptive cross-sectional "snapshots."

Another version of the segmented market hypothesis is that little or no *mobility* occurs between the secondary and primary (or among segmented) occupational groupings. To what extent are workers, according to some pre-labor-market group characteristic, confined to one segment of the occupational spectrum? Longitudinal data are the most useful for testing hypotheses about mobility.

Clearly, both tests of the dual hypothesis require some criteria for determining in advance what assigns a worker to a primary or secondary sector and what degree of bimodality or immobility would be considered sufficient to justify the dual label. Surprisingly, almost no discussion of these criteria has been forthcoming from economists sympathetic to SLM theories. Paul Osterman employs a test of duality in which he first classifies occupations according to his personal judgment about the autonomy and stability of occupations [133, 1975]. Paul J. Andrisani simply selected the three-digit occupations and industries where median earnings are below the 33rd percentile of the labor force to define secondary workers [4, 1973]. Various unfavorable characteristics for secondary jobs are, therefore, assured, but the boundary is arbitrary. The statistical analysis in these two papers examined the effect of human capital variables on labor market outcomes (*e.g.*, wages) and criticism of this analysis will be taken up below.

Several neoclassical-oriented economists have found little empirical support for the dual-market theories of status or mobility. Michael L. Wachter examined and quickly rejected the descriptive, cross-section "test" of the duality hypothesis by pointing to near-normal shaped distributions of wages and earnings [194, 1974, pp. 652–53]. Marc P. Freiman devised alternative measures of the "goodness" of jobs and arrives at the same conclusion [61, 1976]. Freiman [61, 1976] and Duane E. Leigh [97, 1976] tested various mobility hypotheses for workers classified by race, previous wage, previous industry and occupation, and other characteristics. They find no support for immobility across variously defined boundaries for, say, low wage and black workers. (They were aware of the regression-to-the-mean effect that naturally leads to greater movement by workers classed at the lowest and high-

[19] An important issue at this point is to decide upon the appropriate population of workers. For some purposes the youngest and oldest workers would be excluded to eliminate transitory variations in attained job quality. For other purposes the occupational status of blacks and women would be examined separately to focus on discrimination (see below).

est ends of the spectrum, and they attempted to adjust for this source of bias.)

2. *Discrimination*[20]

The definition of discrimination is itself an important issue. Economic discrimination exists when workers who are on average equally able (equally productive) receive different average remuneration. Thus, while discrimination may take the form of different compensation for the same work, it is more likely to be revealed by different jobs being awarded to otherwise equally able workers—jobs that in turn will carry different pay and other benefits.

Once it is recognized that discrimination may be effected by unfavorable job assignments, the analytical distinction between the "wage discrimination" of Becker [15, (1957) 1971] and Arrow [5, 1972; 6, 1973] and the "job discrimination" of Bergmann [17, 1970; 18, 1971] and Marshall [114, 1974] disappears. The Bergmann concepts of "occupational segregation" and "crowding" and Marshall's "job discrimination" appear more descriptively realistic, but analytically, nothing is lost by the concept of wage discrimination. When analysts assume a production function with only one skill level of labor, as do Arrow and Becker, then only wage discrimination is possible. However, if heterogeneous skills (jobs) and a corresponding dispersion of wages is assumed, then wage and job discrimination can be made equivalent merely by defining each wage-skill level as an "occupation" (or "job").

Neoclassical approaches. To review briefly the neoclassical explanation for the existence of discrimination, we may distinguish among "competitive" theories—deterministic and "statistical"—and "noncompetitive" theories. In deterministic competitive theories discrimination reflects "tastes" against a definable group. Employers manifest their tastes for racial discrimination by paying whites more and blacks less. However, the competitive model predicts that employers who do not have such tastes (or have them to a lesser degree) could profit (with no sacrifice in psychic utility) by hiring the cheaper labor. Under conventional assumptions, the low-cost employers would eventually drive the high-cost employers out of business, unless the latter cease their discriminatory practices. For different reasons, neither discrimination by workers nor by customers provides persuasive arguments for sustained discriminatory pay differences, under the neoclassical model of competition, and the model of employee discrimination has the further shortcoming that its prediction of increasing segregation has not been confirmed.[21]

"Statistical" theories of discrimination assume that employers hire, place, and pay workers on the basis of imperfect information about their true productivity (see John J. McCall [107, 1972; 108, 1973], Edmund S. Phelps [138, 1972], Arrow [5, 1972; 6, 1973], and Spence [166, 1973;

[20] A recent survey of the economics of racial discrimination in this journal [114, Marshall, 1974] describes four approaches: neoclassical, dual, radical, and bargaining—all of which relate to my consideration of discrimination as a critical challenge of the SLM theories to orthodox labor economics. My discussion will emphasize points where I draw different interpretations and conclusions.

[21] If the tastes for discrimination are manifest by employees, the implication is that the workers will prefer to work in segregated work sites and/or demand a wage premium to work in an integrated site. Clearly, if the employers have no tastes for discrimination, they will respond by hiring a homogeneous color group. Competition will force equal pay for equal work, and the final result is segregation *but no discriminatory wage difference.* (Noncompetitive behavior by workers is discussed below.) If the tastes for discrimination are mainfest by customers—the final economic agent in the market—discriminatory wage differentials should not occur in jobs that have no direct customer contact, and these constitute the large majority of jobs. See Welch [200, 1975] and Flanagan [55, 1973] for comments on several theoretical and empirical weaknesses of competitive theories of discrimination.

167, 1974]). Given that less reliable information is available for blacks or other minorities, the costs of this uncertainty (or, alternatively, the costs of reducing the uncertainty by providing additional information) is shifted from employers to the affected group of workers.

The most thorough analysis of the implications of the incidence of the costs of providing information about one's productivity is by Spence, whose "signaling" model will be discussed under the education section. Dennis J. Aigner and Glen G. Cain [1, 1977] examine statistical theories of discrimination in detail, and I will simply report our conclusions here. Although the models of statistical discrimination contain some ambiguities and have often been misinterpreted, they are logically suggestive of some plausible circumstances where economic discrimination occurs. However, they do not seem capable of explaining a large measure of discrimination. In the last analysis they rest on rather *ad hoc* conditions—risk aversion with limits on its avoidance, wage rigidities, and the like.

Noncompetitive models tend to be deemphasized by orthodox economists. For example, Armen A. Alchian and Reuben A. Kessel [2, 1962] suggest that monopoly in the product market would rationalize discrimination only under certain conditions: (a) if the monopolists were willing to forgo money profits to indulge their tastes for discrimination; (b) if the barriers to entry were to prevent "buying out" the monopolist, since there would be extra money profits if a nondiscriminator would take over the business; (c) if the monopoly were regulated and money profits controlled, which leads the monopolist to indulge his tastes for nonpecuniary benefits at a zero cost in forgone profits. Generally, neoclassical economists tend to minimize the extent of monopoly, so these points by Alchian and Kessel reinforce their rejection of a product-monopoly explanation for discrimination.

Nor has monopoly in factor markets proved a convincing explanation for discriminatory outcomes against black workers. Despite the clear evidence that *some* unions discriminate against blacks, Ashenfelter [9, 1972] provided empirical evidence for a union effect on wages that, on average, *improved* the black/white earnings ratio. Thus, not only did the labor-monopoly hypothesis not explain discrimination, unionism made the overall measure of discrimination (*i.e.,* the white-minus-black wage difference for comparable workers) even more difficult to explain within a neoclassical framework. It would be useful to study collusive practices by workers (*e.g.,* licensing) outside of unions.

A third type of noncompetitive model is monopsony, which predicts that the wage will be less than under competitive conditions; and if black (or women) workers were confined to monopsonistic labor markets, they would, indeed, be "exploited" in the classic definition of that term. Neoclassical economists have tended to dismiss monopsony because they doubted that this situation could persist in the face of worker mobility out of, or the entry by firms into, the monopsonistic labor market. (An exception is Janice Fanning Madden [110, 1973] who argues for a monopsony explanation of discrimination against women.) A special case sometimes cited is that of nurses, who may face a collusive group of employers (hospitals) and who may be relatively immobile, especially if they are tied to an area because of family responsibilities. (See Stuart H. Altman [3, 1971].)

SLM approaches. The SLM hypotheses about discrimination tend to be elaborations on the foregoing neoclassical models, but with a markedly different emphasis on collusive and collective behavior. To illustrate, Thurow [177, 1969] proposed the monopsony model as a counter-example to Becker's model in which employers paid for discriminating.[22] Piore implies that since certain employers and white male workers benefit from discrimination against minority workers (in particular, employers who benefit from "overcrowding" of the labor pool), there will be forces operating to perpetuate discrimination [140, 1970, pp. 55–60]. But Piore does not describe this collective behavior or these forces, and he dismisses the costs to employers who face the "depleted" labor pool because he misinterprets the theory of statistical discrimination.

Another form of collective behavior emphasized many times in the SLM literature is the "divide-and-conquer" strategy of employers, whereby otherwise costly discrimination pays for itself by forestalling collective labor action against employers (see Morris Silver [162, 1970], Reich [150, 1971], Franklin and Resnick [57, 1973], and Stone [170, 1975].[23] The cost-effectiveness of this policy is dubious in the light of the entrenched position of unions and extensive laws regulating discriminatory actions by employers (see Marshall [114, 1974, p. 858]).

Recently Thurow offered a version of "statistical" discrimination that, under a favorable interpretation, relies on rigid wages (discussed below) to prevent workers and employers from fairly matching average productivity and average remuneration [179, 1975, pp. 170–77]. Finally, Piore has applied the idea of endogenous tastes to suggest a "self-perpetuating syndrome" in which an initial unfavorable placement of discriminated groups in the secondary sector causes them to develop poor working habits [140, 1970]. (This syndrome was also referred to by Arrow [6, 1973] and Phelps [138, 1972].) However, there is yet no evidence for the pattern of causality implicit in the model, and as it is stated, neither employer nor worker seems to benefit from this pattern—so it is not easy to accept at face value. The issue, let us keep in mind, is not whether employers want to keep the workers—perhaps, especially the black workers—"in their places," but whether the economy is organized in such a way that they can do so without paying for it.[24]

In summary, neoclassical economics does not provide a very complete and convincing theory of discrimination, although some criticisms of it seem overstated,[25] and the SLM alternatives appear even less convincing. In any case, there is a large body of empirical work that offers some guidance for interpreting the theories.

Empirical studies, with special reference to time trends, pre-labor-market discrimination, and sex discrimination.

[22] Thurow pointed to South Africa, which, as an example of the confinement and immobility of the discriminated group and as an example of a government-supported collusive arrangement to subjugate the discriminated group, makes the monopsony case crystal clear. However, the United States does not have a policy of *apartheid*, and the example of South Africa does not seem immediately relevant.

[23] Interestingly, the older institutionalist economists, who studied closely the rise of unionism, were aware of this motive and cited cases in which employers apparently were willing to encourage strife and dissension in their work forces, by a policy of playing one ethnic group off against another, solely to stave off unionism. (See Charles A. Gulick [70, 1924].)

[24] However, we should note that the radical economists might claim that employers will be net gainers from the "self-perpetuating syndrome," if, as the radicalists maintain, the profit loss to employers, because of the reduced stock of labor-quality, is offset by entrenchment of the employers' social, economic, political, and psychological status. See Marglin [113, 1974].

[25] At times the neoclassical model is incorrectly assumed to be identical with the perfect competition model, and this loses sight of the capacity of neoclassical theory to examine the impact of laws [94, William M. Landes, 1968], institutions [9, Ashenfelter, 1972], and monopoly elements [165, Thomas Sowell, 1975; 2, Alchian and Kessel, 1962]. Certainly the neoclassical framework is compatible with a positive role for antidiscrimination laws, even though these laws must cope with "job discrimination." Marshall's contrary views and criticisms of neoclassical theories appear to be based on his failure to recognize the equivalence of "job" and "wage" discrimination in neoclassical models [114, 1974, pp. 864, 869].

Since the competitive neoclassical model predicts a demise of discriminatory differences in earnings, the orthodox economists have looked for evidence of this, and they are beginning to find some. Thomas Sowell [165, 1975] views the urbanization of blacks as a recent immigration, and on this basis he draws relatively optimistic conclusions about their pace of economic progress. The ratio of black to white earnings has narrowed during the past ten years relative to earlier periods, although the gross ratio for men is still only around .70 [185, U.S. Bureau of the Census]. Haworth, Gwartney, and Haworth show much more racial equality in earnings in 1969 than in 1959, particularly for the age group under 35 [83, 1975]. In this study, education and other variables were held constant—including hours worked, however, so the effects of discrimination on employment may have been inappropriately suppressed. Other recent studies of cross-sectional data have also found that among the younger cohorts, the earnings of black males rise with higher levels of education as steeply as the earnings-education relation for white males [58, Richard B. Freeman, 1973; 198, Finis Welch, 1973]. It remains to be seen, of course, if these relatively favorable black-white earnings ratios are sustained into the middle and older ages.

Whether discrimination against black males is more severe among older age-groups is an issue raised earlier (*Section* II, A, 5, point d). A widening difference in white-black earnings for older age males is observed in the cross-section data, but this is not conclusive evidence that any cohort of black males meets more severe discrimination in its older ages. Data from the 1950, 1960, and 1970 Censuses have, in fact, been analyzed by Freeman [58, 1973] and Barry R. Chiswick [36, 1974, pp. 116–18] and show cohort profiles that rise at least as rapidly for black males as white males, from ages 30 to 60 (roughly), although the blacks begin at markedly lower bases.

To strike a less up-beat note, I suggest that we not lose sight of the substantial difference in the level of white and black earnings (10 to 20 percent), even for recent data and even after available productivity variables have been "held constant." In view of this, neoclassical economists have looked to pre-labor-market discrimination, sometimes along with capital market imperfections, as explanations for the differences in achievements. If, according to neoclassical theory, workers of equal productivity should receive equal wages, and they do not, then it is natural to expect the defenders of the theory to question whether productivity was really equal; specifically, whether the personal productivity factors are completely enumerated and accurately measured.

In a recent study with longitudinal data, Hall and Richard A. Kasten conclude that pre-labor-market endowments and not a lack of commensurate progress in the labor market are the primary sources of the black males' disadvantages—at least for the younger ages examined [73, 1973]. Another strategy is to attempt to include in one's earnings model those types of pre-labor-market investments that have not been "held constant" in the conventional analyses—quality measures of schooling, educational achievement measures, vocational training, health measures, and so on. Much effort has been expended to investigate these hard-to-measure shortfalls in investments, but the neoclassical economists are divided in their conclusions about how much market discrimination can be explained away by these efforts. (On just the single dimension of the quality of schooling, a large conflicting literature exists. See Gwartney [71, 1970], Dave M. O'Neill [131, 1970], Randall D. Weiss [196, 1970], Ashenfelter and Michael K. Taussig [10, 1971], and Welch [198, 1973].)

Still another line of argument applied

by the orthodox economists to sex discrimination is that women are vocationally discriminated against in the childhood formation of preferences or attitudes regarding their role in life—playing doctor or playing nurse—and in various child development activities.[26] The theory of "role discrimination" (to use Kenneth E. Boulding's term [22, 1976] is consistent with neoclassical economics in two theoretical points. First, the theories of "comparative advantage" and "gains from specialization" suggest a division of labor in the household between market-work and home-work. Historically, the child-bearing role has given women a comparative advantage in home-work. The basis for this division has, of course, been partially eroded by birth control and the declining family size, home-sector technological changes, lighter market-work, and a decreased amount of time devoted to market work on the part of males.

Second, the theory of human capital predicts that the amount of market-oriented investment will be less for those who expect to commit less time to the labor market (see Mincer and Solomon Polachek [123, 1974]). Given a finite life and customary retirement age, the pre-labor-market investments will not pay as much to workers who do not expect to work on a full-time year-in-year-out basis. To some extent, however, market discrimination is causal to the formation of career preferences, but a commitment by women to the home sector would probably exceed that of men even if there were no market discrimination. By the same argument, the slower growth in educational attainment of women relative to men, especially in attaining higher degrees, may reflect, in part, a response to discrimination against women in the higher occupations and, in part, a consequence of women's voluntary decision to commit less time to the labor market than men [187, U.S. Dept. of Labor, 1976].

The mutual causation problem arises again in the orthodox claim that the lesser work experience of women is a key reason for their lower wages (see Mincer and Polachek [123, 1974], and *The Economic Report of the President* [188, 1973, pp. 104–07]). Because wage rates are an important determinant of the time spent in the labor force, work experience is not an entirely satisfactory variable to explain away the sex differential in wages—causation runs both ways.[27] Nevertheless, the difference in male-female earnings found by Mincer and Polachek is still around 20 percent. The effect of their careful control over experience is revealed by the larger male-female earnings differences found in other studies. The cross-section studies of the male-female earnings differences,

[26] One reader of this sentence suggested that the expression "discriminated against" should be replaced by "treated differently from men," on grounds that the burdens and hazards of market work may make a home vocation preferable to a market vocation. Higher mortality rates of males testify to this judgment, the reader added. I agree that prevailing child-rearing practices discriminate against males with respect to many lifetime activities. However, housework appears to be ranked lower than market-work in contemporary society. As to men's high mortality rates, these may only reflect their natural weakness relative to women. See Ashley Montagu [124, 1952] and Francis C. Madigan [111, 1957].

[27] Mincer and Polachek [123, 1974] examine the mutual-causation problem between "years of work experience" and "the wage rate" by estimating a simultaneous equation model in which both variables are endogenous. They report virtually the same-sized positive coefficient of the instrumental variable for experience as they found in the single equation model. I confess to reservations about this part of their paper. The instruments for "experience" were wife's schooling, husband's schooling, and the wife's number-of-children. However, wife's schooling is in the wage equation, and virtually all the remaining variation in experience was due to the number-of-children variable, which had a t-ratio of 12. The coefficient of husband's schooling was not significant at the 5 percent level (its t-ratio was 1.8). Thus, the instrument for experience in the second-stage, wage equation boils down to the number of children, which has every right to be labeled endogenous.

which "hold constant" a variety of personal productivity variables, have been summarized by Andrew I. Kohen in the survey paper by Hilda Kahne [88, 1975, pp. 1256–62]. The main conclusions are that an "unexplained" wage difference of perhaps 40 percent is common (see Isabel V. Sawhill for a compact summary [159, 1973]), and most of this is attributed, directly or indirectly, to discrimination.

In the aggregate, the time-series evidence for sex discrimination rests mainly in the failure of the occupational and full-year earnings gap between men and women workers to narrow. (See Bergmann and Adelman [19, 1973] and Francine Blau Weisskoff [197, 1972].) Victor R. Fuchs [62, 1974], however, reports a modest increase in the wage rate of women relative to men from 1960 to 1970, which suggests that the earnings of full-year, year-around workers may not standardize for hours worked. Fuchs offers two reasons, cogent but not entirely persuasive, as to why the mere holding even of women's wages relative to men's is evidence for an increase in the demand for female labor relative to males. First, he implicitly assumes that the increase in the labor supply of women was largely autonomous. Even accepting this assumption, however, a rightward shift of the supply curve would lower wages only for females, rather than for all labor, only if there is occupational segregation, which presumes discrimination. Second, the increase in work rates by women is viewed as an increase in less experienced and less able women, relative to the existing stock. But this is not obvious. If the increase in work rates stems from reduced *exit* rates, the average experience of the stock of working women may have increased over the decade, relative to men. Moreover, the selectivity of more productive women in the labor force is plausible on *a priori* grounds in a cross section. But in a time series, we need to examine empirically whether the successive cohorts are becoming more or less productive relative to men.

Measures of the effect of education on the male-female difference in earnings are exceedingly difficult to interpret. Women with more education work more, so to some extent their rate of return on education is spuriously high because the value of nonmarket work time is ignored. Carnoy and Marenbach [32, 1975, p. 316] find that the rates of return to education have often been higher for women than for men, using data from the 1940–70 censuses, but no adjustments were made for for hours worked. On the other hand, the women's rate of return to education should take into account the effect of education on her home productivity, which could include the income of her husband. Indeed rates of return on education for males should also include effects on their nonmarket productivity and marriage partner, but these effects probably have a larger impact on female returns-to-education.

3. *Unemployment and job instability*

According to Piore, the job attribute that "above all" distinguishes the primary sector is "employment stability" [143, 1975, p. 126], and job instability in the secondary market has been labeled "pathological" (originally by Hall [72, 1970, p. 389] and widely quoted thereafter). It is important to note the distinction made by SLM economists between *instability* and *unemployment*. (See Hall [72, 1970] and Martin S. Feldstein [53, 1973] for attention to this issue by non-SLM economists.) Instability is attributed to the lack of good jobs and, to some extent, to unfavorable behavioral traits of the workers. Unemployment, on the other hand, is attributed to insufficient aggregate demand and manifested by a short-age of job offers relative to job applicants. Doeringer and Piore claim that it is not the lack of jobs but the lack of "good" jobs—"meaningful employment opportunities"—that is the root cause of the secondary labor market [44, 1971, p. 164].

I confess that I do not understand the analytical distinction between a lack of good jobs and a lack of jobs. Hypothetically, a laid-off auto worker who is white and thirty-five years old has more jobs available to him than an unemployed, unskilled black worker who is twenty-five years old. But both are unemployed because the jobs that are known and available to them are not acceptable, for a variety of reasons that appear sound to them (and probably would to us, if we knew all the circumstances). Perhaps the pool of jobs that may be accepted is larger for the black, partly because his reservation wage is lower—as he has less resources for sustenance while unemployed—and partly because the low wage employers will "know" that the black will be less "choosy" than the ex-auto worker. But the fundamental similarity of the unemployment situation of both types of workers is that the jobs available at the time are not good enough—a rough restatement of the substantive meaning of the census definition of "unemployment"—or, to use an old-fashioned term, "involuntary unemployment." The dissimilarities of the two types of workers depend on such demand factors as racial discrimination in the market, whether the auto layoff is temporary, and on supply factors represented by the general term, "human capital."

We can agree with the SLM proposition that employment instability is an undesirable characteristic of certain jobs and an unfortunate characteristic of certain workers, particularly low-wage workers. Aside from jobs affected by seasonality (*e.g.*, construction) and unstable jobs sought by workers who desire part-time and intermittent employment (some among the young, the semi-retired, and wives), the problem of involuntary employment instability may well be analyzed in the same way as other unfavorable traits of jobs and workers, such as low pay, poor working conditions, and limited fringe benefits. More pointedly, if human capital models are able to provide explanations for the level of wages received, why should these models not apply to fringe benefits and employment stability, which are also components of job remuneration? Why cannot employment stability be viewed as another varying component of the employer's offer and variation in employment stability as another source of differential reward to human capital?

The purpose of these somewhat rhetorical questions is not to dismiss the attention given to unemployment and job instability among SLM economists, but rather to question whether a *prima facie* case for the "failure" of neoclassical economic models should rest on the existence of job instability among a significant portion of low-skilled workers and low-paying jobs. Orthodox economists recognize that variation in unemployment is more important than variation in fringe benefits or working conditions. Unemployment (or job instability) is tied closely to macroeconomic policies, and it impinges on workers in an uneven and harsh way. So it is appropriate that much of our attention be devoted to group differences in unemployment.

Another puzzle to me is the SLM view that employment instability is inherent in the job. As Doeringer *et al.* say: "Instability on the job appears to be a more serious cause of ghetto unemployment than lack of skill" [43, 1972, p. 4]. (See also Bluestone [20, 1970] and Nancy S. Barrett and Richard D. Morgenstern [12, 1974].) What is being referred to here is *not* the demand-side source of instability associated with the business cycle, but rather with structural or permanent characteristics of the jobs. My view is that for long-run equilibrium analysis, the supply side is the more appropriate focus.

Certain types of jobs that are, for example, disproportionately filled by young people may well be described as relatively unstable, but this may reflect the looser attachment of young people to the labor force. Where job instability is associated with prime-age workers who are firmly committed to the labor force, the neoclassical hypothesis is that these jobs ought to offer "compensating" differentials or that the workers comprise a disadvantaged noncompeting group. Explanations of unemployment or job instability that emphasize supply or human capital factors are discussed below, but the point may be made here that a basic unresolved issue is the extent to which low levels of human capital are *causal to* the observed instability and the extent to which low levels of human capital are an *effect of* the instability.

Neoclassical theories of unemployment and their relation to SLM theories. Some groups in the labor force experience unemployment that occurs in relatively numerous spells of short duration, and others, unemployment that tends to be of a single long duration. This issue is primarily important as a source of understanding why the level of unemployment is relatively high for various groups. I consider three orthodox hypotheses about unemployment—two which overlap SLM hypotheses.

a. *Alternative sources of income.* The neoclassical model of the allocation of one's time to various activities is based on the ideas of budget constraints (income effects) and opportunity costs (price effects). The first factor suggests that those whose wealth status is low cannot afford long—or many—spells of unemployment. On the other hand, unemployment is cheaper for those with low earnings abilities. By these terms alone, the sign of the human capital effect on unemployment is ambiguous. However, nonlabor sources of support available during unemployment clearly lowers the cost of unemployment. Thus, young people and other so-called "secondary workers" in families with a "primary" earner often can rely on other members of the family for support. Unemployment insurance and public assistance receive a good deal of comment in this connection by both neoclassical economists [52, Feldstein, 1973] and SLM economists [140, Piore, 1970; 69, Gordon, 1972, p. 10]. It is further recognized that the income from these latter sources is generally *conditional* upon being without work, so work is, in a sense, "taxed" by these programs. It should be noted that public assistance is more important as a determinant of being out of the labor force, rather than being unemployed.

The SLM spokesmen have also emphasized "illegitimate" sources of income, which, along with welfare assistance, are claimed to be a particularly relevant alternative to "regular" employment earnings in central city ghetto areas [69, Gordon, 1972, p. 10; 80, Harrison, 1972, chap. 5; 20, Bluestone, 1970; and 140, Piore, 1970]. The new neoclassical models of crime also emphasize alternative earnings as an influence [14, Becker, 1968].

While all of the above factors appear to be plausible qualitative explanations for differential unemployment rates and patterns among groups under other-things-equal conditions, their quantitative measurement is lacking. Unemployment status, welfare status, criminal activities, low incomes, low wages, and, for some purposes, motivations and attitudes are all endogenous variables, so estimating causal effects is exceedingly difficult.

b. *Labor as a quasi-fixed factor of production.* A simple but influential model of differential unemployment by skill class was advanced by Walter Y. Oi [130, 1962] and Becker [13, 1964] in the early stages of the development of human capital analyses. The model assumes that (a) higher skill classes have more on-the-job, firm-specific training and/or that they are more complementary (relative to unskilled labor) to fixed, physical-capital factors of production (the latter point was developed extensively by Sherwin Rosen [154, 1968]); (b) there are "overhead costs" of recruiting, placing, and laying-off workers—costs that are often positively related to the wage levels of the skill groups; (c) the firm and workers are uncertain about the timing and duration of phases of the business cycle. Under these assumptions, in a downturn firms will tend to layoff the less-skilled workers and to retain the more highly-skilled workers, who are relatively more valuable because of their capital complementarity and on-the-job training (which would be lost to the firm if the laid-off skilled workers were to take jobs elsewhere).

Two further considerations are needed, however, to provide a more complete explanation of the higher unemployment rates for the lower-skill groups. One is that there must be some reason why the wage rate of the lower-skill group does not fall to the point where they can compete on a cost-basis with the higher-skill group. There are several sources of such relatively rigid "floors"—union rates, bureaucratic inflexibility in large firms, minimum wage laws, "social minimum" reservation wages, and the alternative income support available from unemployment insurance and welfare. Orthodox economists have frequently attributed unemployment, especially for "marginal" workers, to governmental wage fixing (see Stigler [168, 1946], Feldstein [52, 1973] and Friedman [60, 1972, pp. 162–63]).

A second reason why a lower-skill group may have higher unemployment and greater job instability links a neoclassical argument about transaction costs and imperfect competition to the SLM hypothesis about internal labor markets. A neoclassical argument is as follows: In larger firms, particularly, the fringe benefits and overhead costs tied to an employee have increased over time because of union pressures, tax laws, and the preferences of workers and employers. These increases are both cause and effect of the large amount of firm-specific on-the-job training. High transaction costs of hiring and allocating the work force make turnover expensive, and fringe benefits serve to reduce turnover. The result is stable employment tenure along with generous fringe benefits. A strong union may obtain high wages as an added benefit for those "lucky" or "favored" workers who happen to get hired in these "good jobs." If there is no favoritism, employers will hire more productive workers for these jobs, although empirical investigators may find it difficult to measure all the productivity traits.[28] Favoritism may mean discrimination by sex or color.

In summary, it would be consistent with neoclassical theory for bureaucratic firms that have firm-specific training, high overhead costs of labor, and somewhat rigid wages to create a strata of high-paying, stable jobs.[29] These types of jobs could be labeled "primary jobs," but whether the labor market is dualistic depends, obvi-

[28] These issues have been investigated empirically. Leonard W. Weiss reviews the relation between industry concentration, unionism, and wage rates [195, 1971]. He concludes that a gross correlation between wages and concentration exists, but that it is reduced in size and reduced to statistical insignificance when various "personal" characteristics of the workers are controlled for—controlling, presumably, for the "quality" or "productivity" of the worker. Thus, Weiss concludes that significant "monopoly rents" are not received by workers in the concentrated industries. However, he did find, as have others (see H. Gregg Lewis [102, 1963]) a significant, positive union effect on wages.

[29] Many of the above ideas are discussed clearly in Rees [149, 1973, pp. 83–90]. See also Wachter [194, 1974] and Oliver E. Williamson, Michael L. Wachter, and Jeffrey E. Harris [201, 1975] for another and more extended rationalization, on neoclassical terms, of "internal" (within-firm) labor markets.

ously, on how common these "protected labor markets" are and whether there is sufficient gradation in the pattern to yield a continuum rather than a dichotomy.

c. *Job-search models.* Neoclassical models of job search and unemployment (see Phelps, [137, 1970]) attempt to provide a link between microeconomics and the prevailing macro theories of unemployment and serve, incidentally, to deal with some of the issues raised by the SLM economists. Consider the following simple version of the new theories. Changes in aggregate demand induce uncertainty about expected wages. Assume workers will be slower (relative to employers) to adjust to inflation and deflation—offering "more" labor (for example, overtime) during the inflationary upswing (because the higher money wage appears as a higher real wage than it really is) and offering "less" labor (unemployment in some cases) during a deflationary downswing (because the lower money wage appears as a lower real wage than it really is).

The job-search models are used to analyze and rationalize the behavior of unemployed workers. The definition of unemployment implies that there is some active job search by the person without a job, and the job search models begin with the quasi-tautology that search continues as long as the marginal benefits of further search exceed the marginal costs. As noted above, the costs are affected by the worker's alternative income, including unemployment insurance, which mainly determines the opportunity costs of search. The direct costs—such as employment agency fees and travel costs—are largely unmeasured but are, perhaps, small.

Unfortunately, little information is available about the determinants of efficient job search. A crucial assumption is that the job search is more efficient when the worker is unemployed and can "specialize" in search activity. This assumption has been questioned, and the little empirical evidence available does not support it (see James Tobin [182, 1972] and J. Peter Mattila [116, 1974]). Unemployed workers not only forgo earnings, but being unemployed may emit unfavorable signals about their employability.

Casual observation suggests that the benefits of job search and job-trials are greater for young workers than for older workers. The latter know more about their skills and preferences. By the same token employers usually know more about experienced or older workers, so there may be less variability in job offers. Since young people also have lower opportunity costs of unemployment, the job-search models predict higher unemployment rates for them. Similar arguments are made about women workers relative to male workers.

Many of these points seem reasonable, but the problems in estimating the job-search model are severe. The data requirements include information about the distribution of wage offers available to the searching worker and whether job offers that are "sampled" must be chosen or rejected on a once-and-for-all basis, or whether two or more chances are available. The worker's "efficiency" in job search, expected future wages, opportunity costs, attitudes toward risk, and subjective discount rate are all more or less unobservable.[30]

It is my view that the new job-search models of unemployment are not yet tractable for empirical work and, therefore, cannot yield useful predictions. It is not clear what policy recommendations follow from the models.

[30] The discount rate may be said to be the one new variable introduced in job-search models that was not already present in the older discussions of unemployment and the reasons for its duration. Even here, one may question the importance of discount rates, given the short duration of most spells of unemployment. Of course, when "job search" means "career choice," the discount rate is important.

4. *Protected labor markets and wage rigidities*

Orthodox economists respond most directly (although seldom self-consciously) to the SLM challenge when they relax the assumptions of perfect competition and price (or wage) flexibility. By taking account of various market imperfections, there is considerable reconciliation of SLM and orthodox views about discrimination, unemployment, and noncompeting groups. Several examples will be briefly illustrated in this section.

Protected markets. Neoclassical models of developing economies often specify a dual labor market, consisting of a "protected" urban, manufacturing-and-government sector and an "unprotected" sector—the rural areas and the nongovernment, nonmanufacturing portion of the urban economy. (For a classic article, see W. Arthur Lewis [104, 1954].) Arnold C. Harberger [78, 1971] and Michael P. Todaro [183, 1969] describe neoclassical models for explaining unemployment in the urban sector and rural-to-urban migration. The fixed high wages offered in the protected sector attract an excess of applicants over job openings. The two wage levels are maintained indefinitely because the amount of unemployment in the protected sector equilibrates expected earnings in the two sectors. Expected earnings is the wage times the probability of landing a job. A higher urban wage as a result of governmental or union imposition will increase migration and unemployment, other things equal.

Orthodox economists have not sought to characterize the U.S. economy, or any developed nation's economy, in dual terms except for certain special cases—foreign immigration in western Europe, the migration of Mexican laborers to the southwestern United States, and, as discussed below, the low-wage industries that are covered by the federal minimum wage law. SLM economists also have applied the model to migration behavior [141, Piore, 1973], but they differ sharply with the orthodox economists in characterizing the entire economy in dualistic terms.

Recently, Welch [198, 1973] and Mincer [122, 1976] have applied the "protected market" model to explain labor-supply responses to minimum wage laws in the United States. Because a higher minimum wage decreases the quantity of low-skilled workers demanded in the affected sector while increasing the payoff to the low-skilled workers who get those jobs, unemployment will increase to equilibrate the excess supply of job applicants. Whether labor-force withdrawals increase depends on the degree of certainty the applicant has about his prospects of getting a job and his willingness to work in the uncovered sector. Mincer also considers the effects of income support programs like public assistance, which are hypothesized to increase queues and increase unemployment. He also examines the effect of turnover in the protected (covered) sector, which likewise is positively related to the number who queue, since the expected waiting time is less as turnover is increased. This essentially neoclassical model seems to capture several features of dual labor market models of migration, unemployment, and job instability.

There is nothing in theory that prevents one from analyzing many sectors of the labor market—industrial, occupational, regional—in terms of these protected-unprotected (or primary-secondary) models. Orthodox economists, however, tend to deny as an empirical matter that the labor market is so rife with these protected enclaves that wide differences in rates of return by occupation, industry, and region will persist for groups of workers with equal endowments, unless nonpecuniary factors are responsible.

Internal labor markets are a type of protected market, and there has been a longstanding concern about whether they are being fostered by fringe benefits, especially pension plans and other seniority-based benefits. (See, *e.g.,* Wright [203, 1951, pp. 380–81].) One of the early empirical tests of the hypothesis of increasing immobility of the work force was carried out by Arthur M. Ross, who gave a negative answer to the question: "Do we have a new industrial feudalism?" [157, 1958]. John H. Pencavel's recent study revealed a slight trend toward lesser mobility [135, 1970], but nothing alarming. The pension reform law that was passed in 1974 will increase vesting privileges, which should facilitate mobility and, it is hoped, efficiency and equity in the labor market.

Wage rigidities. Pervasive wage ridigity is the foundation for the nonorthodox theory of "job competition," which is offered as a replacement for the orthodox theories of "wage competition" [178, Thurow, 1972; 179, 1975]. The issues raised are, unfortunately, not sharply posed. Are wages rigid in both directions? Orthodox economists recognize the short-run stickiness of wages in a downward direction, and macro policies accommodate this fact as a matter of course. What is the length of time that wages have to remain "fixed" in order to be considered "fixed" for the problem at hand? The prevalence of nonwage adjustments of the labor "contract" during the short-run intervals between wage rate changes is well known. (See Reder [146, 1955; 147, 1964; 148, 1969].) However, it is probably fair to credit the empirical studies of the hiring and job-search processes by the neoinstitutionalists (reviewed by Parnes [134, 1954]) for forcing the orthodox labor economists to look more closely at wage rigidities and nonwage terms of the employment exchange.

Does wage rigidity in a firm imply fixed labor costs for a given quality of worker? It is clear that the answer is no. Firms may well adopt a wage policy that fixes a single wage schedule for the grades of workers it hires. To do otherwise would be costly and unsettling. Given this wage policy, the employer will hire the best prospective workers from the pool of applicants, reaching down to the poorer applicants only if the pool is small or if demand is high, just as is described by the queue or job competition theory. However, *effective* wage flexibility is achieved by the employer's ability to upgrade or downgrade the job slots (and, thereby, the wages) of the applicants, depending on whether the labor market is tight or loose. (See Reder [146, 1955].)

Finally, and most importantly for the neoclassical position, wage rigidity for a firm does not imply wage rigidity in the market. Some firms are expanding, some are contracting, and market diversity in wages for similar skills occurs because firms choose "high" and "low" wage policies, depending on how the firm's management decides to deal with turnover, the amount of supervision per employee, and other nonwage aspects.

The question of the flexibility of wages has great importance for neoclassical theories of labor-market behavior. The absence of wage movements in the presence of demand or supply shifts implies nonmaximizing behavior by employers and workers, unless it can be shown that the costs of making the wage change are sufficiently large (for example, renegotiating a contract). Wage rigidities were invoked at several points in the discussions about noncompeting groups, discrimination, and unemployment. But generally, the neoclassical position requires market wage flexibility beyond short-run transitory periods.

5. *Human capital models in education and training*

The failure of programs. Let us first examine the allegation of the failure of education and training programs that was mentioned earlier. A distinction needs to be made between programs that were directly concerned with labor-market skills and educational programs, *per se*. The latter, particularly when administered to young children, are fairly remote from labor market performance, although the pessimistic evaluations by Coleman [37, 1967], Jencks [86, 1972], and others have affected the image of all compensatory programs. Nevertheless, a few lessons that carry over to labor market analysis may be drawn. First, the necessity for a theory! The prevailing pessimistic view of the effectiveness of schooling inputs generally and of compensatory programs in particular is a reflection of the lack of credible, implementable theories of educational development. Second, much of the statistical evidence was marred by a preoccupation with the program's "contribution to explained variance" of the dependent variable (educational achievement), which is at best an irrelevant statistical criterion for policy purposes (see Cain and Harold W. Watts [30, 1970]). It is distressing that human capital models are commonly evaluated by this irrelevant criterion.[31] Third, these pessimistic findings, as mentioned before, are mainly directed at the "intensive margin" of educational investment and not at more years of schooling completed (the "extensive margin"), where for example, Mincer is persuasive in demonstrating a positive effect of schooling on earnings [120, 1970; 121, 1974].[32]

Turning to manpower training programs, Jon Goldstein's useful survey suggests that we know very little indeed about their success or failure [68, 1972]. The initial successes that were reported for the manpower training programs during 1964–66 (see Gerald C. Somers [164, 1968]) were probably overstated. With hindsight, we suspect that the evaluations did not fully cope with the problems of inadequate control groups and too short a post-training period to measure the earnings difference between the trainees and the control group. It is likely that "creaming" served to make the program look better than it really was. In addition, the placement (as distinct from the training) component tended to dominate the trainee-control comparison in the immediate aftermath of the program.

Conversely, the manpower programs after 1966, including the Job Corps and Neighborhood Youth Corps, tended to reach more disadvantaged groups—a response to increased militancy of the constituent groups and to the fact that a tight labor market absorbed the more able workers. Thus, the selection process would lead to an expected negative bias in the evaluation of these programs. Actually, the evaluations produced mixed verdicts; some were negative [132, O'Neill, 1973; 74, Hamermesh, 1971], and some were positive [79, Einar Hardin and Michael E. Borus, 1971; 112, Garth L. Mangum and John Walsh, 1973]. The SLM

[31] Two related statistics are involved. One is the multiple R^2, or total explained variance, whose size is notoriously unstable from sample to sample (and sensitive to model specification in ways that regression coefficients are not), and it has no policy relevance. Unwarranted attention to this statistic is shown in Jencks [86, 1972], Gordon [69, 1972, pp. 39ff], Thurow [179, 1975, pp. 66–70], Mincer [121, 1974, pp. 91–96], Fuchs [63, 1974, p. xiv], and Arleen Leibowitz [96, 1973, p. 357]. The latter three acclaim high R^2's in human capital models in which a dependent variable defined (in effect) by weeks worked times a weekly earnings rate is regressed against weeks worked, although this tells us nothing about the validity of human capital theory. The second troublesome statistic is the contribution of a variable to the R^2, which is the implicit criterion in ranking the "importance" of variables, although the criterion has no clear definition, interpretation, or purpose. Many examples could be cited of this misuse of R^2.

[32] A number of recent studies have appeared in the human capital literature, which find support for an economic payoff to investments in the quality of education—*i.e.*, at the intensive margin. These have been reviewed by Rosen who, however, expresses caution about their interpretation [155, 1976]. The problems of separating own-person (or own-ability) effects from the "quality-of-education" variables appear severe. In any case, the economists' studies are "indirect," whereas in the educational studies referred to in the text examine resource inputs on educational achievement directly.

criticism of governmentally sponsored training programs—a criticism joined by politically conservative economists (who tend to be orthodox)—appears unwarranted by the evidence, as would a positive verdict.

Allegations of the predictive failure of human capital models, with special reference to the secondary sector. The prominent place of formal education in the human capital literature presents an inviting target of criticism. Two types of counter arguments to the claim that this "investment" yields high (or "competitive") rates of return have been inevitable and almost impossible to test satisfactorily: (1) that the failure to control for personal ability imparts an upward bias on the effect of education; and (2) that education serves merely as a "screening," "signaling," or "certification" device, which allows a favored class to get the best jobs. The SLM emphasis is on (2). For example, Thurow states: "the function of education is not to confer skill and therefore increased productivity and higher wages on the worker; it is rather to certify his 'trainability' and to confer upon him a certain status" [178, 1972, p. 68].

The criticism about omitted "ability" and "class" background-variables in earnings functions (with education as an independent variable) is carefully reviewed by two prominent spokesmen for the orthodox school, Rosen [155, 1976] and Welch [200, 1975]. Welch modestly concludes that allowances for omitted variables "do not reduce it [the income effect of schooling] to zero" [200, 1975, p. 67], which concedes a lot to the critics. Rosen is somewhat more sanguine about the empirical estimates of schooling effects, but he raises serious questions about the theoretical specifications of human capital models—a basic issue is the questionable role of schooling as an assumed independent variable, given that it is an endogenous (choice) variable in human capital theory [155, 1976, esp. pp. 12–13].

The screening hypothesis raises three questions. (1) Does the "screen" *reveal* true productivity differences? If not, then the employer who pays more for the more educated worker is not maximizing profits, and he must be exercising his tastes for discrimination. Discrimination has already been discussed and will not be pursued here. (2) If the screen has some value in revealing productivity differences, are the differences due to education *per se,* or are the individual productivity differences independent of the education? Obviously the screening hypothesis, in pure form, says the latter. (3) If a pure screen hypothesis is not accepted, how much of the return to education is due to education, *per se,* and how much to the screen, *per se?* What mechanisms are at work in the market to yield a private and social optimal mix of "information" and "productivity enhancement"?

At the theoretical level, a consistent model of "pure" signaling has been ingeniously developed by Spence [166, 1973; 167, 1974]. It uses neoclassical assumptions and yet produces such unorthodox results as multiple equilibria and, therefore, sub-optimal equilibria. It is probably too soon to judge either its practical applications or its theoretical robustness. John G. Riley's [152, 1975] and, indeed, Spence's own explorations [167, 1974, pp. 174–76] suggest caution about the latter.

Empirical tests of the screening hypothesis by Richard Layard and George Psacharopoulos [95, 1974] and Chiswick [35, 1973] have led the authors to reject it and to accept the orthodox human capital model, but the tests are indirect and, ultimately, inconclusive. Both papers, for example, argue that it is not credible that so costly a screen as, say, a university education could exist in the market, if screening was its major function.

The SLM economists have attempted to estimate the conventional human capital model on members of the lower economic strata—on, for example, "secondary workers." Usually a regression model is used, and implicitly they are testing whether the model yields a positive effect of, say, education on earnings and whether the effect is significantly lower than that found among primary workers. However, these tests almost invariably suffer from a methodological flaw—that of fitting the regression to a sample that is truncated on the values of the dependent variable—with the result that the estimated coefficients (effects) of the independent variables are biased. A simple example will illustrate this important point—important because apparently a statistical artifact has been used as one of the major pieces of evidence of SLM economists to show both the failure of the human capital model and the "uniqueness" of the secondary-worker group.

Consider, a "true" relation between educational attainment and earnings for the population as a whole as shown by line (a) in *Figure* 1. The population might be all persons, all black males, all white males, all persons born in the 1940's, or some other population defined by a fixed characteristic. Because there are many factors that affect earnings, a wide dispersion about the line is expected.

Now consider the relation between education and earnings for a population that is restricted to low-wage workers, to the secondary labor force, or to residents in poverty neighborhoods. This sort of restricted population is very much like the truncated population shown in *Figure* 1. But when we truncate on the values of the dependent variable, we guarantee that the simple regression relation between education and earnings will be lessened —indeed, it is not surprising to see it approach zero.[33] But clearly this is an after-the-fact descriptive relation that does not carry the policy implication that education does not pay for a population of interest—such as blacks and children from poor families. Maybe it does not, but the evidence in the truncated part of the figure does not demonstrate it.[34] Many regression analyses by SLM economists appear to be "truncated" and, therefore, do not justify the conclusion that human capital variables have zero or small effects.[35]

More troublesome in the SLM research is the persistent finding that industry characteristics have significant effects in earnings regressions that include human capital variables (see Wachtel and Betsey [193, 1972], Bluestone, Murphy, and Stevenson [21, 1973, pp. 146–48], Thurow [179,

[33] A downward bias in the regression is assured if there is just one independent variable, as shown in the figure. However, contrary to my earlier statement [29, Cain, 1975, p. 21], there is no guarantee of a downward bias in a multiple regression. See Arthur S. Goldberger [67, 1975]. However, empirical trials of multiple regressions on a truncated earnings sample have consistently shown that the human capital variables are biased down (see David L. Crawford [38, 1975]). For further discussion of this issue, see Cain and Watts [31, 1973] and the comments by Chiswick [34, 1972] and Stanley H. Masters and Thomas I. Ribich [115, 1972] on the paper by W. Lee Hansen, Burton A. Weisbrod, and William J. Scanlon [77, 1970].

[34] In general, truncation on an exogenous or predetermined characteristic like skin color, age, or a genetic trait causes no problems of interpretation. Not so for an endogenous characteristic, either the dependent variable or a characteristic affected by the same variables that affect the dependent variable. The case of "ghetto residence" illustrates the issue. If residence is fixed (*e.g.*, as for a Jewish ghetto centuries ago), then a "truncation" (or selection) on this characteristic is appropriate. However, residence is generally endogenous and affected by many of the same factors that affect income; therefore, it is not a suitable selection variable in models with income as a dependent variable.

[35] This type of truncated regression model is presented in Doeringer *et al.* [43, 1972, pp. 6–7], Andrisani [4, 1973], Osterman [133, 1975]. Bluestone, Murphy, and Stevenson [21, 1973], Wachtel and Charles Betsey [193, 1972], and Harrison [80, 1972; 81, 1972]. Harrison's regressions are fit separately for ghetto (or low-income-area) residents and so effectively truncates on earnings. Piore [141, 1973, pp. 17–19] and Gordon [69, 1972, pp. 44ff] also comment on the small effects of human capital variables for low wage workers.

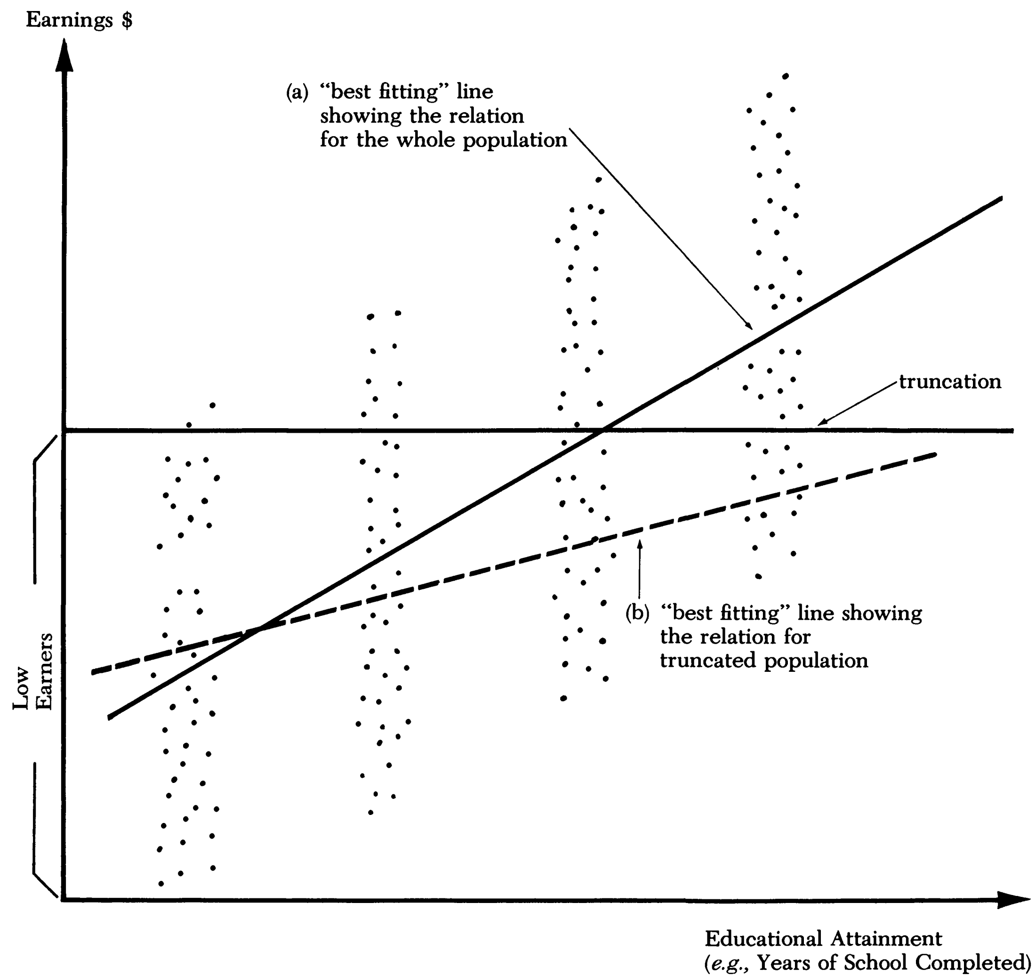

Figure 1
HYPOTHETICAL SCATTER DIAGRAM AND REGRESSION OF EARNINGS ON EDUCATIONAL ATTAINMENT, WITH AND WITHOUT TRUNCATED EARNINGS

1975, p. 68]). The industry variables may represent segmentation and noncompetitive elements in the market determination of earnings as the SLM economists contend. On the other hand, they may represent transitory demand factors, compensating nonpecuniary effects (see Lucas [106, 1972] who arrives at a mixed verdict and Richard Thaler and Rosen [175, 1975]), or unmeasured human capital variables.

V. *Conclusions*

My brief summary judgment of the SLM challenge is that it does not begin to offer a theory of the labor market that can replace neoclassical theory, despite our various degrees of dissatisfaction with the empirical corpus of that theory. The SLM economists' theoretical and methodological criticisms of the neoclassical theory are not substantial and are often misguided; nevertheless, a tradition of criticism of orthodox economics is sustained, and this is healthy. The main theoretical contributions, which amount to modifications and additions to orthodox theory, are (1) the ideas of the endogenous determination of attitudinal variables among workers, and (2) the historical and institutional dimensions of internal labor markets—which enrich our understanding of the economics of bureaucratic organization. Their main contribution to the mixture of analysis and policy debates is their attention to class (or group) interests and behavior, and to the historical basis for these collective actions, which often extend into the political market.

Neoclassical research can become terribly inbred and out-of-touch with policy makers or practical users of economic predictions. This danger is particularly acute because the standards for empirical verification are so weak. Most research is, after all, not addressed to practical and useful prediction or policy assistance. The research that is so addressed is rarely tested in an actual application. Evaluation of government programs is an example both of the difficulties in applied economics research and of the opportunities to estimate relations and test hypotheses in concrete situations where questions of biases and misspecification are not floating in abstraction, which is the bane of our current attempts to assess empirical research.

The issue of strategies of governmental intervention in the labor market recalls the radical criticism of Wachtel, quoted earlier in this paper, that orthodox economics fails to go beyond the study and advocacy of programs to enhance individual productivity. I believe this criticism is incorrect, and I offer a counter example that illustrates the variety of policies proposed by orthodox economists. In a famous paper entitled "Improving the Economic Status of the Negro," [181, 1965] Tobin proposed four types of programs: (1) income-maintenance extension and reform; specifically, a negative income tax; (2) "maintaining genuinely full employment"; (3) ending barriers to entry to favored jobs; (4) programs to increase individual productivity by means of human capital investments. No school of economics ignores, or has a proprietary claim on, any of these strategies.

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