Volume Title: The Youth Labor Market Problem: Its Nature, Causes, and Consequences

Volume Author/Editor: Richard B. Freeman and David A. Wise, eds.

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-26161-1

Volume URL: http://www.nber.org/books/free82-1

Publication Date: 1982

Chapter Title: The Dynamics of Youth Unemployment

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Chapter URL: http://www.nber.org/chapters/c7875

Chapter pages in book: (p. 199 - 234)

7 The Dynamics of Youth Unemployment

Kim B. Clark and Lawrence H. Summers

At any given moment almost 2 million teenagers aged 16–19 are unemployed. Another 600,000 are out of school and neither working nor looking for work. Only about 60% of all teenagers and 25% of black youths who are out of school are employed. These high rates of joblessness have been a source of concern to both economists and policymakers. This chapter seeks to clarify the dimensions of the youth employment problem by analyzing the distribution of unemployment and related patterns of labor force mobility.

High rates of joblessness among young people have been explained in two quite different ways. The traditional view holds that the problem is one of job availability. A general shortage of openings makes it very difficult for some workers to find jobs. It takes the unemployed a long time to find a job. Much of the problem with the traditional view is traceable to a hardcore group who are out of work a large part of the time. The "new" view sees employment instability as the crux of the joblessness problem.[1] It treats the large flow into unemployment rather than the long length of unemployment spells as the crucial symptom of the problem. As Martin Feldstein, a leading exponent of the new view has written, "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

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jobs."[2] In particular, proponents of the new view emphatically reject the suggestion that the solution to the youth unemployment problem lies in job creation.

The results in this chapter strongly support the traditional view of the youth joblessness problem. They suggest that much of what appears to be evidence of dynamic labor market behavior is in fact a reflection of artifacts in the data. A large proportion of the measured flow into and out of unemployment is made up of quite spurious transitions into and out of the labor force. We also show that even though many unemployment spells are very short, their contribution to total unemployment is negligible. Most of the youth joblessness problem is attributable to a small group of young people who remain out of work a large portion of the time. Inability to find suitable work rather than pathological instability seems to be this group's main problem.

Section 7.1 of the paper presents raw data on labor market flows. Section 7.2 illustrates the long-term nature of "problem" youth unemployment. The role of job shortages and effects of aggregate demand are the subject of the section 7.3. A final section concludes the paper with a discussion of some implications of the findings and directions for future research.

7.1 Characteristics of the Teenage Labor Market

The central difference between the traditional and new views of youth unemployment lies in their conception of turnover. The former emphasizes the infrequency of job finding and the consequent lengthy duration of unemployment, while the latter focuses on the brevity and frequency of unemployment spells. Presentations of both views typically concentrate on flows between unemployment and employment. Less attention is devoted to movements into and out of the labor force. This section tries to present a fuller picture of the youth labor market by examining in a systematic way movements among all three labor market states (i.e., employment, unemployment, and not in the labor force [NILF]). We extend previous work on the dynamics of the youth labor market by focusing on the differences in behavior between young people who are in and out of school. After presenting the basic data characterizing the dynamics of youth labor markets, we examine the relative importance of transitions into and out of the labor force as well as the duration of completed spells in each of the labor market states.

7.1.1 The Basic Data

The dynamics of the youth labor market are examined in this section using the BLS gross changes data. Individuals included in the Current

Population Survey (CPS) are in the sample for four months, then out for eight months, and then in the sample for four months before leaving for good. The data in this study are derived from a special file which matches the March, April, May, and June Surveys taken in 1976. It is possible to follow one rotation group over the entire period and several rotation groups over shorter intervals. From these data it is possible to find the number of individuals who moved, for example, from unemployment to employment during the preceding month. Since there are three possible labor market states, nine monthly flows may be calculated.

We summarize the available information in a 3×3 matrix of transition probabilities and a vector of three stocks. Thus for each of several demographic groups we consider the matrix:

$$(1) \qquad P = \begin{vmatrix} P_{ee} & P_{eu} & P_{en} \\ P_{ue} & P_{uu} & P_{un} \\ P_{ne} & P_{nu} & P_{nn} \end{vmatrix}$$

where, for example, P_{eu} represents the proportion of employed workers in a preceding month who are unemployed in the current month. Since a worker must always be in one of the three labor force states, the rows in P sum to 1. Therefore, if any two of the transition probabilities out of a state are known, it is easy to compute the third. In order to calculate aggregate flows between states, we multiply the transition probabilities by appropriate initial stocks. This may be conveniently represented in matrix form as:

$$(2) \qquad \begin{vmatrix} F_{ee} & F_{eu} & F_{en} \\ F_{ue} & F_{uu} & F_{un} \\ F_{ne} & F_{nu} & F_{nn} \end{vmatrix} = \begin{vmatrix} S_e & O & O \\ O & S_u & O \\ O & O & S_n \end{vmatrix} P$$

where F_{ij} represents the flow of workers into state j from state i and S_e, S_u, and S_n refer to the stock of workers employed, unemployed, and not in labor force (NILF) respectively.

Since much of the emphasis in this study is on labor force transitions, it will be convenient to define a state L, for labor force, which includes both E and U. It is clear that:

$$(3) \qquad \begin{aligned} F_{nL} &= F_{ne} + F_{nu} \\ F_{Ln} &= F_{en} + F_{un} \end{aligned}$$

The transition probabilities may then be represented as:

$$P_{nL} = P_{ne} + P_{nu}$$

$$P_{Ln} = \frac{E_{t-1}}{L_{t-1}} P_{en} + \frac{U_{t-1}}{L_{t-1}} P_{un} \tag{4}$$

At the outset, it is crucial to acknowledge a major defect of the gross changes data. They are very sensitive to errors in reporting or recording labor force status. While such errors tend to cancel out in estimating stock-based statistics such as the unemployment rate, they cumulate in estimates of labor market flows. Several studies of CPS reinterviews have shown that there is substantial recall and recording error. Indeed, a recent census memorandum concluded that "the results for 1976 and 1977 indicate the gross change rate is at least two to three times as large as the adjusted estimate. . . . The gross change rate is greatly overstated due to simple response variance."[3] Below we suggest that much of what is called response variance is really a reflection of the arbitrariness of the official unemployment definition rather than recall error.[4] In any event, the estimates we report below using the flows data do characterize persons' actual reported movements in the CPS. It certainly does appear that they may overstate the dynamic character of the labor market. If so, the line of argument developed in section 7.2 is strengthened.

7.1.2 Transition Patterns

In table 7.1 we report average flow rates and transition probabilities for teenagers and mature adults as calculated from the March-April and the April-May CPS. Except for in-school youths it does not appear that the results are seasonally aberrant. For the total of male and female teenagers, the probabilities are consistent with average values for the 1968–76 period.[5]

An important feature of these data is the enormous magnitude of all the flows. For example, the results suggest that about 15% or 645,000 young men withdrew from the labor force within a month. At the same time about 20% of those outside the labor force entered the market.

The differences between persons who are in and out of school are particularly striking. Among young men who were in school, a very large proportion, almost half the unemployed, drop out of the labor force within a month. Slightly more than one-fifth find jobs. Almost one-third of the out-of-school group find jobs, while only 18% withdraw from the labor force. It is noteworthy that in the out-of-school group the job-finding probabilities of persons who are out of the labor force are quite close to those of the unemployed. While 32% of unemployed young men accept employment within a month, almost 22% of those outside the labor force find a job. Since the probability of exit from unemployment

Table 7.1 **Employment, Unemployment, and Labor Force Transitions March–May 1976**

Demographic/schooling groups		*en*	*eu*	*ue*	*un*	*nu*	*ne*	*nl*	*ln*
M1619	Total								
	P	.105	.042	.272	.307	.074	.129	.203	.147
	F	350.3	147.0	237.3	294.6	253.8	450.5	704.4	644.5
	In school								
	P	.173	.033	.217	.479	.061	.111	.172	.246
	F	241.1	46.0	94.9	209.6	209.1	380.4	589.5	450.5
	Out of School								
	P	.053	.049	.310	.185	.134	.210	.344	.077
	F	109.2	101.0	142.4	85.0	44.7	70.1	114.9	194.0
F1619	Total								
	P	.131	.024	.254	.357	.070	.101	.171	.174
	F	411.2	72.9	185.0	257.2	298.1	438.6	736.6	669.1
	In school								
	P	.209	.023	.163	.515	.057	.090	.147	.272
	F	265.5	29.2	54.3	171.6	201.3	317.8	519.1	437.8
	Out of school								
	P	.080	.024	.333	.218	.105	.131	.236	.104
	F	145.7	43.7	130.7	85.6	96.8	120.8	217.5	231.3
M2559	Total								
	P	.009	.010	.323	.081	.053	.082	.135	.013
	F	332.3	369.1	685.1	171.8	162.6	251.6	414.2	504.0
W2559	Total								
	P	.044	.009	.182	.305	.038	.071	.109	.061
	F	1033.8	211.5	293.0	491.1	767.3	1433.7	2201.0	1524.9

NOTE: *F* indicates flow in thousands; *P* indicates probability; *en* indicates employment to not in labor force; *eu* indicates employment to unemployment, and so forth.

SOURCE: Tabulations of the March–April–May–June 1976 CPS Match File. The flows have been adjusted to conform to the stock data. The probabilities are averages of the monthly probabilities for April and May.

declines quite sharply with duration, it appears that persons outside the labor force have as much chance of moving into employment as do persons unemployed for a significant period. As one would expect, the labor force distinction appears to be much more meaningful in the case of in-school youths; only 11.1% of the teenagers 16–19 find jobs within a month.

The differences between male and female transition probabilities are quite small. The largest difference is that young women appear to be much less likely to reenter the labor force than young men. When they leave employment they are also more likely to withdraw from the labor force rather than become unemployed. Not surprisingly, there are large differences between youth and adult transition probabilities. While the differences are much less pronounced for the out-of-school group, young people appear to be much more likely to enter and withdraw from the labor force. For example, 14.7% of male teenagers withdraw from the labor force each month compared to 1.3% of mature men. Similarly, 20.3% of teenagers outside enter the labor force contrasted with 13.5% for adults.

It is clear from table 7.1 that observed changes in the participation and unemployment of young people reflect a net of large gross movements into and out of the labor force. The importance of labor force entrance and exit in explaining youth employment and unemployment is documented in table 7.2. The data in line 1 illustrate the importance of flows from outside the labor force in changes in employment. Between 60 and 70% of all entrances into employment occur from outside the labor force. The second line indicates that most teenagers who leave employment leave the labor force rather than becoming unemployed. Among out-of-school women, this pattern is particularly pronounced: over 80% of those leaving employment withdraw from the labor force. Lines 3 and 4 indicate that labor force transitions are almost as important in determining flows into and out of unemployment. A large fraction of unemployment spells appear to begin and end outside the labor force.

These results indicate the artificiality of the not-in-labor-force unemployment distinction for young people. Given the frequency of movements between unemployment and not-in-labor-force, it is difficult to distinguish between these two states. Most of the newly employed did not search long enough to be recorded as unemployed. The evidence suggests the possibility that for many teenagers, job search is a passive process in which the main activity is waiting for a job opportunity to be presented. This conclusion is especially true of enrolled young people. Their extremely high withdrawal rate (80%) suggests that their job search is extremely casual. The ease with which most young people enter the labor force, documented in line 5 of the table, supports this view. While only about one-third of the unemployed find a job within a month, almost

Table 7.2 **Relative Flows into and out of Not-in-labor-force, March–May 1976 Demographic/Schooling Groups**

Flow category	Males 16–19			Females 16–19			Males 25–59	Females 25–59
	Total	In school	Out of school	Total	In school	Out of school		
1. Proportion of flows into employment from NILF ($F_{ne}/(F_{ne}+F_{ue})$)	.655	.800	.330	.703	.854	.480	.269	.830
2. Proportion of flows out of employment into NILF ($F_{en}/F_{en}+F_{eu}$))	.714	.840	.520	.845	.901	.769	.474	.830
3. Proportion of flows out of unemployment into NILF $F_{un}/F_{un}+F_{ue}$))	.530	.688	.374	.584	.760	.396	.200	.626
4. Proportion of flows into unemployment from NILF ($F_{nu}/F_{nu}+F_{ue}$))	.633	.820	.307	.804	.873	.689	.306	.784
5. Proportion of flows into labor force which result in unemployment ($F_{ne}/F_{ne}+F_{nu}$))	.635	.645	.610	.591	.612	.555	.607	.651

SOURCE: See table 7.1.

two-thirds of labor force entrants are successful within a month. This strongly suggests that many people only enter the labor force when a job is presented.

The patterns of entrance suggest that the availability of jobs is an important element in determining movements into and out of the labor force. At the same time, the evidence indicating that most teenagers end spells of employment by withdrawing from the labor force provides some indication that teenage unemployment arises from voluntary turnover. Among unemployed teenagers, the quitting rate is about half the job loss rate. However, it seems reasonable to conjecture that a large proportion of those who withdraw from the labor force following employment are quitters. If, for example, it is assumed that 80% of this group is made up of quitters, it follows that about two-thirds of teenage employment spells end in quitting. The importance of considering labor force transitions is well illustrated by this calculation. Even if movements out of the labor force are in large part spurious, they nonetheless distort unemployment statistics.

7.1.3 Spell Durations

The results on flows and rates of transition in tables 7.1 and 7.2 underscore the dynamic character of the youth labor market. The tremendous volatility in the market behavior of young persons may also be conveyed by examining the mean duration of *completed spells* in each of the states. It should be emphasized that the estimates presented below differ from the mean duration of those *currently* in each state. As Kaitz (1970) has shown, the former concept will yield lower estimates than the latter. Table 7.3 presents estimates of mean duration of completed spells in each state. The brevity of mean durations for most groups is quite striking. Male teenagers, for example, have an average duration of a spell of employment of only about 6.5 months.

Out-of-school young people have longer durations in employment, about nine months, compared to about four months for enrolled teenagers. Since persons can remain employed but change jobs, these figures overstate the expected duration of a job. The only available evidence, from a 1961 BLS survey, suggests that about 54% of teenage job changes occur without intervening nonemployment. Adjusting for this flow yields the estimates of the mean duration of jobs shown in column 2. Young people do not appear to hold jobs for very long. The mean duration of a job for all male teenagers was three months. Even for out-of-school men the average job lasted a little over four months. In interpreting these figures, several factors should be recognized. First, the figures are based on exit probabilities calculated from March-April and April-May transi-

Table 7.3 **Labor Market Durations**

Demographic/schooling groups	Duration category			
	D_e	D_{job}	D_n	D_u
	(mean duration in months)			
M 16–19				
total	6.80	3.00	4.93	1.73
in school	4.85	2.13	5.81	1.44
out of school	9.80	4.31	2.91	2.02
F 16–19				
total	6.45	2.84	5.85	1.64
in school	4.31	1.90	6.80	1.47
out of school	9.62	4.23	4.24	1.81
M 25–29	52.6	24.1	7.41	2.48
F 25–29	19.9	8.7	9.17	2.05

NOTE: D indicates mean duration, e, n, u represent employment, not-in-labor-force and unemployment. Mean duration for these states is defined as the reciprocal of the probability of leaving the state. D is the duration in a job and is equal to $D_e(1-d)$, where d is the fraction of job changes with no unemployment. The values of d used here are the same for men and women. Estimates of d are from Bancroft and Garfinkle, "Job Mobility in 1961," *Monthly Labor Review* (August 1973): 897–906.

tions. Hence they are unaffected by brief summer jobs. Moreover, the estimates may overstate the mean duration of jobs and employment because of the sampling interval. Individuals who are unemployed for less than a month may never appear as unemployed in the survey, so their employment may incorrectly appear unbroken. Similarly, very brief employment spells which would bring down the average may never be recorded. Second, spurious flows caused by reporting error as discussed above lead to an offsetting downward bias in all of the estimates in table 7.3

Columns 3 and 4 illustrate the brevity of unemployment and out-of-the-labor-force spells. Perhaps the most surprising result is the brevity of spells outside the labor force for out-of-school youths. The average NILF spell for this group lasts three months, which is only slightly longer than the average length spell of the unemployed. This is further evidence that these states are functionally almost indistinguishable. There appear to be relatively small differences between men and women, with somewhat more persistence in withdrawal among women. A striking feature of the results is that the mean duration of unemployment is not much different for teenagers and adults. This is in large part because of the high rate of labor force withdrawal among young people.[6]

7.1.4 Seasonal Variation in Labor Market Flows

Perhaps the most striking evidence of the success of the youth labor market in meeting the needs of most young people comes from evidence on seasonal fluctuations. In table 7.4 we examine the changes over the year in various key labor market rates for males 16–19. Seasonal patterns do not vary much among youth groups, and the male 16–19 group is fairly typical. The first line provides the unemployment rate for the summer months and the remainder of the year. No significant increase in the unemployment rate occurs during the summer months. Indeed, the rates in May, July, August, and September are actually lower than the rate over the rest of the year. Of course, the number of unemployed persons rises substantially because as the second row shows, the participation rate soars. The participation rate in July is amost 40% more than its annual average. As line 3 indicates, a parallel rise in the proportion employed also takes place. Not surprisingly, the vast majority of this increase in employment is due to summer-only workers. In the fourth line of the table, we present the proportion of the population who enter the labor force each month. In June, almost 21% of the male teenage population enters the labor force. This figure represents close to 50% of the NILF category. Another 12% of the population enter the labor force in July. Of course, a certain amount of labor force entrance occurs in all months, averaging about 7% of the population. Contrasting this figure with the

Table 7.4 **Seasonal Variation in Labor Market Stocks and Flows for Males 16–19, 1968–76**

Stock–flow category	May	June	July	Average for: August	Sep-tember	Rest of year	Annual
1. Unemployment rate	.129	.182	.152	.122	.149	.160	.155
2. Participation rate	.541	.704	.758	.701	.541	.527	.578
3. Employment ratio	.471	.575	.643	.615	.459	.442	.488
4. Labor force inflow as a percent of the population	.086	.213	.117	.060	.057	.073	.087
5. Labor force outflow as a percent of the population	.077	.054	.067	.118	.217	.071	.086
6. Probability of successful labor force entry (P_{ns})	.711	.655	.670	.676	.630	.622	.641
7. Unemployment inflow as percent of population	.025	.073	.039	.019	.021	.028	.031
8. Probability of finding a job if unemployed (P_{ue})	.269	.332	.386	.312	.280	.249	.277

SOURCE: Unpublished tabulations by the Bureau of Labor Statistics, adjusted by the Urban Institute as described in J. E. Vanski, "Recession and the Employment of Demographic Groups: Adjustments to Gross Change Data," in Holt, C. C. et al., *Labor Markets, Inflation, and Manpower Policies*, Final Report to the Department of Labor (Washington, D.C.: The Urban Institute, May, 1975).

entry rates for May, June, and July, one finds that during the summer months about an extra 20% of the population enter the labor force. Note that this is a substantial underestimate of the extent of the increase in youths' labor supply, since many teenagers shift from desiring part-time to seeking full-time work during the summer months. Comparisons of the seasonality in teenage labor market behavior with the patterns observed for other demographic groups leads us to conclude that about three-quarters of summer entrances are due to school ending rather than to fluctuations in employment opportunities.

Not surprisingly, the rates of labor force entrance in June and July are mirrored by high rates of labor force exit in August and September. During these months, about 33% of the teenage population exits from the labor force. Since the rate of withdrawal in a typical month is about 7%, the extra labor force exits during August and September almost exactly offset the extra entrances in the early summer months. Thus both the flow and the stock data suggest that employment only during the

summer months characterizes the behavior of about 20% of male teenagers.

The labor market appears to adapt very well to the surge in those seeking employment. In June, when the inflow is at its peak, about two-thirds of labor force entrants find jobs. This figure is actually greater by about 5% than the rate of successful entry during the remainder of the year. Those who do become unemployed during the summer months fare much better than the unemployed in other months, since the job finding rate P_{ue} in May, June, and July far exceeds the rate in the nonsummer months. The fact that these flow rates are significantly higher during the summer months suggests that the additional members of the labor force may have an unemployment rate much lower than that of full-year workers. Clearly, the average unemployment rate over the summer months is lower than during the rest of the year. This suggests that the summer influx of teenagers actually reduces the average annual unemployment rate, since the additional workers appear to fare substantially better both as labor force entrants and as unemployed job seekers than do other teenagers. This quite striking fact bears further comment.

Undoubtedly, public employment and training policy affects the behavior of labor market flows during the summer months. Over the first six years of the period covered in table 7.4 (1868–73), the federal government provided about 600,000 summer jobs through the Neighborhood Youth Corps. The NYC was eliminated with the enactment of CETA in 1973, but summer jobs remain a component of the decentralized employment and training system. In 1976, for example, just over 820,000 jobs were provided in the CETA summer program. The great majority of participants were classified as economically disadvantaged (95.9%), drawn from the unemployed or from outside the labor force (98.7%), and were full-time students (87.8%).

A comparison of the size of the federal summer program with the average flow into the labor force reveals the relative importance of the summer jobs program. From 1968 to 1976, an average of 600,000 summer jobs were provided through NYC and CETA. The data in table 7.4 suggest that about 3 million teenagers left school and entered the labor market each summer. Given the estimated probability of entering with a job (about .6 of average), on the order of 1.2 million teenagers would have remained without employment if no adjustments had been made. Thus about 50% of this group were moved into employment through the federal jobs program. This calculation is likely to overstate, perhaps substantially, the contribution of public policy. We have assumed that the federal jobs constitute net job creation. It is likely however, that the federal program funds some jobs which would have existed anyway. This is more likely to be the case under CETA, where the program largely is

run through state and local government units. Unfortunately, estimates of the net jobs created under the summer programs are not available.[7]

The ability of the labor market to deal with the large inflow of workers in the summer should lead one to question demographic explanations of recent increases in youth unemployment. As table 7.4 shows, the labor market is able to deal with a threefold increase in the proportion of the population newly seeking work without an appreciable increase in individual's difficulty in finding employment. It is improbable that the same labor market should be incapable of adapting to the easily foreseen, persistent, and much smaller increase in the labor force due to demographic shifts. Indeed, the adjustment should be much smoother because in the case of demographic shifts the time frame is much longer and there is no need to create very temporary jobs. While adaptations such as replacing vacationing workers and work scheduling are less feasible in this case, the longer run should permit much greater flexibility.

Taken together, the results in this section convey a picture of an enormously dynamic labor market. It is apparent that most teenagers move easily between labor market states. More than half of all job changes occur without intervening unemployment. Most labor force entrants find jobs without ever being measured as unemployed and incidents of unemployment are typically quite brief. There appears to be no evidence of a serious problem for most teenagers. Yet we did observe in March of 1976 that almost one-fifth of all young people who wanted jobs did not have them, and that an equal number were out of school and jobless, but had chosen not to search. The key question then is whether these average probabilities, which suggest that movement in all directions is quite easy, are relevant to a large part of nonemployment. The next section offers a negative answer to this question.

7.2 The Experience of the Nonemployed

There are at least three reasons why the picture of the labor market presented in the preceding section may be a misleading guide to the experience of the unemployed population at a given time. First, even if most unemployment spells are short, most unemployment may be contained in long spells. To see this, consider the following example. Suppose that each week twenty spells of unemployment begin lasting one week, and one begins with a duration of twenty weeks. This mean duration of a completed spell of unemployment would be 1.05 weeks, but half of all unemployment would be accounted for by spells lasting twenty weeks. Equivalently, in a steady state, the expectation of the length of time until a job is found among all those unemployed at any instant would be 9.5 weeks. Sole focus on the mean duration of a completed spell could clearly be quite misleading.

Second, as we have already emphasized, there is reason to doubt the salience of the distinction between unemployment and not-in-the-labor-force for young people. Unemployment durations appear to be short in large part because of high rates of labor force withdrawal. The brevity of many spells outside the labor force suggests that many of those who withdraw are in fact sensitive to labor market conditions. Indeed, it appears that our official statistics frequently record two brief spells of unemployment, broken by a period outside the labor force, when a single spell of joblessness would be more appropriate.

The third reason why it is necessary to go beyond the average transition probabilities is the need to study the incidence of multiple spells. As Richard Layard has emphasized in his contribution to this volume, one's view about the welfare consequences of youth nonemployment should depend on its concentration.[8] If the burden is quite evenly dispersed, individuals are unlikely to suffer greatly and the economy may even benefit from a better matching between workers and jobs. On the other hand, if the distribution of unemployment is very uneven, the welfare cost to individuals is likely to be greater, and the social benefit much more dubious.

In this section we shall try to deal with these three issues by studying the distributions of unemployment and nonemployment weeks. Basically, we seek to answer two questions. First, how long can we expect the teenagers who are unemployed at a given time to wait before entering employment? Second, how much unemployment and nonemployment can they expect to suffer within the year? It is crucial to realize that we seek to answer these two questions for all those *unemployed at a given time* rather than all those who flow into unemployment over some interval. This procedure gives more weight to long spells than to short ones, since persons suffering lengthy spells are more likely to appear in the sample at a given time. In assessing the nature of the unemployment problem, one wants to study the unemployed population, not the experience of persons flowing into unemployment. This key point is illustrated by the numerical example above in which much of unemployment was due to long spells even though the vast majority of spells were short.

7.2.1 How Long Does It Take to Find a Job?

In table 7.5 we present various estimates of how long it takes young people to find jobs. The first row displays the mean duration of completed unemployment spells. The durations of unemployment, as we have already noted, are fairly short. We have also pointed out that labor force withdrawal makes this figure a very misleading indicator of the ease of job finding. In line 2 we attempt to answer the more meaningful question of how long the unemployed must wait until a job is found. The calculation recognizes the possibility of labor force withdrawal and the attendant

Table 7.5 **Alternative Measures of the Duration of Joblessness**

Duration category	Demographic groups: Males 16–19 Total	Males 16–19 In school	Males 16–19 Out of school	Females 16–19 Total	Females 16–19 In school	Females 16–19 Out of school	Males 25–29
1. Mean duration of unemployment (months) $1/(P_{ue}+P_{un})$	1.7	1.4	2.0	1.6	1.5	1.8	2.5
2. Expected time until next employment spell for those currently unemployed[a] (months)	5.4	7.2	3.0	6.6	9.4	4.2	4.3
3. Average months of unemployment to date	2.9	2.4	3.4	2.4	2.0	2.7	5.3
4. Expected time between beginning of current spell of unemployment and next spell of employment for those currently unemployed[b]	8.3	9.6	6.4	9.0	11.4	6.9	9.6
5. Mean duration of nonemployment (months) $\left(\frac{U+N}{U P_{ue} + N P_{ne}}\right)$	6.4	8.1	3.7	8.2	10.4	5.2	5.5
6. Expected total weeks of nonemployment for those currently nonemployed[c]	—	—	7.5	—	—	10.4	11.1

SOURCE: The probabilities underlying the calculations are taken from tables 7.1 and 7.2.

[a]This is equal to $\frac{D_u + P_{ex} D_n}{1 - P_{ex}(1 - P_{ns})}$ where D_u and D_n are durations in unemployment and nonemployment, P_{ex} is the fraction of unemployment spells which end in labor force withdrawal, and P_{ns} is the probability of entering the labor force with a job.

[b]Line 4 is line 2 plus line 3.

[c]Line 6 is line 5 multiplied by 2; this concept is only meaningful for the out of school group.
SOURCE: The probabilities underlying the calculations are taken from tables 7.1 and 7.2.

decline in the probability of finding a job. The possibility of subsequent labor force reentrance into unemployment is also taken into account. The average unemployed male teenager in March of 1976 could expect to wait 5.4 more months before finding a job. Line 3 notes that the average male 16–19 had been unemployed for 2.9 months. Hence the average unemployed person was in the midst of a spell of over eight months of joblessness. The notion that most of those currently unemployed can and will find jobs quickly is simply false. Most are in the midst of lengthy spells without work.

Even the large estimates above may understate the difficulty of movement into jobs. We have argued that many persons who are out of the labor force behave in ways which are functionally equivalent to the

unemployed. In line 5 we report the expected length of time until a job is found for currently nonemployed young people. Doubling this figure yields the mean total duration of joblessness for the nonemployed. The results indicate that it takes most persons a long time to find a job. The average nonemployed young man who is not in school will have been out of work for about 7.5 months before returning to employment. The corresponding figures for women are even larger, reflecting greater persistence of labor force withdrawal. All of the estimates in table 7.5 are conservative since they do not take account of the fact that continuation probabilities decline with duration.

7.2.2 How Extensive is Unemployment?

While the evidence suggests that joblessness is frequently prolonged, we have not yet considered multiple spells. The annual March Work Experience Survey asks all civilian noninstitutional respondents in the CPS to describe their work and unemployment experience in the preceding year. We have used the Work Experience data to calculate two measures of joblessness. The first is the official definition of unemployment as weeks looking for work or on layoff. This concept is referred to as "nonemployment." It is important to note that nonemployment excludes weeks out of the labor force for those citing illness, family responsibilities, or "other" as the principal reason for part-year work. For these individuals, nonemployment is defined as weeks of unemployment. In both calculations, persons who did not participate in the labor force are excluded from the sample.

The distribution of unemployment and nonemployment for selected demographic groups is shown in table 7.6. Of the approximately 6 million young people with labor force experience, about 1.7 million experience unemployment averaging about three months during the year. The average number of weeks is almost 50% greater for the out-of-school group. While the number of persons experiencing nonemployment is not different from the number with unemployment in this sample, weeks of joblessness are significantly greater when time out of the labor force is included. Out-of-school youths average six months of nonemployment per person becoming nonemployed.

In line 6 of the table we examine the experience of the unemployed population at a given time by focusing on the distribution of unemployment and nonemployment weeks. Because unemployment weeks are captured randomly by the survey, the statements that "x percent of unemployment weeks are suffered by persons with y weeks of unemployment during the year," and "x percent of the currently unemployed will experience y weeks of unemployment during the year" are equivalent. Both the unemployment and nonemployment distributions exhibit substantial concentration, with the preponderance of unemployment

Table 7.6 **The Concentration of Unemployment and Nonemployment for Teenagers, 1974**

	Demographic groups					
		Males		Females	Nonwhite	
					Males	Females
	Total	Out of school	Total	Out of school	Out of school	Out of school
1. Total with labor force experience (millions)	5.99	2.82	5.27	2.44	.31	.30
2. Total with unemployment (millions)	1.71	.91	1.56	.85	.14	.17
3. Average weeks of unemployment per person with unemployment	12.7	18.6	10.4	14.9	20.1	16.4
4. Total with nonemployment (millions)	1.71	.91	1.56	.85	.14	.17
5. Average weeks of nonemployment per person with nonemployment	16.2	25.2	15.4	24.1	29.0	30.3

6. Distribution of individuals and weeks by duration	*U*	*NE*	*U*	*NE*	*U*	*NE*	*U*	*NE*	*U*	*NE*	*U*	*NE*
1–4 weeks												
% of labor force	11.2	10.3	6.2	4.2	14.4	12.6	10.9	6.9	7.5	4.6	17.1	9.0
% of total weeks	6.2	4.4	2.1	1.0	9.4	5.5	4.2	1.6	1.6	.7	3.7	1.0
5–14 weeks												
% of labor force	9.0	7.9	9.7	7.3	8.3	7.2	9.9	7.7	16.5	11.3	17.5	8.0
% of total weeks	24.8	17.0	16.0	9.0	26.8	15.8	19.1	9.1	17.8	8.5	18.8	4.6
15–26 weeks												
% of labor force	4.1	2.8	8.1	5.3	4.0	2.4	8.2	4.8	6.4	2.2	9.2	4.3
% of total weeks	23.8	12.7	28.2	13.7	27.1	11.0	33.2	12.0	14.6	3.4	20.8	5.3
40+ weeks												
% of labor force	1.9	4.2	3.6	8.4	1.2	4.9	2.4	10.5	7.5	18.8	7.5	28.2
% of total weeks	24.0	41.3	27.6	47.4	17.1	49.4	21.5	57.2	37.3	65.0	37.0	75.1

attributable to persons out of work more than half the year. Among out-of-school male teenagers, 54% of unemployment and 76% of nonemployment were experienced by persons out of work more than six months. Among young black men who were not enrolled in school, 65.0% of nonemployment was accounted for by those out of work more than forty weeks during the year. As one would expect from these figures, individuals with brief, infrequent unemployment experience contribute only negligibly to overall unemployment. For example, persons out of work less than three months accounted for only 21% of nonemployment among young men who were out of school. While many teenagers experience short periods of unemployment in moving between jobs, these are of little consequence in explaining total weeks of nonemployment.

The statistics in tables 7.5 and 7.6 tell a consistent story. Youth unemployment is properly understood in terms of a fundamental failure of the labor market to meet the needs of some workers. A small portion of the population finds itself chronically unable to locate satisfactory work. They do not have the same ease of transition which characterizes the remainder of the population. Rather, they wait long periods between jobs. Moreover, they experience frequent unemployment because of the frequency with which they leave employment. Whether the source of the problem is a shortage of jobs or that the "hard core" group is unemployable can never be resolved conclusively. Some aspects of the problem are considered in section 7.3.

7.2.3 Racial Differences in Nonemployment Experience

The wide disparity between the unemployment rates of white and nonwhite teenagers has been the subject of considerable academic and public discussion. Research designed to explain racial unemployment differentials has emphasized differences in turnover and minimized the importance of long term joblessness. Writing in 1974, Barrett and Morgenstern stated this view quite clearly:

> The high unemployment rates of blacks and young people are attributable almost entirely to their higher turnover—that is, the frequency with which they become unemployed. The major unemployment problem among black Americans is not chronic long-duration unemployment, but frequent job changes and unemployed search. High turnover rates among young people are consistent with a search theoretic model in which frequent flows into unemployment represent a potentially efficient sampling of the job market.[9]

The importance of long-term unemployment, evident in tables 7.5 and 7.6, suggests the need to reexamine explanations of racial differences which rely on turnover and search associated with frequent job changes. Evidence on racial differences in transition probabilities and time to find

a job is presented in table 7.7 for male and female teenagers not in school. A comparison of transition probabilities reveals three major differences between whites and nonwhites. Nonwhite teenagers are three times as likely to lose or quit their jobs and become unemployed as their white counterparts. Among young men, for example, the probability of leaving employment and entering unemployment is .042 for whites, while the comparable rate for nonwhites is .129. These differences may reflect a higher propensity of nonwhites to quit jobs, but they are also consistent with the view that nonwhites are more subject to layoff because of less seniority and because of discrimination. There are much smaller differences in the probability of employed teenagers leaving the labor force. Indeed, the racial differences in P_{en} among young men are negligible.

One of the most striking differences in transition patterns is found in the probabilities of entering employment from unemployment and from outside the labor force. Young white men are three times as likely to find employment if unemployed than their nonwhite counterparts. Since the

Table 7.7 **Differences in Unemployment Experience for Out-of-school Teenagers by Race, March–May 1976**

	Demographic groups			
	Whites		Nonwhites	
Category	Men 16–19	Women 16–19	Men 16–19	Women 16–19
1. Transition probabilities				
P_{en}	.052	.078	.059	.097
P_{eu}	.042	.020	.129	.067
P_{ue}	.369	.377	.119	.163
P_{un}	.184	.225	.187	.193
P_{nu}	.118	.107	.194	.100
P_{ne}	.240	.153	.102	.048
2. Time to find a job				
(a) Mean duration of unemployment (months)	1.8	1.7	3.3	2.8
(b) Expected months until next job (for the currently unemployed)	3.1	3.7	8.9	10.2
(c) Average months of unemployment to date	3.2	2.7	4.0	3.0
(d) Expected months of nonemployment from beginning of current spell of unemployment until next job	6.3	6.4	12.9	13.2

NOTE: For definitions of the concepts in lines 2–5, see the note in table 7.5. The probabilities are taken from matched CPS files for March–April–May–June 1976. Additional details are contained in the note to table 7.1.

probability of dropping out of the labor force is identical for white and nonwhite teenage men, nonwhites are much more likely to remain unemployed. Similar patterns are found for young women, where unemployed whites are more than twice as likely to find work.

The apparent difficulty nonwhite teenagers have in finding work if unemployed is mirrored in the experience of those classified as outside the labor force. Using teenage women as an example, the probability of entering the labor force is .36 for whites and .15 for nonwhites. The probability of successful labor force entry (i.e., entering with a job) given by

$$P_{ns} = \frac{P_{ne}}{P_{ne} + P_{nu}} \tag{5}$$

is two-thirds for whites but only one-third for nonwhites. Not only do young nonwhites experience more difficulty finding work if unemployed, they are much more likely to become unemployed upon entering the labor force. These calculations suggest that racial differences in unemployment rates are due largely to differences in the probability of entering employment. While differences in layoffs and quittings are important, the dominant explanation is found in the difficulty nonwhites have in locating work.

The implications of job-finding difficulty are examined in line 2 of table 7.7, which presents estimates of time needed to find a job for those currently unemployed. The differences between whites and nonwhites are quite striking. On average, unemployed white teenagers could expect to wait about three (men) or four (women) months before finding work, while nonwhites faced nine to ten months of further joblessness. Since nonwhites had already accumulated four months of unemployment, the data reveal that unemployed nonwhite teenagers were in the midst of very long spells without work. These calculations are undoubtedly influenced by the depressed state of the labor market in the spring of 1976. Yet even considerably reducing these estimates to account for the cycle would be unlikely to change the basic conclusion. It appears that nonwhite teenagers have much more difficulty finding work than their white counterparts, and that even when they find it, they are much more likely to be fired, laid off, or quit. As a result they spend extended periods out of work.

7.2.4 Employment Exit and Extensive Unemployment

Many observers regard the brevity of employment spells emphasized in section 7.1 as the root cause of the youth nonemployment problem. The results here call that interpretation into question. For most young people, frequent job change appears to be possible without extensive unemployment. The median length of unemployment spells is probably about three weeks. Half of all job changes occur without any unemployment at all. A

person who held five jobs during the year and was unemployed during each change for the median length of time would suffer only twelve weeks of unemployment during the year. Persons with this little unemployment contribute less than one-fourth of all youth unemployment. It is therefore clear that without serious difficulty in job-finding even extreme employment instability could not account for observed patterns of concentrated joblessness.

A similar conclusion is obtained by examining in more detail the experience of young people reporting extensive joblessness. Among persons with over twenty-six weeks of nonemployment, who accounted for 76% of joblessness, the average number of unemployment spells was less than two. In many cases, these spells were separated by periods outside the labor force rather than by jobs. Hence this is an overstatement of the average number of employment spells during the year. Even neglecting this correction the average spell length of the extensively nonemployed appears to last close to five months.[10] Thus, for this group, with whom the real problem lies, the difficulty is prolonged unemployment rather than frequent joblessness.

Previous analyses of unemployment dynamics have emphasized the fact that the average flow into unemployment differs much more among demographic groups than does the average duration of unemployment. This has led them to conclude that the problem of high unemployment groups (e.g., teenagers) is excessive turnover, not difficulty in finding jobs. The results in this section show that this type of analysis can be very misleading. Group averages conceal wide variations. The vast majority of unemployment is experienced by a small minority of the population. Some groups are disproportionately represented in the "hardcore" population. The error is in tracing group differences to general turnover, rather than differences in the incidence of "hardcore" problems.

Nothing in the preceding paragraphs is inconsistent with the common observation that differences in demographic group unemployment rates are due largely to differences in the frequency of spells rather than their duration. The point here is that for the problem population it is very difficult to locate a suitable job. The demographic observation simply addresses the incidence of "problem" people in different subgroups of the population. Once it is recognized that nonemployment is largely a matter of a small minority of all demographic groups with serious job-finding problems, the fallacy of inferring the nature of individual problem unemployment from comparisons of demographic averages becomes clear.

7.3 Cyclical Variations in Employment

The cyclical behavior of youth employment and unemployment can shed light on the nature of the nonemployment problem. If extensive

joblessness occurs only because some young people are essentially unemployable, one would expect changes in aggregate demand to have small effects. On the other hand, a finding that changes in aggregate demand had a large impact on young people would imply that at least some unemployment was due to a shortage of attractive opportunities. Of course, a finding that aggregate demand has a potent effect on the youth labor market need not imply the desirability of expansionary macroeconomic policy, which has other perhaps undesirable consequences.

7.3.1 Employment, Unemployment, and Participation

The cyclical sensitivity of unemployment is the reflection of two quite different phenomena. Unemployment can increase either because fewer jos are available or because more workers decide to seek the available jobs. These two sources of unemployment obviously have quite different welfare implications. While the former is almost certainly indicative of a worsening of labor market performance, the latter may reflect an improvement in conditions. Focusing only on unemployment rates is thus very likely to be misleading. Moreover, the results in section 7.1 suggest that the NILF-unemployed distinction is quite arbitrary. These considerations indicate the importance of examining the cyclical behavior of employment, unemployment, and participation.

These three measures summarize the labor market experience of a given demographic group. They are related by the following identity:

$$\frac{E}{N^i} = \frac{L}{L^i}\frac{L}{N^i} \tag{6}$$

where E is employment, N is population, L is labor force, and i indexes demographic groups. Taking logs and differentiating yields:

$$\text{dln}\left(\frac{E}{N}\right)_i = \text{dln}\left(\frac{E}{N}\right)_i + \text{dln}\left(\frac{L}{N}\right)_i \tag{7}$$

Thus changes in the employment ratio may be decomposed into changes in employment and participation rates. Since persons in the labor force are either employed or unemployed it is clear that

$$\text{dln}\left(\frac{E}{N}\right)_i = \text{dln}\,(1 - UR)_i + \text{dln}\left(\frac{L}{N}\right)_i \tag{8}$$

where UR is the unemployment rate. This decomposition provides the basis for our estimates of the effects of overall economic performance on youth employment.

7.3.2 A Simple Model

The cyclical responsiveness of youth employment is estimated using a quite simple model. For each group we postulate that the unemployment

rate and participation rate are functions of aggregate demand, seasonal factors, and time. The time trends are included to reflect the impact of slowly changing social trends and other gradually moving variables omitted from the equation. Seasonal movements are captured with monthly dummies. The basic equations to be estimated are:

$$\ln(PR)_{it} = \beta_0 + \sum_{j=0}^{8} \beta_{t-j}\, UPRIME_{t-j} + \sum_{k=1}^{11} \Theta_k S_k + \delta_1 T + \delta_2 T67 + v_{it} \tag{9}$$

$$UR_{it} = \alpha_0 + \sum_{j=0}^{8} \alpha_{t-j}\, UPRIME_{t-j} + \sum_{k=1}^{11} \gamma_k S_k + \phi_1 T + \phi_2 T67 + u_{it} \tag{10}$$

where *UPRIME* is the unemployment rate of men 35–44, T is the time trend, $T67$ is a second time trend which begins in 1967, and S_i are monthly dummies.

The specification of (9) is traditional in analyses of participation.[11] The prime-age male unemployment rate is assumed to measure variation in job opportunities and the ease of job finding. Since workers may respond to changes in the availability of jobs with a delay, lagged unemployment is also included in the equation. While equations of this sort have not been extensively used in studying the cyclical behavior of group unemployment rates, they are justified by essentially the same arguments.

The interpretation of the coefficients of the model is straightforward. For example, the cyclical responsiveness of the participation rate of the ith group is measured by $\gamma^i_{PR} = \Sigma\beta_{t-j}$. A value of -1.0 implies that a 1 percentage point decrease in *UPRIME* (e.g., from 0.6 to 0.5) produces a 1% increase in the participation rate of the ith group (e.g., .430 to .434). Equations (9) and (10) have been estimated using both annual and monthly data for the period (1948–77) for various demographic groups. The identity (6) along with the properties of ordinary least squares insures that the relationship between the employment ratio, aggregate demand and time is given by:

$$\ln(EN)_{it} = \beta_0 - \alpha_0 + \Sigma(\beta_{t-j} - \alpha_{t-j})\, UPRIME_{t-j} + \sum_{k=1}^{11} (\Theta_k - \gamma_k) S_k + (\delta_1 - \phi_1)t + (\delta_2 - \phi_2) T67 + e_i \tag{11}$$

It follows immediately that the equations presented here can be used to decompose cyclical movements in the employment ratio into unemployment and participation components since

$$\gamma^i_{EN} = \gamma^i_{PR} - \gamma^i_{UR} \tag{12}$$

In order to insure that this identity is exactly satisfied we have estimated all the equations using ordinary least squares without correcting for serial

correlation. The results for individual equations, however, are not sensitive to this choice. The estimated equations are shown in table 7.8.

The principal conclusion that emerges is the tremendous responsiveness of youth employment to aggregate demand. For men 16–19, each one-point decrease in the prime-age male unemployment rate increases the employed proportion of the population by about 4.5%. About two-thirds of the response comes through unemployment, with the remainder due to increases in participation. For women 16–19, the cyclical respon-

Table 7.8 **Cyclical Behavior of Unemployment, Participation, and Employment by Teenage Demographic Groups (Standard Errors in Parentheses)**

	Independent Variables						
Demographic group/ dependent variable	*CONS*	*UPRIME*	*T*	*T67*	R^2	*SEE*	*DW*
			(12×10^2)				
1. Men 16–19: total							
unemployment rate	.02	2.77	.35	−.15	.84	.018	.85
	(.005)	(.10)	(.02)	(.06)			
participation rate	−.47	−1.87	−1.11	2.82	.95	.035	.73
	(.01)	(.19)	(.04)	(.11)			
employment ratio	−.50	−4.64	−1.45	2.98	.95	.037	.72
	(.01)	(.20)	(.046)	(.12)			
2. Men 16–19: nonwhite							
unemployment rate	−.05	4.29	1.14	−.21	.69	.051	1.32
	(.03)	(.36)	(.12)	(.23)			
participation rate	−.35	−1.99	−2.12	.84	.90	.064	1.13
	(.03)	(.45)	(.14)	(.28)			
employment ratio	−.30	−6.29	−3.26	1.05	.87	.085	1.27
	(.04)	(.59)	(.19)	(.37)			
3. Women 16–19: total							
unemployment rate	−.01	1.78	.52	−.36	.82	.021	.94
	(.007)	(.11)	(.03)	(.07)			
participation rate	−.83	−2.29	−.44	3.48	.93	.039	.69
	(.01)	(.22)	(.05)	(.12)			
employment ratio	−.81	−4.07	−.96	3.84	.89	.045	.60
	(.01)	(.24)	(.06)	(.14)			
4. Women 16–19: nonwhite							
employment rate	−.04	3.45	1.58	−.99	.58	.070	1.44
	(.04)	(.49)	(.16)	(.31)			
participation rate	−1.11	−2.96	−.22	1.02	.75	.105	.82
	(.05)	(.74)	(.24)	(.46)			
employment ratio	−1.07	−6.41	−1.80	2.00	.65	.131	.93
	(.07)	(.92)	(.29)	(.58)			

NOTE: The coefficient on *UPRIME* is the sum of the coefficients obtained from a nine-month Almon lag (first degree, far restriction).

siveness estimates are comparable, with participation somewhat more responsive, and unemployment somewhat less responsive to aggregate demand. In line with the traditional view of disadvantaged youths as likely to be "last hired" and "first fired," black youth employment is even more cyclically sensitive than the total group. For black men 16-19, each point reduction in the unemployment rate raises the employment ratio by close to 6.3%. A comparable figure obtains for black women.

The substantial cyclical response to changes in aggregate demand suggest that a shortage of job opportunities characterizes the youth labor market. If there were not a dearth of attractive jobs, aggregate demand would not be expected to have a significant impact on youth employment. The very strong response of participation to unemployment confirms the importance of focusing on employment rather than unemployment in assessing labor market conditions. It also supports the argument of section 7.1 that much of the high rate of labor force withdrawal among the unemployed is attributable to discouragement.

It is instructive to consider the cyclical responsiveness of enrolled and nonenrolled young people separately.[12] This is done in table 7.9. The results display dramatic differences in the labor market behavior of enrolled and out-of-school youths. For young men and women enrolled in school almost all of the response of employment is due to movements in participation rather than unemployment. The opposite pattern characterizes youths who are out of school. Increases in employment for this group come almost entirely at the expense of unemployment. However, employment of out-of-school youths appears to be only about half as

Table 7.9 **Cyclical Response of Teenagers by Enrollment Status**

Enrollment groups		Employment ratio	Participation rate	Employment rate
In school				
Men	16–19	6.97	6.00	.97
		(1.12)	(1.05)	(.40)
Women	16–19	6.78	6.39	.39
		(1.47)	(1.38)	(.51)
Out of school				
Men	16–19	2.80	−.79	3.59
		(.91)	(.36)	(.84)
Women	16–19	3.38	1.00	2.38
		(.85)	(.72)	(.45)

SOURCE: These estimates are based on data taken from tables B6 and B7 of the *Employment and Training Report of the President*, 1978. The data are based on the October supplement of the CPS, and cover the period 1954–77. This table is reprinted from Clark and Summers, "Demographic Differences in Cyclical Employment Variation," *Journal of Human Resources* 16 (Winter, 1981).

sensitive to demand as that of enrolled young people. The reasons for these disparities are not clear. One possibility is that youths who are in school tend to await job offers passively. When offered an attractive job they accept and join the labor force; otherwise they remain out of the labor force. This would explain the observed pattern of participation and unemployment dynamics.

7.3.3 Evidence from Gross Flows

The strong response of employment and participation to aggregate demand reflects the large inflows and outflows described in section 7.1. The surges in employment and participation that accompany increases in aggregate demand may be due either to increased inflows or decreased outflows. That is, low unemployment may raise employment either by helping workers get jobs or by helping them hold jobs. In order to examine this issue we have estimated equations describing the time series movements in the monthly flow probabilities. In addition to trend, cycle, and seasonal variables, we also studied the effects of minimum wage legislation and federal youth employment programs. Since we were unable to isolate a significant effect of either of these measures on transition probabilities, the results of estimating the equations in which they were included are not reported here.

Table 7.10 summarizes the results of the flow probability equations. The first set of equations describes the probability of employment entrance. For men, the rate of entrance is very sensitive to demand. A one-point increase in the prime-age male unemployment rate reduces the probability of entry by .014, or about 9%. It is changes in entry rather than exit behavior which are the prime cause of employment fluctuations among young men. The probability of job entrance among women is much less affected by cyclical developments. The reasons for this difference are not clear. One possibility is that women are the first to be laid off in downturns. A more plausible explanation is that the entrance rate does not fall as unemployment rises because more women enter the labor force as their family income falls. The rate of exit does not appear to exhibit significant cyclical fluctuations.

The rates of labor force entry and exit also vary cyclically. The rate of exit falls during recessions largely because the probability of withdrawal is much greater for the unemployed than it is for those who are employed. For the male groups the probability of labor force entrance is strongly cyclical. It is much less cyclical for women because of the added worker behavior noted above.

On balance, the flow probability equations bear out the basic conclusions of this section. They demonstrate that both labor force entry and employment entry become significantly easier during peak periods. This is consistent with the findings about the responsiveness of nonemployment to the state of local labor markets, noted in section 7.30. Taken

Table 7.10 **Cyclical Behavior of Transition Probabilities 1968–76 (Standard Errors in Parentheses)**

Transition probability/ demographic group	Independent variables					
	CONS	*UPRIME*	*T* (12×10^2)	$\bar{R}^2$	*SEE*	ρ
Dependent variable						
1. Probability of employment entrance						
M1619	.093	−1.440	−.185	.937	.019	−.050
	(.073)	(.257)	(.105)			(.105)
BM1619	.172	−1.420	−.264	.856	.024	.002
	(.032)	(.357)	(.146)			(.105)
W1619	.051	−.273	.169	.930	.010	−.293
	(.011)	(.110)	(.048)			(.100)
BW1619	.110	−.246	−.206	.796	.017	.029
	(.023)	(.254)	(.104)			(.105)
2. Probability of employment exit						
M1619	.229	.214	−.377	.946	.015	−.105
	(.018)	(.194)	(.079)			(.104)
BM1619	.134	−.696	.216	.839	.038	.002
	(.051)	(.557)	(.218)			(.104)
W1619	.250	.591	−.535	.940	.015	−.154
	(.017)	(.184)	(.075)			(.104)
BW1619	.364	−.493	−.714	.793	.048	−.080
	(.059)	(.642)	(.262)			(.104)
3. Probability of labor force entrance						
M1619	.063	−.760	.378	.961	.020	−.122
	(.024)	(.266)	(.109)			(.104)
BM1619	.170	−1.148	−.115	.932	.027	.111
	(.039)	(.435)	(.178)			(.104)
W1619	.032	−.036	.324	.959	.012	−.25
	(.013)	(.142)	(.058)			(.101)
BW1619	.104	.291	.064	.385	.023	−.018
	(.030)	(.377)	(.133)			(.105)
Dependent variable						
4. Probability of labor force exit						
M1619	.255	.578	−.541	.940	.014	−.041
	(.017)	(.190)	(.077)			(.104)
BM1619	.170	.498	.026	.851	.029	.112
	(.043)	(.478)	(.195)			(.104)
W1619	.280	.627	−.592	.920	.014	−.158
	(.016)	(.173)	(.071)			(.104)
BW1619	.238	1.23	−.149	.753	.036	−.004
	(.047)	(.515)	(.211)			(.106)

NOTE: The coefficient on *UPRIME* is the sum of nine-month Almon lag (first degree, far restriction); each regression was estimated with seasonal dummies, and a correction for first order autocorrelation.

together with the evidence that most unemployed teenagers have and will experience quite prolonged joblessness, these findings suggest that a shortage of attractive jobs is at least a partial source of the youth unemployment problem.

7.4 Conclusions and Implications

In this section we shall discuss the implications of our results for policies designed to combat youth unemployment. Our argument can be stated in quite bold terms. Expansionary aggregate demand policy is the only proven way of enlarging the employment opportunities for young people. A consistent effort to keep the unemployment rate near its full employment level would do more to help young people find jobs than almost any other conceivable governmental policy. Of course, other considerations might suggest that, on balance, such a policy is not workable. While certain structural policies might have salutary effects, it is highly unlikely that they could succeed except in a full-employment economy. After discussing the positive effects of a tight labor market, we shall turn to an examination of potential structural initiatives.

7.4.1 The Macroeconomy and the Youth Labor Market

As section 7.3 showed, both teenage unemployment and participation respond strongly to labor market conditions. A reduction of one point in the prime-age male unemployment rate raises the proportion of teenagers who are employed by about 4%, which is split about 2:1 between a reduction in unemployment and an increase in participation. For black youths the proportion rises about 6.5% split in a similar way. These figures imply that the 1975 recession cost young workers about 800,000 jobs. The growth in the economy during the late 1960s created close to 300,000 jobs for young workers. Evidence from cross-section data underscores the responsiveness of teenage unemployment to changes in demand. Freeman (1978) and Clark and Summers (1978) have shown that the youth employment ratio is much higher in strong than in weak labor labor markets.[13]

Expansion of aggregate demand is especially potent in making available opportunities for those who are most disadvantaged. Between 1969, when the aggregate unemployment rate was 3.6%, and 1976 when it was 7.7%, the proportion of 16–19 year olds suffering more than six months of unemployment rose fourfold. For black youths the same figure increased by almost six times. The tremendous impact of demand on the amount of long-term unemployment is particularly important in light of the results of section 7.1. The evidence presented there suggests that while most teenagers experience little difficulty in moving into and out of employment, most unemployment is concentrated among those who face

serious difficulties in obtaining jobs. The teenage unemployment problem is not the lack of desire to hold jobs, but the inability to find work. A shortage of jobs appears to be the only explanation for the large responsiveness of employment to changes in demand. If unemployment were simply a matter of instability, there would be little reason to expect it to respond strongly to aggregate demand. We conclude that the existence of a job shortage must be the central reality dominating efforts to evaluate or design structural initiatives to improve the labor market for youths.

This conclusion is buttressed by evidence on job applications for surveys of low-wage employers who have placed "help wanted" ads in newspapers. In Noverber 1978, *Fortune* magazine reported on a survey of want ads in a small city in upstate New York. The investigators tracked down all want ads, but the results for jobs requiring little skill provide insight into the operation of low-wage markets. A focus on low-wage/low-skill markets is critical for the validity of this evidence. The existence of a long queue for good high-paying jobs is not evidence of an overall shortage, since low-paying, dead-end jobs could go unfilled while people searched in the high-wage sector. Yet for jobs requiring no skill or previous experience, the *Fortune* investigators found employers swamped with applications. Many employers offering jobs paying as low as $3 per hour had as many as seventy applicants within twenty-four hours of placing an ad. Interviews with employers revealed that many never placed want ads since they had huge files of applications even for low-paying jobs.

A similar finding was uncovered in a recent study of the hiring policies of one low-wage employer.[14] Analysis of personnel records revealed that vancancies were rarely advertised. When jobs opened, the employer simply called past job applicants. In most cases, previous applicants were still unemployed and eager for work. Other new hirings came from the friends and relatives of existing employees.

Further evidence on queues and vacancies has emerged in our continuing analysis of want ads in the Boston area. Focusing on the very worst jobs advertised in the Sunday paper, we have found an average of fifteen to twenty responses within two days of the ads' placement, with some employers receiving more than thirty appliers, over half of whom appeared in person. The available evidence suggests that employers have no difficulty in filling vacancies even for jobs requiring menial tasks that pay close to the minimum wage and have little prospect for improvement. These findings are not definitive, but they do suggest that the long queues characteristic of the high-wage sector may exist in the low-wage sector as well.

The existence of a job shortage is of fundamental importance in assessing the policy implications of the instability view of teenage unemployment. We have noted the allegation that high turnover is the princip-

al culprit in high youth unemployment rates which yields policy prescriptions designed to improve school-to-work transitions and upgrade teenage workers. However, in the face of a job shortage, reduction of turnover will only redistribute the burden of unemployment. Without job vacancies to be filled, or an increase in the number of jobs, reduced instability would simply reduce the frequency and increase the duration of unemployment spells.

Before we turn to an evaluation of potential structural initiatives, it is useful to review the extent to which strong aggregate demand can achieve structural goals. A key objective of almost all structural programs is to aid youths in obtaining the skills and employment experience necessary to succeed in the adult world. These goals are accomplished to a large extent by expansionary macroeconomic policies. Between 1969 and 1976 the rate of job loss rose by about 75%, substantially reducing the ability of young people to accumulate experience. Cyclical decreases in the youth employment rate also cause reductions in on-the-job training. Standard estimates (e.g., those of Mincer) suggest that an extra year's experience raises earnings by about 2 to 3%. Ellwood's results in this volume (chapter 10) appear to be consistent with this figure. This figure suggests that the 1975–76 recession reduced by a significant amount the lifetime earnings of the youth cohort. Since each year of youth nonemployment costs about $20,000, the extra nonemployment had a present value cost of about 16 billion dollars. This calculation is a substantial underestimate of the true difference that cyclical conditions can make in human capital formation. It ignores the benefits of both worker upgrading and the likelihood that if labor were in short supply employers would compete, at least in part, by offering training. When these factors are considered, it is clear that expansionary macroeconomic policy can do a great deal to achieve structural goals.

7.4.2 The Role of Structural Policies

The results in section 7.3 bear out Feldstein and Wright's (1974) conclusion that even if the prime-age male unemployment rate were reduced to unprecedented levels, teenage unemployment rates would remain relatively high.[15] This fact has led many to conclude that only structural measures can make an effective dent in the youth unemployment problem. As we have argued elsewhere, this inference is misleading. Youth unemployment rates remain so high when aggregate demand increases in large part because of increases in participation. In Clark and Summers (1979) we show that if the mature male unemployment rate were driven down its 1969 level, and participation were not allowed to expand, the teenage unemployment rate would fall to close to 6%. The question remains as to what, if any, contribution structural measures can make. These policies may be divided into three broad categories: (1)

programs to aid workers in searching for jobs through job matching or improved information; (2) job training programs designed to provide workers with necessary skills; (3) job creation programs designed to make available special jobs for youth groups.

A detailed review of the evidence and discussion of the effectiveness of job matching, job training, and job creation programs is beyond the scope of this chapter. Our results, however, suggest the following observations. First, given a shortage of jobs, training and job matching programs offer little prospect for making a significant contribution to the solution of the youth unemployment problem. Aiding any single worker through training or improved transition to work will improve his chances at the expense of others. As long as there is only a fixed number of jobs, total employment cannot be increased by helping all workers augment skills or search more efficiently. Each worker's additional search, for example, detracts from the opportunities open to other workers and so generates a negative externality. Under these circumstances, belief in training and job matching reflects the fallacy of composition. Matching and training programs cannot have the desired effects unless coupled with an expansion in the number of jobs. If such an expansion is forthcoming, and employers experience difficulty in filling vacancies, training and market transition programs could prove useful.

Second, direct job creation through public employment or private sector subsidies appears to offer the most promising structural approach to the youth unemployment problem. Like training programs, the impact of policy can be focused on those groups who account for the bulk of teenage unemployment. Moreover, the policy is directed at the root of the problem: a shortage of jobs. The success of such programs, however, depends on the extent of net job creation and the provision of skills and experience useful to young persons over the longer term. The evidence presented in section 7.3 suggests that governmental efforts to provide seasonal jobs for disadvantaged in-school youths have met with some success. The effect of other governmental programs like the Youth Conservation Corps, the Job Corps, and Public Service Employment remains an open question in need of further research.

7.4.3 Conclusion

This chapter has presented evidence on the characteristics and sources of teenage unemployment. Our results underscore the apparent dynamic character of the youth labor market, but suggest that market dynamics cannot account for the bulk of youth joblessness. The job instability/turnover view of unemployment is applicable to the majority of teenagers who experience little difficulty in moving into and out of the labor force. Most unemployment, however, is concentrated among those people who are unemployed for extended periods, and who face serious difficulty in

obtaining employment. The results suggest that the problem of teenage unemployment arises from a shortage of jobs. The evidence in section 7.4 indicates that aggregate demand has a potent impact on the job prospects and market experience of teenagers.

Notes

1. This view has been expressed in Robert E. Hall, "Turnover in the Labor Force," *Brookings Papers on Economic Activity* 3 (1972):709–56, and "Why Is the Unemployment Rate So High at Full Employment?" *BPEA* 3 (1970):369–402; George L. Perry, "Unemployment Flows in the U.S. Labor Market," *BPEA* 2 (1972):245–78; Ralph E. Smith, Jean E. Vanski, and Charles C. Holt, "Recession and the Employment of Demographic Groups," *BPEA* 3 (1974):737–58; Stephen T. Marston, "Employment Instability and High Unemployment Rates," *BPEA* 1 (1976):169–203; and Martin S. Feldstein, *Lowering the Permanent Rate of Unemployment*, a study prepared for the use of the Joint Economic Committee, 93rd Cong. 1st sess. (Washington, D.C.: Government Printing Office, 1973).

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

3. Henry Woltman and Irv Schreiner, memorandum on "Possible Effects of Response Variance on the Gross Changes from Month to Month in the Current Population Survey," Bureau of the Census, Washington, D.C.

4. This point is developed in Kim B. Clark and Lawrence H. Summers, "Labor Market Dynamics and Unemployment: A Reconsideration," *BPEA* 1 (1979):14–60.

5. These data are contained in Kim B. Clark and Lawrence H. Summers, "Labor Force Transitions and Unemployment" (National Bureau of Economic Research Working Paper 277).

6. Ibid.

7. Preliminary statistical analysis suggests that seasonal fluctuations in teenage unemployment have been lower since the inception of various jobs programs in 1965.

8. Richard Layard, "Youth Unemployment in Britain and the U.S. Compared," chapter 15 of the present volume.

9. Nancy Barret and Richard Morgenstern, "Why Do Blacks and Women Have High Unemployment Rates?" *J. Hum. Resources* 9 (Fall, 1974):456.

10. This figure is also an underestimate because of spells which are not completely contained in a year.

11. See, for example, William E. Bowen and T. Aldrich Finegan, *The Economics of Labor Force Participation* (Princeton: Princeton University Press, 1969), and George C. Perry, "Potential Output and Productivity" *BPEA* 1 (1973):207–52.

12. This section draws on Kim B. Clark and Lawrence H. Summers, "Demographic Differences in Cyclical Employment Variation," *Journal of Human Resources* 16 (Winter, 1981):61–79.

13. Richard Freeman, "Economic Determinants of the Geographic and Individual Variation in Labor Market Positions of Young Persons," and Kim B. Clark and Lawrence H. Summers, "Labor Force Participation: Timing vs. Persistence," ASPER, U.S. Department of Labor, (Technical Analysis Paper no. 60, 1978).

14. Jane Schmeisser, "Hiring in a Low Wage Labor Market," (unpublished senior honors thesis, Department of Economics, Harvard University, 1979).

15. Martin S. Feldstein and Brian Wright, "High Unemployment Groups in Tight Labor Markets," (Harvard Institute of Economic Research Discussion Paper no. 488, June 1976).

Comment George L. Perry

The available statistics about what's going on in the labor market are notoriously hard to interpret. They have led some observers to characterize youth unemployment as a product of normal turnover. Clark and Summers have done a careful job of analyzing data on the employment and unemployment of young people; and they make a convincing case that long-term joblessness is a serious problem in this age group and is the principal factor behind the high unemployment rates recorded for teenagers.

The association of youth unemployment with normal turnover arises because the mean duration of unemployment spells for teenagers are relatively short, and so is their mean job tenure. Clark and Summers find that highly concentrated joblessness lies behind these statistics. Their discussion of concentration has three main parts: they look at spell-lengths among the unemployed rather than among all those who enter unemployment; they examine the incidence of multiple spells; and they estimate spells without jobs rather than spells of official unemployment.

The average spell-length of those currently unemployed is much longer than the average for all spells because persons suffering long spells are more likely to appear in the unemployment count. Thus when they calculate average spell durations for those unemployed at any time, Clark and Summers are answering a different question from the one that is usually posed. Theirs' is the right answer if we want to know what experience today's unemployed can expect. It is not the right way to characterize the labor market experience of all workers. The authors are very clear on this point, but it is worth alerting the reader.

Going beyond the data from monthly unemployment surveys, Clark and Summers point out that many workers experience much more extensive unemployment than the data on individual spell-lengths would reveal because they suffer multiple spells of unemployment within a year. More than half of the total unemployment experienced by male teenage youths who are out of school is accounted for by those unemployed more than six months; for their female counterparts, the fraction is nearly half.

According to official definitions, unemployment spells often end by withdrawal from the work force. Some analysts take this as evidence that their interest in, or need for, work is marginal and their unemployment, consequently, is relatively unimportant. Clark and Summers stress, by contrast, that the often spurious distinction in the official statistics between being unemployed and being out of the labor force leads to an understatement of the difficulty that the unemployed experience in finding a job. They argue for focusing on spells without jobs—including

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time officially recorded as out of the labor force as well as time unemployed—in analyzing the labor market for out-of-school youths. It is pointless to try to decide how badly people need a job from their place in the official statistics. But Clark and Summers are surely correct in stressing that ending a spell of unemployment by getting a job is a very different matter from ending one by withdrawing from the official labor force. And if we are serious about understanding the youth employment problem, it is surely right to inquire about periods without work for out-of-school youths rather than just periods when they fall into the official definition of unemployment.

The authors' calculations illustrate the considerable difficulty that many unemployed teenagers have in getting a job, and the even greater difficulty experienced by the subset of unemployed nonwhite teenagers. In 1976, the average unemployed white teenager would expect to be without a job for more than six months at a time. His black counterpart would expect to be without a job for a little more than a year.

The authors point out carefully that such results are not representative of the experience of most teenagers. For most, any unemployment spells are brief. But their experience bears little resemblance to the job-finding difficulties of the much smaller number of teenagers who account for most of the observed unemployment. Clark and Summers show convincingly that job availability makes a big difference for the employment problem that they identify. They find that aggregate demand matters a lot and that a tight overall labor market greatly improves the job prospects of those youths who have the greatest problems finding jobs. They also advocate youth employment programs as the most useful structural remedy. I agree with this emphasis on providing jobs. And if we are entering a period of high overall unemployment in pursuing an antiinflation strategy, the need for specific youth employment programs will be greater than ever.

Comment Robert I. Lerman

Clark and Summers conclude that youth unemployment is not so much a matter of high turnover as of inadequate job opportunities. This is the most important of several interesting conclusions. While I agree with most of their conclusions, I believe there are weaknesses in their analysis, most of which concern their use of CPS gross flow data.

It is the gross flow data that lead Clark and Summers to the conclusion that the distinction between unemployment (U) and not-in-the-labor-

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force (*N*) is very tenuous. But, for some reason, they use this conclusion in some contexts but ignore it in other contexts. Clark and Summers argue that if *U* and *N* are indistinguishable, the duration of *U* may be understated because reported moves from *U* to *N* to *U* should often be recorded as one long period of *U*. But when attempting to show that the labor market works well for most youth, they go back to the *U-N* distinction. They point out that two-thirds of teenage moves into the labor market (from *N* to *U* or to employment) occur without any measured unemployment. This statement should have little meaning. If *N* and *U* are essentially the same status, it should not matter whether the transition to employment (*E*) comes from *N* or *U*. They cannot have it both ways. If the move from *N* to *U* or to *E* does represent labor force entry (and the continuation in *N* does not), then one must allow the move from *U* or *E* to *N* to represent labor force exit.

Clark and Summers interpret the lack of a *U-N* distinction as implying that conventional approaches hide much involuntary joblessness. They imply that a month to month pattern of *U-N-U-E* is essentially like a *U-U-U-E* pattern. Unfortunately, they provide no more evidence for their interpretation (*U* to *E*) than for the alternative interpretation of one long spell outside the labor force (*N* to *E*).

Is it discouragement or lack of sufficient interest in working that keeps youths from such minimal job search as required by the CPS definition of *U*? Clark and Summers state: "The evidence suggests the possibility that for many teenagers, job search is a passive process in which the main activity is waiting for a job opportunity to be presented." This viewpoint is consistent with data from a January 1973 CPS supplement, which revealed that only 18% of unemployed teenagers spent more than ten hours per week actually looking for work. While all this lends support to the idea of a tenuous distinction between *U* and *N*, it does not lead to the conclusion that we should abandon the CPS requirements that *U* represent job availability along with *active* job search. The Clark-Summers analysis forces us to confront normative questions, such as: Is joblessness associated with only passive job search a serious problem? Should it be treated as involuntary unemployment or as indifference about work? To guide our thinking about such questions, we should obtain detailed information about passive job seekers. But, in addition, we must decide on an appropriate way to measure a labor market problem. As it is, if the *U-N* ambiguity were carried to its logical extreme, one could interpret long-term unemployment as long-term leisure or as a vacation between jobs.

Clark and Summers rely on gross flow data to help sort out these matters. Unfortunately, they give only passing attention to the unreliability of the gross flow data. It is unfortunate that the Woltman-Schreiner memo to which Clark and Summers refer appeared after Clark and

Summers virtually completed their paper. As noted, the memo shows that the reported gross flows are probably two to three times the actual flows. Clark and Summers seem unfazed by this conclusion. In fact, they suggest that the existence of the upward bias in gross flow data actually strengthens their findings. They interpret CPS reporting variance which leads to the gross flow bias as the result of the often arbitrary nature of CPS definitions of U and N. Since the true flows are less than the reported flows, the high concentrations of unemployment pointed out by Clark and Summers actually understate the true concentrations of unemployment.

Although this last implication is correct, the bias in the gross flow data raises other problems which Clark and Summers do not confront. For example, they ignore the fact that reported flows in and out of E are as overstated as flows between N and U. Would they argue that the high flows between E and U resulting largely from response variance indicate that the CPS definition of E is arbitrary? The unreliable nature of the data on E flows also creates difficulties for their analysis of the share of youths entering jobs without any unemployment and for their treatment of cyclical patterns of job change. Clearly, any future analysis based on these data must deal with the biases in a thorough manner.

Two other points about the Clark-Summers data are worth noting. They present results covering in-school and out-of-school youths. Actually, they make use of a CPS question asking whether an individual's major activity is school or something other than school. Some youths who attend school report work as their major activity. Thus, the CPS out-of-school group includes some enrolled youths who have jobs. If these enrolled workers are more committed to the work force than other enrolled youths, the Clark-Summers results would understate the stability of employment patterns of in-school youths. The second item is the number Clark and Summers cite for the percentage of job changers who experience no unemployment between jobs. The number comes from 1961 data. Clark and Summers should be cautious about using a 1961 number in their overall description of current labor markets.

While I have focused on problems in the Clark-Summers analysis, I believe their paper contributes much to our understanding of youth labor force patterns. Most important is the abundant evidence they cite showing that youth unemployment is highly concentrated among a small subset of young workers and that short-term, turnover factors cannot account for most youth unemployment.