Age, Earnings, and Change Within the Dual Economy*

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Abstract

In the explanation of earnings differences, age has been seen commonly as a proxy for human capital characteristics of experience and physical stamina. However, like sex and race, age has meanings other than those attributed to it by human capital theorists. Age-specific rewards reflect the power of workers, not only as individuals, but as members of work organizations, especially in core industries. It is the argument of this paper that changes within the U.S. economy since 1960 are weakening the power of core workers to attain high rates of return to their characteristics. One characteristic likely to be affected is age. Data from 1960 and 1980 are examined to see if there has been a change in the relation of age to earnings within the dual economy. The analysis shows a decrease in the earnings advantage of core sector employment for older workers. The change in the age–earnings relation within and between economic sectors is taken as a sign of other changes in the social organization of workers and employers.

The 1980s marked the return to social consciousness of a conflict not much discussed since the late 1960s. The "new" conflict was generational. The popular press and scholarly journals (see Davis & van den Oever 1981; Fromson 1983) carried articles charging that the young were being excluded from the American dream. The mechanisms of exclusion included high Social Security taxes, high interest rates, and, perhaps most important of all, a constricted, top-heavy labor market. Older workers in blue- and white-collar occupations were envied and despised because they had gained "power" during a period of economic expansion. During the economic stagnation of the 1970s, their positions were secure.

Although there are problems in these popular perceptions,[1] the in-

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sertion of the issue of power into an understanding of age stratification is valuable. Age stratification should be reconceptualized in a way that sees power not as an individual attribute but as a group attribute. Older workers are powerful to the extent that the organizations of which they are a part are powerful. Some older workers are members of organizations such as unions that represent them in the work setting. Others belong only to the work organization and deal with it as individuals. In this case, rewards are allocated according to principles of competition in the labor market. But earnings are also influenced by an element outside of the individuals' characteristics; in the new structuralist literature this element has been described as "economic" or "industrial structure." Economic structure has been shown to influence earnings of workers, whether or not the workers are represented by second-order organizations (usually labor unions) within the workplace (Hodson 1983).

The stratification of age groups reflects the structural constraints of the economy in which workers of various ages participate. This is contrary to the functionalist interpretation of age stratification as the result of allocation of people to socially valued roles (Riley, Johnson & Foner 1972), a process that depends on training and education of individuals for the important and difficult positions in the occupational structure, a process guided by technological developments that leave behind older workers, obsolete in a modern world (Cowgill 1986; Touraine 1971).

The argument of this paper is that the dual reward structure has changed. Because age has been a correlate of workers' power in the core sector of the economy, changes in the distribution of economic rewards to age groups provide evidence of changes in the power of workers (and employers) within U.S. economic sectors.

The New Structuralist Critique of Neoclassical Theory

Although there have been criticisms of the theoretical development of the new structuralist model (Hodson & Kaufman 1982; Kalleberg, Wallace & Althauser 1981; Zucker & Rosenstein 1981), sociologists seeking to improve the status attainment model of inequality generally agree that new structuralists have properly focused attention on the *context* in which individual behavior occurs. The neoclassical model of inequality (human capital theory in economics and functionalist theory of stratification in sociology) has emphasized individual rationality and characteristics of labor supply as the primary determinants of earnings. Earnings differences between men and women, whites and nonwhites, young and old are attributable to differences in education, ability, experience, training, and labor market commitment (Becker 1971). New structuralism has emphasized that the economy is divided along structural lines into distinct sectors that provide different opportunities and rewards for individual characteristics. Whether this approach constitutes a critique or an addition to the status attainment model is not always clear from the literature. Although some analysts are content to challenge the dominance of individual characteristics in influencing economic rewards, other treatments of economic dualism emphasize the variation in the economic returns to worker characteristics (Beck, Horan & Tolbert 1978; Hodson 1978; Horan 1978; Horan, Tolbert & Beck 1981).

Implicit in the structuralist critique of neoclassical economic theory is an assumption that human capital variables have other meanings (Bowles & Gintis 1975). Education reflects not just "training" of some sort, but also a credential, a screening device (Collins 1979). Rather than seeing gender as a proxy for human capital because being female signals intermittent labor force participation, structuralists are likely to argue that skills are undervalued in typically female occupations. Female gender serves as a signal for cheap, exploitable labor. "Analysts in the structuralist tradition interpret the existence of sex and race differences in earnings as indicative of systematic forces involving differential opportunity structures which are embedded in the socioeconomic order" (Beck, Horan & Tolbert 1978, pp. 708–09).

Age, too, has several meanings in the earnings determination process. Human capital theorists see age as a proxy for experience; as years of experience are accumulated in one's job, so too are they accumulated on one's body. Aging, therefore, represents the contradictory forces of accumulation of experience and decline in physical strength and stamina. For a time, the value of experience offsets physical decline. Earnings rise with age as long as investment in a worker's skills continues and performance is not hampered by physical decline. After middle age, little work life remains to recoup costs of retraining or updating skills. This disincentive combined with physical changes offsets the value of accumulated experience, bringing wages down for older workers relative to middle-aged workers. Cross-sectional analysis of the entire civilian labor force reveals a convex shape in the age–earnings profiles (Becker 1971; Stolzenberg 1975). The higher the level of education or skill, the later the age at which income is maximized (Clark, Kreps & Spengler 1978).

However, age can be seen in a way that functionalists and new structuralists have generally neglected—as a correlate of worker power. Where workers have institutionalized their power through seniority provisions in collective bargaining agreements or where employers have established internal job ladders to retain valuable (market powerful) workers, earnings of older workers will remain at least as high as those of middle-aged workers. Under these conditions, age–earnings profiles, rather than being convex, have a high plateau shape or even a continued upward slope.

There are several good examples of this structural interpretation of age and earnings. Stolzenberg (1975) bases his analysis of differences in wage attainment on an argument of occupational segmentation in labor markets. Labor supply and demand play a role in this fragmentation, but so do "social factors such as judgments about the worth of work and patterns of social organization among workers and employers" (p. 646). Stolzenberg applies his argument to an explanation of the differences in age earnings of task-similar occupations. Although the type of occupational information available provides only a limited test of his hypothesis, he finds that age–earnings profiles of workers in more heavily unionized occupations decline less after they peak than profiles of workers in less unionized occupations.

Bluestone et al. (1981) provide another example of a structural interpretation of age. They use age–earnings profiles of retail workers to reveal changes in the social organization of that (noncenter) industry. They find evidence of the trend toward corporate hierarchical organization between 1957 and 1975 in the changed shape of white men's age–earnings profiles. Prior to 1972, the profiles were relatively flat for groups over age 25; the highest incomes went to men age 55 and older. The 1972 and 1975 age–earnings profiles were much steeper and more peaked, with the highest incomes going to men between age 35 and 54—corporate managers. White women's age–earnings profiles also changed during this period, but in the opposite way; they become flatter. Bluestone et al. argue this flattening is a reflection of the trend away from full-time, commissioned sales positions toward part-time, deskilled cashier positions.

In contrast to Stolzenberg's emphasis on the social organization of workers (unionization), the emphasis of Bluestone and his coauthors is on the social organization of employers. Department store ownership has become more centralized, but pricing remains very competitive. Owners continue to invest in new technology that helps deskill jobs, but unions cannot offer promises of substantial wage or benefit increases. As a result, union and nonunion wage and benefit packages are almost identical, and the retail industry provides only marginal employment opportunities for most of its work force.

These studies show that the age–earnings relation can be used to reveal changes in the social organization of workers and employers, changes that tend to be obscured by average earnings figures. This is true because age is more than a proxy for experience or an indicator of physical strength and endurance. It is also a correlate of worker power. Earnings differences among workers of the same age reflect not only the differences in individuals' human capital, but also differences in the power of groups of workers to collectively influence the earnings process or to collectively benefit from the organization of production.

This paper is particularly concerned with the power held by workers within each sector of the dual economy. I believe the changes that have occurred in the U.S. economy in the postwar period have had their most profound effect on the power of core sector workers to secure a high rate of return on their human capital characteristics. The core sector is the most interesting theoretically because its workers, having attained more influence over the earnings process, have more to lose. Of course, periphery workers are not immune to economic changes. Their earnings are affected by national and international competition, as well as by the institutionalized power of the working class (minimum wage levels). In the following section, I highlight the important features of economic organization for workers in the center economy. I then discuss some of the changes that have occurred in these features and hypothesize about the effect of these changes on the age–earnings relation. Older and younger workers, two groups most vulnerable in the competitive sector of the economy, will experience the most dramatic changes in the core.

Change in the Dual Economy

Averitt's (1968) description of the center economy is central to the sociological work that draws parallels between earnings inequality, labor market structure, and industrial organization. However, sociologists have not taken into account the changes in labor's position in the dual economy hypothesized by Averitt. He saw a dim future for center labor, arguing that high wages would increase the propensity of center management to substitute physical capital for labor. Geographically dispersed plants of relatively small size, increases in white-collar employment, in women's participation in the labor force, and in southern employment presented major obstacles to union growth. Trends in labor force participation and industrial growth since Averitt wrote *The Dual Economy* have been consistent with these gloomy expectations for center labor.

Occupational and industrial shifts, combined with economic decline in the 1970s, produced an increase in the proportion of the labor force in white-collar occupations. Census data used in this paper illustrate the extent of this shift. Professional, technical, and managerial occupations increased from 17.7 percent of the labor force in 1960 to 26.4 percent in 1980. Employment in the transformative industries declined from 40.1 percent in 1960 to 31.7 percent in 1980. Women increased their share of total employment in the civilian (nonextractive) labor force from 39 percent to 47 percent between 1960 and 1980. In addition to these changes in labor force composition, changes have occurred in the employment setting. Work is increasing in smaller-sized establishments (Granovetter 1984), in nonmetropolitan settings (Summers et al. 1976), and in the South and West (Bluestone & Harrison 1982).

The declining proportions of all workers who belong to unions, down from 35 percent in 1954 to 24 percent in 1978 (U.S. Department of Labor 1980), may be especially significant for older workers—the earnings of older union members average 19 percent higher than those of their nonunion counterparts (Freeman & Medoff 1984). Furthermore, older workers are concentrated in declining industries at a time when union protection in these industries is less extensive. By 1978, the proportion of workers under age 35 in manufacturing fell below the average for all industries, although it had been above the average in 1968 (Wernick & McIntire 1980).

Other changes that affect workers' power are also occurring within the postwar center economy. These transformations are more threatening because they involve the organization of core production. The expansion of international activities by core firms has endangered jobs within the U.S. Unions must make concessions or face plant closings. Core workers feel the pinch from increased international competition, even though core firms often benefit from it.[2]

Increased international activity by core firms and increased competition for core workers' jobs point to another change in the postwar economy—competition within industries has increased. According to Shepherd (1982), effectively competitive markets accounted for over three-fourths of national income in 1980, an increase of about 25 percent from 1958. Antitrust policies had the greatest impact in increasing competition, but deregulation and imports were also important.

Industrial-level concentration is important because it provides freedom from market pressure, allowing concentrated firms to directly control their prices and output. But national-level concentration is also important because it puts decision-making power in fewer hands. The acceleration of conglomerate merger activity since the 1950s has helped increase concentration in the economy (Bluestone & Harrison 1982). Müller (1977) provides evidence that fewer firms control more of the nation's resources: between 1955 and 1970, the *Fortune* 500 firms increased their share or profits, assets, and employment in all of U.S. manufacturing and mining by between 40 and 70 percent.

Thus, the U.S. is experiencing increasing competition within many industries and increasing concentration and centralization across industries. The benefits for workers of these seemingly contradictory trends are difficult to see.[3] Despite the increased industrial-level competition in the 1970s, workers' wages did not keep up with prices and real earnings fell (Blumberg 1980). Meanwhile, merger mania taxed already tight money supplies, increased absentee ownership, and heightened job insecurity among blue- and white-collar employees.

Effects on Earnings

All of these trends suggest that employers in the core economy of recent times may be less able or less willing to provide benefits to their workers at the same rate as they had in the past. In light of these changes, I expect to find that age and core sector employment provide lower rates of return to workers in 1980 than they had in 1960. This finding alone would not constitute strong evidence of substantial change within the dual economy; comparisons need to be made of each sector over time and of the relations between sectors.

Using the age–earnings relation to highlight the pattern of change, analysis will show that from 1960 to 1980 the value of advancing age group membership within the core and periphery has declined. I expect that older workers (those age 55 and above) in the core have experienced the most dramatic changes, because it is in this sector that age has been positively correlated with worker power. (For example, Beck, Horan & Tolbert [1978] show that for men age had greater dollar payoffs in the core than in the periphery because of higher average wages in the core. Older core workers benefit from the power of all core workers.) These changes will be apparent in the shapes of the age–earnings profiles and in multivariate regression analyses that control for the effects of other factors. I also expect the analysis to show a reduction in the relative benefits of core versus periphery sector employment for the most vulnerable age groups of workers, the young and the old.

Studies of age and change are complicated by the coincidence of three effects—age, cohort, and period. My argument is that period effects, specifically changes in economic structure, influence the rate of return to age. However, Freeman (1979) and Welch (1979) have shown that cohort effects, especially the size and educational level of birth cohorts, also influence the rate of return to age. Changes in cohort experiences coincide with period effects, reinforcing each other in some cases and contradicting in others.

For example, Freeman (1979) notes that in the late 1940s and early 1950s, "relatively large numbers of young workers were 'absorbed' into the work force with little reduction in the earnings of young workers relative to older workers" (p. 309). This was not the case for the baby boom cohort who entered the work force in the 1970s. When those born between 1946 and 1964 (the postwar baby boom generation) entered the work force, they were more highly educated than previous cohorts. The labor market was flooded with inexperienced skilled workers. This time relative earnings were affected as the value attached to experience increased. Older skilled workers benefited; younger skilled workers suffered. These two scenarios indicate that the conditions of a particular period affect the relative earnings of age groups in ways independent of cohort size.

Young workers will obviously be affected by their greater numbers in 1980 compared to 1960—a cohort effect—and by the changes in the dual economy—a period effect. In this case, the two effects should be mutually reinforcing (in a negative way). In contrast, the large cohort of young workers should strengthen the relative earnings of older workers, including those over age 55—a group neglected in the earnings "twist" argument of Freeman (1979) and Welch (1979). However, the period effect of declining resources for core workers contradicts the positive cohort effect, resulting in a relatively lower rate of return for older core workers, especially those over age 55. These comparisons will be most relevant for men in the labor force, because age differences are more likely to reflect experience or seniority differences for men than for women at both times. This means that the hypotheses need to be examined for men only.

Comparing birth cohorts can provide insight into period effects for particular variables. For example, if core employment brought a certain earnings benefit to workers 25 to 34 years old in 1960, but a lower return in 1980 to those workers aged 45 to 54, then evidence of declining core advantage for that cohort would exist. However, comparing birth cohorts does not satisfactorily address the major premise of this paper—that the power of core workers is eroding and that groups with the greatest vulnerability in the labor market as a whole will show the greatest effects of the reduction in class resources. This is an argument about relative advantage of age groups within certain employment contexts, and of particular employment contexts for age groups.

In summary, the major hypotheses to be examined are:

1. Age and core sector employment are less influential in the earnings determination process for workers in 1980 than in 1960.

2. (a) Within each sector, age group membership brings lower economic returns, and (b) younger and older workers in the core show the greatest decline in this regard.

3. Younger and older workers have experienced a decline in the relative advantage of core (versus periphery) employment.

Methods

To address these hypotheses, I use comparisons of age–earnings profiles in the core and periphery, and results from regression analysis of earnings. Drawn from public use files of the 1960 and 1980 U.S. Census of Population, the study populations comprise male civilians (aged 14 and older in 1960 and aged 16 or older in 1980) who had been gainfully employed in the year preceding the census and were in nonextractive industries during the reference week of the census year or during the last employment period—the experienced civilian labor force (ECLF).[4] The Appendix provides descriptive statistics for the selected variables in the analyses.

Multivariate regression analysis is used to assess the independent contributions of age, race (white/nonwhite), education (highest grade attended), occupation, industrial (transformative/service) sector, and economic (core/periphery) sector to earnings in 1960 and in 1980.[5] Industrial sector is included to address more completely the issue of the changing nature of production.[6] Although little attention has been paid by new structuralists to this transformation in what is produced, work by economists (Fuchs 1968; Stanback et al. 1981) and sociologists (Singelmann 1978; Wright & Singelmann 1982) suggests that neglect of this dimension is, in Sullivan's (1981) words, a "missed opportunity." I consider two categories of industrial production: transformative and services. These categories are based on the definitions developed by Browning and Singelmann (1978). The transformative sector comprises the construction industry, manufacturing, and utilities, and the service sector includes transportation, communications, wholesale and retail trade, producer services, social services, and personal services.

Classification of economic sectors in 1960 and 1980 is accomplished by application of Tolbert, Horan, and Beck's (1980) schema of core and periphery industries.[7]

Assuming decreasing concentration within industries since 1958 (Shepherd 1982), the effect of the application of Tolbert, Horan, and Beck's categories to 1960 and 1980 Census data might be a slight underestimation of the core in 1960 and a slight overestimation in 1980. The application of static classification schemes to the study of historical change is not ideal but does serve the intent of exploration into changes occurring within the structure of the economy.

Comparisons of age–earnings profiles can be simplified and clarified by making the wages of the different years comparable in their real purchasing power. This is accomplished by setting 1979 dollars equal to their 1959 purchasing counterpart, 1959 constant dollars.[8] Age–earnings profiles provide a graphic representation of the earnings of workers of one age group relative to those of another at each point in time and the changes between and within sectors across time. Because experience is embedded in age, age–earnings profiles also indicate the relation between experience and earnings.

Multivariate regression analyses by economic sector use dummy variables for age groups in order to see the specific age group effects. These results are then used to create age–earnings profiles showing the net effects of age. The regression analyses by age allow assessment of the changes in the earnings process for each age group.

Findings

CHANGES IN FACTORS AFFECTING EARNINGS

The results of multivariate regression analyses of earnings on education, occupation, race, age group, economic sector, and type of industrial activity (transformative or service) for 1960 and 1980 are presented in Table 1. The coefficients for race, education, and age are significantly smaller in 1980 than they were in 1960, as is the total amount of variation in annual earnings (R^2) that can be accounted for by the independent variables. Of particular interest for this paper is the significant decrease in the coefficients of the age variables. This gives support to the hypothesis that age group membership is less important to earnings in 1980 than in 1960.

Core sector employment, however, had a significantly greater effect on men's earnings over time; and service industry employment carried a greater penalty. The increase in the effect of core employment is the opposite of that hypothesized. Inclusion of the service industry variable may help account for the positive change in the effect of economic sector. Given the increased share of core employment in service industries, the net return to core employment probably would have decreased if a service variable had not been included. Analysis of earnings by capital sector supports this interpretation, as does an analysis, not shown here, in which service industry was omitted.

CHANGES WITHIN CAPITAL SECTORS

To address my second hypothesis concerning change in the age–earnings relation within sectors of the dual economy, we look first at average annual earnings for age groups employed in each sector in 1960 and in 1980. Examination of the age–earnings profiles by sector (Figure 1) suggests a change in the earnings process within the core. The age–earnings profile of men in the core sector in 1980 is visibly different from the corresponding 1960 profile. The high plateau shape that characterized the age–earnings profile of core workers in 1960 is steeper and more peaked from one end of the age distribution to the other in 1980. In comparison to the 1960 profile, the shape of the curve for workers in the periphery in 1980 is also steeper until age 35, but flatter between the ages of 35 and 64.

Looking at the profiles for the differences between the core and periphery at each time, we see that in 1960, the earnings differences between core and periphery workers were especially great for older age groups. But in 1980, sectoral earnings differences for older workers were reduced, making the shape of the earnings profiles of core workers similar to that of periphery workers (though the heights of the profiles continued to differ).

Table 1. REGRESSION ANALYSIS OF MEN'S EARNINGS, 1960 AND 1980[a]

Variables	1960	1980	t Test of Differences
Age group (relative to <25)			
25-34	1.188 (.014)	.973 (.011)	12.076*
35-44	1.383 (.014)	1.262 (.012)	6.562*
45-54	1.387 (.014)	1.306 (.013)	4.240*
55-64	1.308 (.016)	1.205 (.014)	4.845*
65+	.766 (.023)	.249 (.023)	15.895*
Education	.048 (.001)	.045 (.001)	2.121*
Occupation	.076 (.002)	.072 (.002)	1.414
Core sector	.317 (.010)	.340 (.009)	1.710*
Service industry	-.090 (.010)	-.119 (.009)	2.156*
Nonwhite	-.280 (.015)	-.227 (.011)	2.849*
Adjusted R^2	.391	.373	
Constant	5.781	6.103	

[a]Unstandardized coefficients with their standard errors in parentheses.

*Significant at the .05 level.

Sources: U.S. Bureau of the Census (1963, 1983).

Regression analysis of earnings within the core and periphery reveal the extent to which the changes in age–earnings profiles are the result of changes in the net effects of age. The results (Table 2) confirm that there has been a change in the pattern of age earnings in the core, and that this exists independent of other effects. There is support for Hypothesis 2(a), that age group membership brings lower economic returns in each sector in 1980, and for Hypothesis 2(b), that older workers in the core will experi-

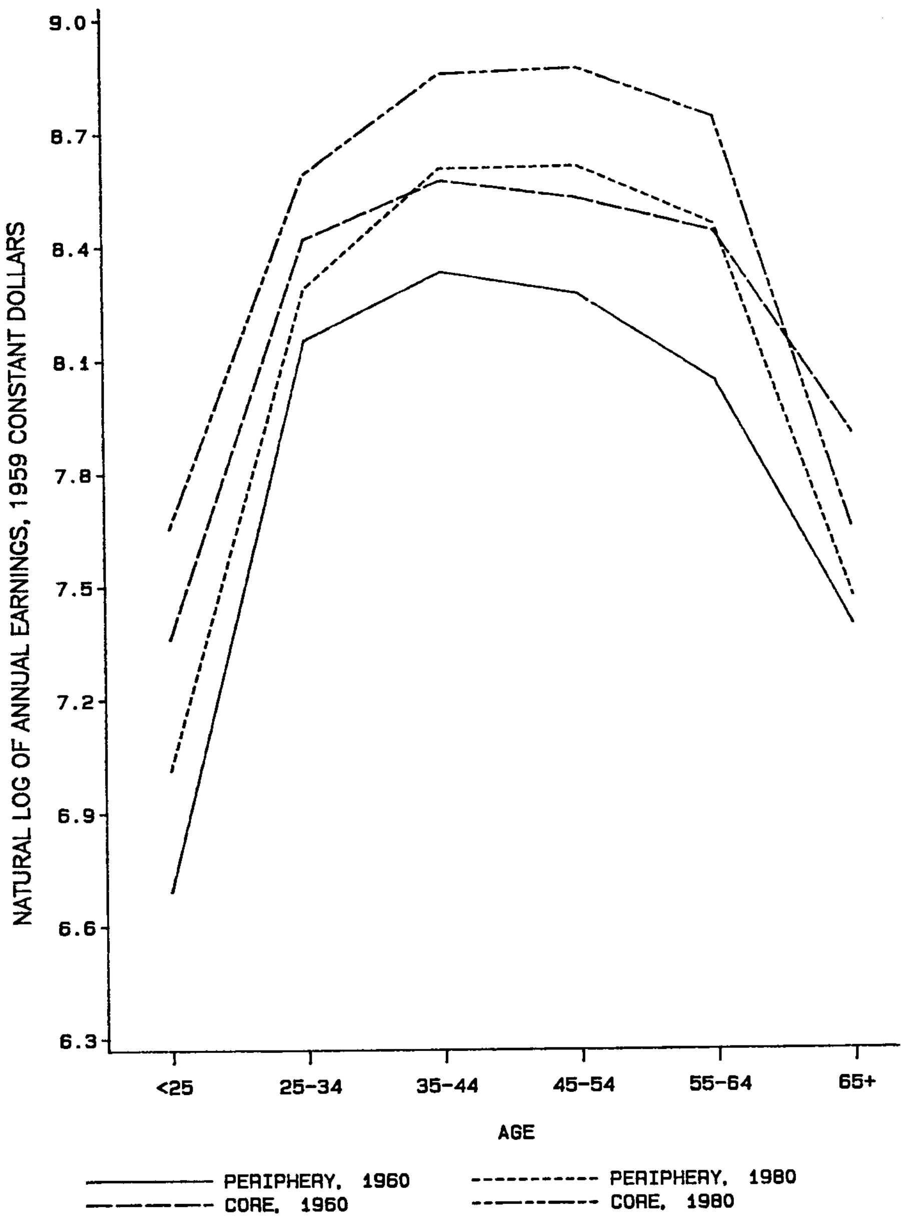

Figure 1. AGE-EARNINGS PROFILES OF MEN BY SECTOR, 1960 AND 1980

Table 2. REGRESSION ANALYSIS OF MEN'S EARNINGS BY ECONOMIC SECTOR, 1960 AND 1980[a]

	Periphery			Core		
Variables	1960	1980	t Test of Differences	1960	1980	t Test of Differences
Age group (relative to <25)						
25-34	1.324 (.024)	1.066 (.018)	8.600*	1.045 (.016)	.848 (.014)	9.266*
35-44	1.546 (.025)	1.376 (.021)	5.207*	1.229 (.016)	1.127 (.015)	4.651*
45-54	1.533 (.026)	1.423 (.023)	3.169*	1.241 (.017)	1.176 (.015)	2.867*
55-64	1.390 (.030)	1.324 (.025)	1.690*	1.195 (.019)	1.073 (.017)	4.785*
65+	.804 (.038)	.442 (.035)	7.007*	.694 (.028)	.004 (.030)	16.814*
Education	.043 (.003)	.036 (.002)	1.941*	.052 (.002)	.051 (.002)	.354
Occupation	.101 (.005)	.095 (.003)	1.029	.056 (.003)	.050 (.003)	1.414
Service industry	-.255 (.023)	-.256 (.021)	.032	-.021 (.010)	-.055 (.010)	2.404*
Nonwhite	-.261 (.026)	-.054 (.019)	6.428*	-.295 (.018)	-.271 (.014)	1.052
Adjusted R^2	.399	.373		.315	.298	
Constant	6.090	6.487		6.554	6.886	

[a]Unstantardized coefficients with their standard errors in parentheses.

*Significant at the .05 level.

Sources: U.S. Bureau of the Census (1963, 1983).

ence the greatest decline in the rate of economic return. The most drastic changes occurred in the net effects of being age 65 and older in the core, but the increase in mandatory and voluntary retirement makes temporal comparisons difficult for this group. The effect of being age 55 to 64 declined, as did the effects of younger age group membership. In an absolute sense, the net effects of age in the core declined most for those between the ages of 25 and 34, and 55 and 64. In the periphery, those 25 to 44 years old had the greatest changes.

The changes in the net effects of age for men can be shown in the age–earnings profile by taking all other variables at their means and generating the predicted value for each age group from the regression coefficients. Figure 2 shows the changes in the age–earnings relation, net of other effects. Relative to middle-aged men, older men in the core are clearly worse off in 1980 than they were in 1960. Age, per se, is providing lower returns to men in core industries (if not for higher regression intercepts and improvements in labor force quality, the 1980 profile would be

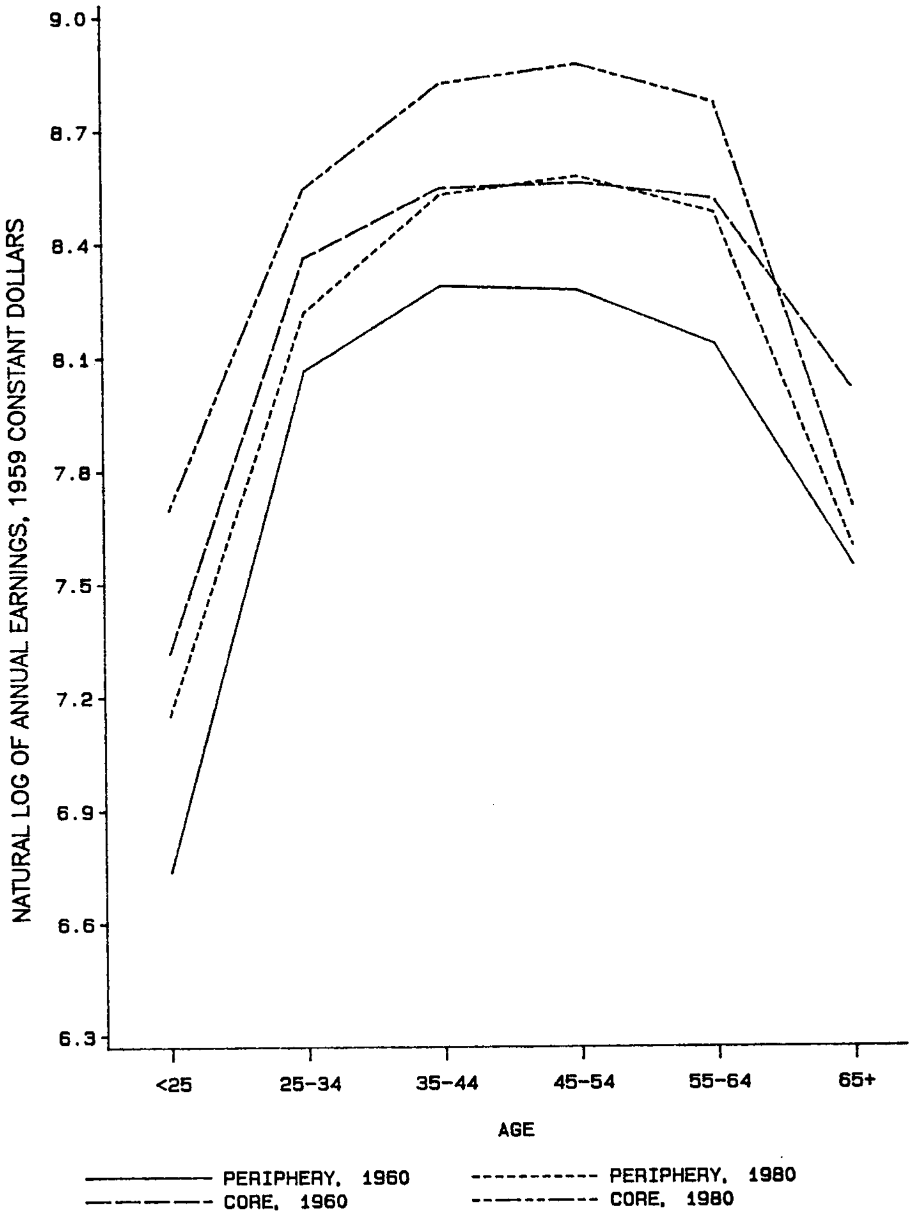

Figure 2. NET EFFECTS OF AGE ON MEN'S EARNINGS BY SECTOR, 1960 AND 1980

lower than the 1960 profile). At the other end of the age spectrum, those age 25 to 34 appear to have benefited the least from the changes over the 20 years.

The decline in relative earnings for young workers is consistent with the cohort size explanations of earnings, because the 1980 group, born between 1946 and 1955, is part of the post-World War II baby boom cohort. Their lower rate of earnings in 1980 is believed to be a result of the oversupply of skilled labor brought in by the large number of highly educated workers (Freeman 1979; Welch 1979). While this helps account for the lower returns to young men, it does not explain the lower rate of return to older men within economic sectors. In fact the cohort size argument leads one to expect a higher return to experienced men in skilled positions. The peaked age–earnings profile of core workers suggests some support for this argument—compared to the situation in 1960, men age 45 to 54 in 1980 have slightly higher earnings than those age 35 to 44. However, in 1980 the earnings of the 55- to 64-year-olds is lower relative to 45- to 54-year-olds than it was in 1960. The cohort size argument cannot account for the failure of older core workers to benefit from the oversupply of less experienced young workers.

CHANGES FOR AGE GROUPS

Because the age–earnings relation in the dual economy is important for what it tells us about what is going on between, as well as within sectors, we turn now to comparisons of core versus periphery sector employment for each age group. My third hypothesis stated that younger and older age groups have experienced declines in the relative advantage of core sector employment. A crude indication of support for this hypothesis is provided by the changed shapes of the age–earnings profiles. The earnings gap between the core and periphery sectors was smaller in 1980 than in 1960 for older and for younger workers. This finding adds some fuel to the argument that changes in the core have reduced the ability of otherwise vulnerable workers to secure high economic returns for their labor.

To determine whether the relative advantage of core employment is reduced even when other factors are taken into account, regression analysis on earnings for each age group in 1960 and 1980 was performed. The results provide support for the conclusion of declining core sector advantage for older workers (Table 3). However, core sector employment was more important for younger age groups (25 to 44 years). The generally poor labor market situation facing baby boom cohorts may account for the increased importance of employment in core industries. Across age groups in 1980, the contribution of core sector employment to earnings steadily decreased through age 64. In 1960, the core sector had its greatest effects on the earnings of the two oldest and two youngest age groups.

Finally, I would briefly like to point out changes in the effects of race and service industry employment on the earnings process. Although being nonwhite carried less penalty in the periphery in 1980 than it had in 1960, the effect of race did not change significantly within the core. This is quite shocking given 20 years of progressive civil rights and equal opportunity legislation. The much greater earnings penalty associated with race for young workers also provides cause for alarm, even though this age group is composed of very diverse workers—among them, students who do mostly part-time work, and other temporary workers.

In the periphery, which has a small transformative sector, the negative effect of service industry employment did not change. In the core, however, where service industries employed about 37 percent of males in 1980, the penalty for service industry employment was greater in 1980 than it had been in 1960. These differences suggest that changes in the type of industrial activity are an important dimension of economic transformation that should be considered in new structuralist stratification research (see Tigges 1987).

Conclusions and Implications

Unlike many other studies in the new structuralist tradition, this study has not attempted to prove the importance of economic segmentation. Instead, I have looked for the way in which the influence of employment sector and other factors, such as type of industrial activity, occupational level, and education, have changed in the 1960–80 period. Changes in these factors are taken as indicative of changes in the resources available to workers and owners in their struggle with each other over shares of the outcomes of production. This study has focused on change in one particular aspect of earnings—its relation to age. The age–earnings relation is a significant object of study because age has been a correlate of worker power in the core sector of the economy. Older and younger workers have traditionally been the prime beneficiaries of employment in the core. I have argued that changes in the economy since 1960 have reduced the ability of core workers in the more vulnerable age groups to obtain sector-specific earnings benefits.

The findings generally support the hypotheses of the study. The rate of return to age was lower in 1980 than in 1960 in the economy as a whole and in each economic sector. The profiles of gross earnings by age also showed that, within the core, older and younger workers had lower returns, compared to middle-aged workers, in 1980 than they did in 1960. Regression analysis of earnings by age group confirmed that the net effect of core sector employment for older workers had declined in the period from 1960 to 1980. Relative to their counterparts in the periphery, older

Table 3. REGRESSION ANALYSIS OF MEN'S EARNINGS BY AGE GROUP, 1960 AND 1980[a]

Variables	<25		25-34		35-44	
Education						
1960	.069	(.007)	.037	(.003)	.057	(.002)
1980	.041	(.005)	.027	(.003)	.055	(.003)
t test of differences	3.255*		2.357*		.555	
Occupation						
1960	.085	(.008)	.040	(.004)	.062	(.004)
1980	.086	(.005)	.058	(.003)	.060	(.004)
t test of differences	1.060		3.600*		.354	
Core sector						
1960	.444	(.041)	.268	(.017)	.233	(.015)
1980	.420	(.026)	.333	(.015)	.312	(.017)
t test of differences	.494		2.867*		3.485*	
Service industry						
1960	-.308	(.041)	-.013	(.017)	-.038	(.014)
1980	-.337	(.027)	-.020	(.015)	-.0005	(.017)
t test of differences	.591		.309		1.703*	
Nonwhite						
1960	.005	(.055)	-.456	(.023)	-.309	(.021)
1980	-.221	(.028)	-.297	(.017)	-.246	(.021)
t test of differences	3.662*		5.559*		2.121*	
Adjusted R^2						
1960	.112		.168		.260	
1980	.116		.109		.178	
Constant						
1960	5.412		7.321		7.244	
1980	6.119		7.353		7.266	

[a]Unstandardized coefficients with their standard errors in parentheses.

*Significant at the .05 level.

Sources: U.S. Bureau of the Census (1963, 1983).

workers gained less from employment in the core in 1980 than those age groups did in 1960.

These findings suggest that the rules of core sector employment, especially those involving returns to age, have changed. Unfortunately, this analysis could not get at the cause of this change. Such an ambitious project would need to introduce measures of power not available from census data. The goal of this study was to use change in the age–earnings relation as a sign of changes in the social organization of workers and employers. One important change is unionization of the work force. The decline in unionization has its greatest impact in the core sector, since workers in these industries are more likely to be unionized or have their wages influenced by the unionization of their industrial counterparts in other firms. Lower levels of unionization, therefore, are likely to reduce the returns to older workers in oligopolistic industries as a whole.

Table 3. (continued)

45-54	55-64	65+
.052 (.003)	.041 (.004)	.104 (.008)
.053 (.003)	.048 (.004)	.048 (.009)
.236	1.237	4.651*
.087 (.005)	.097 (.006)	.143 (.015)
.068 (.005)	.080 (.006)	.097 (.016)
2.687*	2.003*	2.097*
.250 (.019)	.328 (.026)	.415 (.061)
.286 (.019)	.248 (.025)	.064 (.070)
1.340	2.218*	3.780*
-.064 (.018)	-.091 (.025)	-.058 (.060)
-.062 (.018)	-.137 (.024)	-.178 (.070)
.079	1.327	1.223
-.299 (.028)	-.294 (.040)	-.111 (.103)
-.244 (.025)	-.149 (.036)	.318 (.106)
1.465	2.694*	2.903*
.247	.209	.147
.183	.143	.068
7.179	7.054	6.232
7.386	7.386	6.586

Changes in the social organization of employers takes place on at least two levels, in employers' relations with their workers (control of labor) and in their relations with each other (concentration of ownership and market power). The change in the relation of employers to each other has been treated by new structuralists as qualitatively unchanged, although quantitatively more concentrated, since the emergence of the dual economy (Bluestone & Harrison 1982; Hodson 1978).

With respect to employers' relations with their workers, Gordon, Edwards, and Reich (1982) suggest that bureaucratic control by capital may be in decline in the 1970s and 1980s. They see owners increasing their technical control over workers, via greater determination of the direction of work tasks and the pace of work. Capital is also increasing the intensity of supervision and management, and using its resources to resist union demands through relocation and anti-union activities. The result of the use of these resources by capital and the weakening of labor's key resource (unionization) will appear in labor market segments. The authors foresee some reshuffling of labor market boundaries and some internal structural changes as well. Thus, the parallelism between economic segmentation and labor market outcomes and structure, which they argue emerged from the application of bureaucratic control in core industries after 1950, should be showing signs of breaking down by 1980. The change in the age–earnings relation documented in the present study provides one such sign.

But not all of the class struggle is contained within the production setting. Changes in the relation between the state and the sphere of production, as well as within the production setting, restructure class relations in advanced capitalism. The power of workers has been aided by the apparatus of the state—labor legislation and welfare policies (Burawoy 1983). The power of employers and workers in capitalism is never balanced, because the organization of workers is always dependent on employment (Offe & Wiesenthal 1980). However, the resources available to class actors can change so that workers' bargaining power is strengthened or weakened. Recent changes have meant greater vulnerability for workers. Some of the factors contributing to the restructuring of class relations include increased price competition within industries, increased centralization within the economy, geographic mobility of capital, changing structures of control, and changing skill requirements because of technological change and industrial shifts.

Profitability of the firm is no guarantee of rising or sustained earnings levels for workers. Indeed, many profitable firms in the recovering economy of 1984 sought permanent concessions from their employees (Winter 1984). Conditions of competition are cited as necessitating these returns, but the competition exists in oligopolistic markets and often comes from their own foreign interests. Strength of the union, age of the workers, and resources of the corporation are no longer related in a simple, positive way. The experience of older workers bears this out and may serve as an indication of the changes in store for other workers in the core sector of the economy. It is the task of new structuralist research to explore the nature and impact of changing class resources within as well as between economic sectors.

Notes

1. In economic recessions, older workers experience higher increases in unemployment, longer periods between jobs, and a greater likelihood of dropping out of the labor force (Pepper 1982; Wilcock & Franke 1963).
2. Goodyear Tire and Rubber has linked itself to its foreign competition through technology sales to Bridgestone of Japan, and through manufacturing arrangements with Dunlop of Britain and is involved in a joint venture with Michelin of France (Bluestone & Harrison 1982). International competition threatens the U.S. tire industry, not multinational firms such as Goodyear.
3. The trends only appear contradictory. In fact, increased competition, and therefore insecurity, within an industry encourages firms in that industry to diversify by acquiring other firms. Acquisitions minimize the firm's risks by spreading out its resources.
4. Extractive industries of agriculture, fishing, forestry, and mining have been excluded. The

processes of production and major occupational categories in extractive industries are qualitatively different than those in other industries.
5. Earnings are given for the year preceding the census. Industry and occupations, however, are current for the census year. The analysis of earnings associated with occupation and industry is based on the assumption of continuity of employment between the census year and the preceding year. This assumption is necessary in 1960, since no information on industry or occupation for the earnings year is available. Although labor market information of this type is available in the 1980 Census, information pertaining to the census year is used to make the assumptions between the two data sets as similar as possible. Occupation is coded: 1 = Laborers, 2 = Service, 3 = Operatives, 4 = Crafts, 5 = Sales, 6 = Clerical, 7 = Managerial, 8 = Professional and Technical. Substantial changes in the 1980 Census classification of occupation make any finer breakdowns suspect.
6. I use industry (indicated by Standard Industrial Classification Code) twice to obtain two conceptually distinct dimensions of employment—economic and industrial segmentation. Although this situation is potentially problematic, the variables are not highly correlated with each other.
7. With industry as the basic unit of analysis, Tolbert, Horan, and Beck (1980) use three types of empirical indicators of economic structure: (1) measures of market concentration and economic scale, (2) measures of oligopolistic behavior in the industrial product market (especially profit), and (3) measures of the relative size of the bureaucratic work force an the extent of internal labor market development. There may be a problem in the use of a classification scheme derived since 1960 but not as recently as 1980 for analysis of data from these two time periods. This problem should not be prohibitive since the data sources for these variables cut across a wide swath of the 1960 to 1980 period, ranging from 1966 four-firm adjusted concentration ratios) to 1976 (earnings data).
8. The only problem that emerges is the change in the method for recording income between the 1960 and the 1980 censuses. Intervals of different sizes were used to code earnings in the two censuses, and the 1980 Census had much greater precision in this regard. This difference does not substantially challenge the usefulness of the 1960 to 1980 earnings comparisons, since the major focus is on the relative inequality of groups at each point in time.

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Appendix. ZERO-ORDER CORRELATION COEFFICIENTS, MEANS, AND STANDARD DEVIATIONS FOR VARIABLES USED IN REGRESSION ANALYSIS, BY YEAR*

	Nonwhite	Education	Occupation	Core Sector	Service Industry	25-34
Nonwhite	--	-.190	-.204	-.065	.021	.017
Education	-.122	--	.514	-.027	.157	.158
Occupation	-.119	.489	--	-.003	.157	.071
Core sector	-.025	-.050	-.020	--	-.515	.036
Service industry	.006	.182	.155	-.509	--	-.013
25-34	.039	.174	.078	.037	-.010	--
35-44	.007	.061	.089	.054	-.024	-.292
45-54	-.024	-.054	.061	.068	-.035	-.261
55-64	-.044	-.121	.020	.039	-.024	-.220
65+	-.022	-.107	-.007	-.045	.049	-.113
Log earnings	-.115	.214	.304	.249	-.120	.110
1980 means	.140	12.738	4.492	1.591	.577	.276
(S.D.)	(--)	(3.117)	(2.212)	(--)	(--)	(--)

*1960 above diagonal; 1980 below diagonal.

Sources: U.S. Bureau of the Census. (1963, 1983).

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Appendix. (continued)

35-44	45-54	55-64	65+	Log Earnings	1960 Means	(S.D.)
.010	-.006	-.017	-.012	-.152	.096	(--)
.052	-.088	-.180	-.159	.204	10.745	(3.412)
.041	.003	-.021	-.020	.295	4.240	(2.060)
.064	.037	.013	-.044	.247	1.639	(--)
-.037	-.031	.002	.043	-.110	.498	(--)
-.305	-.266	-.208	-.122	.108	.233	(--)
--	-.268	-.210	-.123	.199	.235	(--)
-.199	--	-.183	-.107	.148	.190	(--)
-.168	-.150	--	-.084	.062	.125	(--)
-.087	-.077	-.065	--	-.101	.047	(--)
.209	.193	.115	-.120	--	8.134	(1.014)
.182	.151	.113	.032	8.277	---	
(--)	(--)	(--)	(--)	(1.110)		

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