

JOB CHANGE AND JOB STABILITY
AMONG LESS-SKILLED YOUNG WORKERS

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December 1998

This paper was prepared for the conference on “Labor Markets and Less-Skilled Workers” sponsored by the Joint Center for Poverty Research in November 1998. We would like to thank Elizabeth Clifford and Carol Lijek for outstanding research assistance.

I. Introduction

To what extent does job or employment instability contribute to the problems of less-skilled workers in the labor market? For which skill groups is job instability most severe? What factors are associated with such instability, both among and within demographic groups?

Labor economists and policymakers have long been interested in these questions, and a significant body of research has emerged over the years on these topics. But changes in the labor market for less-skilled workers over the past few decades raise new concerns these questions. For one thing, inequality has grown rapidly between skill groups over the past few decades, while real wages of the less-skilled (especially among men) have apparently declined.¹ Furthermore, employment rates among less-skilled men have declined in association with these wage losses (Juhn, 1992; Murphy and Topel, 1997), while employment rates of less-educated women have improved less rapidly than those of more-educated women (Blau, 1998). The extent to which job or employment instability contribute to the widening gaps in employment rates between the more- and less-educated, and the degree to which enhanced job stability might help to improve both the employment prospects and the real wages of these workers, clearly need to be determined.

Interest in these questions also has been stimulated by the recent enactment of welfare reform legislation, designed to increase the participation of less-educated women in the labor market. Some observers (e.g., McMurrer *et. al.*, 1997; Holzer, 1998) have expressed concern that job turnover, perhaps associated with child care/transportation as

¹ Of course, the existence and extent of real wage loss for these groups depends on the extent to which price increases over time are overstated by the Consumer Price Index or other deflators.

well as work performance problems, will limit the earnings of welfare recipients as they enter the labor market, as well as their potential for wage growth over time. To what extent is job turnover a particular problem for less-educated females, and what factors are associated with these problems? Are they more severe for some parts of this population, such as minorities, than others? And are there policy approaches, such as the provision of early work experience or child care, that can help to remedy these problems once they have appeared?

In this paper, we hope to shed some light on the determinants of job change and job stability among less-educated workers.² We begin by reviewing the existing literature on these issues, identifying recent additions to as well as persistent gaps in our knowledge. We then present some new evidence on this topic, using data from the work history files of the National Longitudinal Survey of Youth (NLSY79).

In particular, we present summary data on transitions out of and into employment by education, race and/or gender. These data establish the extent to which job leaving and/or job loss account for the employment problems of different demographic and skill groups. We then present summary data on job changes among these groups. We separately consider transitions from one job to another as well as from a job to nonemployment, and voluntary v. involuntary transitions. We also focus other measures of skill besides educational attainment, such as scores on different components of the Armed Forces Qualifying Test (AFQT).

After presenting the summary data on transitions, we present hazard rates for these groups, and how they vary with job tenure. Since the work history files of the

² The *effects* of job instability and employment losses on the wages of less-skilled workers are analyzed elsewhere in this conference, in the paper by Taber and Gladden.

NLSY79 provide us with employment data on a weekly basis, we can estimate hazards on such a basis, and determine whether jobs stabilize much more quickly for some groups than for others. Finally, we present the results of estimated logit models for transition rates from jobs, and focus on a variety of covariates that seem to affect these rates. The role of various personal and family background characteristics, earlier employment history, and characteristics of jobs attained are all considered here. We close with a review of our findings and some discussion of their policy implications.

II. Previous Empirical Literature on Job Change and Stability

Over the years, a number of empirical findings have emerged regarding job change and job stability across various groups of workers, especially by race, gender, age/experience, and educational attainment. For instance, it is well-known that job separations decline with labor market experience and/or job tenure (e.g., Leighton and Mincer, 1982; Farber, 1998), though this appears to be somewhat less true among low-income young black males (Ballen and Freeman, 1986).

Average separation rates from jobs differ systematically among demographic groups. For instance, employment and job instability appear to be higher among women, minorities and the less-educated than their counterparts (Parsons, 1986; Farber, *op. cit.*); but these differences by race and gender disappear or even are reversed when controls are included for observable differences in personal or job characteristics (e.g., Light and Ureta, 1992). Voluntary separation rates appear particularly lower among blacks when these controls are included (e.g., Blau and Kahn, 1981), though layoffs and discharges are still higher for them (Jackson and Montgomery, 1986; Ferguson and Filer, 1986).

By contrast, differences in turnover by level of educational attainment persist

within each gender or race group, especially among females (Light and Ureta, *op. cit.*). The differences among these groups become even clearer when we distinguish *job-to-job* transitions from *job-to-nonemployment* ones. In particular, the kinds of job-to-job changes that have potentially positive effects on the earnings of young workers (e.g., Topel and Ward, 1992) are relatively infrequent among young less-educated women, while job-to-nonemployment changes occur much more frequently among this group (Royalty, 1998).

To what extent are the employment problems of less-skilled and particularly minority workers accounted for by their higher employment instability (or transitions *out of* employment), as opposed to longer nonemployment spells (or lower transitions *into* employment)? The work of Clark and Summers (1982) and Ballen and Freeman (*op. cit.*) indicated that the latter accounted for most of the differences in employment rates across racial groups, suggesting that employment instability was not as great a concern for this group as the difficulty of reentering employment, once it was gone.³ But all of this work was performed on data from two or more decades ago, and little of it focused on differences in employment rates between the more- v. less-skilled *per se*.

More recent work by Juhn *et. al.* (1991) and by Murphy and Topel (*op. cit.*) also suggest that recent declines in employment rates among less-educated (or low-wage) men largely reflect increasingly lengthy durations of nonemployment and nonparticipation in the labor force, though the potential role of employment instability was not considered in this work. Thus, the extent to which employment instability contributes to the lower overall employment rates of less-skilled workers of any race or gender has not been

³ This issue also boils down to one of *incidence v. duration* of nonemployment, and racial differences in the latter seem to account for most of the racial differences in employment rates. For more evidence on these

analyzed explicitly in any of these studies.

What do we know about the labor market consequences of these lower employment rates over time among less-skilled workers? Although it is well-known that some degree of job change has positive effects on the earnings of young workers (Topel and Ward, *op. cit.*), it has also become increasingly apparent that early nonemployment among some groups of young workers leads to significant losses in earnings over time, as their general labor market experience and tenure are reduced. This appears to be true for both blacks and whites (Bratsberg and Terrell, 1998), for women as well as men (Light and Ureta, 1995), and among the less-educated (Taber and Gladden, this volume).

The extent to which early nonemployment generates later nonemployment (as opposed to lower wages), especially once unobserved heterogeneity was accounted for, was questioned in some well-known papers many years ago (e.g., Ellwood, 1982; Meyer and Wise, 1982). But more recent research evidence (e.g., Neumark, 1997; Rich, 1994) calls these findings into question.⁴ Furthermore, the growing tendency of low wages to be associated with lower employment rates further suggests an indirect mechanism through which early employment losses might persist over time, and one that might matter more now than a few decades earlier.

A few other findings in this literature are noteworthy as well. Farber (1994) finds that tenure of the most recent job has a stronger effect on job changes than does earlier employment experience. While Ballen and Freeman (1986) suggest that, among black youth, these previous experiences do not necessarily improve over time, Ham and

issues see Holzer (1986, 1994).

⁴ The papers by Meyer/Wise and Ellwood primarily used the older NLS data and relied on fixed-effects techniques to deal with unobserved heterogeneity. In contrast, the papers by Rich and Neumark use instrumental variables based on local labor market conditions to generate their findings.

LaLonde (1996) find that a year of employment in the National Supported Work program raised subsequent employment durations among very low-income adult women. Thus, the extent to which some early employment experience, even if it is in the public sector, provides returns in terms of subsequent private sector job stability remains unclear. Furthermore, the effects of past or current *job* characteristics on employment stability, controlling for personal characteristics, remain unclear as well (e.g., Brown, 1982; Filer and Ferguson, *op. cit.*). It might be the case that access to “good” jobs, rather than any employment at all, determines employment stability to a greater extent.

Also, marital status and presence of children continue to be important determinants in many studies of employment stability and/or wages among women, and need to be considered as well.⁵ Finally, it is quite noteworthy that, despite the growing interest recently in earnings returns to cognitive skills, independently of educational attainment, we know of no analysis to date of their relation to employment stability.⁶

Thus, we find a need to update important parts of the previous literature on employment stability among less-skilled workers, particularly in light of the major changes that have occurred in labor markets for these workers. More attention needs to be placed on less-skilled workers more generally, who can be identified on the basis of academic achievement through test scores as well as educational attainment. And other determinants of employment stability, such as job characteristics, previous employment experiences, and family status, need to be considered as well.

⁵ Light and Ureta *op. cit.* demonstrate that both of these variables generally reduce employment durations among women but raise them among men. Similar findings for wages more generally appear in Waldfogel (1998).

⁶ Murnane *et. al.* (1995) show that such returns have grown over time, and that they may also grow with experience. Neal and Johnson (1996) find important effects of these measures of skill on black-white wage differences, while Rivera-Batiz (1992) finds effects on relative employment rates as well. Pavetti (1997) also shows fairly large differences in employment rates among women with different levels of AFQT

III. Data and Summary Statistics

As noted above, we use data from the NLSY79 to analyze job and employment stability. This dataset consists of a sample of over 12,000 individuals who were aged 14 through 21 in 1979. To be included in our sample, respondents had to be interviewed in 1994, have complete job histories during the years that they were scheduled to be interviewed, and have been employed at least once between 1978 and 1993. Accordingly, our sample contains the job histories of respondents through the 1994 wave of the survey, and the statistics we present are weighted according to the sample weights given in that year. We limit our analysis to jobs that are held only when the respondent was not enrolled in school full-time.

The NLSY79 public use file contains a Work History file that provides information on each weekly activity over the preceding year. It also contains information on up to five jobs a year, providing the week the job started (and perhaps ended), whether the job continues from the previous year or into the next, and usual weekly hours worked on each. It also provides information on occupation, industry and wage level on the job, as well as why it might have ended. We use all of this information in our computations below.

As noted above, we focus on job-to-job transitions as well as job-to-nonemployment transitions, following Royalty (*op. cit.*). We will distinguish between voluntary and involuntary separations in many cases. However, following Farber (1998), we analyze transitions at the *weekly* rather than monthly or annual level. This allows for the well-documented nonlinearity in hazards during the very early period of a job, since

scores.

the probability of leaving increases within the first 3 or 4 months before declining sharply thereafter. For cases where employers use probationary periods (either formally or informally) of a few weeks or months before committing to employing workers for longer periods, such nonlinearities should be expected. By analyzing job transitions at the weekly level, we can examine the determinants of instability during the early phase of the job.

Our primary focus in this paper is on the stability of *regular* jobs during the first 18 months of the job. We define these jobs as those in which respondents worked at least 30 hours per week. However, in circumstances where the respondent worked in a part-time job that did not overlap with a regular job, we also include those spells in our analysis. In some cases these part-time jobs became full-time jobs. We discarded jobs that were already in progress (i.e., left-censored spells) prior to January 1978.

When several jobs were held at the same time, we chose the job with the longest duration as the regular job, as long as the respondent usually worked full-time for some period during that job spell. Thus a job that started as a part-time job, in which the respondent reported usually working less than 30 hours, and became a full-time job in a subsequent interview would be considered a regular job from the date that job began as a part-time job until the employee's relationship with the employer was severed. Accordingly, we measured duration of this job from the time it began as a part-time job. However, because some jobs began as a part-time job and then became a full-time jobs we created a variable indicating whether the regular job was once a part-time job. We kept track of employment in other jobs during this regular job spell with a variable indicating whether during the current week the respondent held two or more jobs.

A. The Work Experience of Young Adults

We begin our analysis of the data by examining some results on the employment experiences of workers who are in their late twenties or thirties from recent panels of the NLSY79, and how these compare with results for this same cohort of workers when they were in their early-to-mid twenties several years earlier. Such a comparison can at least suggest the extent to which the stability of new jobs bears on the employment experience that youths and young adults accumulate during their careers, and the extent to which their early experiences manifest a pattern that continues to hold as these individuals approach middle age.

Table 1 presents data on the percent of overall time between 1991 and 1995 during which workers are employed. The workers are aged 31 through 38 as of 1995, (or 27 through 38 over the entire period).⁷ Results are disaggregated by the educational attainment of the individual, separately by gender or race. The results indicate that the percent time spent employed varies considerably by education, race and gender. Within each race/gender group, the least educated work the least frequently. Among white males, college graduates work roughly 95% of the time while high school dropouts do so only 75% of the time during the five years studied. These data thus reflect the trend towards lower labor force participation among less-educated men that has been frequently documented in recent years (by Juhn, Murphy and Topel, etc.). But among the other demographic groups, the difference between the participation rates of the most and least educated are even larger than for males. Indeed, female or black high school dropouts each work less than half of the time. Moreover, consistent with recent evidence regarding the equivalence of a high school diploma and the GED, individuals with only a GED participate substantially less in the work

force than those with a high school diploma (Cameron and Heckman, 1993). Among males, participation rates of high school dropouts and those with a GED are nearly the same, though women with a GED work considerably more than high school dropouts.

In Table 2, we examine these individuals earlier in their life cycle, at ages 23 through 27. We present these data by gender and education, and on percent of time spent in the military, unemployed and out of the labor force as well as employed. Overall, we find qualitatively similar relationships between educational attainment and employment experience as we found in the earlier table. Specifically, male high school dropouts between the ages of 23 and 27 report working about 70% of the time during this five year period - just a bit less time than they spend working in their later years. High school dropouts were employed for nearly as many weeks as high school graduates, but the latter group spend a much larger share of their nonemployed time in the military, whereas the former spend it almost exclusively being unemployed or out of the labor force. Thus, the changing skill composition of the military over the past few decades may help to account for much of the diverging employment experiences of male high school dropouts and graduates during this time period.

The corresponding figures for young adult females are substantially more varied among the educational groupings than are those of males. Female college graduates accumulate approximately the same amount of work experience during their early to mid-twenties as male college graduates. Time spent either unemployed or out of the labor force also is similar. However, as we turn to increasingly less-educated groups, we find that the time spent employed during this period drops sharply and is approximately offset by a rise in the percentage of time spent out of the labor force. Indeed, female high school dropouts

⁷ These results are reproduced from a publication by the U.S. Department of Labor (1998).

were employed only about one-third of the time during their early to mid-twenties.

Among females, a natural explanation for these differences in participation rates are differences in child-bearing patterns, since less-educated women's first births occur earlier than those of more-educated women (e.g., Geronimus and Korenman, 1994). However, by comparing Tables 1 and 2, we see that the low participation rates of less-educated females early in their careers cannot be fully explained by timing of births. The less-educated work markedly less than their better educated counterparts, even as they age into the part of the life cycle in which births among more educated women are relatively more likely. The substantial persistence of their low employment rates even into non child-bearing years might reflect other costs associated with their early child-bearing (such as child care costs, lost work experience, welfare dependence, etc.) or other factors that relate primarily to their low skills.⁸

B. The Transition Rates Into and Out of Employment by Youths and Young Adults

Less skilled young adults exhibit less attachment to the employed work force than other workers, and this pattern is maintained as they mature. This lack of attachment appears to be a barrier to future employment and to the acquisition of productivity/wage-enhancing on-the-job training, as we noted above. By definition, the probability of being employed in any period for an individual or group is determined by their transition rate from non-employment to employment (p_{ne}) and the transition rate from employment to non-employment (p_{en}).⁹ The latter reflects the *frequency* or *incidence* of spells of nonemployment, which will reflect employment instability; while the former reflects the

⁸ The extent to which the low educational attainments and employment experience actually result from their early childbearing has been the subject of much controversy - e.g., Geronimus and Korenman (*op. cit.*), Bronars and Grogger (1994), and Lundberg and Plotnick (1990).

⁹ More formally, we note that $p_{e,t}$, the probability of being employed in period t , equals $p_{e,t-1}*(1-p_{en}) + (1-$

average *durations* of these spells.

To illustrate the importance of these two transition rates in explaining the difference in employment rates among educational groups, we follow Ballen and Freeman (1986) and compute the respective fraction of employment and non-employment spells that end during any period - which, in our case, is weekly. These results appear in Table 3.¹⁰ Our computations indicate that a larger portion of the difference in participation rates by race and gender results from differences in transition rates from non-employment to employment, while differences in transitions out of employment are relatively minor. This finding is consistent with Ballen and Freeman's results using the NLSY79 and the NBER Inner-City Youth Survey.

Across educational groups, the results are a bit more mixed. Although the low transitions rates out of non-employment clearly explain the larger share of the gap between the employment rates of high school dropouts v. graduates, Table 3 also reveals that those with low levels of education also are markedly more likely to leave employment for non-employment. Thus, a closer examination of the causes of job and employment instability among less-skilled v. more-skilled workers appears to be in order.

C. Empirical Transition Rates From Jobs

In Table 4, we present means on transitions out of *jobs*, rather than employment more generally. From each job two transitions are possible: (i) from job to non-employment;

$p_{e,t-1} * p_{ne}$. In steady state, the employment rate equals $p_{ne} / (p_{ne} + p_{en})$.

¹⁰ These computations do not correspond exactly to those that follow, since these are based on the weekly employment summaries in the NLSY Work History file while the rest are based on the summaries of jobs held during each period.

and (ii) from job to job. As we noted earlier, previous research suggests that the latter of these transitions are likely associated with earnings growth and are more likely among the skilled workers (Topel and Ward, 1992; Royalty, 1998). By contrast, the earlier transition is less likely to lead to earnings growth, and more likely for the less skilled. The latter also corresponds more closely to transitions from employment to nonemployment that were considered in the previous table.

We present means on overall transitions out of jobs, as well as those into nonemployment and other jobs. We also distinguish between *voluntary* and *involuntary* transitions - i.e., quits v. layoffs, discharges, etc. The results appear separately by gender, and also by educational attainment or quartile of the math test score distribution.

The results of Table 4 show that the weekly probability of a transition out of job averages about 2% for our sample. This transition probability is a bit higher than that observed by Royalty, likely because of differences in our samples and definitions of transitions, but they are fairly comparable to those observed by Farber (1998).¹¹ Overall transition rates do not vary greatly by gender, though we see somewhat more transitions into nonemployment for women in the less-educated groups (as did Royalty). Voluntary transitions into nonemployment are particularly higher for women, consistent with the notion that many are leaving jobs for reasons related to childbearing or childrearing; while involuntary ones are generally higher among men. Transition rates, especially into nonemployment, also vary by education level within both genders; *high school dropouts are*

¹¹ Royalty's sample included only those who are aged 22 or above; our younger sample no doubt generates more job transitions. In addition, she defines a transition as being into nonemployment only if the spell lasts four or more weeks; thus, she counts more transitions as job-to-job and fewer as job-to-nonemployment than we do.

*especially likely to leave jobs and become nonemployed.*¹² Similar patterns also appear across math test score quartiles.¹³

To see the extent to which these transitions vary with tenure on the job, we present weekly Kaplan-Meier hazard rates in Figures 1 through 3 for roughly the first 18 months in the job. We present these hazard rates separately by gender and education (i.e., high school dropouts v. all other educational categories). We also present them separately for transitions into nonemployment and those into other jobs.

Overall, the pattern of transition rates from new jobs in our sample corresponds to the familiar pattern depicted elsewhere in the literature (e.g. Farber, 1998, Figure 5). For every demographic group, the hazard rates rise during the first few weeks on the job and reach a peak after approximately 12 to 16 weeks. After this point, the hazard declines - at first sharply, and then more slowly through the first 18 months of the job. This pattern is the same for all educational groups, but the hazard rates are generally higher for high school dropouts than for other workers.

The pattern of transition rates for women is similar to those of men. However, during the first 16 weeks of a job the transition rates of the least-educated women are especially high, and remain much higher than those of more-educated groups for much of the first year on the job. Even after 18 months, the hazard rates of women high school dropouts remain above those of their more educated counterparts. This pattern for less-educated women suggests that at least a portion of their low participation rates can be

¹² Transition rates in Table 4 do not vary greatly across educational categories of a high school diploma or more. However, when we limit the sample to those with ages 22 and above, somewhat greater differences appear, with college graduates having lower transition rates than those with some college or high school only.

¹³ Results obtained when using the verbal rather than math test score are very similar to those presented here. In all work below we focus only on the math score, as it seems to be more strongly related to earnings in much of the literature (e.g., Murnane *et. al.*, 1995).

accounted for by very high transition rates, especially during the early parts of their job spells.

Comparing Figures 2 and 3, there are differences between the patterns of transitions into jobs and into nonemployment during the first 18 months on the job. Among males, the pattern of transition rates (i.e., the initial rise in hazard rates and subsequent decline) from job to non-employment is similar to but much more striking than the pattern depicted for job-to-job transitions in Figure 3. Moreover, the difference between the job-to-nonemployment transition rates of high school dropouts and other workers is clearer than that between their job-to-job transitions. Among females, the distinction between the transition rates of high school dropouts and other workers is much sharper for job-nonemployment than for job-job transitions. This finding is consistent with earlier comparisons between less and highly educated male workers' annual job to job transition rates (e.g., Royalty, 1998, Figure 5).

IV. The Determinants of Job Transitions

As we discussed in Section II, previous research has identified a several variables that consistently can explain differences in job stability among individuals. In this section we present regressions analyses of the determinants of job transitions. In keeping with this paper's focus on the stability of new jobs among workers of different skill levels, in this section we focus on how a wide range of variables influence job stability among these different classes of workers.

To analyze the determinants of job transitions we use the logit framework. Specifically, we let the probability that an individual leaves a job j during week t be given

by

$$(1) \quad L(t) = 1/(1-\exp(\beta X(t) + \alpha_1 \log(t) + \alpha_2 \log(t)^2)),$$

where $X(t)$ is a vector of characteristics, some of which may vary with time. We model the dependence of the hazard rate on time in the spell by the log of the duration of the current spell and its square. This specification is sufficiently flexible to mimic the "duration dependence" of the hazards depicted in Figures 1 through 3.

Unfortunately, we do not control for unobserved heterogeneity in this version of the paper. Accordingly, even if this heterogeneity is uncorrelated with our observed characteristics, $X(t)$, the coefficients are biased. To some extent this heterogeneity is accounted for in our specification of the "duration dependence." However we do not intend to give the parameters in this framework any structural or "causal" interpretation. Instead, we use this framework to parsimoniously summarize some of the relations between these characteristics and the propensity to leave jobs.

Usually in a logit framework the importance of the estimated coefficients are difficult to interpret without knowing the predicted probabilities, so that the marginal effect of a characteristic on the transition rate out of employment would be given by $\beta P(1-P)$. Because the weekly transition rates are small, on the order of 0.01 to 0.03 (see Figure 1), the estimated coefficients give the approximate percentage impact on the hazard of a one point change in the characteristic.¹⁴

¹⁴ When P is small, $P(1-P)$ approximates P , so that the percentage change in the hazard, $\partial P/P$, is given approximately by $\beta \partial X$. In other words, a one-point change in the characteristic X raises (lowers) the hazard by

A. Basic Model

In Table 5 we consider the relationship between individual's skills and weekly transition rates during the first 18 months of a job. We also examine how this relationship changes when we control for a standard set of personal and job characteristics. The fixed characteristics that we consider are race, a region dummy indicating whether the individual resides in the south, current industry, occupation at the start of the job, duration of the individual's last job, whether the current regular job began as a part-time job, educational attainment and test scores. The time varying characteristics we consider are current age and its square, actual job experience, whether the individual currently holds at least one other job, and a vector of dummy variables denoting the calendar year of the current job at time t .

For each set of hazards, we present several specifications of the model. We begin by controlling only for educational attainment as a measure of skill. In the second model, we add the math test score, to see whether or not cognitive skills (presumably developed quite early in one's life) affect transitions independently of educational attainment. In the third model we add dummies for occupation and industry as well as starting pay on the job, to see whether *job* characteristics matter separately from those of workers.

The results from our analysis indicate that low skills are associated with higher transition rates out of jobs. As suggested by the Figures, this relation is more striking for women than for men. As shown by column 1 of Table 5, male high school dropouts are 15 percent more likely to leave their job in a given week than are males with college degrees. The transition rates out of jobs are more similar among the other educational groupings. In column 4 of the table, we see that female high school dropouts are 30

β percent. For small values of P , the logit becomes arbitrarily close to a proportional hazards model.

percent more likely to leave a job during a given week than are female college graduates. As was true among males, the transition rates among the other educational groupings of females are more similar. These higher job transition rates for high school dropouts imply that the share of jobs that last more than one year is approximately 5 percentage points less for the male dropouts and 10 percentage points less for the female dropouts than for other workers.

The effects of skill on job transitions appears to be associated with our measure of cognitive ability, the score on the mathematics portion of the AFQT. As shown by columns 2 and 5, both males and females who score in the lowest quartiles of this distribution have transition rates that are roughly 20 percent higher than those who scored in the highest quartile. Notice, we find that this relation holds even when we hold educational attainment constant. This connection between cognitive ability (or academic achievement) and job transitions continues to hold even when we control for job characteristics. As shown by columns 3 and 6, even when we control for both educational attainment and occupation, those who scored in the lowest quartile of the distribution of math test scores had the highest transition rates. On the other hand, the estimated effects of educational attainment on transitions are eliminated or even reversed once we control for test scores and job characteristics.

The estimated coefficients on control variables in these equations appear in the Appendix, and some of these are of interest as well. We find that an individual's race does not predict differences in transition rates from jobs either for males or females. The coefficients for blacks and other racial groups are both small and statistically insignificant. The results do not change when we exclude our controls for an individual's occupation at

the start of the job. This evidence indicates that once other personal and job characteristics are accounted for a person's race is not a factor in overall job stability. However, we show below that when we distinguish between transitions to non-employment and transitions from job to job, race has modest effects on the results.

The results also indicate that job transition rates decline sharply with age, experience or tenure among both males and females (though the age effect for females disappears once we control for job characteristics). One way of characterizing these results is that individuals "age" into job stability during the early phase of their careers. In the next sub-section we examine whether these age and experience effects differ by skill level.

As reported by others, prior job tenure also is associated with longer durations on the current job (Farber, 1994). The estimated coefficients implies that if a man's previous job lasted 18 months instead of 6 months the transition rate from the current job declines by approximately 17 percent. The relation between previous job tenure and current transition rates for women is similar. Of course, distinguishing true causal effects from unobserved heterogeneity in these results is particularly problematic, though Farber's results imply that at least part of this effect is truly causal.

Though these results are not included in the table, the logit results also indicate that dual job holding is associated with slightly lower transition rates. If during the current week a regular job holder also holds a part-time job, the hazard rate out of the regular job is approximately five percent lower. From an employer's perspective dual job holding by employees is not associated with greater turnover during the early phase of a job.

The coefficients on the industry and occupation as well as the starting wage indicate that these job characteristics affect turnover as well. As expected jobs, held by males in

construction have higher transition rates than other jobs in the economy. Jobs in manufacturing (and, to a lesser extent, those in the transportation and utility sectors) have lower transition rates. The decline in the availability of the latter set of jobs for less-educated workers, especially black males (Bound and Holzer, 1993), may have contributed to increased job instability among these workers in recent years.¹⁵ Among occupations, despite controls for starting pay of the job, occupations with higher average pay also have significantly lower turnover rates. These differences could reflect that these jobs offer better benefits, have better amenities (Hamermesh, 1998) or that they experience faster wage growth. Services and laborer jobs have higher turnover rates among both males and females, while craft jobs and white-collar jobs are the ones with low turnover rates among men and women respectively. Finally, the starting wage of the job has strong negative effects on transitions for both males and females.; Of course, sorting out “person” from “job” effects in this type of analysis is extremely difficult; but because we control for educational attainment, test scores, experience, and tenure on the current and prior jobs, these estimates likely reflect the true effects of differences across job characteristics at least partly, rather than only the unobserved characteristics of the individuals in these jobs.

Finally, we note that the duration terms imply that, on average, the transition rate rises until approximately the 12th week of the job before declining sharply. According to the estimates the weekly transition rates rise to approximately 3.5 percent during the 12th week of the job, decline to 2.0 percent by the 24th week of the job, and then gradually decline to 0.7 percent by the eighteenth month of the job.

In Table 6 we separately consider the relationship between these standard

¹⁵ For evidence on the extent to which job instability has worsened among less-educated workers in recent years see Farber (1998), Neumark *et. al.* (1998), and Jaeger and Stevens (1998).

personal and job characteristics and the transition rates from jobs into nonemployment and into new jobs. We control for the same sets of characteristics that we used for the analysis presented in columns 2 and 3 (or 5 and 6) of Table 5 - in other words, we present results in which we have controlled for both education and math test scores, but without and with job characteristics respectively.

The results for this analysis indicate that our measures of cognitive ability (i.e., the math test score quartiles) are strong predictors of transitions from jobs to nonemployment, but have smaller effects on transition rates between jobs. As shown by the first columns of Table 6, during the first eighteen months of the job, males and females with the lowest test scores have transition rates into nonemployment that are 20-30 percent higher than those of their counterparts with the highest test scores. By contrast, differences in this characteristic have only a small and statistically insignificant impact on the likelihood of a job to job transition. The finding suggests that the higher job transition rates for less skilled individuals result from higher job-to-nonemployment transition rates. The remaining characteristics (i.e., experience, tenure, and various job characteristics) have similar effects on job-to non-employment transitions as they had on all transitions.¹⁶

The relationships between the other personal or job characteristics and job-to-job transitions differ in several ways from those described above for all job transitions (and for job-to-nonemployment transitions in Table 6). First, during a given week black males are about 10 percent less likely to leave for another job than are whites. This result suggest that job shopping might be a somewhat less important source of earnings growth

¹⁶ As was the case in Table 5, the effects of educational attainment on transitions are eliminated or reversed once we control for test scores and occupational characteristics.

among black males than it is for their white counterparts. Notice that we obtain this result even though we hold constant occupation and other characteristics at the start of the job. Second, actual experience is now positively associated with transitions instead of being negatively associated with job-to-nonemployment transitions. Third, the effects of tenure on the current job are somewhat attenuated compared to this characteristic's relation to job- to-non-employment transitions. Finally, among males the relation between age and job-to-job transition rates also differ. Whereas there is some evidence of aging into job stability among job to non-employment transitions, if anything just the opposite is true among the job-to-job transitions.

B. Differences by Skill Groupings

In Table 7, we present the same specifications as we did in Table 6 (i.e., with and without job characteristics), but separately by educational attainment as well as gender. This enables us to see the extent to which duration dependence (both for the current and prior job), cognitive abilities, job characteristics, and other factors affect job stability differently for less- and more-educated workers.

The results of Table 7 show that the determinants of job transitions for both high school dropouts and high school graduates are roughly the same as those described above in connection with Table 6. Our measure of cognitive ability (the math test score) continues to have a significant relation with the likelihood of a job transition for most groups. Age effects do not appear for female high school dropouts. But current job duration, the duration of the prior job, and actual employment experience are all strongly associated with lower transition rates out of jobs for males and females within each educational category. Of course, all of these characteristics may well be proxies for

unobserved skill characteristics.

In addition, for all of the various educational groups, higher starting wages and average pay of the occupation are associated with greater job stability. We obtain this result even though we hold constant a very wide range of observable characteristics of the individual and their work histories. During the first eighteen months of a job, transition rates in managerial, technical, and crafts occupations are substantially lower than the transition rates from other occupations. Similarly, weekly transition rates from jobs in the manufacturing and transportation, communications, and public utility sectors are significantly lower than from jobs in the services sector among less-educated males and females.

C. Marital Status, Fertility and Transitions among Less-Educated Females

The high rates of voluntary transition into nonemployment that we observe among female dropouts suggests a potentially important role for childbearing, and perhaps for marital status as well (as single mothers are disproportionately concentrated among the poor). While a formal treatment of this issue is beyond the scope of this paper, we present some simple tabulations on transition rates by marital status or fertility history as of 1994 for females by educational attainment in Table 8.¹⁷

The results show that transition rates into nonemployment are relatively comparable between female dropouts and those with higher educational attainment among those with no children; major differences in these transition rates appear only for women who have had one or more child, especially in the case of voluntary transitions. Furthermore, the transition

¹⁷ Potential endogeneities between marital status/fertility and employment history would plague any attempt to simply include measures of the former in our logit equations above. Also, relatively small sample sizes preclude us from presenting transition rates simultaneously by marital status and fertility history. For instance, among 517 female dropouts, we have just 124 women who have never been married

rates among dropouts are particularly high among those who have never been married and especially those who are no longer with their spouses, most of whom (in either category) have had children nonetheless. Thus, it seems quite likely that the greater employment instability among young and less-educated women is closely related to their marital status and childbearing experiences. Loss of early work experience among these women may also cause their employment difficulties to persist over time.

V. Conclusion

In this paper, we review evidence from previous studies of job and employment instability among the less-educated, and provide some new evidence from the NLSY79. We separately consider evidence on job-to-job and job-to-nonemployment transitions, since the latter are less likely to generate positive outcomes (such as wage growth) among young workers. Our own evidence is based primarily on summary results and reduced-form logit equations in which we do not explicitly try to control for unobserved heterogeneity across people, so our conclusions are subject to some important caveats on this point.

Nevertheless, our results (along with the previous work that we review) at least suggest the following conclusions:

- Early employment instability contributes somewhat to the low levels of employment (and also earnings growth) observed among high school dropouts, especially among females;
- To some extent, these problems are associated with the poor cognitive skills of these workers, rather than their weaker educational attainments *per se*;
- The characteristics of the jobs to which less-educated workers have access, including

and 43 women who have not had children as of 1994.

starting wages, occupations, and industries, seem to affect their turnover rates independently of their personal characteristics;

- Tenure on both the current and previous jobs appear to have important effects on the stability of current employment spells for all skill groups;
- Employment instability also declines with age and/or general labor market experience, even for the less-educated; and
- The employment instability that we observe among female dropouts also appears to be correlated with childbearing and, to a lesser extent, their marital status.

Despite the somewhat tentative nature of our findings, some potential implications for public policy can be drawn from this work. On the one hand, the strong effects of educational attainment and especially test scores on job stability imply that “pre-market” human capital formation has important effects on job stability. This suggests that what goes on in homes and classrooms, perhaps relatively early in a child’s life, has important subsequent effects on their employment stability and on their labor market performance more generally (as the recent volumes by Duncan and Brooks-Gunn (1997) as well as Jencks and Phillips (1998) have stressed). On the other hand, some characteristics of the labor market for less-educated individuals, such as their ability to afford child care (for less-educated females) and their access to “good” jobs (for males or females), may also matter importantly. Early labor market experience of any type has some positive relationship to subsequent job stability, especially more stable early experience.

In light of these results, what labor market policy interventions might improve the employment stability of less-educated workers? Recent welfare reform efforts that primarily stress work requirements and incentives appear to be raising employment and general labor

market experience among unskilled single mothers (Bishop, 1998; Burtless, 1998); all else equal, this added experience should help generate some improved job stability for these individuals over time. On the other hand, many of these jobs appear to be characterized by high turnover and low wages and benefits; and the least-skilled recipients may face difficulty being hired at all, especially in time periods or areas where labor market demand is more slack (Holzer, 1998).

Thus, the ability of work incentives and requirements alone to generate stable employment over time for very unskilled welfare recipients will likely be very modest, in which case policy makers may need to consider other labor market interventions that might provide unskilled workers with more stable employment experiences and perhaps better access to jobs characterized by lower rates of turnover. For instance, the National Support Work Demonstration was one of the earliest attempts to rigorously evaluate the effects of such services provided to employed workers on participants' subsequent labor market prospects. In this program, operators provided employment in a sheltered environment in which the support services were integrated with the job. The evaluations, based on a well-implemented experimental design, demonstrate that this treatment when applied to long term welfare recipients significantly raised participants' employment rates and earnings (Ham and LaLonde, 1996). Further, these impacts persisted for at least 8 years. More importantly, these employment and earnings impacts appear to result entirely from the effect of the program on the duration of employment. The treatment did not appear to have any impact on subsequent transition rates out of non-employment. On the other hand, evaluations revealed few such effects for youth, and more ambiguous effects for adult men.

Thus, certain types of work experience programs, even if provided in the public

sector, can have positive effects on subsequent employment stability, if an appropriate set of services are provided in addition to the basic employment experience. For disadvantaged men, perhaps some additional training or credentials can lead to more positive outcomes, though the evidence here is unclear.¹⁸ Also, the extent to which these interventions may interact with other important variables (such as local labor market conditions) has not yet been explored.

A different type of intervention seeks to improve the employment stability of disadvantaged workers in their current private sector jobs. For example, in the Post-Employment Service Demonstration support services are by design detached from the work place.¹⁹ Employers generally would not be aware that treatments were receiving such services. By contrast to the findings from the NSW Demonstration, the early impacts of these services in one study on labor market outcomes appear to be very small (Hershey and Rangarajan, 1998). On the other hand, labor market intermediaries such as the STRIVE or the Center for Employment and Training (CET) work more closely with employers when trying to obtain more successful performance of those placed into jobs. Mentoring or “job coaching” from incumbent workers are among the strategies that been recently been used to help stabilize the work experience of newly placed disadvantaged workers in some programs.²⁰

Also, we note the potential of effective “School-to-Work” (STW) programs to improve the attachment of less-educated young workers to jobs and employers early in their

¹⁸ Recent examples of programs which try to combine employment experience with training and/or counselling include the YouthBuild and Youth Corps programs (American Youth Policy Forum, 1997). However, the effects of these programs on the subsequent labor market outcomes of youth have not been rigorously evaluated.

¹⁹ The Post-employment Services Demonstration is operated in Chicago, San Antonio, Riverside , and Portland, Oregon. Other experimental evaluations are underway in Virginia and Iowa.

²⁰ Evaluations of CET have been very positive (Melendez, 1996), though effects on job stability *per se* have not

working careers. These programs might succeed in reducing dropout rates of youth who otherwise are performing poorly and are not very motivated in their academic work; and they might improve early work experience and stability among those who obtain their high school diplomas as well. These programs might particularly be a way of improving the access of the less-educated to “good jobs” and on-the-job training. But, once again, we have little evidence to date on what kinds of STW programs are effective in generating the desired outcomes.

Finally, it is important to remember that the limited early work experience of high school dropouts reflects two very different problems: relatively low transition rates into employment (or lengthy durations of nonemployment) as well as high transition rates out of employment. Indeed, within educational groups, differences in employment rates by race and/or gender mostly reflect the former type of transition; and between these groups, different rates of transition into employment also account for large shares of overall differences in employment experience.

The causes of lengthier nonemployment spells of less-educated workers and especially blacks relative to other groups have been discussed or reviewed elsewhere at great length (e.g., Holzer, 1986, 1994, 1998; Juhn, 1992). These causes include differences in the respective search strategies chosen by these groups and in their effectiveness; the limited access that unskilled inner-city minorities have to establishments in areas of job growth, due to “spatial” imbalances and related transportation/information problems; the limited willingness of employers to offer jobs to unskilled workers and minorities, due to the relatively low skills among the latter and also discrimination by the former; and a growing tendency of unskilled workers (especially males) to withdraw from a labor market that

been analyzed, and replication of results beyond the original sites have not yet been completed.

offers them only low wages and benefits, especially in comparison to their nonmarket (and sometimes illegal) sources of income. Differences between men and women, especially among the less-educated, may also reflect child care and health care issues.

In any event, it is worth remembering that job or employment instability is just one of many problems facing very unskilled workers in the current U.S. labor market. Even if cost-effective policies can be designed to reduce this particular problem, we must not lose sight of the others that will remain, and in particular there will likely continue to be large differences between the employment experience of low- and high-skilled workers.

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