Labor Force Concepts and Definitions
in View of Their Purposes

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March 1978

This paper was prepared for the National Commission on Employment and Unemployment Statistics. It is a draft that has not yet been through the Commission's review procedure. Helpful comments on an earlier draft were made by Robert Aaron Gordon and San Levitan, although the author alone is responsible for the content. The author wishes to thank Janet Johnson, a graduate student at the University of Wisconsin for research assistance.
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Labor Force Concepts and Definitions in View of Their Purposes

I. Introduction and Overview

Labor force concepts and definitions must be developed with a set of purposes in mind and a theoretical framework capable of putting the concepts to use in analyzing problems. A substantial amount has been written on these matters during the past forty years or so, and this literature and the historical perspective it provides is a base to build upon. Looking ahead in time, it is important that the National Commission on Employment and Unemployment Statistics consider the question of concepts in the light of the current criticisms and controversies that prompted the formation of the Commission.

Labor force statistics, particularly the unemployment statistics, which receive the most attention, are intended to serve three important purposes. First, they measure the overall performance of the economy, in ways described below, and thereby provide signals to authorities responsible for monetary and fiscal policies. Second, the unemployment statistics are directly related to the system of transfer payments for those who have lost their jobs and are eligible for unemployment insurance or for those whose incomes have fallen to levels permitting eligibility for various welfare programs. In recent years expansion of the unemployment insurance program has been initiated by the federal government in response to the high levels of the unemployment rates that were reported monthly by the Bureau of Labor Statistics. The unemployment rate thus serves as a signal of economic distress and hardship, and it has been a stimulus for federal legislation providing for a variety of income support programs, as well as public employment and training programs. A third and closely related purpose is
the use of labor force statistics, again principally unemployment statistics, to allocate federal aid or expenditures to local areas -- states, counties, and cities. Unemployment rates for localities are used as indicators of economic distress in the area, but these rates are not based on the same concepts as the national unemployment rates. The fact that these labor force statistics are developed at the local level is the distinguishing difference from the first two functions served by the national statistics. Sometimes another difference is that a local political unit is the primary recipient of the funds, although in some programs the local units are merely the channel for federal aid based on the national unemployment rate and directed to unemployed persons.

The modern evolution of the labor force concepts and definitions associated with these purposes is inextricably tied to the development in the 1940s of the Current Population Survey (CPS), which is the survey instrument that operationalized the concepts. These developments make it clear that the first purpose mentioned above is the primary one, and indeed the only one that is strictly consistent with the definitions. Simply stated, the reason is that the definitions of labor force categories -- employed, unemployed, and not-in-the-labor force -- are not dependent on the status of economic hardship or any measure of economic well-being of the respondents. The question addressed by the statistics is: How well is the labor market functioning to provide jobs for those who are seeking jobs?

It is true that work on labor force concepts in the 1930s, particularly in connection with the 1930 decennial census and various government surveys
during the depression years, was motivated by the problems of hardship and by the need for public relief programs. However, three developments between this period and the mid 1940s, when the modern CPS time series of monthly unemployment rates began, shifted the focus of labor statistics to macroeconomic policy and to the measurement of labor market performance.

One development was the attainment of relative prosperity in the post World War II period. This brought about a concern with inflation and, from time to time, with so-called "labor shortages," and these concerns have since continued to share the attention of the public and of policy-makers, along with unemployment. A second development is the expanded interventionist role of the federal government in the conduct of macro policy -- a development both symbolically and substantively represented by the Employment Act of 1946. The third is the development in economics of the theory of national income determination and the business cycle -- the "Keynesian Revolution" that dominated macro economics throughout the 1940s -- which promised the means to control levels of employment, unemployment, and inflation through monetary and fiscal policies.

While these developments during the twenty-year period, 1935-1955, served to emphasize the unemployment rate in particular as an indicator of the performance of the economy, especially in the context of the business cycle, the fact that unemployment generally signifies personal and area-wide economic hardship, and the powerful memories of the depression, are reasons for attention to the second and third purposes previously discussed. Government programs of aid to unemployed people and to depressed areas, in connection with these purposes, have also expanded greatly in the last twenty years.
The usefulness of the labor force statistics, and particularly the
unemployment rate, to serve these purposes has been challenged recently by
government officials, economists, journalists, and editorial writers.
Essentially the criticisms are that the unemployment rate is no longer a
valid measure either of the economic performance of the economy or of
economic hardship, whether at the individual or local area level.

Here, again, a historical perspective is helpful. Nearly a generation
ago, in 1960 and 1961, the unemployment rate was attacked on similar
grounds, and there are striking parallels between that time and the present.
Both periods witnessed unemployment levels that were accurately referred
to as the highest since the Great Depression. Unemployment resisted declining,
even though inflation rates during these periods were high by historical
standards. Then, as now, a conflict between "doing something" about
unemployment and maintaining price stability was at the center of policy
debates. The most pertinent similarity is, however, the expression of
doubts that the unemployment rate is a valid measure of market conditions.
It is instructive to compare the Wall Street Journal editorials criticizing
the unemployment statistics in 1977 and the critical articles that appeared
in The Reader's Digest and in the editorial pages of the Wall Street Journal
in the early 1960s.¹

In response to these criticisms and concerns, a presidential commission
was established in 1961 to investigate the collection and uses of unemploy-
ment statistics, and today we see a recurrence of this governmental response.²
(The 1961 commission will hereafter be referred to as the Gordon Commission,
named after its chairman, Robert Aaron Gordon. The new commission
will be referred to as the National Commission.)
The journalistic criticism cited in footnote 1 uses arguments which, aside from some overwrought language, are similar to those made today by a number of government officials and academicians. The claims in 1977, like those in 1961, are that the demographic composition of the labor force has changed, that high income transfer payments to non-working people have increased in scope and generosity, and that work attitudes have changed—all of which undermine the traditional meaning of unemployment and, therefore, undermine the uses of unemployment statistics. Finally, in both periods the fact of increasing employment rates, which measure the fraction of people employed out of the population eligible to be in the labor force, was used to counter the pessimistic interpretation of the high unemployment rates. These and other criticisms will be evaluated below.

What are the major stakes in the current reassessment of labor force statistics? Concerning the gathering and publication of national statistical indicators, it is clear that strong sentiment exists for downgrading, if not eliminating, the unemployment rate from its role in macro policy formation. Perhaps other statistics such as the employment rate will replace it, but some advocate paying less attention to any of the traditional labor force statistics for cyclical policies. Another proposal is to adjust the existing unemployment rate in a way that reduces it for purposes of comparing it with unemployment rates of five, ten, or twenty years ago. A consequence of this approach is to define a new and higher rate of unemployment that is considered to represent "full-employment." In fact, the unemployment rate believed to signify full-employment has increased from 3 or 4 percent in the late 1940s and 1950s to 4 or 5
percent in the 1960's and to higher levels in the 1970s. If, however, the "full-employment, unemployment rate" is considered to be as high as 7 percent, as Herbert Stein suggests, then for all practical purposes, this approach amounts to the first proposal, which is to pay little or no attention to the unemployment rate.

The consequences of these particular reevaluations of unemployment statistics for macro policy are not obvious. However, during the current period of high unemployment it is fair to say that they point to less expansionary monetary and fiscal policies. The consequences for micro-economic policy are even less clear. On the one hand, fewer training programs and reduced income transfer payments to unemployed people might be advocated because the problem of unemployment is viewed as less serious. Reinforcing this view is the belief that these programs subsidize and contribute to unemployment. On the other hand, more aid could be advocated by those who oppose expansionary macro policies and who doubt that unemployment is a valid macro indicator, but who see a need to compensate unemployed persons for various reasons. Still another approach is to play down the overall rates of unemployment and to concentrate on the high unemployment rates for certain groups such as youth and minorities, along with an emphasis on policies aimed at these groups.

Also at stake is the distribution of whatever amount of aid is to be allocated among groups in the different labor force categories. If, for example, a new definition of unemployment is more restrictive for some groups and less for others, then the former may lose relatively.

The stakes involved in the disbursement of aid and expenditures to local areas are high. The Commissioner of Labor Statistics reports that
$16 billion in federal funds are awarded to local areas on the basis of the estimated amount of unemployment in the area. There is general agreement that current measurements of labor market conditions at the local level are inadequate. First, the relevant federal legislation generally implies that the alleviation of economic hardship is a primary goal for these programs, but unemployment statistics are not intended to measure economic hardship. Second, there is probably a smaller overlap between hardship and unemployed statuses today than twenty or thirty years ago. Finally, measurements of local conditions pose a difficult statistical problem because of the costly surveying procedures necessary to obtain accurate data.

While these are some of the major stakes involved for policy purposes in a reevaluation of labor force definitions and concepts, there are certainly many more consequences in other areas. New methods of surveying and sampling may need to be developed. Business and government planning may be different. It may also be said that if the concept of unemployment were to lose its status as an operationally valid measure of labor market conditions then the teaching of and applied work in macroeconomic theory, econometric estimation of macroeconomic models, and in a large part of labor economics would need to undergo major revisions.

II. Current Concepts and Definitions of Labor Force Statistics

The basic building blocks of labor force statistics are simple, practical, and understandable to the average citizen. They are (1) a population defined as eligible to be in the labor force; briefly the adult population, aged 16 and over, that is not institutionalized; (2) an employed component, which is defined to be working for pay or profit during the
specified survey week; (3) an unemployed component, which is defined as not working but "looking for work" during a specified four-week period prior to and including the survey week. In practice, the operational definitions of these concepts are more complicated than these brief descriptions indicate. However, these simple descriptions of the categories convey the essentials. It should also be said that these categories can be defined for various demographic groups and permit a variety of finer classifications.

In its discussion of these labor force categories, the Gordon Commission presented five criteria for their operational definitions. Each concept should be (1) objectively measured and "depend as little as possible on personal opinion or subjective attitudes;" (2) obtainable at reasonable cost; (3) readily understood; (4) easily interpretable and sufficiently flexible to accommodate the needs of different users; (5) market oriented, to be consistent with national income concepts. Finally, the Gordon Commission noted the desirability of keeping the concepts consistent over time to facilitate analytical work that uses time-series data.7

Several comments about these criteria might be added to expand upon their scope and importance. Regarding (1), the largest element of subjectivity in the basic statistics concerns unemployment, since the respondents must answer questions that depend on their beliefs about their ability to work, and their sincerity in searching for work. Thus, the validity of the series on unemployment statistics depends on a certain stability of people's attitudes and beliefs. To be more specific, two types of stability seem especially important. First, an implicit agreement must exist between employers and workers about what constitutes an "employable" person and what
constitutes a "meaningful job." The particular standards for defining "employable" and "meaningful" may change without damaging the integrity of the concepts, because all that is required is that employers and workers agree on whatever definitions are current. A second type of stability concerns the beliefs of nonworking respondents about what behavior constitutes a sincere and authentic search for work during the specified four-week period.

As discussed below, the usefulness of the labor force concepts for economic analysis depends mainly on the degree to which they measure changes in the "objective" circumstances of the economy. The critical assumption is that the distribution of people's tastes, preferences, and attitudes is stable. Certainly, every period contains individuals whose search behavior is not genuine, but no serious problem in interpreting changing unemployment rates over time occurs if the proportion of "false" responses is stable.

Criteria (2) and (3) in the list above are especially important because the monthly survey that provides the statistics relies on the voluntary cooperation of the respondents. One implication is that probing questions about people's sincerity in searching for work if they are not working may be misunderstood, resented, and costly. Another implication is that the interviewers will be limited in the information they can obtain about people's incomes. If the statistics on unemployment are sensitive to the receipt and sources of nonlabor income, particularly transfer payments, then there will be difficulties in determining how the increase in nonlabor income has affected the unemployment statistics.

The fifth criterion, which states the desirability that employment and unemployment "reflect market criteria used in measuring the national output,"
is not only practical — permitting the disregard of most unpaid workers and houseworkers from the employed category, for example — but also is important theoretically. Unemployment is difficult to define and controversial precisely because its link to market exchanges involving money is so difficult to measure and verify.

A few brief observations about the connection between measured unemployment and macro- and microeconomic theories will be mentioned at this point. Macroeconomic theories emphasize changes in aggregate demand — private and public spending — as the chief cause of the business cycle and, therefore, of unemployment. The supply side of the market, which includes workers' skills and attitudes toward work, the capital stock, and technology, is assumed to be relatively stable in the short run relevant to the business cycle. If demand were stable, there would be stable proportions of the population who are employed, not employed and looking for jobs, and not in the labor force. In passing, we note that this unemployed proportion, under these assumed normal conditions, is often referred to as "frictional" unemployment. (It could also be labeled "natural" unemployment, although this term signifies something more and will be discussed below.)

Demand instability produces variations in the proportions in the labor force categories; in particular, declines in demand produce increases in unemployment that can be labeled "cyclical" unemployment. That these above-normal levels of unemployment reflect real economic losses and shortfalls in the performance of the economy is generally agreed upon, assuming agreement on the validity of the operational definition of unemployment. However, macro economists do not agree about the role of unemployment in affecting price levels (or money levels of wages).
Microeconomic theory analyzes the decisions and behavior of individuals, households, and firms. Unemployment is an ambiguous concept in this theory, a fact which necessarily makes unemployment an ambiguous concept in the macro theories as well, since the two branches of economic theory must be consistent. Suffice it to say that general compatibility is obtained by viewing unemployment as a search process subject to the usual rules of optimizing behavior -- that is, to rational deliberations about the costs and benefits of search. Under conditions of stable aggregate supply and demand structures, these searches constitute frictional unemployment.

If shocks occur to the demand structure, say by unexpected changes in taxes, expenditures, or the money supply, then the volume of job changes (layoffs, quits, etc.) increases and so does the uncertainty about information relevant to optimizing decision-making by workers seeking jobs and by employers seeking workers. Consider declines in demand: These negative shocks emit discouraging "signals," and some workers withdraw from the labor force, other workers are fooled into searching longer (since they do not realize the true dimensions of the negative shock and do not revise their aspirations downward), and others merely acquiesce in a set of rules that rations jobs in particular businesses by the layoff system. The latter two groups -- those searching longer and those laid off (who often do not search at all) -- are in the group that could be labeled the cyclically unemployed. However, just why and how the searchers are fooled and why the rationing system leads to layoffs rather than to work sharing agreements or to wage reductions, are matters of theoretical dispute. Moreover, we have very little information about the empirical relationships that describe search behavior and its relation to people's knowledge and
expectations about wages and job offers. These unanswered questions are responsible for the ambiguity of unemployment in microeconomic theory.

To complete the traditional taxonomy of types and sources of unemployment, it is necessary to mention "shocks" that affect the supply side -- such as large changes in the age composition or a wave of immigration -- or "shocks" that affect localized demand conditions -- large changes in technology that displace workers or a decline in the natural resources in an area are examples. These shocks are usually cited as the sources of "structural" unemployment, but unless they are relatively sudden or unanticipated by firms, workers, and governmental agencies, it is not clear why they should lead to more than "frictional" unemployment. Even unanticipated "shocks" are, to some extent, classifiable as part of the normal "frictions" of a dynamic economy. Moreover, to some extent what is called "structural" unemployment is really the manifestation of "cyclical" downturns, during which times shocks that would normally be absorbed by a healthy economy are instead magnified. To the extent that the structural changes go beyond frictions and persist over the cycle, they tend to represent quite particularistic conditions that generally call for a particularistic analysis. For example, the huge layoffs in Seattle as a consequence of the cancellation of government defense contracts in the early 1970s was one such "special case." A quite different type was the technological displacement of sharecroppers in the Mississippi Delta in the 1960s, or the decline in mining employment in the Appalachian region in the 1950s. The unemployment associated with these events deserves the label "structural unemployment."

A different classification of unemployment uses the categories of voluntary and involuntary unemployment. These terms are not well-defined,
however, and they will seldom be used in this paper. All unemployment persisting over time is voluntary in the trivial sense that the person voluntarily chooses, explicitly or implicitly, not to work for a wage so low that employment is assured. But this is hardly a useful definition. It might be suggested that voluntarism may refer to the initiating cause; for example, quits being voluntary and layoffs involuntary, but this distinction breaks down for unemployment associated with entering (or re-entering) the labor force. Also, quits are not always voluntary, and some types of anticipated and reoccurring layoffs may reflect a chosen pattern of labor force activity. In general, the operational definition of search behavior defining unemployment implies an involuntary state -- a desire to work at one's previous or prevailing wage in a job to which one is suited. This is only a presumed implication, of course, and ultimately we must fall back on our assumption of a certain stability of workers' and employers' attitudes and expectations.

III. The Purposes of Employment and Unemployment Statistics

A. Macroeconomic Indicator

In section I the claim was made that the main purpose of employment and unemployment statistics was to measure the overall performance of the economy and thereby guide macroeconomic policy. On closer look we can detect three separate purposes in this area -- as a short-run forecast, an inflation indicator (or monitor), and a measurement of "real" economic performance over the cycle. Only the last named is served moderately well.

First, none of the main aggregate labor force statistics -- unemployment rates, employment rates, or labor force participation rates -- is very good
for the purpose of short-run forecasting of the business cycle. It should not be surprising that different statistics are used for forecasting performance than for measuring performance. The forecasting instruments used by the National Bureau of Economic Research (NBER), for example, are often rather detailed components of statistical series, which are available on a weekly or monthly basis. As Julius Shiskin reports, the NBER's list of cyclical indicators includes such narrowly focused statistics as new orders for durable goods, housing starts, and payroll employment statistics in the nonagricultural sector but not such obviously comprehensive and important measures as the Consumer Price Index, the Gross National Product, or the unemployment rate.

Second, labor force rates, particularly the unemployment rate, have not been reliable indicators of inflation rates, especially in recent years. If one believed that the rates of change in money wages and prices measured the tightness or looseness of labor markets, then one would have to believe that the unemployment rate had not served this function very well. The Phillips Curve, which measures the unemployment/inflation correlation, has virtually collapsed in recent years. Geoffrey Moore has cited the 1973 to 1975 period as an "economic puzzle -- why, in the fact of this 'worst recession,' have wages and prices continued to advance at near-record rates?" Moore advocates shifting our attention from the unemployment rate to the employment rate, in part because the latter has a higher correlation with the inflation rate.

There are persuasive reasons on a priori grounds, however, for doubting that either employment or unemployment rates will have a stable relation (or a high correlation) with inflation. Many economists maintain that, over the span of several years, inflation is a monetary phenomenon affecting nominal
prices, whereas employment and unemployment are responsive to real prices. The implication is that the natural rate of unemployment, which may be defined as the frictional rate plus the component of unemployment due to random structural shocks, will be the same at varying inflation rates, because the latter are consistent with the same levels of real incomes and prices. No "money illusion" in the long run implies that no long-run Phillips Curve should exist. Moreover, some of these economists maintain that the short-run Phillips Curve has no stability either. The claim is that it is not the level or rate of inflation that influences changes in short-run employment decisions, but rather the gap between expected and realized price and wage changes. Since this gap has no close relation to the level of current inflation rates, neither will the employment or unemployment rates. Indeed, Milton Friedman has gone so far as to suggest that the short-run Phillips Curve may have a positive relation, rather than a negative or zero relation, given various governmental interventions and market adjustments that are typically made in economies during periods of rapid inflation.

The clear implication of this line of analysis regarding labor force statistics is that attempts to use them for measuring inflation behavior are at best going to lead to inconclusive results, and at worst are simply mistaken. Moore's preference for an employment rate statistic over an unemployment rate on these grounds lacks a firm theoretical justification.

The third and final macroeconomic purpose of labor force statistics is as an indicator of the real, as distinct from monetary, performance of the economy. Traditionally, the unemployment rate is deemed better suited to measuring performance over the business cycle and the relatively short-run
of several years. The labor force participation rate (LFPR), on the other hand, may be better suited for measuring longer-run performance, although "good performance" is associated with both increasing LFPRs (of married women, for example) or decreasing LFPRs (of older men who have retired, for example). (See section V.I below.) Many works could be cited which make the point that the main purpose of employment and unemployment statistics is to measure the cyclical performance of the economy. Gertrude Bancroft makes this point and reveals the policy emphasis given to the demand side of the economy in the following quote:

"A measurement of the current demand for jobs is essential for the operation of the present Federal policy on employ­ment as expressed in the Employment Act of 1946... [which states] 'there will be afforded useful employment opportunities... for those able, willing, and seeking to work, and to promote maximum employment and purchasing power'.... Finally, it should be remembered that the employment and unemployment concepts were developed for use as current indicators in a setting where measurement of change was of prime importance."15

The phrase "measuring the real performance of the economy over the course of the business cycle," will be used to express the main purpose of the unemployment rate, although it is recognized that there is inevitably some ambiguity in the definition of "real performance." The unemployment rate directly measures the rate of unfulfilled job-seeking, but if this were the definition of real performance, the claim for the unemployment rate as its measure would be tautological. Rather, we should view unfulfilled job-seeking as an important statistic in its own right because it represents several important aspects of economic performance, such as the decline in per capita income, the increase in personal hardship -- both monetary and psychic--and the altered distribution (or variance) of individual well-being in the labor market. The unemployment rate should not be justified as our
focus of attention solely because it correlates highly with any one alternative measure of real performance. Such a justification would be self-contradictory, since these measures can be examined directly.

Granting the macroeconomic purpose of the labor force statistics, we may ask: Is the unemployment rate the best labor force statistic for this purpose, and is it as valid an indicator now as it has been in the past? In section IV several criticisms of the unemployment rate are discussed.

B. An Index of Hardship

The concept of unemployment was not developed for the purpose of defining or measuring economic hardship and its use for that purpose has been decried by various government officials responsible for the statistic. In the Congressional testimony of Ewan Clague, cited in footnote 8, the then Commissioner of Labor Statistics stated:

There is no necessary connection between the unemployment figures and need .... We like to emphasize this because it is so frequently misunderstood (p. 5).

Later in these Congressional hearings Raymond Bowman of the Bureau of the Budget said of unemployment statistics:

We are not measuring destitution, we are measuring availability for employment and not having it .... I have done everything I possibly can to insist that we are not measuring it [destitution] with these statistics, that we oughtn't... (p. 304).

This is not to say that the unemployment rate has no significance for assessing hardship. That it has, has always been recognized and has been the basis for a variety of policy actions.

In the decennial census of 1930 attention to the labor force status of the respondents was heightened by the need to obtain information for administering programs of public works and relief for the jobless victims of the
Great Depression, which began that year. Nevertheless, the census question that was the main basis for the definition of unemployment made no reference to the hardship of the respondent: "[was the respondent] usually employed but without a job the day preceding the enumeration, though able to work and looking for work?" The distinction between hardship and unemployment in the 1930 Census was noted by Mary Van Kleeck of the Census Bureau:

... some idea can be gained as to the effectiveness of this count of the unemployed in measuring economic distress in different regions. In farming communities many who were at work some part of the day preceding the enumeration and hence were counted as employed may have been as badly off economically as the automobile mechanic who had no work that day. The fact is that economic status has such different meanings in different occupations that to find a common measure is baffling (p. 196).

The immediate precursor to the modern monthly series of labor force estimates were those prepared in the late 1930s and 1940s by the research division of the WPA. These estimates were "part of their [the WPA's] responsibility for relief and work-program policies," according to A. Ross Eckler. However, the estimates of unemployment were based on a survey using a straightforward "search" concept, without regard to the hardship status of the respondent.

At the individual level, being unemployed because of a job loss generally enables a person to be eligible for unemployment insurance (UI) payments. For several reasons, however, the connection between UI and economic hardship is loose. First, not all unemployed people are eligible -- entrants to the labor force, some who quit or were fired, and those who have been laid off in an "uncovered" industry are ineligible -- and one may only receive UI for a fixed length of time (usually less than a year). Often ineligible unemployed people, particularly those who have exhausted their
UI benefits, are more economically distressed than recipients. Second, there are two other purposes of UI that are only indirectly related to alleviating hardship: facilitating a more efficient job search and providing a countercyclical macroeconomic stimulus. Third, for those who are eligible for UI, its receipt is nearly a "right" -- one has only to be willing to take "suitable" employment, and there is no means test required for UI.

An important conceptual difference between unemployment as defined by the CPS and unemployment as defined for the administration of UI, is that the former status depends only on a self-claimed "search" for a job, whereas the latter depends on an administratively determined "search" for a "suitable" job. This may mean that a less needy person -- say, an unemployed engineer -- may be more likely to receive UI than a more needy person -- say, an unskilled laborer -- because the former may face a more restricted pool of "suitable" job openings than the latter. The difference in the concepts and definitions of unemployment, for the CPS compared to the UI, provides a clear example of the dependence of the definition on the purposes of the statistics. One could think of many reasons why the definition of unemployment for the purpose of determining UI eligibility might be changed; for example, to ration scarce funds, prevent abuse, and so on, and yet not favor any change in the CPS definition.

Historically the most severe hardship cases among individuals have been among those who were not in the labor force (NLF), such as the aged, disabled, and mothers with young children and no other adult earners in the household. These groups have accordingly been the main recipients of the various programs of public assistance or welfare. The simplest criterion
for defining hardship is the lack of personal or household income or assets during an extended period of time, which, along with data on household size and the cost-of-living, provides the basis for the official poverty statistics. Most unemployed people would not be included in a poverty count if a one-year period were used for the measurement of household income and an income-flow from certain assets (like owned-homes and financial assets) were included in the poverty definition. Over time, the increase in household income, mainly stemming from higher wage rates, has reduced the overlap between unemployment and poverty, but other important reasons why this overlap has been reduced are the growth in households with multiple earners (or, more to the point, multiple income recipients) and the growth in income maintenance programs.

Thus, not only is unemployment not designed to measure economic hardship, but the customary measure, poverty, is not designed to reflect unemployment, although it is closely related to "not working." An even more unusual twist to the relation between unemployment and economic hardship is the possibility that an unemployment rate might be a good general economic indicator of hardship even though no unemployed person is poor. One reason is that a sluggish performance of the economy adversely affects the employed groups in the population. Unemployment means an income and earnings loss for employed workers who may be forced into part-time employment or to suffer demotions. It also may mean withdrawals from the labor force or the failure to enter the labor force for NLF groups. Thus, a consequence of higher unemployment rates is income losses, and perhaps even an increase in poverty, for many among the employed and NLF. Even if no unemployed person were poor, the unemployment rate could still be positively
related to the poverty rate. Of course, this is a purely hypothetical case, since unemployment is in reality an important reason why persons and families have low annual incomes.

There are two major policy issues that involve the relation between unemployment and hardship. One, already mentioned, is in the administration of the UI program. Although the point was made that eligibility for UI does not depend on hardship, there is a constant debate about the generosity of the benefits, regarding both levels and duration, which does depend largely on the issue of hardship. In my opinion, the several purposes of UI, its historical link to partial actuarial funding, and improvements in scope and generosity of alternative income support programs (aimed at household units), all suggest that the recent tendency to use UI for long-duration income support is not necessary and, perhaps, not wise. A shift away from this use of UI could mean that the concept of hardship would be even less relevant for the definition of unemployment in the administration of the UI program.

The second issue concerns federal aid to depressed areas, or other forms of federal expenditures and subsidies, the amounts for which have often been based on the level of unemployment in the area. Federal aid (to use this general term) of this type is generally intended to alleviate hardship in an area, and for this reason unemployment statistics are less pertinent than are income statistics -- especially poverty statistics. However, except for census years the conventional unemployment and household income statistics are only available for the largest population areas defined as labor markets, which usually means a county or SMSA, so the expedient matters of the costs, timing, and accuracy of the available data must be taken into account. It must also be said that no answer can be given to the question of which statistics -- unemployment, income, or some
other concept -- are most appropriate, unless a specific program is under
discussion. Some programs are intended to bolster low incomes or to equalize
incomes, so income is relevant, and NLF status may be paramount. Other
expenditures may be for training programs, and low-wage (or under-employed)
workers as well as unemployed workers may be the most important target group.
In general, program aid should not be keyed primarily to the unemployment
rate in the local labor market unless the composition of unemployed persons
is specifically appropriate for the program.

There remain several reasons, however, why unemployment statistics for
local areas offer useful information for the allocation of federal aid.
(1) Despite their shortcomings, unemployment statistics that are based on
the records of the UI program may offer the single most valid and reliable
indicator of economic distress for a local area on a month by month basis.
Particularly as the UI program expands its coverage, these statistics will
become better measures of the true unemployment rate, and the lack of
better alternatives for measuring distress may make the use of UI statistics
expedient.
(2) Unemployment generally connotes two characteristics of a person (or
an area) that are relevant to many federal assistance programs: first,
a decline in one's income and well-being, and to the extent that income
loss is considered an appropriate indicator of need, unemployment usually
measures this; second, an attachment to the labor force, so that aid pro-
grams that seek to expand employment opportunities can generally count
on an available labor supply. In summary, unemployment status indicates
certain dimensions of hardship and of program efficacy that other measures
of economic distress -- for example, the proportion of the population on
welfare -- do not convey.
(3) Although it is a weakness of unemployment as a measure of hardship that the household (or family) economic status is not a part of it, the fact that it is specific to a person has two unique features that partially offset this weakness. One is that the experience of unemployment may be deleterious to a person's skills and confidence, and even if there are other earners and sources of income in the family, the personal costs of unemployment may be high. Second, the family unit is not permanent, and the unemployed person may not always share fully in the family's income. It is, of course, nearly impossible for policy-makers or program administrators to know about the nature of a person's participation in or attachment to the family. Thus, there may be no feasible way for individual hardship status to be ascertained separately from the family's economic status.

C. Summary

The basic definitions of labor force status, particularly unemployment rates that are derived monthly from the CPS, have as their main purpose the measurement of real economic performance (not monetary movements) in the short run. If these definitions are to be changed or abandoned, it should be because either the existing purposes can be improved with such changes or because the existing purposes are no longer usefully served. These issues are discussed in the next section, which deals with specific criticism of the unemployment statistics.

The secondary purpose of the unemployment statistics—to measure economic hardship—does appear to have been weakened in recent years, even beyond the basic weakness that hardship was never a criterion for the definition. For individuals or families, hardship status is most relevant
in determining eligibility for income transfer programs, which raises
the issue of the role of UI in relation to other income maintenance programs.
These issues are beyond the scope of this paper, but my judgment is that
unemployment should not be relied upon very heavily for measuring hardship
and that the UI program should be shifted more towards short-run support
for active job seekers. This would help to make unemployment a more valid
measure of meaningful job search, but this conceptual advantage is by no
means a reason for modifying UI policies.

At the level of local areas, the link between unemployment and
hardship is also weak. However, the availability of UI statistics may,
by default, make unemployment a useful criterion for federal aid allo-
cations. The varied purposes of these federal programs prevent definitive
statements about the appropriate role for labor force statistics in
the allocation formulas. Nevertheless, my judgment is that poverty and
income statistics are usually more appropriate for these purposes, and
efforts should be made to develop timely income statistics for local areas.

IV. Current Criticisms of the Labor Force Statistics

The preceding discussion of the purposes of the labor force statistics,
with particular reference to the unemployment rate, provides a basis for
evaluating the criticisms of the statistics. If, as I have argued, the
main purpose of the statistics is to measure the real performance of the
economy over the course of business cycles, then we need to ask how the
current concepts are serving this purpose and how they might be improved.
If another purpose, even though secondary, is to measure hardship, the same
questions apply, although here a satisfactory response may require a
different set of statistics that are more directly related to this purpose.
The criticism of the unemployment rate that is most challenging to the validity of the statistic is that it no longer measures the cyclical performance of the economy. This challenge is emphasized below, and the criticisms that are directed at subsidiary purposes are mentioned only in passing.

A. The Demographic Composition of the Labor Force

The attention of some analysts to the demographic composition of the labor force has led to several types of criticisms of the unemployment rate as a guide to policy. One criticism, which it is relatively easy to show is not central, is based on the observation that the unemployment rate for, say, husbands (or, alternatively, prime age male heads-of-households) is much lower than the overall unemployment rate; therefore, it is sometimes argued, we need not be concerned about the high level of the published rate. 20

This criticism misses the mark for two reasons. First, the implication that the unemployment rate is misleading because it does not measure hardship by including workers who are not the sole or primary earner in the family is almost entirely irrelevant to the basic purpose of the unemployment rate. Second, the criticism fails to recognize that the unemployment rate must be used as a relative measure of performance, usually relative to past time periods. Its absolute level at any moment in time may be arbitrarily made higher or lower by various definitions, just as national income may be raised or lowered, for example, by adding in the value of home work or subtracting pollution by-products. The main reason that the unemployment rate and national income are useful economic statistics is that they serve to measure changes over time. They are also useful,
although probably less valid, for measuring relative performance in other contexts, such as among nations.

With this change-over-time purpose in mind, one answer to the criticism that the variation in demographic composition of the labor force leads to misinterpretations of the unemployment statistics is to display the time series of unemployment rates for various demographic groups. When this is done, as shown in Figures 1 and 2 below, the dominant fact is that the various rates move together, so that any one could just as well be used as a measure of relative performance. Similarly, Julius Shiskin shows a chart of seven rates of unemployment, using different definitions of unemployed persons in the numerator, while maintaining the standard definition of the civilian labor force in the denominator.21 The definitions of unemployment were not based on demographic criteria, except one for "household heads," but instead were based on other labor force categories, such as persons unemployed over 15 weeks, job losers, unemployed persons who were full-time job-seekers, unemployed part-time job-seekers, "involuntary" part-time workers, and so-called "discouraged workers." These categories of unemployment will be discussed below, but here the main point is that the quarterly plot of the seven unemployment rates, 1953-1975, shows almost identical charts of cyclical economic performance of the economy.

Note that the critics who claim that the current definition of unemployment understates the true state of affairs are also undercut by the apparent similarity of trends for the different definitions Shiskin uses, including the two that add some among the part-time employed and the "discouraged workers" to the official count of the unemployed.
FIGURE 1A

UNEMPLOYMENT RATES FOR SELECTED DEMOGRAPHIC GROUPS
AND FOR ALL WORKERS, 1948-1976

Percent Unemployed


married men

all 16+
married women
FIGURE 1B
UNEMPLOYMENT RATES FOR SELECTED DEMOGRAPHIC GROUPS
AND FOR ALL WORKERS, 1948-1976
FIGURE 2
UNEMPLOYMENT RATE FOR MALES BY AGE
AND FOR ALL WORKERS, 1948-1976
Let us turn next to the more penetrating criticism that the unemployment rate is increasing over time because the demographic composition of the labor force is changing. This criticism correctly focuses on a source of bias in the use of the overall unemployment rate to measure performance over time. The argument is based on the fact of differential attachment to the labor force among demographic groups; in particular, that young people and wives are more likely to enter and exit from the labor force periodically, causing their unemployment rates to be higher than those of prime-age males, who are more permanently attached to the labor force. The growth in the proportion of young people and wives in the labor force, therefore, will increase the overall unemployment rate merely because of this compositional change.

A technique for measuring the amount of change in the overall unemployment rate that is attributable to the compositional change is to fix the composition for the time periods compared and recalculate the overall unemployment rates by using only the changes in each group's unemployment rate. Paul O. Flaim of the Bureau of Labor Statistics computes a time series of unemployment rates from 1957 to 1976, using the 1957 demographic composition (22 age-sex groups) of the labor force. This shows that the 1976 overall unemployment rate of 7.68 percent would be reduced by 1.04 percentage points to 6.64 percent. Using the 1966 demographic compositional weights, the 1976 unemployment rate becomes 7.01 percent. For technical reasons, explained below, Flaim suggests that the "pure" demographic compositional change should be 0.8 and 0.5 percentage points in the two comparisons, rather than the measured 1.04 and .67 points. The general conclusion is, in any case, that the unemployment rates in the last few years are slightly higher because of the demographic mix. The correction
factor, in my opinion, is large enough to bring to the public's attention, but not nearly large enough to reverse one's judgment that the recent unemployment rates are very high by historical standards.

Further discussion of this procedure will increase our understanding of its strengths and weaknesses.

(1) One assumption in this procedure is that the performance of the economy, per se, has no effect on the size of the demographic groups in the labor force. This assumption is not correct, but the bias in the procedure due to the endogeneity of the size of the labor force has offsetting biases, and in any case appears not to be a serious bias according to Flaim's calculations. When the business cycle peaks, the size of the labor force expands as more secondary workers enter the labor force (mainly because of improved job prospects) than leave the labor force (mainly because of their family's improved prosperity). Thus, paradoxically, the unemployment rate will tend to be higher because it is low as a result of the influx of groups with generally higher unemployment rates during periods of low unemployment. Conversely, the high unemployment rates for the current recession (beginning in 1974) have probably dampened labor force participation rates of these groups, and served to hold down the unemployment rate.24 Part of this source of understatement in the unemployment rate during recessions is that some of those who leave the labor force are "discouraged workers," i.e., they, in principle, want to work at prevailing (or
customary) wages but do not report that they are searching for a job because conditions are too "discouraging" to justify a search. In summary, the long-run trend of increased labor force participation by women and (more recently) of young people has served to increase the recent unemployment rates, even though the recession presumably has held down these participation rates.

One feature of Flaim's calculations is extremely useful in clarifying this source of ambiguity. Flaim decomposes the effect of the demographic shifts on the unemployment rate into one part that is due to population change and another part due to labor force participation change. Two important conclusions result. First, it is the growth in the population of young people that is the source of about 80 percent of the inflation of the unemployment rate in 1976 using 1957 weights, although only for about 55 percent of the 1976 increase using 1966 weights. In either case population change, which is unambiguously exogenous, is the major source of the effect. Second, Flaim shows that the increased labor force participation of women has not been an important source of the rise in unemployment rates. The increased labor force participation has mainly been by wives, and the unemployment rates for wives, who are a somewhat older age group, are not high relative to the overall rate. In summary, Flaim's calculations show that around one-half to one percentage point in the current unemployment rate may be attributed to a largely exogenous increase in the population of younger persons during the previous 10 to 20 years.

(2) Given that a basis of compositional change has been decided upon -- in this case the age-sex categories -- there is an inevitable
arbitrariness in selecting the base year for computing the change. Flaim shows that the most common question analysts have posed about demographic adjustments is the following: "How much lower would the overall unemployment rate for 1976 have been, given the age-sex specific unemployment rates for that year, if the percentage of the labor force in each group had remained at the 1957 [or 1966] level?"\(^{25}\) Symbolically, this question is answered by computing:

\[ L_2 U_2 - L_1 U_2 = U_2 \Delta L , \]

where the L's refer to the proportions in the labor force in periods 1 and 2, which are 1957 (or 1966) and 1976, and \( U_2 \) refers to the unemployment rate in 1976.\(^ {26}\) \( \Delta L \) is defined as \( L_2 - L_1 \). Thus, 1976 is the basis for fixing unemployment rates, and Flaim shows that \( U_2 \Delta L \) is equal to 1.04 percentage points when 1957 is period 1. However, as Flaim is fully aware, an alternative comparison could have been derived from the question: "How much higher would the overall unemployment rate for 1957 have been, given the age-sex specific unemployment rates for that year, if the percentage of the labor force in each group was at the 1976 level?" Symbolically, the answer is found by computing:

\[ L_2 U_1 - L_1 U_1 = U_1 \Delta L , \]

which is obviously a smaller adjustment than \( U_2 \Delta L \), because \( U_2 \) is greater than \( U_1 \). The difference between the two alternative measures of the
adjustment is

\[ u_2 \Delta L - u_1 \Delta L = \Delta U \Delta L, \]

which is called the "interaction effect." Flaim adopts a procedure suggested by the statistician, Frederick C. Mill, of halving the interaction effect and adding this to the lower-bound measure and subtracting it from the upper-bound measure. The subtraction leads to the adjustment estimates of 0.8 and 0.5 in place of the original estimates, 1.04 and 0.6, for the 1976-1957 and 1976-1966 comparisons, respectively.

(3) A more serious type of arbitrariness in the use of compositional fixed-weights for "standardizing" unemployment rates for different years is in the choice of compositional variables. The age-sex standardization lowers the 1976 unemployment rate, and, according to Flaim, a race standardization has no effect, but standardizing for the changes in the educational and occupational composition would raise the recent unemployment rates. Levitan and Taggart report that the education standardization from 1966 to 1973 lowered the unemployment rate in the latter year by about the same amount as the age-sex standardization raised the unemployment rate over the same period.

In the Economic Report of the President, 1977, there is recognition of the types of standardizations that could lower the recent unemployment rates, but the only adjustment actually reported is an age-adjustment. In comparing 1955 with 1976, the Report states that the latter rates are higher by 0.9 percentage points because of the age composition change, which is very close to the 1.04 measure reported by Flaim. The Report supports this conclusion with another comparison of the unemployment rates,
total and by age groups, for the years 1956, 1965, and 1973. The Report's figures, along with figures for 1958 and 1976, are shown in Table 1. The Report noted that a lower overall unemployment rate of 4.1 in 1956, compared with 1965 and 1973, involved higher unemployment rates for the 25-54 and 55+ age groups. The authors conclude that a 4.1 rate in 1956 is equivalent to the 4.9 rate in 1973, although this disregards the rise in unemployment rates for the 16-24 year olds. Consider next the age pattern of rates for the recession years, 1958 and 1976. Again, the rates for the 25-54 year olds are almost the same, 5.8 and 5.7, and the rates for the 55 and older group declined from 5.1 to 4.6, although the overall rate in 1976 is 1.1 percentage points higher. This comparison also suggests that the current rates are 1 percentage point or so higher than the age-adjusted rates for years a generation earlier at similar points in the business cycle. However, two other points about Table 1 may provide a different overall impression. One, even the conservative judgment that the 1976 rate of 7.7 is equivalent to the 1958 rate of 6.8 justifies the claims that 1976 was a serious recession and that 1975 was even worse. Recall that 1958, up to 1975, had been considered the worst recession year since the Great Depression. Second, the unemployment rate is high in 1976 in part because the rate for young people is so high, but we should not overlook the fact that the rates for the other two age groups, 25-54 and 55+, increased relatively more from 1973 to 1976.

In conclusion, the demographic composition of the population has changed during the past 20 years in ways that have, on balance, increased overall unemployment rates. At a given performance-level of the economy we may expect unemployment rates to be higher, and, as the Economic Report of the President,
1977 claims, a "full-employment" unemployment rate in the economy may be as much as 1 percentage point higher today than 20 years ago. These judgments, while conservative in the sense of ignoring many of the reservations about the demographic adjustment procedures discussed above, nevertheless fully support the conclusion that recent unemployment rates are extraordinarily high. It would seem that the use of an age-adjusted unemployment rate would improve the concept for its basic purpose of measuring economic performance, enhance its secondary use as a measure of hardship, and would command widespread understanding and acceptance by technicians and the public. Age is a demographic variable that, compared to sex and race, has clear causal connections to unemployment and is much less value-loaded.

B. The Effect of Income Transfer Programs on Unemployment

Along with the issue of the changing demographic composition of the labor force, the growth of income transfer programs has received the most attention as a source of upward bias in the unemployment rate. The theoretical reason is that the transfer programs subsidize unemployment, although, except for unemployment compensation, it is more accurate to say that the programs subsidize non-work activities, which could be unemployment or not-in-the-labor-force (NLF). The growth in such welfare programs as food stamps, aid to families with dependent children, and aid to the disabled and aged might reduce unemployment by providing incentives for the recipients to withdraw from the labor force. To the extent that the recipients would be in the labor force in the absence of the programs, they might well have higher-than-average unemployment rates. This tendency (or possibility), which operates to lower unemployment rates, has not been
Table 1: Civilian Unemployment Rates for Selected Age Groups and Selected Years, 1956-1976

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.1</td>
<td>6.8</td>
<td>4.5</td>
<td>4.9</td>
<td>8.5</td>
<td>7.7</td>
</tr>
<tr>
<td>25-54 years</td>
<td>3.3</td>
<td>5.8</td>
<td>3.2</td>
<td>3.2</td>
<td>6.4</td>
<td>5.7</td>
</tr>
<tr>
<td>55 years and older</td>
<td>3.4</td>
<td>5.1</td>
<td>3.2</td>
<td>2.7</td>
<td>4.7</td>
<td>4.6</td>
</tr>
<tr>
<td>16-24 years</td>
<td>8.5</td>
<td>13.1</td>
<td>10.1</td>
<td>10.5</td>
<td>16.1</td>
<td>14.7</td>
</tr>
</tbody>
</table>

examined, however, and the prevailing view is that the combination of unemployment insurance, work registration requirements of some of the welfare programs, and the increased amount of public assistance benefits to the persons who are both searching for work and "on welfare" has increased the unemployment rate above the levels it would have reached in the absence of the programs. Granting that this is true, what are the implications for the concept of unemployment?

It is doubtful that the subsidies to unemployment status have led the unemployed to stop searching. If they did and continued to claim that they were searching to CPS interviewers, then the operational concepts of unemployment would be seriously damaged by the fact of false responses. False responses in this context arise from two sources. One is recipients who are not looking for any jobs that they may reasonably be expected to be qualified for and take. The other is the inability or unwillingness of the UI administration to enforce the "suitable work" criterion, although, strictly speaking, the respondent is not making a false response if he or she is searching for a job that is unattainable. The problem of false answers may be becoming more serious precisely because of the increased generosity of transfer payments and because the labor force has more workers who are not primary or sole earners. There has always been a "leisure" component to unemployment, except in the most desperate hardship cases, and the question is whether this component has so grown as to negate the concept of search. This deserves closer study, but what is more likely is that the search does take place but that it is less strenuous, although more prolonged. This does not challenge the validity of the unemployment statistics,
although it does alter our interpretation of the statistics regarding the purposes of measuring economic performance and measuring hardship.

As a measure of the performance of the economy, it is clear that the higher levels of unemployment induced by transfer payment programs do not connote a failure or shortcoming, since these programs are a reflection of societal affluence and compassion. Indeed, unemployment insurance (UI) often lengthens the duration of unemployment deliberately by subsidizing search to allow the unemployed person the luxury of turning down "unsuitable" jobs. By itself, this judgment only requires that we allow or adjust for this induced component when we use the unemployment rate as a relative indicator of performance. Put in terms used elsewhere in this paper, transfer payment programs affect the "frictional" or "natural" rate of unemployment. Quantifying this adjustment is a difficult empirical problem as will be noted below, but the principle is the same as in the case of the changing demographic composition of the labor force.

The growth of transfer payments has further weakened the use of unemployment in measuring hardship. The increase in benefit levels and extensions in coverage are, as mentioned above, reflections of societal affluence, and the plight of the recipient is made easier. Moreover, an increasing fraction of recipients of unemployment compensation are in households with another earner or with food stamps as another source of income-in-kind. Some young UI recipients are in households with no other dependents. As a result, the average amount of hardship experienced by UI recipients has surely greatly diminished relative to the past. Finally, some among the unemployed who are not eligible for UI are benefit-
ing from higher levels of welfare payments and various income-in-kind welfare benefits, such as Food Stamps and Medicaid.

Let us briefly look at the question of how much the unemployment rate has been affected by the program that is most directly involved -- the UI program. UI was extended to cover more workers in the 1970s and to increase the duration of entitlement benefits (up to a maximum of 65 weeks of unemployment) in 1976. The ratio of the average weekly UI benefit to average weekly wages increased from .35 in 1967 to .37 in 1975. Since average weekly wages rose by 5.5 percent in constant dollars over this period, the rise in UI benefits in constant dollars was around 11.5 percent. Thus, the monetary incentive to become and remain unemployed increased relative to the statuses of being employed or NLF. As several economists have pointed out, the incentive to becoming unemployed can arise from employer-initiated layoffs, in addition to worker-initiated quits, if employers: (1) recognize the subsidy to laid-off workers; (2) implicitly have understandings with workers that the latter will return to their jobs when business picks up; and (3) do not bear the full burden of the costs of the UI subsidy through experience-rated tax increases.

Flaim draws together a number of studies about the effect of the UI program on unemployment rates, primarily relying on a previous survey and analysis by Daniel S. Hamermesh, and conservatively concludes that the current unemployment rate is higher by about 0.4 percentage points. Apparently, the conservatism of the estimate is because the amount of employer-induced layoffs is not included, although it is not clear how double-counting is to be avoided if the layoffs from this source are added.
The effect of other welfare programs on the unemployment rate is more complicated, but very likely smaller overall, than the effect of unemployment compensation. As noted above, there is the theoretical possibility that increases in public assistance benefits could reduce unemployment by facilitating withdrawals from the labor force. In the study of UI beneficiaries who exhausted their benefits, Mathematica Policy Research reported that about one-fourth of these unemployed people withdrew from the labor force after one-year and separately reported that more than one-fourth of the exhaustees received AFDC, food stamps, pension, and social security disability and retirement benefits. Whether those who withdrew and received benefits from these programs would have remained unemployed is not known, however.

The argument that the transfer programs increased the unemployment rate is more plausible, but such programs as AFDC, SSI (or aid to the aged, blind, and disabled), social security old age and disability benefits, Medicaid, and general assistance basically deal with the NLF population, not the unemployed. Food stamp benefits are available to all three labor force groups — employed, unemployed, and NLF — depending on household income. Kenneth W. Clarkson and Roger E. Meiners recently advanced a widely publicized view that the AFDC and Food Stamp programs artificially inflated the ranks of the unemployed by requiring recipients, who (according to the Clarkson–Meiners thesis) were formerly NLF, to register for work and thereby become, by definition, unemployed. The calculations of Clarkson and Meiners have been shown to be inaccurate, but the thesis that unemployment is larger because of the registration requirement is
accepted. Flaim summarizes the estimates of two newer studies, which suggest that the registration requirement has added around .2 of a percentage point in the unemployment rate.

In summary, income transfer payment programs and their recent growth have probably altered our perspectives on unemployment in two major ways: by raising the "frictional" or "natural" level of unemployment, and by diminishing the overlap between unemployment and hardship. The former effect is difficult to quantify but appears to be smaller than was the effect of the changing age composition of the labor force.

C. Miscellaneous Criticisms of the Unemployment Rate

This section will briefly discuss several topics which raise issues about the concept and interpretation of unemployment. Limitations of my time, space, and knowledge preclude a longer discussion.

1. The Duration of Unemployment as a Measure of Performance and Hardship

A frequent observation about the difference between unemployment in recent years compared to unemployment in earlier periods is that the former is relatively more "voluntary." To some extent this repeats the themes of the changing demographic composition of the labor force (i.e., the looser attachment to the labor force of "secondary" workers) and of the role of income transfer-payment programs. Milton Friedman noted the association between voluntary unemployment and being unemployed for a short-duration, and he suggested that the average duration of unemployment was "a more
meaningful measure" than the unemployment rate.\textsuperscript{40} A Canadian economist, Helen Buckley, writes:

The "new view" [which she credits mainly to Martin Feldstein] argues that the nature of unemployment has changed radically since the thirties. Then unemployment lasted for months — if not years — and it was a state to be avoided if at all possible because there weren't enough jobs to go around and the welfare system was rudimentary. But present-day unemployment is different. A high percentage of the unemployment may be "voluntary." The amount of unemployment, therefore, may be less closely related than formerly to the level of economic activity. Because turnover is high [leading to short duration unemployment], unemployment may remain high even in a buoyant economy.\textsuperscript{41}

She cites as evidence the Canadian experience from 1970 to 1973 when the short-duration unemployment rate (defined as less than 3 months duration) stayed about the same, 3.5 in 1970 and 3.4 in 1973, while the rate of long-duration unemployment declined from 3.1 to 2.4. However, two comparisons over longer periods, 1966 to 1973 and 1968 to 1973, show that the long-duration rate, relative to the short-duration rate increased more during the 1966-1973 period and less during the 1968-1973 period.\textsuperscript{42}

Whatever the experience and interpretation of the Canadian unemployment situation, the U.S. shows no anomaly. As shown in Figure 3 and Tables 2A and 2B, the ratio of long-term unemployment (defined as unemployment for 15 weeks or longer) to total unemployment shows a pattern that: (a) is approximately coincident with the pattern of the overall unemployment rate given an allowance for the somewhat lagged pattern of long-duration unemployment; (b) has only a slight downward trend relative to unemployment levels, and this trend is entirely attributable to more women and young workers in the labor force;\textsuperscript{43} (c) is not only higher for the prime-age male workers, aged 25-44, but has increased more
FIGURE 3
RATIO OF LONG-TERM UNEMPLOYED TO TOTAL UNEMPLOYED, 1957-1976

Source: Employment Report of the President, 1977, p. 20A.
Table 2A: Long-term Unemployment as a Fraction of Total Unemployment, for All Workers (age 16 and over); All Female Workers, and Males, age 25-44, 1957-1976

<table>
<thead>
<tr>
<th>Year</th>
<th>All</th>
<th>Females</th>
<th>Males, 25-44</th>
<th>Year</th>
<th>All</th>
<th>Females</th>
<th>Males, 25-44</th>
</tr>
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<tbody>
<tr>
<td>1957</td>
<td>.19</td>
<td>.17</td>
<td>.19</td>
<td>1967</td>
<td>.15</td>
<td>.13</td>
<td>.18</td>
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<td>1958</td>
<td>.31</td>
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<td>.34</td>
<td>1968</td>
<td>.15</td>
<td>.13</td>
<td>.18</td>
</tr>
<tr>
<td>1959</td>
<td>.27</td>
<td>.23</td>
<td>.31</td>
<td>1969</td>
<td>.13</td>
<td>.12</td>
<td>.16</td>
</tr>
<tr>
<td>1961</td>
<td>.32</td>
<td>.27</td>
<td>.35</td>
<td>1971</td>
<td>.24</td>
<td>.20</td>
<td>.30</td>
</tr>
<tr>
<td>1962</td>
<td>.28</td>
<td>.24</td>
<td>.29</td>
<td>1972</td>
<td>.24</td>
<td>.20</td>
<td>.32</td>
</tr>
<tr>
<td>1964</td>
<td>.25</td>
<td>.23</td>
<td>.26</td>
<td>1974</td>
<td>.18</td>
<td>.15</td>
<td>.24</td>
</tr>
<tr>
<td>1965</td>
<td>.22</td>
<td>.20</td>
<td>.24</td>
<td>1975</td>
<td>.32</td>
<td>.28</td>
<td>.39</td>
</tr>
<tr>
<td>1966</td>
<td>.18</td>
<td>.15</td>
<td>.22</td>
<td>1976</td>
<td>.32</td>
<td>.28</td>
<td>.40</td>
</tr>
<tr>
<td>1966a</td>
<td>.18</td>
<td>.15</td>
<td>.22</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Table 2B: The Trend of the Long-term Ratio for Years of Peaks and Troughs, along with Overall Unemployment Rate for Years Listed

<table>
<thead>
<tr>
<th>Peak Year</th>
<th>Unem. Rate</th>
<th>Ratio</th>
<th>Trough Year</th>
<th>Unem. Rate</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957</td>
<td>4.3</td>
<td>.19</td>
<td>1958</td>
<td>6.8</td>
<td>.31</td>
</tr>
<tr>
<td>1959</td>
<td>5.5</td>
<td>.27</td>
<td>1961</td>
<td>6.7</td>
<td>.32</td>
</tr>
<tr>
<td>1966</td>
<td>3.8</td>
<td>.18</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1969</td>
<td>3.5</td>
<td>.13</td>
<td>1971</td>
<td>5.9</td>
<td>.24</td>
</tr>
<tr>
<td>1973</td>
<td>4.9</td>
<td>.19</td>
<td>1975</td>
<td>8.5</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1976</td>
<td>7.7</td>
<td>.32</td>
</tr>
</tbody>
</table>

*aNew definitions instituted in 1967 are used for the second set of calculations in 1966 and for all succeeding years. See source below for explanation of new definitions.

rapidly during the last 10 years for this age group. We might interpret this last finding as evidence that the high unemployment rates in 1974–1976 are really reflective of sluggish performance in the labor market, on grounds that long-duration unemployment for prime-age males is an important indicator of the seriousness of unemployment conditions. The ratio of long-duration to short-duration unemployment for the group reached its highest level on record in the 1975 and 1976 years.

2. The Effect of Minimum Wage Laws on Unemployment Rates

Minimum wage laws have no direct implications for the concept of unemployment, although they frequently receive a good deal of attention as an explanation for unemployment, and in particular, for the increase in unemployment rates of young people. The previously cited paper by Flaim provides a number of references, although it emphasizes the difficulty of extracting quantitative estimates from the literature. One such estimate, by Phillip Cagan, suggests that the unemployment rate increased by 0.43 percentage points from 1956 to 1973 and by 0.63 percentage points from 1956 to 1974 because of the minimum wage law. However, as shown in Table 3 below, inflation has reduced the real level of the minimum wage by 2 percent from 1956 to 1973, although the real level has increased by 10 percent from 1956 to 1974 because of the legislative increase of the minimum wage in 1974. The combination of inflation and another statutory increase in 1975 has kept the real level of the minimum wage in 1976 at its 1974 level of $1.35—in constant (1967) dollars. Moreover, the minimum wage as a ratio of the average manufacturing wage declined from 50 percent in 1956 to 44 percent in 1974. Any increased unemployment from 1956 to 1973 and 1974 would, therefore, presumably stem from the increased coverage of the law.
Table 3: Minimum Wage Levels in Current and Constant (1967 = 100) Dollars

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Dollar Levela</th>
<th>Constant Dollar Level(^{(1967 = 100)})b</th>
<th>Year</th>
<th>Current Dollar Levela</th>
<th>Constant Dollar Level(^{(1967 = 100)})b</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>$0.75</td>
<td>$1.04</td>
<td>1964</td>
<td>$1.35</td>
<td></td>
</tr>
<tr>
<td>1951</td>
<td>.96</td>
<td></td>
<td>1965</td>
<td>1.32</td>
<td></td>
</tr>
<tr>
<td>1952</td>
<td>.94</td>
<td></td>
<td>1966</td>
<td>1.29</td>
<td></td>
</tr>
<tr>
<td>1953</td>
<td>.94</td>
<td></td>
<td>1967</td>
<td>$1.40</td>
<td>1.40</td>
</tr>
<tr>
<td>1954</td>
<td>.93</td>
<td></td>
<td>1968</td>
<td>1.60</td>
<td>1.54</td>
</tr>
<tr>
<td>1955</td>
<td>.94</td>
<td></td>
<td>1969</td>
<td></td>
<td>1.46</td>
</tr>
<tr>
<td>1956</td>
<td>1.00</td>
<td>1.23</td>
<td>1970</td>
<td></td>
<td>1.38</td>
</tr>
<tr>
<td>1957</td>
<td>1.19</td>
<td></td>
<td>1971</td>
<td></td>
<td>1.32</td>
</tr>
<tr>
<td>1958</td>
<td>1.15</td>
<td></td>
<td>1972</td>
<td></td>
<td>1.28</td>
</tr>
<tr>
<td>1959</td>
<td>1.15</td>
<td></td>
<td>1973</td>
<td></td>
<td>1.20</td>
</tr>
<tr>
<td>1960</td>
<td>1.13</td>
<td>1974c</td>
<td>2.00</td>
<td></td>
<td>1.35</td>
</tr>
<tr>
<td>1961c</td>
<td>1.15</td>
<td>1975c</td>
<td>2.10</td>
<td></td>
<td>1.30</td>
</tr>
<tr>
<td>1962</td>
<td>1.27</td>
<td>1976c</td>
<td>2.30</td>
<td></td>
<td>1.35</td>
</tr>
<tr>
<td>1963c</td>
<td>1.25</td>
<td>1.36</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{a}\)The current dollar level is for the "basic" minimum wage that covers all but special groups of workers, usually newly covered, for whom a lower statutory wage applies. The current levels are given only in years in which the statutory minimum wage changed.

\(^{b}\)The Consumer Price Index is used to express all statutory minimum wage levels in current dollars, 1967 = 100.

\(^{c}\)Years in which coverage was expanded to include more categories of workers.
The mixed pattern of increases in the real levels of the minimum wage -- they were considerably lower in 1974-76 than in 1967-70, for example -- and the increases in coverage do not appear to constitute a major structural change in labor markets; not one that challenges the meaning and interpretation of unemployment. The laws might contribute to "discouraged workers" among those who would like to work at wages that are below the minimum, but the rise in labor force participation rates among teenagers in the last 10 years does not suggest a major change in this aspect of unemployment.

3. A Declining Commitment to Work?

The question of whether unemployment rates are high because of a declining commitment to work is not well-defined. Work commitment might refer to the labor force participation rate or to the employment/population ratio. If so, work commitment today would have to be judged high relative to the previous 30 years or so. We have seen that these high rates mainly reflect increased market work by women, especially wives, and, in recent years, an increase in work by teenagers. On the other hand, these high rates of employment could coexist with high rates of unemployment, along with a more casual job search by unemployed persons that either extends for longer durations or occurs more frequently, because of intermittent job holdings. The term "casual" brings to mind the idea, expressed earlier, that more of today's unemployment is "voluntary." In part these terms are simply reflections of the two major structural changes previously discussed: the changing demographic composition and the increase in transfer payments. To distinguish the issue of work commitment from that of these structural changes, we can consider several hypotheses listed below.
The research strategy to test these hypotheses involves three questions: (1) Is there a causal link between a characteristic of a worker (or a group of workers) and unemployment?; (2) Has the incidence of the characteristic increased over time? (3) Has the incidence of the characteristic among labor force participants increased over time?

1. **Multiple earners.** Does the presence of another earner in a household lead to more unemployment by other family members? Note, that the question of causality is crucial, because an observed negative correlation between unemployment and work (or earnings) by other family members might merely reflect other characteristics (some of which may be unobservable) that are causal to the employment status of all family members. Nevertheless, given (or "holding constant") these other traits, which may have an invariant distribution in the population over time, there may be a positive net correlation between unemployment of one family member and employment by other family members. In other words, at any point in time, there may be a negative relation within a population between employment and earnings of one family member and unemployment of other family members. However, if on average employment and earnings increase for each family, a response by some members in the family may be to increase their unemployment. Thus, unemployment in the population as a whole increases over time. The research strategy to test this hypothesis is complicated because of the difficulty in controlling for the "other factors" affecting employment status, which is required to isolate the net effect of one family member's employment status or another member's.

2. **Women with young children.** The fertility rate has declined, and the labor force participation rate of mothers has risen. Mothers may be
less committed to market work because of child-care responsibilities. Thus, the hypothesis is that the presence of young children causes more unemployment by those wives who are in the labor force, and, therefore, that the increased proportion of mothers in the labor force has raised unemployment rates.

3. Young people in school. The hypothesis here is analogous to that for mothers, except that school attendance rates, unlike fertility rates, have increased over time. Students may be less committed to market work than non-students of the same age. The hypothesis is that school attendance causes more unemployment and is a source of rising unemployment over time among young people. Again, the causal link between school attendance and unemployment is difficult to measure because both variables are correlated with many other factors, such as individual motivation and intelligence, family income, and so on. Unemployment rates among 16-17 year olds are higher among out-of-school youth, but this may reflect various personal traits that distinguish them, rather than school status, per se.

It is not difficult to think of other hypotheses about the issue of work commitment. Traditional roles among demographic groups in society are changing, transfer payments for a variety of vicissitudes have increased, and wealth and income have increased. However, the arguments which link these types of changes to explanations for rises in unemployment rates or for new interpretations of unemployment are seldom simple.
V. Suggested Alternative Measures to the Unemployment Rate

This section examines several labor force measures that are alternatives to the unemployment rate in terms of its purposes. Three general criteria should be kept in mind in assessing the alternatives: (1) theoretical or conceptual soundness; (2) practical considerations, which mainly involve the ease of measurement and interpretation and comprehensibility to non-technicians; and (3) the empirical and statistical evidence about the alternatives.

1. The Employment/Population Ratio

The labor force measure currently receiving the most attention as a substitute for the unemployment rate is the employment/population ratio (E/P), generally defined as the ratio of employed civilians to the population of civilians eligible to be in the labor force, which is the noninstitutionalized population age 16 and older. One good reason for its popularity is its advocacy by both the current and previous Commissioners of the Bureau of Labor Statistics, Julius Shiskin and Geoffrey Moore. In addition, the E/P ratio has received favorable attention in the press, and support among eminent economists may be traced back to Jacob Viner in 1949 and, most prominently today, to Milton Friedman.

Moore has been a particularly strong advocate of E/P, on grounds that it is an easier and more objective measure than unemployment and that it is in better accord with other macro measures of the level of aggregate demand, such as inflation. The point about the correlation between inflation rates on the one hand and the E/P or unemployment rates on the other hand has been discussed previously in this paper (pp. 15-17),
but it is useful to consider the relation between E/P and a more general set of cyclical indicators. Moore states:

A high level of unemployment not accompanied by a low level of employment (relative to population) may not imply a deficiency of demand. It may, on the contrary, imply that large numbers of workers are seeking jobs, or seeking to change jobs, because employment opportunities are plentiful. (p. 175, italics added.)

He contrasts the record of unemployment rates in the six post-war recession troughs with the E/P's in those years (see Table 3), which shows that 1975 was the second best year by the E/P criterion, rather than the worst year, by the unemployment criterion. However, if we want to use E/P as a cyclical indicator, we should look at its levels relative to (or adjusted for) the secular trend in the time series. By measuring the change in the E/P in the recession year relative to the year preceding—which tacitly assumes that the trend factor is negligible in two adjacent years—we see in the last column of Table 3 that 1975 was the worst year among the six, which is the same conclusion as the unemployment rate shows. This conclusion is also supported by a detailed econometric treatment of the issue by Otto Eckstein and Jane Haltmaier, who report that "the decline [of E/P] during both the 1970 and 1974-75 recessions has been just as severe as in the past economic cycles."47

Moreover, although the unemployment rate is not intended to be an important forecast statistic, it actually scores slightly better for this purpose than the E/P statistic according to Shiskin.48 Thus, the claim that E/P gives a different reading of the real cyclical economic performance of the economy than the unemployment rate is doubtful. Granting the greater objectivity in the underlying measure of employment status com-
Table 3A: Unemployment Rates and E/P Ratios in Six Post-War Recession Troughs

<table>
<thead>
<tr>
<th>Year</th>
<th>Unemployment Rate</th>
<th>E/P</th>
<th>((E/P)<em>t - (E/P)</em>{t-1})</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>5.9</td>
<td>54.6</td>
<td>-0.8</td>
</tr>
<tr>
<td>1954</td>
<td>5.5</td>
<td>53.8</td>
<td>-1.5</td>
</tr>
<tr>
<td>1958</td>
<td>6.8</td>
<td>54.2</td>
<td>-1.5</td>
</tr>
<tr>
<td>1961</td>
<td>6.7</td>
<td>54.2</td>
<td>-0.7</td>
</tr>
<tr>
<td>1970</td>
<td>4.9</td>
<td>56.1</td>
<td>-0.4</td>
</tr>
<tr>
<td>1975</td>
<td>8.5</td>
<td>55.3</td>
<td>-1.7</td>
</tr>
</tbody>
</table>

(Source: For columns 1, 2, and 3, Moore, *op. cit.* Column 4 was derived from data presented in Moore's appendices to his paper.)
pared to unemployment, the case for substituting E/P for the unemployment rate still requires demonstrating that is conceptually preferable and empirically easier to interpret. On both standards E/P appears much weaker than the unemployment rate.

A serious conceptual problem with E/P as an index of the cyclical performance of the economy or, for that matter, of hardship, is that employment (or work) is an ambiguous indicator of well-being, just as is its obverse -- the status of not working, which is mainly the not-in-the-labor force (NLF) status. Unemployment, in contrast, is much more unambiguous as an indicator of a shortcoming in the performance of the economy and of disutility for the unemployed person. Employment signifies both the "good" of opportunities fulfilled for those seeking jobs and the "bad" of the need to work by those for whom nonwork activities are more desirable, if the (primarily) financial pressures were absent. The secular trends of E/P's for different demographic groups illustrate this point clearly. Because of the form in which the data exist, we will use labor force participation rates (LFPRs), which are almost perfectly correlated with E/P's. As shown in Table 4, the LFPRs for young and old males have declined sharply during this century. There are many reasons for these trends, but the most important have to do with the increased schooling of the young and earlier and more protracted retirement among the aged. These options to market employment reflect the long run rise in per capita income, which has been associated with a decrease in time spent at work in many ways, such as reduced hours per day, fewer days per week, more vacations and holidays. Viewed as an increase in "leisure," the decline in male E/P's represent a positive achievement of the economy over time. Indeed the negative rela-
### Table 4: Civilian Labor Force Participation Rates (LFPR), Selected Years, 1900–1976, and Selected Age-Sex Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>1900</th>
<th>1920</th>
<th>1940</th>
<th>1960</th>
<th>1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14–19</td>
<td>61</td>
<td>53</td>
<td>34</td>
<td>44</td>
<td>46</td>
</tr>
<tr>
<td>25–64</td>
<td>95</td>
<td>96</td>
<td>91</td>
<td>95</td>
<td>90</td>
</tr>
<tr>
<td>65+</td>
<td>68</td>
<td>60</td>
<td>42</td>
<td>33</td>
<td>20</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14–19</td>
<td>27</td>
<td>28</td>
<td>19</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>25–64</td>
<td>17</td>
<td>20</td>
<td>26</td>
<td>42</td>
<td>54</td>
</tr>
<tr>
<td>65+</td>
<td>9</td>
<td>8</td>
<td>6</td>
<td>11</td>
<td>8</td>
</tr>
</tbody>
</table>

tion between income and male LFPRs over time for the U.S. is also found in cross-section studies among nations at a point in time — the richer nations have lower male LFPRs than poorer nations. These statistics and their interpretation should by themselves cast doubt on the use of E/P to measure a favorable or unfavorable performance of the economy.

The ambiguity and complexity of E/P is demonstrated further by the contrast between secular trends of LFPRs of men and women (see Table 4). There is a slight downtrend in the LFPRs of young and old women between 1900 and 1940, but the picture is mixed for the 1940 to 1976 period, and the trend in LFPRs of the middle-aged group of women rose steadily during this century. To interpret these trends it should first be noted that the growth in women's LFPRs is almost entirely attributable to increased LFPRs of married women, spouse present (see Table 5). For wives, much if not all of this increase in market work represents a shift from home work to market work, and this reflects such exogenous supply-side changes as the decline in the birth rate, advances in labor-saving home-work technology, and attitudinal changes about women's role in society. On the demand side, the dominant factor has been the growth in wages and white-collar jobs, but another contributing factor has been the growth in part-time jobs, which is another complicating factor in interpreting the E/P (discussed below). Thus, it seems inappropriate to translate a high E/P that is the product of long-run trends in increases in work by wives into a cyclical indicator of full-employment or some other measure of good performance in the economy. As a cyclical indicator, the E/P would have
Table 5: Labor Force Participation Rates of Women by Marital Status, Selected Years, 1947-1976

<table>
<thead>
<tr>
<th>Group</th>
<th>1947&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1957&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1967&lt;sup&gt;a&lt;/sup&gt;</th>
<th>1967</th>
<th>1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single&lt;sup&gt;a&lt;/sup&gt;</td>
<td>51</td>
<td>47</td>
<td>41</td>
<td>-</td>
<td>51</td>
</tr>
<tr>
<td>Wives, Spouse Present</td>
<td>20</td>
<td>30</td>
<td>37</td>
<td>-</td>
<td>37</td>
</tr>
<tr>
<td>Widowed, Separated, Divorced</td>
<td>37</td>
<td>40</td>
<td>39</td>
<td>-</td>
<td>39</td>
</tr>
</tbody>
</table>


<sup>a</sup>Figures for 1947, 1957, and 1967<sup>a</sup> included 14 and 15 year olds; for 1967 and 1976 these ages are excluded.
at least to be trend adjusted, and as shown by Tables 4 and 5 the adjustments would be quite complicated in view of the contrasting trends among the different demographic groups.

A second point to make about the trend in women's LFPRs (and, therefore, of E/P's) is that the relatively flat trend for widowed, separated, and divorced women is probably due to the offsetting factors of better wages for market work on the one hand and the growth of nonwork sources of income, including AFDC and Social Security payments on the other hand. Among single women the offsetting factors are mainly the increase in wages and, on the other side, rising schooling. These examples again reveal the ambiguity of E/P as either a positive indicator of performance or a negative indicator of hardship. Another way of making this point is to recognize that E/P would rise, other things equal, if high school and college attendance rates declined, if pension plans were curtailed, and if welfare payments, disability and old-age benefits, and scholarships were reduced. To be sure, a similar point was made about the role of UI in the unemployment rate, but this called for a relatively minor technical adjustment, rather than an entire reinterpretation of decades of massive trends in labor force behavior, which is what would be required if E/P were used as a measure of economic performance or economic hardship.

Finally, the growth of LFPRs of women over the course of decades and of young people in the last ten years or so, along with the decline in LFPRs of men, reflect the increasing fraction of the labor force engaged in part-time work. The percentage of nonagricultural workers on voluntary part-time schedules to the total of full-time and voluntary part-time workers has increased from 9.6 in 1957 to 14.4 in 1976. This is almost
certainly a larger change than for the comparable measure for the unemployment rate: the percentage of unemployed persons looking for part-time jobs to the total of unemployed persons. Thus, the secular increase in E/P may be largely a reflection of the growth in part-time employment or, even more disturbing, of the substitution of part-time workers (such as wives) for full-time workers (such as older males).

In summary, the E/P statistic, which shows an almost imperceptible rising trend over the last 28 years, from 56.7 in 1948 to 56.9 in 1976, is an amalgam of underlying contrasting trends — principally between men and women but also among different age and marital status groups. The increases in wives' LFPRs and in part-time employment are mainly responsible for the slight overall positive trend and for why today's E/P ratio is "historically high" at the same time that the unemployment rate is high. Because of the heterogeneity of the underlying trends, it is difficult to interpret the overall E/P ratio. On empirical grounds, the ratio does not have a closer relation to peaks and troughs of the business cycle than the unemployment rate. Most importantly, the ratio is conceptually much more ambiguous as an indicator of either performance or hardship than is the unemployment rate. This theoretical shortcoming, along with the mixed empirical aspects of the E/P statistic, is too great a price to pay for its superiority as an objective measurement.

2. The Perry Index of Unemployment

The Perry Index of Unemployment (PIU) is intended to measure a dollar-weighted shortfall in labor utilization in the economy. The numbers in each age-sex group in the unemployed population and in the labor force are weighted (multiplied) by the average earnings of the
employed portion of that age-sex group. The ratio of the estimated earnings forgone -- the earnings-weighted unemployed -- to the estimated labor force earnings capacity -- the earnings-weighted labor force, is the PIU. The index was first devised to provide a measure of labor market "tightness" that would correlate more highly than the conventional unemployment rate with inflation as measured by the rate of change in money wages. Viewed as a tool for analyzing the "Phillips Curve," the PIU has a rather restricted purpose that is not the same as measuring the real cyclical performance of the economy, and a purpose that is enmeshed in many unresolved theoretical and econometric issues. These points were made earlier in this paper (pp. 15-17), where it was noted that even the direction of the relation between unemployment and inflation, as well as the closeness of the fit of the relation, are matters of theoretical and empirical controversy. In addition, there are many econometric questions about Perry's single-equation model, in which the change in money wages is assumed to be affected by (but not to affect) several macroeconomic variables, including, of course, the reciprocal of the unemployment rate. As previously argued, the mere fact that the PIU, the E/P, or some other labor force statistic has a higher correlation with inflation rates than the conventional unemployment rate should not be a reason to replace the latter with one of the former. 53

Perry has also used his PIU in measuring potential output in the economy. 54 Given that potential output is measured in dollar terms, the PIU is probably better than the conventional unemployment rate for this purpose. As Charles Schultze stated in his discussion of PIU:
... it is virtually a wage-gap index—in effect, the difference between the actual wage bill and the potential wage bill, expressed as a ratio of the potential wage bill. It is an interesting comparison to the GNP gap.55

The wage-gap could be measured more accurately if account were taken of many other grouping characteristics of the unemployed (and of those in the labor force), such as educational attainment, race, demographic status in the household, industrial and occupational affiliation, and so on. The PIU would be still more accurate if allowance were made for the lower earnings abilities of the unemployed relative to their counterparts in the employed groups that provide the earnings weight. Two other shortcomings in the PIU as a wage-gap measure are that no allowance is made: (1) for the wages foregone by "discouraged workers" during downturns in the economy;56 or (2) for wage-rate changes—which are closely associated with productivity changes—during different phases of the business cycle. A wage gap differs from the GNP gap mainly in that the latter also captures declines in the returns to capital, but it would be interesting to compare the PIU with the GNP gap and in particular with the predicted changes in GNP based on "Okun's Law."57

In summary, the PIU is a measure of earnings fluctuations. Earnings fluctuations are important measures of economic performance and well-being in their own right, but they are not a substitute for unemployment statistics, which measure the performance of the economy in providing jobs for those who seek them.


Unemployment does not coincide with hardship, for reasons discussed earlier in this paper. Low earnings is a closer measure of hardship...
because this signifies both employment at low wages and deficient employment, whether due to unemployment or to not being in the labor force (NLF). However, low earnings, like unemployment, refers to an individual, and the individual may be in a household that has sufficient income from other members or from nonlabor sources to raise the individual's standard of living to an above-hardship level.

Household income is generally viewed as the most comprehensive measure of economic well-being and economic hardship, but some analysts have expressed the need for an income-related measure that was restricted to persons with a labor force attachment. This type of measure would exclude those low income households that have no or limited attachments to the labor force -- measured, say, by one's current labor force status or by the number of weeks in the labor force during a designated preceding period.

In the past 10 years there have been several attempts to construct a measure of "labor-market related economic hardship" -- to use a phrase contained in the Comprehensive Employment and Training Act (CETA) that calls for such a measure. Two proposed measures are those by Sar Levitan and Robert Taggart, Jr. and by Robert L. Stein. 58

Levitan and Taggart use the March CPS to construct the Employment and Earnings Inadequacy index (EEI). It is a ratio in which the numerator contains the target group; the denominator is the base or coverage group. The base group is the civilian labor force, augmented slightly (by less than one percent) with discouraged workers. The target group is the sum of the following groups: (1) unemployed, involuntarily part-time employed, and "discouraged workers" as reported in the current week of the March CPS; and (2) current employed family heads whose earnings last year were
below the poverty level and whose family income last year was below average. Excluded from the target group are: (a) persons 16-21 years of age who are in school, (b) persons 65 years of age and older, and, as noted above, (c) persons in families with above-average annual incomes, separately computed for residents of metropolitan and nonmetropolitan areas and for families and individuals.

As the authors point out, the time frames of current labor force status and last year's earnings or income are mixed in the EEI. The EEI is, therefore, a weighted average of this year's and last year's conditions. In practice, the current unemployment statistics contribute about 25 percent to the EEI and last year's earnings statistics contribute the remaining 75 percent. The result is that the annual fluctuations in such indices as the unemployment rate will be more variable than the "smoothed out" EEI. This may be a disadvantage of the index, if it is intended to inform us about a particular calendar year. Consider also the following type of consequence of the mixed time frames: An NLF woman who is a household head is excluded from the target group even though she may have worked all last year at below poverty earnings, whereas another woman heading a household who is currently unemployed is included in the target group even though she may have been either NLF all last year or, conversely, employed last year at above poverty earnings (but in a family whose total income was below average).

A second drawback of the EEI is that the numerator and denominator refer to different populations. As a result, the following anomalies are possible: The EEI would decrease if (1) a 16-21 year-old student in a family enters the labor force and is unemployed; (2) an over-65 retired person
reenters the labor force and is unemployed; or (3) a wife or other non-head of household from a nonpoor family enters the labor force and is unemployed. The reason is that the denominator of the EEI increases in all these cases, but the numerator is unaffected.

The Stein measure of labor-market related hardship proposed in detail in 1974 is also a ratio, but the target group in the numerator and the base or coverage group in the denominator have the same time frame -- the previous calendar year -- and the same population basis -- primary earners in households who were in the labor force 27 weeks or longer. The target group consists of those in the coverage group whose annual earnings in the previous year were below the poverty line for their families. In 1977 Stein and colleagues at the BLS suggested another index which would be restricted to workers 25 to 64 years of age who work full-time or who are seeking work full-time. This report also suggested the use of a quarterly time period.

Discussion. In my view these proposed measures do not meet our most pressing need, which is a measure of hardship that would apply to local areas and serve the intent of various laws, including CETA, to allocate aid to distressed areas. The measures of Levitan and Taggart and of Stein, and other measures found in the literature as well, apply to the nation as a whole, require national survey data, and would not be feasible for many hundreds (or thousands) of local areas. (The issue of appropriate statistics for local areas will be discussed in the concluding section of this paper.)
On their own terms as national measures of labor-market related hardship, the Stein and EEI indices seem to me to have conflicting objectives which render them ambiguous and intractable. Consider the following questions.

Should the target group be confined to heads-of-households or, alternatively, primary earners? Many would object to this definitional exclusion of even full-time working wives (unless they earned more than their husbands). However, let us accept a yes answer to this question in order to concentrate on the remaining questions.

Should labor force attachment be a requirement or criterion for determining who is in the target group? The basic problem here is that participation in the labor force is a continuum when measured for a period of time that corresponds to the relevant earnings or income period. Stein suggests a minimum 27 week criterion but notes that larger minimums might be preferred. The Levitan-Taggart criterion of labor force attachment in the current week does not meet the problem of interpreting last year's earnings and income data for people whose labor force participation varied from zero weeks to 52 weeks of full-time work.

Should the degree of voluntarism in the person's NLF status be a criterion for exclusion from the target group? Note that although the included discouraged workers may be said to be involuntarily out of the labor force, they are a small fraction of the NLF group. The degree of voluntarism in the NLF status may be clear, perhaps, for full-time students, affluent retired people, and affluent female heads who are NLF, but it is not clear for persons whose families are below various poverty or low-income standards.
Should the capacity for work be a criterion for inclusion in the target group? The exclusions of those over 65 in some proposed hardship measures and of those who are "sufficiently" out of the labor force -- less than 27 weeks for Stein and out during the survey week in the EEl -- perhaps because of disabilities or inadequate skills, suggest that the measures are aimed more at situations in which inadequate labor market opportunities rather than inadequate capacities are at fault. However, the distinction between these situations is not clear, and even if it were, the cases where the incapacities permit some limited labor force participation will produce inevitable gray areas where exclusion from the target group is problematic.

Detailed examples of anomalies in these proposed measures of labor-market related hardship to illustrate their inherent ambiguities are not appropriate in this paper, but one common case is worth noting. Some households, particularly those without a prime-age male head, will be included in the target group even though the head's wage rate and income are relatively high if: (1) he/she has worked only part-time but enough to pass a cutoff mark (27 weeks in Stein's measure and if currently in the labor force in the Levitan-Taggart measure); and (2) part of his/her income is received from nonlabor sources, such as AFDC payments or child support payments from an absent father. The real anomaly occurs when other similar persons are excluded because their earnings are above the poverty cutoff although (1) their wage rate is lower, but they work sufficiently more hours per week and weeks per year, and (2) their incomes are lower because they receive no income other than their earnings.
The inconsistencies in objectives of the proposed measures may be summarized as follows. If the question asked is whether the labor market provides above-poverty earnings to one who is in the labor force full-time then our unemployment and "wage rate" statistics give the answer, and these can apply either currently in the survey week or to last year's experience. (The May CPS gives a current wage rate or weekly earnings measure.) If the question is whether the individual lacks the capacity or preference to obtain above-poverty earnings, then the emphasis on full-time participation in the labor force is misplaced. If it is decided to include either persons who are fully or partly NLF, then the use of earnings rather than income loses much of its appeal.

I conclude that the proposed labor-market related hardship measures give less relevant information, and in the last analysis, are more complicated than the three types of measures that are now available: (1) income, poverty, and welfare statistics; (2) wage rate or weekly earnings statistics; (3) unemployment statistics. Unfortunately, all three categories must be tabulated by age, sex, and family relationship to be interpreted for descriptive and policy purposes.

IV. Conclusions and Recommendations

The conclusions and recommendations about labor force definitions and concepts are presented in the light of the preceding discussion of purposes, criticisms, and suggested alternatives. Brevity and tentativeness in this concluding section seem appropriate in view of the complications that arise from the several purposes of the statistics and from the fact that the criticisms and alternatives await more evidence before a definitive appraisal is possible.
Several dominant themes stand out, however. First, recognition of the primary purpose of unemployment statistics as an indicator of the cyclical performance of the economy means that the criticisms that they fail to measure hardship and inflation pressures adequately are not central, although they may be quite valid in other contexts. I do not believe the criticisms and alternatives are supported by sufficient evidence to justify moving the unemployment rate off the center of the stage in assessing the performance of the labor market over the business cycle.

Second, the changing demographic composition of the labor force, increased transfer payments, and higher incomes generally have made the status of employment, unemployment, and NLF more fluid and, therefore, easier to challenge as being less reliable and valid. To preserve and enhance the integrity of the unemployment statistics the following conclusions and recommendations are suggested:

1) The main labor force statistics, particularly the unemployment rate, should be computed with a fixed age-distribution of weights, and this age-weighted rate should be reported for the time-series of annual rates. The changes in the age distribution of the labor force will continue to hinder the interpretation of the unemployment rate in the coming years, and this recommendation will remove this needless source of confusion. The result would not cause major revisions in the series and should be acceptable to the user-public that already accepts seasonal adjustments in the monthly rates.

2) "Discouraged workers" should remain classified as NLF. The very fact that the boundaries between being in the labor force and NLF are today more blurred is a reason to insist on preserving the "active search" criterion
in defining unemployment. Dropping this and including discouraged workers would not significantly change either the level or the cyclical pattern of unemployment rates, but it would aggravate the existing skepticism about the integrity of unemployment.

3) The growth of the labor force attributed to the increased employment of young people who are in school and women has led to a larger proportion of part-time workers in the labor force. Part-time work may also become more common among older people who have pension or other nonlabor sources of income. The growing importance of part-time work raises the following questions about labor force statistics: Should workers who work as little as one hour in the survey week be classified as employed? What fraction of unemployed workers are looking for only part-time jobs? Regarding the first question, any cutoff in hours worked is arbitrary, and the use of one hour is defensible for making the distinction between those who do and don't work at all. The argument for a higher cutoff requires evidence that workers employed for, say, eight hours or less have increased substantially. Regarding the second question, data are available on the proportion of unemployed workers who are searching for only part-time jobs, but no time-series of this statistic has been developed.

A third dominant theme of this paper is the need to give priority to hardship measures over unemployment statistics for purposes of allocating aid to distressed areas. Unemployment statistics are still needed, however, for two reasons: (1) in the form of the records of the Unemployment Insurance program, the unemployment statistics may be the only available measure of local labor market conditions; and (2) the specific relevance of unemployed workers for various employment and training programs. The lack of poverty
and family income statistics at the local level is a serious handicap to measuring hardship. One strategy is to experiment with a per capita income measure which, according to Garth Mangum, is available in the statistics of Personal Economic Analysis from the Department of Commerce. Another strategy is to define areas large enough to yield reliable family income, wage rate, and unemployment statistics from the CPS, to use these to construct a hardship index, and to rely on the appropriate governmental unit at the larger level to decide where and how to allocate aid to smaller areas, including neighborhoods. The CPS could sum monthly statistics to provide larger samples for a quarterly, semi-annual or annual measure, although the non-independence of the monthly observations for the same households sharply decreases the effective sample size in this procedure. I question whether greatly expanding the CPS sample -- say, by more than 50 percent -- can be justified on grounds of obtaining better local area data. However, this is a political issue as well as an economic and statistical one.

A number of research questions about unemployment and labor force statistics have been raised in this paper. A common presumption is that the unemployment rate has been pushed upward by various changes in the economy, and, as a consequence, that it has become downward biased as a measure of performance of the economy. But we should be prepared to look for biases in both directions. In a changing environment there are always some changes that serve to inflate the unemployment rate for a given level of economic activity, but unless the net effect of all changes increases the rate spuriously, there is no reason to distrust the rate as an overall guide to policy. The following research areas seem most important:
(1) The relations between family income, the sources of income, and transfer payments on the one hand and unemployment on the other hand requires concurrent measures of these variables. Obtaining these measures in the CPS may mean that the questions can be asked only of those respondents who are leaving the survey panel. The reason is that the questions and probes necessary for reliable income data, especially for households with unemployed persons receiving transfer payments, may appear threatening and obtrusive. Nevertheless, we need this information because the relation between transfer payments and unemployment is perhaps the single most controversial challenge to our understanding of unemployment and its causes.

(2) The relation of unemployment to nonlabor-market activities, such as schooling, training, and child rearing needs to be studied to answer the question of how these activities have affected the levels, trends, and cycles of unemployment.

(3) Continued analysis of the search behavior of the unemployed is required to address the persistent criticism that the subjectivity involved in the responses defining unemployment makes them unreliable. What changes have occurred in the percent who report turning down one or more job offers; who report seeking only part-time work; or who have registered for work with a public agency?

The motivation for these research topics derives from three basic questions: Has the structure of the economy changed so that the unemployment rate no longer means what it used to? Have the procedures for collecting the statistics gone awry? Have we begun to err in our interpretation and use of the statistics? When I compare the present period with the time when the Gordon Commission examined these questions, I do not feel compelled to
answer yes to any of them. The increase in women in the labor force, the
decreasing participation of older males, the increase in part-time employment,
and the existence of transfer payments were all well established in 1961,
although, to be sure, these trends have become more prominent today. Un-
employment was not synonymous with hardship in 1961, nor was the correlation
between the two conditions nearly as high in 1961 as in the 1930s. In
1961, as today, teenagers who worked for pay a few hours a week were counted
as employed, just as teenagers who reported being without a job and searching
for a job were counted as unemployed. It is a mistake, I believe, to consider
that these facts invalidate the use of the unemployment rate as a cyclical
indicator, although they do diminish its use as a hardship measure. The one
major difference in the role of unemployment statistics between 1961 and 1978
is their use in allocating federal expenditures to local areas, and this
is where the unemployment statistics are least well-used and most in need
of supplementation, if not replacement.
NOTES


3 Robert Aaron Gordon examines this issue and cites several studies that suggest that the "full-employment unemployment rate" was about 5.5 percent in the mid-1970s. His own prediction is that "the national unemployment rate in the 1980s is not likely to be below about 4.8 percent," although he advocates placing less emphasis on a single overall rate and


5 Gordon, *op. cit.* especially pp. 76-78.


8 Early statements to this effect, by government officials who were developing the labor force statistics, are contained in the following articles: Louis J. Ducoff and Margaret J. Hagood, "Objectives, Uses, and Types of Labor Force Data in Relation to Economic Policy;" and Charles Stewart and Loring Wood, "Employment Statistics in the Planning of a Full-Employment Program;" both articles appearing in *The Journal of the American Statistical Association*, 41, September 1946, pp. 293-302 and 313-321, respectively; Gertrude Bancroft, *The American Labor Force*, John Wiley and Sons, Inc., New York, 1956, pp. 186-188; and the testimony of the then Commissioner of Labor Statistics, Ewan Clague, and of Raymond T. Bowman of
the Bureau of the Budget in Employment and Unemployment: Hearings Before
the Subcommittee on Economic Statistics of the Joint Economic Committee,

9 Julius Shiskin, "Employment and Unemployment: The Doughnut or the

10 Geoffrey H. Moore, "Employment, Unemployment, and the Inflation-

11 The most prominent spokesman for the "vertical Phillips Curve" (that
is, a zero unemployment-inflation correlation) in the long run is Milton
Friedman. See, "Monetary Policy and Inflation," American Economic Review,
March 1968, pp. 1-17. See also Edmund S. Phelps, "Money Wage Dynamics and
Labor Market Equilibrium," Journal of Political Economy, July/August 1968,
pp. 678-711. As is made clear in the expository articles by James Tobin,
11-32, adherents to the negatively sloped (non-vertical) Phillips Curve
lose very little policy relevance by conceding a long-run vertical relation,
since they can always claim the existence of a trade-off between unemployment
and inflation "... in as long a run as can be of concern to policy-makers
in an uncertain and changing world" (p. 30).

12 For the view that the structural relation between unemployment and
inflation rates is "vertical," see Robert E. Lucas, Jr., "Econometric Testing


17 Ibid., p. 196. On the same page the author reveals a stark and hopefully obsolete example of the overlap between being economically distressed and being out of the labor force ". . . 200 workers, mainly from steel mills, . . . were interviewed in jail in a mid-western town where they sought commitment for vagrancy to get a night's lodging."


An editorial in the *Wall Street Journal* on March 7, 1977, which generally downplayed the seriousness of the current unemployment rate, stated: "...since the unemployment figure includes 16-year-olds looking for part-time jobs, often the unemployed member is not the sole income-provider in his or her household." In 1961 during the time of the famous *Reader's Digest* article that sparked the formation of the Gordon Commission, the *Wall Street Journal* editorialized: "A distorted picture of 'unemployment' can result when you also count in teenagers looking for summer jobs merely to pass the time or to pick up a little extra spending money" (August 31, 1961). The editorial is reprinted in *Employment and Unemployment, Hearings*, 1961, op. cit. Milton Friedman is another critic who believes the unemployment rate is "highly misleading," in part because it includes teenagers and does not coincide with hardship in many cases. *Newsweek*, August 4, 1975, p. 63.

Shiskin, "Employment and Unemployment: The Doughnut or the Hole?" op. cit.

Flaim notes that his calculations of the adjusted unemployment rates generally agree with the adjustment calculations made by other analysts.

Another way of stating this result is that an unemployment rate based on fixed weights would show greater cyclical fluctuations than the unweighted unemployment rate in current use. This point is made by Frank P. Stafford, "Microeconomic Aspects of Employment and Unemployment Statistics," paper for the NCEUS, November 1977, pp. 39-41.

Ibid., footnote 3.

In practice, the L and U variables are vectors of the 22 age-sex groups, but treating L and U as scalars simplifies the exposition with no loss in generality.

The interaction term shows up in the following algebraic expression for the difference in the unemployment rates:

\[ L_2 U_2 - L_1 U_1 = L_1 ΔU + U_1 ΔL + ΔLΔU \]

The uncorrected adjustment used by Flaim is \( U_2 ΔL \) which, when added to \( L_1 ΔU \) equals the left- and right-hand sides of the above equation. Thus, \( U_2 ΔL \) equals \( U_1 ΔL + ΔLΔU \), which shows that the total amount of the interactions term is included in \( U_2 ΔL \). Similarly, the alternative adjustment shown in the text, \( U_1 ΔL \), when added to \( L_1 ΔU \), is less than the left- and right-hand sides of the above equations by the interaction term. Flaim's corrected adjustment subtracts half of the interaction term from his uncorrected measure \( U_2 ΔL \).

At a moment-in-time there are inverse relations between educational attainment and unemployment and between occupational status and unemployment, and over time the labor force has become more highly educated and has shifted toward higher occupational categories. Thus, the overall unemploy-
ment should be decreasing secularly because of these improvements in education and occupation.


30 Economic Report of the President, 1977, Council of Economic Advisors, Washington, D.C., G.P.O., 1977, p. 51. The report says that "it is not clear whether the rise in education by itself" contributes to lowering unemployment, because "the reasons for differences in unemployment rates by education level are not well understood." Thus, the Report seems to attribute causality to the age-unemployment relation but not to the education-unemployment relation. My guess is that the authors of the Report are in a minority among economists in denying a causal connection between educational attainment and unemployment.

31 Note that the argument is that raising the benefit payments are reflections of societal affluence and compassion, and therefore positive indicators of economic performance, whereas increases in the numbers of recipients of the program may reflect either the negative indicator of poor performance or the positive indicator of more generous programs.

32 Flaim, op. cit. As Flaim notes, this increase is understated because of the increase in social security and income taxes, which reduce wages but not UI.

33 Given a 35/100 ratio of average weekly UI benefits to average weekly wages in 1967, a ratio of .37 in 1975 along with an increase in average weekly wages to 105.5 (based on 1967 = 100), implies that the index of UI benefits rose from 35 to 39, which is an increase of about 11.5 percent. For the figures on average weekly earnings for full-time wage and salary workers, see: "Weekly and Hourly Earnings Data from the


36 Flaim, op. cit., p. 28 The comparison point for this 0.4 percent figure is apparently the economy without the recent added benefits in the UI program, which are the extension of coverage, extended benefits, and the Federal supplemental benefits.


39 See the paper by Flaim, op. cit., and the citations therein.


42 Ibid. The long duration rates were 1.1, 2.6, and 2.4 in 1966, 1968, and 1973, and the short duration rates for those years were 2.5, 2.9, and 3.4.

43 In addition to the growth of young people and women as contributing to the slight trend toward a shorter average duration of unemployment, Gordon noted that changes in labor force definitions in 1967 were responsible for shortening the average duration of unemployment by about one week. His analysis of the average duration of unemployment, measured in weeks, is generally compatible to the analysis here of the ratio of long-duration unemployment to total unemployment. (See Gordon, op. cit., p. 47.)


46 In the Shiskin article cited above, reference is made to a letter, dated March 9, 1970, from Milton Friedman to Geoffrey Moore, in which E/P is advocated in place of the unemployment rate. Jacob Viner's endorsement of E/P is found in his review of National and International Measures for Full Employment, a United Nations Report, 1949, which is reprinted in Jacob Viner, The Long View and the Short, The Free Press, Glencoe, Illinois, 1958. He states "I question the preferability of the use of the volume of
unemployment rather than of employment as a guide [for stimulative fiscal policies] partly because unemployment as a residual phenomenon is much more variable and much harder to define and identify for specific purposes than is employment." (p. 160)


48 Shiskin, "The Doughnut and the Hole . . .", op. cit.


50 The LFPRs of single women and women of other marital statuses -- divorced, widowed, and separated -- have had no long-run upward trend. These statistics are shown explicitly in Glen G. Cain, "The Labor Force," in the Encyclopedia of Social Work, Vol. I, 17th Issue, National Association of Social Workers, Washington, D.C., 1977, pp. 744-764, and they are implicit in the statistics in Table 4 that show the marked increase in female LFPRs for the age group (25-64) that is dominated by wives, compared to the other two age groups, where women without husbands are more common. See also the corroborating data in Table 5 for the years 1947-1976.

51 The statistics are reported only for nonagricultural workers, which comprise 96 percent of the civilian employed population in 1976. The trend of part-time workers is measured for voluntary part-time workers to abstract from the cyclical fluctuations, which dominate the annual figures.


It might be noted in this connection that Perry's correlation of money wage changes (DW) and the PIU is a correlation between:

\[ DW = \frac{W_t - W_{t-1}}{W_{t-1}} \text{ and } \frac{1}{\Pi_t} \]

where \( W_t \) is the wage in year \( t \). Given that the conventional unemployment rate is the number of unemployed (\( U \)) divided by the labor force (\( L \)), we see that \( \frac{1}{\Pi_t} \) is essentially:

\[ \frac{\sum w_{t-1} \text{ for age-sex group } j}{\sum w_{t-1} \text{ for age-sex group } j} \]

where \( j \) refers to the age-sex group. (Actually, PIU also contains information on the hours worked by the age-sex groups.) Thus, when comparing the correlation between DW and the conventional unemployment rate with that between DW and PIU, we should investigate how much the latter is affected merely by the definitional relation between the \( w_{t-1} \) components in the DW and PIU variables.


A large body of evidence supports the proposition that the size of the labor force is pro-cyclical. Thus, in downturns, the number of "discouraged workers" exceeds the number of "additional workers."
Okun's Law refers to the empirical relation put forth by Arthur Okun, which related changes in the unemployment rate (relative to a presumed full-employment rate of 3 percent) to percentage changes in GNP. Okun's Law appears to capture the effects of lower unemployment rates on productivity changes and capital utilization, which are not included in the PIU wage-gap measure.
