Continuation of NLS Discussion Paper 93-16
Part 2 of 3

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6. Characterizing Labor Market Experiences and Mobility

Estimation of our statistical model formally provides direct evidence only on the short-term relationships linking the five economic statuses of low-wage employment, high-wage employment, simultaneous low-wage high-wage employment, nonemployment and educational pursuits. Transition and entrance probabilities indicate the likelihood that a period in one status is immediately followed by a period in the same or in another status. These probabilities do not directly indicate how a spell in, say, low-wage employment influences the career path of an individual. One can, however, uncover the long-term relationships between occupancy in such an employment status and a youth's future earnings prospects by implementing a straightforward simulation exercise. This simulation captures the accumulative and interaction effects implied by particular specifications of the transition and entrance probabilities that characterize a transition probability model.

To formulate the comprehensive picture of economic mobility implied by our empirical findings, we carry out several simulation analyses under a variety of scenarios. This collection of simulations allows us to calculate summary statistics illustrating the long-term relationships among different labor-market statuses during the initial years of young men's working careers after leaving school. We exploit this information not only to summarize the cumulative labor-market experiences of this population (i.e., the total

amounts of time that individuals spend in various labor-market activities), but also to characterize the dynamic patterns of movements between labor-market statuses and the extent of economic mobility during the first 10 years after school. We carry out distinct simulation exercises for the four education categories, with results presented separately in each category for the three race-ethnic groups.

This section develops our characterization of the role that low-wage employment plays in the process of economic mobility in five steps taken up in Sections 6.2-6.6, respectively. To further our understanding of who participates in low-wage labor markets, the extent of this participation, and the links between this participation and the amount of time spent in other labor-market statuses, Section 6.2 examines the distribution of cumulative labor-market experiences in the five statuses and combinations of these statuses. While the measures presented in Section 6.2 greatly improve our knowledge about the role of low-paying jobs, cumulative summaries of this sort provide only limited information about the dynamic process generating these early labor-market experiences. Sections 6.3 and 6.4 fill in some of the dynamic features of this process by looking at the number of spells in all five labor-market statuses along with the durations of individual spells. Still another aspect of the picture concerns how long it takes youths to enter high-paying employment given involvement in various labor-market activities. Section 6.5 investigates this dynamic facet by summarizing several measures associated with the length of time that it takes individuals to enter high-paying jobs from the time when: they initially leave school; they start a low-wage job; and they become involved in some form

of training. Finally, to complete our characterization, Section 6.6 explores the role that specific labor-market histories play in determining future employment activities. Before discussing our first step in the analysis which is the subject of Section 6.2, we briefly describe our simulation approach.

6.1 Simulating Employment Experiences

Simulation methods, commonly used in both statistics and econometrics, produce the information needed to describe the long-term relationships among the economic statuses examined in our TPM. Implementing a simulation of our empirical model involves generating sequences of Monte Carlo trials using our estimated transition and entrance probabilities to mimic the process governing young men's experiences over the initial years of their working careers. We carry out such an exercise by assigning sequences of discrete variables indicating a person's status in each week by comparing the values of independently-drawn uniformly-distributed variables to the predicted values of the probabilities relevant in determining the discrete variable in the week under consideration. The initial-status probabilities $Pr(s \rightarrow i)$ (relations (4.1) and (5.4)) are the relevant quantities for assigning the values of the discrete variables at the very beginning of the working career when formal schooling ends; the transition probabilities $P_i(t,Z)$ or the hazard rates $H_i(\tau)$ (relations (4.3) and (5.1))) are relevant for assigning outcomes while a spell in labor-market activity i is in progress; and the entrance probabilities $Pr(k \rightarrow i)$ (relations (4.5) and (5.3)) are the relevant numbers for assignment when a spell

ends. The analysis calculates the predicted values for these probabilities using parameter estimates obtained in the empirical analysis outlined in the previous section. The variables used in the simulation include: demographic covariates (X) that are chosen at the beginning of a simulation exercise and held constant over the sequence of weeks; labor market history variables (H) that are updated at the beginning of each new spell in a status to reflect the simulated experiences up to the relevant week; and, the length of the simulated spell that is in progress or just completed. Evaluating these probabilities in every week over the 10-year period following the completion of formal schooling allows one to assign a sequence of labor-market activities experienced by a typical individual during the early years of his life cycle.

Repeating the above procedure numerous times and recording sequences of weekly experiences for a large number of hypothetical individuals provides the basis for characterizing the distribution of the labor market activities experienced by young men with a given set of demographic traits.[1] Examining the labor-market experiences of men with different racial backgrounds and levels of educational attainment over various sequences of simulated weekly statuses produces a comprehensive picture of cumulative labor-market experiences. In addition, with suitable adjustments in the values of the covariates, one can implement the same procedure to simulate labor-market experiences of individuals with a variety of labor-market histories as well as different demographic traits.

[1] The findings discussed below are based on random draws of 1,000 hypothetical individuals for each demographic group.

6.2 Cumulative Experiences

Summarizing the cumulative amount of time men occupy various economic statuses during the initial years of their labor-market experiences provides a valuable foundation for constructing a comprehensive picture of low-wage employment and economic mobility. Tables 6.1-LQ, 6.1-M, 6.2-LQ and 6.2-M present summary statistics from the simulations describing the cumulative amount of weeks that individuals spend in the five labor-market statuses and combinations of these statuses over various horizons of the 10-year interval after leaving school. The designations "LQ" and "M" indicate the definition of low-wage employment assumed in the computations presented in the corresponding table. The top half of Tables 6.1 report averages of the total number of weeks spent in the different labor-market activities, with results for the entire 10-year period listed in the first set of columns, for the first 5 years of the period (i.e., years 1-5) in the second set of columns, and for the second 5 years (i.e., years 6-10) in the third set. Each cell reports results for Whites, Blacks, and Hispanics, respectively, for the education group designated at the left of the corresponding row. The bottom half of the tables lists the participation rates in the five statuses over the 10-year period, along with the two 5-year horizons making up this period.[2] These participation rates reflect the

[2] In the case of college graduates, the 6-10 year subperiod of the 10-year horizon is out of sample for the data set used in estimation. The vast majority of our observations making up the college sample are in the first five years after leaving school. Only a few of our college graduates make it into the 6-10 year period and no one makes it past 8 years. We report results for the 6-10 year sample mainly for the purpose of making the college sample comparable to the other education groups. All the other education groups have sufficient data in both the first and second half of the 10-year horizon.

probability an individual experiences at least one week in the corresponding status during the relevant time period.

Tables 6.2 present the 10th, 25th, 50th, 75th, and 90th percentiles for the simulated distributions of the cumulative number of weeks spent in the various labor-market statuses and a combination of these activities. The specific combination we consider sums the total weeks spent in low-wage employment and nonemployment to assess the extent to which individuals spend time in a "secondary" labor market status. The results for this secondary labor market status are in the last set of rows in the tables. As in previous tables, each cell lists results for Whites, Blacks, and Hispanics, respectively, for the education group designated in the row. In addition to the percentiles over the entire 10-year period, which are summarized in the first six sets of rows, the two lower groups present the percentiles for the cumulative weeks associated with the first and the second 5 years, respectively.

The subsequent discussion focuses on the LQ definition of low-wage employment. The main conclusions drawn from our analysis do not change when considering the minimum-wage definition. Thus, to avoid diverting the discussion away from the development of a complete picture of cumulative experiences we do not consider the results for cumulative experience based on the M concept of low-paying employment until after discussing the LQ results in their entirety. We then highlight the relatively subtle differences in the findings implied by the LQ and the M definition.

6.2.1 Low-Wage Employment and Nonemployment

For the LQ definition, the findings in Tables 6.1-LQ and 6.2-LQ reveal several interesting patterns in the labor market experiences of youths. Starting with involvement in low-wage employment, the top portion of Table 6.1-LQ shows the average number of weeks that individuals spend in low-paying jobs. The averages reported in Table 6.1 generally indicate that the typical member of any education group spends relatively little time in low-wage employment, from 5% to 20% of the 10-year period. The time spent by college graduates is higher than might be expected, but the averages for the lowest education group are surprisingly low. Specifically, the results show that high-school dropouts spend an average of slightly over one year (i.e. 67-77 weeks) in low-paying employment over the 10-year period. High-school graduates spend approximately from 1.5 to 2 years on average in low-paying employment (i.e. 75-96 weeks). Those in the some-college group experience about .75 of a year in low-paying jobs (i.e. 37-40 weeks); and college graduates experience around .5 of a year on average in low-paying jobs (23-25 weeks).

The bottom portion of Table 6.1-LQ shows that the likelihood of holding a low-wage job at some time during the 10-year period is approximately 75-80% for high-school dropouts and graduates, about 45-50% for those individuals with some college, and approximately 40-45% for those who are college graduates. With the exception of high-school dropouts, participation in low-paying jobs generally diminishes for higher levels of education and for older workers (where older refers to experiences in the second

half of the 10-year period); both the average number of weeks and the participation rates fall for persons with higher educational attainments and for individuals in the 6-10 year portion of the period after leaving school.

In the case of high-school dropouts, the participation rate remains about the same in years 1-5 and 6-10, and the average number of weeks spent in low-paying jobs is typically higher in the second half of the 10-year period after departing from formal schooling. Whereas White high-school dropouts tend to experience a slight 3-week decline in average weeks of low-wage participation in the second five years of the 10-year horizon, both Blacks and Hispanic high-school dropouts tend to experience more low-wage employment in the second 5-year period.

The percentiles reported in Table 6.2-LQ for low-wage employment support the conclusions drawn from Table 6.1-LQ. These findings indicate that the amount of time spent in low-paying jobs is not very high for the vast majority of individuals in every education group. The 90th percentile barely exceeds 4 years for any education group. For high-school graduates and beyond, low-wage employment declines monotonically for higher levels of education, and it is lower for the older workers in the upper educational categories. Surprisingly, high-school dropouts typically experience less low-wage employment than their high-school graduate counterparts over the 10 years. While the median for dropouts is lower for older workers (i.e., the second half of the 10-year period), the 75th and the 90th percentiles are not lower for older workers.

Looking at the distribution of experiences in nonemployment reveals that the

smaller amount of low-wage employment for dropouts than for high-school graduates arises because dropouts spend a considerable number of weeks in nonemployment--not in training or high-paying employment. The percentiles presented in Table 6.2-LQ for the labor market status designated low-wage+nonemployment shows that dropouts spend many more weeks in either low-paying jobs or nonemployment in the 10-year period than high-school graduates in the same race-ethnic group. Comparing results for this combined labor-market status across education groups discloses that the number of weeks spent in low-wage jobs and nonemployment decreases monotonically with higher education, except for the two upper education groups which are roughly comparable.

Careful inspection of the results for the combined category low-wage+nonemployment for dropouts indicates that race-ethnic groups differ substantially in terms of their experiences, especially when considering Blacks. More than 50% of Blacks spend more than 6.5 years in the combined state of $\ell + n$ over the 10-year period, and 10% spend more than nine years. While the typical Black--as measured by the median values--experiences less in this state in the second five years of the 10-year horizon, there is no improvement for the worst 25% of experiences; the 75th percentile in years 1-5 is 232 weeks, and it is 217 weeks in years 6-10.[3]

While the experiences of Black high-school dropouts are especially dismal, the analysis predicts that many White and Hispanic dropouts also spend a great deal of time

[3] Of course, the individuals involved in the highest 25% of experiences in years 1-5 are not necessarily the same people included in the group with the highest 25% of experiences in years 6-10.

in low-wage jobs or out of work. About 50% of the Hispanics spend about half of the 10-year period in the combined status of $\ell + n$; and 10% of Hispanics participate almost nine years in these labor market statuses. Whites fare better than Blacks or Hispanics, and yet 10% of them spend about 7.5 years or more in low-wage jobs or out of work.

Differentials among the race-ethnic groups in the total amount of time spent in low-paying jobs or out of work over the 10-year period steadily diminish when considering higher levels of education, with the differentials disappearing for college graduates. Blacks continue to stand out as the disadvantaged group among high-school graduates, although their position relative to their White and Hispanic counterparts does not come close to the differentials seen in the case of high-school dropouts. The number of weeks spent in low-paying jobs for White and Hispanic high-school graduates are very similar over the 10-year horizon. Whites and Hispanics also have similar nonemployment experiences, except in the tails of the distribution represented by the 75th and 90th percentiles where a differential exists favoring the Whites. Inspection of the results in the lower parts of Table 6.2-LQ indicates that most of this differential occurs in the first half of the 10-year period. The patterns observed for race-ethnic groups in the case of high-school graduates continue to apply when considering those individuals in the some-college category.

6.2.2 High-Wage Employment and Training

The findings of Tables 6.1-LQ and 6.2-LQ for high-wage employment show that

the amount of this type of employment increases monotonically with higher levels of education, with experiences similar in the two upper groups. Blacks fare less well than either Whites or Hispanics in the three lower education categories, with the differential inversely linked to education and widening to an enormous margin for high-school dropouts. Whites and Hispanics have similar experiences in the some-college category and in the upper percentiles associated with lower educational attainments. Whites have more high-wage experience than Hispanics in the lower percentiles of education levels below some college. The favorable position of Whites in the bottom percentiles of those lower education levels in part reflects the favorable margin attained by Hispanics over Whites in the upper percentiles of low-wage employment, which indicates some substitution of low-paying jobs for high-wage employment by this segment of Hispanics. For college graduates, the typical experiences are essentially the same across the three demographic groups. To the extent that a differential exists, it favors the Blacks at the lower percentiles, which is in sharp contrast to the order operative for the lower education groups.

The results in Tables 6.1-LQ and 6.2-LQ relating to the number of weeks spent in both low- and high-wage employment show that the phenomenon of simultaneous job holding at low- and high-wage positions is not uncommon and does not differ much across educational attainments. The participation rates in the lower portions of Table 6.1-LQ reveal that about one-third of individuals will hold a low-wage and a high-wage job during the same week at some time during the 10-year period, and the averages in the

upper part of this table indicate that individuals spend approximately 1-4 months in this type of employment over a 10-year horizon. While simultaneous job holding is not rare, the upper percentiles indicate that only 10% of any education group experience 6 months or more in this category of employment. Furthermore, there is no systematic pattern in this type of employment across race-ethnic groups.

Regardless of the education group considered, the average number of weeks spent in training over the 10-year period after leaving school is not small. It ranges from 18 to 59 weeks. The participation rates reported in the lower portion of the Table 6.1-LQ reveal that individuals from any education group have around a 50-60% chance of participating in training at some time over the 10-year period. Training is no more likely to occur in the first 5 years after leaving formal schooling, and there is no systematic patterns in the amount of training across education groups. These conclusions continue to hold after examining the percentiles reported in Table 6.2-LQ. Recall that training in this analysis refers to a variety of activities, including apprenticeships, on-the-job training while working, returning to formal schooling after dropping out, and vocational training. No doubt, this composition varies considerably across the education groups.

6.2.3 Differences in Findings Based on LQ and M Definitions

A casual comparison of the results in Tables 6.1 and 6.2 for the LQ and the M definitions indicates a remarkable similarity in the summary statistics. The numbers reported for average cumulative weeks reported in Table 6.1-LQ are quite close to those

presented in Table 6.1-M, and the participation rates reported in the bottom of these tables are virtually identical.

A detailed examination of Tables 6.2-LQ and 6.2-M indicates that the differences in the findings implied by the two definitions of low-wage employment can be summarized quite succinctly. A comparison of the percentiles for low-wage spells reveals slightly longer amounts of time spent in low-wage jobs using the M definition for all education groups. Most percentiles increase by only a few weeks over their counterparts based on the LQ definition, with a few moving as much as 20 weeks. Not surprisingly, the ordering is reversed when considering time spent in high-wage jobs. Cumulative experience in this type of employment is shorter using the M definition. Once again, in most instances the percentiles based on the LQ and M definitions are different by only a few weeks, with the maximum divergence being only about 15 weeks. The experience in "both" employment tends to be longer using the M definition, but there is no systematic ranking of the differences between the M and the LQ percentiles. The amount of time predicted in training over the 10 years differs for the two concepts of low-wage employment, but these differences are marginal, and there is no change in the patterns across either education or race-ethnic groups. The predictions of the amount of time spent in nonemployment based on the LQ and the M definition are essentially identical, which primarily reflects the fact that this state is defined the same way under the two definitions. Cumulative experience in the combined state of low-wage+nonemployment is predicted to be higher using the M definition, with the margins

comparable to those noted above for purely low-wage employment. An important point to observe in comparing the cumulative experience in low-wage+nonemployment is that only the lower percentiles are different in the case of high-school dropouts (i.e., the 50th percentiles and below). All of the percentiles are higher for the three upper education groups under the M definition, but the lower percentiles are the most affected for the lower education groups, and the upper percentiles are the most affected for the higher education levels.

6.2.4 Summary of Findings for Cumulative Experiences

The results in Tables 6.1 and 6.2 lead to the following conclusions:

- Young men spend relatively little time in low-wage employment in the first 10-year period after leaving school. High-school graduates experience the largest amount of involvement in low-wage jobs, followed by high-school dropouts, with persons possessing educational attainments above high school having considerably less experience. While high-school dropouts and graduates have a 75%-80% chance of holding a low-wage job at sometime during the 10-year period, they average a modest 1-2 years of low-wage employment in this period; the majority spends less than one year; and only 10% spend more than 4 years in low-paying jobs. The participation rate of college graduates in the low-wage sector in the first 5 years after school is a surprisingly high 30%, but the average amount of time in low-wage jobs for this group is only about 3 months over this period.

- The combined state of low-paying employment and nonemployment provides a more relevant notion of labor-market status than time spent in low-paying employment alone for judging the prospects of individuals during the initial stages of their working careers. The larger amount of low-wage employment for high-school graduates relative to dropouts reflects the fact that a significant segment of the dropout population spends a considerable amount of time in nonemployment--not in training or high-

paying employment. The extent of participation in the state of low-wage+nonemployment decreases sharply for higher levels of education and for older workers.

- Black high-school dropouts spend an exceptionally large amount of time in the combined state of low-paying employment and nonemployment; the prospects for some White and Hispanic dropouts are not much better. More than 50% of the Blacks spend more than 6.5 years in low-paying jobs or out of work during the first 10 years after school; and 10% spend more than 9 years. About 50% of Hispanics spend around half of the 10-year period in low-wage employment or out of work; and 10% participate almost 9 years in these statuses. White dropouts fare better than Blacks and Hispanics, and yet 10% of Whites spend about 7.5 years or more in low-wage jobs or out of work.

- Not surprisingly, the amount of high-wage employment is greater for higher levels of education, and the amount of nonemployment is smaller. The average amount of time spent out of work in the 10 years after school for high-school dropouts ranges from 2.5 years for Whites to almost 5 years for Blacks. These averages fall to less than a year for those individuals with educational attainments above high school.

- Simultaneous job-holding of low- and high-wage positions is not uncommon and does not differ much across education groups, but only 10% of any group experience 6 months or more in this category of employment. Anywhere from 15%-30% of any education group hold a low-wage and a high-wage job during the same week at some time during the 10 years following school.

- The average number of weeks spent in training during the 10-year period following school falls in the range of 18-59 weeks, with individuals from any education group having around a 50%-60% chance of participating in some form of training at least once in the period.

- For all categories of labor-market experiences, race-ethnic differentials steadily diminish with higher levels of education. The differences become negligible for college graduates.

- The evidence supports the familiar concept of life-cycle wage growth, which implies more employment and higher wages as individuals age and accumulate labor-market experience. Not only is there generally more employment in the second 5 years of the 10-year period following school,

but a greater amount of this employment takes place in high-paying jobs. These effects diminish with higher levels of education.

6.3 Numbers of Episodes

The above findings on the cumulative amount of time spent in the various labor-market activities tell us who the primary participants are in low-wage labor markets, but they tell us little about the process involved in producing these experiences. Are participants in the low-wage sector there because they enter the sector many times, staying for short periods each time, or do they enter the sector only a few times and stay long periods? In the next step of our analysis, we address part of this question in this section by looking at the number of spells in each of the five labor-market statuses. We address the remainder of this question in the next section where we describe spell durations.

Tables 6.3-LQ and 6.3-M report percentiles for the number of spells that occur in the five labor-market statuses. These tables are organized analogously to Tables 6.2 with results first presented for the entire 10-year period after men leave school followed by measures for the two 5-year periods making up this horizon. The three divisions in these tables are constructed in the same way except for one important difference in the part describing the number of spells in the second 5-year period. Specifically, this table only counts spells that begin in the second 5-year period and does not include spells in progress at the start of this period. For instance, consider the number of high-wage employment spells in the second 5-year period for college graduates. The zero entries in

the table at the 10th and 25th percentile do not imply that 25% of this group did not hold a high-wage job, but, instead reflect the fact that a significant proportion of this population holds a high-paying job throughout most of the 10-year period.

Examination of Table 6.3-LQ shows a smooth pattern across education groups in the number of spells experienced in the various labor market activities. The medians for low-wage spells indicate that two spells is typical for high-school dropouts and graduates; one is common for those with some college; zero is typical for college graduates. Very few individuals experience many spells in low-wage jobs; only 10% of the high-school dropouts or graduates experience more than 4 entries into low-paying employment during the 10 years after leaving school. The typical number of high-wage spells is four over the 10-year horizon for all education groups. The representative person from any education group experiences one training spell over the 10-year horizon, and no spells of holding both a low-wage and a high-wage job at the same time. The lower education groups have more nonemployment spells than the higher education groups, with the number falling from 5 as typical for high-school dropouts to 2 as typical for college graduates.

A comparison of the results across race-ethnic groups shows no substantive difference in the distribution of the number of spells over the 10-year period for any education group other than high-school dropouts. Even for this group, the differentials are quite small and only occur in the tails of the distribution for high-wage and nonemployment episodes. In the light of the differentials noted in the previous

discussion, it is not surprising to see that Blacks are the disadvantaged group in the sense that they have fewer high-wage spells.

Inspection of Table 6.3-M indicates that the patterns observed for the lowest-quintile definition of low-wage employment are duplicated in the minimum-wage definition. Not only is the relationship of the distributions similar across race-ethnic and education groups, the number of spells is almost identical for this definition of low-wage employment.

Summarizing the results of Tables 6.3 as they apply to participation in low-wage employment, the basic findings are:

- **Individuals typically experience very few entries into low-paying employment during the first 10 years after leaving school. Even for the lowest education groups, only 50% of individuals start low-paying jobs 2 times or more during the 10-year period; only 10% start such jobs more than 4 times.**

6.4 Lengths of Episodes

To further our understanding of the dynamic process involved in labor-market mobility, this section investigates the duration of spells in each of the five labor-market statuses. Tables 6.4-LQ and 6.4-M, structured similarly to Tables 6.3, list the percentiles describing the length of spells associated with the various labor-market statuses over the 10-year horizon. Starting with the results from the lowest-quintile definition, the findings show a simple pattern in spell lengths across education groups. Employment spells, regardless of whether they are in low- or high-wage jobs, tend to be longer for individuals with higher levels of education with practically no difference for

the two upper education groups. Typical employment episodes last from about 5 months for low-wage jobs for high-school dropouts to around 12-20 months for high-wage jobs for college graduates. Training spells tend to be shorter for higher levels of educational attainment; typical spells last in the range of 6-9 months for high-school dropouts and less than 3 months for college graduates. There is no clear pattern in the lengths of nonemployment spells across education groups. Most nonemployment spells are completed well under 4-6 months; and 10% last longer than 12 months.

The duration of spells in low-wage employment is surprisingly short. Typical spells last less than three quarters of a year, regardless of educational attainment. Even at the extremes, 90% of the spells are completed well within 2 years. For high-school dropouts, 90% of the low-wage spells are finished before 1.5 years. These findings do not support the notion of a "trap" that invokes long periods of low-paying employment.

The race-ethnic differentials primarily show up in the lengths of nonemployment spells, most notably for the upper percentiles. For educational attainments other than college graduates, Blacks spend the longest time in nonemployment spells. The differential for Blacks widens for the lower levels of education and the upper percentiles. For high-school dropouts, the 90th percentile for Blacks is almost three years compared to only one year for Whites. Hispanics experience nonemployment spells that are about 50% longer than Whites in the high-school dropout category, but the differential shrinks when considering higher levels of educational attainment.

Race-ethnic differentials in the lengths of employment spells are not systematically

linked across educational attainments. For high-school dropouts the typical spell length in low- or high-wage employment are not much different across Whites, Blacks and Hispanics. However, Blacks and Hispanics are more likely to experience longer spells in low-wage employment (see the 90th percentiles). At the same time, they are also more likely to spend longer spells in high-wage employment, with the Blacks outpacing the Hispanics. For the some-college and college-graduate categories, Hispanics experience longer employment spells in both low- and high-wage jobs. Whites and Blacks are roughly comparable for durations in low-wage jobs in these two education categories. For high-wage employment, the durations are longer at the extremes for Whites than for Blacks in the some-college category; and they are roughly comparable or shorter in the college-graduate group.

Comparing these findings with the results reported in Table 6.4-M, the basic patterns identified for the lowest-quintile definition of employment continue to hold for the minimum-wage definition. Not surprisingly, the percentiles for the training and nonemployment spells are very similar in the two tables reflecting the fact that these two activities are defined the same way using the LQ and M definitions. The medians for low- and high-wage spells in Tables 6.4-LQ and 6.4-M are similar. For high-school dropouts the main effect of switching from the LQ to the M definition is to lengthen the duration of high-wage spells at the extremes, with the lengths of low-wage spells unaltered. The same is true for high-school graduates and for those with some college. For college graduates, the shift from the LQ to the M definition systematically lengthens

high-wage spells but leads to no systematic shifts in the lengths of low-wage spells.

The conclusions drawn above for the LQ definition concerning race-ethnic differentials broadly hold up when considering the minimum-wage concept. The rankings among race-ethnic groups are unaltered for the two lower education groups. For the some-college group, Hispanics no longer stand out as having longer spells in low-wage jobs than Whites or Blacks, but Hispanics continue to experience the longer spells for high-wage jobs. For college graduates, Blacks show up more as having shorter spells in low-wage jobs; Whites and Hispanics experience more similar durations in low-paying employment than appears using the LQ definition. Considering durations in high-wage employment for college graduates, the differentials widen in favor of Hispanics and Blacks when compared to the LQ definition, with Hispanics continuing to enjoy the longest spells in high-wage employment.

Summarizing the findings in Tables 6.5 in terms of their implications for participation in low-paying jobs, the major findings are as follows:

- **The durations of spells in low-wage employment are surprisingly short. Typical spells last for less than 5 months for the high-school dropouts, and around 6 months for high-school graduates and beyond; 90% of all spells are completed well within 2 years.**

- **High-wage employment spells last longer than those in low-wage jobs, with typical spells increasing from 7 months for high-school dropouts to around 12-18 months for those with educations beyond high school.**

- **The race-ethnic differentials primarily show up in the length of nonemployment spells (most notably for the longest durations) and not for the length of spells in low-wage employment. Black high-school dropouts spend the longest time in nonemployment spells with 50% of their spells lasting longer than 6 months--more than double that of Whites; the**

differential narrows steadily for higher levels of education until it vanishes for college graduates.

6.5 Durations To and From Participation in Low-Wage Jobs

The results summarized above portray a general picture of the role low-paying jobs play in the process of economic mobility; however, several significant features of this role still remain unexplored. One important issue is whether the long durations in the combined state of low-wage employment plus nonemployment occur because individuals take a long time to get their first jobs, or because they continually enter and re-enter the low-wage sector with long stays in nonemployment. A second issue is how long it takes to enter high-wage employment once an individual starts a low-wage job. A third issue concerns the likelihood that individuals enter a low-wage job after finding high-paying employment. Finally, a fourth issue is how training fits into the picture of mobility out of low-paying jobs. This section addresses these issues by examining a variety of duration measures designed to relate sequences of labor-market experiences.

Tables 6.5-LQ and 6.5-M present summary statistics describing several measures of duration associated with entering first jobs, with entering low-wage jobs under a variety of scenarios, and with eventually participating in a specific labor-market activity after the initiation of a spell in low-wage employment.

6.5.1 Durations Until First Jobs

The top two groups of rows report statistics corresponding to the durations until

individuals enter their first job, distinguishing whether this first job is in low-wage or high-wage employment. The results summarize findings for the four education categories and the three race-ethnic groups. The first set of columns give the fraction of the population experiencing each first-job classification. The second set of columns present the fraction of the population who immediately enter employment upon leaving school, and the remaining columns give the percentiles of the duration distributions for those persons who do not enter employment immediately.

According to the results in Table 6.5-LQ relying on the lowest quintile definition of low-wage employment, around 50-60% of high-school dropouts start employment in high-wage jobs. This percentage rises steadily for upper education levels, reaching the value of around 85% or above for college graduates. Durations until first employment generally decline with education, except for the two upper education groups which are not systematically ranked. The vast majority of young men in those education groups other than dropouts find their first jobs shortly after leaving school. Keeping in mind that roughly half of all demographic groups in the 3 upper education groups start in employment, we can conclude that at least 75% are working within one year. Considering Blacks with 12 years of schooling, those beginning employment in low-paying jobs typically find work more rapidly than their counterparts who start in high-wage jobs. However, about 5% of the group who start in low-paying jobs do not find

work for the first 5 years.[4] Durations of this length are far more common for high-school dropouts, especially for Blacks. Regardless of whether first employment is a low- or high-wage job, around 50% of the Black dropouts do not find employment within 3.5 years[5]; between 5% and 10% of this group are not employed before 6 years. Indeed, the fact that the probabilities of first jobs in high-wage and low-wage employment do not sum to one for Black dropouts indicates that almost 5% of them are not employed even by the end of the 10-year period. The Hispanic dropouts fare significantly better than their Black counterparts; only about 5% have not found jobs before 4 years. The Whites fare slightly better than the Hispanics in the dropout group; only around 5% of them are not working before 3 years.

Pronounced differences exist in durations until first jobs across race-ethnic groups for low educational attainments, but these differences narrow for the upper education levels. Whites and Hispanics generally have the most rapid job acquisition in the high-school graduate and some-college groups. Blacks lag behind, much more noticeably for high-school graduates than for some-college individuals. For college graduates, race-ethnic differentials are not ordered in the same way as for the other groups; Hispanics are

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[4] According to the results for high school graduates with low-paying employment as first jobs, almost 50% of the Blacks immediately find employment and the 90th percentile for the remainder is 252 weeks. Thus, approximately 5% of the total don't find employment for almost five years.

[5] Examining information on first jobs for high school dropouts, less than 30% of the Blacks find jobs immediately and the 75th percentile for those who don't immediately find jobs is 170 weeks or greater. Thus at least .7 x .75 = .53 of the Blacks aren't in their first job within 170 weeks.

the most likely to start high-wage jobs, and they acquire low-wage jobs slightly more rapidly than Whites.

Examination of the summary statistics for first jobs using the M definition of low-wage employment reported in Table 6.5-LQ supports the basic conclusions implied by the LQ definition, but there is a systematic shift in the results. Most notably, there is a sharp increase in the probability that the first job will be a low-wage job for all education groups with the size of the increase falling for the higher levels of educational attainment. For high-school dropouts, the probability that the first job is a low-wage job rises from around 40% in the LQ definition to almost 60% for the M definition; for the college-educated individuals the corresponding increase is from about 15% to about 20%. For the three lower education groups, the length of time it takes to acquire low-wage jobs is slightly longer under the LQ definition; for college graduates, there is no systematic difference in the waiting times for low-paying jobs.[6] Just the opposite occurs for the high-wage jobs. Here waiting times are shorter for the three lower education groups under the LQ definition; once again for college-educated individuals there is no systematic ranking of durations until first high-paying jobs.

Even after accounting for shifts in durations implied by the M definition, the basic findings supported by the LQ results continue to hold: pronounced differences exist in

[6] The main discrepancy between the percentiles for college-educated individuals and durations until first jobs that are low-wage is in the 90th percentile where 340 appears for the LQ definition and only 130 appears for the M definition. As noted in previous discussion, we have data for college-educated individuals only for the first few years after they leave school. Consequently, the 90th percentile for the LQ definition of 340 extrapolates well outside the range of our data.

the durations until first jobs across race-ethnic groups for the two lower education groups; 25% of the Black high-school dropouts experience exceptionally long waits until first jobs, regardless of whether it is in low- or high-paying employment; Hispanic high-school dropouts fare better than Blacks but not as well as Whites; Whites and Hispanics in the high-school graduate and some-college groups have similar experience in their durations for first jobs, with Blacks lagging behind to a much greater degree in the high-school graduate group; there is a reversal of the ordering of the race-ethnic groups when considering first jobs in the college-educated group.

6.5.2 Durations To and From Low-Paying Employment After First Jobs

Given entry to a low-paying job, the third group of rows in Tables 6.5-LQ and 6.5-M lists summary statistics for the durations until individuals enter some form of high-wage employment, either status *h* or *b*. The third column, designated "Population Percentage Experiencing Event," shows the fraction of the race-ethnic group in the education category who enter low-wage spells, and the next column designated "Percentage at Zero Weeks" lists non-applicable (na) throughout since all of these spells are strictly positive. The remaining columns in the table report the percentiles of the duration distribution associated with the initiation of low-wage employment until entry into some form of high-wage job.

Inspection of the findings in Table 6.5-LQ reveals that mobility out of low-wage jobs does not vary systematically across education levels, ignoring college graduates who

experience noticeably more rapid movement into high-wage jobs than the other groups. Substantial differences exist in mobility out of low-wage employment across race-ethnic classifications for high-school dropouts. These differentials steadily dissipate the higher the educational attainment, with the differentials being relatively small for college-educated individuals.

Results indicate a great deal of mobility out of low-wage jobs, with the exception of some low-educated Blacks. Considering either high-school dropouts or graduates, around 50% of individuals entering low-paying employment are in a high-wage job within about 15 months; 75% hold such jobs within 2-2.5 years; and 90% enter such employment within 3-5 years. While the typical member of the race-ethnic groups--as measured by the median value--waits similar amounts of time to enter high-paying employment, in the tails of the distribution Blacks tend to wait the longest and Whites the shortest. A small segment of Black high-school dropouts experiences exceptionally long waits; 25% are not in high-paying employment before 3.5 years; and 10% are not in such employment even after 9 years.

The summary statistics reported in Table 6.5-M broadly support the conclusions drawn from the findings based on the LQ definition. Table 6.5-M predicts slightly longer durations until entry into high-paying employment, but most of the differences are inconsequential.

The fourth set of rows in Tables 6.5-LQ and 6.5-M presents findings for the durations associated with entry to low-wage employment measured from the time that a

person begins a high-wage job (only status *h*). The statistics in the various columns correspond to those described above for durations from low- to high-wage jobs. The dashes reported in the tables indicate that a spell is right-censored at the 10-year mark.

Once in high-wage employment, the results of Table 6.5-LQ show that the level of education is a significant factor in determining the length of time before participation occurs in low-wage employment. Whereas 75% of college graduates who start a high-wage job wait at least five years before entering low-paying employment, 25% of the high-school dropouts are back in low-wage jobs within about a year.

The race-ethnic differentials for the length of spells from the start of high-wage employment until entry into low-wage jobs are not as pronounced as they were for the durations discussed above for low-wage to high-wage. Indeed, the Hispanics and the Blacks have the more favorable experiences in the upper two education groups. White and Hispanic high-school dropouts experience similar durations, with Blacks at the median entering low-wage employment slightly faster. For high-school graduates, Whites have the longest durations until participation in low-wage jobs, followed by Hispanics, with Blacks experiencing the shortest durations. In the some-college and college-graduate groups, Hispanics have the longest spells before entrance into low-paying employment, followed by Blacks, with Whites having the shortest durations.

The findings support the general conclusion that the majority of people entering high-paying employment will not experience low-wage jobs for quite some time, regardless of educational attainment. This is not to say that the possibility of entering

low-wage employment is small in the near future for those individuals in the bottom two education groups. At the time of the start of a high-wage job, about 50% of high-school dropouts take part in low-paying employment within about 3.5 years. Over 25% avoid such jobs for over 8 years, and this number would be above 10 years if one ignored the experiences of Blacks.

These conclusions about the duration of spells from the start of high-wage employment until entry into low-wage jobs are not altered when one examines the relevant statistics in Table 6.5-M. The shift in some percentiles is quite large when compared to those obtained using the LQ definition, but the implications of these shifts is immaterial to the main emphasis..

6.5.3 Time Between Low-Wage and Training Experiences

The fifth group of rows in Tables 6.5-LQ and 6.5-M lists summary statistics for the durations until an individual enters training after beginning a low-paying job; and the sixth group reports analogous results for durations until entry into low-wage employment measured from the initiation of training.

Examination of the findings in Table 6.5-LQ for high-school dropouts reveals that at least 90% of individuals who enter a low-wage job wait at least a year before going into training. Blacks wait the shortest amount of time; over 50% are in training within 5 years. While a minority of high-school graduates (10%) move into training more rapidly than their high-school dropout counterparts, the vast majority of graduates take a longer

time to enter training. Those with some college typically take less time to enter training than high-school graduates; and college graduates take even less time.

The findings in Table 6.5-LQ show that durations between training and entry into low-wage employment lengthen dramatically for higher levels of education. Given entry into training, over 75% of the high-school dropouts avoid low-paying employment for well over one year; 50% avoid such employment for well over three years; and over 25% are not seen in low-wage jobs for over 10 years. While Hispanics in the dropout group tend to have the shortest durations, the race-ethnic differentials are less noticeable than in the previous analyses. Not surprisingly, White and Hispanic high-school graduates participating in training wait even longer before entering low-wage jobs than their dropout counterparts; this is not true for Blacks. In the some-college category, Hispanics have the longest durations, and Blacks the shortest; entry into low-wage employment is unlikely for all demographic groups. Durations substantially lengthen for the college graduates, and the race-ethnic differentials virtually disappear.

While the main points of the picture described above do not change when one considers the M definition of low-wage employment, there are some systematic differences in the results reported in Table 6.5-M when compared to the corresponding findings in Table 6.5-LQ. In particular the duration until training given entry into low-wage is systematically longer in Table 6.5-M for the upper two education groups. On the other hand, the duration until low-wage given entry into training is typically shorter for these two education groups in Table 6.5-LQ. There is a tendency for these patterns to

show also in the two lower education groups, but it is not nearly as systematic. In any case, the relationships mentioned in the previous analysis across the various levels of educational attainment and race-ethnic groups continue to apply under the M definition of low-paying employment.

6.5.4 Summary of Findings for Durations To and From Low-Wage Jobs

The essential findings from Tables 6.5 are as follows:

- Approximately 50% of high-school dropouts start their employment in low-wage jobs. This percentage drops steadily for higher education levels, falling to below 20% for college graduates.

- Durations until first employment generally decline with education, except for the two upper education groups which are roughly similar. For education groups other than high-school dropouts, the vast majority of young men find their first job shortly after leaving school, with at least 75% working within 1 year. Long durations until first employment occur for some segments of the high-school dropout and high-school graduate populations.

- About 2.5% of Black high-school graduates starting their first employment in low-paying jobs do not begin working within 5 years after leaving school. Regardless of whether first employment is in low- or high-wage jobs, about 50% of Black high-school dropouts do not find employment within 3.5 years, and between 5%-10% are not employed before 6 years. About 5% of Hispanic high-school dropouts do not find jobs before 4 years after leaving school; and about 5% of the Whites dropouts are not working before 3 years. White and Hispanic dropouts who enter low-paying jobs as their first employment acquire these jobs more rapidly than their counterparts who enter high-paying jobs as their first employment; this is not true for Blacks.

- While pronounced differences exist in the durations until first jobs across race-ethnic groups for low-educational attainments, the differences are only marginal at higher levels of education.

Concerning the durations from low-wage employment to high-paying jobs, the findings support the following conclusions:

- **There is a great deal of mobility out of low-wage jobs with the exception of some low-educated Blacks. About 50% of high-school dropouts or graduates entering low-paying employment find a high-wage job within about 15 months; 90% find such employment within 3-5 years. While the typical members of race-ethnic groups wait similar amounts of time to enter high-paying employment, a component of Black high-school dropouts experiences exceptionally long waits; 25% are not in high-paying employment before 3.5 years, and 10% are not in such employment even after 9 years.**

- **Mobility out of low-wage jobs does not vary systematically across education levels, except for college graduates who experience noticeably more rapid movement into high-wage jobs than any other group.**

- **Substantial differences exist in mobility out of low-wage employment across race-ethnic groups at lower levels of educational attainment, but these differentials steadily dissipate for the higher education groups and become inconsequential for college graduates.**

The findings on the durations from high-paying employment to low-wage jobs leads to the following conclusions:

- **Once in high-wage employment, individuals with higher education are likely to stay out of low wage employment for much longer than less-educated men. Whereas 75% of the college graduates who start a high-wage job wait at least 5 years before entering low-wage employment, 25% of high-school dropouts are back in low-wage jobs within about a year.**

- **The findings generally support the view that the majority of people entering high-paying employment will not experience low-wage jobs for quite some time, with only the members of the two lower education groups having much of a chance at all in the near future. Measured from the beginning of a high-wage job, about 50% of high-school dropouts take part in low-paying employment within about 3.5 years; over 25% avoid such jobs for over 8 years.**

6.6 Linking Work Histories and Future Labor-Market Activities

An important aspect of the process governing the relationship between low-wage employment and economic mobility is the role that prior labor-market experiences play in future employment activities. The findings reported above provide only limited insights into the importance of early labor-market activities in altering subsequent employment experiences. For instance, the results reported in Sections 6.2 through 6.5 do not allow us to ascertain the importance of any potential compounding effects of labor-market experiences. To fill in this part of the picture, this section addresses questions such as: Do individuals end up spending a significant amount of time in low-wage employment and nonemployment because they start life with a bad set of experiences that continue to influence experiences unfavorably for a long time into the future, or does the influence of early labor market experiences dissipate rather rapidly? How important are the different early labor-market experiences in explaining the race-ethnic differentials found in the previous analyses?

Tables 6.6-1 through 6.6-4 present a variety of summary statistics describing the cumulative number of weeks that individuals spend in five labor-market statuses during the three years immediately following various hypothetical 2-year work experiences. All the findings in these tables rely on the "LQ" definition of low wages. Table 6.6-1 reports results for high-school dropouts; Table 6.6-2 gives analogous findings for high-school graduates; Table 6.6-3 lists statistics for the some-college category; and, finally, Table 6.6-4 summarizes results for college graduates. The rows in the tables consider five

labor-market activities: low-wage, which refers to cumulative weeks over 3-year horizon in status ℓ; high-wage+both, which sums cumulative weeks over 3-year horizon in statuses h and b; training, which represents cumulative weeks classified in activity e in the 3-year period; nonemployment, which signifies the total weeks spent in status n; and low-wage+nonemployment, which totals the number of weeks in statuses ℓ and n during the three years.

Each table considers six scenarios regarding the labor-market activities experienced by an individual in the first two years of the career after leaving school. The designation of these 2-year work histories and their corresponding definitions are:

Base Case:	75% of 2-year period spent employed Weeks of employment equal in the first and second year No training in 2-year period All employment in two years in low-wage jobs
More n:	Base Case, except only 25% of 2-year period spent employed
Recent n:	Base Case, except all employment occurs in the first year and none in the second
Training:	Base Case, except individual participates in 10 weeks of training in the 2-year period
Early ℓ:	Base Case, except low-wage experience only in the first year and all employment in second year in high-paying jobs
No ℓ:	Base Case, except no low-wage experience at all in the 2-year period

These tables report statistics summarizing the experiences in the three years directly succeeding the 2-year work histories specified above, with the 2-year period assumed to

end in an exit from a one-week spell in nonemployment.

Each cell in these tables presents results for Whites, Blacks, and Hispanics, with the columns focusing on different aspects of the distributions of cumulative weeks. The first set of columns gives the fraction of the population that participates in the five labor-market activities at any time in the 3-year horizon. The second set presents the average number of weeks spent in the various activities over the three years. The remaining columns report the 10th, 25th, 50th, 75th, and 90th percentiles for the simulated distributions.

6.6.1 Relationships Between Previous Work Experience and Future Employment

Comparing the first three labor-market scenarios presented in the tables for each of the education groups reveals that the total amount of previous labor market experience is a prominent predictor of individuals' future employment, irrespective of whether the previous experience is recent or not. Whereas shifting from the "base case" to "more n" induces a sharp decrease in total employment over the 3-year period (i.e., increase in nonemployment), especially for the lower education groups, movement from the "base case" to "recent n" produces only marginal shifts in total employment. Holding the total amount of past work experience constant in the first two years, the primary consequence of making this labor-market experience more recent (i.e., moving from "recent n" to "base case") is to shift future employment slightly from low- to high-wage jobs. In sharp contrast, a lowering of total employment in the first two years induces a decrease in

employment over the subsequent three years, with the effect diminishing with higher levels of education. A one-year increase in experience in the first two years implies: a 4-month rise in employment over the subsequent three years for high-school dropouts; a 3-month increase for high-school graduates; about a 2-month rise for those with some college; and only a one-month increase for college graduates. The effects are even more dramatic for those individuals experiencing the highest amounts of nonemployment in any education group. Comparison of the 90th percentiles of nonemployment across educational attainments reveals that a one-year increase in experience leads to a 4-5 month rise in employment or training over the following 3-year period for all groups other than college graduates. For those experiencing the most nonemployment over the 3-year period, a shift of experience from early in the first two years to later in this period makes little difference in the total amount of nonemployment experienced over the future 3-year horizon.

6.6.2 Effects of Training and Composition of Past Employment on Future Work Activities

The comparison of the "training" scenario with the base case indicates that higher training implies only marginal increases in employment over the subsequent 3-year horizon, and it does very little to shift employment from low-wage to high-wage jobs. For the lower two education groups, training during the 2-year work history signals slight increases in the amount of training done over the future three years of the working

career. No doubt, this positive influence of past training on future training in part reflects our definition of training which incorporates vocational training while employed as well as pure educational activities. For the upper two education groups, increased training has essentially no effect on any labor-market activities during the subsequent 3-year horizon.

Comparing the base case with the last two labor market scenarios listed in the tables (i.e., "early ℓ" and "no ℓ") helps determine the role of altering the composition of past labor-market experience from low-wage to high-wage jobs. For high-school graduates and beyond, switching previous labor-market experience from low- to high-paying employment primarily implies a near one-to-one substitution of high-wage for low-wage jobs in subsequent time spent employed, with the effect almost nonexistent for college graduates. While this substitution is even larger for high-school dropouts, a shift of past labor-market experience from low-wage to purely high-wage employment also implies an increase in average employment in the future, amounting to approximately 1-2 months during the 3-year horizon. This increase in employment is not larger for those in the group who experience the largest amount of nonemployment (i.e., those at the 90th percentile).

6.6.3 Summary of Findings for Work Histories

The results in Table 6.6 suggest that much of the differences observed across the race-ethnic groups in the earlier discussion reflects a compounding effect of previous work histories on future experiences, rather than an unalterable disparity inherent in the

race-ethnic groups. Tables 6.6 assume the same work history at the end of the first two years after leaving school for all individuals of a given educational attainment, and the resulting differences in labor-market experiences over the next three years across race-ethnic groups are much smaller than those noted in Sections 6.2. Examining Tables 6.1-LQ and 6.2-LQ shows that the difference between White and Black high-school dropouts is more than a year for the combined status of low-wage+nonemployment when considering either of the 5-year periods making up the 10-year horizon (comparing either the means or the percentiles above 10%).[7] Comparing Whites and Blacks in Table 6.6-1 for the combined status of low-wage+nonemployment reveals differentials that typically fall well below 6 months for any scenario considered, even at the extremes of the distribution. Similarly, the differentials observed in Table 6.2-LQ for nonemployment in either of the 5-year periods between White and Black high-school dropouts are enormous when compared to the differentials presented in Tables 6.6-1, given any reasonable adjustment for the different time spans. For the three upper education groups, the differences observed across the race-ethnic categories in Tables 6.6 compared to earlier findings for these groups are even less pronounced than for high-school dropouts.

In summary the findings from Tables 6.6 allow us to draw the following conclusions:

- **The main factor predicting the amount of future employment is the total amount of past labor-market experience, irrespective of whether this past**

[7] For years 1-5, the 90th percentile differs only 29 weeks between White and Black high school dropouts, however this reflects the fact that a large fraction of the Blacks are truncated at 260 weeks which represents the entire 5-year period.

experience occurred recently or whether it occurred in low- or high-wage employment.

- **The link between previous work experience and future employment diminishes with higher levels of education.**
- **A large component of the race-ethnic differentials observed in the amount of employment and the fraction of this employment spent in high-wage jobs reflects the accumulation of unfavorable experiences early in the work career that have a compounding effect on subsequent labor-market activities.**

While it may be tempting to interpret the above findings in causal context, it is not appropriate to do so. Some of our statements summarizing the results in this section may suggest an attempt to make a causal link between labor-market experiences in our analysis, but we recognize that the empirical results presented throughout this study are purely descriptive in character. They are derived from a nonstructural statistical model that does not provide a basis for inferring causal relationships. Given a particular labor-market history applicable up to some year after leaving school, our empirical model predicts the lengths of time that individuals with this history will spend in alternative labor-market activities in the future; it predicts the routes followed by these individuals into low-wage labor markets, as well as the conditions linked to continued participation in these markets and to return participation; and it further predicts the routes of escape from low-wage markets. Prediction, however, is not a basis for inferring causality.

While our empirical findings cannot formally be given a causal interpretation, they do indicate how early labor-market scenarios link to subsequent employment activities, and they identify the dynamic relationships associated with participation in the low-wage

sector. An elaborate behavioral interpretation of our findings is not needed to answer most of the questions cited in the previous discussion. For those questions where a reader believes that a behavioral link is required for an answer, the same care must be exercised in using our empirical findings to arrive at an answer as one would apply in interpreting the estimates of multiple regression models in a behavioral context.

7. Conclusion

The findings of this study offer many insights into the role played by low-wage jobs in the overall employment picture of youths, and a synthesis of these results provides a useful source for addressing several important questions about this role. The subsequent discussion undertakes such a synthesis in an effort to answer the following questions:

- Among young men, who participates in low-wage sectors?
- How much does earnings from low-wage jobs contribute to income?
- Is employment less stable for workers in low-wage markets?
- Is participation in low-wage sectors temporary or persistent?
- Is low-wage employment a port-of-entry into high-paying jobs?

Disputes over the answers to these questions are often at the heart of many public debates over government intervention in labor markets.

One of the most prominent examples concerns policies dealing with the setting of minimum wages. The main rationale for raising minimum-wage rates as an anti-poverty program presumes that participation in low-wage jobs is relatively permanent and that earnings from these jobs contribute a significant fraction to household income. The arguments against minimum wage legislation, or for the inclusion of sub-minimum training wages in such legislation, rely on the supposition that the hourly wages earned on

jobs early in a career are not nearly as important for new labor-force entrants as are the opportunities for these entrants to acquire the work experience that leads to upward mobility in the labor market. Answering the above questions provides critical information for establishing the validity of the alternative suppositions maintained by opposing parties in minimum-wage debates. We consider them in the order listed.

7.1 Among Young Men, Who Participates in Low-Wage Sectors?

All demographic groups have some experience. High-school dropouts and high-school graduates have a 75%-80% chance of holding a low-wage job at sometime during the first 10 years after leaving school. The participation rate of college graduates in the low-wage sector during their first 5 years after school is a surprisingly high 30%.

High-school graduates experience the most time in low-wage jobs during the 10-year period after school, followed by high-school dropouts, with college-educated individuals having considerably less experience. The larger amount of low-wage employment for high-school graduates relative to dropouts reflects that a significant segment of the dropout population spends a considerable amount of time in nonemployment. High-school dropouts and graduates average 1-2 years of low-wage employment during the 10-year period. Approximately 50% of high-school dropouts start their employment in low-wage jobs; this percentage steadily drops for higher levels of education, falling to well below 20% for college graduates.

Measurements designed to gauge the extent of low-wage employment in any

population depend critically on the time frame used to register participation as well as on the age of individuals. For high-school dropouts and high-school graduates, the participation rate in low-wage employment is as large as 59% when registering participation as holding any low-wage job in a 2-year period in the late teens, and it is as small as 11% when participation refers to holding a low-paying job during an arbitrary quarter when individuals are in their late twenties.

Regardless of the age and education of young men, participation in low-wage jobs is twice as likely to occur over 2-year horizons than in any particular quarter making up this horizon. Irrespective of the time frame used to catalog participation, the likelihood of holding low-wage jobs declines with age (by as much as 50%), with the most significant decreases occurring at the earlier ages. As individuals age, education becomes a stronger factor determining the likelihood of holding a low-wage job.

Race-ethnic differences in low-wage participation are relatively minor at young ages, but they tend to widen at older ages especially at lower levels of education. Ignoring college graduates, Blacks tend to have the highest participation rates in the low-wage sector, with no systematic ordering between Whites and Hispanics. Race-ethnic differentials are inconsequential for college graduates.

7.2 How Much Does Earnings from Low-Wage Jobs Contribute to Income?

The fraction made up by earnings from low-wage jobs falls as one considers longer horizons for accumulating income and broader sources of income. Earnings from

low-wage jobs is a relatively high fraction of individuals' labor income earned during the quarter during which these jobs were held; it is a much smaller fraction of total family income received over 2 years. For high-school dropouts and high-school graduates, earnings from low-wage jobs average as much as 86% of total labor income during those quarters during which such jobs were held; this average drops to as little as 30% when calculating the contribution of these earnings to total family income received over 2-year periods during which low-paying employment occurs. For college graduates, the analogous percentages are 71% and 15%.

For less-educated men who hold low-wage jobs, earnings from these jobs account on average for 65%-80% of total family income received in a quarter, and 40%-50% of family income received over 2-year periods when low-paying jobs are held. Considering individuals' labor income alone, the fraction of earnings coming from low-wage jobs for poorly-educated participants ranges between 69%-88% when considering the contribution of these earnings to quarterly labor income; and it ranges between 33%-61% when considering the contribution to total labor income received during 2-year periods when low-wage jobs are held.

The contributions of earnings from low-wage jobs to any measure of income over any period declines with age and with higher levels of education. The rate of decline associated with aging is much steeper for higher education levels. At the lower levels, the fraction of any measure of income made up by earnings from low-wage jobs is typically highest for Blacks, with Hispanics second, and with Whites having the lowest

fractions. Race-ethnic differentials are insignificant for college graduates.

7.3 Is Employment Less Stable for Workers in Low-Wage Labor Markets?

A central finding in this study concerns the role of work experience in future labor-market activities. The total amount of past employment is the main factor predicting the extent of future employment, irrespective of whether this past experience occurred recently or whether it occurred in low- or high-wage jobs. Within any education group, past employment is the primary factor governing the stability of individuals' future employment. The link between previous labor-market experience and future employment diminishes at higher education levels. A large component of the race-ethnic differentials observed in the amount of employment and the fraction of this employment spent in high-wage jobs reflects the influence of limited employment early in careers--i.e., time spent out-of-work, not time spent in low-wage jobs--that has a compounding effect on subsequent labor-market activities.

7.4 Is Participation in Low-Wage Sectors Temporary or Persistent?

There is a great deal of mobility out of low-wage jobs. The evidence does not support the notion of a low-wage "trap". Young men spend relatively little time in low-paying employment in the first 10 years after school. Individuals typically experience very few entries into low-wage jobs during this period. Even for the lowest education groups, only 50% start low-paying jobs 2 times or more during the 10-year period; only

10% start such jobs more than 4 times. Further, the durations of spells in low-wage employment are surprisingly short. Typical spells last for less than 5 months for the high-school dropouts, and around 6 months for high-school graduates and beyond; 90% of all spells are completed well within 2 years. High-school dropouts and graduates average a modest 1-2 years of low-wage employment in total during the 10 years after school; the majority spend less than 1 year; and only 10% of this population spend more than 4 years in low-paying jobs.

About 50% of high-school dropouts or graduates entering low-paying employment find a high-wage job within 15 months; 90% find such employment within 3-5 years. While the typical members of race-ethnic groups wait similar amounts of time to enter high-paying employment, a component of Black high-school dropouts experience exceptionally long waits; 25% are not in high-paying employment before 3.5 years; and 10% are not in such employment even after 9 years. Most of this wait, however, does not reflect long periods spent in low-wage employment, instead it reflects much time spent out of work.

Mobility out of low-wage jobs does not vary systematically across education levels, except for college graduates who experience noticeably more rapid movement into high-wage jobs. Substantial differences exist in mobility out of low-wage employment across race-ethnic groups at lower levels of education, but these differentials steadily dissipate for the higher education groups and become inconsequential for college graduates.

If there is any notion of a "trap" in the labor market, it must incorporate time spent out-of-work along with low-paying employment. Time spent in the combined state of nonemployment and low-wage jobs provides a notion of a labor-market status more relevant than time spent in low-paying employment alone for judging the prospects of individuals in the subsequent stages of their working careers. The extent of participation in the combined status of low-wage jobs and out-of-work diminishes sharply for higher levels of education and for older workers.

Less-educated Blacks spend an exceptionally large amount of time in this status, and the experiences for some poorly-educated White and Hispanic dropouts are not much better. More than 50% of Black high-school dropouts spend more than 6.5 years in low-paying jobs or out of work during the first 10 years after school; and 10% spend more than 9 years. About 50% of Hispanics spend about half of the 10-year period in low-wage employment or out of work; and 10% participate almost 9 years in these statuses. White dropouts fare better than Blacks and Hispanics, and yet 10% of Whites spend 7.5 years or more in low-wage jobs or out of work.

The large amount of time spent in this combined state of low-wage employment and nonemployment primarily reflects the influence of insufficient labor-market experience early in the career which predicts low future employment. When individuals acquire labor-market experience, even in low-wage jobs, their prospects for future employment are significantly enhanced.

7.5 Is Low-Wage Employment a Port of Entry into High-Paying Jobs?

Increasing employment at any wage implies more time spent in high-wage jobs in the future. The evidence supports the familiar concept of life-cycle wage growth, which depicts participation in low-wage sectors as offering individuals the opportunity to acquire the work experience and additional skills needed to move on to higher-paying jobs in the future. The acquisition of work experience in low-paying jobs at earlier ages not only implies more employment in the future, but a greater amount of this future employment takes place in high-paying jobs.

The findings generally support the view that the majority of people entering high-paying employment will not experience low-wage jobs for quite some time, though a nontrivial fraction of the high-school dropouts and graduates become involved in low-wage employment in the not-too-distant future. From time of entry into a high-wage job, 25% of high-school dropouts are in low-paying jobs within about a year. On the other hand, over 25% avoid such jobs for over 8 years.

Once in a high-wage job, educational attainment is a significant factor in determining the length of time before participation occurs in low-wage employment. Whereas 75% of the college graduates who start high-wage jobs wait at least 5 years before entering low-wage employment, about 50% of high-school dropouts are back in low-wage jobs within 3.5 years. Race-ethnic groups have broadly similar experiences in entering low-paying employment after working at a high-wage job, regardless of the level of educational attainment.

7.6 Concluding Remarks

The two definitions of low-wage employment used in our empirical analysis imply very low thresholds for the hourly wage rate, and this factor may account for the close similarity in our empirical findings based on these two definitions. Expressed in 1990 dollars, both of our wage thresholds fall below $5.50 per hour, which most people would accept as a low wage. While our definitions may be relevant for considering proposed movements in minimum wages, many would define the relevant concept of a low-wage labor market using a much higher level for hourly earnings than adopted in this study. If one were to use a higher threshold in our empirical analysis, it is quite possible that the answers offered above would have been quite different.

No matter what dimensions of work activities considered in our study, education plays a critical role in neutralizing any disadvantageous attributes or array of experiences. The relationships between previous labor market experiences and the characteristics of future employment become less pronounced the higher the level of education. For all categories of labor-market experiences, race-ethnic differentials steadily diminish for higher educational attainments, with differences becoming negligible for college graduates. Education is the single most important factor in improving individuals' prospects for the extent of future employment and for the fraction of this employment spent in high-paying jobs. After education, the total amount of time spent employed is the major factor influencing future employment prospects.

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