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Labor Market Dynamics and Unemployment: A Reconsideration

ECONOMISTS in recent years have come to view unemployment as a dynamic phenomenon. Both theoretical and empirical research have emphasized the role of turnover in understanding unemployment. The instability of employment, the brevity of unemployment spells, and the large flows into and out of unemployment have been central themes of this work.[1]

1. Many of these studies appear in *Brookings Papers on Economic Activity*. They include Robert E. Hall, "Turnover in the Labor Force," *BPEA, 3:1972,* pp. 709–56, and "Why Is the Unemployment Rate So High at Full Employment?" *BPEA, 3:1970,* pp. 369–402; George L. Perry, "Unemployment Flows in the U.S. Labor Market," *BPEA, 2:1972,* pp. 245–78; Ralph E. Smith, Jean E. Vanski, and Charles C. Holt, "Recession and the Employment of Demographic Groups," *BPEA, 3:1974,* pp. 737–58; Martin S. Feldstein, "The Importance of Temporary Layoffs: An Empirical Analysis," *BPEA, 3:1975,* pp. 725–44; and Stephen T. Marston, "Employment Instability and High Unemployment Rates," *BPEA, 1:1976,* pp. 169–203. Other papers include Martin S. Feldstein, *Lowering the Permanent Rate of Un-*

Where the unemployed were once viewed as a stagnant pool of job seekers awaiting a business upturn, today economists describe unemployment in quite different terms. A leading contemporary macroeconomics textbook, after reviewing published evidence on unemployment dynamics, found: "the important conclusion [is] that average unemployment is not the result of a few people being unemployed for a long period of time. Rather unemployment is the result of people entering and leaving the pool of unemployment fairly often."[2] Proponents of the dynamic view interpret a large part of observed unemployment as an indication of "normal turnover" as people search for new jobs. "Problem" unemployment, according to this view, is largely confined to a few demographic groups that display pathological employment instability and leave jobs at a high rate.

The central thesis of this paper is that most unemployment, even in tight labor markets, is characterized by relatively few persons who are out of work a large part of the time. We find that "normal turnover," broadly defined, can account for only a small part of measured unemployment. Much of observed joblessness is due to prolonged periods of inability or unwillingness to locate employment. These conclusions appear to hold at all points in the business cycle for almost all demographic groups. They suggest the need for a reexamination of theoretical models and policy recommendations that feature a dynamic portrayal of unemployment.

During the last decade a major effort has been made to place the theory of unemployment on sound microeconomic foundations.[3] Theoretical

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employment, a study prepared for the use of the Joint Economic Committee, 93 Cong. 1 sess. (Government Printing Office, 1973); Hyman B. Kaitz, "Analyzing the Length of Spells of Unemployment," *Monthly Labor Review,* vol. 93 (November 1970), pp. 11–20; and Stephen W. Salant, "Search Theory and Duration Data: A Theory of Sorts," *Quarterly Journal of Economics,* vol. 91 (February 1977), pp. 39–57. Some of the issues examined in this paper are discussed in George A. Akerlof and Brian G. M. Main, "Unemployment Spells and Unemployment Experience," Special Studies Paper 123 (Board of Governors of the Federal Reserve System, Special Studies Section, October 1978).

2. Rudiger Dornbusch and Stanley Fischer, *Macroeconomics* (McGraw-Hill, 1978), p. 482.

3. The most notable early contributions appear in Edmund S. Phelps and others, *Microeconomic Foundations of Employment and Inflation Theory* (Norton, 1970). Other important papers include Martin Neil Baily, "Wages and Employment under Uncertain Demand," *Review of Economic Studies,* vol. 41 (January 1974), pp. 37–50; and Costas Azariadis, "Implicit Contracts and Underemployment Equilibria," *Journal of Political Economy,* vol. 83 (December 1975), pp. 1183–1202.

research has focused on providing explanations of unemployment that are based on individual maximization. Two primary theoretical paradigms—search theory and the theory of contracts—have evolved as explanations of why persons rationally choose to be unemployed some of the time. Both are, in an important sense, theories of voluntary unemployment. In search models, persons choose to be unemployed in order to engage in productive search. Contract theories explain why workers might choose to sign contracts that insure fixed wages but allow for uncertain employment. The search and contract paradigms provide a coherent account of large flows into and out of unemployment, but they are inconsistent with repeated long spells of joblessness. The plausibility of these theories thus depends on which characterization of unemployment is correct.

The study of unemployment dynamics also has important policy implications. Emphasis on dynamics tends to reduce the welfare significance of unemployment. The implication is that the burden is widely shared and that few individuals suffer greatly. Furthermore, turnover is sometimes seen as socially productive in facilitating an efficient matching of persons to jobs. On this basis it has frequently been argued that reducing unemployment below some "natural" rate would be a step away from economic efficiency.[4] Observed high turnover rates and brief unemployment durations have led many analysts to suggest that appropriate measures to remedy unemployment should be focused on facilitating rapid job search and increased job holding, rather than on increasing the number of available jobs. Even the case for public employment programs is frequently expressed in terms of the problems of high turnover groups.[5] Perhaps most important is the fact that the turnover view has been used to discredit earlier notions of "hard-core" unemployment. The emphasis in employment

4. Perhaps the most well-known statement of this view is found in Milton Friedman, "The Role of Monetary Policy," *American Economic Review,* vol. 58 (March 1968), pp. 1–17. Robert Hall argues that the natural unemployment rate is below the optimal level because unemployed workers generate positive externalities by reducing recruiting costs. See his "Turnover in the Labor Force."

5. A menu of policy prescriptions following from a dynamic view of the labor market may be found in Feldstein, *Lowering the Permanent Rate of Unemployment.* Policies derived from a turnover perspective are studied in Charles C. Holt and others, "Manpower Proposals for Phase III," *BPEA, 3:1971,* pp. 703–22. Baily and Tobin argue that public employment programs can be useful in addressing the problem of high turnover; see Martin Neil Baily and James Tobin, "Macroeconomic Effects of Selective Public Employment and Wage Subsidies," *BPEA, 2:1977,* pp. 511–41.

and training policy has shifted toward improvements in the operation of labor markets rather than the employment prospects of specific individuals.

The first part of the paper examines the distribution of completed spells of unemployment. The apparent brevity of spells has played a key role in supporting the dynamic view of unemployment; it has been used to suggest that, except in weak labor markets, jobs are readily available to most of the unemployed. We challenge this view by demonstrating that only a small part of all unemployment is experienced by persons who find a job after a brief spell. In 1974, for example, when the unemployment rate was relatively low, only 36 percent of unemployment was attributable to persons finding a job within three months.

Almost half of all unemployment spells end by persons leaving the labor force. In the official statistics, movements between unemployment and employment are dwarfed by transitions into and out of the labor force. The second part of the paper examines these transitions in the labor force. We find that the distinction is weak between the categories of "unemployment" and "not in the labor force." Many observed transitions appear to arise from inconsistent reporting of quite consistent behavior. Repeated spells of unemployment separated only by brief periods outside the labor force appear to be common. This strongly suggests that the mean length of individual unemployment spells greatly underestimates the length of time it takes workers to move between jobs. Indeed, we conclude that the average person unemployed at a point in time will experience almost six months of unemployment during a year. The analysis also suggests that the "reentrant" unemployment category is quite misleading. We show that a large fraction of this group is comprised of persons who have recently lost or left jobs.

The interpretation of the frequency of unemployment spells depends on whether they are widely dispersed among the population. This issue is examined in the third part of the paper, which presents evidence on the concentration of unemployment over one- and four-year horizons. Because of the pervasiveness of multiple spells, a large fraction of all unemployment is attributable to persons out of work a large part of the time. Over half of joblessness is traceable to persons out of work for more than six months in a year. The concentration of joblessness is far greater than we would expect from normal turnover. We conclude that normal turnover

accounts for at most 1.5 points, or about 25 percent of unemployment at high employment levels.

The limited importance of short spells in explaining total unemployment has important implications for current theoretical paradigms, which are explored in the fourth section. In light of the finding that most unemployment is attributable to persons with long periods of joblessness, we reevaluate the significance of theories of search and temporary layoffs. Neither appears able to explain a large part of measured unemployment. Survey data suggest that relatively few of the unemployed search in ways that would be more difficult if they were employed. Moreover, most jobs are found by persons who move directly from another job or from outside the labor force. Temporary layoffs do not appear to be of great significance. Using newly available matched tapes from the Current Population Survey (CPS), we find that only about half of those reporting layoff unemployment return to jobs in the same occupation and industry. Our calculations suggest that at a maximum only about 7 percent of all unemployment and 14 percent of unemployment among men aged 25 to 59 can be explained by temporary layoffs. The paper concludes by advancing some suggestions on sources of extensive unemployment.

The Distribution of Completed Spells of Unemployment

Recent research on unemployment has emphasized the distinction between the frequency and the duration of spells of unemployment.[6] We begin our reexamination of unemployment dynamics by analyzing the distribution function of the duration of completed unemployment spells. The estimated spell distributions provide the basis for estimating characteristics such as the mean duration of a completed spell, which have been the focus of earlier work. The distributions can also be used to calculate a different concept, the fraction of total unemployment attributable to spells of different durations. To see the importance of the difference between these measures, consider the following example. Suppose that, each week, twenty spells of unemployment began lasting one week, and one

6. This distinction is emphasized in almost all papers cited in note 1. An additional theme in some of these papers has been the short duration of unemployment spells.

spell began lasting twenty weeks. The mean duration of a completed spell of unemployment would be 1.9 weeks; but half of all unemployment would be accounted for by spells lasting twenty weeks. In a steady state, the expected length of time until a job was found, among all those unemployed at any instant, would be 9.5 weeks. Focusing on the mean duration of a completed spell would not convey this picture of the underlying unemployment experience.[7]

We calculate the distribution of completed spells using the gross-flow data of the U.S. Bureau of Labor Statistics, which is derived from monthly CPS data. Individuals are included in the CPS sample for four months, then are dropped for eight months, and return for four additional months. By matching individual survey responses in successive months, flows between labor force states can be estimated. These data underlie much of the empirical work in this paper.[8]

The procedure used to calculate the distribution of unemployment spells is briefly described here and detailed in an appendix.[9] Probabilities of withdrawal from the labor force or of job entrance—exit probabilities —within the subsequent month can be computed for persons who have been unemployed for different lengths of time. After fitting a smooth curve relating duration and exit probability, the distribution of completed spells can be derived. Given the spell distribution, the proportion of unemployment due to spells of any arbitrary duration can be evaluated. Because we work directly with the hazard function that relates exit probabilities and

7. None of the concepts considered in this paragraph corresponds to the published statistics on the duration of unemployment. These statistics provide the mean amount of unemployment already experienced by persons currently unemployed. They thus apply to interrupted rather than to completed spells. In our numerical example the mean duration for those currently unemployed would be approximately five weeks.

8. The gross-flow data have been used in several previous studies of labor market dynamics. Papers other than those previously cited include Ralph E. Smith, "A Simulation Model of the Demographic Composition of Employment, Unemployment, and Labor Force Participation," and Richard S. Toikka, William J. Scanlon, and Charles C. Holt, "Extensions of a Structural Model of the Demographic Labor Market," in Ronald G. Ehrenberg, ed., *Research in Labor Economics,* vol. 1 (JAI Press, 1977), pp. 259–303 and 305–32, respectively. Problems in the data are examined in Harvey J. Hilaski, "The Status of Research on Gross Changes in the Labor Force," *Employment and Earnings,* vol. 15 (October 1968), pp. 6–13. One of our main points, the importance of considering nonparticipation in understanding unemployment dynamics, is emphasized in much of this work.

9. The appendix is available from the authors on request.

Table 1. Characteristics of Completed Spells of Unemployment, by Demographic Group, 1974, and for All Groups, 1969 and 1975

	1974					1969	1975
	Males		*Females*			*All groups*	*All groups*
Characteristic	*16–19*	*20 and over*	*16–19*	*20 and over*	*All groups*	*All groups*	*All groups*
Completed spells of unemployment							
Proportion of spells ending within one month	0.71	0.47	0.70	0.60	0.60	0.79	0.55
Mean duration of a completed spell (months)	1.57	2.42	1.57	1.91	1.94	1.42	2.22
Proportion of spells ending in withdrawal from the labor force	0.46	0.26	0.58	0.55	0.45	0.44	0.46
Mean duration for "indomitable" job seeker (months)[a]	2.58	3.45	3.19	4.02	3.37	2.03	4.22
Proportion of unemployment[b]							
By length of spell (months)							
2 or more	0.55	0.80	0.55	0.69	0.69	0.49	0.75
3 or more	0.34	0.63	0.33	0.48	0.49	0.24	0.58
4 or more	0.23	0.48	0.21	0.34	0.36	0.12	0.45
5 or more	0.15	0.37	0.14	0.25	0.26	0.06	0.35
6 or more	0.11	0.28	0.09	0.18	0.19	0.03	0.27
Spells ending in withdrawal	0.47	0.26	0.59	0.58	0.47	0.46	0.48
Spells ending in employment, by length of spell (months)							
2 or less	0.36	0.29	0.28	0.24	0.28	0.42	0.23
3 or less	0.42	0.39	0.33	0.30	0.36	0.49	0.30

Source: Derived from authors' calculations of the distribution of unemployment spells, using gross-flow data from the Current Population Survey of the U.S. Bureau of Labor Statistics. The procedure is detailed in an appendix available from the authors upon request.

a. Calculated by finding the average duration of a completed spell, excluding the effect of withdrawal from the labor force.

b. Expressed as a fraction of the total weeks of unemployment within the specific age-sex category.

duration, our calculation of the completed spell distribution does not depend on the assumption of a steady state. Various features of the completed spell distribution are indicated in table 1. The data are presented for male and female teenagers and adults and are based on average transition probabilities in 1974. We chose 1974 because it represents the most recent year for which data are available when the economy operated at

high employment levels. The distribution of spells for the total population in 1969 and 1975 are also shown.[10]

The first two rows of figures confirm the traditional conclusion that the typical spell of unemployment is quite short. Sixty percent of all spells in 1974 were completed within a month, and the mean duration of a completed spell was slightly less than two months. In 1975, when the unemployment rate rose precipitously, the mean duration of a spell increased by about a week. The response to cyclical movements appears to be quite asymmetric. Almost 80 percent of all unemployment spells lasted less than one month in 1969 when the unemployment rate was 3.5 percent. The finding in previous work that young people have shorter mean durations of unemployment than older persons is also confirmed.

Short spells of unemployment can be the result of either easy entrance into new jobs or high rates of withdrawal from the labor force.[11] These two causes obviously have different implications. The relative importance of spells of unemployment that end in exit from the labor force is examined in the third and fourth rows of table 1. In the aggregate, 45 percent of spells ended in withdrawal in 1974. This proportion varies substantially across demographic groups, from 26 percent for men over twenty years of age to almost 60 percent for young women. The high rates of exit from the labor force indicate the inadequacy of the duration of completed spells as an indicator of the ease or difficulty of finding work. The point is well illustrated by comparing young and older men. Adult men have unemployment spells that are about 50 percent longer than those of teenagers. This differential is largely attributable to the much higher withdrawal rate of teenagers. The fourth row of the table attempts to provide a more meaningful indicator of the ease of finding a job by calculating average durations for hypothetical "indomitable" job seekers. These durations are calculated by finding the average duration of a completed spell, excluding

10. Our calculations do not appear to be sensitive to the choice of years. For example, the results for 1973, which some might regard as more typical than 1974, differ negligibly from the 1974 results. Our calculation of the duration distribution of unemployment spells, which differs from previous estimates (for example, Kaitz, "Analyzing the Length of Spells of Unemployment"), does not depend on the assumption of a constant flow into unemployment. We do not require this assumption because we work directly with the hazard function relating exit probabilities and duration.

11. This point is emphasized in Perry, "Unemployment Flows," and in Marston, "Employment Instability." Their discussions emphasize the difficulties that high rates of withdrawal created for interpreting unemployment duration statistics.

the effect of withdrawal. To do this, we define the probability of exit from unemployment as

$$P^*_{ue} = \frac{P_{ue}}{P_{ue} + P_{uu}},$$

which is the probability of finding a job, conditional on not dropping out of the labor force.[12]

A comparison of the durations for indomitable job seekers with the conventional calculations underscores the importance of withdrawal in reducing the length of unemployment spells. When the option of withdrawal from the labor force is removed, the average duration of a completed spell in 1974 rises from 1.94 to 3.37 months. Focusing only on finding a job alters the demographic duration pattern. While the mean duration of a completed spell for female teenagers, for example, is less than that for the total population, the "indomitable durations" for these two groups are very close together. Adult women have spells of average length as conventionally measured, but the calculation for the indomitable job seeker illustrates that this is *only* due to their high rates of withdrawal from the labor force.

The indomitable calculation is merely illustrative; it is not calculated from the actual experience of all persons who never leave unemployment until they obtain a job. It assumes that those who end unemployment spells by leaving the labor force would have the same probability of finding a job if they had stayed in as those who actually did stay in. To the extent that more determined persons have higher than average probabilities of finding jobs, it may thus overstate the length of time individuals take to acquire employment.

The fact that most spells are short does not imply that most unemployment is due to short spells or that most unemployed persons at any point in time will leave unemployment soon. If, for example, all the unemployed

12. The P_{ue} and P_{uu} terms are, respectively, the probabilities among the unemployed of finding a job or of remaining unemployed. Alternative treatment of withdrawal is possible. At one extreme, those who withdraw could be treated as identical to those who find jobs, so that the adjusted probability of exit from unemployment would be the measured probability of finding a job. This approach yields durations substantially longer than those reported in table 1. A further possibility is to treat only part of withdrawal as indicative of no desire for work. The probability of leaving the labor force from employment, for example, could be taken to indicate the probability of normal withdrawal from unemployment. The results that use this approach are similar to those of table 1.

had a probability of one-half of escaping unemployment in a given month, the mean duration of completed spells would be two months, but three-quarters of unemployment would be due to spells lasting more than two months. Of those unemployed at a point in time, ultimately half would have experienced more than three months of unemployment. If the probability of escape from unemployment declines with duration, the concentration of unemployment in the longer spells would be even more pronounced.

The lower half of table 1 weights spells by their length to portray the distribution of months of unemployment. The results present a different picture of unemployment from that suggested by the spell distribution. While 60 percent of spells in 1974 ended within a month, almost half of all unemployment was attributable to spells lasting at least three months—that is, of all those unemployed at any moment in 1974, half experienced three months of unemployment or more before terminating their spell.[13] The concentration of unemployment in long spells is even more pronounced, among adult men, almost 50 percent of whose unemployment is contained in spells lasting four or more months. The 1969 and 1975 figures reveal sharp cyclical changes in the concentration of unemployment. While only 3 percent of total weeks of unemployment in 1969 was found among those who experienced long-term unemployment—spells lasting six months or longer—the share of long-term unemployment rose to 27 percent in 1975.[14]

The concentration of unemployment in longer spells results from two factors. First, there is a natural tendency for most of the weight in any probability distribution to be found in its tail. Even if all unemployed persons at all points in their spells had the same probability of exiting from unemployment, a disproportionate share of unemployment would be endured by the "unlucky" group who suffered long spells. Second, the tendency toward concentration in longer spells will be exacerbated if the probability of exit from unemployment declines with duration. This occurs because the longer a spell lasts, the longer is its time until completion. Declining exit probability can occur because of either duration depen-

13. This calculation requires the assumption of a constant flow into unemployment during the year.

14. These statistics contrast sharply with published data on the distribution of interrupted spell lengths. In 1974, for example, on average 7.3 percent of the unemployed had already experienced six months of unemployment, yet almost 20 percent would do so before their unemployment spell ended.

dence or sorting. Duration dependence means that, because workers are unemployed longer periods, their exit rate falls. Sorting refers to the fact that even if individuals have exit probabilities that are constant, the longer term unemployed will be disproportionately comprised of those with a low probability of exit.

Declining exit probabilities appear to be characteristic of almost all demographic groups. In a typical month in 1974, for example, 34 percent of those unemployed between one and four weeks found jobs, while only 16 percent of those out of work more than six months did so. In figure 1 we indicate the importance of declining exit probabilities for adult women. In the upper panel we contrast the pattern of actual probabilities of exit from unemployment with the constant exit probability implied by a simple Markov model. In the lower panel we compare the distribution of months actually observed with that implied by the Markov model. The Markov model implies that 9 percent of the unemployment is found in the spells lasting six months or more. In fact, 18 percent is found in these spells. Thus both the normal tendency toward concentration and declining exit probabilities imply that the focus on the average or median spell is misleading because much of unemployment is contained in the relatively few long spells.

The proportion of unemployment attributable to spells ending in withdrawal from the labor force is shown in the third row of table 1. It is marginally greater than the proportion of spells that end in employment because withdrawal spells last slightly longer than those terminating with a job.

The final rows of the table demonstrate the unrealistic features of the view of unemployment that stresses relatively easy access to jobs after a brief spell of unemployment. For the entire population, only about one-third of unemployment is due to spells ending in a job within three months. The view that most of the unemployed are in the midst of short transitions between jobs is simply wrong. *Even during the strong 1969 peak, less than half of the unemployed found jobs within three months.*

Patterns of Transition in the Labor Force

Movements into and out of the labor force dominate all other labor market flows, at least as they are measured in the official statistics. Accord-

Figure 1. Exit Probabilities and Unemployment Distributions, Females Aged
Twenty and Over, 1974

Probability
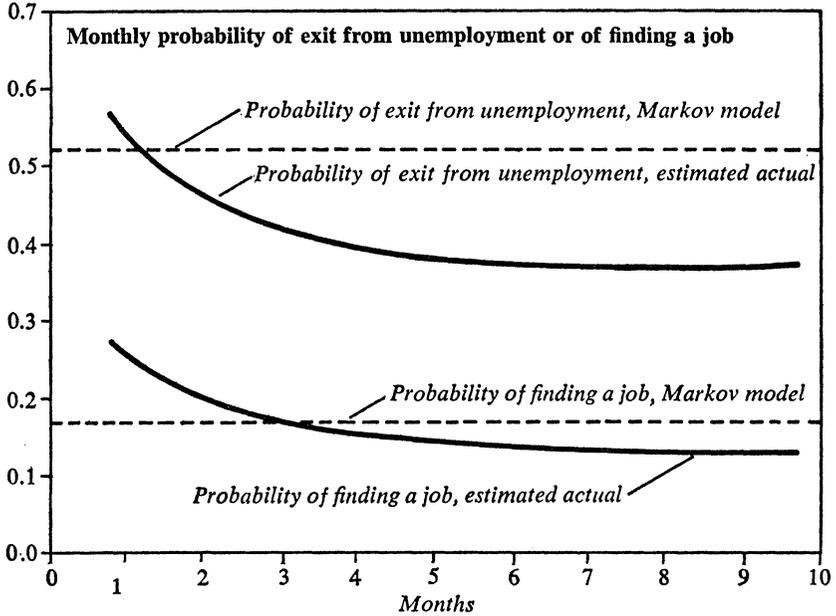
Months

Proportion of unemployment
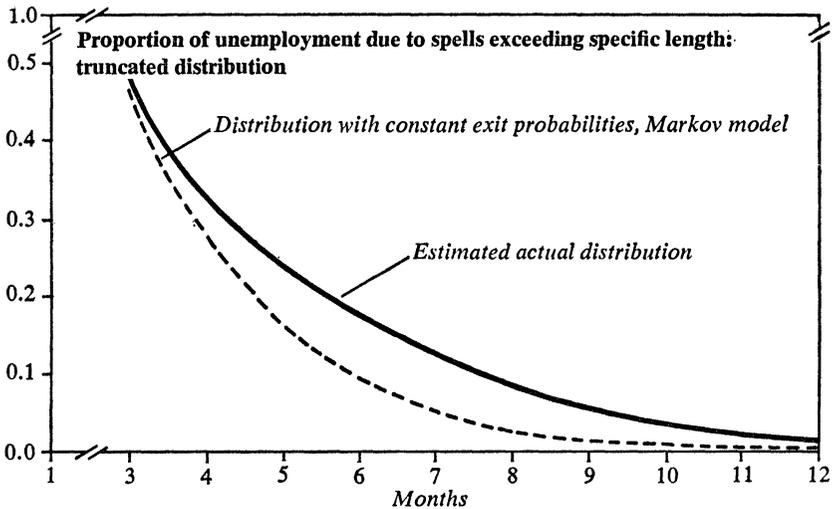
Months

Source: Same as table 1. The distribution of months of unemployment in the Markov model is based on
our constant probabilities of exit from unemployment and of finding a job.

ing to the gross-flow data from the Bureau of Labor Statistics, almost 70 percent of persons who enter employment in a given month were outside the labor force in the preceding month.[15] An equally large fraction of persons leaving employment withdraw from the labor force without ever being measured as unemployed. Most movements into and out of employment thus do not involve any measured unemployment. This surprising fact underscores the importance of understanding withdrawal from and reentry into the labor force. Moreover, the sheer size of the flows into and out of the labor force raises serious questions about the distinction between unemployed persons and those not in the labor force. In an average month between 1968 and 1976, the gross-flow data indicate 3.8 million people leaving the labor force and 4.0 million people entering. If each individual had no more than one transition annually, the monthly size of the flows would imply that each year 45 to 50 million people, or half the labor force, enter and another 45 to 50 million leave. The extent of multiple changes in classification by individuals implies that many transitions do not reflect significant changes in behavior.

Various aspects of withdrawal from the labor force are examined in table 2. In the first and second rows we contrast the monthly probability of withdrawal from employment and unemployment. The rate of withdrawal from employment might be thought to represent the "normal" rate of withdrawal due to reasons of illness or home responsibilities.[16] This rate is dwarfed by the rate of flow out of unemployment. In total, while only 3.3 percent of those employed withdraw, over 20 percent of the unemployed exit from the labor force, suggesting that only a small part of withdrawal from unemployment occurs for reasons independent of being unemployed.

The third row shows that, when asked the reasons for labor force withdrawal, nearly half of those who withdrew from unemployment in 1977

15. The importance of transitions in the labor force has been a central theme of much work using the gross-flow data. Marston emphasizes that unemployment for certain demographic groups is characterized by withdrawal from the labor force followed by reentry. See his "Employment Instability." Calculations on which parts of this section are based, which indicate the importance of transitions in the labor force, are presented in Kim B. Clark and Lawrence H. Summers, "Labor Force Transitions and Unemployment," Working Paper 277 (National Bureau of Economic Research, August 1978).

16. This argument was first advanced in Perry, "Unemployment Flows."

Table 2. Characteristics of Labor Force Withdrawal and Reentry and Selected Groups outside the Labor Force, by Demographic Group, Various Years, 1974–77

	Males		Females		
Characteristic	*16–19*	*20 and over*	*16–19*	*20 and over*	*All groups*
Withdrawal from the labor force					
Monthly probability (1974) of withdrawal					
From employment	0.102	0.013	0.133	0.045	0.033
From unemployment	0.286	0.119	0.318	0.230	0.208
Classification (1977) of those who withdrew from unemployment (proportion of withdrawals)[a]					
Persons wanting a regular job now		0.443		0.469	0.460
Discouraged workers		0.161		0.142	0.150
Selected groups (1974) outside the labor force (ratio to unemployed)[a]					
Persons wanting a regular job now	0.492	0.712	1.044	1.372	0.877
Discouraged workers	0.076	0.089	0.100	0.225	0.135
Persons outside labor force for economic reasons[b]	0.411	0.182	0.435	0.169	0.384
Proportion of withdrawals (1976) who reenter the labor force[a]					
Within 1 month	0.644	0.244	0.407	0.291	0.341
Within 2 months	0.804	0.442	0.526	0.349	0.443
Within 12 months	0.810	0.766	0.813	0.760	0.779

Sources: Data on the probability of withdrawal are annual averages for 1974 based on unpublished tabulations, adjusted by The Urban Institute as described in Jean E. Vanski, "Recession and the Employment of Demographic Groups: Adjustments to Gross Change Data," in Charles C. Holt and others, *Labor Markets, Inflation, and Manpower Policies*, final report to the U.S. Manpower Administration (Urban Institute, 1975), pp. C–1 to C–14. The remaining data on withdrawal from the labor force are annual averages for 1977 and are unpublished tabulations from matched files of the fourth and eighth (departing) groups in the Current Population Survey. The data for categories of persons not in the labor force are annual averages for 1974 and are from *Employment and Earnings*, vol. 21 (January 1975), pp. 159–60, *Employment and Training Report of the President, 1978*, p. 201, and unpublished tabulations. One- and two-month rates of reentry were calculated using the matched file of the CPS for May through August 1976. The twelve-month rate is defined as one minus the ratio of the number of persons outside the labor force who had work experience in the last year to the sum of monthly flows out of the labor force. The data are from the gross-flow data of the CPS or from unpublished tabulations. All unpublished tabulations were provided by the Bureau of Labor Statistics.

a. Expressed as a fraction of the number of withdrawals, or the number of unemployed, for the specific age-sex category.

b. Persons with work experience in the last year.

continued to profess to "want a regular job now."[17] The fourth row shows that about one-third of this group gave inability to find a job as the sole reason for not seeking work and were thus classified as discouraged workers. It is likely that many of the remaining two-thirds gave inability to find work as a reason for not searching, but they are not counted as discouraged workers under current definitions. The National Commission on Employment and Unemployment Statistics observes, "The CPS attachment tests are both arbitrary and subjective; they assume that certain reasons for not searching . . . indicate unavailability for work even if the respondent also cites reasons of discouragement. These reasons for not *looking* for work cannot necessarily be equated with not being available for work if a job were available."[18]

The data suggest that some, but not all, movements from being unemployed to being outside the labor force reflect an inability to find desirable work. While discouragement may account for up to half of the outflow from unemployment, the behavior of the remaining persons who exit requires further explanation. Existing discussions of unemployment have not focused attention on why an individual would actively search for several months, and then neither search nor respond affirmatively to the question: "Do you want a regular job now?" One explanation that has been advanced is that persons remain in the labor force for many months in order to collect unemployment insurance benefits—presumably leaving when benefits are exhausted. While unemployment compensation (and other forms of social insurance) may well have an important effect on the probability of withdrawal for those receiving benefits, it is unlikely to be a dominant explanation of the high overall rate of exit from the labor force. Less than half of the unemployed receive insurance benefits, and a large part of withdrawal occurs among young people and women who frequently are ineligible for unemployment insurance. Most importantly, the 1975 extension of the benefit period from twenty-six to sixty-five weeks had only a small effect on the overall rate of withdrawal.[19]

17. These tabulations were kindly provided by Robert McIntire of the Bureau of Labor Statistics.

18. National Commission on Employment and Unemployment Statistics, *Counting the Labor Force: Preliminary Draft Report of the National Commission on Employment and Unemployment Statistics* (January 1979), pp. 65–66.

19. Table 1 indicates that 45 percent of spells ended in labor force withdrawal in 1974, compared to 46 percent in 1975.

It seems likely, however, that some observed exit and entry flows arise from inconsistent reporting of consistent behavior.[20] Careful examination of the way in which the data are generated confirms the ambiguity and arbitrariness of the distinction between unemployment and not in the labor force. Minor variations in circumstance or the exact construction of the CPS have a great influence on the classification of persons according to this distinction. For example, being exposed to the survey appears to affect responses. In 1977 the recorded rate of unemployment was 11 percent higher among those in the first rotation group than it was in the third rotation group.[21] The rate of participation in the labor force was correspondingly lower, while the rate of employment was slightly different. This pattern, referred to as "rotation group bias," is common to all demographic groups in all years.

The ambiguous nature of the concepts used to define unemployment is further illustrated by differences in the reporting of rotation groups that emerged after a slight change in the questionnaire was introduced in 1970. In response to the Gordon Committee report, a variety of questions about the work experience, current activity, and job-seeking intentions of persons outside the labor force was added to the monthly survey in 1967. Originally only persons in the first and fifth rotation groups were asked these questions. In 1970, the procedure was changed so that only persons in the fourth and eighth groups were asked. Following the introduction of the new procedure, the pattern of reported unemployment by rotation group changed precipitously. Unemployment in the fourth and eighth (departing) rotation groups rose 7 to 9 percent, while unemployment in the first and fifth groups fell by an equal amount.

Differential reporting across rotation groups suggests that "looking for work" is an ambiguous concept. This implies that the distinction between being unemployed and out of the labor force may be arbitrary for a sig-

20. Robert Hall emphasizes the arbitrariness of the unemployment definition. He notes survey evidence suggesting that a high proportion of persons measured as outside the labor force return within a short time. His focus is on the incidence of "hard-core" unemployment rather than on the interpretation of unemployment dynamics. See his "Why Is the Unemployment Rate So High?"

21. This figure is based on unpublished tabulations provided by Morris Newman of the Bureau of Labor Statistics. Rotation group bias is examined in Barbara A. Bailar, "The Effects of Rotation Group Bias on Estimates from Panel Surveys," *Journal of the American Statistical Association,* vol. 70 (March 1975), pp. 23–30. The discussion in the text is drawn mainly from this source.

nificant number of persons. The clearest evidence of arbitrariness comes from the CPS reinterview program.[22] As part of its validation of the survey, a supervisor from the U.S. Bureau of the Census reinterviews some of those included in the sample. The reinterviews usually take place one week after the initial survey and use the regular questionnaire, modified to refer to the survey week. The responses to the interview and reinterview are then reconciled. Published results of the reinterview program suggest a substantial amount of spurious volatility. Of those measured as unemployed in the original survey, 11 percent are deemed to be employed or out of the labor force after reconciliation with the reinterview. About 13 percent of persons who are measured as unemployed in the reinterview survey are recorded as outside the labor force by the initial survey. Another 4 percent are recorded as employed. Thus the total number of misclassifications is about one-fourth the number of unemployed persons. This figure does not include persons who consistently misclassify themselves and thus do not show up as errors in the reinterview survey.

The likelihood of classification error and the extent of discouragement imply that many of those not in labor force are in situations effectively equivalent to the unemployed. It should be clear that the majority of those outside the labor force are neither classified incorrectly nor discouraged. However, even a small proportion of those outside the labor force is large relative to the number of unemployed. Some notion of the potential amount of hidden unemployment can be gleaned from the fifth through seventh rows of table 2, which indicate the size of selected groups not in the labor force as a fraction of the number unemployed.[23] The fifth row indicates that almost as many people are out of the labor force and want a job as are listed as unemployed. More women are out of the labor force and want to obtain a job than are unemployed. Additional evidence of the functional equivalence of many persons in and out of the labor force comes from the reasons persons out of the labor force give for leaving their last job. A group equal to 38 percent of the unemployed list economic reasons, such as job loss or slack work, as their reason for with-

22. This paragraph is based on data provided in Bureau of the Census, *The Current Population Survey Reinterview Program, January 1961 through December 1966,* Technical Paper 19 (GPO, 1968).

23. We use the term "hidden unemployment" to refer to persons classified as outside the labor force whose behavior is functionally equivalent to that of the unemployed. Many persons who are unemployed are functionally indistinguishable from persons who have withdrawn from the labor force.

drawal. This suggests strongly that their withdrawal reflects the available employment opportunities.

These facts, taken together, indicate that a large number of persons out of the labor force are sensitive to job opportunities, and would likely choose to work if a job were available. This implication is confirmed by the strongly procyclical movement of the labor force participation rate. It is also supported by geographic evidence suggesting a large response of participation to economic opportunities.[24]

The last three rows of the table provide more direct evidence on the subsequent behavior of those who withdraw from the labor force. If observed withdrawals do not reflect a change in willingness to accept employment, then the time spent outside the labor force should be relatively brief. Rates of reentry within one, two, and twelve months of withdrawal are presented for each demographic group. The rates for one and two months are based on newly available longitudinal data taken from the CPS in May, June, July, and August 1976. We calculated the percentage of those persons unemployed in May 1976 and outside the labor force in June, who were back in the labor force in July (one-month reentry rate) and in August (two-month reentry rate). These calculations underscore the brevity of withdrawal from the labor force for a substantial fraction of those who exit from the labor force. For the unemployed population as a whole, we find that 34 percent of those who withdrew in June 1976 reappeared in the labor force in July. By August, over 44 percent were back in the labor force.[25]

The finding that withdrawal from the labor force is followed by reentry

24. The cyclical response of participation is documented in George L. Perry, "Potential Output and Productivity," *BPEA, 1:1977,* pp. 11–47; and in Kim B. Clark and Lawrence H. Summers, "The Demographic Composition of Cyclical Variations in Employment," Technical Analysis Paper 61 (Department of Labor, Office of the Assistant Secretary for Policy, Evaluation and Research, January 1979). Geographic differences in unemployment and participation are considered in Kim B. Clark and Lawrence H. Summers, "Labor Force Participation—Timing vs. Persistence," Technical Analysis Paper 60 (Department of Labor, Office of the Assistant Secretary for Policy, Evaluation and Research, January 1979). For the purposes of this paper it is immaterial whether participation responds to the unemployment rate or to fluctuations in the real wage. While traditional analyses focus on the net difference between the number of "added" and "discouraged" workers, it is the total number of workers falling into either of these categories that is relevant here.

25. These results are not an artificial result of the summer months. Reentry rates have been estimated using the March through June 1976 matched file. In that data the one-month rate is 33.8 percent, while the two-month rate is 45.3 percent.

within a short period reinforces the conclusion that many of those classi-
fied as not in the labor force are functionally indistinguishable from the
unemployed. It is implausible that those seeking work in May and also
July or August experienced a substantive change in job-seeking intentions
in June.[26] Some of the instances of withdrawal reflect persons who become
discouraged and cease searching. Many more reflect the ambiguity and
arbitrariness inherent in any definition of labor force activity. We have
emphasized the problems with the category of not in the labor force, but
those difficulties are mirrored in the unemployed group. Although many
persons counted as unemployed are eager for work and sensitive to job
opportunities, a significant fraction of the unemployed exhibit only mar-
ginal search behavior and do not appear to be committed to finding work.

There can be little doubt that current definitions offer a misleading por-
trayal of the dynamics of the labor market. It appears that many of those
who withdraw experience a brief spell outside the labor force and a further
period of "reentrant" unemployment. The official statistics capture two
relatively brief spells of unemployment, yet the evidence presented here
suggests that the experience might be more appropriately characterized as
a single lengthy spell of unemployment.

REENTRANT UNEMPLOYMENT

One implication of the view of labor force transitions developed here is
that the category of reentrant unemployment may be quite misleading.
The welfare significance of such unemployment is frequently downgraded.
However, it appears that many reentrants have experienced only quite
brief spells outside the labor force. It may be more appropriate to view
this group as representing long-term unemployment rather than as turn-
over in the labor force or transition after a long absence.

In May 1976, a special survey on the job-search behavior of the unem-

26. It might be argued that the patterns of withdrawal and reentry found in the
summer months reflect desires of the unemployed for a one- or two-month vacation.
Because the reentry rates in the March through June matched file are similar to
those in the May through August file, the vacation argument must apply to both
spring and summer months. Although vacations from unemployment may be re-
flected to some extent in these data, they are unlikely to be a dominant explanation.
Most activities that fall under the heading of vacation can be carried out while one
is looking for work, particularly given the required frequency (once in four weeks)
of search and the kind of activities (answering want ads, talking with friends) which
constitute "looking" in the CPS.

Table 3. Characteristics of Reentrants into the Labor Force, by Demographic Group, May 1976

Characteristic[a]	Males				Females				All groups
	16–19	20–24	25–59	60 and over	16–19	20–24	25–59	60 and over	
Reentry unemployment (percent of unemployment)	28.5	24.1	13.1	28.0	25.2	39.1	31.7	33.1	25.1
Time outside the labor force for unemployed reentrants, cumulative distribution (percent of unemployed reentrants)[b]									
3 months or less	19.6	27.4	39.9	30.2	25.6	30.1	16.6	27.5	25.8
6 months or less	28.3	43.3	51.6	42.5	31.6	47.4	24.4	27.5	36.8
9 months or less	61.1	57.6	64.3	42.5	55.9	63.7	33.4	35.9	52.7
12 months or less	73.9	64.7	75.8	65.0	70.6	71.0	37.8	51.3	61.9

Source: Survey of job-search behavior of the unemployed, supplement to the May 1976 Current Population Survey.
a. Expressed as a fraction of unemployment, or of unemployed reentrants, for the specific age-sex category.
b. Time outside the labor force is calculated as the difference between the number of months since the last job and the number of months of unemployment in the current spell. Approximately 3.3 percent of reentrants failed to provide the necessary information but are included in the base figures. Another 4.4 percent had a negative value of time outside the labor force. These individuals are included in the category of three months or less.

ployed was conducted as a supplement to the CPS. This survey provides considerable information about work intentions and work experience, and for reentrants permits a rough calculation of the time spent outside the labor force before reentry. Table 3 presents data on the characteristics of reentrants. In the first row we examine the importance of reentrant unemployment for different demographic groups. The data indicate that those groups most likely to end a spell of unemployment by withdrawing from the labor force—teenagers and adult women—are important sources of reentrant unemployment.

While the demographic composition of reentrant unemployment is consistent with evidence on propensities to exit and enter presented earlier, it is important to identify how long reentrants have been out of the labor force. We present a cumulative distribution of time between the last job and the beginning of the current spell of unemployment. Because those currently unemployed may have experienced more than one such spell, this measure overstates time spent outside the labor force. Even with this conservative measure, we find that 26 percent of reentrants have been out of the labor force for three months or less and that 62 percent return within a year of exit. Similar patterns emerge across demographic groups. Except for middle-aged and older women, the proportion reporting a year or less outside the labor force lies between 65 and 75 percent.

Overall, it appears that the reentrant unemployment category is quite deceptive. A significant part of the category is comprised of persons who leave or lose jobs and record a brief period outside the labor force in the midst of a lengthy spell of unemployment. Insofar as reentrant unemployment spells are short, this reflects only the CPS classifications and says little about the ease of finding a job. The category combines persons with different experience. Some are suffering long spells of joblessness, while others have no serious employment problems. A more meaningful breakdown could be developed using the length of time since the last spell of employment as a basis for measurement. This is not possible in the regular CPS, which is unfortunate.

The Concentration of Unemployment

The arbitrariness of the distinction between unemployment and not in the labor force and the resulting frequency of multiple spells of unemploy-

ment suggest the importance of analyzing unemployment experience over
a long horizon. Retrospective data over a year or longer are less likely to
be contaminated by spurious movements into and out of the labor force.
Persons are unlikely to recall nine months later that they were unavailable
for work for a short period in the midst of a lengthy unemployment spell.
Thus retrospective durations may give a more meaningful measure of the
length of spells of joblessness. Retrospective reporting of behavior may
have the limitation, however, that it is more subject to recall error than
contemporaneous response.[27]

The annual work experience survey asks all civilian noninstitutional
respondents in the March CPS to describe their work experience and un-
employment experience in the preceding year. We have used these data
to calculate two measures of joblessness. The first is the official definition
of unemployment, the number of weeks spent seeking work or weeks on
layoff. This conventional definition is compared with a second concept in
which the number of weeks spent searching are combined with weeks out-
side the labor force for those who list "unable to find work" or "looking
for work" as the principal reason for less than a full year of work.[28] This
combined concept is referred to as "nonemployment." It is important to
note that nonemployment excludes weeks outside the labor force for those
citing illness, family responsibilities, or "other" as the principal reason for
part-year work. For these persons, nonemployment is defined as weeks of
unemployment. In both calculations, persons are excluded from the sam-
ple if they did not participate in the labor force or if they listed school
attendance as their main reason for part-year work.

The distributions of unemployment and nonemployment for selected
demographic groups are shown in table 4. Of the almost 94 million work-
ers who were in the civilian labor force and were not in school at some
point during 1974, 14.1 million, or 15 percent, experienced unemploy-
ment. The average amount of unemployment for persons with unemploy-

27. It should be noted that unemployment in the work experience survey is lower
than that implied by the monthly figures (4.9 percent versus 5.6 percent for 1974).
The discrepancy may arise because of differing definitions (that is, use of a four-
week test period in the monthly CPS) or response error. It is interesting to note that
weeks of nonemployment are similar in the two surveys. Moreover, the mean length
of a spell is significantly greater in the work experience data because the number of
spells reported is much smaller. For further details, see Clark and Summers, "Labor
Force Transitions and Unemployment."

28. The response "looking for work" applies to part-year workers; "unable to
find work" applies to nonworkers who searched for work.

ment is fifteen weeks or about three and a half months. Male teenagers have the highest number of weeks per person, while women appear to accumulate fewer weeks of unemployment within a year. There is some cyclical variation in weeks of unemployment, but most cyclical fluctuations appear to be from movements in the number of persons experiencing unemployment.

The number experiencing nonemployment differs only slightly from the number unemployed. However, weeks of joblessness are significantly greater when time outside the labor force is included. Nonemployment in 1974 averaged 19.9 weeks, or about four and a half months. This implies that the average unemployed person spent one month outside the labor force though still wanting a job. Because many persons move directly from unemployment into employment, the evidence suggests that the remainder who withdraw following unemployment will experience significant periods of hidden unemployment.

The second section of the table provides the distribution of unemployed persons and unemployed weeks. The concentration of unemployment emerges as a clear conclusion. In 1974, the 2.4 percent of the labor force who experienced more than six months of unemployment accounted for over 41 percent of all the unemployment. The 4.9 percent of the labor force who experienced more than twenty-six weeks of nonemployment accounts for two-thirds of all nonemployment during the year. Compared with the spell durations of table 1, which are estimated from the monthly CPS, a much higher fraction of unemployment and nonemployment is included in spells lasting more than fourteen weeks—73 percent of unemployment and 84 percent of nonemployment.

Some significant demographic variations occur in the distribution of weeks of unemployment. Most surprising is the large concentration of unemployment among male teenagers. The importance of extensive unemployment among male teenagers who are not in school is inconsistent with the view that youth joblessness arises from a high rate of movement between jobs with brief intervening periods of unemployment. Over half of all unemployment among this group is attributable to the 8.4 percent of its members who are unemployed for more than six months during the year. More than three-quarters of all nonemployment in this group is attributable to its members who are out of work for more than six months. The concentration of unemployment is least pronounced among adult women, which indicates their high propensity to withdraw from the labor

Table 4. Characteristics and Distribution of Unemployment and Nonemployment, by Demographic Group, 1974, and for All Groups, 1969 and 1975[a]

Characteristic or distribution	1974					1969	1975
	Males		Females				
	16–19	20 and over	16–19	20 and over	All groups	All groups	All groups
Characteristic							
Persons with labor force experience (millions)	2.8	51.3	2.5	37.4	94.0	85.2	94.5
Unemployed persons (millions)	0.9	6.8	0.9	5.5	14.1	8.5	17.4
Average weeks of unemployment per unemployed person	18.6	15.8	14.8	13.9	15.0	12.4	18.8
Nonemployed persons (millions)	0.9	6.8	0.9	5.6	14.2	8.7	...
Average weeks of nonemployment per nonemployed person	25.7	18.9	24.9	18.9	19.9	15.9	...
Distribution[b]							
Unemployed persons (percent of labor force)							
1–4 weeks	6.3	2.5	11.0	5.3	3.7	3.4	3.5
5–14 weeks	9.5	5.1	9.8	5.4	5.3	3.6	5.7
15–26 weeks	8.1	3.4	8.1	3.3	3.4	1.9	4.5
27–39 weeks	4.9	1.3	3.7	1.3	1.4	0.7	2.3
40 weeks or more	3.5	0.9	2.4	0.9	1.0	0.4	2.3

Weeks of unemployment (percent of weeks)

1–4 weeks	2.6	4.4	5.3	5.5	4.2	5.7	2.6
5–14 weeks	16.2	22.6	18.3	31.1	22.4	27.8	15.6
15–26 weeks	27.4	32.7	32.6	27.3	31.7	31.6	27.0
27–39 weeks	26.3	21.0	22.2	17.4	21.1	19.1	22.3
40 weeks or more	27.5	19.3	21.6	18.7	20.7	15.8	32.5

Nonemployed persons (percent of labor force)

1–4 weeks	4.2	2.0	6.9	3.9	2.9	...	...
5–14 weeks	7.4	4.5	7.7	4.2	4.5	...	...
15–26 weeks	5.3	3.0	4.9	2.2	2.8	...	...
27–39 weeks	7.0	2.3	5.3	2.0	2.4	...	...
40 weeks or more	9.2	1.6	11.4	2.7	2.5	...	...

Weeks of nonemployment (percent of weeks)

1–4 weeks	1.4	2.5	1.8	3.4	2.6	...	...
5–14 weeks	7.5	15.1	7.6	13.7	13.0	...	...
15–26 weeks	11.8	22.8	10.2	15.0	17.7	...	...
27–39 weeks	26.7	29.2	18.3	23.2	25.6	...	...
40 weeks or more	52.2	30.4	62.1	44.6	41.1	...	...

force. Adopting the alternative nonemployment definition makes a relatively large difference for this group.

There is a strong cyclical pattern in the distribution of weeks of unemployment. The fraction of the labor force unemployed for over twenty-six weeks more than quadrupled between 1969 and 1975, and the share of unemployment accounted for by those persons rose from 35 to 55 percent. Compared to the analysis of completed spells, the cyclical response of the distribution of weeks of unemployment in the work experience data is much less asymmetric. In terms of weeks per person or the fraction of the labor force with six months or more of unemployment, 1974 lies more or less proportionately between 1969 and 1975, which is not the case in the spell distributions of table 1.

There is another way of conveying the evidence on the concentration of unemployment that clarifies its impact and sharpens the cyclical patterns evident in the work experience data. Suppose that one asks the question, "how much unemployment will those currently unemployed experience within the year?" The answer can be obtained by using the distribution of total weeks of unemployment presented in table 4. Those data indicate, for example, that 41.8 percent of those unemployed at any particular moment in 1974 would experience more than six months of unemployment during the year. Using the nonemployment definition, 66.7 percent would report more than six months of joblessness.

The weighted averages of the distribution of weeks of unemployment are shown in table 5. The figures are to be interpreted as the average weeks of unemployment and nonemployment accumulated during the year for persons measured as unemployed in a given month.[29] In a steady state, this corresponds to estimating, for persons currently unemployed, how much unemployment they had during the preceding year or will have during the current or following year. The estimates are extremely large. Because the 1974 situation closely parallels current economic conditions, the figures suggest that persons currently unemployed will have experienced an average of almost six months of unemployment by the end of

29. This concept differs from the mean duration of unemployment for all those experiencing unemployment at some point during the year. By capturing all those unemployed at a given point in time, it weights longer spells more heavily. This is because longer spells are more likely than shorter ones to be in progress at the measurement point. An arithmetic example of the difference between mean duration of a completed spell and expected unemployment duration for the currently unemployed was given before the discussion of table 1. These issues are discussed in more detail in Salant, "Search Theory and Duration Data."

Table 5. Expected Weeks of Unemployment and Nonemployment, by Demographic Group, 1974, and for All Groups, 1969 and 1975

| | 1974 | | | | | 1969 | 1975 |
| | Males | | Females | | | | |
Category	16–19	20 and over	16–19	20 and over	All groups	All groups	All groups
Unemployment	28.5	24.8	25.8	23.0	25.2	24.1	29.3
Nonemployment	36.0	29.7	31.9	32.6	32.3	...	...

Source: Calculated as a weighted average of total weeks of unemployment and nonemployment, by duration category, as described in the text. The data are derived from table 4.

the year. The demographic differences parallel differences in the distribution of weeks of unemployment. Unemployed male teenagers experience a somewhat greater number of weeks of joblessness than average, while adults experience slightly less.

The expected number of weeks of unemployment for those currently unemployed is not very sensitive to the cycle. Even in 1969, when it is widely believed that *all* but frictional unemployment was eliminated, the average person measured as unemployed at a point in time experienced five and a half months of unemployment. In the 1975 downturn, the duration approached thirty weeks. No matter what the state of the business cycle, those who are out of work can expect to accumulate a large number of weeks of unemployment. Although the average number of weeks experienced by an unemployed individual rises moderately over the cycle, the data suggest that the primary effect of a decline in aggregate demand is a sharp increase in the incidence of long-term unemployment. Comparison of the 1969, 1974, and 1975 distributions (table 4) shows that as unemployment rises, the incidence of short-term unemployment increases only modestly, while longer term unemployment rises precipitously.

THE CONCENTRATION OF UNEMPLOYMENT OVER TIME

Analysis of annual data provides little basis for determining the relative impact of market adjustments and personal characteristics on extensive unemployment. Besides aggregate movements, long-term joblessness could arise from stochastic fluctuations in demand in diverse labor markets. Given the necessity for extensive wage adjustments and possible relocation, it is clear that shifts in demand could produce extensive periods of joblessness for those directly affected. Over long periods of time, however, adjustments are more likely to occur, and so the burden of this kind

of unemployment should be fairly equally distributed. In contrast, personal characteristics that may lead to disadvantageous experiences in one year are likely to persist into the future. A persistence of concentration over several years would lend credence to the notion that personal characteristics and not market maladjustments are at the heart of the observed extensive joblessness.

Obviously, both personal characteristics and market maladjustments are likely to be at work in a given situation. Some insight into their relative importance, however, may be obtained through analysis of longitudinal data. Because the CPS provides no data on individuals over a period longer than two years, we used the National Longitudinal Survey (NLS) of men aged 45 to 59 for the 1965–68 period to examine the concentration of unemployment. The NLS provides extensive information on the labor force experience of several thousand men aged 45 to 59. The sample of middle-aged men is chosen for analysis because of the relative importance of prime-aged men in the total labor force and because of the greater welfare significance of behavior within this group. Calculations of weeks of unemployment and nonemployment over the four-year period are presented in table 6 for the total sample and for nonwhites. The labor force concepts used in the NLS questionnaire are comparable to those in the work experience survey, and the definitions of unemployment and nonemployment in the calculations are likewise identical to those in our earlier analysis.

The job attachment of middle-aged men and the effect of the sustained economic expansion of the 1965–68 period are evident in the relatively small fraction of the sample experiencing unemployment or nonemployment. In contrast to the experience of groups who move into and out of the labor force frequently, only 21.1 percent of men aged 45 to 59 experienced unemployment during the four-year period. For those with unemployment, however, the time spent looking for work averaged 20.3 weeks. An additional week was spent outside the labor force because of inability to find work.

This apparent concentration of joblessness is examined in greater detail in the distributions, by weeks, of unemployment and nonemployment presented in the table. It is clear that an accumulation of brief periods without work is not the dominant source of total weeks of unemployment. For the sample as a whole, only about one-third of all unemployment is attributable to those with less than six months of joblessness during the four-year

Table 6. Characteristics and Distribution of Unemployment and Nonemployment of Nonwhite and All Men Aged 45 to 59, Four-Year Period, 1965–68[a]

Characteristic or distribution	Total labor force		Nonwhite labor force	
	Unemployed	Non-employed	Unemployed	Non-employed
Characteristic				
Persons experiencing unemployment or nonemployment (percent of labor force)	21.1	21.6	31.8	32.5
Weeks per person experiencing unemployment or nonemployment	20.3	21.2	22.7	23.7
Expected total weeks per person with unemployment or nonemployment at a point in time	48.0	51.4	47.3	50.1
Distribution[b]				
Unemployed or nonemployed persons (percent of labor force)				
1–14 weeks	12.0	11.8	16.2	15.8
15–26 weeks	3.8	3.9	5.8	5.6
27–50 weeks	2.9	3.1	5.4	6.1
51–70 weeks	1.3	1.6	2.4	2.8
71–110 weeks	0.7	0.9	1.7	2.0
111 weeks or more	0.2	0.3	0.1	0.2
Unemployed or nonemployed persons (percent of weeks)				
1–14 weeks	17.4	15.7	14.7	13.4
15–26 weeks	18.4	16.8	17.2	15.2
27–50 weeks	24.7	23.5	26.3	26.4
51–70 weeks	17.8	18.6	19.4	19.2
71–110 weeks	14.6	17.1	19.9	22.3
111 weeks or more	7.1	8.3	2.6	3.5

Source: National Longitudinal Survey of Work Experience of Men 45–59 Years of Age, 1965–68.
a. The total labor force over the 1965–68 period was 14.4 million; the nonwhite labor force was 1.2 million. Nonemployment is defined as weeks of unemployment plus any weeks outside the labor force if the reason given for not looking was "unable to find work."
b. Expressed as a fraction of the labor force, or the weeks of unemployment, for the specific category.

period. Almost 40 percent of unemployment can be traced to persons who
are out of work for a year or more. The distribution is slightly more con-
centrated when the nonemployment definition is used. Relatively little
difference occurs in the distributions of unemployment for nonwhites. A
smaller proportion of nonwhite unemployment is due to persons out of
work over two years, but a correspondingly larger proportion is traceable
to those unemployed between eighteen and twenty-four months.

The concentration of unemployment is most dramatically shown by
the mean amount of unemployment experienced by persons unemployed
at a point in time. The figures in the third row of the table indicate that
the average unemployed person at any point in the 1965–68 period was
out of work for almost a year during the period. These figures, it should
be emphasized, apply to prime-aged males in a boom period. There is rea-
son to expect that the duration would lengthen if the calculation were
extended to other groups or periods. This suggests to us that much of un-
employment, even in a boom period, may be the result of a semi-
permanent mismatch between the capabilities and desires of workers and
the available employment opportunities.

NORMAL TURNOVER AND EXTENSIVE UNEMPLOYMENT

A central conclusion following from the evidence thus far presented is
that normal turnover (short spells of unemployment followed by job
attainment) accounts for an insignificant proportion of measured unem-
ployment. Robert Hall suggests that normal turnover can be character-
ized by the assumptions that a person requires, on average, two months to
find the first job, but only one month to find subsequent jobs; and that
teenagers change jobs every year, young adults every two years, and adults
every four years.[30] Our calculations demonstrate that only a small propor-
tion of unemployment is attributable to such turnover. Table 4 indicates
only 4.2 percent, or about 0.25 point of measured unemployment in 1974
was due to persons out of work less than one month. Similar conclusions
emerge from the NLS data. Even taking a far broader definition than Hall
and regarding all unemployment of those out of work less than three
months as normal turnover, one can account for only about 1.5 points of
aggregate unemployment.

30. Hall, "Why Is the Unemployment Rate So High?" p. 390.

It is instructive to consider reasons for the contrast between our conclusion and Hall's suggestion that 3.3 points of unemployment can be attributed to normal turnover. The principal difference seems to be Hall's assumption that all workers have this quantum of normal turnover unemployment; in fact, most people do not suffer this much. The concentration of unemployment among some workers contrasts with the ease with which most of the labor force finds jobs. More than half of those who change jobs experience no unemployment at all. Over 70 percent of labor force entrants find jobs without being measured as unemployed.[31] The NLS reveals that only about 20 percent of mature men experienced any unemployment at all during the 1965–68 period.

OBSERVED CONCENTRATION AND PREDICTIONS FROM THE MARKOV MODEL

The concentration of unemployment and the insignificance of normal turnover evident in this section could be deceptive. As we noted earlier, even if all workers were alike and faced identical constant probabilities of moving between labor force states, one would expect that a disproportionate share of unemployment could be attributed to the relatively few "unlucky" workers who were slow to find jobs. Moreover, Hall's estimates of the frequency and duration of normal spells could be treated as statistical averages. It is therefore important to isolate the extent to which the results in tables 4 and 6 reflect genuine heterogeneity of workers. We do this by contrasting the observed distribution of weeks of unemployment with those that would be generated by Markov models in which all workers had the same constant probabilities of transition. In particular, we simulated the distribution of weeks of unemployment that would be generated both by the actual average 1974 transition probabilities and by a set of hypothetical probabilities designed to yield Hall's assumptions of normal turnover.[32] The salient features of actual and simulated distributions of weeks of unemployment during the year are shown in table 7.

The results demonstrate that the actual distribution of weeks of unemployment is much more concentrated than either Markov model would

31. This figure is a 1968–76 average from the gross-flow data. Little yearly or demographic variation occurs.

32. Hall's turnover assumptions imply for teenagers, for example, a weekly probability of 1/4 of moving out of unemployment and a weekly probability of 1/52 of exiting from employment.

Table 7. Alternative Estimates of the Distribution of Unemployed Persons and of Weeks of Unemployment, by Demographic Group, 1974

	Males		Females		
Distribution[a]	*16–19*	*20 and over*	*16–19*	*20 and over*	*All groups*
Unemployed persons (percent of unemployed)					
Actual	32.4	13.2	35.0	14.8	15.0
Markov model					
Actual probabilities	57.0	16.2	41.6	13.6	23.3
Normal turnover					
probabilities	66.2	24.5	66.2	24.5	28.5
Unemployment due to persons with three months of unemployment or less (percent of weeks of unemployment)					
Actual	18.8	27.0	23.6	36.6	26.6
Markov model					
Actual probabilities	66.1	58.4	70.6	60.6	61.3
Normal turnover					
probabilities	75.0	83.9	75.0	83.9	81.4
Unemployment due to persons with more than six months of unemployment (percent of weeks of unemployment)					
Actual	53.8	40.3	43.8	36.1	41.8
Markov model					
Actual probabilities	3.5	8.7	4.1	8.3	8.0
Normal turnover					
probabilities	1.4	0.3	1.4	0.3	0.6

Sources: Actual distributions are calculated from the results in table 4. The other distributions are based on simulations of a Markov model in which all workers had the same, constant transition probabilities. One simulation used actual 1974 transition probabilities, and the other used a hypothetical set of probabilities designed to yield the normal turnover assumptions in Robert E. Hall, "Why Is the Unemployment Rate So High at Full Employment?" *BPEA, 3:1970*, p. 390.

a. Expressed as a fraction of the number of unemployed, or the weeks of unemployment, for the specific age-sex category.

predict. Consider, for example, the group of males aged 20 and over. Only 27 percent of all unemployment in this group can be traced to persons out of work for less than three months. This may be contrasted with the predictions of 58.4 percent and 83.9 percent, respectively, from actual and "normal turnover" Markov models. The differences in the proportion of prolonged unemployment are even more dramatic. Fully 40.0 percent of

Table 8. Number of Spells, Weeks Employed, and Weeks outside the Labor Force for Persons with More Than Twenty-Six Weeks of Unemployment, by Demographic Group, 1974

	Males		Females		
Characteristic	*16–19*	*20 and over*	*16–19*	*20 and over*	*All groups*
Average number of spells of unemployment[a]	2.0	1.7	1.6	1.4	1.6
Average weeks employed	10.9	11.8	9.4	10.4	11.0
Average weeks outside the labor force	3.4	3.3	5.1	4.2	3.7

Source: March 1975 work experience survey, supplement to the Current Population Survey.
a. Calculation of the average number of spells assumes those with three or more had 3.5 spells.

unemployment is experienced by men who are out of work over six months, compared to 0.3 percent predicted by the normal turnover model. The results are quite similar for other demographic groups. These results, if anything, underestimate the importance of heterogeneity. Similar calculations using a longer horizon provide much more striking evidence. Almost 40 percent of unemployment among men shown in table 6 was attributable to persons out of work for more than fifty weeks. If the experiences of those men were characterized by the average transition probabilities of men aged 25 to 59 in 1968, only 0.2 percent of unemployment over a four-year period would have been attributable to this group! It seems clear, then, that a large part of unemployment cannot be traced to normal turnover, regardless of how elastically it is defined. An explanation of the extensive unemployment of a small fraction of the population is required.

The insignificance of normal turnover in accounting for measured unemployment need not imply that frequent movement between jobs with brief intervening spells of unemployment is unimportant. Extensive unemployment over a year could arise from the tendency of certain members of the labor force to move from one unsatisfactory job to another, as proponents of a turnover view of unemployment have claimed.[33] Some insight into the importance of the "frequent job exit—brief unemployment spell" characterization of the unemployment problem can be gleaned from table 8. The table presents data from the March 1975 work experience survey, which show that those with more than twenty-six weeks of unemployment

33. Hall states this view clearly: "The real problem is that many workers have frequent short spells of unemployment." See his "Why Is the Unemployment Rate So High?" p. 387.

spent about nine months unemployed, and averaged twenty-three weeks per spell. While the observed brevity of employment may be an indication of serious problems of instability, it is clear that extensive unemployment does not arise through an accumulation of brief spells of unemployment between jobs.

Alternative Explanations of Unemployment

The preceding tabulations suggest that most unemployment is the result of a relatively small part of the population suffering repeated, extended spells. The unemployment rate is high even at full employment because a few people are out of work for much of the year. The dominant theoretical views of unemployment fail to explain this concentration that characterizes actual experience in labor markets.

According to these theoretical views, unemployment is understood as an optimal response to economic conditions. In search theory, persons choose to be unemployed in order to seek better job opportunities. In contract theory, they enter into implicit or explicit understandings with employers under which temporary layoffs are the optimal response to variations in demand. These views do not recognize equilibrium involuntary unemployment. They exclude the possibility of the labor market failing to "clear" over sustained periods. Such models may explain a great deal of the observed labor market behavior and may fit the experience of many, perhaps even most, workers. But it is not plausible that efficient response, either to the uncertainty of what jobs may be found or to variations in demand, could lead to arrangements in which persons repeatedly spend a large part of the year involuntarily without jobs. In the next part of the paper we examine survey evidence on the behavior of the unemployed to assess the significance of temporary layoffs and of search models in accounting for unemployment.

TEMPORARY LAYOFFS

Temporary layoffs have played a central role in recent theoretical and empirical research on unemployment.[34] Moreover, the theory of contracts,

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34. Theoretical developments emphasizing the importance of temporary layoffs include Baily, "Wages and Employment under Uncertain Demand," and Azariadis,

which underlies research on temporary layoffs, has contributed to our understanding of the persistence of inflation and the response of quantities rather than prices to aggregate demand. Models in which layoffs emerge within an optimizing framework assume essentially permanent attachment of workers to firms. The development of a long-term attachment to a firm is usually explained in terms of job-specific human capital. For a variety of reasons, including risk aversion, unemployment insurance, and difficulties in enforcing contracts, wages are fixed over the contract period and firms respond to fluctuations in demand by laying off workers.

The May 1976 supplement to the CPS is the first nationwide survey of the job-search methods that are used by the unemployed. Because it has been matched to the regular CPS for May through August 1976, we can analyze the subsequent labor market experience of those on layoff. Before examining the results, it is useful to clarify the distinction between the official terminology of the Bureau of Labor Statistics and the popular lexicon. In the CPS, workers on layoff are divided into two categories—temporary and indefinite. Temporary layoff status is reserved for those with a job to which they expect to return within thirty days. Other workers on layoff who indicate a possibility of returning to their original employers sometime after thirty days are placed in the indefinite category. Most persons on layoff are classified in the second group. Following previous research, we use the term "temporary layoff" to refer to both official definitions.

The results of the analysis for the total population and for men aged 25 to 59 are presented in table 9. Temporary layoffs do not account for a large fraction of total unemployment and are not a dominant source of job loss. In 1976, they accounted for only 13 percent of total unemployment. This figure would be even lower if 1976 had not been a year of high unemployment. Among middle-aged men, only one-fourth of the unem-

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"Implicit Contracts." Barro has pointed out a severe theoretical difficulty in Robert J. Barro, "Long-Term Contracting, Sticky Prices, and Monetary Policy," *Journal of Monetary Economics,* vol. 3 (July 1977), pp. 305–16. He notes that the set of admissible contracts is unduly restricted by Baily and Azariadis. He argues that an optimal contract would mandate a fixed level of employment. Empirical studies include Martin Feldstein, "The Effect of Unemployment Insurance on Temporary Layoff Unemployment," *American Economic Review,* vol. 68 (December 1978), pp. 834–46; James L. Medoff, "Layoffs and Alternatives under Trade Unions in U.S. Manufacturing," *American Economic Review,* vol. 69 (June 1979), pp. 380–95; and David M. Lilien, "The Cyclical Pattern of Temporary Layoffs in United States Manufacturing" (Ph.D. dissertation, Massachusetts Institute of Technology, 1977).

Table 9. Unemployment due to Temporary Layoffs and Reemployment and Search
Intensity of All Unemployed Persons and Persons on Temporary Layoff, Males Aged
25 to 59 and Total Population, 1976[a]

	Males, 25–59		Total population	
Characteristic	*Temporary layoffs*	*Total unemployed*	*Temporary layoffs*	*Total unemployed*
Unemployment[b]				
Proportion of unemployment	0.25	1.00	0.13	1.00
Proportion of job losers	0.42	...	0.32	...
Reemployment[b]				
In same industry	0.68	0.55	0.66	0.36
In same occupation	0.68	0.47	0.66	0.33
In same industry, occupation	0.55	0.38	0.51	0.24
Intensity of search				
Average hours of search per month	23.3	33.9	18.3	24.9
Average number of search methods used	2.6	3.6	2.5	3.4

Sources: Survey of job-search behavior of the unemployed, supplement to the May 1976 Current Popu-
lation Survey, and matched May through August 1976 Current Population Survey.
a. The category of temporary layoffs includes both persons expecting to be recalled within thirty days
and indefinite layoffs. Industry and occupation are measured at the two-digit level used by the U.S. Bureau
of the Census. Those who did not search are assigned zero hours and zero methods of search. Search in-
tensity data are tabulated for those with four or more weeks of unemployment.
b. Expressed as a fraction of the specific category.

ployed were on layoff, and over three-quarters of those on layoff did not
expect to return to their original job within thirty days. The data further
reveal that persons on layoff are a minority of those losing jobs because
only 32 percent of all workers and 42 percent of men aged 25 to 59 who
lost their jobs in 1976 were on layoff.

The significance of temporary layoffs as a distinct category of unem-
ployment depends on whether a high proportion of those on layoff return
to their original employer. We have no direct evidence on this question,
but some inferences can be drawn from available data.

If some of those on layoff in fact do not return, then the fraction of
unemployment due to "true" temporary layoffs is actually smaller than the
calculations above suggest. Unfortunately, the CPS does not ask the newly
employed whether they have previous work experience at the same firm.
The survey does inquire, however, about the occupation and industry of
workers and persons who are unemployed. The third through fifth rows

of table 9 report the proportion of workers returning to the same industry and occupation. We estimate that 51 percent of persons on temporary layoff return to jobs in the same industry and occupation. This fraction is double the corresponding proportion for all unemployed; an approximately equal number of persons change industry and occupation. Almost one-sixth of those on layoff change both industry and occupation.

It seems reasonable to infer that persons who change industry or occupation do not return to their original jobs. The data suggest, therefore, that no more than one-half of those on temporary or indefinite layoff could possibly be returning to their original jobs. If observed reemployment is temporary, and many of those changing industry and occupation eventually return to the original employer, 51 percent could be an underestimate. By August, the proportion of persons on temporary layoff who had returned to their original industry and occupation was higher than it was in June. The evidence suggests that the return rate to the original industry and occupation may be nearer 60 to 65 percent than the 50 percent we estimate without "stopgap" jobs.

On the other hand, two further considerations point toward lower estimates of return rates. First, many workers undoubtedly return to different jobs in the same occupation and industry. Second, the proportion returning to the same industry and occupation is calculated on the basis of persons who return to a job before dropping out of the sample.[35] Thus persons with longer spells of unemployment and those who are recorded as withdrawing from the labor force (56 percent of the sample) are excluded. It is reasonable to expect a smaller proportion of those with long spells of unemployment to return to the same job. This supposition is supported by the finding that 51 percent of those on temporary layoff in May who were employed in June returned to the same industry and occupation, while only 29 percent of persons who first became reemployed in August did so.[36]

These figures seem to contradict previously published results suggesting

35. Persons in the third rotation group in May can only be monitored into June, when they leave the sample. Hence, if they do not become reemployed in June, they are excluded from the calculation.

36. Coding errors in the industry and occupation data lead to an offsetting bias. It is difficult to assess its magnitude. Comparison of reported occupations and industries in successive months for the unemployed suggests that coding errors could bias the 50 percent estimate by up to 20 percentage points. Even this bias is probably less important than those noted in the text.

that between 66 and 85 percent of workers on layoff return to their original employer.[37] There is an important difference that might well account for much of the disparity. Previous studies have estimated the proportion of workers on layoff who return to the original employer (recall rate) by contrasting rehire and layoff rates in manufacturing from establishment data. That calculation will differ from the CPS results presented here if very short layoff durations coincide with a high probability of recall. In this case, the recall rate estimated from establishment data is likely to overstate the fraction of those currently on layoff who will return because it weights all spells of unemployment equally. If most periods of layoff are short, which seems likely, and are followed by workers returning to their original jobs, but some of those periods are lengthy and are followed by entrance into new employment, a high recall rate can coincide with a small proportion of those currently on layoff returning to the original employer. It is the latter concept, however, which is relevant for determining the fraction of unemployment attributable to returning workers.

We further examine the job attachment of persons on layoff by contrasting their search behavior with the search behavior of other unemployed persons. The May 1976 job-search survey provides several measures of the search intensity of the unemployed. Persons on temporary layoff are contrasted with all unemployed persons in table 9. Whether measured in terms of hours per month or number of methods used, the results suggest that persons on layoff search almost as much as unemployed persons in general.[38] It is doubtful that this is traceable to any requirement of the unemployment insurance system. Under many state laws persons on layoff collecting unemployment insurance are not required to search for work. Moreover, many of the search methods used by persons on layoff are not mandated by the unemployment insurance system. Almost 32 percent answer want ads and over 52 percent report that they have talked with friends and relatives about jobs. Less than half register with the state employment service, which is surely the most credible way to comply with a search requirement of the unemployment insurance system.

37. These figures may be found in Medoff, "Layoffs and Alternatives," and Lilien, "Cyclical Pattern of Temporary Layoffs."

38. These conclusions are similar to the ones reached in Thomas F. Bradshaw and Janet L. Scholl, "The Extent of Job Search during Layoff," *BPEA*, 2:1976, pp. 515–24. At the time Bradshaw and Scholl were writing, no nationwide sample of the search behavior of the unemployed was available.

These findings, together with the results on return rates, indicate that the temporary layoff model can account for no more than a small fraction of observed unemployment. Only 13 percent of the unemployed in May 1976 were on layoff. If more than half of this group did not return to their original jobs, no more than 7 percent of unemployment, or 0.5 point of the aggregate unemployment rate, is attributable to temporary layoffs. During periods when the unemployment rate is changing rapidly, layoffs are more important: between 1974 and 1975, for example, layoffs accounted for about 30 percent of the increase in unemployment. Once unemployment stabilized, the importance of layoffs diminished. Between 1974 and 1976, for example, the overall unemployment rate rose by 2.1 points, of which only 13.3 percent represented layoffs. All the increase in persons on layoff was accounted for by the indefinite category; the number on layoff officially classified as "temporary" actually declined from 1974 to 1976. Because a significant number of persons on layoff do not return to their original employer, no more than 7 to 8 percent of the increase in unemployment between 1974 and 1976 can be explained by layoffs. Furthermore, no more than 15 percent of the sharp 1974–75 downturn can be accurately described by the layoff model.

The theory of contracts has raised important questions about the unemployment insurance system. However, it does not appear that the theory can account for a large part of measured unemployment. Only a small fraction of unemployment is due to those grouped in the official layoff category, and an even smaller fraction is due to those on layoff who actually return to their original jobs. The paradigm is not completely accurate even for persons who return because they appear to search seriously for alternative employment. It seems clear that while job attachment and implicit contracts may be pervasive and important for other purposes, explanations for most unemployment must be sought elsewhere.

SEARCH THEORY

Another explanation of unemployment is offered by models of job search.[39] According to these models, individuals become unemployed

39. The search literature originated in George J. Stigler, "The Economics of Information," *Journal of Political Economy,* vol. 69 (June 1961), pp. 213–25. Applications of the model to explain cyclical fluctuations in unemployment include Dale T. Mortensen, "Job Search, the Duration of Unemployment, and the Phillips Curve,"

when the return to search exceeds the return to remaining employed or
out of the labor force. Unemployed persons continue to search until they
receive an offer whose value exceeds the return to continued search or
until they decide that the net return to search is negative and withdraw
from the labor force. The theory thus offers an explanation of both the
flow into and the duration of unemployment.

In search models, time spent searching is a form of investment. Per-
sons invest by forgoing income and becoming or remaining unemployed in
order to find jobs with higher wages. The credibility of the theory depends
on persons receiving a reasonable return on their investment in search
time. The return that is received depends critically on the expected dura-
tion of the person's next job. If job tenure is low, the return to search is
also likely to be low because higher wages will be received only briefly.
Even if tenure is expected to be lengthy, individuals may anticipate that
wage differentials will not persist in a competitive market.

In table 10 we report estimates of the mean duration of completed
spells of employment and completed spells in a given job for various de-
mographic groups.[40] The estimates are calculated using the gross-flow data
from 1968 to 1976 and a special 1961 survey of job changers by the
Bureau of Labor Statistics. The duration of a completed spell of employ-
ment has been calculated as the reciprocal of the monthly probability of
exiting from employment. To find the mean duration of completed job
lengths, it is necessary to take account of persons who move from one job

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American Economic Review, vol. 60 (December 1970), pp. 847–62; and Armen A.
Alchian, "Information Costs, Pricing, and Resource Unemployment," in Phelps, ed.,
Microeconomic Foundations, pp. 27–52. Empirical tests are presented in Nicholas
M. Kiefer and George R. Neumann, "An Empirical Job-Search Model, with a Test
of the Constant Reservation-Wage Hypothesis," *Journal of Political Economy,* vol.
87 (February 1979), pp. 89–107; and John M. Barron and Wesley Mellow, "Search
Effort in the Labor Market, *Journal of Human Resources* (forthcoming). An excel-
lent survey of the literature is contained in Steven A. Lippman and John J. McCall,
"The Economics of Job Search: A Survey," *Economic Inquiry,* vol. 14 (June 1976),
pp. 155–89. An extensive critique of search theory that first made many of the points
referred to here is included in Robert J. Gordon, "The Welfare Cost of Higher Un-
employment," *BPEA, 1:1973,* pp. 133–95.

40. Because the probability of leaving a job declines sharply with tenure, the
mean duration of a completed spell is much less than average tenure for those cur-
rently on a job. The distribution and determinants of job tenure are discussed in
Richard B. Freeman, "The Exit-Voice Tradeoff in the Labor Market: Unionism, Job
Tenure, Quits, and Separations," Working Paper 242 (National Bureau of Economic
Research, December 1978).

Table 10. Duration in Employment and Duration in a Job, by Demographic Group[a]

Characteristic	Males			Females			All groups
	16–19	25–59	Total	16–19	25–59	Total	
Employment duration							
Probability of leaving employment							
By leaving the labor force	0.116	0.004	0.020	0.143	0.044	0.057	0.034
By becoming unemployed	0.043	0.011	0.015	0.030	0.011	0.013	0.014
Duration in employment (months)	6.3	66.7	28.6	5.8	18.2	14.3	20.8
Job duration							
Proportion of job changers experiencing no unemployment	0.560	0.542	0.528	0.560	0.542	0.565	0.540
Duration in a job (months)	2.8	30.5	13.5	2.6	8.3	6.2	9.6

Sources: The probabilities are estimated from 1968–76 gross-flow data from the Current Population Survey, with adjustments as described in Vanski, "Recession and the Employment of Demographic Groups." The data on job changers experiencing no unemployment are taken from the 1961 survey of job mobility conducted by the Bureau of the Census for the Bureau of Labor Statistics. The data are reported in Gertrude Bancroft and Stuart Garfinkle, "Job Mobility in 1961," *Monthly Labor Review*, vol. 86 (August 1963), pp. 897–906, especially tables 1, 4, and 6. The data on job changers are not available by sex for the specific age groups presented in this table. For men and women aged 25 to 59, data on all persons aged 25 and over are used, and for male and female teenagers aged 16 to 19, all teenagers aged 14 to 19. Applying the same fraction to men and women may lead to a slight understatement of the job duration for women and a slight overstatement for men.

a. Duration in employment is defined as the reciprocal of the sum of the probabilities of leaving employment. Duration in a job is the duration in employment multiplied by one minus the proportion of persons changing jobs with no unemployment.

to another without experiencing unemployment. The survey of job chang-
ers includes estimates of the proportion of job changers who experience no
unemployment. Because the probability of leaving a job is the sum of the
probability of job change without unemployment and the probability of
leaving employment, it is possible to calculate the probability of leaving
a job and its reciprocal, average duration in a job.[41] The average dura-
tions are influenced by noneconomic factors such as pregnancy leave,
long illness, and return to school. And those durations do not distinguish
layoffs with recall from other types of job separation.

The results indicate the implausibility of the search model as an ex-
planation of why people become or remain unemployed. Adult men have
the largest potential gains from search because their jobs last longest. Yet
they are the group with the lowest unemployment rate. For all workers, the
average job lasts less than ten months. For teenagers, the figure is slightly
less than three months. A high proportion of persons who change jobs
experience no unemployment. The proportion averages 54.0 percent for
the total population, and 56.5 percent for women. The duration of the
average completed spell of employment, as opposed to time at a single
job, is also quite short, lasting twenty-one months. Thus the payoff to
investment in search is likely to be low even if high wages are "portable"
between jobs.

The notion that being unemployed in order to search is a useful activity
that characterizes an efficient labor market is also unsupported by evi-
dence. The most important problem is that the majority of the unemployed
search in ways that would be possible if they held a job. According to the
1976 job-search survey, the average person unemployed for four weeks or
more devoted only seventeen hours a month to search.[42] Furthermore,
most jobs are found through channels that do not require the person
seeking a job to be unemployed. A January 1973 special survey of suc-
cessful job seekers conducted as a supplement to the CPS found that 26
percent had obtained a job through friends or relatives and 14 percent

41. These calculations require a steady state assumption to be strictly accurate.
For this reason we used average transition probabilities over the 1968–76 period.
The 1961 survey of job changers provides age-specific data on the number of people
who changed jobs at least once, rather than the total number of job changes. The
calculations in table 10 are thus likely to overstate somewhat the length of a com-
pleted job spell. The sampling interval of one month in the gross-flow data also leads
to overestimates of spell lengths.

42. Carl Rosenfeld, "Job Search of the Unemployed, May 1976," *Monthly Labor
Review* (November 1977), p. 41.

had used want ads, while only 35 percent had found a job through direct application to employers.[43]

The feasibility of on-the-job search is supported by the finding noted above—that is, half of job changes occur without intervening unemployment. This finding creates two difficulties for search theories of unemployment. First, it calls into question the theory's explanation of the flow into unemployment: if workers can search for a new job while continuing to work, there is no reason for them to quit for that purpose. Second, if most jobs last only a short time, and workers can search on the job, there is little reason for a worker to reject job offers. Such a worker can continue searching for more attractive offers while working at an inferior job. In fact, it appears that most unemployed accept the first job offer they receive. According to the May 1976 survey, about 10 percent reported that they had rejected a job offer. Simple explanations based on the search model, which suggest that the unemployed refuse offers until a sufficiently attractive one comes along, do not appear capable of explaining continuing unemployment.

More recent developments in search theory have attempted to account for the dearth of offers received by the unemployed.[44] These models characterize search as a sequential process in which the unemployed seek successively less attractive potential employers, accepting the first offer they receive. This version of the theory explains why unemployed workers report that they have received no job offers. It does not afford an explanation of why workers do not accept a relatively unattractive job and continue to look for a more attractive one. Even ignoring this difficulty, the sequential search model does not offer a reasonable explanation for prolonged unemployment. Given the brevity of tenure in most jobs, unemployed workers could raise their total return from search by looking for less attractive jobs from the beginning.

Concentrated Unemployment: Explanations and Implications

The discussion above demonstrates that unemployment is high because a relatively small number of workers are out of work a large part of the

43. Bureau of Labor Statistics, *Jobseeking Methods Used by American Workers,* Bulletin 1886 (GPO, 1975), p. 7.

44. See, for example, S. C. Salop, "Systematic Job Search and Unemployment," *Review of Economic Studies,* vol. 40 (April 1973), pp. 191–201.

time, although the remainder of the labor market clears. Even over fairly
long periods, the burden of unemployment is highly concentrated. An
individual who is currently unemployed can expect to be unemployed six
months out of the next twelve, and one year out of the next four years.
Conventional search and layoff theories appear to be incapable of explain-
ing this type of unemployment. We now briefly consider some potential
explanations of extensive unemployment. The purpose of this analysis is
to suggest a number of issues requiring further research rather than to
provide final answers.

Although our main focus in this section is on the noncyclical aspects of
unemployment, a satisfying explanation of extensive unemployment must
also shed light on its fluctuations. The number of persons with more than
six months of unemployment rose more than fourfold between 1969 and
1975. Most cyclical variation in unemployment is attributable to changes
in the number of persons experiencing extensive unemployment. Little
can be explained by changes in the number of persons suffering only a
small amount of unemployment during the year. Thus an explanation of
extensive unemployment that rests entirely on the characteristics of a
subset of the labor force cannot be complete. Such a theory would explain
little about the observed fluctuations in the unemployment rate.

The existence of a minimum wage floor is sometimes blamed for exten-
sive unemployment. With rigid wages, the demand for labor could be
expected to fall short of the number of available workers at the prevailing
wage. While the logic of this explanation is impeccable, its empirical rele-
vance is limited at best. We find concentrated unemployment among adult
males, almost none of whom work for near the minimum wage when em-
ployed. Studies of changes in minimum wages have typically found rela-
tively small unemployment effects.[45] At a time when the minimum wage
was $2.30 only 17 percent of the respondents in the May 1976 job-search
survey who had been unemployed more than fifteen weeks reported a
wage on their last job between $2.00 and $2.50. Another 10 percent were
found in the $2.50 to $3.00 range. It seems unlikely, therefore, that a re-
duction in the minimum wage could have a direct effect on most of the

45. For an analysis along these lines see Edward M. Gramlich, "Impact of Min-
imum Wages on Other Wages, Employment, and Family Incomes," *BPEA, 2:1976*,
pp. 409–51. Enforcement of the minimum wage is examined in Orley Ashenfelter
and Robert Smith, "Compliance with the Minimum Wage Law," Technical Analysis
Paper 19A (Department of Labor, Office of the Assistant Secretary for Policy, Eval-
uation and Research, April 1974).

long-term unemployed. The statutory level is too low to affect most persons. Even for those who are potentially covered, a large (licit and illicit) uncovered sector exists in which jobs paying less than the minimum wage can be found.

Welfare payments and unemployment insurance are also candidates for explaining long-term joblessness. In an earlier study, using state data on registrants in Aid to Families with Dependent Children and food stamp programs, we found that welfare registration programs have raised measured unemployment by about 0.5 to 0.8 percentage point. We also estimated that the existence of unemployment insurance almost doubles the number of unemployment spells lasting more than three months.[46]

These results should be viewed with caution. An unknown portion of these influences on measured unemployment merely reflects reporting effects.[47] As we emphasized above, nonemployment rather than measured unemployment is the concept that deserves attention. Furthermore, the concentration of unemployment was evident in 1969, before enactment of work-registration requirements for welfare recipients and before the extension of the duration and coverage of unemployment insurance benefits. Finally, cyclical fluctuations in the incidence of extensive unemployment cannot be traced to changes in regulations concerning social insurance.

Extensive unemployment is sometimes explained as a consequence of "high reservation wages" by the unemployed. Because their reservation wages are close to their market wages, the unemployed "want to be" out of work a significant portion of the time. They show up as unemployed rather than as outside the labor force because they are available for work at some wage and frequently make casual attempts to see whether they can obtain it. This explanation of unemployment could account for some of the behavior described above. Frequent movements between being unemployed and being outside the labor force would be expected of

46. These estimates are based on an analysis of transitions out of unemployment, using the May through August 1976 matched file. It should be noted that the estimates are partial equilibrium calculations. A general elimination of the unemployment insurance system is likely to have different effects than would elimination for a single person.

47. For a discussion and empirical analysis of reporting effects, see Kim B. Clark and Lawrence H. Summers, "Social Insurance, Unemployment and Labor Force Participation" (Department of Labor, Office of the Assistant Secretary for Policy, Evaluation and Research, forthcoming).

those whose reservation and market wages were nearly equal. One would also expect cyclical upgrading of wages and job opportunities to have large influences on these persons. Finally, the near-equality of market and reservation wages would explain casual search because it implies that joblessness is not costly.

This explanation, if correct, has important implications for macroeconomic policy. It suggests that the cost of unemployment to individuals may be quite small. A person whose market wage is equal to his reservation wage is indifferent about whether he is employed. Even if this were true, his unemployment would be socially costly. As Feldstein and Gordon have emphasized, taxes and social insurance drive a large wedge between the private and social costs of unemployment.[48] What direct evidence exists suggests that reservation wages are near market wages. The May 1976 job-search survey found that only 36 percent of those who seek jobs reported reservation wages below their previous wages. Almost a fourth reported reservation wages more than 20 percent in excess of their last wages. These results were obtained when overall unemployment was high. One would expect to find even greater excesses of reservation wages over market wages during an average period.

It is difficult to explain why so many persons should have such high reservation wages. For persons with productive or enjoyable home opportunities, high reservation wages are easy to comprehend. Robert Hall has noted that 30 percent of the unemployed who were not in school reported keeping house as their major activity during the survey week, and 18 percent listed retirement or "other."[49] It is more difficult to understand the high reservation wages of the 52 percent for whom being on layoff or looking for work was the major activity. To some extent, they may result from the direct and indirect effects of social insurance and minimum wages. By subsidizing unemployment, social insurance measures raise reservation wages. Minimum wages, by affecting the social definition of a "decent job," may increase reservation wages. This effect will be especially important if workers define "decent" or minimally adequate wages in terms of the amounts others are receiving. Similarly, reservation wages may be

48. Martin Feldstein, "The Private and Social Costs of Unemployment, *American Economic Review,* vol. 68 (May 1978, *Papers and Proceedings, 1977*), pp. 155–58; see also Gordon, "The Welfare Cost of Higher Unemployment."

49. See Hall, "The Nature and Measurement of Unemployment," Working Paper 252 (National Bureau of Economic Research, July 1978), p. 21.

high if some workers are unwilling to accept pay cuts under almost any circumstances.

While the high-reservation-wage view explains certain aspects of the behavior described in this paper, it does encounter several difficulties. First, despite using a variety of specifications, we were unable to relate successfully the probability of finding a job within a month to the ratio of the reservation wage to the market wage of an individual. Second, substantial and persistent regional differences in extensive unemployment cannot be explained within this framework. Why should the proportion of persons whose reservation wages are close to their market wages differ substantially across regions?

Extensive unemployment could arise from stochastic demand shocks.[50] Suppose that the economy is comprised of many labor markets, separated either geographically or by occupation and industry. Stochastic demand shocks occur constantly in these markets. If wages were sluggish when negative shocks occurred, some labor markets would be out of equilibrium where long-term unemployment could be observed. In markets where positive shocks are received, vacancies will be observed if wages are sluggish upward, otherwise equilibrium will be restored immediately at higher real wages. Thus in an economy of this type, one might expect to see extensive involuntary unemployment at every point in time, even though wages and prices in individual markets are sluggish but not rigid. While this type of formulation affords an explanation of concentrated unemployment within a year, it is less convincing as a story about persistent joblessness of the type observed in the NLS data on middle-aged men.

Another explanation of extensive unemployment focuses on the high rate of job exit and is implicit or explicit in many recent studies of unemployment dynamics. Frequently proponents of this view attribute the high rates of job exit to unattractive "dead-end" jobs. As we noted above, many people are out of work much of the time because they hold jobs very briefly. But surprisingly, a relatively small proportion of the extensively unemployed report low previous wages. In the May 1976 job-search survey, 38 percent of persons out of work fifteen weeks or more had previous wages below $3.00 an hour, while more than 33 percent had previous wages over $4.50 an hour. Among adults with more than fifteen weeks of unemployment, the average wage was $3.88. The average wage of all

50. This argument is a central theme in James Tobin, "Inflation and Unemployment," *American Economic Review,* vol. 62 (March 1972), pp. 1–18.

workers paid on an hourly basis in May 1976 was $4.06. Thus it does not appear that the problem groups are in jobs that are substantially less attractive than those held by the remainder of the population. In any event, the "high exit" explanation of extensive unemployment is more descriptive than analytic. It can describe an important source of difference in the average unemployment rates across demographic groups. But it does not provide an answer to what it is about the labor market that causes some persons within a demographic group to hold jobs for such brief periods.

Each of the explanations for unemployment that we discussed has some plausibility, but there is no solid empirical evidence to support any one, or to aid in choosing among them. No individual's experience can be neatly pigeonholed into one of these categories. Nor is there any reason to believe that a single monolithic explanation should characterize all extensive unemployment. More research is necessary to quantify the importance of these potential explanations and to develop new theories illuminating extensive unemployment. It appears that current theories that emphasize the importance of high turnover of the unemployed population are relevant to only a small portion of all unemployment and a smaller portion of joblessness. An understanding of the reasons for extensive unemployment is a necessary precondition for the design of useful policies to combat it.

Comments and Discussion

Charles C. Holt: Clark and Summers are to be commended for writing one of the best papers available for putting the labor market in a comprehensive empirical perspective. It is especially good in following up on Hyman Kaitz' work on unemployment durations. For years the U.S. Bureau of Labor Statistics reported duration up to time of interview as if it were duration of completed spells of unemployment. Clark and Summers correctly estimate the duration of completed spells of unemployment and employment and of the time spent temporarily out of the labor force. This is an overdue and important contribution.

The paper is strong in emphasizing the size and significance of large flows into and out of the labor force. The authors show that about four million people dropped out of the labor force in an average month during the past decade, and this is an underestimate because it does not include anybody who dropped out for less than one month. In a high-employment situation, 21 percent of the unemployed per month withdraw from the labor force, and the median time spent outside the labor force is close to nine months. This phenomenon of temporary withdrawal from the labor force is not well understood in theoretical terms. The authors emphasize that it may represent an ambiguity in the labor force categories of the Current Population Survey. I am more inclined to think it may be a real phenomenon representing discouragement with job prospects.

One of the authors' main themes is that the dynamic analysis of the labor market has overemphasized turnover and slighted long duration of nonemployment. But I think they somewhat overstate their conclusions. They show that the ratio of the probability per month of finding a job for those with very short unemployment spells (one to four weeks) to the probability for those with very long spells (say, half a year) is about two

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to one. Comparing the probability for someone with a long spell with the average constant probability of the Markov model that would give the same total unemployment shows only a very modest difference. Unemployment would be highly concentrated, and hence socially costly, even if the probability of finding a job remained constant throughout a spell. But for many analytic purposes it is the difference between that degree of concentration and the concentration actually observed that is significant. This is shown by comparing the two distributions in the bottom half of their figure 1.

While emphasizing duration and concentration, the authors may be playing down differences in turnover among labor market groups. In table 1, the mean durations of unemployment for different demographic groups range from 1.57 to 2.42 months. Teenagers have shorter spell durations than adults, although they have higher unemployment rates. But the duration differences are not great.

The durations of unemployment and nonemployment by race in table 6 also show relatively small differences. Here the nonwhite group has longer duration by about 12 percent, which is certainly a significant difference. But again it comes nowhere near explaining the well-known two-for-one unemployment rate differential between whites and non-whites.

Table 10 does show that turnover is the main explanation of the differences in unemployment rates among groups. The average duration of employment for males aged 25 to 59 years is sixty-six months, or ten times as long as for male teenagers. Female teenagers have even shorter employment durations, and durations for women aged 25 to 59 are less than one-third that of adult men. The duration of a particular job gives the same picture. Compared with the turnover rate of males aged 25 to 59, the rate for male teenagers is eleven times as great; the rate for female teenagers is twelve times as great; and for adult women, nearly four times as great.

The Clark-Summers data clearly show the importance of turnover for understanding the cross-sectional differences in unemployment. I am not challenging the factual material that they present with regard to the significance of the duration distribution; but in terms of really understanding the differential unemployment experience within the labor force, the principal explanation lies in the differences in turnover.

Two components of turnover must be distinguished. One is quitting, which the worker initiates; the other is layoffs, which the employer initiates. Clearly, the motivations for these two are quite different, and I think the theory and measurement of these behaviors need much more study.

Some highly skilled occupational groups in the labor force that are important in analysis of inflation have very low unemployment rates. Variations in these rates are insensitive indicators of labor market conditions in those occupations. Especially for such groups, but also for the labor market in general, the demand side of the labor market needs to be better understood. What are employers doing about labor shortages? What is happening to job offers and vacancies in inflationary labor markets?

There is a lack of data with which to tackle such questions. We could never come near to obtaining an insight of what is happening on the demand side of the labor market comparable to what Clark and Summers have been able to provide on the supply side. There is a great risk that this deficiency in data will be perpetuated for another decade, judging from the draft recommendations of the National Commission on Employment and Unemployment Statistics.

I would like to close by outlining a model that might explain the Clark-Summers findings. The existence of very concentrated unemployment, together with a large number of people who find jobs easily and who experience no unemployment or very short spells, may reflect the segmentation of the market. Workers in some regions, skill levels, and industries or occupations experience tight, possibly inflationary, labor markets; at the same time, other workers have a difficult time finding and keeping jobs. Institutional barriers including trade unions and the concentration of power in product markets keep these tight and loose segments of the labor market from offsetting each other and apply inflationary pressures to the levels of wages and prices.

Employers do not attempt to cut across this segmentation and hire from the slack parts of the labor market at lower wages because of the cost of selecting, recruiting, hiring, socializing, and training. The importance of these costs increases for short employment tenure with the firm. If the quit rate increases with lower wages, these contributions to labor costs will become large, and will offset the apparent advantage of lower wages.

Robert E. Hall: This is a challenging paper, full of new information and insights. In my view, the paper has a number of messages: it presents a wide variety of new facts and ways of looking at unemployment as a probability process; it rejects temporary layoffs as an important explanation of the overall level of unemployment; it minimizes the importance of search theory and the general idea that unemployment is a privately or socially productive use of time; and it disposes of some kind of widely accepted new view of unemployment that rests on the idea of high turnover. I have listed these messages in roughly declining order of my acceptance of them. Before making my case that Clark and Summers have contributed to, rather than overturned, the new view of the labor market, I think it would be useful for me to summarize their findings independently of their interpretations of them.

The paper shows that the labor market contains an important minority of workers who are unable to find and hold steady jobs. These workers suffer repeated and sometimes extended spells of unemployment. Although it is true that most spells last only a few weeks, much of the flow out of unemployment is not into jobs but is out of the labor force. If the unemployed found jobs at their present rates but never left the labor force, unemployment would last about four months, not the current one or two months. An important fraction of those ending an unsuccessful job search do so because they think no jobs are available. Their interest in working is confirmed by the fact that over a third of them will be back in the labor force in just a month. The distinction between unemployment and being out of the labor force is highly arbitrary, and, indeed, a large part of the flow between the two categories is probably measurement error.

The number of people who want to work but are out of the labor force is almost as large as the number counted officially as unemployed. Because persons in the former group are so likely to resume job search, the category of unemployed reentrant is not much different in its composition from the unemployed in general. Almost two-thirds of reentrants have previously been out of the labor force for less than a year.

A large fraction of all unemployment comes from the small fraction of the labor force with extensive unemployment, far in excess of the amount predicted by a model in which every worker has the same chances of becoming unemployed and the same chances of finding work during each

month of search. Compared to a model in which everybody has the same chances, in reality only two-thirds as many workers suffer any unemployment during a year, and more than five times as much unemployment comes from spells lasting over six months.

Little unemployment comes from temporary layoffs—no more than seven percent of total unemployment. An equally small amount is attributable to careful search among a variety of alternatives to find the best possible job. Jobs are much too brief to justify this kind of search; few among the unemployed actually look at more than one job; and nothing about job search requires that the searcher actually be unemployed.

All this adds up to a diagnosis of persistent, excess supply of labor for certain groups of workers. Some persons would work much more than they do now if jobs were available to them. Instead, they spend a large amount of time either unemployed or out of the labor force. Unemployment is *not* a widely distributed, reasonably productive process of finding new jobs. It is largely time wasted by people who really cannot find the work they want.

I learned a great deal from the evidence presented here. The authors are to be congratulated for assembling a mass of highly relevant results from a wide variety of sources. Much of their evidence is new and attests to their energy and skill in processing large volumes of survey data.

The message that temporary layoffs are not an important component of unemployment is, I think, quite correct. Even a simple study of the data published monthly by the U.S. Bureau of Labor Statistics is enough to make this point. Clark and Summers show that even the 14 percent or so of the unemployed that these data suggest are on temporary layoff is a considerable overstatement of the number who actually return to their old jobs. Most of the unemployed are truly jobless.

I am a little less convinced that nothing remains of the idea that unemployment is related to purposeful, efficient job search. The authors repeat the well-known criticism of search theory that nothing prevents people from looking for new jobs while they hold jobs. But we already know that the majority of the unemployed have lost their earlier jobs, not quit them. Although the critics of search theory do not seem to have grasped the point, they can perfectly well explain the behavior of the unemployed in a world in which micro fluctuations in demand cause employers to lay off workers in a steady stream. If most of the fluctuations are unpredictable, it is no mystery that the unemployed wait until they

have lost their jobs to start looking for new ones. Clark and Summers do make some new and more telling points against the search theory, however. First, they demonstrate the extreme brevity of jobs, especially for youths. It is difficult to see how it is efficient for the average teenager to spend more time looking for work than they will spend on the job. Second, the authors show how concentrated unemployment is among workers who spend a large fraction of most years looking for work. Again, they are reasonably convincing that this cannot be efficient if in fact these people are able to do productive work.

I am totally unconvinced that Clark and Summers have upset a new view of the labor market that prevailed before their paper was written. It seems to me that the new view attacked here is almost entirely fictitious. The fictitious new view contends that unemployment is a benign, even socially useful phenomenon. The authors effectively demolish the *fictitious* new view. The naive reader might think that the paper will save the profession from a profound error. But the more knowledgeable reader will recognize that no serious student of the facts about the contemporary American labor market holds an opinion anything like the fictitious new view. Clark and Summers make only one attempt to establish that anyone actually advocates the view they are attacking in a brief quotation from an undergraduate textbook coauthored by a distinguished monetary economist and an equally distinguished trade economist. Others, including me, are implicated by footnote; but my reading of the papers cited does not confirm at all that the view being attacked is supported in them.

There *is* a new view about labor markets in general and unemployment in particular, but its resemblance to the fictitious new view attacked in the Clark-Summers paper is hardly perceptible. Let me summarize the new view as I see it—readers of the early issues of *BPEA* may recognize the general themes of my 1970 paper. First, unemployment is a turnover process, but the unemployment rate is higher than it ought to be given natural turnover rates. Second, unemployment is unevenly distributed across the labor force. Some groups, especially youths and blacks, have much higher unemployment than makes sense. Third, unemployment is not generally a long-term experience for an individual; high unemployment usually takes the form of frequent spells. Fourth, the major problem of high-unemployment markets is not the unavailability of work; it is the rapid turnover in jobs and the lack of steady work. I cannot resist finishing this description with one brief quotation from my 1970 paper:

"The true problem of hard-core unemployment is that certain members of the labor force account for a disproportionate share of unemployment because they drift from one unsatisfactory job to another, spending the time between jobs either unemployed or out of the labor force."[1]

I believe I speak for the other authors associated with the new view in reaffirming our belief in this diagnosis today. Far from finding this view refuted by the evidence reported by Clark and Summers, I believe most of what they say supports the new view. I think they misunderstand one central feature of recent thinking: its emphasis on turnover is not primarily that people move out of unemployment quite rapidly (the main focus of Clark-Summers paper), but rather that people move out of *jobs* very rapidly. In view of the importance attributed to job turnover in virtually all the literature attacked in the paper, it is remarkable how little attention the subject receives here. The paper does present some remarkable figures, though. The typical teenage job lasts less than three months, for example. Clark and Summers dwell at length on the cases of people who spend large fractions of their time out of work over periods of a year or longer without even mentioning the likelihood that they held brief jobs in between spells of joblessness. The reader who can lay aside the badly mistaken attack on an uninteresting fictitious new view will find much interesting material here supporting the major points of the new view that has actually been advocated.

What Clark and Summers and the earlier contributors to the debate agree on is the importance of workers who lead a kind of "twilight existence" in the labor market, moving frequently from brief, unsatisfactory jobs to spells outside the labor force to fairly aimless job search. Further research ought to focus on improving our understanding of this aspect of the labor market.

Martin Neil Baily: As Charles Holt and Robert Hall have pointed out, the paper by Clark and Summers provides a wealth of fascinating information about unemployment dynamics, but it neither destroys earlier approaches nor offers a picture of unemployment that is quite as unfamiliar as the authors suggest. I would like to add a few points to their discussion.

Clark and Summers carry out what might be called unemployment accounting. This can be a deceptive way of evaluating the empirical impor-

1. Robert E. Hall, "Why Is the Unemployment Rate So High at Full Employment?" *BPEA, 3:1970,* p. 389.

tance of alternative theories, particularly explanations of how the labor market (not only the unemployment rate) fluctuates during the business cycle. It could well be that in a year when the economy is in macroeconomic equilibrium the fraction of unemployment that fits some cyclical model is small. Specifically, anyone who thinks that contract theory or temporary layoff theory provides an explanation of teenage or other long-term structural unemployment has badly misunderstood these theories.

The empirical importance of temporary layoffs has by now been firmly established. Whether one accepts the results of Martin Feldstein and David Lilien or those of Clark and Summers, a large proportion of workers laid off in manufacturing are rehired by the same firm. This does not imply that most of the unemployed are on temporary layoff. I have never thought this, although I do think that the proportion that are on layoff is larger than the authors estimate because I assign more importance to stopgap jobs than they do.

The model I developed allowed for job search by workers on layoff and considered stopgap jobs as an important option.[1] More important to the question of causality, however, is the fact that Clark and Summers ignore the *indirect* effects of temporary layoffs on unemployment. In a recession year it is the influence of a large number of laid-off workers looking for stopgap jobs (as well as those looking for new long-term jobs) that makes it so difficult for inexperienced or low-skilled entrants and reentrants to the labor market to find employment. Table 1 of the Clark-Summers paper is consistent with this. The mean duration of unemployment changed only 14.4 percent from 1974 to 1975, while the unemployment rate rose by 51.8 percent. *Thus frequency of unemployment has to be the important change.* The breakdown of months of unemployment shown in the same table suggests that the increased frequency of unemployment spells by experienced workers has reduced the job prospects of the less experienced unemployed. That is, although the mean duration of an unemployment spell has not changed much, the shape of the distribution of spell lengths has been altered.

In the analysis of the temporary layoff model I gave in *BPEA, 3:1976,* I presented a modified version of the model that is strikingly consistent with the picture the authors are painting. In that model a subset of primary or upper-tier workers has considerable job security. Their hours of work

1. Martin Neil Baily, "On the Theory of Layoffs and Unemployment," *Econometrica,* vol. 45 (July 1977), pp. 1043–63.

are varied and they are sometimes on temporary layoff for short spells in response to demand fluctuations. There is, then, a second tier of workers that serves as a buffer or reserve stock of workers and those persons experience much more unemployment.

Inflation analysis provides another example of the importance of layoffs. The Phillips curve remains the most important equation for this analysis over a business cycle. Adult males aged 25 to 64 in 1974 were only 24 percent of the unemployed. Yet this group's unemployment rate drives out the rates of other groups from an estimated Phillips curve. Thus one-quarter of the unemployed are clearly of disproportionate importance. Actually some people find that the change in the unemployment rate is more important than the level and, as even the authors concede, temporary layoff unemployment *is* important when the unemployment rate is increasing. I have found that the layoff rate in manufacturing is a successful measure of tightness in the labor market in an aggregate Phillips curve. In short, a theory of layoffs—temporary and otherwise—would seem to be of considerable relevance to macroeconomics.

Clark and Summers also refer to contract theory, which is related to the temporary layoff model.[2] It is observed that a decline in aggregate demand falls heavily on the quantity of labor—layoffs and hours reduction of *those currently employed*—and has little effect on wages. Understanding this phenomenon is surely an important task and contract theory is one step toward an explanation. The persistence of wage stickiness in the presence of large numbers of *potential* employees also needs explanation. It is perhaps easier to understand this second puzzle, however, because it is hard for potential employees to compete effectively for jobs.

Let me turn away from cyclical issues and consider the microeconomics of equilibrium unemployment. Some analysts have asserted that teenagers, for example, can quickly and easily find regular legal jobs. Clark and Summers have helped considerably to change this view, although it was hardly one that was universally held. Stephen Marston used the same gross-flow data in *BPEA, 1:1976*, to show that the probability of leaving unemployment by leaving the labor force is high for many groups. There has also been extensive discussion in the profession and in the press of the fact that a high percentage of black teenagers is neither at work nor in school. I agree completely with the authors that programs to lower un-

2. The contract theory-temporary layoff models I have worked with are not models of voluntary unemployment.

employment in the long run should tackle the difficulties of workers who remain chronically on the fringe of the mainstream labor market.

Even though I agree with much of the authors' story of equilibrium unemployment, parts of their analysis make me uneasy. First, if one hypothesized the extreme view that unemployed teenagers were basically uninterested in working, then nothing in the Clark-Summers picture really refutes this. Teenagers search for a few hours a week for a few weeks, then give up, then search again. My own view is that most unemployment has both voluntary and involuntary elements. But how much weight to give to each is not easily seen and is not revealed by this paper.

Second, their discussion of search theory does not do justice to this approach. Stephen Salant, in his careful analysis of duration data, notes: "Most theories of job search assume that the unemployed are hetero-geneous. . . . Although search theory may predict a constant escape rate for each individual, the assumed heterogeneity means that the fixed rate may differ among different individuals. This in turn implies that the aggregate escape rate will fall as unemployment progresses."[3] It is in the nature of the sampling process that a small decline in escape rates as un-employment progresses leaves a large fraction of the unemployed in the tails. It is also true that a fairly small change in escape rates over the cycle has a large impact on the percent of the unemployed with long spells.[4] Thus their tabulations of distributions of spell lengths would not provide so sharp a conflict with a more sophisticated version of search theory. In order to see what is really going on, it would be useful to test for heterogeneity or time dependence, following the method of compar-ing alternative probability models suggested by Salant and used by James Heckman in another context.

Kim B. Clark and Lawrence H. Summers: The principal criticism of our paper seems to be that we attacked a straw man, what Robert Hall calls a "fictitious new view" of unemployment. He chides us for citing non-specialists as evidence that this view exists. Our point in doing so is to show that two highly respected members of the profession read the litera-ture and concluded that concentrated, extensive unemployment was an unimportant part of total unemployment.

3. Stephen W. Salant, "Search Theory and Duration Data: A Theory of Sorts," *Quarterly Journal of Economics,* vol. 91 (February 1977), pp. 44–45.

4. The data on long-term unemployment in the 1975–76 recession are suspect because of the extension of unemployment compensation to sixty-five weeks that took place at this time.

It is not difficult to see why. We have already quoted Hall on this point in our paper. In 1973, Martin Feldstein observed: "[The] picture of a hard core of unemployed persons unable to find jobs is an inaccurate description of our economy. . . . A more accurate description is an active labor market in which almost everyone who is out of work can find his usual type of job in a relatively short time. . . . The current structure of unemployment . . . is not compatible with the traditional view of a hard core of unemployed who are unable to find jobs."[1]

Although in disagreement with most of Feldstein's policy recommendations, R. A. Gordon agreed with this characterization of unemployment and, indeed, described it as a view widely shared by experts: "With all this one can only agree. The 'traditional view' he [Feldstein] criticizes is not held by present informed observers."[2]

Finally, in a recent analysis of the Great Society programs and their critics, Henry Aaron summarized many of the papers cited in note 1 of our paper: "Except at very high rates of unemployment, nearly all unemployed workers appear to find jobs after a relatively brief period of joblessness. . . . A small fraction of the unemployed experience protracted unemployment. . . . These facts should not be construed as suggesting that long-term unemployment does not exist. . . . The point is that . . . eliminating protracted unemployment completely would reduce total unemployment negligibly."[3]

Each of these authors, and many others we could cite, adopted a dynamic, turnover view of unemployment that emphasized frequent job exit coupled with brief spells of unemployment and downgraded extensive joblessness. We have shown that a large part of unemployment is due to a relatively small number of people who spend several months looking for work. On average, this extensive joblessness is much more important, and short-term unemployment much less important, than the turnover view suggests. A simple calculation summarizes this point. Using evidence from our table 4, if we stopped counting as unemployed all those persons with less than five weeks of unemployment during the year, the measured unemployment rate would fall only from 6 percent to 5.75 percent. By

1. Martin S. Feldstein, *Lowering the Permanent Rate of Unemployment,* a study prepared for the use of the Joint Economic Committee, 93 Cong. 1 sess. (Government Printing Office, 1973), pp. 11, 16.

2. Ibid., p. 59.

3. Henry J. Aaron, *Politics and the Professors: The Great Society in Perspective* (Brookings Institution, 1978), pp. 118–20.

contrast, if we stopped counting those with six months or more, the unemployment rate would fall from 6 percent to 3.5 percent.

General Discussion

Several discussants emphasized that Clark and Summers were answering a different question when they calculated their unemployment durations for those currently unemployed rather than providing a different answer to the question: "how long is the average unemployment spell?" Interest also centered on their treatment of the distinction between being unemployed and outside the labor force. Michael Wachter reasoned that some persons might have to move in and out of the labor force because of other responsibilities, and it would be inaccurate to consider them as unemployed in the traditional sense of the term when they were not working. Charles Holt suggested that one ought to make four types of classifications: working, unemployed, temporarily withdrawn from the labor force, and not in the labor force. William Poole suggested that the way to classify those not working should depend upon their age. He felt that because teenagers are in a transitional phase between one state in which leisure was the norm to another in which work was the norm, the high unemployment rate for teenagers was not surprising and reflected the weak job attachments normal for their age group. Robert Hall objected that this view failed to explain the high incidence of unemployment among black teenagers and the rise in such unemployment over the past twenty years.

Wachter agreed with the authors that the search model is not particularly relevant as an explanation for youth unemployment and suggested a queuing model in its place. The young know where the jobs they want are and they are waiting for them to become available. He reasoned that it is important to distinguish between disadvantaged teenagers who would later have problems, and those who would do well in later years even if they experienced substantial unemployment as teenagers. James Duesenberry believed that the prime-age males who had been unemployed for long periods also fall into two distinct categories. One consists of people with problems, such as alcoholics, who have trouble finding and keeping jobs. The other consists of people who have some assets and a high income when working but who will not accept a job that is not their specialty or one that lowers their status.