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THE LABOR FORCE

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THE LABOR FORCE

I. THE DEFINITION AND MEASUREMENT OF THE LABOR FORCE

The labor force is an economic indicator of prime importance, but it is an important social indicator as well. Size of the labor force and labor-force behavior tell us something about the performance of the economy, for example, changes in national income or in business cycle conditions. But these measures also inform us of social conditions that reflect job opportunities, leisure consumption, and, on the negative side, the despair of unemployment. By examining the historical data showing the composition and deployment of the labor force, we gain an understanding of a wide range of social issues, including the status and role of women, the American paradox of poverty amid affluence, and at least one aspect of racial injustice--unequal employment opportunities.

The Labor Force as a Concept in Economics

We begin with the questions posed by economics that require a definition and measurement of the labor force. The economist's initial focus is on the measurement of marketable goods and services. Households (which may be families or individuals) are viewed as the basic source of the supply of labor to produce goods, usually through intermediaries such as firms. After the goods move through various stages of production in the market to become "final goods," they return as payment to households in exchange for the labor originally supplied. The

The consumption of goods and services by households is, in a real sense, the basic end of the economic system.

Although this greatly oversimplified sketch has obviously left out many components of the economic system, one in particular--the role of money as a medium of exchange--is especially salient to this discussion. The labor force is defined as the segment of the population producing marketable goods and services, and the distinction between what is marketable and nonmarketable usually depends upon whether money is exchanged as a payment for the provision of such goods and services.¹

A rationalization of the economist's emphasis on market goods is, first, that in an advanced industrialized nation most work is market work and most goods and services are market produced; second, that the measurement of change in production will primarily concern the market sector, since it rather than the home sector is the more volatile, growing more rapidly over the long run, and subject to the most fluctuations in the short run. The need to measure fluctuations in business and labor market conditions is particularly critical for informed policy choices at various levels of decision making, both governmental and non-governmental. It should be noted, however, that economists have begun in recent years to give increased attention to nonmarket sectors of the economy. This is primarily in response to the growing share of their time people are devoting to leisure and to the delayed entrance into market-work activities as a consequence of school attendance (see below, pp. 8-12).

The Measurement of the Labor Force

In the official statistics of the U.S. government, the labor force is defined and measured on the basis of interview surveys of a sample of households. Although there are a number of supplementary sources of data, the principal survey is the Current Population Survey (CPS) of the Census Bureau, which is conducted each month for a large sample of civilian households (now about 50,000).² A large amount of detail is made available by the CPS, so the user of the survey data need not rely on only one or two overall summary figures regarding the labor force. The measurement of the labor force is obtained for groups of different socioeconomic and demographic characteristics, and the information on labor-force status and behavior is obtained by a sequence of questions that attempt to minimize errors and ambiguities in the classifications. Nevertheless, the survey method imposes certain limitations, both conceptual and practical, in the attainment of an ideal measure. For example, although children under 16 years of age perform some market work, the amount and variability of such work is presumably so limited that they may be considered not in the labor force by definition. The value of obtaining information on the labor-market activities of such youngsters is simply not deemed worth the costs.

Only part of the population is therefore considered eligible to be in the labor force, namely those who are civilians, 16 years of age and older, and not inmates of institutions (such as penal institutions, homes for the aged, mental institutions, etc.). On the basis of the monthly

interview the eligible members of the household are classified into one and only one of the following categories: employed, unemployed, or not in the labor force.

Employed persons comprise all civilians who worked at all during the week, even for as little as one hour, if they received pay or worked in their own business or profession. A small additional group of unpaid workers is included if they worked 15 hours or more on a farm or in a family business. A final group included in the employed category are those who are not working but who had jobs from which they were temporarily absent because of illness, bad weather, strikes, vacations, or the like.

If a respondent answers affirmatively to questions about employment then he, or the member of the household for whom the respondent is answering, is classified exclusively as employed. Further questions determine whether the employed person worked full time (35 hours or more) or part time. The reasons for part-time work are obtained, and a determination can be made as to whether the work was voluntarily or involuntarily part time. Thus one aspect of the economic question of underutilization of the employed work force can be examined. At the same time these statistics, in conjunction with the data on the respondent's family status and income position, reveal the extent of personal hardship that may be involved. These issues loom larger, of course, when examining the unemployment statistics.

A respondent is classified as unemployed if he did not work during the survey week, was available for work, and gave some evidence of seeking

a job or was waiting to report to work in a scheduled job. With this definition of unemployment, the "labor force" is defined simply as the employed plus the unemployed. Like the data on employed persons, the unemployment statistics are most meaningful when examined for specific age-sex-race-marital status groups. However, the aggregate unemployment rate, defined as the number of unemployed persons divided by the total number in the labor force ($U/LF = U/[U+E]$), is perhaps the single labor force statistic that serves most explicitly as the barometer measuring the degree of prosperity (or recession) in the economy. As such it is certainly the single statistic most closely watched by the government and the aware citizen. Before discussing the interpretation of the unemployment rate, let us look at the overall composition of the labor force and the changes in this composition over the long run.

The Composition of the Labor Force: Overview

The civilian labor force consists of all civilians classified as employed or unemployed by the criteria developed in the preceding section. During 1968 over 90 million persons worked in the U.S. economy at some time. The labor-force participation rate (LFPR) is defined as the number in the labor force divided by the total number eligible to be in the labor force [$LF/(LF + NLF) = (U + E)/(U + E + NLF)$]. Those not in the labor force (NLF) are classified, on the basis of the household interview, as "engaged in own housework," "in school," "unable to work because of long-term physical or mental illness," "retirement," "voluntarily idle," and a few other special categories. Separate statistics are collected on armed forces personnel and on inmates of institutions. Table 1 shows the LFPRs for a number of demographic groups for 1968, 1966, 1960, 1940, and 1900.

TABLE 1: Labor Force Participation Rates for Selected Demographic Groups, 1900 - 1968 (Percent)

Group	1968	1966	1960	1940	1900
Total	58	55	56	54	52
Males, all (by age)	78	75	78	80	86
14 - 19	.. ^a	36	38	34	61
25 - 64	93	95	95	93	95
65 and over	25	25	31	42	68
Females, all	41	37	35	27	21
Single	51 ^a	41	44	48	46
Married, husband present	38	35	31	15	6

^aBeginning 1967 the labor force was defined to exclude 14 and 15 year olds. Thus, no labor force participation rates are computed for a 14-19 age group in the 1968 column. The exclusion of 14 and 15 year old females, moreover, makes the labor force participation rate for 1968 for single females not comparable with the rates for this group in the earlier years shown in the table.

Sources: 1900, 1940: C.D. Long, The labor force under changing income and employment. Princeton, N.J.: Princeton University Press, 1958, pp. 286-87.

1960: Handbook of labor statistics, 1967. Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics, pp. 24-28.

1966: E. Waldman, Marital and family status of workers, March 1966, Special Labor Force Report 80. Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics.

1968: Data from unpublished tables kindly sent to me by Elizabeth Waldman, U.S. Department of Labor. This information will become available in Fall 1970 in a Special Labor Force Report of the Bureau of Labor Statistics, U.S. Department of Labor.

High labor-force participation rates (LFPRs) characterize the 25-64 age group, among both men and women (see also Table 3, p. 19). The LFPRs of the young and old are lower, and the rates for the young, especially, would be still lower if a downward adjustment were made to take account of the widespread prevalence of part-time work. This pattern of labor-force participation can be loosely rationalized by pointing to the alternatives to market work in the form of schooling and retirement which face the young and the old, respectively. Another alternative, homework, largely explains the lower rate of market work by women compared with men. By examining the choices individuals make regarding the allocation of their time, a theory of labor-force behavior can be formulated with a number of applications to a wide range of economic and social behavior.

II. THE ECONOMIC THEORY OF LABOR FORCE BEHAVIOR

An economic theory of labor-force behavior, specifically a set of hypotheses about labor-force participation, is derived from the theory of the demand for goods. Leisure is viewed as a good which people can purchase by giving up the earnings (and the goods these earnings can buy) from work. The decision to work is viewed as the decision not to consume leisure, and the principal economic variables that determine this decision are income and prices. As incomes rise people are expected to buy more goods, including leisure--which means working less. As the price of leisure rises people are expected to buy less leisure. The usefulness of this approach may be demonstrated with specific illustrations.

Older Persons

Low LFPRs among the population over 64 years of age largely reflect voluntary decisions to retire. Retirement is an important way in which people choose to consume leisure. The consumption of leisure is similar to the consumption of any normal good in the sense that as incomes increase, more is bought. Part of the explanation for the long-term decrease in LFPRs of older men (shown in Table 1) is the increase in voluntary retirement which in turn is largely attributable to a growth in incomes--both at the personal level, so that one's own savings can finance retirement, and at the governmental level, wherein an extensive system of Social Security benefits has been established to supplement private resources.

By viewing leisure as a normal good which people are permitted to purchase in varying quantities by forgoing earnings from work, we arrive at an economic hypothesis that specifies a positive relation between income and leisure consumption. Alternatively, we say that the effect of income on work is negative, holding other factors constant. Consider a hypothetical case of two individuals who are identical in all respects except that one possesses a larger endowment of inherited wealth. The predicted effect of more wealth (or income) is a larger consumption of leisure (or less time spent at work). (Like all measures of behavioral relationships, this "predicted effect" should be viewed as an average effect--not one that would necessarily be found to characterize each and every person.)

What are the other factors which are held constant in the preceding example? In an economist's framework the principal variables are prices and incomes. A third category of variables may be subsumed under the

rubric "tastes" (or "attitudes" or "preferences"), which may be either peculiar to an individual's psyche or attributable to the culture of his social environment. Let us concentrate on the price variables, specifically, the price of leisure. To measure this price economists use the wage rate of the individual faces in the labor market, since the value, cost, or price of leisure time is what the individual forgoes in goods and services which he could purchase if he were to engage in market work.

The law of demand predicts that, other things being equal, the higher the price of a good, the less of it is purchased. A high price of leisure (or, equivalently, a high wage rate) is predicted to be associated with less leisure consumed or more work; thus, the wage-rate effect on labor supplied is positive. This establishes the second economic theoretical relationship. However, since high wage rates imply high earnings, it is clear that an increase in wage rates will carry an income effect (negative with respect to work) as well as its own wage-rate effect (positive with respect to work). Which of the two effects predominates cannot be determined a priori, so it is an empirical question whether increases in wage rates (earnings per unit of time at work) will increase or decrease labor supplied. The secular decline in time spent at work (for men, at least) in the face of rising wage rates is evidence for the hypothesis that the income effect is larger than the wage-rate effect in the long run, when people are fully able to adjust their behavior to the changed circumstances in their environment.

Looking again at Table 1, some aspects of labor-force behavior become more understandable when account is taken of the wage-rate effect (see also Table 3, below). The timing of market work vis-à-vis retirement is clearly responsive to the wage rate that is relevant. Thus an important reason for the high work rates of the 25-64 age group is their higher earnings abilities, which characteristically peak after the completion of formal education and training and before the onset of losses in productivity from gerontological factors and the obsolescence of previously learned skills.³

Several institutional factors impinging on the retirement decision, particularly legislation and management and union policies, may also be analyzed within the framework of the economic model. The important contribution of Social Security retirement benefits to the postretirement income of many older workers today is heightened in its effect on work behavior by regulations that affect the recipient's wage rate. Briefly, retired persons under 72 years of age are constrained from engaging in market work because their retirement payments will be reduced by some proportion of their wage and salary earnings. Viewed another way, their labor earnings may be thought of as taxed at whatever rate the retirement payments are reduced. Since the payments may be reduced by fifty cents to one dollar for each dollar earned, the taxes range between 50 percent and 100 percent--far from inconsequential. Thus the elderly person's wage rate, which is already generally low because of his diminished productivity, is made even lower in the relevant sense of its effect on his total income. The following predictions are implied by the analyses of the work behavior of elderly persons. The amount of

market work supplied by an elderly person would be less: (a) the larger their income or wealth from nonlabor sources; (b) the smaller their market wage-earning abilities; (c) the larger the Social Security "tax" on their earned income; (d) the larger are Social Security payments as a proportion of their total income.

Most establishments where people work have compulsory retirement provisions, many of which are negotiated by union-management collective bargaining. To the extent that the compulsory retirement does not coincide with the person's voluntary choice, we may still observe reduced (or zero) labor-force participation by the affected person, since his job loss may entail such a sharply reduced wage at any other available job that he will no longer feel it worthwhile to work. Even if his productivity is relatively high, the fact of his age and of employers' views of the pension, insurance, and retraining costs associated with hiring him may severely restrict the retired worker's job options.

In view of the lighter work generally required in modern industry and the improvements in health and increased longevity of workers, the question of "forced" retirement and various impediments to work by elderly persons may become a serious issue in the coming decades. It is indeed an interesting question why relatively rigid retirement systems have been so widely adopted, when the humanitarian motives could apparently be achieved by a permissive, voluntary system. Unions have, of course, a general bias toward limiting the supply of labor, which may explain their acceptance of compulsory systems. Employers may prefer a compulsory system because it permits them to avoid the unpleasant task of either firing or cutting the wages of older employees whose

productivity declines but who do not want to retire. These are merely speculations, however.

The labor force participation rate of older workers has been analyzed in considerable detail both because the operation of the income and price (or wage) variables could be illustrated and because a number of questions of social welfare policy could be addressed in terms of the economic model incorporating income and wage variables. A similar method of analysis is useful in comparing labor force behavior of men and women.

Women in the Labor Force

The lower LFPR of women compared to men reflects, to state the obvious, the division of work tasks made by the family unit--adult women engaging mostly in homework and adult men in market work. The life cycle of market work by women typically involves high rates of labor-force participation after school departure, a slight decline in LFPR upon marriage (which occurs around age 22), a sharp reduction after the birth of the first child and continued low levels of LFPR during the prime childbearing ages of 25-34, and a steady rise in LFPR as the children grow older, reaching a peak of 45 percent for the age group 45-54. The U.S. Department of Labor has estimated that the birth of a first child reduced the average number of years a married woman works by about ten years, and the birth of each additional child further reduces the average work-life expectancy by from two to three years [2].

Men do have a comparative advantage in market work because they can commit themselves to a career that need not be interrupted by childbearing

and child care. This commitment is manifested by the greater emphasis on a longer period of education and training--for example, men earned 70 percent of all professional, Masters, and Ph.D. degrees conferred in 1967-1968 [3]. Commitment to uninterrupted work and longer training are two important reasons for a man's ability to earn more in the labor market. Physical strength is a factor in some jobs, but this source of a market-work advantage for men is of declining importance under modern conditions of work technology. These reasons are interwoven, of course, with social custom regarding the market-work roles of men and women.

The hypothesis about relative earnings ability as a factor explaining the work allocations of men and women also applies when looking solely at women. We are not surprised by the research findings that women who have more education (and who can earn more) and women who live in high-wage areas are more likely to be working (see Table 2 below). By similar reasoning, wives with children at home, especially children under school age, are generally relatively more productive in the home than the market, so such wives are less likely to be working (see Table 2). Of course, other reasons than simply the relative market and home wage rates explain these observed empirical relationships of labor-force behavior to educational attainment, residency, and number of children, but the wage effect is important.⁴

What of the income effect on the labor-force behavior of women? The prediction of economic theory is confirmed: holding constant such factors as the earnings ability, age, presence of children, etc., wives (who constitute about 80 percent of women between 20 and 54 years of age) are less likely to be working if their husbands have a high income.

TABLE 2: Selected Labor Force Participation Rates of Married Women, by Education of Wife, Presence and Age of Children, and Income of Husband, March 1969

Income of husband and presence and age of children	Years of school completed		
	Less than 4 years of high school	4 years of high school	4 years or more of college
Under \$3000			
Children 6-17 years only	48	70	--
Children Under 6 years	26	44	--
\$3000-4999			
Children 6-17 years only	52	60	--
Children under 6 years	29	39	42
\$5000-6999			
Children 6-17 years only	51	59	--
Children under 6 years	29	38	48
\$7000-9999			
Children 6-17 years only	45	54	79
Children under 6 years	25	27	42
\$10,000 and over			
Children 6-17 years only	38	36	48
Children under 6 years	18	17	22

Source: E. Waldman, Marital and family characteristics of the U.S. labor force, Monthly Labor Review, May 1970, p. 25.

Economists have found that a rise in the husband's income of 1 percent was associated with a decline in labor-force participation of wives by about 0.5 percent, after controlling for such factors as the wage available to the wife, the number of children, and other variables ([4], [5], [6]). A negative relation between husband's income and work rates of wives is shown below in Table 2. Note especially the modal group of wives with four years of high school.

An interesting challenge to economic analysis is presented by the secular rise in LFPRs of married women--the single most dramatic change in the composition of the labor force. As the earnings of husbands increased over time, the LFPRs of wives have increased. Why? Part of the answer is the long-range improvement in employment opportunities for women, bringing about rises in wages for women which have been about as rapid as the rate by which men's wages rose. This increase in wages had a positive effect on labor-force participation which more than offset the negative effect from the increase in husband's incomes. But recall that the long-run increase in men's wages was associated with a decline in their time spent at work; the theoretical reason suggested was that the higher incomes led to a greater increase in leisure. What is different about the case of married women? For women, unlike men, an increase in market work and an increase in leisure is perfectly consistent if homework decreased sufficiently. The rise in market wages, in other words, induced a substitution of market work for homework. Homework declined sufficiently to permit women, like men, to enjoy more holidays, increased vacations, earlier retirement, more day-to-day free time--in a word, more leisure.

An important factor reducing the homework demands on women has been the great advances in technology for the tasks of housekeeping and child rearing. Birthrates have declined over the long span of the past century, but it is a remarkable fact that work rates for wives rose most rapidly (except during World War II) in the period from 1950 on, when birthrates were climbing. Moreover, work rates for mothers with young children rose during the past twenty years. The presence of children does deter wives from working, but the effect was not so strong as to stem the recent increases.

Several trends point to further increases in work rates of married women. Earnings and employment opportunities will continue to improve as a consequence of several factors--general economic growth and accompanying higher wages, increasing educational attainment, less discrimination against women in the labor market, and the combination of light work and fewer hours in the typical workday. Also, greater access to birth-control devices will permit more planned, if not fewer, children. It remains to be seen whether day-care centers will become more important for working mothers with preschool children. (In 1965 only 5 percent of the children under six years of age of working mothers were cared for in group-care facilities [7].) An upsurge in the use of day-care facilities may depend on breakthroughs in the development of low-cost techniques which enhance the educational, social, psychological, and health status of attending children, so that more is accomplished than just the provision of babysitting services. On the other hand, an expanded use of day care, along with an increase in work rates of

mothers, may result from governmental encouragement--either in the form of the subsidized provision of such services or through tax deductions. There currently seems to be considerable support for such subsidies.

The increase in working married women has had, and promises to continue to have, a profound impact on the family structure and on the role of women in society as a whole. Earnings ability and educational attainment, after all, grant one a measure of economic power and independence, which, in turn, provide a basis for attacks on legal, political, and social barriers to full equality for women.

The Black Population

The lower incomes of black families in the United States stem from a combination of less wealth in the form of physical capital--i.e., property and financial assets--and lower earning ability which, in turn, is a result of less education and training, and of discrimination in the labor market. Less leisure is expected as a consequence of the lower income status of black families. Given this, the decisions for the family unit concern the allocation of work time between home and market and among adult members of the household. Discrimination in the housing market forces blacks to consume less housing than whites of comparable socioeconomic status, and the result is that the women face a reduced demand for homework. In addition to this incentive to the black wife to spend more of her working time in the market, the low incomes of husbands are expected to lead to higher work rates of wives. It is noteworthy, however, that the black wife works more despite the lower wage rates she faces compared to her white counterpart (Table 3), although discrimination

in the labor market tends to be more severe against black men than against black women. Put in other words, the wage ratio of black women (relative to black men) is higher than that of white women.⁵

Other reasons for the higher work rates of black wives are related to their greater likelihood of working in part-time jobs. Such part-time work, especially in the common occupation of domestic service, is conducive to low-cost arrangements for the care of children, and the presence of children is a less inhibiting factor to work by black mothers. Another factor encouraging labor-force participation is the greater likelihood of a female head of household among black families, in which event the economic responsibilities of the mother for the children are heightened, particularly since alimony or adequate support payments from the absent husband may be uncertain (see [5, pp. 80-83]).

Table 3 also shows that the rates of labor-force participation by black men are lower than for white men in all but one age group.⁶ This is symptomatic of the disfavored position of black men in the labor market, which is even more sharply indicated by reference to comparative unemployment statistics and to their relatively low occupational and earnings position. These comparisons will be made below when the subjects of unemployment and of the occupational and wage structure of the labor force are discussed.

Summary of the Composition and Trends in the Labor Force

The remarkable stability over time in overall labor-force participation rates has been shown to mask marked changes in the labor-force behavior of various age-sex-marital status subgroups in the population.

TABLE 3: Labor Force Participation by Age, Sex, Race and Marital Status, March 1968
(Percent)

Age	Male				Female			
	White		Nonwhite		White		Nonwhite	
	Total	Married, wife present	Total	Married, wife present	Total	Married, husband present	Total	Married, husband present
16-19	49	94	43	-- ^a	39	36	31	36
20-24	79	95	80	97	53	42	55	49
25-54	96	98	90	97	46	41	58	55
55-64	83	87	78	83	42	35	48	41
65+	25	30	22	29	9	6	11	12

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^aToo few observations to percentage.

Source: As for Table 1, 1968.

A substantial and pervasive decline in this century of the amount of time spent at work in the average person's lifetime is associated with some shifts in the allocation of time among different types of work: for women, a shift from homework to market work; for youngsters, a decrease in market work (for example, in apprenticeships) was accompanied by an increase in school work; for older workers, the gradual work withdrawals possible for a large segment in agriculture were replaced by a sharper break taking the form of retirement in modern industrial society. There are many factors which have brought about these changes. The emphasis on economic factors was chosen because of their suggested importance, their susceptibility to theoretical analysis, and because the economic variables--incomes, wage rates, taxes on work effort, etc.--are subject to direct policy manipulation and are therefore of special concern to those interested in policy action.

III. UNEMPLOYMENT

We have seen that the definition of unemployment places the unemployed worker in the labor force and draws a distinction among those not working between (1) those who are seeking work, the "unemployed" group, and (2) those who are not seeking work, the "not in the labor force" group. Where the line is drawn on the scale of activities separating those seeking work from those who are not is necessarily arbitrary, and the reliability of the measuring instrument (the survey questionnaire) is not perfect. The distinction, however, is necessary and important for several reasons.

First, the assessment of how well the economic system is functioning depends on the proportion of those who have found jobs among those who have elected to "participate" in the labor force. Second, it is important to realize that unemployment is principally a search process and not idleness. Economic growth and technological change require adjustments that are facilitated by a mobile labor force. In a world with uncertainty and imperfect information, some amount of "frictional unemployment" is inevitable and even desirable, as some workers will voluntarily decide to leave the one job to seek a better one and some persons will decide to substitute market work for homework. Third, the use of the criterion of "job search" to distinguish between the unemployed and those not in the labor force is helpful in determining the degree of personal hardship and the choice of policies to cope with the social problem of unemployment. On the one hand, prolonged job search that does not yield a job, particularly on the part of the primary earner, indicates one type of stress and hardship, and signals a need for monetary and fiscal policies to increase labor demand. On the other hand, conditions of poverty in a family with no members in the labor force--employed or unemployed--requires a different set of remedial policies; for example, an income maintenance program.

The aggregate unemployment rate, in its role as an indicator of the overall state of the economy, is closely related to and may be considered a proxy measure of several additional and associated statistics: (1) unemployment experience over a longer period of time--during the past month, quarter, or year; (2) the partially unemployed among those who want full-time employment but who are only working part time; (3)

"underemployment" in the sense of those working at jobs below their customary pay and skill levels; and (4) the "discouraged worker" who is classified as not in the labor force only because he has withdrawn in the face of temporarily depressed conditions that make his job search appear futile. To focus on the unemployment rate, then, usually connotes a concern for these associated measures of economic performance and of personal hardship. Also, to view the unemployment rate as an indicator is to recognize that changes in it, rather than its absolute size or level, are most important for making policy decisions.

The Composition of Unemployment

Unemployment rates vary widely among different groups in the population, as is shown in Table 4 presenting data for the U.S. labor force in 1969. The year was one of relative prosperity, and the overall unemployment rate was only 3.5 percent. Unemployment rates averaged between 4 and 6 percent for most of the post-World War II period, a range far below the recorded historic highs of around 25 percent during the Depression and somewhat above the low of around 2 percent achieved during World War II.

The unemployment rate for married male workers is sometimes considered the most sensitive index of the state of the economy. The labor force attachment is so firm for this group that there is less likelihood of errors or ambiguities in their classification as unemployed. The rate for this group was only 1.5 percent in 1969. The usefulness of this particular unemployment rate as an index is based on changes in it and not on its level per se.

TABLE 4: Selected Measures of Unemployment, 1969

Measure	Number (thousands)	Rate (percent)
Total unemployment	2,831	3.5
Race:		
White	2,261	3.1
Nonwhite	570	6.4
Selected type of worker:		
Blue collar	1,154	3.9
White collar	780	2.1
Sex:		
Male	1,403	2.8
Female	1,428	4.7
Marital status:		
Male:		
Married	582	1.5
Other	821	7.1
Female:		
Married	689	3.9
Other	739	5.8
Teenagers, 16-19 years of age:		
Males, white	343	10.1
Males, nonwhite	97	21.3
Females, white	317	11.5
Females, nonwhite	95	27.7
Adults, 20-44 years of age:		
Males, white	509	2.1
Males, nonwhite	122	4.2
Females, white	571	4.2
Females, nonwhite	168	7.2

Source: Council of Economic Advisors, Economic Report of the President, 1970 (Washington, D.C.: U.S. Government Printing Office, 1970), pp. 152-53.

The highest rates of unemployment are found among teenagers (particularly among nonwhites). The handicaps of inexperience and generally lower earnings abilities and their characteristic looser attachment to the labor force make teenagers less desirable employees to many employers, particularly those who are obliged to pay legal or union-bargained minimum wage rates. Faced with this relatively unfavorable labor-demand situation, and in conjunction with less pressing financial needs and fewer familial responsibilities, teenage workers will typically search longer (although more casually) for jobs.

Blue-collar workers have higher unemployment rates than white-collar workers at any point in time, and their unemployment rates fluctuate more widely over the course of the business cycle. The fluctuations are chiefly due to the relative concentration of blue-collar workers in those industries, particularly durable goods manufacturing and construction, that are most affected by the business cycle--most characterized by a boom-and-bust cycle. Even in these industries, however, the sales, production, and employment levels have become somewhat more stable in recent years. The higher unemployment rate for blue-collar workers relative to white-collar workers which is observed in the prosperous year of 1969 is a reflection of the former group's generally lower levels of education, training, and skills, although generalizations are apt to be misleading--craftsmen are quite unlike laborers with respect to skills and incidence of unemployment.

The reasons for higher unemployment among blue-collar workers apply with greater force to black workers. Handicaps of less education and training are exacerbated by labor-market discrimination in hiring, promotion, and layoff practices. Thus black workers, male and female, are

more likely to be in industries where the incidence of unemployment is high and to have higher unemployment rates in a given industry. An unemployment rate which is twice that for whites (6.4 percent for nonwhites compared to 3.1 percent for whites), shown in Table 4, is representative of a pattern that has persisted since the mid-1950's. Since the black labor force is younger and is made up of women in a greater proportion--two groups with relatively higher rates of unemployment--an age-sex standardization of unemployment rates narrows the color gap somewhat, but not by much: a 6.4/3.1 ratio becomes a 6.0/3.1 ratio by this standardization. Such comparisons remind us of how labor-force statistics can serve as indicators of our economic and social progress and of our shortcomings.

Unemployment Rates and Labor Force Participation

Although unemployment is a subcategory of the labor force, the use of the unemployment rate as an index of business conditions (or "aggregate demand" in the language of the economist) raises the possibility that the overall labor-force participation rate may vary inversely with respect to the unemployment rate. This possibility holds true. When unemployment rates are high, the overall labor-force participation rates are low and vice versa. Not surprisingly, the fluctuations in labor-force participation are mainly on the part of so-called secondary workers, a term which commonly refers to workers in a family who are not the main earner and/or workers who, regardless of family status, have a casual or part-time commitment to the labor force. The following categories virtually cover the secondary worker group, although some individuals in these groups would be more appropriately classified as primary earners: married women, husband present; women (other than married women with husband present) aged 55 and

over; single women aged 16-21; males aged 65 and over; and males aged 16-21. Married women, husband present, is the largest group in the labor force in the list, numbering over 16 million, which is more than the combined total of labor force participants in the other secondary worker groups.

Primary workers are so firmly attached to the labor force that they tend to remain in the labor force regardless of recessions or prosperity. They move from the status of employed to unemployed and back again, but it takes exceptional circumstances to move them out of the labor force entirely.

A pattern of behavior of some secondary workers which increases the size of the labor force during periods of high unemployment is their entrance into the labor force to make up for the lost earnings of the primary earner who has become unemployed. This pattern led to the formulation of the "additional worker hypothesis," which was first advanced in the Depression and was the basis for the prediction that the labor force would increase during periods of high unemployment. A contrary pattern of labor-force behavior among secondary workers was predicted by the research findings which indicated the negative effects that loose labor markets would have on the ability to get good jobs at a high wage. Given the socially approved alternatives to market work that are available to such groups as youngsters and wives, the "discouraged worker hypothesis" was advanced, predicting a decrease in the size of the labor force during periods of high unemployment. The term "disguised unemployment" was coined to describe the "discouraged workers" among the officially designated not-in-the-labor-force group.

We now know a good deal about this behavior and the relative sizes of the "added" and "discouraged" worker groups. Research has been conducted which examined the relation between labor-force participation rates and unemployment rates over time (1947-69) and space (across geographic areas like cities which define different labor markets). Other studies have examined data referring to individual households, some of which experienced unemployment by the primary earners. Two firm conclusions have emerged from this research (see [4], [5], and [11]).

1. Among families where the head of the household--usually the husband--is unemployed, the labor force participation of other family members does tend to be higher than among families where the head is fully employed. Families do attempt to maintain their accustomed living standards by supplementing family income with the earnings of secondary workers. The "added worker" effect is a real phenomenon.

2. A finding that has received more attention in recent years is that, for the labor force as a whole, the "discouraged worker" effect predominates, so the net effect of unemployment is to reduce the size of the labor force.

The implications of these findings for macroeconomic policy are that the reduction in total output of the economy is more than that measured by unemployment alone, and that the growth in output as unemployment rates are reduced during an upswing will partly stem from an expanded total labor force. The implications for welfare policy are not so clear. On the one hand, the "discouraged worker" phenomenon works a special hardship among some families, especially in depressed areas. Here, the measured rate of unemployment understates the amount of distress by not counting the "discouraged workers." On the other hand, not all shifts out of the labor force represent a social waste or a private hardship. We should recognize that many of these shifts by secondary workers are a consequence of the

presence of relatively good substitutes to labor force activity in the allocation of their time.

IV. THE INDUSTRIAL AND OCCUPATIONAL DISTRIBUTION OF THE LABOR FORCE

An industry classification offers a rough designation of the type of goods and services produced--for example, agricultural goods, durable goods, government services, etc. An occupational classification indicates, again roughly, the skill level of the workers engaged in the production process. The two classification systems provide, therefore, a good deal of information about the composition, amount, and value of the goods and services produced in the nation's economy. From the point of view of the individual worker the industry and occupational classifications are important chiefly because they largely determine his social status and his level of income. Some occupations and industries pay high wages and offer prestige; for example, surgeons in the medical services industry; in other cases high wages are accompanied by limited prestige and physical danger, such as in coal mining; and in the occupation of infantryman in the military industry we find low wages, limited prestige, and danger combined. Obviously, then, the status of "employment," which was the focus in the preceding sections, is only the starting point for understanding the activities of the labor force and what these activities mean in terms of societal and individual welfare.

In the limited space of this article, only a few aspects of the industrial and occupational distribution of the labor force will be discussed. Over the long sweep of time, the industrial composition of the labor force has shifted in broadest terms from agricultural predominance to manufacturing

to the current manufacturing-plus-services character. The occupational composition of the labor force has changed from blue collar (craftsmen, foremen, operatives, and laborers) to white collar (professional, technical, managerial, clerical, and sales workers).

The major effects of these changes on the labor-force participation rates of the demographic groups discussed earlier are straightforward. The urban migration has, in a number of ways, opened opportunities for market work by women--the group (specifically, wives) which accounts for the single most important change in the demographic composition of the labor force during this century. Urban job opportunities, particularly in the services industries (wholesale and retail trade, finance, insurance, real estate, government, and miscellaneous services) replaced the heavy demands on homework in the farm setting where larger and poorly equipped homes and typically large family sizes combined with a more tradition-bound value system to keep the women in the home. The occupational transition of white-collar predominance is another cause (as well as an effect) of the influx of women into market work.

Associated with the changing occupational structure, particularly the growth of the professional and technical occupations, is the persistent increase in levels of educational attainment in the work force. Two historical processes are at work here. On the one hand, the nation's growth in income permits the young to forgo market earnings and attend school for more years. The output from the educational system is technically trained people, as well as technical ideas and innovations, which provide personnel and a technology to supply the white-collar occupations. On the other hand, the shift in consumer demand from food to furniture to finance, along with the technological advances in the production processes

of all industrial sectors, set in motion a demand for technically trained and educated workers. This "derived demand" for educated workers made it profitable to stay in school (despite the forgone earnings) and invest in oneself. After completing schooling the rewards of a high salary, prestige, and pleasant working conditions were available in the professional jobs that were in demand. The relation education has to the occupational structure is, therefore, partly autonomous, partly induced.

The growth in education and its effect on the industrial and occupational composition of the work force has clearly been directly responsible for the secular decline in LFPRs of young people and indirectly responsible for the secular increase in the LFPRs of women, whose comparative advantage is found in mental rather than physical prowess. Education is an important variable, therefore, in explaining current and historic patterns of labor-force participation as well as the industrial and occupational composition of those in the labor force.

There is a danger, however, in overrating the importance of education. Formal schooling is only one type of investment in human capital which increases the productive capacity of workers--which is not to say that this is the only purpose of education. Health care, training, investments in information about employment and career opportunities, and investments in mobility and migration are other methods by which workers can make themselves "fully employed" in the sense of working in jobs that fully utilize their potential abilities (given their personal preferences). Furthermore, it is important to distinguish between the effect of education per se on occupational and earnings attainment and the effects, say, of parental background and upbringing, which also affect one's career attainment.

and which are positively related to education. This says no more, of course, than that the relevant information in most decision-making contexts is the net effect of education (or of health, training, etc.)--that is, the effect measured after holding other factors constant. A large task for social science research is to measure the benefits (effects) and costs (not necessarily monetary) of these various forms of policy action investments in people.

A variety of social policies are aimed at assisting the work force to adjust to the changing industrial and occupational structure in the economy. These policies range from the provision of job information services at relatively low cost by the Department of Labor to the intensive and costly retraining programs of various agencies in the departments of Health, Education, and Welfare and Labor, and the Office of Economic Opportunity. We have previously mentioned the need for formal procedures for retirement to ease the aged worker out of the market-work sector as one consequence of the transition from an agricultural economy to an industrial one. This is just one example of a cost in greater insecurity that is incurred in the process of economic growth, which has generally been so beneficial in improving the material well-being of the population.

V. *CONCLUSIONS: AGENDA FOR SOCIAL RESEARCH AND FOR SOCIAL ACTION*

The labor force is in the aggregate basically an economic concept, and the tools of macro-economics have been developed to influence the size and composition of the labor force--in particular, to maintain at high levels the proportion of the labor force that is fully employed,

while accommodating the sometimes competing objectives of economic efficiency, growth, and price stability.

At the individual (or micro) level the behavioral decisions involve, in the following sequential fashion: (1) participating in the labor force (or not participating); (2) taking a job (or remaining unemployed to continue the search for employment); and (3) deciding what job (or, sometimes more fundamentally, what career) to take. Although the techniques and amount of empirical economic research needed to analyze these decisions have advanced rapidly in recent years, the behavioral context is increasingly being recognized as only partly susceptible to economic analysis (or at least to conventional economic analysis).⁷

First of all, there is recognition of the family context and the involvement of all family members in the behavior pertaining to labor-force activities. The amount of time the wife devotes to the labor force will, for example, depend upon the quantity of work and earnings of her husband, and, at a later stage in her life, of the work and earnings of her children. Also, there is an obvious interrelation between the decisions of the husband and wife regarding market work by the wife and their decisions about the desired number and spacing of children. Thus the research methods and materials of demography are needed to understand work choices. The demographic analysis should take into account the increased control couples now have over the number and timing of children, making the determinants of fertility (and of work) less culturally and less physiologically imposed and more subject to individual choice. If, to complete the circle, the income of families, the costs (or prices) of raising children, and the opportunity cost of the wife's time (her earnings potential in market work) do have an influence on these individual choices, then economics will have something to contribute to demographic analysis.

Decisions to marry and at what age to marry and decisions concerning marital dissolution are related to work behavior at several junctures and in several ways. For women, but to some extent for men as well, career choices and the related issue of schooling choices will depend on age at marriage and how quickly children are born after marriage. Conversely, but by no means contradictorily, career choices will influence age at marriage and fertility behavior.

During the life of the marriage the intra-family roles of men and women are affected by their employment opportunities and employment experiences. The success the husband has as a provider for his family will affect the stability of that family--an issue that is raised most starkly in the context of a welfare system that may give the family more money than the husband earns under the condition that the husband, in effect, abandon his family.⁸

Less depressing is the empirical finding that women who are divorced or separated are more likely to work than women who are married with husband present. Whether causation runs the other way, in the sense that better employment opportunities for women raise the probability of marital break-ups, has not been established, but the hypothesis deserves study. The rise in recent years in divorce rates for both white and black families and the greater prevalence of marital break-ups among black families make these issues worthy of attention, although not because marital dissolution is looked upon as intrinsically "wrong."

The second important way in which the analysis of labor-force behavior must draw upon related disciplines in the social sciences is in the determination of the cultural and legal environment in which the individual and family

decisions take place. Particularly as economic growth and rises in per capita income permit more time to be spent in activities other than market work, the value systems of the society regarding education, leisure, retirement, and the role of women become important to analyze. The societal values reflect, of course, individual's values, but what are the consequences of substantial heterogeneity of individuals' values in society, and to what extent have laws and other modes of societal regulations kept pace with individual preferences? How might laws change values? To what extent can the values be altered by public policy, and what stresses, social and/or individual, are occasioned by such alterations? It is easy to get enmeshed in abstract and unrewarding theorizing and in an exchange of value judgments about these issues, but it is not too far afield to suggest, for example, that societal attitudes in the United States toward work, toward race, and toward women will be reflected in welfare and income maintenance laws, in divorce laws, in laws affecting discriminatory practices in the labor market, and in the use of birth-control devices, to name but a few examples.

The challenge of devising public policies to improve the functioning of the labor market, to alleviate the distress of insecurity in employment and income, and to foster values and behavior in accordance with an ethical system, is closely bound up with the socio-political environment as discussed above. At the same time, informed public decisions can be greatly improved by knowing what behavioral consequences will likely follow some change in policy or law.

It is instructive to consider welfare laws and proposed income maintenance laws as an example for these issues. Two potentially opposing values are involved: (1) the necessity of work that elevates this need to a moral

code and links the receipt of income to some measure of the amount of work; (2) the right to live in decency without regard to work capacity. The traditional means of reconciling these two ethical standards has been to devise "categories" composed of those households which cannot or should not or need not engage in market work and who are then eligible for income grants, and categories of those who can or should work and who are deemed ineligible to receive transfer payments. Among many difficulties with this system are (a) the inequities produced when the welfare grants exceed the incomes of the working poor, (b) the incentives produced to "categorize" oneself to become eligible, and (c) the conditions of the categorization that foster dependency and discourage work.

These difficulties arise under any system of income maintenance, but some systems appear to hold out the promise of working better--being fairer and encouraging behavior that is more socially approved. However, we have little concrete evidence from social science research to know how various welfare reform measures will operate in practice.

An income maintenance program of the type popularly referred to as the negative income tax promises to improve upon the traditional welfare systems, at some cost in money and in whatever cost may be involved in abandoning the traditional categories and the implicit distinctions drawn between the "deserving" and the "undeserving" poor.⁹ A negative income tax plan usually entails universal coverage (although the Family Assistance Act proposed by President Nixon in 1969 was restricted to families with dependent children)--in particular the inclusion of the working poor. The stigma of being on welfare is nearly eliminated, and uniformity of treatment across state boundaries is achieved. Moreover, whereas customarily

welfare benefits were reduced at roughly the rate of a one-dollar reduction in benefits for every dollar of income earned (or received from any other source), the negative income tax permits the amount of reduction in welfare benefits to be less than the full amount of earnings. Something less than a 100 percent tax on earnings is permitted. If the rate of retention were around 50 percent, for example, this would provide a sharp improvement in the effective market wage available to persons on welfare and thus an incentive to work. That more market work, under a negative income tax, should come from the existing welfare population is predicted by the economic theory that asserts a positive relation between the amount of labor supplied and the wage rate. The quantitative magnitude of the work increase is crucial, however, and there is little information on this point.

What incentives does a negative income tax provide to the majority of the poor population, those not on welfare whose incomes are low enough to qualify for some income supplementation? The economic theory of labor-force participation sketched in this article gives an unambiguous but qualitative answer: The incentive is to reduce market work. These families will receive a transfer payment which will raise their incomes, and since the predicted income effect on leisure consumption is positive, less work is expected. At the same time the marginal tax rate on their wages is increased (since they may be paying zero taxes now, or at around a 14 percent rate as of 1970). For each \$1.50 earned, their income subsidy may be reduced by, say, \$0.75, so their effective wage is only \$0.75. The effect on work of this wage-rate reduction is expected to be negative.

It is unambiguous, therefore, that holding constant other variables-- chiefly the institutional environment and personal preferences and attitudes--less work can be expected from the working poor under a negative income tax system. Both income and wage effects operate to reduce work incentives. How much less is not known and is barely susceptible to informed guesses. The level of income guarantees, the rate of taxation on earned income, and the whole system of eligibility will profoundly affect the costs of a negative income tax system--initially by virtue of the financial outlays and secondarily through their effects on labor-force behavior. Indeed, there will be further effects that stem from the impact an income maintenance system has on marriage rates, fertility rates, divorce rates, and other matters relating to the composition of the family unit. A large challenge is presented to the social sciences to analyze, predict, and quantify the behavioral responses to such reforms in the welfare system.

Another set of policies to cope with employment and income insecurity consists of programs to raise the productive capacities of people. The challenge here is mainly one of determining which among alternative programs-- compensatory education, school dropout prevention, health programs, training programs, etc.--work well enough to justify their costs. It is probably safe to say that most citizens have an exaggerated view of the potential effectiveness of these programs. If we consider that an investment yield of 10 percent is a reasonably good rate of return, then a \$20,000 investment (in training, for example) is required to raise the worker's annual income by just \$2,000--say from \$3,000 to \$5,000 per year. The income improvement is modest, yet the amount of the investment far exceeds any offered in programs aimed at the low-income population. Nevertheless, the inequality

in the distribution of wealth in the United States, particularly the disadvantaged position of many minority groups, calls for huge investments in human capital to permit them full participation in the spheres of production and consumption. Income maintenance programs offer only a base upon which to build to eliminate the underemployment that is a product of poverty and discrimination.

The above proposals deal with the plight of unemployables who require income maintenance, with those who are partially employable but who need income supplementation, and those who could be fully employable and who require only their "fair share" of education, training, and other types of preparation for the labor market. Upon bringing these endowments, abilities, and aspirations to the labor market, the opportunities for optimal utilization depend on conditions of full employment. This article may end on the optimistic note that full employment--the absence, that is, of depressions or serious recessions--is a fully realizable objective given the current state of economics.

NOTES

¹Housework offers a classic illustration of the distinction. Housework is considered a marketable output and included in the national income account when the work is accomplished by a domestic servant, but not when it is accomplished by the wife. The domestic servant, but not the housewife, is counted in the official labor force enumeration.

²The remaining part of this section is based on [1].

³Note that the claim that prevailing attitudes and customs determine this allocation between work and leisure (retirement) only begs the question of whether the customs have been adopted as a consequence of the economic factors. Indeed, one might argue that social customs which militate against market-work productivity would be both psychologically and sociologically dysfunctional in a society where the accumulation of material goods is both valued and, in a Darwinian sense, has "survival" traits.

⁴Economic analysis of the labor-force behavior of married women has been abundant (see [4], [5], and [6]).

⁵The ratio of black female income to white female income is not only higher than the ratio of black male income to white male income, but the female ratio has been increasing over time more rapidly than the male ratio (see [9]). Moreover, the ratio of black female earnings to white female earnings rises as education rises; for men, this black-to-white ratio falls as education rises (see [5, p. 104]).

⁶Participation rates are higher for black wives than for white wives, but among women who have never married and among men at virtually every age, the LFPRs of blacks are lower than those of whites. A "matriarchal" family structure, stemming from the slave system, is often advanced in connection with this pattern. The relation between family structure and the employment and earnings of black Americans was given national attention in 1965 with the publication of the Moynihan Report [8], which refers to the matriarchal hypothesis as an explanation of the high work rates of black wives and relatively low work rates of black men. Actually, economic analysis offers a number of explanations for the differential work behavior of whites and blacks into which the matriarchal hypothesis enters only peripherally.

⁷In defense of much empirical research in economics, it should be noted that there is often value in measuring the quantitative magnitude of a relationship, even when its qualitative sign may be obvious.

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⁸That the AFDC program has this very effect of breaking up families is a well-publicized, if not a well-researched, fact.

⁹The term derives from the symmetry of allowing income subsidies (negative taxes) to households who earn less than a certain amount, just as positive taxes are levied on households which earn above a certain amount (an amount referred to as the "break-even level"). Just as taxes get proportionately (perhaps progressively) higher as the household's income is farther above the break-even level, so the subsidies or negative taxes would get proportionately greater as the household's income falls farther below the break-even point. The amount of the subsidy at zero earned income is called the "basic income guarantee." This might, for example, be \$2400 for a family of four. The rate per dollar by which this grant is reduced as the family earns an additional dollar of income is called the "marginal tax rate" on earned income. Thus if a family lost 33-1/3 cents of the grant for every dollar earned, the marginal tax rate would be 1/3. Households would receive some positive transfer payment until they earned \$7200 under the plan; the break-even level is the guarantee level divided by the marginal tax rate.

REFERENCES

- [1] Concepts and methods used in manpower statistics from the Current Population Survey, June 1967. Washington, D.C.: U.S. Department of Labor, Bureau of Labor Statistics Report No. 313; also available as Current Population Reports, Ser. P-23, No. 22, U.S. Department of Commerce.
- [2] V. C. Perulla. Women in the labor force, Monthly Labor Review February 1968, 91, 1-12.
- [3] 1970 World Almanac. Doubleday and Co., Newspaper Enterprises, Inc., New York: 1969, p. 344.
- [4] W. G. Bowen and T. A. Finegan. The economics of labor force participation. Princeton, N.J.: Princeton University Press, 1968.
- [5] G. G. Cain. Married women in the labor force. Chicago: University of Chicago Press, 1966.
- [6] J. Mincer. Labor force participation of married women, in Aspects of labor economics. Universities--National Bureau of Economic Research. Princeton, N.J.: Princeton University Press, 1963.
- [7] Child care arrangements of the nation's working mothers. Washington, D.C.: U.S. Department of Health, Education, and Welfare, Welfare Administration, Children's Bureau, and U.S. Department of Labor, Women's Bureau, 1965.
- [8] The Negro Family: The case for national action. Washington, D.C.: U.S. Department of Labor, Office of Policy Planning and Research, March 1965.
- [9] O. Ashenfelter. Changes in labor market discrimination over time. Journal of Human Resources, Fall 1970, 5, 1-25.
- [10] Economic report of the President, 1970. Annual report of the Council of Economic Advisors. Washington, D.C.: U.S. Government Printing Office, 1970.
- [11] J. Mincer. Labor force participation and unemployment: A review of recent evidence, in Prosperity and unemployment, ed. M. S. Gordon and R. A. Gordon. New York: Wiley, 1966.