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## The Evolution of the American Labor Market, 1948–80

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### 1. *Richard B. Freeman*

Since World War II, the labor market in the United States has experienced significant changes in the composition of the work force, the type of work performed, institutional rules of operation and structure of wages, and employment and unemployment. Some of the changes continue historic trends. Others, however, have diverged from developments of earlier decades to create new labor market conditions and problems. In this paper, I identify seven of the most important changes, document their magnitude, and seek to estimate their impact on the economy. The seven changes are:

#### 1. *A Decreasing Rate of Growth of Real Wages and Labor Productivity*

For the first time in recent American economic history, the real (constant dollar) pay and average output per worker have failed to increase substantially over an extended period of time. From 1900 to 1966, real earnings increased by 2.1 percent per annum. From 1966 to 1978, real compensation per man-hour increased by just 1.7 percent per annum. Output per worker grew by 2.4 percent from 1900 to 1966, compared to just 1.8 percent from 1966 to 1978. Slackened growth of real earnings and productivity in the 1970s represents one of the major changes in the United States labor market.

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I have benefited from the comments of Orley Ashenfelter, H. G. Lewis, and J. T. Dunlop.

## 2. *A Changed Age, Sex, and Educational Composition of the Work Force*

Continuing historic trends, the percentage of the work force that is female and the percentage with high school and college training have increased, while the labor participation rate of older men has declined. The age structure of the work force was also altered as a result of the post-World War II "baby boom." These demographic changes make the typical worker in the latter part of the twentieth century different from the typical worker in earlier decades and have led to different market problems.

## 3. *A Significant Change in the Composition of Labor Demand and Employment*

Continuing long-term historic trends, the fraction of workers employed in white-collar occupations, in government, and in the service industries increased in the period under study, while the fraction working as factory operatives or laborers, and in agriculture, declined. In specific individual sectors, marked changes occurred in the composition of employment, with the number of workers in some industries (e.g., coal) decreasing in early postwar years and then increasing in the later years, while the converse occurred in other industries (e.g., education). In a strikingly new development, the growth of demand for educated workers fell short of the growth of supply, with the result that the quality of jobs obtained by the educated declined. The sizable changes in employment by industry and occupation highlight the flexibility of the work force in response to dynamic changes in demand for labor in a modern economy.

## 4. *A Declining Proportion of Workers in Trade Unions*

In 1954, 35 percent of nonagricultural workers in the United States were in trade unions; in 1974, only 26 percent were so organized—a decline in the extent of union organization of comparable magnitude to the decline in the percentage of those organized in the 1920s. The decline in the proportion organized is the result of two divergent trends: a steep fall in the proportion of *private* wage and salary workers who are organized, even in traditional union strongholds, and a sharp rise in the proportion of *public* sector workers who are organized. Thus, unionism has become less prevalent and qualitatively different than in the immediate post-World War II period.

## 5. *Changes in the Rules and Procedures of Operation of Firms and Unions*

Three important sets of forces have fundamentally altered the way in which companies hire, fire, promote, and otherwise treat workers: equal opportunity and affirmative action legislation by the federal government;

other federal laws such as those pertaining to occupational health and safety; and the advent of computerized personnel files. These forces have transformed the personnel practices of companies to an extent unprecedented since the onset of the scientific management movement from the 1890s through the 1920s. They have had a particularly significant effect on the way enterprises treat minority and women workers.

#### 6. *An Altered Structure of Wages*

Differentials in wages by race, age, education, and occupation have undergone fundamental changes in the postwar period. The wages of young workers have fallen relative to the wages of older workers. Blacks have gained relative to whites. The composition of the wage package has also altered, with fringes becoming an increasingly large share of labor cost. Sizable medium-term changes in the differentials paid different groups of workers highlight the flexibility of wage structures.

#### 7. *Changes in the Rate and Composition of Unemployment and its Relation to Wage Inflation*

The average rate of unemployment in the United States drifted upward in the period under study. In the 1950s, unemployment averaged 4.5 percent; in the 1970s, 6.2 percent. The fraction of the unemployed who are young workers, particularly young minority workers, has risen noticeably as has the fraction in high-skill groups. The rate of change in money wages coincident with given levels of unemployment rose over the period, destroying the once widely held belief in the existence of a stable Phillips curve linking wage inflation to unemployment.

### 5.1 Plan of Study

What are the quantitative dimensions of the seven changes sketched out above? To what extent do the changes represent continuance of past labor market developments or fundamentally new patterns of change? What caused the seven major changes?

These are the questions that will be considered here. This paper will first analyze the magnitude of each of the seven changes and the extent to which they represent a continuation of historical trends or fundamentally new economic developments and then try to determine the cause of the changes and their meaning for the operation of the United States economy.

### 5.2 Change 1: Growth of Real Earnings and Labor Productivity

Perhaps the most disturbing post-World War II trend in the American labor market has been the notable retardation in the growth of real wages and output per man-hour that began in the late 1960s. As table 5.1 shows, long-term increases in real compensation per man-hour on

**Table 5.1** Retardation in the Rate of Growth of Productivity and Real Earnings

	Compound Annual Rates of Change (in Percentages)		
	1900-66	1947-66	1966-78
<b>Productivity</b>			
1. Output per man-hour (NBER)	2.40	3.39	—
2. Private business sector output per hour of all persons (BLS)	—	3.30	1.83
<b>Real Earnings</b>			
3. Annual earnings	2.14	2.90	—
4. Compensation per man-hour	—	3.30	1.71
5. Average hourly earnings, private industry	—	2.36	0.84

*Sources: Line 1*—U.S. Bureau of the Census, *Historical Statistics, Part I*, Series D-683, Washington, D.C.: GPO, 1975, p. 162.

*Line 2*: BLS 1979c, table 79, p. 229, with 1978 from *Monthly Labor Review* 102 (August 1979): 103, table 31 (1947-66 based on hours worked concept from labor force data with 1978 estimated from 1977-78 from change in output per hour using established data.)

*Line 3*: U.S. Bureau of the Census, *Historical Statistics, Part I* (1975), Series D-726, p. 164 for 1900-60; Series D-722, p. 164, deflated by E-135, p. 210. I calculated the growth rate from 1900-60, then from 1960-66, and used the final figure to calculate 1900-66. A similar procedure was used to get 1947-66.

*Line 4*: BLS 1979c, table 80, pp. 231-32 with update from *Monthly Labor Review*, August 1979, table 31, p. 103. Because of slight inconsistencies among the series, I used the percentage change from 1977-78 in the *Monthly Labor Review* to update the series.

*Line 5*: *Monthly Labor Review*, August 1979, p. 81 for average hourly earnings and p. 89 for consumer price index deflator in 1978 with earlier figures taken from BLS 1979c, table 118, p. 399.

the order of 2.1 percent per annum, which had risen in the 1947-66 period, declined to just 1.7 percent from 1966 to 1978. The rate of growth of real average hourly earnings (a measure which is widely used but is not totally adequate, since it excludes fringe benefits) fell from 2.4 percent (1947-66) to just 0.8 percent (1966-78). Concomitant with the decline in real earnings was a sharp fall in the growth of output per man-hour.

Is the retardation in the growth of real earnings and productivity the result of sectoral shifts in the economy, such as the reduced flow of workers out of agriculture or the shift into services? Analysis by the United States Bureau of Labor Statistics (BLS) suggests that 22 percent of the reduction in growth from 1947-66 to 1967-78 can be attributed to sectoral shifts (Mark 1979), a percentage which falls far short of accounting for the bulk of the retardation. That sectoral changes are not the prime force at work is documented by the fact that productivity

growth has decreased in most industries: in forty-seven of the sixty-two industries for which the BLS calculates productivity, rates of change in output per employee hour were lower from 1966 to 1976 than from 1947 to 1966. Similarly, while rates of change in earnings differ for various groups of workers (see the discussion of change 6) only in coal was the rate of increase in real earnings higher post-1969 than pre-1969.<sup>1</sup> The seventies' retardation is not the result of the changing industrial mix of the economy.

The retardation in growth rates is also not directly explicable by the sluggish state of the economy in the 1970s. Regression analyses of the log of real earnings or productivity per man-hour on a trend variable, a 1970 trend, and a measure of business cycle, the level of unemployment, yield significant negative 1970 trend coefficients. Comparable regressions using a first difference format and using different trend breaks yield similar results.<sup>2</sup>

Accepting the retardation of growth as real, what factors can be adduced to explain the pattern of change?

Selected factors to account for the 1950s slowdown have been suggested by Edward F. Denison, who used standard growth accounting methods to evaluate the decline in productivity. Table 5.2 presents the results of his analysis for the period 1948–73 and 1973–76. While Denison's period is shorter than that covered in table 5.1 and suffers from reflecting cyclical (the 1974–75 recession) as well as secular patterns and other problems, his estimates offer the best available evaluation of the magnitude of factors at work.

With respect to labor inputs, Denison finds little impact from changes in workers' hours and attributes on the decelerated growth rate: the sizable increase in the educated work force in the period, which tends to raise growth, is balanced off by the decrease in labor input due to fewer hours worked and the changing age-sex composition of employment. Extending these calculations over a longer period of time is unlikely to greatly alter the results (see change 2).

With respect to the other major input, capital, Denison's calculations suggest only a modest role for slower capital formation per person in the retardation. From 1948 to 1973 Denison finds a growth of capital per person employed of .35 points, compared to .24 points from 1973 to 1976, a modest retardation of .11 points compared to the decline in productivity of 2.97 points. Using different data, Mark (1979) obtains an even stronger result as he finds that "the capital-labor ratio grew at about the same rate from 1966 to 1976 as it did from 1947 to 1966" (p. 198), eliminating it as an explanatory factor.

Three other possibilities for explaining the retardation deserve attention. First is the decline in expenditures on research and development (R&D) relative to national output. While the drop in R&D may have

**Table 5.2 National Income per Person Employed in Nonresidential Business: Growth Rate and Sources of Growth 1948-73 and 1973-76**

	1948-73	1973-76	Change
Growth Rate	2.43	-0.54	-2.97
Contributions to growth rate in percentage points			
<i>Total factor input:</i>			
Changes in workers' hours and attributes:			
hours	-.24	-.54	-.30
age-sex composition	-.17	-.25	-.08
education	.52	.88	.36
Changes in capital and land per person employed:			
inventories	.10	.02	-.08
nonresidential structures and equipment	.29	.25	-.04
land	-.04	-.03	.01
<i>Output per unit of input<sup>a</sup></i>			
Improved allocation of resources <sup>b</sup>	.37	-.01	-.38
Changes in the legal and human environment <sup>c</sup>	-.04	-.44	-.40
Economies of scale	.41	.24	-.17
Irregular factors	-.18	.09	.27
Advances in knowledge and miscellaneous determinants <sup>d</sup>	1.41	-.75	-2.16

Source: Edward F. Denison, *Accounting for Slower Economic Growth: The United States in the 1970s*, The Brookings Institution, 1979, table 7-3. (To be published)

<sup>a</sup>Contributions to the growth rate shown in subsequent lines are restricted to effects upon output per unit of input.

<sup>b</sup>Includes only gains resulting from the reallocation of labor out of farming and out of self-employment and unpaid family labor in small nonfarm enterprises.

<sup>c</sup>Includes only the effects on output per unit of input costs incurred to protect the physical environment and the safety and health of workers, and of costs of dishonesty and crime.

<sup>d</sup>Obtained as a residual.

complex effects on the economy, estimates of its contribution to the retardation of growth using standard growth accounting suggest only a modest impact (Denison 1979; Griliches 1973).

Second is what Denison calls "changes in the legal and human environment," due in large measure to governmental regulation (see change 6). While there is general agreement that regulations have reduced measured productivity, estimates of the degree to which this is true are difficult to obtain. Those of Denison indicate that costs incurred to protect the physical environment and health and safety of workers may explain as much as 13 percent of the retardation (-.40/-2.97).

The third, and most controversial factor, is the rise in energy prices. Some analysts place great weight on the increase in energy prices and resultant decline in energy used in their analyses of productivity (Jorgenson and Hudson 1978). The fact that the timing of the drop in

productivity and real wages was concentrated after 1973, which is roughly coincident with the rise in oil prices due to OPEC, tends to support this interpretation. On the other hand, other analysts (Perry 1978; Denison 1979; Bruno and Sachs 1979) attribute a smaller impact to the rise in energy prices, largely because energy use has not declined dramatically and does not constitute a large share of national product.

As table 5.2 shows, the bottom line in Denison's calculations for productivity growth in the 1970s, like those for earlier times, leaves the final explanation open to question, for the key factor is changes in the residual "advances in knowledge and miscellaneous determinants," which dropped from positive 1.41 to negative  $-.75$  in the period covered. In sum, while there is general agreement that there was a marked break in trend in productivity and real wage growth in the period covered, the cause and possible long-term persistence of the change remain open to question. Is the retardation a phenomenon unique to the United States in the post-1967 period, or is it a more general process?

Table 5.3 presents evidence on the growth of productivity and real wages in several developed countries and in the United States which suggests that the retardation has characterized most of the developed countries and is thus more likely due to worldwide economic trends than to developments specific to the United States.

**Table 5.3**                      **Compound Annual Increase in Output per Hour and Real Hourly Earnings in Manufacturing, 1960-77**

	Output per Hour in Manufacturing		Real Hourly Earnings of Production Workers in Manufacturing	
	1960-67	1967-77	1960-67	1967-77
United States	3.4	2.4	1.5	0.9
Belgium	5.2	8.2	5.2	5.5
Canada	4.2	3.7	2.0	3.6
Denmark	6.0	6.4	4.1	5.1
France	5.5	5.5	3.4	5.1
Germany, F.R.	5.7	5.4	5.5	4.5
Italy	6.3	4.0	5.1	7.8
Japan	9.6	7.5 <sup>a</sup>	4.1	7.4
Netherlands	5.8	7.9	6.4	4.5
Sweden	6.8	4.6	4.0	3.2
United Kingdom	3.8	2.4	2.5	1.8
Austria	—	—	4.7	5.7
Switzerland	—	—	3.7	3.2
Norway	—	—	3.1	4.5

Source: BLS 1979c, table 164, p. 582 and table 168, p. 586.

<sup>a</sup>Based on 1967-76.



What stands out in table 5.3 is the fact that both before and after the period of retardation, the growth rate of the United States was exceedingly dismal: worse than that of every country save the United Kingdom. Moreover, though in earlier decades slower growth in the United States might be attributed largely to higher initial levels of productivity and real earnings, such an explanation has decreasing validity. Despite serious problems of comparison due to exchange rate fluctuations, there is no doubt that the United States no longer has a major advantage in real income over other major developed countries: by the latest BLS comparisons, in fact, the United States had lower compensation per hour worked than did Belgium, Germany, the Netherlands, and Sweden.<sup>3</sup> Finally, it also is important to realize that the more sluggish increases in real wages in the United States compared to other developed countries are partially attributable to the rough constancy of labor's share of compensation in the United States in the period, compared to an upward trend in labor's share in several of the other countries.<sup>4</sup>

Since growth of productivity and real wages is the essence of economic progress, the declining rates of increase in the 1970s represent a potentially major economic problem. Productivity advances are necessary for improving average living standards and make numerous national goals easier to attain. Reduction of poverty, increased real defense spending, allocation of a greater share of desirable jobs to women and minorities, and increased support of older persons is easier, most would agree, in a rapidly growing economy than in a sluggish one. In the late 1950s, the Rockefeller Brothers issued a report comparing the growth of the United States to that of the Soviet Union and called for a major effort to raise the United States growth rate. If the falloff in the 1970s represents a new secular pattern of productivity growth rather than a temporary phenomenon, national attention should perhaps focus once more on policies to strengthen productivity growth.

### **5.3 Change 2: The Composition of the Work Force**

In 1978 there were over 103 million persons aged 16 and over in the United States work force, of whom 100.4 million were in the civilian work force. Forty-one percent of the work force were women; nearly half were less than 35 years of age; and about one-fourth were between 16 and 24; approximately one in three had attended college for at least one year and one in six was a college graduate; over 70 percent were high school graduates; and about 10 percent may have been illegal aliens.<sup>5</sup>

Thirty years earlier, the composition of the labor force was quite different with relatively fewer women, young persons, and highly edu-

cated workers. The labor force participation rate of married women with spouse present more than doubled over the period, and the proportion of married women in the labor force with children under six nearly tripled. The participation of men, by contrast, fell, especially those in the 55 to 64 age bracket and nonwhite men. In the span of only three decades, the work force had changed to a remarkable extent (see fig. 5.1).

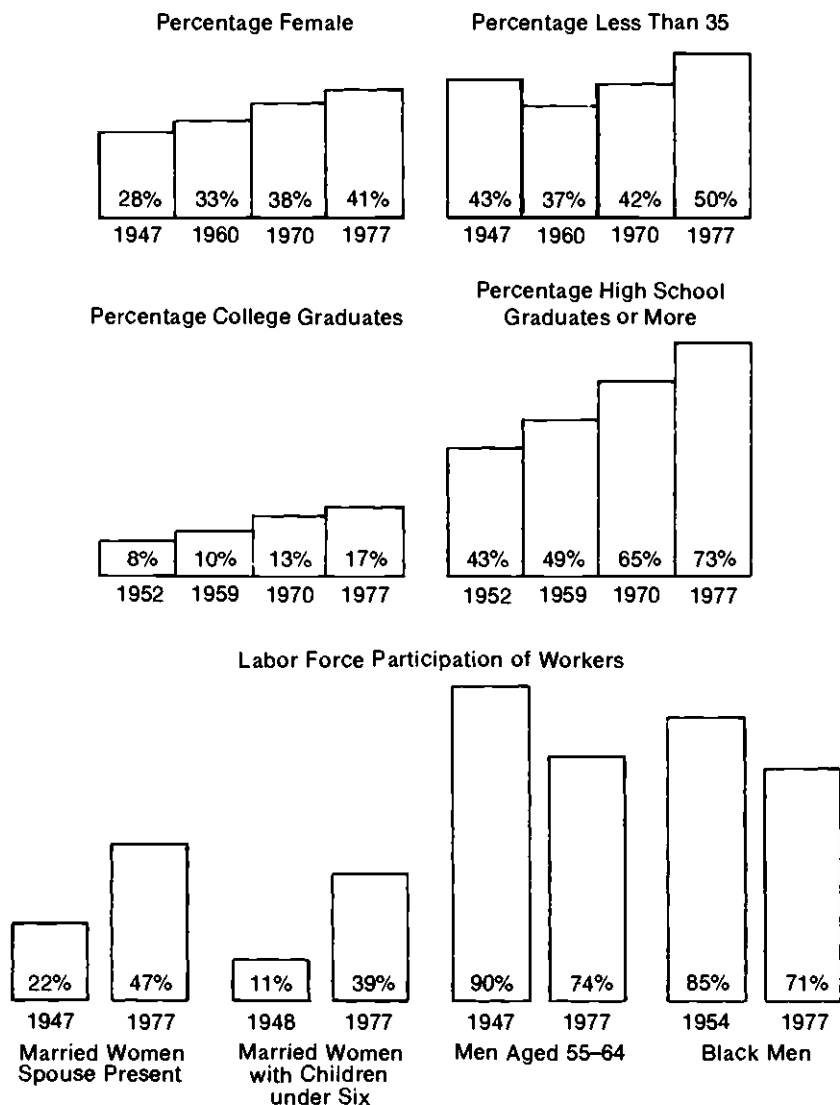
The most important change was the influx of women into the job market, particularly of married women with children. In the early part of the post-World War II period, most of the increase occurred among older women, many of whom were returning to work as their children reached school age. Nearly 80 percent of the growth in the female work force between 1947 and 1965 resulted from increased numbers of women aged 35 and over, whose labor force participation rate rose sharply. By contrast, in the late 1960s and early 1970s, the major source of growth of the female work force was among younger women, with 77 percent of the increase coming from persons less than 35 years old. From 1965 to 1977, the participation rate of women aged 20 to 24 rose from 50 percent to 67 percent while that of women aged 25 to 34 rose from 39 percent to 60 percent (BLS 1979c, p. 34).

The increased participation of women in the work force was related, presumably partly as cause and partly as effect, to several important social developments. The downward trend in fertility that followed the postwar baby boom was undoubtedly linked to the change in participation, though the influx of women with children into the work force makes it clear that the link is not the predominant factor at work. Similarly, the growth in the number of female-headed homes, which was especially sizable among blacks, is also likely to have been closely tied to increased female participation. By 1978 only 23 percent of homes fit into the traditional stereotype husband-wife homes with men employed and no other household member in the work force.<sup>6</sup>

On the job side, the female work force was associated with a marked increase in part-time jobs, which are largely filled by women. In 1950, 16 percent of persons with work experience over the year were part-time workers; in 1975, 12 percent, and in 1977, 21 percent (BLS 1979c, p. 12).

Because of the changes in fertility noted above, there was a remarkable shift in the age structure of the work force. In the 1950s, the proportion of the work force below 35 years of age was relatively small because of the low birthrate during the Depression. In the mid-1960s, however, the number of younger workers began increasing at unprecedented rates due to the postwar baby boom. The proportion of workers under 35 years of age jumped from 35 percent to 50 percent in the span

of only one decade. As the proportion of the young going on to higher education increased in the period, much of the growth in the labor force of younger workers occurred among the college trained. In 1966, there



**Fig. 5.1** Fractions of work force. Data from BLS 1979c, table 1 (percentage female), table 3 (age data), table 4 (male participation rate), table 12 (education data), table 14 (female participation rate).

were 0.49 male college graduates aged 25 to 34 per graduate thirty-five years of age and over; by 1976 the ratio had jumped to 0.78 (BLS 1977).

The large size of the youth population has had several socioeconomic consequences. It has, as will be seen later, altered the earnings of younger relative to older workers and made youth unemployment a major national concern. Coupled with 1960s' increases in the proportion of young choosing to go on to college, the increased number of youths sparked a large expansion of the education sector and a "golden age" for colleges and universities. Because crime is an activity disproportionately conducted by the young, it also raised rates of criminal activity (Freeman and Medoff 1980).

Despite the extraordinary increase in the number of young persons and growth in their labor participation rate, youth unemployment did not rise dramatically in the period studied. Among white youth aged 16 to 19 the number employed rose from 4.1 million in 1964 to 7.0 million in 1977 as the proportion employed actually increased. Among minority youth, however, the proportion in the labor force and the proportion employed fell while the proportion unemployed rose. The differential employment prospects facing white and black youth became one of the major problems of the decade (BLS 1979c, table 15).

One of the most surprising labor force changes shown in figure 5.1 is the marked drop in the participation of adult males, particularly older men and nonwhite men. In 1954, 86 percent of men 16 and over were in the work force; in 1977, 79 percent. Among nonwhites the decline was even more precipitous, from 85 percent in 1954 to 71 percent in 1977. The downward trend in nonwhite male participation is the major discordant pattern in a period of broad nonwhite economic advance. Both among whites and nonwhites the drop in participation was concentrated among older men, with the participation of all 55 to 64-year-old men falling by 16 percentage points.

The principal qualitative change in the labor force in post-World War II years was the increased educational attainment of workers. In contrast to the situation before World War II, high school graduation became common among the young, and a substantial fraction of young men and women chose to go on to college during the 1960s. Between 1954 and 1969, the proportion of 18 to 19-year-old men going to college rose from 30 percent to 44 percent while the proportion of 18 to 19-year-old women going to college increased from 23 percent to 36 percent. As a result of increased enrollments, in the late 1960s and the early 1970s, the number of graduates grew rapidly. From 1966 to 1974, the number of bachelor's degrees granted doubled, while the number of master's degrees and doctorates increased at nearly the same pace. The boom was accompanied by sizable changes in the fields of study

and occupations of new graduates, with some specialties like law or MBA management enjoying extraordinary growth and others such as engineering experiencing different patterns of change.

At the outset of the 1970s, however, enrollment in higher education began leveling off. The proportion of 18- to 19-year-old men in college dropped to just 34 percent by 1974; whereas in 1969 there were 0.5 graduate level enrollees per college graduate aged 22 to 29, and in 1975, there were 0.4 enrollees per bachelor's graduate in the 22 to 29-year-old age bracket. In some PhD specialties, enrollments and degrees granted fell by as much as 40 percent. Stabilization or decline in enrollment rates among the young did not, however, reduce or even greatly affect the rate of increase in the overall educational attainment of the work force. Even with the rates of the 1970s, the average education of the labor force rose noticeably. This was because of a continued sizable difference in years of schooling between retiring and entering workers. The proportion of college workers among the young, but not in the work force as a whole, stabilized.<sup>7</sup>

### 5.3.1 Causes of Change 2

The economic model of labor supply, in which supply decisions reflect economic incentives, can be used to analyze changes in female participation, male participation, and educational investments. In the simple economic model, changes in labor force participation are caused by changes in market wages and in the value of time spent working at home (the 'shadow wage' for household activities). Increases in market wages will raise labor participation (substitution effect), while increases in the value of working at home, due to higher income of other household members, will reduce participation (income effect).

Improvements in household technology, which take the form either of new machines or techniques or of lower prices for given techniques, can increase or decrease work activity depending on the extent to which they substitute for household time, among other things.

The basic effort to explain participation rate patterns follows a two-stage procedure. First, the effects of the wages of women and of their husbands on participation are estimated by cross-sectional (more recently, longitudinal) data. Then the changes in these explanatory factors over time are multiplied by their estimated effects to assess the impact of the changes on participation. Because the wages of men and of women have risen at roughly the same rate over time, the model requires greater female responsiveness to female wages than to the incomes of their husbands to account for the upward trends in participation. While most studies have found that women react more to their own wages than to their husbands' earnings, the differences have not been sufficiently large to explain the bulk of increased female participation.<sup>8</sup> Addition

of other factors, such as number of children, does not greatly enhance the ability to track the trend. Perhaps most discouragingly, the most recent results for the 1970 Census of Population show that the economic factors "which together once explained three-quarters of the variation in wives' participation rates across SMSAs (Standard Metropolitan Statistical Areas) now account for only one-third of it. Many of the variables are no longer significant, and the strength and explanatory power of all except the unemployment variable have declined" (Fields 1976, p. 576). We are far from accounting for the rise in the participation of women in terms of simple economic factors.

One possible missing element from standard models is the nature of household technology. The household sector is surprisingly capital intensive. In 1975 the average household had \$6,900 in consumer durables. From 1952 to 1975, the accumulation of durables increased by 5.4 percent per annum.<sup>9</sup> Refrigerators, washing machines, and related equipment became increasingly prevalent in the home. Although cause and effect cannot be readily disentangled, the growth of fast-food services and other restaurants have come to offer a more readily available (and chosen) alternative for one of the main household products. In the absence of estimates of the quantitative effect of these factors (and of the substitution between time and goods in household production), however, we can do no more than speculate about the effect of technology in "freeing" women's time.

Another possible missing element, which must be brought into the story with care, is attitudinal changes, potentially associated with the women's liberation movement of the late sixties and seventies. That there were significant changes in attitudes over the period is apparent from diverse opinion surveys. As late as 1967, 44 percent of first-year college women and 67 percent of first-year college men thought "a woman's place is best at home." In 1974 only 19 percent of entering college women and 40 percent of entering college men agreed with that view (Freeman 1976, p. 168, fig. 29). Clearly, it had become (for whatever reason) more socially acceptable for women to devote themselves to careers as opposed to marriage and family. The extent to which these changes in attitudes were caused by or caused the labor force patterns is difficult to determine.

The basic economic model can also be used to analyze the decline in the labor participation of older men. One important economic factor that can be expected to reduce participation of men sixty-five and over has been the expansion of social security coverage, which places a higher tax on earnings after that age. Another factor likely to lower older male participation is private pension plans, which have also become more widespread in recent years (Skolnik 1976) and which typically provide strong incentives to leave the job, often in the form of mandatory retire-

ment. Indeed, mandatory retirement provisions are sufficiently widespread as to constitute a major institutional provision in labor contracts (Lazear 1979). Recent changes in the law regarding vesting of pensions and mandatory retirement (see change 6) may provide an important "test" of how private pensions and mandatory retirement rules in fact affect retirement decisions.

Most empirical studies find sizable response parameters to economic variables in retirement behavior, with older men estimated to be more sensitive to wages or nonwage income than men in general (Cain and Watts 1973). Although detailed analysis of the effect of social security on retirement is just beginning, the evidence seems to support the attribution of a considerable effect to the social security mode of retirement pay (Boskin and Hurd 1978; Boskin 1977; Burkhauser and Turner 1978; Pellechio 1978; Quinn 1977). Recent analysis of the work incentive effects of social security—the strong dependence of benefits on final years' pay, which can increase participation—does, however, raise some doubts about its impact (Blinder, Gordon, and Wise 1979).

The puzzling drop in the labor force participation of black men has been explained in part by another component of social security: disability insurance (SSDI). About half of older black men out of the labor force are recipients of SSDI. Because of their concentration in blue-collar jobs with substantial risk of job-related injuries and lower wage rates, black men turn out to have been more affected by the program than white men (Leonard 1979). Still, a significant proportion of their decline in participation remains unexplained.

Finally, the human-capital analysis of investment in skills provides a reasonably successful explanation of the changes in the qualifications of the work force. In the human-capital model, decisions to obtain a certain level of schooling or skill are made by comparing two income streams: the stream that results from the investment and the stream that would obtain in its absence. If, at a given interest rate  $r$ , the present value of the former exceeds the latter plus the direct cost of the investment, the individual is expected to choose the investment. Because about two-thirds of the private cost of education turns out to consist of foregone income, as opposed to direct costs, the analysis directs attention to differences in the wages of more and less qualified persons as the major factor in investments in schooling.

Analyses of the link between enrollment patterns suggest that much of the postwar expansion and the seventies' contraction in the higher education system can be attributed to changes in economic incentives, measured by wages or other indicators of rates of return. The growth of enrollments in the 1960s was spurred by improved earnings opportunities for college graduates while the decline of enrollments in the 1970s appears to be the result of the falling return to college workers (see

change 5). Cross-section (Rosen and Willis 1979) and time series (Freeman 1975) analyses find sufficiently high elasticities of response as to account for the bulk of the changes in male enrollments in terms of the economic model. The slowdown in doctorate production also appears explicable in terms of the economic factors at work in that market, although, in this case, nonprice factors, notably the difficulty of obtaining academic employment, may be as important as wages in causing changes (Freeman 1980a). Finally, the selection of particular fields of study has also been found to respond to market factors with, for example, relatively many students choosing education in the 1960s when the school system was expanding and few choosing this concentration in the 1970s when the teacher's job market deteriorated (Hebl 1978). Though by no means without problems, the economic analysis does appear to provide a good handle on the changing educational attainment of the work force.

Overall, if one single conclusion about the labor force is to be drawn from the post-World War II experience, it is that the labor supply undergoes substantial dynamic shifts and evinces high supply responsiveness in several dimensions and thus cannot be viewed as a stable, inflexible component of the labor market. Much of the variation of course, rises from marginally attached groups—young persons, women, older workers—rather than from the prime-age male workers.

#### **5.4    Change 3: Demand and Employment**

Figure 5.2 highlights some of the most significant changes in the composition of employment in the post-World War II period. With respect to occupations it shows a massive shift in employment from blue-collar work, including agricultural, to white-collar work, particularly into professional, technical, and clerical jobs. Note, however, that the rate of expansion of the white-collar sector levels off noticeably in the 1970s. Between 1950 and 1960 the proportion in white-collar jobs increased by four percentage points; between 1960 and 1970, the increase is by seven points, whereas from 1970 to 1978 it is just three points. Among professionals the slackened rate of increase in the 1970s is even more striking: after increasing by three points between 1950 and 1960 and by four points between 1960 and 1970, the professional share of employment was virtually unchanged between 1970 and 1978.

The slowdown in the growth of professional and white-collar employment at a time when the number of college graduates was increasing rapidly caused a major "underemployment" problem in the college job market. As table 5.4 shows, there was a substantial downgrading in the types of jobs held by graduates, with fewer holding professional and technical positions and more in blue-collar and lower level white-collar



jobs. The modest increase in the proportion of male graduates in managerial positions and the sizable increase in the proportion of women in those jobs is, it should be stressed, dwarfed by the decline in the proportion in technical and professional jobs. The Bureau of Labor Statistics predicts that in the next decade or so the demand for professionals will continue to expand more slowly than supply, creating an even greater underemployment problem.

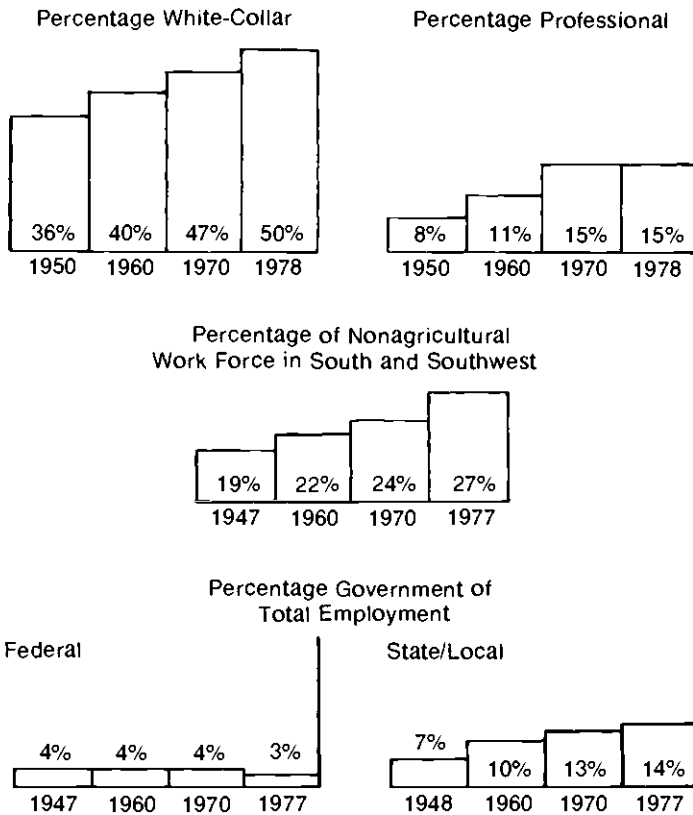


Fig. 5.2

Employment distribution. Data for 1950–70 white-collar and professional from U.S. Bureau of Census 1975, p. 139; for 1978 white-collar and professional, from BLS 1979a, pp. 172, 174; government data from BLS 1979c, table 50 with the total employment from table 1, regional data from table 52, with total nonagricultural employment from table 42. South and Southwest defined as regions IV and VI and Arizona and Nevada from region IX. See table 52, p. 159 for precise definitions of regions.

**Table 5.4**      **Percentage Distribution of Occupations of Employed College Graduates, 1968-78**

Occupations	Men			Women		
	1968	1978	Δ	1968	1978	Δ
Professional and technical	60.6	52.1	-8.5	81.1	65.0	-16.1
Managers and administrators	22.2	24.5	1.8	4.1	8.7	4.6
Sales workers	6.8	8.9	2.1	1.2	4.6	3.4
Clerical workers	4.4	4.7	0.3	10.6	15.4	4.8
Craft workers	2.2	3.9	1.7	1.2	1.9	0.7
Other blue-collar workers	1.3	2.7	1.4	1.2	1.9	0.7
Service workers	1.1	2.1	1.0	1.5	3.8	2.3
Farm workers	0.9	1.2	0.3	0.3	0.5	0.2

*Source:* Brown, 1979, p. 58, table 5.

The reduction in the quality of jobs and in the relative earnings of the more highly educated could be expected to cause a drop in the job satisfaction of more highly educated workers, and, according to the University of Michigan Quality of Work Survey, such appears to have been the case. Whereas in 1969 college workers scored higher than high school workers on an overall job satisfaction index by a considerable amount, in 1977 they scored much lower than in 1969 and no higher than high school workers.<sup>10</sup> A major burden has been placed on employers to adjust to the new availability of college graduates for jobs that have traditionally been held by the less educated and to the distorted age structure of the college work force.

Figure 5.2 also displays one of the most important changes in the industrial distribution of the work force: the doubling in the state and local governments' share of employment in the postwar period. By 1977 one in seven workers was employed by state and local governmental bodies compared to one in fourteen three decades earlier. One-third of the growth of employment over the entire 1948-76 period is attributable to expansion of the public sector (including federal employees). At the other end of the spectrum there was a continued shift of the work force out of agriculture, leaving just 3.8 percent of employed workers in that sector in 1976, and a drop in the self-employed, nonagricultural labor force (BLS 1979c, table 42, p. 134, table 34).

The increased importance of the governmental labor force in the economy has raised a whole host of industrial relations problems. Consider, for example, the following type of issue. A locality forbids public workers from striking. This same locality reaches an agreement with the public workers on a certain wage settlement after collective negotiations, but the citizens of the locality refuse to raise taxes to pay for this

wage settlement. The public sector workers cannot strike. Should wages be raised to the negotiated levels? If not, should the public sector workers be permitted to strike to pressure voters to meet the agreement? What should be done? A wide variety of answers to these questions have been employed by various states. As yet, there is no general agreement as to the best mode of dealing with public sector industrial relations problems.

Another widely heralded shift in employment, shown in figure 5.2, is the relative decline of employment in the Eastern and Midwestern industrial belt. The fastest growing regions of the country were the South, Southwest, and, to a lesser extent, the West Coast. Many industries moved into the South and Southwest in this period, locating new plants in such states as Texas, Louisiana, Florida, Arizona, and Colorado. Industrialization of those areas and loss of employment in New England and the Midwest became a subject of considerable controversy, due to, in part, the federal government's alleged spending decisions which favored the Sunbelt over the Snowbelt.

The shifts in jobs among occupations, industries, and areas are the tip of an iceberg of changes in employment in the job market. Among disaggregated categories there were large changes in employment, with some groups growing rapidly and others declining and with the growth sectors of one decade often being the declining sectors of the next and vice versa. Schoolteaching, for example, was a booming occupation in the 1960s but not in the 1970s. Employment in aircraft and parts rose by 184 percent from 1950 to 1969 and then fell by 42 percent from 1969 to 1977. Employment in all mining dropped from 901,000 in 1950 to 619,000 in 1969 and then shot up to 837,000 in 1978.<sup>11</sup>

It is important to recognize that the changes in the composition of employment are more extensive than the changes in the structure of wages. The standard deviation of log changes in employment in three-digit Census of Population occupations from 1960 to 1970 was .39 compared to a standard deviation in the log changes of earnings in those occupations of .13. Similarly, the standard deviations in log changes in employment among two-digit manufacturing industries far exceeded those in wages. From 1961 to 1977 (which have roughly similar cyclical conditions) the standard deviation on log changes in production worker employment in twenty two-digit durable and nondurable industries was .25, while the standard deviation in the log changes of average hourly earnings, exclusive of overtime, was .09.<sup>12</sup>

One of the fundamental features of the United States economy appears to be much greater variability in employment by sector than in earnings by sector. Though the wage structure changes over time, it has greater stability than employment.

### 5.4.1 Causes of Change 3

The principal cause of the structural change in employment among occupations and industries appears to be *dynamic shifts in demand for labor*, which alters employment along relatively elastic supply schedules. While there are other possible explanations for the concordance of large changes in employment with more modest changes in wages, the demand/elastic-supply interpretation of the patterns appears to offer the best explanation of the observed phenomenon (Freeman 1980b). Some of the shifts in demand are attributable to broad economic swings, such as growth of demand for some goods rather than others, while others are attributable to technological changes.

## 5.5 Employment and Productivity

Considerable concern has often been expressed about the effect of technological change on the level of employment in industry. Does employment increase or decrease in industries undergoing significant technological progress? The impact of differential increases in productivity and industry of employment is twofold. All else being the same, industries with large increases in productivity will experience relative declines in employment since fewer workers are needed for production. But all else will not remain the same. An industry with substantial gains in labor productivity will find that labor costs per unit of output and total costs decline rapidly. The decline in cost causes prices to fall and induces consumers to purchase more of the industry's output. Hence, the decline in labor demand associated with the need for fewer workers per unit of output may be offset by the increased demand for output.

Empirical evidence for the United States in the postwar period indicates that the employment creating effect of the growth of output is roughly offset by the disemployment effect of rapid productivity gains. Specifically, the correlation between changes in output per employee hour and employee hours in the industries for which the BLS calculates productivity indexes is a bare  $-.03$  (BLS 1979c, table 81). Thus, rapid productivity is essentially unrelated to growth of employment by sector. Technological change alters the distribution of employment among industries and occupations, but does not have the feared effect of creating significant loss of jobs in sectors with rapid productivity growth.

## 5.6 Change 4: Unionism

Collective organization of the United States labor force has changed substantially in the postwar period. Since the mid-1950s, the fraction of private sector workers who are unionized has fallen gradually while, by

contrast, organization of public sector workers has jumped enormously. These two changes have altered the labor movement in the country and the operation of the labor market.

The two divergent patterns and their net impact on unionization in the country are depicted in figure 5.3, which records the fraction organized in the private and public sectors and in the country overall. In 1956 the BLS data showed 34 percent of private nonagricultural workers to be organized; by 1974 the fraction had dropped to 26 percent. In the public sector, organization grew from 12 percent in 1956 to 19 percent in 1974, reaching 34 percent if members of associations, like the National Education Association, are included as union members. Because the majority of workers are private employees, the overall percentage has also fallen.

Data on the success of unions in National Labor Relations Board (NLRB) representative elections tell a similar story about the diminution of private sector unionism in the United States. In 1950 unions won 74 percent of NLRB elections; in 1976 their victory rate was below 50 percent. The fraction of eligible-to-vote workers in elections won by unions fell even more sharply as unions had increasing difficulty in elections in large establishments. Barely one-third of workers in elections were in districts won by unions. As a result, the ratio of workers organized as a consequence of the NLRB elections to the total nonagricultural private work force fell from 1.7 percent in 1950 to a bare 0.3 percent in 1977.<sup>13</sup>

While trade unions have contracted in earlier time periods—notably the 1920s when the percentage of nonagricultural workers organized fell from 20 percent to 12 percent—the drop in the 1950s to the 1970s represents a sharp break with the long-term trend and a pattern in marked contrast to the growth or stability of unionism in other developed countries, including Canada, where many of the same unions and firms operate.

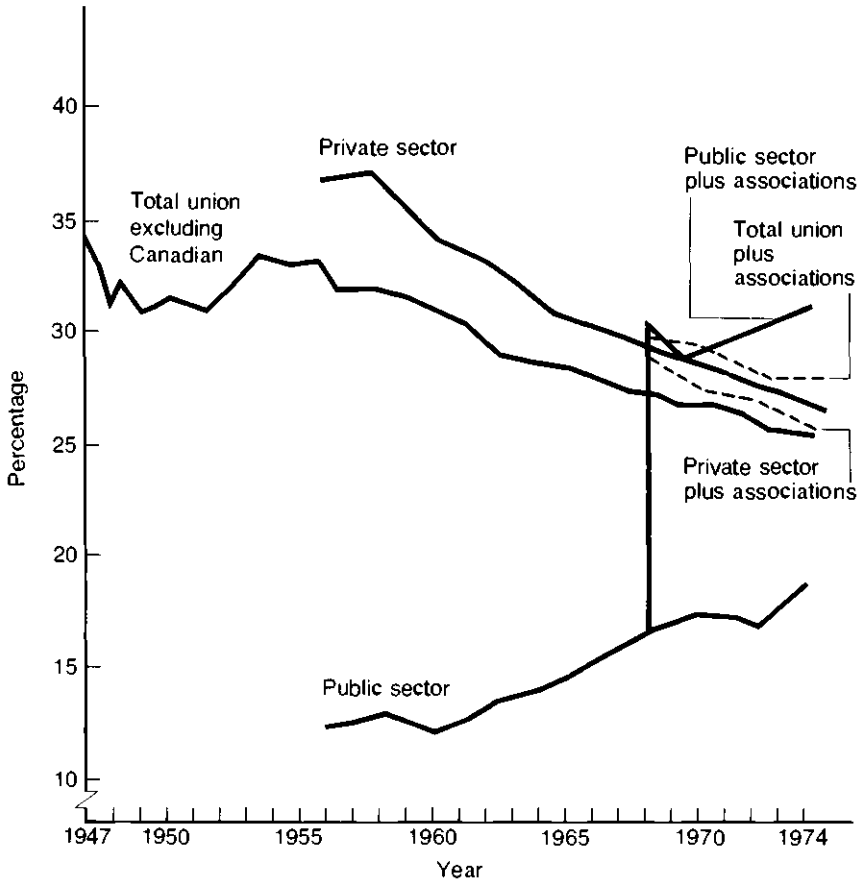
What explains the erosion of private sector organization of the United States labor force? One important factor has been the demographic and employment changes in the composition of the work force. The proportion of workers who have historically tended to be less organized—women, the young, Southwestern workers, white-collar workers—have grown while the proportion in the traditionally organized categories have fallen. Estimates by Freeman and Medoff suggest that about 60 percent of the decline in unionism can be explained by such structural changes (1976, p. 24, table 4).<sup>14</sup> Still, even among blue-collar workers in traditional strongholds of unionism, there was a sizable drop in union coverage. The following figures show the percentage of production workers covered by collective bargaining (BLS 1979c, table 157, p. 42):

	1958	1960	1970	1974-76
Metropolitan areas	—	73	—	61
Northeast	—	77	—	66
Manufacturing	67	—	61	—
Electrical manufacturing	73	—	58	—
Petroleum refining	89	—	74	—
<i>Ratio of Union Workers to Nonagricultural Employment*</i>				
Transportation and public utility	81	81	73	69
Contract construction	84	79	73	69

\*These figures are merely illustrative, since the concepts and sources of the data are quite different.

A second major factor underlying the erosion of unionism among private wage and salary workers has been increased managerial opposition, abetted in part by changes in the law. In the early years of the Wagner Act, employers were severely limited in what they could say or do to oppose unionism. Since the late 1940s, however, legal enactment (Section 8C) of Taft-Hartley and diverse NLRB and Supreme Court decisions regarding management right to "free speech" in opposition to unionism has significantly altered the nature of the election process. Nowadays, managements contest elections, making extensive efforts to convince workers to vote against union, and often employing specialized labor-management consultants to advise or run their campaigns. In Canada, where the same unions and management often deal with one another but where the method of recognizing unions does not allow for management campaigns against organization, trade union organization of the work force has grown.

Quantitative data from the AFL-CIO and the National Industrial Conference Board (NICB) suggest that active management opposition has significant effects on the success of unions. According to the AFL-CIO study, unions won 97 percent of elections with no opposition compared to 30 percent to 40 percent in which management opposition was extensive. According to the NICB study, unions won 85 percent of elections in which companies made either no effort or a limited effort in the form of a written letter opposing organization; they won 51 percent of those in which the company held antiunion meetings but only 34 percent of those in which companies communicated their opposition in writing or by holding group and individual meetings. Although the validity of these studies suffers from the possibility that management might not fight when the outcome is a foregone conclusion in the union's favor, both union and management officials place great stress on the impact of opposition, and particularly on the use of expert labor/management consulting firms.



**Fig. 5.3**

Union organization of the nonagricultural sector, 1947-74: union members per hundred nonagricultural employees. Data for total from BLS 1979c, table 150, p. 507. Public sector estimated by multiplying the percentage of union members in the public sector from table 147, pp. 498-503, by the total proportion by the ratio of nonagricultural employment to government employment from table 42, p. 134. Data for public sector including associations obtained by multiplying public sector figures by the ratio of union plus association membership to union membership from U.S. Bureau of Labor Statistics, *Directory of National Unions and Employee Associates* (Washington, D.C.: Government Printing Office, 1975), table 15, p. 70. Private sector and private sector plus association figures calculated using the same tables and methodology. Total association data from *Directory*, table 6, p. 63.

In addition to legal opposition, however, there has been a marked increase in illegal opposition to unions. The number of cases under section 8(a) (1) of the Taft-Hartley amendment—those involving discrimination in employment to discourage unions—has skyrocketed from 4,472 in 1950 to over 26,000 in fiscal 1977 while the number of 8(a) (3) cases—firing for union activities—has risen from 3,213 in 1950 to over 16,000 in 1976. The penalty for breaking these provisions of the law are sufficiently slight as to be only a moderate deterrent to companies strongly opposed to unions. Statistical analysis finds a significant negative correlation between unfair labor practices or other indications of managerial opposition and union success (Ellwood and Fine 1980; Freeman and Medoff 1976). Finally, in certain cases, even when management has lost an election, it may bargain so as never to sign a collective agreement.

A third potential cause of the diminished success of private sector unionism is the growing similarity in personnel practices between organized and nonorganized companies, especially among the largest enterprises. Many large nonunion firms pay union-level wages and have work conditions comparable to those in organized plants, such as job bidding systems for positions, seniority rules on layoffs, and grievance procedures. This is particularly the case in firms that have some organized plants and some nonorganized plants. In addition, to some extent at least, unions may be suffering from the fact that increased governmental regulation of the labor market and funding of worker benefits (see change 5) have also eroded the payoff to joining a union.

Another factor which may contribute to the changed position of unions has been a drop in favorable attitudes toward the institution. Beginning roughly in mid-1957, when the McClellan Labor-Management Relations Committee began its sensational hearings, stories dealing with labor in the major newspapers, *Time*, and *Newsweek*, became unfavorable. In public opinion surveys by Gallup, responses to the question, "In general, do you approve or disapprove of labor unions?" show a steady deterioration in favorable attitudes as follows:

<i>Period</i>	<i>Average Approval</i>
1950–1957 (Sept.)	75%
1957 (Sept.)–1959	68%
1960s	68%
1970s	60%

This drop in public approval for unions has occurred within broad occupational categories (professional and business, white-collar, blue-collar, and farmers). According to Gallup, it has dropped most rapidly in the past decade among adults under thirty.



Even with changing attitudes, however, a relatively large fraction of nonunion workers would like to be unionized. Kochan found that in the 1977 Quality of Employment Survey 39 percent of blue-collar workers would vote for union representation in their workplace if an election were held, while 28 percent of white-collar workers, excluding the self-employed and managers, would also vote for unions. "Perhaps the most striking finding was that 67 percent of all black and other minority workers would vote to unionize" (Kochan 1979, p. 25). While *all* of these workers could be in plants where even in the absence of management campaigns to discourage organization the majority of workers would vote down unions, it is more likely that at least some are in plants that would be organized if institutional procedures were different.

Will private sector unionism continue to diminish in the future? The answer to this question is unclear. On the one hand, even modest efforts to reform the labor laws in the United States in such a way as to reduce the ability of management to discourage unionism, (e.g. the Labor Law Reform of 1978) have been defeated. On the other hand, unionism has traditionally grown in sudden spurts which were never predicted by experts.

What are the economic effects of a proportionately smaller trade union movement? From the perspective of the monopoly "face" of unionism the decline can be expected to reduce the monopoly misallocation of resources resulting from unionism and, to the extent that union monopoly wage gains depend on the fraction of the labor force organized (Freeman and Medoff 1979), also reduce the union wage advantage. On the other hand, however, reduced unionism can be expected to affect adversely many of the positive effects of strong unionism—lower dispersion of earnings among workers; lower quit rates; and higher productivity due to pressures on management to reduce costs in organized firms. As the United Mine Workers organization and industrial relations in coal have deteriorated, productivity in union mines has fallen sharply. The broader social effects of a diminished trade union movement remain to be seen.

### 5.6.1 Public Sector Unionism

While private sector unionism has declined, public sector unionism has grown rapidly. The largest union in the AFL-CIO is that of the State, County and Municipal Workers. Teachers have become one of the most highly organized occupations in the country. In most cities, policemen and firemen negotiate for wages and work conditions. About half of the federal work force is organized. This organization of public sector workers brings the United States closer to other developed countries, where unionism of government employees has long been important, and alters the face of the American labor movement. Public sector

unions rely on political rather than economic muscle to obtain desired benefits. Public sector unions are usually not allowed to strike. Negotiated settlement must be approved, in many cases, by bodies that decide taxes. As noted earlier, these distinct characteristics create new industrial relations issues.

What explains the success of unionism in the public sector compared to the diminution of organization in the private sector? A good case can be made that the direct cause of union success in the public sector has been explicit changes in the law regarding public sector labor relations. First, states with laws that are more favorable to public sector collective bargaining have the highest proportion unionized. Second, and more importantly, over time public sector organization has grown rapidly in states following passage of the more favorable laws and has not grown rapidly in states which maintain laws that discourage public sector unionism. In one study, it was found that organization of police increased sizably following passage of a law that required localities to meet and confer with unions (Lauer 1979). Third, at the federal level, President Kennedy's Executive Order 10988 and ensuing policies toward unionism clearly precipitated the successful organization of federal employees. While the political and attitudinal changes that underlie the new laws may be properly viewed as the fundamental causes of the increased public sector unionism, new laws appear to be a necessary condition for organizational success.

Concomitant with an increase in unionization in the public sector has been a growth of strikes among public employees, including white-collar workers such as teachers. In 1956 BLS data show that outside of education there were just 27 work stoppages in the public sector; in 1976 the number of stoppages was 378. For the education sector, National Center for Education Statistics (NCES) data reveal only two teacher work stoppages (involving just 210 people) in 1959 compared to 218 stoppages (involving 182,300 teachers) in 1975 (NCES 1978, table 4.9, p. 182). Despite the illegality of public sector strikes in most states, teachers and other public sector workers (except for police and firemen) have come to view the strikes as a legitimate mode of seeking contract changes.

Most studies of the effects of public sector unionism on the pay of public employees have found moderate differences between the wages of public sector workers in cities that are organized and cities that are not (see Lewin 1977), a surprising result in view of the widespread concern over the power of public sector unions and the belief that absence of competition for government functions would create inelastic demands for union services and thus allow them great power in bargaining (Wellington and Winter 1972). One reason for the modest estimated effect of public sector unions appears to be the extensive "spillover" of

wages across cities as a result of the extensive reliance of local governments on comparability comparisons in wage setting (Ehrenburg and Goldstein 1975). A nonunion city near a union city in the same state is likely to pay wages similar to those in the union city. One study has found that while police in union and nonunion cities in the same state receive roughly similar pay, police in highly unionized states obtain a considerable advantage over those in less organized states, suggesting that public sector unionism has indeed had sizable economic consequences that escape detection from city comparisons (Lauer 1979). Other studies have found that public sector unions have larger effects on fringe benefits than on direct pay (Gustman and Segal 1977; Ichniowski 1978; Edwards and Edwards 1979).

### **5.7 Change 5: Governmental Regulations**

One of the major changes in the labor market in post-World War II years has been an increased role of governmental regulations in determining market behavior and outcomes. In the area of collective bargaining, legislative enactment and NLRB and court decisions have brought internal union affairs and the bargaining process under greater regulation than ever conceived by the proponents of the Wagner Act. In the area of personnel policy, the antibias and affirmative action rules of the federal government have revolutionized employee selection, promotion, and remuneration policies. In the area of workplace conditions, occupational health and safety acts and environmental policies have brought governmental rules and regulations into the workplaces of thousands of enterprises. Compensation has also been affected, both by equal pay legislation and regulation of pension plans. Finally, through its taxation and social welfare programs, the government has altered the rewards from working and the floor beneath which those who cannot work may fall.

#### **5.7.1 Regulation of Collective Bargaining**

In the period under study, two major pieces of labor legislation were enacted by the United States Congress. The Taft-Hartley Act attempted to redress what was viewed by many as an imbalance in the labor law favoring unions. The main purpose of the Landrum-Griffin Act was to regulate the internal affairs of trade unions to guarantee democratic procedures and reduce the possibilities of corruption. The laws, interpreted by the National Labor Relations Board, the Representative of Labor (expressly responsible for the Landrum-Griffin Act), and the courts have established the method of determining union representation, modes of bargaining and conflicts, and internal union practices.

### *Representation*

As noted in change 4, court rulings and the Taft-Hartley “free speech provision” have greatly expanded the extent to which employers can campaign against unions in NLRB elections, making the electoral process more an adversary procedure than had previously been the case. In addition, the Taft-Hartley Act outlawed closed-shop clauses, which made union membership a prerequisite for a job, and permitted states to outlaw the union shop, which required membership after employment. Evidence suggests that these changes have contributed to the gradual diminution of private sector unionism (Freeman and Medoff 1976; Ellwood and Fine 1980).

### *Bargaining Topics and Procedures*

The government has also come to play a role in determining the subjects of collective bargaining, prescribing *mandatory topics* about which parties must bargain (as opposed to permissive topics, which they can choose not to discuss), and outlawing other topics. When the Supreme Court ruled in 1949 that pensions were a mandatory topic, there was a sharp increase in the proportion of the wage bill going to pensions in unionized industries. In the 1964 Fibreboard Case (which made contracting out a mandatory bargaining topic under certain conditions) the Supreme Court noted the extent to which the original intent of the Wagner Act (to get parties into a room to negotiate, but not to affect the substance of the negotiations) had been changed. “There was a time when one might have taken the view that . . . the courts have *no* power to determine the subjects about which parties must bargain. . . . Too much law has been built upon a contrary assumption.”<sup>15</sup>

A second, more complex legal obligation on the two parties is “bargaining in good faith.” In several important decisions, the NLRB and the courts have outlawed certain forms of bargaining—such as Boulwarism (the General Electric strategy of making its first offer the full and final offer and engaging in a tough propaganda program to sell the offer to workers)—and have sought to interpret the state of mind called “good faith.” As there are no obligations to reach an agreement, however, it is unclear what effect the duty to bargain has on negotiations.<sup>16</sup>

#### 5.7.2 Weapons of Conflict

The Taft-Hartley Act outlawed certain forms of conflict, making it an unfair labor practice for unions, as well as managements, to coerce employees, for instance by mass picketing, to engage in secondary boycotts, and to strike for jurisdictional purposes. The Landrum-Griffin Act added “hot cargo” clauses (in which management agrees to refuse

to deal with other enterprises having labor disputes) to the list of illegal weapons of conflict.

### 5.7.3 Internal Union Practices

Far-reaching federal controls on the governance of unions were established by the Landrum-Griffin Act, passed following the sensational McClellan Committee hearings on criminal elements in trade unions: the electoral procedures in unions were brought under the law; a "bill of rights" was enacted to guarantee normal democratic freedoms to members; trusteeships over locals were restricted; and union leaders were ordered to report certain financial transactions.

To some extent the extensive and detailed regulation of collective bargaining and internal union democracy may be a necessary concomitant of the use of government-regulated elections to establish unions. Once the government has set up a procedure for organizing, next it can reasonably be expected to concern itself with the process and outcome.

### 5.7.4 Antibias Regulation of Personnel Policies

No institutional change has transformed the labor market more than the outlawing of discriminatory employment practices by Title VII of the Civil Rights Act of 1964 and the requirement that federal contractors engage in affirmative action under Executive Order 11246. "The world of the personnel manager was changed drastically as the EEO and the courts have enforced and implemented Title VII of the Civil Rights Act" (Miner and Miner 1978, p. 4). Many traditional modes of recruiting, testing, and selecting workers were ended by the Equal Employment Opportunity (EEO) laws, replaced by affirmative action searches and "fast tracks" to promote women and minorities. As table 5.5 indicates, a whole set of new personnel practices was initiated as a result of the EEO pressures of the government. As stated in the Bureau of National Affairs (1976):

Equal Employment Opportunity (EEO) Programs complete with Affirmative Action Plans (AAP) are viewed as "a fact of life" by nearly all employers, and the personnel function has changed in a variety of ways as a result of the government's efforts to enforce the employment provisions of the act. [P. 1]

The muscle behind the EEO effort has been the court decisions, which first tended to weigh heavily the interests of protected groups as opposed to other workers. Through the early 1970s most court decisions tended to favor active equal employment and affirmative action programs. In the mid and late 1970s, however, the tone of court decisions changed. Instead of *Griggs Power*, which came down heavily against employment tests with disparate effects, there was *Washington v. Davis*, which sup-

**Table 5.5** New Personnel Practices Resulting from EEO

Company Programs and Regulations	Percentage of Companies
1. Have <i>Formal</i> EEO Programs Including Affirmative Action Plan (of those subject to OFCCP regulations)	86 96
2. Have Had Investigation or Other Action under Title VII	63
3. Have Made Changes in Selection Procedures for EEOC Reasons:	60
in testing procedures	39
in revised job qualifications	31
in application forms	20
in recruiting techniques	19
4. Have Instituted Special Recruiting Programs:	
for all minority workers	69
for minorities in professional/managerial positions	58
5. Have Instituted Programs to Insure EEO Policies are Implemented	
communications on EEO policy	95
follow-up personnel or EEO office	85
training sessions on EEO	67
periodic publications of EEO results	48
EEO achievements included in performance appraisals	33
6. Have Instituted Special Training Programs	
for entry-level jobs	16
for upgrading	24
for management positions	16

*Source:* Bureau of National Affairs Personnel Policies Forum, *Equal Employment Opportunity: Programs and Results*, PPF Survey No. 112, March 1976 (*lines 1-2:* table 9, p. 15; *line 3:* table 3, p. 4; *line 4:* table 1, p. 9; *line 5:* table 6, p. 9; *line 6:* table 5, p. 8).

ported tests for the District of Columbia police force. Instead of finding discrimination on the basis of statistical disparities, additional information on specific cases of discrimination was also required in several cases. In the Weber Case the entire notion of voluntary affirmative action that involved inverse discrimination came under attack. The decision of the court in favor of Kaiser Steel and the Steelworkers may have drawn the bounds, however, on the changed direction of court decisions.

There is a wide variety of evidence indicating that governmental equal employment efforts have substantially improved the economic position of black workers. As table 5.6 indicates, there was a marked acceleration in black economic progress post-1964, when the federal antibias effort began (Title VII of the Civil Rights Act outlawing discrimination took effect on 1 July 1965). As might be expected given

**Table 5.6 Ratios of Nonwhite to White: Economic Position and Annual Changes in Ratios 1949-64 and 1964-76**

	Year			Annual Change	
	1949/50	1964	1976	Before 1964	After 1964
<b>Males</b>					
Median wages and salaries:					
all workers:	.50	.59	.73	0.6	1.2
full-time, year-round workers:	.64 <sup>a</sup>	.65	.77	0.1	1.0
Median income: Professionals	.57	.69	.84	1.1	2.1
Relative number of:					
professionals	.39	.45	.65	0.4	1.8
managers	.22	.22	.41	0.0	1.7
<b>Females</b>					
Median wages and salaries	.40	.58	.97	1.8	3.5
All workers:					
Full-time, year-round workers:	.57 <sup>a</sup>	.69	.99	1.3	2.3
Relative number of:					
professionals	.47	.60	.83	0.9	2.1
clericals	.15	.33	.69	1.3	3.3

Source: Incomes from U.S. Bureau of Census, *Current Population Reports*, Consumer Income Series P-60. Employment from Census of Population, 1950 and U.S. Department of Labor, *Handbook of Labor Statistics*, 1977.

<sup>a</sup>1955.

pressures of affirmative action programs to place and promote minorities into higher level jobs that were previously closed to them, many of the gains were concentrated among the better educated and skilled. For the first time in American history, blacks began to obtain managerial and professional jobs in major corporations. The most rapid gains were made, it is important to recognize, by young blacks and by black women, both of whom attained rough economic parity with whites in many markets. Finally, most studies of the employment of blacks have found greater increases in employment in companies influenced by federal antibias and affirmative action pressures than in companies that are less influenced by such pressures (Burman 1973; Ashenfelter and Heckman 1976; Heckman and Wolpin 1976; see Goldstein and Smith 1976 for an exception).

While most would agree that at least some of the post-1964 black economic progress results from the effect of antibias laws on company employment practices, some have cited other factors as being important as well. Welch and Smith (1975) stress improvements in the quality of education obtained by blacks, while Butler and Heckman (1977) suggest that reduced work force participation of black relative to white workers may also have contributed to the observed changes.<sup>17</sup>

Though apparently less affected, the position of women appears to have also improved, in some respects, by the federal laws. Some women

were moved into traditionally male occupations and others benefited from special promotion policies designed to alleviate underrepresentation in high level jobs.

### 5.7.5 Computerization

In addition to EEO pressures, the personnel practices of major corporations were also greatly affected by new computer techniques developed in the postwar period. For the first time, companies computerized available personnel files (some put together as a result of court cases regarding discrimination) which permits more detailed and rigorous tracking and analysis of internal labor markets. The new technology has begun and will continue to transform personnel policy into a more integral part of corporate policy-making.

### 5.7.6 Other Market Regulations

The federal government enacted several other major pieces of legislation regulating the labor market in the period under study. Among the most important were:

(a) The Coal Mine Health and Safety Act (1969), which established dust and ventilation standards in mines and compensation for victims of black lung disease. In the years following the Act, fatality rates fell among bituminous coalworkers, apparently, at least partially as a result of the regulations (Connerton 1978).

(b) The Occupational Safety and Health Act of 1970 (OSHA), which requires that places of employment be free from "recognized hazards that are causing or are likely to cause death or serious physical harm to employees" and mandates the Department of Labor to promulgate and enforce occupational health and safety standards. Despite the significant powers given to OSHA and efforts of the agency to monitor work places, it is generally agreed that OSHA failed to live up to its potential for reducing job injury and disease. There is an increasing realization of the complexities involved with health and safety problems, which will not yield to simplistic strategies based on simple approaches (see Ashford 1976; Smith 1976; Viscusi 1980).

(c) The Employee Retirement Income Security Act (ERISA), which mandates that all retirement plans be vested after ten years. It established financial standards for pensions and provided federal insurance for pension plans. As is often the case with governmental regulations, in addition to its planned effects on pension plans, ERISA appears to have had unanticipated effects causing a number of plans of small companies to be closed down.

(d) Extension of Minimum Wage coverage. While the level of the minimum wage has not changed relative to average wages, the fraction of the work force covered has increased greatly, which can be expected



to increase its effect. In 1947, 56 percent of workers were covered by the minimum wage; by 1968 the fraction covered had risen to 79 percent.

(e) Age Discrimination in Employment Act, which outlaws discrimination against workers between the ages of forty and seventy, and the Rehabilitation Act of 1973, which outlaws discrimination against handicapped workers.

### 5.7.7 Spending and Taxation

In addition to direct regulations, the government has influenced the operation of the labor market through its social insurance and welfare manpower training and taxation policies. In the post-World War II period, many new programs were initiated and expenditures on existing programs increased while tax rates rose significantly.

In 1960 the United States federal expenditure on manpower programs was approximately \$250 million; in 1975 expenditures were over \$5 billion a year, more than a twentyfold increase. The legislative cornerstone of this expansion is the Comprehensive Employment and Training Act of 1973 (CETA), with its subsequent amendments, which is designed to provide training, employment, and related services for economically disadvantaged, unemployed, and underemployed persons. The major titles of CETA authorize: a nationwide program of employment and training services, including training, employment, counseling, testing, and placement administered for the most part by state and local governments; transitional public service employment and other manpower services in areas with high rates of unemployment; nationally sponsored training and job placement programs for such special groups as youth, criminal offenders, persons of limited English-speaking ability, seasonal farmworkers, and others with particular market disadvantages; the Job Corps program of intensive education, training, and counseling for disadvantaged youth; and temporary emergency public service jobs to reduce the impact of high unemployment. For persons on welfare, the Work Incentive (WIN) program is designed to provide comparable aid in obtaining skills and finding jobs. In 1976 there were about 2.5 million persons in CETA programs and over two million registered for WIN. While the results of studies of manpower training programs are not uniformly positive, it appears that trainees may have benefited from their experience, though the return to the investment may not be extremely high (Ashenfelter 1978).

Other programs gave direct financial aid to persons unable to work or temporarily out of work. Public social welfare expenditures, broadly defined—the most important of which is Aid to Dependent Children, which provides money largely for families lacking a male head of household—increased drastically in the 1960s and 1970s, from 10 percent of

GNP in 1960 to 19 percent in 1975. Other major programs include social security disability insurance, and workmen's compensation, which assist persons injured at work. Another set of programs seeks to provide funds for particular types of purchases. In 1976, \$5.6 billion were given in food stamps to help low income families with food coupons. These stamps can be used only for purchases of food. Medicare similarly provides funds for the medical expenses of older persons. Yet another, unemployment insurance, provides money for persons who have lost their jobs.<sup>18</sup>

The effects of these various programs are twofold. On the one hand, they clearly raise the economic well-being of persons suffering economic distress. One estimate of the net effect of the welfare programs suggests that upwards of sixteen million persons have been raised above the official poverty level.<sup>19</sup> On the other hand, the programs also reduce the incentive to work and thus reduce labor force participation.

On the taxation side, the gap between before and after tax earnings has grown steadily in the post-World War II period, as a result of increases in income, social security, and other taxes. In 1949 taxes took up 23 percent of net national product; in 1975 taxes amounted to 33 percent of net national product (NNP). In 1949 the individual federal income taxes were 7.6 percent of NNP, while social insurance taxes accounted for 2.3 percent. By 1979 the income tax share was 11.5 percent and the social security share 7.2 percent. While there does not exist a set of widely accepted estimates of the effect of taxes on the quantity, quality, and effort devoted to work, many believe that the increased gap between what employers pay and what workers receive in earnings has significantly affected the market.<sup>20</sup>

## 5.8 · Change 6: Structure and Composition of Wages

Once thought of as relatively inflexible, the structure of wages in the United States, by which I mean the differentials paid workers categorized in various ways, underwent significant change in the post-World War II period. Educated workers, young workers, and many highly skilled workers had slower increases in wages than less educated, older, or less skilled workers in the 1970s after more rapid increases in the 1950s and 1960s. Black workers, as noted, had greater increases in earnings than white workers. While differentials may not have changed as rapidly as might be desired for optimal allocation of workers or elimination of discriminatory differences, there is no gainsaying the flexibility of relative wages in responding to the changes in the supply-demand balance. Table 5.7 summarizes evidence on some of the principal changes in the wage structure in post-World War II years.

Table 5.7 Changes in the Structure of Earnings in the United States

	Ratios of Earnings	
	1968	1975-79
<b>Education<sup>a</sup></b>		
College/high school men		
all	1.53	1.38 <sup>b</sup>
25-34	1.38	1.16 <sup>b</sup>
<b>Age</b>		
Men 25-34/men 45-54		
all	.85	.79 <sup>c</sup>
college	.72	.61 <sup>c</sup>
<b>Industry</b>		
Mining/all private	1.11	1.28 <sup>d</sup>
Construction/all private	1.53	1.32 <sup>d</sup>
<b>Specific Skills Group</b>		
R&D doctorate women/all full-time workers	2.68	2.47 <sup>e</sup>
Professors/all full-time workers	2.50 <sup>e</sup>	2.20 <sup>f</sup>

Sources: R. Freeman, "Effect of Demographic Factors on Age-Earnings Profile," *Journal of Human Resources*, vol. 14 (Summer 1979), table 2; ———, "The Facts About the Declining Economic Value of College," *Journal of Human Resources*, vol. 15 (Winter 1980), table 1; U.S. Department of Labor, *Employment and Training Report of the President 1977*, Washington, D.C.: GPO, 1978, table C-3, and *Monthly Labor Review*, vol. 102 (August 1979), table 14.

<sup>a</sup>Education data for 1977 has been adjusted for change in imputation procedure in 1975.

<sup>b</sup>1977.

<sup>c</sup>1975.

<sup>d</sup>1979.

<sup>e</sup>1969-70.

<sup>f</sup>1975-76.

### 5.8.1 Education

One of the most widely heralded changes in the structure of wages has been the decline in the advantage received by college graduate men. As table 5.7 shows, from the 1950s through the 1960s, college men earned a sizable differential over men with just high school training. In the 1970s, however, the differential eroded rapidly—part and parcel of the declining occupational position of graduates depicted in table 5.3. The drop in the advantage to college workers was most pronounced among the young, with starting bachelor's graduates in several cases earning much less in real terms in the mid-1970s than comparable workers earned at the end of the 1960s. For instance, the real pay for beginning B.S. science majors dropped by 21 percent from 1969 to 1975 and that of social science or humanities majors by 23 percent.<sup>21</sup> Since the direct costs of college rose in the period, the rate of return to college

graduates fell markedly, which in turn lowered enrollment rates among young persons.

The principal cause of the decline in the relative earnings of young college graduates appears to be the enormous increase in the number of graduates in the 1970s—the result of the high fraction of (baby boom) young persons enrolling for higher education—rather than decreased demand for college relative to high school graduates. Viewed strictly from a human-capital investment interpretation, however, an alternative explanation of the change can be developed: namely that the wages of young graduates have fallen because graduates are making greater investments in on-the-job training as a means of coping with the increased supply. This view suggests that the earnings of the workers who graduated in the 1970s will rise rapidly in the 1980s (Welch and Smith). While the long-term significance of the depressed college market of the 1970s thus will not be clear for some time,<sup>22</sup> the changes of the period show dramatically the impact of supply and demand on relative earnings and investments in skills.

Another important change in the structure of wages has been a marked twist in age-earnings profiles. As table 5.7 shows, in 1968, 25 to 34-year-old men earned 15 percent less than 45 to 54-year-old men. By 1975 the differential had risen to 21 percent. Among college men, the ratio of 25 to 34-year-olds' earnings to those of 45 to 54-year-olds fell from .72 in 1968 to .61 in 1975. The remarkable increase in the income advantage of older over younger male workers in the period appears to be primarily due to the changed age composition of the work force noted earlier, apparently because younger and older male workers are imperfect substitutes in production. It previously eased the inflow of the large numbers of young workers of the period into employment and enabled the market to adjust to the baby-boom cohort without massive increases in youth unemployment. It may also have created, however, a lifetime "cohort earnings gap" for the entrants of the 1970s. Whether the sizable drop in the earnings of the young in the 1970s will persist, however, remains to be seen (Welch and Smith 1978).

### 5.8.2 Specific Skills Groups

Workers in certain occupational and industrial groups also experienced marked changes in earnings relative to other workers in the post-war period. In the 1960s, construction average hourly earnings zoomed, rising from 1.26 times those in manufacturing in 1947 to 1.56 times those in manufacturing in 1969, only to fall to 1.37 times those in manufacturing by 1979. Scientists, engineers, college faculty, and doctorate personnel enjoyed substantial increases in income in the sixties and sluggish increases in the seventies. Workers in the oil industry had sizable gains in the 1970s, as did those in coal.

Overall, the pattern of the 1970s was toward lower differentials between more and less skilled workers, in contrast to stable or rising differentials in the 1950s and 1960s. As in other changes in the wage structure, the prime reason appears to be shifts in the demand for those workers compared to the supply.

Finally, as noted earlier, one of the major changes in the wage structure occurred along the racial dimension. Black-white differences diminished significantly, apparently as a result of increased demand for labor spurred by governmental EEO efforts.

### 5.8.3 Significance

The finding that relative wages have changed in the postwar period in response to labor market conditions suggests that the price system has at the least operated in the right direction in rewarding and allocating workers among sectors. According to the postwar experience, large increases in numbers of workers in particular groups, relative to demand, produced sizable drops in wages relative to those of other workers, while large decreases had the opposite effect.

### 5.8.4 Composition of the Wage Bill

Table 5.8 documents another important change in the pattern of wage payments in the United States: the increased importance of fringe or supplementary benefits. By 1977 over one-third of compensation in major companies consisted of fringes, with pension plans, vacation and holiday pay, and health insurance constituting the bulk of privately agreed-upon fringes and social security, the most important component of legally required payments.

There are several reasons for the growth of fringe benefits: the tax advantages which accrue to most fringes, increased worker desires for certain benefits as incomes rise, union pressures for fringes following rulings that fringes are valid bargaining topics (fringe benefits are a larger share of wage bills in union than in nonunion companies), and changes in social security and other laws.

While there are serious problems in international comparisons of wage bills, particularly with regard to the institutional structure of work forces (distinction between regular and temporary workers, for example), available data suggest that the tendency for a larger share of compensation to take the form of fringes is not unique to the United States, and that the ratio of supplementary payments to earnings in the United States is by no means high on an international scale. For example, the following figures show the comparative ratios of additional compensation to hourly earnings for 1960 and 1978 (BLS 1978).

	1960	1978
United States	18.0	34.5
Italy	71.7	93.4
Germany	35.0	60.9
United Kingdom	26.5	29.4
Canada	15.4	24.1
Sweden	16.0	60.7
France	54.5	75.7

The increased role of supplementary or fringe benefits has substantially changed the nature of remuneration for work and complicated the meaning to be attached to “wages.” Whether workers behave differently when a sizable proportion of their pay does not appear in the weekly pay check than when it does has not been seriously investigated, however.

## 5.9 Change 7: Unemployment and Wage Inflation

From the point of view of national policy two basic labor market problems plague national economics: unemployment and hourly wage inflation. In the post-World War II period under study, the level of unemployment drifted upward, the composition of unemployment changed, and there was a significant change in the level of wage inflation and its link to unemployment and aggregate economic activity.

### 5.9.1 Level of Composition and Unemployment

The level of unemployment in the United States appears to have increased in the 1970s relative to the 1950s and 1960s. From 1950 to 1959 unemployment averaged 4.5 percent per year, with a range from 2.9 percent to 6.8 percent. From 1960 to 1969, the average was slightly higher at 4.8 percent, with a range from 3.5 percent to 6.7 percent. From 1970 to 1977, however, unemployment averaged 6.3 percent, with a range from 4.8 percent to 8.5 percent.<sup>23</sup> Analysis of the unemployment rates of separate groups of workers shows that, while changes in the demographic composition of the work force have contributed to the higher rate, the upward drift in the 1970s is not primarily the result of the changing mix of workers but is, instead, a phenomenon found among virtually all groups of workers, though it is more pronounced among some than among others. While part of the upward drift in unemployment rates may be attributable to changes in unemployment insurance, which leads some workers to remain on unemployment compensation for large periods of time due to the receipt of funds while out of work, most analysts would attribute the higher rates of unemployment to the state of the aggregate economy—in particular, the level of demand for

labor (itself affected by changes in oil and other natural resource prices) and to governmental macroeconomic policy. Most other major countries have also experienced an increase in unemployment rates in the 1970s, pointing to world market conditions as an underlying cause of the problem.

The incidence of unemployment in the United States has also changed significantly, with young workers in general and black teenagers in particular having higher rates of unemployment relative to other workers

**Table 5.8** Changes in the Composition of the Wage Bill in Large Companies: Fringe Benefits as a Percentage of Payroll Expenses

	1951	1977	Change
Total	18.7	36.7	+18.0
1. Legally Required Payments	3.5	8.5	+5.0
a. OAS(DH)I	1.4	5.4	+4.0
b. Unemployment compensation	1.4	1.5	+0.1
c. Workmen's compensation	0.6	1.5	+0.9
d. Railroad retirement tax, etc.	0.1	0.0	-0.1
2. Pension, Insurance, & Other Agreed-upon Payments	5.4	12.7	+7.3
a. Pension plan premiums, etc.	3.6	5.9	+2.3
b. Life insurance premiums, etc.	1.4	5.9	+4.5
c. i. separation or termination pay allowances	*	**	—
ii. salary continuation or long-term disability	**	0.2	—
d. Dental insurance premiums	**	0.2	—
e. Discounts on goods and services	0.2	0.1	-0.1
f. Employee meals	***	0.2	—
g. Miscellaneous	0.2	0.2	—
3. Paid Rest Periods, Etc.	1.9	3.5	+1.6
4. Payments for Time not Worked	6.0	9.8	+3.8
a. Paid vacations	3.2	5.0	+1.8
b. Holidays	2.0	3.2	+1.2
c. Sick leave	0.6	1.2	+0.6
d. Payments for National Guard duty, jury, Death in family, other personal, etc.	0.2	0.4	+0.2
5. Other Items	1.9	2.2	+0.3
a. Profit sharing	0.7	1.1	+0.4
b. Employee thrift plans	***	0.4	—
c. Bonuses	1.0	0.4	-0.6
d. Employee education expenditures	***	0.1	—
e. Special wage payments ordered by courts, payments to union stewards, etc.	0.2	0.2	0.0
Total as ¢/Hour	31.5	226.4	+194.9
Total as \$/Year-Employee	644.0	4692.0	+4048.0

Source: U.S. Chamber of Commerce, *Employee Benefits* 1951 and 1977.

\* < .05%.

\*\*not included.

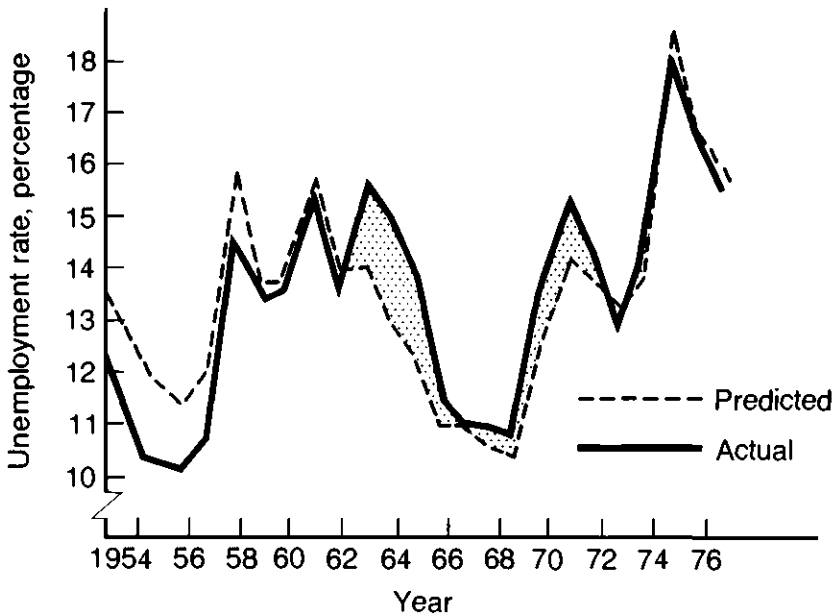
\*\*\*included in 2g miscellaneous in 1951.

than in the past, exacerbating the concentration of and inequality in unemployment. On the other end of the spectrum, white-collar workers and more highly educated workers have also had higher rates of unemployment relative to others than in the past.

The changing patterns of unemployment rates over time is examined in figure 5.4 in terms of the rates of unemployment for selected groups of workers and the rates predicted by regression of those rates on those of other workers. When the deviation between actual and predicted rates rises over time, the rate of the specified group worsens relative to the other group, and converse is true if the deviations decline over time.

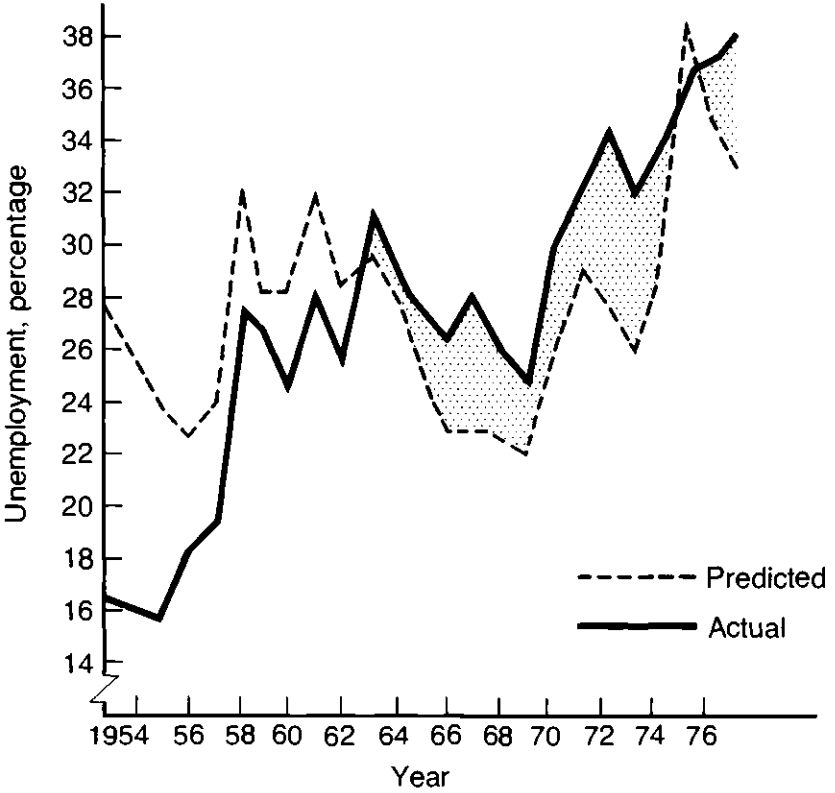
The figure shows the following:

1. A moderate increase in the employment rate of 16 to 19-year-old white young persons at given levels of total unemployment in the 1960s but not in the 1970s.
2. A more surprising and less noticed increase in the unemployment of 25 to 34-year-old white men relative to older workers, possibly attributable to demographic forces.
3. A marked increase in the unemployment rate of black teenagers relative to the total unemployment rate. The causes of the extraordinary deterioration in the employment position of these youths



**Fig. 5.4a** Actual unemployment for 16–19 year old whites versus that predicted from total unemployment rate.





**Fig. 5.4b** Actual unemployment for 16–19 year old nonwhites versus that predicted from total unemployment rate.

has yet to be satisfactorily explained. Whatever the causes, however, few would disagree with the proposition that the deteriorated employment of nonwhite youth constitutes one of the major socio-economic problems of the period.

4. An increase in the unemployment rate of white-collar workers relative to blue-collar workers.
5. An increase in the unemployment rate of professional and college trained workers relative to the less skilled and less educated workers, yet another indicator of the turnaround in the college job market discussed earlier.

As a result of the changed pattern of unemployment rates and changes in the composition of the work force, the unemployed worker of the late 1970s had very different characteristics than the unemployed worker in earlier years. The unemployed worker of the late 1970s was more likely to be young, black, and also highly educated and skilled than in the past.

The changing composition of unemployment suggests the need for different policies to aid the jobless than in the past. Young unemployed workers, particularly minority youth in inner cities, have a greater need for job training and related skill acquisition than the unemployed experienced heads of households of previous periods. Unemployed professional, managerial, and other white-collar or college educated workers also represent a new problem, for which existing policies may be inadequate.

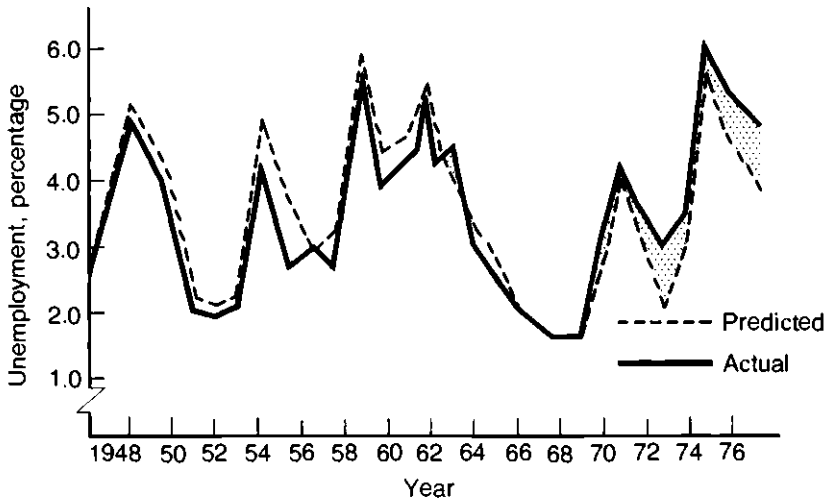


Fig. 5.4c

Actual unemployment for 25-34 year old white men versus that predicted from 35-44 year old white male rate.

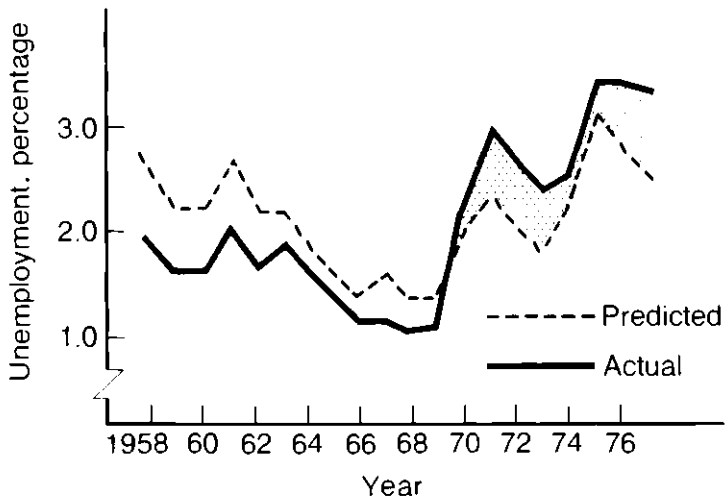
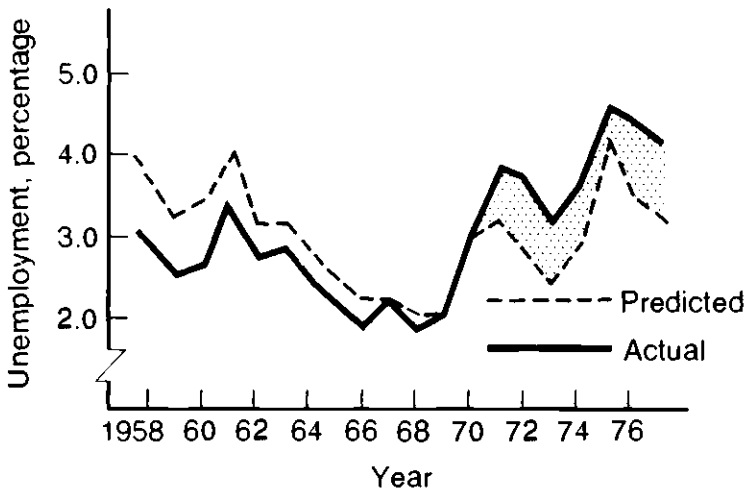
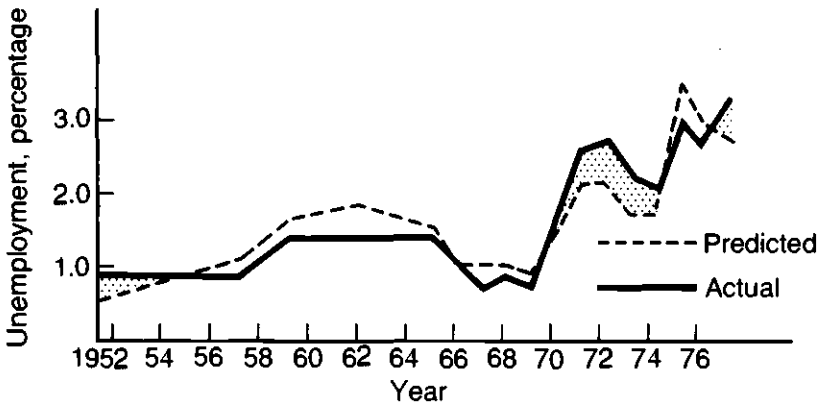


Fig. 5.4d

Actual white-collar unemployment versus that predicted from blue-collar unemployment rate.



**Fig. 5.4e** Actual unemployment of professional, technical, and kindred workers versus that predicted from blue-collar unemployment rate.



**Fig. 5.4f** Actual unemployment of college graduates (four or more years) versus that predicted from high school graduate (four years) rate.

### 5.9.2 Wage Inflation

Concordant with the upward drift in unemployment over the postwar period has been an increase in the average rate of wage inflation, creating a substantial policy problem. From 1950 to 1959, hourly compensation of all persons in private businesses increased by 5.1 percent per

annum; from 1960 to 1969, hourly compensation of all persons in private business increased by 4.9 percent per annum; from 1970 to 1977, the rate of increase was 7.1 percent. As figure 5.5 shows, the increase in wage inflation in the 1970s despite increased unemployment appears to have significantly raised the Phillips curve relation which once guided thinking on the unemployment-inflation problem. Whereas in the 1950s and the 1960s a level of unemployment of 6.0 percent to 7.0 percent was associated with wage inflation of 4.0 percent to 5.0 percent, in the 1970s it was associated with wage increases nearly twice as high. While it is not universally agreed that the experience of the 1970s proves that there is no long-term stable tradeoff between unemployment and hourly wage inflation, there is no doubt that whatever relation exists is quite unstable and an inadequate guide to policy.

More detailed analyses of the cyclical behavior of wages have shown a further change in the responsiveness of wage to unemployment and

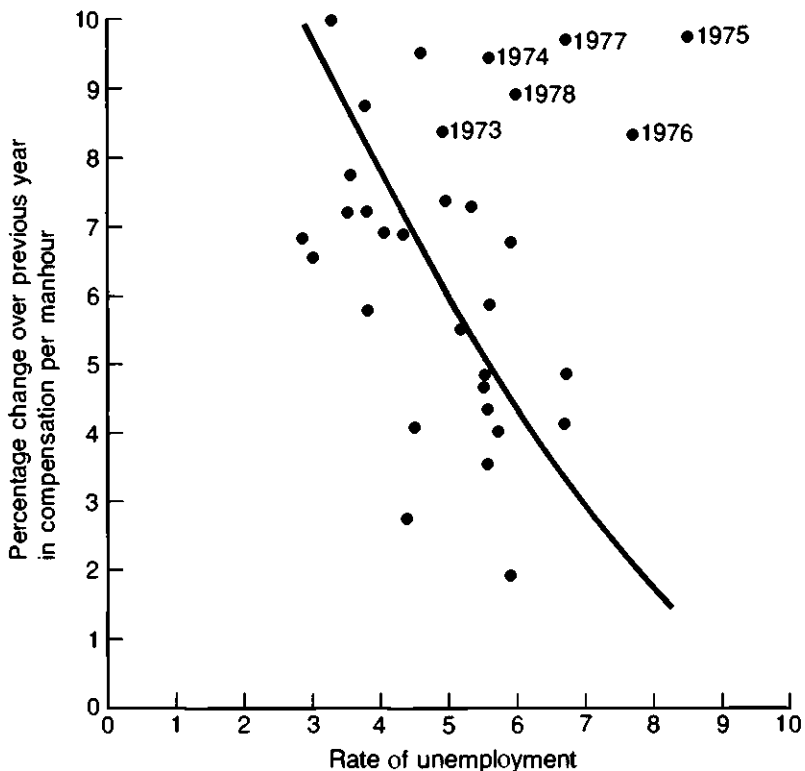


Fig. 5.5

The relation of unemployment to changes in money wages in the United States, 1948-79. Data from U.S. Department of Labor 1978, tables G-2, A-19.

aggregate cyclical conditions in the period under study: a sizable decline in the reduction in the rate of wage inflation associated with a given shortfall in aggregate activity. According to one set of estimates, the effect of unemployment on the rate of change in wages has become significantly lower in the postwar period than in the earlier part of the twentieth century (Sachs 1978). One important reason for the declining cyclical sensitivity of wages is the spread of long-term collective bargaining contracts. At the outset of the postwar period most contracts covered a one-year period. By the 1970s, most major industrial agreements were written for a three-year period. Wages set over a three-year period are likely to be unresponsive to unemployment or other measures of market conditions except in the year the contract is signed. Other factors, such as effective macroeconomic policy, have also been cited as potential causes of the decreased cyclical responsiveness of wages (Sachs 1978). The upward shift and reduced slope of the unemployment-wage change schedule make aggregate economic policy more difficult, which directs attention to a more disaggregated and sectoral approach to both unemployment and wage inflation problems.

### 5.10 Conclusion

“Each generation believes itself on the verge of a new economic era, an era of fundamental change” (NBER 1929, p. ix). In three decades examined in this study, seven major changes have taken place in the American labor market, significantly altering the wages, employment, and institutions at the workplace. First, the rate of growth of real wages and productivity declined sharply. While some of the decline is attributable to sectoral shifts in employment—the changing age-sex composition of the work force, changes in capital-labor ratios, increased regulation, changes in energy prices, and reduced R&D effect—for the most part, the retardation in growth is a story of changes in the famous “residual,” about which, by definition, we know little.

Second, there have been sizable demographic changes in the composition of employment: more women workers, more young workers, more educated workers, and fewer older male workers. In part these changes can be explained by changes in labor market incentives, but at least some remain a puzzle.

Third, the composition of employment has changed substantially, with the number of workers in white-collar and skilled jobs, in the South and Southwest, and in local and state government employment rising while the number in blue-collar and lower skilled jobs has declined. One noticeable pattern has been that employment in skilled areas has fallen short of the growth of the supply of educated labor, with a resultant

drop in the quality of jobs held by the educated. Another is for employment changes to vary more across sectors than wage changes.

Fourth, the trade union share of the work force has diminished substantially, with a sharp drop in the proportion unionized in the private sector overpowering a rise in the proportion organized in the public sector. Changes in the age-sex-skill mix of the work force explain perhaps 60 percent of the decline in private sector organization, but increased managerial opposition and effectiveness in contesting NLRB elections is also important in accounting for the diminished number of private sector unionism. Growth of public sector organization appears to be closely linked to changes in public sector labor relations laws.

Fifth, governmental regulation of the labor market and of the internal operation of management and labor has been greatly expanded. Equal employment legislation and affirmative action requirements have changed the personnel function. A wide variety of acts, such as the Occupational Health and Safety Act or the Employee Retirement Insurance Security Act, have changed the “rules” of labor market behavior, in some cases with sizable effects on basic economic factors.

Sixth, the structure of earnings has been significantly altered by shifts in the demand/supply balance. In the period studied, college graduates, particularly the young and those in the educational sector, young male workers, and those in several highly skilled occupations have suffered declines in relative earnings. Black workers have significantly gained compared to white workers. Fringe benefits increased in importance in the wage package.

Seventh, the composition of unemployment and its relation to wage inflation has also undergone major change. Young black workers and highly educated men have come to bear a greater share of unemployment. The rate of inflation consistent with particular levels of unemployment has increased rapidly.

#### 5.10.1 Comparisons with 1929 NBER Conference

The changes delineated in this paper can be fruitfully compared to those examined half a century earlier at the 1929 NBER Conference on Recent Economic Changes, in which Leo Wolman wrote a section on labor. Which of the seven changes are similar to those cited in the earlier volume? To what extent do our changes represent continuation of long-term developments and to what extent do they significantly diverge from historical changes? Answers to these questions should provide perspective on the nature of changes in the post-World War II period.

Four of our changes, while different in some cases in direction, have definite parallels with those in the earlier period.

In 1929, as in 1979, the changing demographic structure of the work force, due to declining birth rates and immigration was of some concern.

In 1929, however, the increased participation of women was not given serious attention.

Similarly, in 1929, as in 1979, patterns of change in the composition of employment—increases in white-collar and skilled jobs, declines in farming—received attention. While the 1970s may be relatively unique in that growth of employment in skilled areas has fallen short of the growth of educated labor there is nothing surprising in the existence of significant shifts in employment among sectors.

Sizable changes in the wage structure were also observed in the 1929 volume. Though the direction and nature of changes differed fundamentally between the periods, changes in relative wages appear to be a hallmark of the United States labor market.

Decline in unionization in the 1920s parallels to some extent the decline in the post-World War II period, though here more fundamental differences also arise. In the 1920s, the total number of union members, as well as the union share of the work force fell, whereas in the post-World War II period, union membership rose, while the proportion of workers covered fell. Moreover, there was nothing in the 1920s comparable to the spurt in public sector organization in the later period. Still, in the period covered by this essay and in the earlier period, declines in unionization were a major development.

Three of our seven changes, by contrast, seem to differ greatly from those stressed in the 1929 volume.

First, the latter period experienced increased governmental regulation of the labor market and of the internal operations of management and labor. Governmental intervention in the market following World War I seems to have been sufficiently modest as to draw virtually no attention from analysts. Peacetime growth of governmental regulation in the recent decades appears to be a relatively unique development.

Second, the concern of the 1970s over the growth of real wages and productivity had no parallel in the earlier period of time. In the 1929 conference, continued rapid advance of the economy was assured by all: "The spread of higher living standards [is] not new, but in its degree and scope it has taken on new importance" (NBER 1929, p. xi). The loss of confidence in growth, due to the sluggish performance in the 1970s, is a strikingly new development.

Third, the 1970s saw a drift upward in both unemployment and rates of wage inflation, constituting the aggregate economic problem of that decade. By contrast, in 1929, there was little concern with overall levels of unemployment (which were viewed as satisfactory) or with inflation, due to an "increasing tendency" toward price stability.

Finally, it is important to remember that all of the labor market changes stressed in the 1929 conference were, of course, completely overshadowed by the change about to occur—the Great Depression, the

development of which no analyst managed to foresee. I hope the changes examined in this paper will not be overshadowed by forces escaping current attention that will yield a new economic disaster.

## Notes

1. This can be seen by examining the earnings by industry data in BLS (1979c, table 92). In coal the rate of increase in real earnings rose from 1.6 percent (1950-69) to 1.8 percent (1969-77), using the CPI Deflator.

2. Regression of the log of output per man-hour (O) on unemployment (U), trend (T) and trend post-1970 (T70) yielded:

$$O = 3.97 + .003T - .010U - .012T70 \quad R^2 = .995$$

(.001)      (.003)      (.002)

Regression of the log of real compensation per man-hour (C) on the same variables yielded:

$$C = 3.97 + .031T - .019T70 + .000U \quad R^2 = .998$$

(.0004)      (.001)      (.002)

An alternative way of showing the changed trend in productivity growth and real wages is to assume that they follow a random walk with a drift and analyze changes ( $\Delta$ ) in the variables. (Suggested by Orley Ashenfelter.) The results of this calculation are given below:

$$\Delta O = -.005 - .005T70 + .008U - .007\Delta U \quad R^2 = .366$$

(.001)      (.003)      (.003)

$$\Delta C = .02 - .003T70 + .002U - .004\Delta U \quad R^2 = .270$$

(.001)      (.003)      (.002)

3. BLS 1978. If one correlates the rate of growth of real wage for 1967 to 1977 with the level of real wages in 1967 in that document, one does find a negative Spearman rank correlation of  $-.55$ , indicating that there is a pattern for slower growth in higher wage countries. However, less than 25 percent of the country variation in real wage growth can be explained by variation in initial levels.

4. Thus the United States lags more in real wage growth than in productivity growth.

5. All figures are from BLS (1979c) except for the illegal alien figure which is a rough estimate from M. Piore (pers. comm.).

6. Estimated by multiplying the percentage of all households composed of husband-wife families by the percentage of those families with husbands in the labor force and wives not. A comparable figure for 1955 was 46 percent. See BLS (1979c, table 27) and U.S. Department of Commerce (1977, table 50).

7. See Freeman (1976a) for these and related data.

8. See, for example, Ashenfelter and Heckman (1974, pp. 73-86). For a review of the time series literature see J. Mincer (1966).

9. Figures for 1975 were estimated by dividing current (1975) dollars of consumer durables of \$497 billion as reported in the U.S. Bureau of Census (1977, p. 428, table 695), by 71.1 million households (p. xiii) with 1952 data for trend



from U.S. Bureau of Census (1975, p. 252), and (1960, p. 15). The 1952 value was \$2,079 (in 1958 dollars).

10. This is based on an index of job satisfaction rather than a single measure. See Quinn and Staines (1978, table 18.5).

11. BLS 1977 (pp. 4, 313). See BLS (1979a, p. 75) for coal mining, and BLS (1978, p. 64) for aircraft and parts.

12. The data for three digit census occupations are from Freeman (1980b). The other data were calculated from BLS (1979c, table 45 and table 95).

13. Data from 1977: numbers in elections won by unions from NLRB (1977, p. 294); numbers of nonagricultural workers from BLS (1979c, table 42). Data for earlier years in Freeman and Medoff (1976).

14. This estimate is obtained by calculating the unionization rate one would expect in one year given the fractions organized of various demographic groups in another year.

15. U.S. Supreme Court decision in *Fibreboard Case*.

16. Dunlop and Bok (1970) among others, have argued that the duty to bargain has little impact. For a contrary view see Ross (1965).

17. For a survey of the literature see Freeman (1980c). The Butler and Heckman (1977) survey is unfortunately marred by use of incorrect data, which leads to an underestimate of the effect of post-1964 governmental policy.

18. Social insurance statistics taken from U.S. Bureau of the Census (1977, line 459, p. xvii; line 630, p. xix).

19. Calculated from data in Paglin (1977).

20. Calculated from data in Tax Foundation (1977, tables 15, 21, and 82).

21. See Freeman (1976a) for this and other related evidence on the falling value of college.

22. According to some analysts, the college job market will improve for new graduates in the 1980s when the supply of new degree recipients falls.

23. Calculated from data in BLS (1979c, table A-1).

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## 2. John T. Dunlop

### The Changing Character of Labor Markets

The introduction by the Committee on Recent Economic Changes to John Maurice Clark's *Strategic Factors in Business Cycles* published by the National Bureau of Economic Research in 1935 contains at least two ideas for this anniversary. First, the committee addressed "the great question that we face as a nation: which factors are and which are not amenable to purposive control by public or private agencies?" (p. xi).

Clark stated that "a factor may be said to have strategic importance if it has real power to control other factors, and . . . it has peculiar strategic importance if, in addition, we have power to control it; if it is not, like the weather, beyond the reach of anything we can do." (pp. 6-7).

The quality of being amenable to purposive control depends on the

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time frame. If one regards strategic factors as subject to control in a five- or ten-year framework, one is dealing with a moderate economic term in which to secure a turnaround, but an aeon in political time, normally beyond the perspective or concern of our political process. In this conflict between economic and political time lies one of our nation's most paralyzing characteristics of the period under review.

The second idea stated in the committee's introduction is reflected in the composition of this conference:

Effective results can be achieved only by putting to work the results of scientific analysis and continued statistical investigation in the realm of practical affairs. What is perhaps more needed at the present time than anything else is the development of the means of coordinating and utilizing the experience of men of affairs and the results of economic research. [P. x]

This theme deserves separate consideration in the present conference, since today, those engaged in research and those making public policy are neither listening to each other nor communicating much that is relevant to one another.

The idea of strategic factors, amenable to purposive control, suggests that we might examine Prof. Richard B. Freeman's list of changes or factors operative in the period 1948–80—as well as those of other papers—with this concept in mind. The idea of factors that are controllable is also a fruitful framework in which to view the future, provided one is open-minded as to means of control or persuasion. Several of Freeman's list of changes are clearly not to be classed as strategic, although this appraisal in no way minimizes their importance in generating other significant changes. The changed composition of the labor force (change 2)—age, sex, and educational features—as well as change in the composition of labor demand and employment and the wage structure (change 3 and part of change 6) are clearly forces that have to be largely accepted in any decade. It would have been appropriate for Freeman also to develop the shifts in employment regionally and between the suburbs and central city and to place emphasis upon the growing significance of undocumented aliens.

The following discussion treats several of Freeman's other categories of change (changes 4 and 5 and part of change 7) that might be regarded as strategic in the period of a decade in the sense of being amenable to purposive control. (Change 1 concerning real wages and productivity is passed over here since there is a whole session related to that topic.)

#### Freeman's Change 4: Declining Proportion of Workers in Trade Unions

The number of employees in labor organizations is a strategic factor in that it is subject in a decade's perspective to influence by the policies

and activities of public and private managements, by governments as rule-makers, and by labor organizations themselves in their organizing activities and collective bargaining policies. American management has generally been more hostile to the presence of unions in enterprises than have managements in other advanced Western countries. One of the key questions for the decade ahead is whether more managements will find this historic bias unsatisfactory on balance in dealing with challenges to management in the political and international arena in such areas as corporate governance, trade policy, regulatory processes, regional development, and taxation issues. Some larger enterprises may find a moderation of hostility and more accommodating approaches to be desirable. The "neutrality letter" of General Motors, restricting forms of hostility permitted by law, is illustrative of this possibility.

Labor and management do not adequately recognize that union policies in collective bargaining are themselves one of the strategic ways in which union growth is influenced, at times adversely. Union capacity to extract gains in collective bargaining is often greater than its capacity to organize domestic or foreign competition, resulting in the gradual erosion of a highly organized sector. In the 1920s, railroads, coal mining, and construction—among the highest organized sectors—suffered declines in union organization, in part as a result of the consequences of collective bargaining policies, while employment grew in the new unorganized industries such as automobiles, electrical manufacturing, rubber, and glass. In the 1970s, employment again eroded under highly organized union agreements in such industries as meat-packing, steel, construction, master-freight trucking, and maritime, while employment expanded in unorganized service industries, such as professional employment and clerical occupations, and at the same time shifted to the sunbelt that was resistant to union representation. It is a fundamental problem to collective bargaining in the decade ahead to transform bargaining structures in many key organized sectors, such as trucking, steel, construction, rubber, and retail food, in which employment is eroding under agreements (see Weber 1979, p. D-2). Separate provisions or agreements may be required, for instance, to cover local cartage, short hauls, and special products in the trucking industry rather than to include these under the master-freight agreement as at present, and separate provisions likewise may be more appropriate for rubber plants, other than those devoted to tires and tubes, that produce rubber belting or footwear.

Public policy in legislation and administration in numerous ways affects the climate for union growth and the opposition of managements. Union growth is influenced by many external factors, but the policies of labor organizations, managements, and government constitute a strategic factor.

It is somewhat ironical that nowhere does Freeman tell us the absolute numbers of union members, only the declining proportion of non-agricultural workers reported as dues-paying members of unions. But the fact is that unions and employee organizations, such as the National Education Association (NEA) or the baseball players who act like unions, increased their dues-paying membership by 60 percent, or 9 million members, in the period 1948 to date, thus expanding membership from 15 to 24 million. The 1920s were a very different era since there was a marked absolute decline from a peak of 4.8 million members in 1920 to 3.2 million in 1930, and 2.8 million in 1933 (Troy 1965, pp. 1–2). (The percentage of nonagricultural employees members of unions declined from 19 to 11 percent.)

The share of the nonagricultural work force in labor organizations, moreover, is scarcely an all-purpose measure of union strength or influence—at the workplace, in a community, or in the larger society—on compensation, on the role of the strike, on legislative matters, on voting patterns, on the role of retired members who are not counted, or on public opinion or the community. It is hard to believe that labor organization influence in the society today, in the year of the National Accord, is one-fourth less in some gross sense, than it was in 1948, one year after the Taft-Hartley Act was enacted.

Labor organizations and collective bargaining have been major factors contributing to the homogenization of the rules of work places under the direction of larger enterprises in the postwar period, whether organized or not. A major influence of labor organizations has been on the managers and their policies in larger unorganized establishments. In larger companies, particularly those that encompass both organized and unorganized establishments and units, considerable attention is directed by managers to see that wages and salaries, benefits and policies relating to employment, promotions, layoffs, transfers, and a host of personnel rules do not favor one group over others in similar occupations. Union membership figures, or fractions of the labor force paying union dues, cannot reflect this influence. Other factors have been working in the same direction, such as the training of managers, the professionalism of personnel, and public policies, but the dominant influence has been collective bargaining and potential organization.

There is a strange lacuna in Freeman's recital (in change 5) of the major enhancement of government regulations in the labor market of the period 1948–80. He refers to equal employment opportunity legislation, OSHA, pension plan regulation, and the expanded scope of the obligation to bargain under the National Labor Relations Act. He fails to relate this expansion in regulation to the legislative role of organized labor despite its falling rate of growth in dues-paying membership. He might also have included statutes and regulations against age discrim-

ination, the handicapped, social security and disability legislation, and minimum wage and hours laws. The Civil Rights Act of 1964 contains Title VII only because George Meany insisted, on behalf of the labor movement, that it be included. On the eighth floor of the AFL-CIO building hangs an exhibit with 100 pens used by President Johnson in the middle 1960s to sign major legislation advocated by the labor movement. Legislative programs of the Federation, from its inception a hundred years ago, have encountered opposition from management and others, but their success cannot narrowly be related to the percent of the work force paying dues to unions.

The patterns of union growth constitute a large subject for a brief commentary. Econometric models have not been very helpful, in my view, and Freeman is correct that "unionism has traditionally grown in sudden spurts which were never predicted by experts."<sup>1</sup> Over the past hundred years, labor organization in this country has grown appreciably in a relatively few years, no more than one-fourth of the total years—1884–86; 1896–1901; 1916–20; 1933–37; 1940–48; 1951–53. The normal state of affairs has been that the labor movement has had to run hard to stand still. Major breakthroughs to new industries, occupations, and locations seem to take place under the impact of special social and political circumstances that are often long-term in the making.

#### Freeman's Change 7: Wage Inflation and Economic Policy-Making

In my experience the procedural fundamental of a policy of wage restraint in a period of inflation in this country is the sympathetic involvement of leading representatives of labor organizations and management. The substantive fundamental of a wage restraint program is various standards that allow the gradual restoration of historical relativities in wages, salaries, and benefits, or the attainment of those which are emergent or which correct the distortions created by the stabilization program itself, often in an earlier phase (Dunlop and Fedor 1977, pp. 235–59). (The wage differentials created by different standards for COLA—cost of living adjustments—and non-COLA increases in the 1978–79 program are illustrative.)

There have been two quite different types of wage restraint programs in public policy in this country.<sup>2</sup> The first group is represented by the programs of World War II, the Korean War period, the Construction program of 1971–74, and some aspects of 1971–74 which involved genuine participation of labor and management. These programs have involved overt recognition of multiple standards for various elements of compensation, direct involvement in dispute resolution and considerable attention to individual case situations. These programs have typically been built upon a general statutory authorization that always has

been made more detailed by Congress over the course of the program. The second type of wage restraint program includes the guidepost period of 1962-66, much of Phase II of 1971-72, and the 1978-79 program. These programs have involved concentration upon a single guidepost number for all elements of compensation, a labor-cost approach to restraint, little or no labor and management participation (except for the outset of Phase II in 1971), and a rejection of concern with dispute resolution and the process of developing policy through case consideration. The single standard necessitates a cost approach to all compensation which distorts benefits very considerably in work groups of different compositions, as in the costing of pensions for a young or old work force. These programs have been labeled voluntary rather than compulsory, but that distinction has now been greatly confused.

The industrial-relations fraternity has led the first approach, and the guidepost wing of the macroeconomic profession has designed and led the second, and it appears that never the twain shall meet or communicate. The macroeconomics profession is designing and advocating still other devices which it regards as effective to restrain wage inflation, such as TIP, tax-based income policies (see Rees 1978, pp. 453-90), anti-inflationary tax-credit compacts (Eisner) and MAP, market method antiinflation plan (Lerner). This is the point at which the 1935 wisdom of the Committee on Recent Economic Changes needs to be recalled: "What is perhaps more needed at the present time than anything else is the development of the means of coordinating and utilizing the experience of men of affairs and the results of economic research."

The task of serious discussion and consensus building at a policy level in this country is made virtually impossible by virtue of the Advisory Committee Act and its interpretations and administration, which require open meetings with full access by the press and media. As compared to other advanced industrial countries we have seriously handcuffed ourselves to reach consensus on such vital matters as general economic policy, including wage restraint, among major interest groups of the nation. Yet frank and continuing discussion among representatives of labor, management, and government is essential if structural questions are to be seriously addressed that are at the bottom of many features of inflationary tendencies—these include questions of taxation, trade, productivity, the duration of collective agreements, introduction of technical change, reform of bargaining structures. Such discussions are indispensable to generate ideas, develop common approaches, and shape institutional changes. Legislative or executive fiat or expert pronouncement are ineffectual.

As one element of economic policy, wage restraint in voluntary or compulsory forms will not work save for a very brief period, indeed

measures to achieve the result will have perverse results, unless a large measure of genuine consensus and participation in any program is developed in the labor and management communities.

### Notes

1. See Dunlop (1948, pp. 163–93; 1958, pp. 25–54).

2. Let me state for the record again, that direct wage or price restraint is a limited purpose tool of great complexity with only marginal restraining consequences at best and with serious adverse and disruptive consequences most generally.

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## 3. R. F. Schubert

### Postwar Changes in the American Labor Market

Since the end of World War II, the American economy and its labor market have clearly undergone important changes. The question to which this paper is directed is whether the labor market at the beginning of the 1980s is different in significant ways from the labor market at the beginning of the postwar period. In my opinion, the answer probably is in the affirmative. However, I would also suggest that it can persuasively be argued that the changes which have taken place should not be seen as radical shifts in direction or watersheds but rather as developments consistent with the general evolution of our labor market, our economy, and our society at large.

It should be noted at the outset that the frame of reference selected for reviewing the changes which have occurred will be the steel industry labor force (specifically Bethlehem Steel's employment history) with the belief that this perspective is probably consistent in many ways with the labor market as a whole. It should also be understood that there are some obvious forces which, although not specifically discussed, have clearly been at play in the overall postwar labor market. Among these are: the general shift in the proportions of private versus public sector employment and the concurrent increase in the percentage of white-collar jobs; the impact of collective bargaining tempered by the realization that labor unions have had declining success over the last ten or fifteen years in terms of the proportion of the American work force that they represent; the influx of young adults into the labor market resulting from the post World War II "baby boom"; a dramatic increase in imported goods; and the numerous effects of escalating inflation on every aspect of our economy.

I leave it to the experts—the economists and sociologists—to debate the specific influences of these forces for change. This paper, aims, in-

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stead, at helping to define the postwar changes in the labor market by capsulizing some of the changes that have occurred in a representative sector of the labor force—the steel industry. The changes have been extensive. And, while some have been subtle, the majority are more obvious and the impact of each of them poses difficult questions for our future:

In comparing the average Bethlehem steelworker of 1949 with a similar steelworker today, the following differences are apparent:

1. *A significant increase in real wages*

Over the thirty-year period since 1949, the level and composition of steelworker income, broadly defined, has changed significantly. Employment costs, which include nonwage compensation as well as wage and salary payments, have, after adjustment for inflation, risen almost 300 percent over the period in question. This has been accompanied by a dramatic increase in the “benefits”-to-payroll ratio. In 1949, benefit costs for production workers in the steel industry were equal to 3 percent of payroll costs. Today, that percentage has risen to 26 percent. In the case of Bethlehem’s health care program instituted in 1950, for example, the company’s contribution at that time was less than 50 percent of the cost of coverage, whereas today Bethlehem picks up 100 percent of the cost of the much more extensive program.

2. *An increase in the level of education*

While 1949 data is not readily available to specifically document this change, we know that the average steelworker of today is much more apt to be a high school graduate than his or her counterpart of thirty years ago, and today many of our employees have some post high school training. As an example, one of our major plants found that 130 of the last 1,100 hired into entry-level production and maintenance jobs, or 10 percent of those hired, had graduated from a four-year college.

3. *A shorter work life*

Besides entering the work force later due to extended periods of education, the steelworker of today is choosing to retire earlier than ever before. In 1949, the average Bethlehem pensioner was more than sixty-eight years of age and received a monthly pension of \$165 in 1978 dollars. In 1978, our average steelworker was retiring nine years earlier, at age fifty-nine, and received a pension of \$655, four times more than that received by his 1949 counterpart.

4. *An increase in the amount of leisure time*

Besides spending fewer years at his job, the steelworker of today also spends fewer days at his job each year than did the 1949 steelworker; through the postwar years our employees have re-



ceived more and more holidays and more vacation time off. In 1949, the typical steelworker had six holidays a year and received one, two, or three weeks of vacation, depending upon his service (three weeks were granted after twenty-five years with the company). Today, a steelworker receives eleven holidays a year and vacations ranging from one to five weeks, with extra "extended vacation" weeks once every five years amounting to three weeks for shorter-serviced employees and eight or nine weeks for longer-serviced employees.

5. *An increase in the number of female workers*

The influx of women into the labor force and the removal of barriers to their participation in traditionally male-only jobs have had a noticeable impact on the steel industry. For example, in 1949 women constituted approximately one-half of a percent of Bethlehem Steel's production work force. Today, that percentage has risen to about 4.5 percent. Also, historically, most women employed by Bethlehem in the postwar period worked in office and clerical positions but, increasingly, the company has hired women as management trainees and has hired them for, or promoted them to, previously all-male higher-level supervisory and management positions.

6. *A decrease in concern over job security*

The average steelworker of today seems less concerned about lay-off than was an employee circa 1949 because of the excellent benefits accruing to an unemployed worker today from private and public sector programs. And, while there is much legitimate speculation about the effects such benefits to the unemployed may have on their interest in actively seeking work, it suffices to say at this juncture that laid-off steelworkers today will, in most cases—through State Unemployment Compensation (UC) and Bethlehem Supplemental Unemployment Benefits (SUB)—receive an income of approximately 65 percent of their gross earnings for temporary periods of unemployment of, in some cases, up to 104 weeks. Compared to 1949, when laid-off employees received only 24 weeks of UC benefits equal to about 33 percent of their wages, the employees of today are afforded considerable security against cyclical economic fluctuations.

In general, it is clear that the changes noted in our work force since 1949 have been substantial, and they have generally proven very positive changes for Bethlehem employees. As a company, we employ a work force that is better educated and more comfortable financially than our work force of thirty years ago. Ironically, these same changes have caused some paradoxes, and these paradoxes signal warnings for the future.

1. While the steelworker of today is better educated than he was thirty years ago, his education has in some instances increased faster than has the demand for jobs requiring higher levels of education, the result being that a number of people have had to settle for positions below the level for which they were prepared.

What effect will this elevated level of education of our production workers have on future job satisfaction? How can we adapt our human-resources training so as to motivate people who may feel overeducated and who may, hence, in the future react negatively to employment in positions which they perceive to be inferior to those for which they were trained and those to which they had aspired?

2. While the worker of today is considerably more comfortable financially than his or her counterpart of thirty years ago, a good portion of this personal financial improvement has been obtained at the expense of profits and retained earnings for capital investment. Higher employment costs are, of course, not totally to blame for the industry's plight, but there is little doubt that they have been a major contributor to the decline in profit margins and funds available for investment. In the last ten years the American steel industry invested in capital expenditures \$22 billion—*twice* what it earned. But during the next ten years, the American steel industry will have to spend *six to seven* times what it earned in the past ten years—\$60 to \$70 billion—if it is to remain technologically competitive, reduce its energy costs and improve its productivity. Therefore, all concerned must take a hard look at the proper tradeoffs in employment cost and new investment.

3. While over the last thirty years advancing technology and an expanding economy have created thousands of jobs throughout the country, many of which have been filled by a whole new sector of our population—women—their success in attaining jobs has to a certain extent aggravated the problem of another category of Americans—unemployed youth, many of whom are becoming lost in the ranks of the structurally unemployed.

4. While, again, the steelworker of today has, among other advantages, a much improved wage and benefits package and a better work environment, there seems to be concurrently a lesser degree of job satisfaction and work motivation than thirty years ago.

What does this issue of lower job satisfaction and work motivation portend for the future? What steps do we take to make work more meaningful for our employees and, again, what can be done about improving worker motivation? There would seem to be a direct correlation between these issues and our nation's lagging productivity growth.

These four paradoxes, though probably mirrored in the labor market generally, are matters of particular concern for the steel industry's future. There is one further paradox which I will consider and this too

clearly affects not only Bethlehem and the steel industry, but most segments of American industry as well. This is the problem of lagging productivity growth.

Lagging productivity growth is a societal problem that can only be solved if we see it as such and are committed to work together to overcome it. The problem arises at a time when as a country we've made great strides in the work place for our employees. However, with all of the positive benefits, the productivity growth of the 1950s and early 1960s—the Golden Age of Productivity—is slipping away from us. And a drop from a 3.2 percent annual increase in our nation's rate of growth up through 1965, to a much less desirable rate of one percent since 1973, could translate into some unpleasant predictions for our standard of living in the coming decade.

This problem is one of the most serious for my industry, and while there are many ideas being promulgated concerning the factors contributing to the productivity problem, there clearly is no panacea. But as I see it there are a couple of things that we in the business community can do to help. We can work on improving the vocational training, the skills training, of our younger work force and of the minorities and women whom we will hire. We can also develop more innovative human resources techniques to try to reverse the trend we detect toward lower worker motivation.

Both the private and public sectors must join forces to keep each other better informed of what jobs will be available in the future and what training can be planned to meet those needs. We can also work together on a national industrial policy or strategy so desperately needed to generate the capital which industry *must* have to maintain a competitive posture. And with some of that capital we can strive to return to the pre-1973 level of commitment to research and the development of new technology and equipment. And, of course, more capital and improved technology in the end will mean more jobs—real jobs—and, we hope, lasting jobs.

That is really the bottom line. More jobs. More jobs to address a problem that's probably bigger even than our nation's productivity problem, and growing all the time. It is the labor-market problem of the 1980s—the structurally unemployed.

And interestingly enough, many of the suggestions made for addressing the nation's lagging productivity are also possible solutions for this bigger problem. Foremost among these is the need to work together. There must be a commitment on the part of the public and private sectors to communicate needs and potential cooperative solutions. That commitment must be manifested in terms of a stable flow of government funds to the private sector for manpower training and development programs during periods of an expanding economy when the private

sector has career opportunities. And the commitment must also include a strategic plan for a quick and efficient transfer of government fund allocations from the private sector to public sector job creation programs during those periods when the economy dampens. We must also work together to improve our capital formation so we can create more jobs and target groups to train for those jobs. Conceivably, we in industry can even use some of our plants and skilled craftsmen during slower times to train youths in the trades that will be expanding in the upswing.

I don't mean to make the solution sound simple, for we all know that it is not. Unemployment is a labor-market problem that has been with us long before the postwar period. But the problem of youth unemployment—of structural unemployment—is even more severe. It may indeed be a time bomb with an ever-shortening fuse. And the only way to begin to defuse it is to pool our ideas, our energy, and our resources with an unequivocal commitment and unflagging resolve.

## Summary of Discussion

The themes of wage inflation and demographic shifts in the labor force dominated the discussion. Arthur Okun declared that wage restraint is difficult to achieve because of externalities in the wage-setting process. He urged that we consider using an incentive system, perhaps through the tax code, to provide the right signals to private parties in wage setting. Now, parties simply do not pay attention to the social interest in holding down wages and prices. Okun suggested that the problem partly results from the willingness of the government to underwrite, or bail out, parties agreeing to excessive wage settlements. In the steel negotiations, for example, the industry anticipates government policies for protection from international competition. Schubert retorted that the steel industry's problems have been caused, not solved, by government. He cited price restraints, outmoded depreciation laws, the regulatory burden, and the failure of the government to enforce trade laws against dumping as sources of the industry's problems.

Alan Blinder challenged John Dunlop's view that macroeconomists have spearheaded the past programs of statutory wage-and-price controls. Men of affairs created the programs, Blinder suggested, largely over the opposition of academic macroeconomists. Herbert Stein opposed any system of wage restraints built on an agreement between government and organized labor. He criticized the 1979 "accord" between the Carter administration and the AFL-CIO as undemocratic, for it made the leaders of organized labor, with its twenty-five million members, the unelected representatives of the entire labor force. Robert

Gordon declared that the main effect of the Carter administration's wage guidelines during the past two years has been to drive a wedge between wages of workers in large establishments, whose wages are restrained by the guidelines, and other workers, whose wages are not.

James Schlesinger pointed out the difficulties of achieving wage restraint in an economy with low or negative productivity growth. The presence of rising living standards is an important lubricant to a successful controls program.

Many participants addressed the problem of youth unemployment. Gordon noted that results of the recent NBER Conference on Youth Employment (May 1979) showed that white youth unemployment is not a severe problem. When the number of white out-of-school unemployed youths is measured as a proportion of the white youth labor force *plus* youths in school, the adjusted unemployment rate stands at about 5 percent, near the level of adult unemployment. On black unemployment Gordon felt that zoning laws in suburban areas prevent young workers from living near new suburban factories, thus hindering job creation for central city workers. He contrasted this situation with that of many European cities, where working-class suburban neighborhoods have sprung up near suburban factory sites. Martin Feldstein stressed that much of the black youth unemployment problem has resulted from the decline of rural agriculture and the urbanization of black youths in the past thirty-five years. Richard Freeman reported research results which show that unemployed black youths eventually get absorbed into the adult labor market, though possibly not with the quality of jobs they might have found without the unemployment spell.

Victor Fuchs addressed demographic changes at the other end of the age distribution, noting that slower economic growth and the increasing age of the United States labor force will threaten the financial stability of the social security system over the next twenty years. He proposed that the age of eligibility for retirement benefits be raised two months per year for the next eighteen years, increasing the eligibility age three years by the year 2000.

Wilbur Cohen discussed another major structural shift in the labor market: the tremendous growth of the unemployment insurance system. In the last thirty years, Cohen noted, the coverage of the unemployment insurance system has moved far beyond industry, so that it is nearly universal today. The maximum duration of benefits has grown from 16 to 20 weeks in 1948, to 39 weeks today. In some special congressional income support systems, such as those relating to airlines and railroads, benefits may be provided for five years, or even until retirement! Cohen declared that these special programs may have a major impact on work incentives in the United States labor force.

## References

- Ashenfelter, A. 1979. Estimating the effects of training programs on earnings. *Review of Economics and Statistics* 60 (February):47-57.
- Ashenfelter, Orley, and Heckman, James J. 1974. The estimation of income and substitution efforts in a model of family labor supply. *Econometrica* 42 (January): 73-86.
- . 1976. Measuring the effect of an antidiscrimination program. In *Evaluating the labor market effects of social programs*, ed. Orley Ashenfelter and James Blum. Princeton, N.J.: Industrial Relations Section, Princeton University.
- Ashford, N. 1976. *Crisis in the workplace*. Cambridge: MIT Press.
- Blinder, Alan S.; Gordon, Roger H.; and Wise, Donald E. 1979. Reconsidering the work disincentive effects of social security. Mimeographed. Princeton, N.J.
- Boskin, Michael J. 1977. Social security and retirement decisions. *Economic Inquiry* 15, no. 1 (January): 1-25.
- . 1978. The effect of social security on early retirement. *Journal of Public Economics* 10 (December): 361-77.
- Brown, S. C. 1979. Educational attainment of workers: Some trends from 1975 to 1978. *Monthly Labor Review* 102 (February):54-58.
- Bruno, Michael, and Sachs, Jeffrey. 1979. Supply vs. demand approaches to the problem of stagflation. National Bureau of Economic Research Working Paper, no. 382. Cambridge, Mass.: NBER.
- Bureau of National Affairs. 1976. *Equal employment opportunity programs and results*. Personnel Policies Forum, Survey no. 12. Washington, D.C.: Bureau of National Affairs.
- Burkhauser, Richard V., and Turner, John A. 1978. A time-series analysis on social security and its effect on the market work of men at younger ages. *Journal of Political Economy* 86 (August): 701-15.
- Burman, George. 1973. The economics of discrimination: The impact of public policy. Ph.D. diss., University of Chicago.
- Burstein, P. 1978. Equal opportunity legislation and the income of women and nonwhites. Unpublished paper. New Haven: Yale University.
- Butler, R., and Heckman, J. 1977. Government's impact on the labor market status of black Americans: A critical review. In *Equal rights and industrial relations*, ed. L. J. Hausman, O. Ashenfelter, B. Rustin, R. F. Schubert, and D. Slaiman, pp. 235-81. Madison, Wisc.: Industrial Relations Research Association.
- Cain, G., and Watts, H. 1973. *Income maintenance and labor supply*. Chicago: Markham.
- Clark, John Maurice. 1935. *Strategic factors in business cycles*. New York: National Bureau of Economic Research.

- Connerton, M. 1978. Accident control through regulation: The 1969 Call Act. Ph.D. diss., Harvard University.
- Denison, E. F. 1979. Explanations of declining productivity. In U.S. Department of Commerce, *Survey of Current Business* 59 (August): 1-24.
- Dunlop, John T. 1948. The development of labor organization: A theoretical framework. In *Insights into labor issues*, ed. Richard A. Lester and Joseph Shister, pp. 163-93. New York: Macmillan.
- . 1958. The American industrial relations system in 1975. In *U.S. industrial relations: the next twenty years*, ed. Jack Stieber, pp. 25-54. East Lansing: Michigan State University Press.
- Dunlop, J., and Bok, D. 1970. *Labor and the American community*. New York: Simon and Schuster.
- Dunlop, John T., and Fedor, Kenneth J., eds. 1977. *The lessons of wage and price controls—the food sector*. Cambridge: Harvard University Press.
- Edwards, L., and Edwards, F. N. 1979. The effect of unionism on the money and fringe components of public employees: The case of municipal sanitation workers. Unpublished paper, Columbia University Press.
- Ehrenberg, R., and Goldstein, M. 1975. A model of public sector wage determinations. *Journal of Urban Economics* 2 (June): 223-45.
- Ellwood, D., and Fine, G. A. 1980. The impact of right-to-work laws on union organizing. National Bureau of Economic Research Working Paper. Cambridge: NBER.
- Fields, J. 1976. A comparison of intercity differences in the labor force participation rates of married women in 1970 with 1940, 1950, and 1960. *Journal of Human Resources* 11 (fall): 568-76.
- Freeman, R. 1976a. *The overeducated American*. New York: Academic Press.
- . 1976b. The depressed college job market: Issues and implications. Unpublished paper. Cambridge, Mass.
- . 1979. The effect of demographic factors on the age-earnings profile in the U.S. *Journal of Human Resources* 14 (summer): 289-318.
- . 1980a. The facts about the declining economic value of college. *Journal of Human Resources* 15 (winter): 124-42.
- . 1975. Overinvestment in college training. *Journal of Human Resources* 10 (summer): 287-311.
- . 1980b. Employment opportunities in the doctorate manpower market. *ILRR* 33 (January): 185-87.
- . 1980c. An empirical analysis of the fixed coefficient "manpower requirements" model, 1960-1970. *Journal of Human Resources* 15 (summer). In press.

- . 1980d. Black economic progress post-1964: Who has gained and why? In *Low income labor markets*, ed. S. Rosen. Chicago, University of Chicago Press.
- Freeman, R., and Medoff, J. 1976. The dwindling of private sector unionism. Unpublished paper.
- . 1978. The percentage organized-wage (POW) effect. National Bureau of Economic Research Working Paper, no. 305. Cambridge: NBER.
- . 1980. The youth labor market problem in the U.S.: An overview. National Bureau of Economic Research Working Paper. Cambridge: NBER.
- Garfinkel, I. The quality of education and cohort variation in black-white earnings differential. *AER*, 70 (March): 186-91.
- Goldstein, Morris, and Smith, Robert S. 1976. The estimated impact of the anti-discrimination program aimed at federal contractors. *Industrial and Labor Relations Review* 29 (July): 523-43.
- Griliches, Z. 1973. Research expenditures and growth accounting. In *Science and technology in economic growth*, ed. B. R. Williams. New York: Hartford Press.
- Gustman, A., and Segal, M. 1977. Interstate variations in teacher's pensions. *Industrial Relations* 16, no. 3 (October): 335-44.
- Hebl, J. 1979. A look at the 20th century market for public elementary and secondary school teachers. Senior thesis, Harvard College.
- Heckman, James J., and Wolpin, Kenneth. 1976. Does the contract compliance program work? An analysis of Chicago data. *Industrial and Labor Relations Review* 29 (July): 544-64.
- Ichniowski, C. 1980. Economic effects of the firefighters' unions. *Industrial and Labor Relations Review* 33 (January): 198-211.
- Jorgenson, D. W., and Hudson, E. A. 1978. Energy prices and the U.S. economy 1972-1976. *Data Resources U. S. Review* (September), pp. 877-97.
- Kirchner, William. N.d. Statement as Director of Organization, AFL-CIO to the Special House Subcommittee on Labor.
- Kochan, T. 1979. How American workers view labor unions. In U. S. Department of Labor, *Monthly Labor Review* 102 (April): 23-31.
- Lauer, H. 1979. The economic effects of the policemen's unions. Senior thesis, Harvard College.
- Lazear, E. 1979 Why is there mandatory retirement? *Journal of Political Economy* 87 (December): 1261-84.
- Leonard, J. S. 1979. The social security disability program and labor force participation. National Bureau of Economic Research Working Paper, no. 392. Cambridge: NBER.
- Lewin, David. 1977. Public sector labor relations: A review essay. *Labor History* 18, no. 1 (winter): 133-44.



- Mark, J. 1979. Productivity trends and prospects. In *Work in America: The decade ahead*, ed. C. Kerr and J. Rosow. Van Nostrand Reinhold.
- Mincer, J. 1966. Labor force participation of married women. In *Prosperity and unemployment*, ed. R. Gordon. New York: Wiley.
- Miner, M. G., and Miner, J. B. 1978. *Employee selection within the law*. Washington, D.C.: Bureau of National Affairs.
- National Bureau of Economic Research (NBER). 1929. Recent economic changes in the U.S. New York: McGraw-Hill.
- National Center for Education Statistics (NCES). 1979. *The condition of education 1978*. Washington, D.C.: Government Printing Office.
- National Industrial Conference Board (NICB). 1970. White-collar unionization. New York.
- National Labor Relations Board (NLRB). 1978. *42nd annual report*. Washington, D.C.: Government Printing Office.
- Paglin, M. 1977. Transfer in kind: The impact on poverty, 1959–1975. Hoover Institution Conference on Income Redistribution. Unpublished. Stanford, Calif.
- Pellechio, Anthony T. 1978. The effect of social security on retirement. National Bureau of Economic Research Working Paper, no. 260. Cambridge: NBER.
- Perry, G. G. 1978. Potential output: Recent issues and present tides. Reprint 336. Washington, D.C.: The Brookings Institution.
- Quinn, R. P., and Staines, G. L. 1977. *The 1977 quality of employment survey*. Ann Arbor: Survey Research Center.
- Rees, Albert. 1978. New policies to fight inflation: Sources of skepticism. *Brookings Papers on Economic Activity* 2: 453–90.
- Rosen, S., and Willis, R. 1979. Education and self selection. *Journal of Positive Economy* 87, no. 5 (October), pt. 2, pp. 27–36.
- Ross, P. 1965. *The government as a source of union power: The role of public policy in collective bargaining*. Providence: Brown University Press.
- Sachs, J. 1978. The changing cyclical behavior of wages and prices: 1890–1976. National Bureau of Economic Research Working Paper, no. 304. Cambridge: NBER.
- Skolnik, Alfred M. 1976. Private pension plans, 1950–74. *Social Security Bulletin* 39 (June): 3–17.
- Smith, Robert Stewart. 1976. *The Occupational Safety and Health Act: Its goals and its achievements*. Washington, D.C.: American Enterprise Institute for Public Policy Research.
- Tax Foundation. 1977. *Facts and figures on government finances, 1977*. Washington, D.C.: Tax Foundation.
- Troy, Leo. 1965. *Trade union membership, 1897–1962*. NBER Occasional Paper 92. New York: National Bureau of Economic Research.

- U.S. Department of Commerce, Bureau of the Census. 1947-77. *Current population reports*. Consumer Income Series P-60. Washington, D.C.: Government Printing Office.
- . 1954. *Census of the population 1950*. Washington, D.C.: Government Printing Office.
- . 1961. *Historical statistics of the United States, colonial times to 1957*. Series A-242. Washington, D.C.: Government Printing Office.
- . 1975. *Historical statistics of the United States, colonial times to 1970*. Part 1, series D-182-232, series F-373. Washington, D.C.: Government Printing Office.
- . 1976. *Statistical Abstract of the United States, 1976*. 97th ed. Washington, D.C.: Government Printing Office.
- . 1977. *Statistical abstract of the United States, 1976-77*. 98th ed. Washington, D.C.: Government Printing Office.
- . 1978. *Statistical abstract of the United States, 1977-78*. 98th ed. Washington, D.C.: Government Printing Office.
- . 1978. *Statistical abstract of the United States, 1977-78*. 99th ed. Washington, D.C.: Government Printing Office.
- . 1978. *The Budget of the U.S. Government*. Washington, D.C.: Government Printing Office.
- U.S. Department of Labor. 1977. *Employment and training report of the president, 1977*.
- . 1977. *Handbook of labor statistics 1977*.
- . 1978. *Employment and training report of the president, 1978*.
- U.S. Department of Labor, Bureau of Labor Statistics (BLS). 1977a. *Employment and earnings, U.S. 1909-1975*. Washington, D.C.: Government Printing Office.
- . 1977b. *Educational attainment of workers*. Washington, D.C.: Government Printing Office.
- . 1978a. *Employment and Earnings*, vol. 25, no. 3 (March).
- . 1978b. *Estimated hourly compensation of production workers in manufacturing: Ten countries, 1960, 1965-1978*. Washington, D.C.: Government Printing Office.
- . 1979a. *Employment and earnings*. Washington, D.C.: Government Printing Office.
- . 1979b. *Monthly Labor Review*, vol. 102, no. 8 (August).
- . 1979c. *Handbook of labor statistics 1978*. Bulletin 2000. Washington, D.C.: Government Printing Office.
- Viscusi, W. Kip. 1980. *Employment hazards*. Cambridge: Harvard University Press.
- Weber, Arnold R. 1979. Cost to industries of old labor ties. *New York Times*. 19 December.

- Welch, F. 1973. Black-white returns to schooling. *American Economic Review* 63, no. 5 (March): 893-907.
- . 1978. Effects of cohort size on earnings: The baby boom babies' financial bust. Cambridge University Conference on Income Distribution, March 1978.
- Welch, F., and Smith, J. 1975. Black/white male earnings and employment: 1960-1970. U.S. Department of Labor, R-1666-DOL-June 1975.
- . 1978. The overeducated American: A review article. Rand Paper Series. Santa Monica: Rand Corporation.
- Wellington, H. H., and Winter, R. K. 1972. *The unions and the cities*. Washington, D.C.: The Brookings Institution.