Racial differences in youth employment

Work experience at an early age positively impacts labor force attachment of different racial groups; however, racial gaps in employment that are present in the early teen years seem to continue into adulthood

Rosella M. Gardecki

Since the late 1960s, researchers have noted large differences in employment and unemployment rates among black workers, Hispanic workers, and white workers. These differences have generally been the greatest for younger workers. For example, Robert Flanagan documents that white workers have historically held jobs at a higher rate than black workers; for young workers, this gap widened in the 1960s and the 1970s when the employment rate of black teens decreased further.[1] Recent studies show that this early joblessness has an impact on later employment probabilities and wage outcomes.[2] However, few studies have examined the impact of jobholding on later employment probabilities among the youngest workers.

Data from the National Longitudinal Survey of Youth 1997 cohort (NLSY97) indicate that the youngest teens follow the same employment trends. Slightly more than half of the NLSY97 14-year-olds report some type of work activity; nearly 24 percent of them are working at an employee-type job (that is, working for an employer), while about 43 percent report employment at a freelance job (for example, babysitting, snow shoveling, pet care).[3] Jobholding among 14- and 15-year-old nonblack/non-Hispanic youths is markedly higher than among their black and Hispanic counterparts.

Working at a freelance job differs from working at an employee-type job in a number of aspects that may make freelance jobs a more viable option for many teens. Periods of actual work at freelance jobs typically are more sporadic and generally have low hours requirements. In addition, freelance jobs are not subject to the Fair Labor Standards Act—that is, they have neither maximum hours constraints nor the need for parental permission—and can be held at any age. As a result, many 12- and 13-year-olds, who are not eligible for most employee-type jobs, hold freelance jobs. Freelance jobholding in the NLSY97 does not stop at these ages, but continues to be a regular source of employment and income throughout the teenage years.[4]

This article examines the factors that affect different types of jobholding among teens in order to better understand employment decisions the youngest workers must confront, and how these decisions may differ by racial group. It focuses on the individual, family, neighborhood, and spatial characteristics that affect jobholding among teens living in a parental household. The pattern of an employee-type jobholder is examined separately from that of a freelance jobholder in an attempt to measure differences between the propensity to hold either type of job. This article presents a brief review of the existing literature on teen employment; explains the data used and the selection criteria for the NLSY97 sample; lists the factors that affect employment at any job for young workers—those aged 12 through 18 are

Rosella M. Gardecki is a senior research associate, Center for Human Resource Research at The Ohio State University. E-mail: gardecki@postoffice.chrr.ohio-state.edu

considered—as a whole and by racial group (black, Hispanic, nonblack/non-Hispanic); examines the types of jobs held—that is, employee-type jobs and freelance jobs, and discusses the effect of holding a job, during the year that the youth was 14, on the probability of employment among teens ages 16 and older.

What previous research shows

According to recent figures, racial differentials in employment have continued into the present decade, improved economic conditions notwithstanding.[5] Despite the sizable gap in employment for teens, only a limited number of studies focus on this group; most researchers consider differences in labor force status among older workers who have finished their formal education.

In one of the few studies to examine jobholding among younger teens, Robert Michael and Nancy Brandon Tuma used data from the NLSY79 to consider differential employment effects for 14- and 15-year-old workers.[6] Nearly 25 percent of 14-year-olds reported being employed at the time of the survey, and this percentage increased for each age group. Even among the youngest workers, large differences in employment patterns were present between racial groups. White teens were more likely to be employed than their black or Hispanic counterparts at any age. Further, 16- and 17-year-old youths who reported employment prior to the age of 16 were more likely to be employed and were working more hours than those without prior experience.

Most of the remaining research focuses on racial differences in employment among older teens—those who are at least aged 16 years.[7] Although debate continues regarding which factors cause the differential, a number of characteristics have been identified. These factors can be grouped into four areas: individual characteristics, family determinants, neighborhood and geographic factors, and spatial mismatch measures.

Individual characteristics. Aside from the typical demographic characteristics (for example, age, race, gender, schooling), other individual characteristics may impact on the probability of a youth working. In particular, a number of studies focus on the relationship between employment and criminal activity. Not surprisingly, most of these studies support the hypothesis that crime and employment are competing forces for a youth's time.[8] As a result, participation in criminal activity decreases the probability that a teen is employed. Richard Freeman used self-reports of criminal activity as a measure of the tradeoff between crime and employment. He found that youths who reported committing a crime in the previous month were less likely to be employed than those who did not report criminal activity. Least likely to be employed were youths who reported high income from criminal activities or who had been jailed in the previous year.[9]

John Bound and Richard Freeman, and Jeff Grogger found that a proportion of the employment differential between black and white youths can be attributed to whether a youth has a criminal record.[10] These figures do not necessarily result entirely from a time tradeoff between criminal activity and employment, because an arrest may signal to employers that the youth will not be a dedicated worker. On the other hand, using the National Longitudinal Survey of Young Men, Freeman found that church attendance is a strong indication that a youth will "escape" a background of poverty to become employed.[11]

Family characteristics. Characteristics of the youth's family may also affect his or her probability of working. These factors may either indicate unobserved family characteristics that promote labor market attachment or point to household characteristics that may ease the youth's transition into the labor market (for example, established job networks or employment opportunities that arise through another household member's work). Factors most often considered include the employment behavior of the respondent's parents and siblings, single parent households, and the poverty status of the household.

Mary Corcoran, Richard Gordon, Deborah Laren, and Gary Solon used a sample of men from the Panel Study of Income Dynamics (PSID) to examine the relationship between family, community, and employment.[12] Their strongest result indicates that family or community welfare receipt negatively affects the men's probability of working; not surprisingly, those from families who have spent more time in poverty are also less likely to work. Albert Rees and Wayne Gray found that parental characteristics have no effect on employment, while siblings who work positively affect the respondent's work behavior.[13]

Neighborhood and geographic factors. A number of studies have found that the characteristics of the youth's geographic area—and especially the immediate neighborhood—affect whether a youth begins working at an early age. The types of jobs prevalent in the region may determine the availability of teen jobs; for example, areas dominated by heavy industry may present teens with fewer opportunities due to safety regulations. In addition, neighborhood factors may impact on the probability of working in two ways, according to Bruce Weinberg, Patricia Reagan, and Jeffrey Yankow.[14] First, these factors may influence the decision to work by changing the stigma attached to unemployment; for example, a neighborhood with a high unemployment rate may attach

less of a stigma to not working than may a low-unemployment neighborhood. Second, certain neighborhood characteristics may determine how effective the job network is. High unemployment may degrade the job network because fewer residents are in the labor market and able to pass along information about employers or job openings.

Bound and Freeman showed that geographic location accounts for part of the racial difference in employment.[15] Finding that the black/white employment and earnings gaps in the 1970s and 1980s were larger in the Midwest than elsewhere, they attribute part of this outcome to regional changes in industrial composition and dominant occupations. In a separate study, Freeman determined that economic activity in a geographic area impacts on the probability of youth employment. [16] He found that the important indicators of economic activity are the area's unemployment rate, poverty status, growth in personal income, industrial composition, and proportion of older to younger workers.[17]

On a neighborhood level, Katherine O'Regan and John Quigley used 1990 Census data to consider the effects of living in a predominantly nonblack/non-Hispanic census tract and of living in a census tract with higher poverty, which they refer to as social isolation.[18] Focusing on black and Hispanic youths who live at home, their results indicate that the employment probabilities of a minority youth living in a predominately white or lower poverty census tract are higher than minorities residing elsewhere. Finally, Weinberg, Reagan, and Yankow examined the block-groups in which male NLSY79 respondents reside, and determined that neighborhood characteristics do affect the probability of employment. However, they also find that ordinary least square overstates the impact of neighborhoods, and that including individual fixed effects reduces the residence effect by two-thirds or more when compared to ordinary least square regressions.[19]

Spatial mismatch. According to the spatial mismatch theory first advanced by John Kain, housing segregation affects black employment opportunities because jobs are located outside of the urban areas with high black populations.[20] Also applied to Hispanics in subsequent studies, this theory is particularly appealing when considering the employment of teens because this group is generally tied to their residential area by their parents. Neighborhood factors differ from spatial mismatch in that the first takes into account the composition of the residence along a number of dimensions while the second considers the proximity of jobs to the residents of an area. Richard Arnott states that spatial mismatch may either involve problems encountered in job search or reflect job access or difficulties with transportation.[21]

First, the job search aspect of spatial mismatch theory suggests that urban teens cannot search effectively for a job due to poor connections to an area rich in jobs. Using a sample of nonenrolled civilian men in the 1981 and 1982 NLSY79 surveys, Harry Holzer found that informal job search, which involves job networks (for example, checked with friends or relatives and direct application without a reference), results in the most job offers for both black (60 percent) and white teens (70 percent).[22] However, white youths have a higher probability of a job offer using any search method. Holzer concluded that this difference accounts for the racial gap in employment, with job offers resulting from informal job search leading to 87 to 90 percent of the differential.

The second problem relates to access to jobs and lack of transportation for youths ages 14 and 15—a problem that is aggravated by their inability to drive. Research suggests the impact of this factor is not uniform across metropolitan areas. A number of researchers used microdata and discovered that proximity to a job-rich area, as measured by commute times, affects the probability that a youth is employed.[23] Keith Ihlanfeldt and David Sjoquist found that the "nearness" of jobs impacts on both black and white youth employment in Philadelphia, but only affects black youths in Los Angeles and Chicago. Using an index of commute times in four metropolitan areas in New Jersey, O'Regan and Quigley determined that longer commutes have a negative impact on minority teen employment, but the magnitude and significance of their measure varies across metropolitan areas.

Combining the two problems, Holzer, Ihlanfeldt, and Sjoquist considered the effect of longer travel times on both work and search behavior.[24] Although they focus on slightly older workers—NLSY79 respondents aged 16 to 24—this group is similar to younger workers in that a number lived in the parental home. Their findings indicate that greater travel for work or search activity was positively related to wage gains. Due to residence constraints and nonownership of an auto, black respondents faced higher travel costs per mile, resulting in a smaller search area.

Constructing the study

Aside from extensive employment data, the round 1 NLSY97 provides current and retrospective data on all youth respondents, limited data on the current status of other household members, and, in cases in which the parent interview was completed, extensive data on the responding parent. The round 1 NLSY97 sample consists of 8,984 respondents who were aged 12 to 18 at the time they were interviewed.[25] In round 2 NLSY 97, 8,386 of the youth respondents completed an interview; in addition to answering questions about themselves, they also provided all updates and changes to household composition and parental information, excluding family income.

What factors influence youth employment? This question is addressed using round 1 NLSY97 data. How does early work experience affect the probability that older teens work? To address this question requires restricting the sample to youths age 16 or older. In round 1, a large majority of youths interviewed were aged 15 or younger, so data from rounds 1 and 2 of the NLSY97 were merged.[26]

Variable definitions. The employment variables discussed in this article equal 1 if the respondent worked at any job, at a freelance job, or at an employee-type job within 4 weeks of the interview date and zero otherwise. To measure the probability of working at an employee-type or a freelance job at age 14, a dummy variable is formed based on the starting and ending dates of the respective job types and birth dates reported by youths in the NLSY97.

Both age and highest grade completed are continuous variables taken directly from the survey instrument and measured as of the interview date. The dummy variables for black and Hispanic are created from the expanded race and ethnicity codes collected in the screener part of the round 1 instrument. Any youth who is reported as Hispanic in either the race or the ethnicity question is considered Hispanic in this study; black respondents who are also Hispanic are coded as Hispanic.[27] Enrollment is defined as continuous enrollment; thus, youths on summer vacation are still considered enrolled. The variable "summer" equals 1 if the respondent was interviewed during the summer months (June, July, and August) and zero otherwise. Because teens tend to hold jobs with greater frequency during the summer, this variable is included to capture differences in jobholding based solely on the time of year the youth was interviewed. Youths with any number of children are coded as a 1 in the "has a child" variable; all other youths are coded as zero.

Because the respondents are at the age where peer effects may influence their present and future behaviors, the NLSY97 presents a unique opportunity to look at the groups that impact on youths by asking the respondent a number of questions about his or her peers. The survey includes a number of questions about the respondent's perception of peer involvement in various activities and of peer educational plans; from these questions, three variables were formed to capture teen activities.[28] The first looks at the percent of peers who plan to attend college. The effect that this variable might have on teen work is uncertain. If more motivated youths tended to go to college, this variable would have a positive effect on employment; conversely, if teens who were focused on college spent more time studying, they would work less. The second variable focuses on "positive activities" for youths as measured by church-going activity and volunteerism. It is unclear whether these types of activities serve as a signal that a youth is a "good kid" or whether knowing large numbers of people who participate in these activities actually changes the behavior of teens.[29] Finally, NLSY97 considers whether knowing a number of peers who participate in "negative activities"—such as taking part in illegal activities or belonging to a gang—affects employment behavior. Like the positive activities, it is unclear whether associating with peers involved in these activities provides a signal for future employers or indicates something about the pre-existing work ethic of respondents.

For the purposes of this article, "crime" is defined as stealing something worth $50 or more, selling drugs, or other property crimes, such as fencing stolen property, possessing or receiving stolen property, or deliberately selling something for more than it was worth. Youths who have been institutionalized for any crime are coded as 1 in the criminal institution variable.

The family variables are derived from the household roster, created during the screener portion of the NLSY97 interview. Siblings equals 1 if siblings of any type (biological, adoptive, step, or foster) were recorded in the household; the employment of siblings is a count of the number of these siblings age 16 or older who were employed as of the survey date. The employment of parental figures and living in a female-headed household are determined for the same relationships (for example, biological, adoptive, step, and foster).

Residence variables were originally created by NLSY97 staff based on respondent addresses. For this article, four dummy variables indicate the respondent's region of residence.[30] The urban/rural variable on the NLSY97 Main CD was similarly changed into a dummy variable, with residence in an urban area equal to 1.[31] Taken from the NLSY97 Geographic CD, the unemployment rate in the respondent's metropolitan area is a continuous exact number based on the March CPS. The poverty rate variable indicates the percent of households in the respondent's county of residence with incomes below the poverty level.

Finally, the spatial access variable used in this article is the mean travel time to work at the county level; it is derived from the *1994 County-City Data Book*.[32] Although this variable is constructed from data for older workers (those aged 16 and older), it serves as a proxy for the distance between youths and jobs.

Sample construction. Sample one uses the employment behavior of at-home teens, regardless of age, as reported in the round 1 survey. This sample includes at-home respondents who have valid data for all variables as defined above. These youths were aged 12 to 18 during round 1 of the survey. In addition, sample one includes only respondents with an identifiable parent or a parent figure. After these restrictions are

applied, the sample includes 8,511 respondents, of whom 5,743 were at least 14 years old and eligible to report employee-type jobs. Details on the number of respondents excluded due to each restriction are provided in the appendix.

Sample two is used to address the issue of whether work experience at age 14 impacts on the employment probabilities of older teens. Answering this question requires information on the youth's residence both at age 14 and at the interview date because the spatial mismatch literature indicates that this may impact on employment probability. Because most respondents had not yet turned 16 at the date of the first interview, data from both round 1 and round 2 of the NLSY97 survey are examined to increase the size of sample two. At the time this research was conducted, round 2 addresses were not geocoded, and only teens who met certain residence restrictions (described in the appendix) were included in the sample. In short, these restrictions required teens to remain at the same residence for a period of time. After imposing the residence restrictions, 2,512 respondents remained in sample two.

Note that rather than measuring the effect of jobholding in the 14th year on later employment, this article addresses whether, among at-home teens who remain in the same labor market from the age of 14, those who hold a job do better than those who do not work. Although the difference may seem subtle, the issue of sample selection bias must be considered. Nonmoving youths may have more stable job networks (for example, family, friends, former employers) and may be more likely to be employed at older ages as a result. In addition, movers may have a lack of familiarity with the area and with available employers that hinders their ability to find work. Finally, since most teen positions are awarded on the basis of recommendations rather than work experience, movers may have more difficulty obtaining a known reference in a new area.

Due to these factors, the returns to holding a previous job may be biased upward for this sample. The following tabulation shows the weighted effect of residence restrictions on probability of employment at age 14:

Variable	*In-scope*	*Out-of-scope*
Any job at age 14	0.61	0.58
Employee-type job at age 14	.27	.24
Freelance-type job at age 14	.47	.44
Employee type job at age 16	.46	.39

A larger percentage of the nonmovers held any type of job (61 percent versus 58 percent for movers) at the age of 14; the same was true of employee-type jobs (27 percent versus 24 percent) and freelance jobs (47 percent versus 44 percent). Further, a larger percentage of nonmovers than movers in this sample held a job within 1 month of the latest survey date (46 percent versus 39 percent). In addition, this type of sample selection bias may affect the family variables because older family members who lived in the same location for a period of time may have better connections to jobs for the respondent through friends and coworkers. This may cause returns to employment of the respondent's parent(s) or siblings to be overstated. However, determining how this sample selection may bias other measures is beyond the scope of this article.

Racial disparities

In the last several decades, jobholding among teens—especially those in the youngest age group—has been increasing. Looking at the first year of the NLSY79, Michael and Tuma found that approximately 25 percent of 14-year-olds held jobs, with the rate increasing to slightly more than 50 percent by age 17.[33] The following tabulation shows the weighted employment rates by age group:

Survey	*Age 14*	*Age 15*	*Age 16*	*Age 17*
NLSY79	25.1	26.9	38.0	50.9
NLSY97 any job	41.7	44.4	54.3	61.2
NLSY97 employee-type job	41.7	44.4	54.3	61.2
NLSY97 freelance job	41.7	44.4	54.3	61.2
NLSY97 both freelance and employee-type job	41.7	44.4	54.3	61.2

Also presented in the above tabulation is the percentage of NLSY97 teens eligible for this article, as described above, who hold jobs.[34] The percentage of eligible youths holding jobs in the NLSY97 is higher than in the NLSY79 when all jobs are considered. Although this may reflect that more teens are working in the late 1990s than in the early 1980s, when economic conditions would have been worse, it may also reflect differences in the fielding periods that contribute to the NLSY97 collecting higher numbers of jobs.[35]

The increase in jobholding as the cohort ages follows the same pattern as in the NLSY79. A lower percentage of younger respondents in both surveys work and that percentage increases over time.) As expected, employee-type jobholding, increases with age as respondents in the NLSY97 both become more mobile and age out of the Fair Labor Standards act restrictions to become eligible to work at more jobs. Freelance jobholding increases and then falls as more youths begin holding employee-type jobs; the percentage of those holding freelance jobs is higher for 14-year-olds than for any other age group.

Across all respondents, who are between the ages of 12 and 18 in round 1, jobholding by youths in the NLSY97 is the norm

rather than the exception. About 66 percent of the round 1 respondents in this sample reported having ever held either an employee-type job or a freelance job. Jobholding was higher among nonblack/non-Hispanic youths (71.1 percent) than either black (52.2 percent) or Hispanic youths (51.6 percent). (See table 3.) Looking at type of job reveals that a larger percentage of nonblack/non-Hispanic youths (44.6 percent and 55.9 percent, respectively) hold either employee-type or freelance jobs than their black or Hispanic counterparts. More Hispanic than black teens reported holding employee-type jobs, although more black youths reported participating in freelance activity.

Given the racial disparities with respect to the prevalence and type of youth employment, it is important to consider whether holding any type of job during the early teenage years has an impact on later employment probabilities. In short, it does. The percentage (67) of youths who reported holding any type of job during their 14th year worked at an employee-type job after the age of 16, compared with only 53 percent of those who were not early jobholders. The following tabulation shows the weighted probabilities of employment at employee-type jobs for older teens by employment status at age 14:

Variable	*All youths*	*Black youths*	*Hispanic youths*	*Nonblack/ non-Hispanic youths*
No job held	0.53	0.40	0.39	0.59
Held any job	.67	.58	.66	.69
Employee-type job	.82	.73	.74	.84
Freelance job	.59	.51	.62	.60
Both employee-type and freelance jobs	.73	.56	.69	.75

This is true regardless of racial group. It is interesting to note that the type of job also seems to matter. Those who held an early employee-type job (82 percent) were working after their 16th birthday, while only 59 percent of those reporting a freelance job during their 14th year were working after the age of 16. This holds for all racial groups, although the probability of attaining an employee-type job after the age of 15 is about the same for nonblack/non-Hispanic teens who held a freelance jobs during their 14th year as it is for those who did not work.

Other differences exist among the groups included in the survey, with potential effects on early employment. (See table 1.) Across racial groups, there are only minor differences in age and years of schooling. The majority of respondents (89.4 percent) report at least one parent who works; black teens are the least likely to have a parent working, and nonblack/non-Hispanic youths are the most. Conversely, nearly 51 percent of black teens live in female-headed households, while only 20 percent of nonblack/non-Hispanic youths do so.

Turning to peer effects, about 57 percent of the respondents reported that a large percentage of their peers planned to attend college, while only 21 percent reported that most of their peers were involved in negative activities. Interestingly, more black youths reported that their peers were involved in both negative (28.4 percent) and positive activities (34.4 percent) than their nonblack/non-Hispanic (19.0 percent and 30.6 percent, respectively) or Hispanic (23.8 percent and 28.1 percent, respectively) counterparts. Despite their peers' behavior, only about 16 percent of each group reported committing a serious crime themselves and about 2 percent reported having been institutionalized for any crime.

Geographically, more Hispanic respondents live in the West, in urban areas, and in areas of relatively high unemployment, while the majority of black youths are located in the South, in urban areas, and in counties with a high poverty rate. Finally, nonblack/non-Hispanic respondents live in counties with lower average travel times to work than either black or Hispanic teens.

Probability of employment

What is the impact of individual, family, geographic, and access measures on the probability that a youth is working at any type of job?[36] Being black or Hispanic significantly reduces the probability of employment. (See table 2.) Conversely, being female is positively associated with working. Completing more years of formal education has a significant positive relationship to working, although being enrolled has no effect.

Youth behavior also impacts on the probability of working. Believing that at least 75 percent of one's peers intend to attend college increases the probability of employment; other peer behaviors have no significant effect. Contrary to previous studies, those who report committing a serious crime are nearly 4 percentage points more likely to be employed. This counterintuitive finding may indicate that working teens have more opportunities to commit a crime (such as theft) than do nonworking teens. Further, the base amount for stealing may be too low to be considered a serious crime since most youths caught stealing this small amount would most likely not face serious consequences, such as institutionalization. As expected, being institutionalized for any crime—regardless of the crime's severity—has a negative impact on the probability that a teen is employed.

The work behavior of a parent has a significant positive

Table 1. Weighted sample means by racial group

Variable	Total	Black	Hispanic	Nonblack/ non-Hispanic
Ever held any job	0.659	0.522	0.515	0.711
	(.474)	(.500)	(.500)	(.453)
Ever held employee job	.410	.306	.329	.446
	(.492)	(.461)	(.470)	(.497)
Ever held freelance job	.513	.402	.373	.559
	(.500)	(.491)	(.484)	(.497)
Age	14.4	14.4	14.4	14.3
	(1.51)	(1.52)	(1.49)	(1.51)
Female	.486	.490	.464	.489
	(.500)	(.500)	(.499)	(.500)
Enrolled in school	.978	.983	.967	.979
	(.147)	(.128)	(.179)	(.145)
Highest grade completed	7.74	7.66	7.70	7.76
	(1.59)	(1.61)	(1.61)	(1.58)
Interviewed in summer	.226	.240	.239	.221
	(.418)	(.427)	(.427)	(.415)
Has a child	.005	.014	.003	.003
	(.069)	(.119)	(.056)	(.055)
Percent of peers who expect to attend college	.574	.470	.493	.609
	(.494)	(.500)	(.500)	(.488)
Percent of peers in positive activities	.308	.344	.281	.306
	(.462)	(.475)	(.450)	(.461)
Percent of peers in negative activities	.210	.284	.238	.190
	(.407)	(.451)	(.426)	(.393)
Ever committed a crime	.164	.163	.167	.163
	(.370)	(.370)	(.373)	(.370)
Ever been institutionalized for a crime	.021	.020	.026	.021
	(.144)	(.139)	(.160)	(.142)
Has a sibling	.844	.826	.884	.840
	(.363)	(.380)	(.320)	(.366)
Siblings employed	.308	.306	.399	.292
	(.581)	(.625)	(.662)	(.555)
Female head of household	.253	.506	.294	.195
	(.435)	(.500)	(.456)	(.396)
Parents employed	.894	.794	.849	.921
	(.308)	(.405)	(.358)	(.269)
Northeast	.187	.148	.151	.201
	(.390)	(.355)	(.358)	(.401)
North-central	.266	.169	.122	.311
	(.442)	(.375)	(.327)	(.463)
South	.325	.574	.277	.283
	(.468)	(.495)	(.448)	(.451)
West	.222	.110	.450	.205
	(.416)	(.313)	(.498)	(.404)
Urban	.537	.645	.725	.482
	(.499)	(.479)	(.446)	(.500)
Unemployment rate	5.17	4.80	6.74	4.96
	(2.60)	(2.12)	(3.82)	(2.31)
Percent in poverty (county)	9.88	13.1	10.8	9.07
	(5.51)	(7.20)	(5.63)	(4.79)
Mean travel time to work (county)	21.9	23.2	23.6	21.3
	(4.79)	(4.96)	(4.93)	(4.61)
Number in sample	8,511	2,105	1,808	4,598

[1] Youths aged 12 and 13 do not specifically report employee jobs. Therefore, the number of cases for this variable differs from all other variables. The numbers of cases are as follows: total: 5,743; black: 1,454; Hispanic: 1,201; and nonblack/non-Hispanic: 3,088.

NOTE: Standard errors are in parentheses.

effect on the employment probability of the youth. (See table 2.) As pointed out earlier, this may indicate either the presence of better connections to the labor market or unobserved family characteristics. However, the number of siblings, the siblings' employment status, and living in a female-headed household do not significantly affect the employment probability of the youth.

Youths living in the Northeast are about 6 percentage points less likely to be employed than those in the west; however, the employment probability of youths who live in the north central or the southern region is not significantly different from those in the West. Not surprisingly, living in areas with high unemployment rates or high poverty rates decreases the probability of employment, although living in an urban area does not significantly impact on the probability of work.

Finally, table 2 presents a measure of average travel time to work, reflecting job access and spatial mismatch. Living in areas in which the average travel time to work is higher has a significant negative impact on the probability that a teen is employed.

Employee-type jobs. The probability that a youth works at an employee-type job is included in table 3. As in the previous set of regressions, being black or Hispanic has a significant negative relationship to holding an employee-type job. Regardless of race, being male or completing more years of education increases the probability of holding an employee-type job. These effects are strongest for nonblack/non-Hispanic youths.

In general, the behavior of the teen's peers does not affect the probability of attaining an employee-type job; for nonblack/non-Hispanic youths, however, associating with peers engaged in positive activities significantly decreases the probability of working. This seems counterintuitive; however, this may reflect nonblack/non-Hispanic youths trading time that would have been spent at a job for time spent at church or volunteering. In addition, having an employed sibling significantly increases the probability that nonblack/non-Hispanic youths work. Regardless of racial group, the employment of a parent is positively associated with the teen working at an employee-type job, supporting the theory that unobserved family characteristics may influence the youth's employment decision or that an established job network may help the respondent find a job.

Finally, geographic factors influence the probability that teens are working at employee-type jobs. Neighborhood factors have a significant negative impact on the probability that a minority youth works at an employee-type job. Black teens living in areas of high poverty, in counties with longer commute times, or in areas of high unemployment are less likely to work. Only the unemployment rate is negatively associated with the probability of working for Hispanic teens. Nonblack/non-Hispanic youths are not significantly affected by these neighborhood characteristics; however, living in the north central or southern regions increases the probability of employment for these teens.

Freelance jobs. The factors affecting freelance jobholding are in table 4. Being black or Hispanic is negatively related to holding a freelance job, as it was with employee-type jobs. However, being younger or being female is positively associated with holding freelance jobs, regardless of race. Completing more years of education does not impact on the probability that teens hold a freelance job; however, being enrolled in school increases the probability that a Hispanic youth works at this type of job.

Peer behavior affects freelance jobholding. Knowing a larger number of peers who plan to attend college increases the probability that Hispanic and nonblack/non-Hispanic youths work at a freelance job. Rather than college plans, it is the percent of the teen's peers involved in "good activities" that positively impacts on the probability that a black teen works; this supports Freeman's finding that church attendance positively affects jobholding among black teens.[37] As expected, hanging out with a "bad crowd" or committing a crime has a significant negative impact, but only for nonblack/non-Hispanic youths. Conversely, committing a crime is positively associated with the probability that black and Hispanic teens work for themselves. This counterintuitive result may reflect the fact that working at a freelance job provides an opportunity for committing a crime (for example, stealing from customers) or it may reflect the reporting of illegal activity as a freelance job (for example, lookout for a drug seller). As expected, the effect of serving time in a criminal institution on freelance jobholding is negative, but only for Hispanic youths; serving time does not seem to affect the other groups.

Turning to family factors, having at least one parent in the labor force or the presence of a sibling is positively related to the probability that nonblack/non-Hispanic youths work. This result does not extend to black or Hispanic teens. Unlike employee-type jobholding, the employment of the respondent's sibling(s) does not matter.

Finally, geographic location affects the probability that teens will work for themselves. Living in the West is positively related to holding a freelance job for black teens, while living in the South or in urban areas negatively impacts on the probability that Hispanic youths work for themselves. Living in areas of high unemployment increases the probability that nonblack/non-Hispanic teens work at a freelance job, possibly because fewer employee-type jobs are available. Regardless of racial group, living in counties with high poverty

Table 2. Probability of employment for all youths

Variable	Individual effects	Family effects	Geographic effects	Spatial effects
Age	0.012	0.016	0.017	0.014
	(.008)	(.008)	(.008)	(.008)
Black	–.204	–.189	–.167	–.150
	(.012)	(.012)	(.014)	(.014)
Hispanic	–.212	–.206	–.179	–.165
	(.012)	(.012)	(.014)	(.014)
Female	.042	.044	.043	.042
	(.011)	(.011)	(.011)	(.011)
Enrolled in school	.006	–.010	–.009	–.008
	(.037)	(.038)	(.038)	(.038)
Highest grade completed	.045	.041	.041	.045
	(.007)	(.008)	(.008)	(.008)
Interviewed in summer	.014	.015	.016	.017
	(.014)	(.014)	(.014)	(.014)
Has a child	–.082	–.082	–.087	–.090
	(.061)	(.061)	(.061)	(.061)
Percent of peers who expect to attend college	.042	.038	.037	.039
	(.011)	(.011)	(.011)	(.012)
Percent of peers in positive activities	–.0002	–.001	.0003	.002
	(.012)	(.012)	(.012)	(.012)
Percent of peers in negative activities	.007	.010	.008	.008
	(.014)	(.014)	(.014)	(.014)
Ever commmitted a crime	.036	.037	.028	.027
	(.016)	(.016)	(.016)	(.016)
Ever been institutionalized for a crime	–.100	–.085	–.091	–.096
	(.034)	(.035)	(.035)	(.035)
Has a sibling	–	.020	.023	0.025
	–	(.016)	(.016)	(.016)
Siblings employed	–	–.004	–.003	–.002
	–	(.009)	(.009)	(.009)
Female head of household	–	–.012	–.009	–.011
	–	(.013)	(.013)	(.013)
Parents employed	–	.101	.090	.085
	–	(.016)	(.017)	(.017)
Northeast	–	–	–.053	–.034
	–	–	(.017)	(.018)
North-central	–	–	–.008	–.008
	–	–	(.017)	(.017)
South	–	–	–.021	–.015
	–	–	(.016)	(.016)
Urban	–	–	–.015	–.013
	–	–	(.012)	(.012)
Unemployment rate (Metropolitan Statistical Area)	–	–	–.0008	–.0006
	–	–	(.0002)	(.0002)
Percent in poverty (county)	–	–	–.006	–.007
	–	–	(.001)	(.001)
Mean travel time to work (county)	–	–	–	–.008
	–	–	–	(.001)
P-value, family variables (LR test)	–	.000	–	–
P-value, neighborhood variables (LR test)	–	–	.000	–
P-value, access variable (LR test)	–	–	–	.000
Number in sample	8,511	8,511	8,511	8,511
Pseudo R^2	.066	.070	.076	.080

NOTE: Standard errors are in parentheses. Partial derivatives of probability of outcome associated with dependent variables with respect to independent variables.

Table 3. Probability of working at an employee-type job by racial group

Variable	All youths	Black youths	Hispanic youths	Nonblack/ non-Hispanic youths
Age	0.047	0.010	0.038	0.074
	(.008)	(.012)	(.015)	(.014)
Black	–.091	–	–	–
	(.013)	–	–	–
Hispanic	–.056	–	–	–
	(.014)	–	–	–
Female	–.065	–.042	–.049	–.088
	(.011)	(.017)	(.021)	(.017)
Enrolled in school	–.044	–.026	–.068	–.039
	(.035)	(.060)	(.062)	(.054)
Highest grade completed	.061	.054	.040	.067
	(.007)	(.011)	(.013)	(.012)
Interviewed in summer	.035	.018	–0.021	.077
	(.013)	(.020)	(.023)	(.021)
Has a child	–.016	–.004	–.050	–.009
	(.051)	(.049)	(.098)	(.123)
Percent of peers who expect to attend college	.005	–.004	.018	–.0003
	(.011)	(.017)	(.021)	(.017)
Percent of peers in positive activities	–.019	.006	–.011	–.035
	(.012)	(.019)	(.024)	(.019)
Percent of peers in negative activities	.017	–.001	.012	.030
	(.013)	(.017)	(.023)	(.020)
Ever committed a crime	.022	.008	.030	.024
	(.015)	(.023)	(.028)	(.022)
Ever been institutionalized for a crime	–.067	–.070*	–.056	–.071
	(.025)	(.030)	(.039)	(.043)
Has a sibling	–.019	–.012	.003	–.030
	(.015)	(.022)	(.033)	(.023)
Siblings employed	.018	–.014	.002	.052
	(.009)	(.014)	(.015)	(.014)
Female head of household	–.024	.001	–.034	–.028
	(.013)	(.017)	(.023)	(.021)
Parents employed	.082	.048	.071	.102
	(.015)	(.019)	(.024)	(.027)
Northeast	–.001	.014	.003	.017
	(.018)	(.040)	(.032)	(.028)
North-central	.024	.020	–.014	.059
	(.017)	(.034)	(.035)	(.026)
South	.023	.029	–.032	.046
	(.016)	(.028)	(.025)	(.028)
Urban	.004	.004	–.024	.015
	(.011)	(.019)	(.023)	(.017)
Unemployment rate (Metropolitan Statistical Area)	–.0007	–.0008	–.001	–.0002
	(.0002)	(.0005)	(.0003)	(.0004)
Percent in poverty (county)	–.005	–.005	–.003	–.002
	(.001)	(.001)	(.002)	(.002)
Mean travel time to work (county)	–.003	–.005	–.004	–.001
	(.001)	(.002)	(.002)	(.002)
P-value, family variables (LR test)	.000	.112	.015	.000
P-value, neighborhood variables (LR test)	.000	.001	.000	.134
P-value, access variable (LR test)	.004	.011	.104	.497
Number in sample	5,743	1,454	1,201	3,088
Pseudo R^2	.132	.123	.125	.121

NOTE: Standard errors are in parentheses. Partial derivatives of probability of outcome associated with dependent variables with respect to independent variables.

Table 4. Probability of working at a freelance job by racial group

Variable	All youths	Black youths	Hispanic youths	Nonblack/ non-Hispanic youths
Age	–0.029	–0.026	–0.015	–0.036
	(.007)	(.011)	(.012)	(.011)
Black	–.098	–	–	–
	(.012)	–	–	–
Hispanic	–.138	–	–	–
	(.012)	–	–	–
Female	.084	.036	.040	.124
	(.010)	(.018)	(.018)	(.014)
Enrolled in school	.062	–.030	.126	.048
	(.032)	(.071)	(.028)	(.052)
Highest grade completed	.010	.012	.010	.009
	(.007)	(.011)	(.011)	(.011)
Interviewed in summer	–.006	–.014	–.023	.008
	(.012)	(.021)	(.020)	(.019)
Has a child	–.081	–.049	–.057	–.217
	(.055)	(.057)	(.117)	(.108)
Percent of peers who expect to attend college	.029	–.018	.038	.041
	(.010)	(.018)	(.018)	(.015)
Percent of peers in positive activities	.008	.034	.005	–.003
	(.011)	(.020)	(.020)	(.016)
Percent of peers in negative activities	–.008	.007	.027	–.039
	(.012)	(.020)	(.022)	(.019)
Ever committed a crime	.010	.053	.073	–.034
	(.014)	(.027)	(.028)	(.021)
Ever been institutionalized for a crime	–.039	–.048	–.101	.008
	(.034)	(.053)	(.035)	(.054)
Has a sibling	.033	.028	.022	.036
	(.013)	(.023)	(.028)	(.020)
Siblings employed	–.008	–.001	–.008	–.015
	(.008)	(.014)	(.013)	(.013)
Female head of household	.003	.008	.029	–.004
	(.012)	(.018)	(.021)	(.019)
Parents employed	.043	.015	.029	.074
	(.015)	(.022)	(.024)	(.027)
Northeast	–.034	–.097	–.038	–.003
	(.015)	(.028)	(.026)	(.023)
North-central	–.024	–.079	.058	–.002
	(.015)	(.027)	(.037)	(.022)
South	–.028	–.098	–.045	.015
	(.014)	(.030)	(.022)	(.023)
Urban	–.020	–.036	–.033	–.001
	(.010)	(.020)	(.020)	(.015)
Unemployment rate (Metropolitan Statistical Area)	.00002	–.00007	–.0004	.001
	(.0002)	(.0005)	(.0003)	(.0003)
Percent in poverty (county)	–.004	–.002	–.003	–.006
	(.001)	(.001)	(.002)	(.002)
Mean travel time to work (county)	–.007	–.005	–.010	–.006
	(.001)	(.002)	(.002)	(.002)
P-value, family variables (LR test)	.008	.735	.524	.017
P-value, neighborhood variables (LR test)	.000	.004	.000	.003
P-value, access variable (LR test)	.000	.026	.000	.000
Number in sample	8,511	2,105	1,808	4,598
Pseudo R^2	.054	.025	.061	.034

NOTE: Standard errors are in parentheses. Partial derivatives of probability of outcome associated with dependent variables with respect to independent variables.

rates or with long commute times negatively impacts on the probability of freelance jobholding.

Jobholding of older youths. Does holding a job as a 14-year-old impact on the probability that youths age 16 and older work at an employee-type job? It should again be noted that the composition of this sample differs greatly from the composition of the prior sample, due to the residence restriction. These results, while informative, cannot be generalized to the teen population but rather address only nonmoving teens. (See table 5.) Column 1 of the table presents the base specification without the prior jobholding information included; in column 2, a dummy variable indicates whether the teen held any type of job at the age of 14; column 3 separates the jobs held at 14 into freelance and employee-type jobs. The results indicate that holding any type of job at age 14 increases the probability that older teens work for an employer. Further, teens who held an employee-type job in their 14th year are more likely to hold an employee-type job later compared with freelance jobholders; however, both types have a positive significant association with jobholding at older ages.

Holding an employee-type job as a teen increases the probability of employment regardless of racial group. (See table 6.) Hispanic youths gain the most from early work at an employee-type job, although black and nonblack/non-Hispanic teens also benefit. Holding freelance jobs at age 14 is positively associated with the employment probabilities of black and Hispanic youths, but has no effect on the nonblack/non-Hispanic group.

Although these results provide an indication of the effect of early employment, they may not capture the extent to which unobserved characteristics affect early jobholding. For example, older nonworking teens who did not hold a job may have chosen to devote their time to schooling or volunteer activities rather than investing in work experience. Conversely, those who took a job between the ages of 14 and 15 may possess an unobserved family trait that makes them more likely to work than other teens at later ages. Thus, the results may bias the coefficient on holding a job of either type at aged 14 and older.[38]

Groundwork for further study

Overall, this article has attempted to shed some light on whether historical racial differences in both employee-type and freelance jobholding were present for today's teens and to determine whether early differences affected later employment. Due to the ages of the respondents and the number of rounds completed, these later outcomes were limited to teens aged 16–19 with a stable geographic residence. Regardless, the information presented here is important because racial gaps that are present for young workers seem to continue into adulthood. Even more valuable would be a follow-up study that considered similar questions after more rounds of data are complete (for example, does early work experience impact on labor market attachment when the respondent's formal education is finished?).

Keeping the strict sample selection criteria in mind, this article has found that having previous work experience positively impacted on labor force attachment for different racial groups for the NLSY97 cohort, as it did for the NLSY79 cohort.[39] That is, nonmoving teens who held an employee-type job at age 14 were more likely to work at an employee-type job at age 16 and older than were their counterparts, regardless of race or ethnicity. The effect of holding a freelance job was not as clear. Black and Hispanic youths who worked for themselves at an early age were more likely to work at an employee-type job than were those who did not; however, freelance jobholding had no effect for nonblack/non-Hispanic youths.

It should be reiterated that these results may overstate the effect of holding an early job because nonmovers have advantages in an area that movers may not have. For example, nonmovers may be more familiar with the employers in the area and have established job networks. More research is needed on the effect of early jobholding for youths who move between their 14th and 16th birthdays to determine the effects of early work experience when a youth must adjust to an area.

Throughout this article, the employment of older teens was considered to be a positive outcome, and to this end, the results can be interpreted to offer some support for programs that encourage early jobholding, preferably employee-type jobs. Although additional analysis may be needed, these findings suggest that a successful program would address issues such as teen job opportunities and job search networks. These would include programs that provided information about labor market opportunities or that established job networks to assist in job search. Some of these programs may fit into the school-to-work transition, with internships or cooperative education providing experience—although more research should be done on this topic before a positive recommendation is made. Other programs may be community-based to target areas in which neighborhood characteristics indicate a problem. Given the finding that parent's work behavior is positively associated with the probability that the respondent holds an employee-type job, these programs may be extended to adult workers in certain communities.

Full support for these policy provisions would require more analysis. In particular, using block-level neighborhood effects rather than county-level effects would provide better recommendations as teens are usually constrained geographi-

Table 5. Probability of working at an employee-type job for nonmovers

Variable	Base specifications	Hold any job	Freelance/ employee-type job holding
Held any job at age 14	–	0.115	–
	–	(.020)	–
Held an employee job at age 14	–	–	.186
	–	–	(.025)
Held a freelance job at age 14	–	–	.025
	–	–	(.021)
Age	.105	.101	.113
	(.014)	(.014)	(.014)
Black	–.130	–.117	–.124
	(.025)	(.026)	(.026)
Hispanic	–.077	–.056	–.061
	(.028)	(.029)	(.029)
Female	–.024	–.029	–.013
	(.020)	(.021)	(.021)
Enrolled in school	.024	.021	.022
	(.012)	(.011)	(.012)
Highest grade completed	.053	.050	.047
	(.012)	(.012)	(.012)
Interviewed in summer	.014	–.003	.026
	(.113)	(.111)	(.114)
Has a child	.012	.025	.025
	(.070)	(.071)	(.071)
Ever committed a crime	.063	.058	.055
	(.028)	(.028)	(.028)
Ever been institutionalized for a crime	–.016	–.022	–.022
	(.052)	(.052)	(.052)
Has a sibling	–.004	–.009	–.006
	(.028)	(.028)	(.028)
Siblings employed	.041	.041	.038
	(.018)	(.018)	(.018)
Female head of household	.012	.013	.011
	(.026)	(.026)	(.026)
Parents employed	.053	.053	.054
	(.039)	(.039)	(.039)
Northeast	.006	.008	.003
	(.033)	(.033)	(.033)
North-central	.010	.102	.097
	(.033)	(.032)	(.033)
South	.093	.094	.010
	(.032)	(.032)	(.032)
Urban	.018	.019	.018
	(.021)	(.021)	(.021)
Unemployment rate (Metropolitan Statistical Area)	–.001	–.001	–.001
	(.0004)	(.0004)	(.0004)
Percent in poverty (county)	–.008	–.008	–.008
	(.002)	(.002)	(.002)
Mean travel time to work (county)	–.007	–.006	–.006
	(.002)	(.002)	(.002)
P-value, early employment (LR test)	–	–	.000
Number in sample	2,512	2,512	2,512
Pseudo R^2	.115	.125	.133

NOTE: Standard errors are in parentheses. Partial derivatives of probability of outcome associated with dependent variables with respect to independent variables.

Table 6. Probability of working at an employee-type job for nonmovers by racial group

Variable	Black youths	Hispanic youths	Nonblack/ non-Hispanic youths
Held an employee job at age 14	0.169	0.244	0.171
	(.054)	(.067)	(.031)
Held a freelance job at age 14	.099	.107	–.018
	(.043)	(.053)	(.028)
Age	.063	.113	.136
	(.023)	(.031)	(.020)
Female	–.007	–.022	.0001
	(.038)	(.044)	(.028)
Enrolled in school	.045	–.010	.030
	(.031)	(.023)	(.015)
Highest grade completed	.054	.050	0.028
	(.020)	(.026)	(.017)
Interviewed in summer	.104	–	.138
	(.316)	–	(.146)
Has a child	.008	–.008	.148
	(.084)	(.141)	(.132)
Ever committed a crime	.004	.166	.087
	(.052)	(.056)	(.038)
Ever been institutionalized for a crime	–0.100	.053	–.035
	(.069)	(.106)	(.075)
Has a sibling	.021	–.014	–.016
	(.045)	(.074)	(.038)
Siblings employed	.046	.049	.015
	(.030)	(.034)	(.026)
Female head of household	.031	.016	–.018
	(.038)	(.054)	(.038)
Parents employed	.061	.075	–.022
	(.049)	(.066)	(.072)
Northeast	–.115	–.071	.044
	(.062)	(.065)	(.046)
North-central	.078	–.017	.133
	(.085)	(.074)	(.043)
South	.115	.074	.112
	(.062)	(.062)	(.046)
Urban	.094	.011	.015
	(.039)	(.047)	(.028)
Unemployment rate (Metropolitan Statistical Area)	–.001	–.001	.0002
	(.001)	(.001)	(.0007)
Percent in poverty (county)	–.005	–.006	–.010
	(.003)	(.004)	(.003)
Mean travel time to work (county)	.005	–.001	–.008
	(.004)	(.005)	(.003)
P-value, early employment (LR test)	.000	.000	.000
Number in sample	580	478	1,451
Pseudo R^2	.150	.198	.101

NOTE: Standard errors are in parentheses. Partial derivatives of probability of outcome associated with dependent variables with respect to independent variables.

cally. This is especially true for younger workers who may have trouble finding transportation outside their immediate neighborhood. Additionally, further investigation of movers may suggest that this group of teens would benefit more than nonmovers from job networking programs geared toward the immediate neighborhood.

Beyond the scope of this article is the question of whether jobholding among early teens provides valuable work experience that encourages later employment or whether it signals characteristics that make the teen more likely to engage in labor market activity in future years. It is also unclear whether encouraging very early labor market attachment leads to more successful adult outcomes as measured along other dimensions, such as wages or the provision of employee benefits. □

Notes

This article is based on a report prepared for the NLSY97 Early Results Conference at the Bureau of Labor Statistics and funded by the Department of Labor. Points of view or opinions stated in this document are the author's and do not necessarily represent the official position or policy of the Department of Labor.

[1] Robert J. Flanagan, "On the Stability of the Racial Unemployment Differential," *American Economic Review,* May 1976, 302-08.

[2] See David T. Ellwood, "Teenage Unemployment: Permanent Scars or Temporary Blemishes?" in Richard B. Freeman and David A. Wise, eds., *The Youth Labor Market Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1982), 349–85; Christopher J. Ruhn, "Is High School Employment Consumption or Investment?" *Journal of Labor Economics,* October 1997, 735–76; Robert H. Meyer and David A Wise, "High School Preparation and Early Labor Force Experience," in Richard B. Freeman and David A. Wise, eds., *The Youth Labor Market Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1982), 277-339; and Brian E. Becker and Stephen Hills, "The Long-Run-Effects of Job Changes and Unemployment among Male Teenagers," *Journal of Human Resources,* Summer 1983, 197–212.

[3] BLS press release announcing the NLSY97 Round 1 data, "Employment experience and other characteristics of youths: results from a new longitudinal survey, USDL 99-110, Apr. 30, 1999.

[4] Using the NLSY97 sample as defined in section two, 15 percent of male 17-year-olds and 23 percent of female 17-year-olds report holding a freelance job in the month prior to the survey.

[5] According to figures from the October 1999 CPS, the employment-to-population rate for white teens aged 16 to 19 was 47.7; for black teens ages 16 to 19, the corresponding rate was 25.4.

[6] Robert T. Michael and Nancy Brandon Tuma, "Youth Employment: Does Life Begin at 16?" *Journal of Labor Economics,* April 1984, 464–76. According to current Child Labor Laws, teens aged 14 and 15 may work outside school hours in various nonmanufacturing, nonmining, and nonhazardous jobs. The job may include no more than 18 hours per week during the school year and 40 hours per week during vacation periods. An exception to this rule is when these teens are enrolled in an approved Work Experience and Career Exploration Program (WECEP); in this case, they may be employed for up to 23 hours during a school week.

[7] For an overview of this literature, see Albert Rees, "An Essay on Youth Joblessness," *Journal of Economic Literature,* June 1986, 613–29.

[8] See Gary Becker, "Crime and Punishment: An Economic Approach," *Journal of Political Economy* March-April 1968, 169-217.

[9]. Richard B. Freeman, "The Relation of Criminal Activity to Black Youth Employment," *Review of Black Political Economy,* Summer-Fall 1987, 99–108.

[10] John Bound and Richard B. Freeman, "What Went Wrong? The Erosion of Relative Earnings and Employment Among Young Black Men in the 1980s," *The Quarterly Journal of Economics,* February 1992, 201-32; Jeff Grogger, "Arrests, Persistent Youth Joblessness, and Black/White Employment Differentials," *Review of Economics and Statistics,* February 1992, 100–06.

[11] Richard B. Freeman, "Who Escapes? The Relation of Church-Going and Other Background Factors to the Socio-Economic Performance of Black Male Youths from Inner-City Poverty Tracts," *NBER Working Paper No. 1656,* June 1985.

[12] Mary Corcoran, Richard Gordon, Deborah Laren and Gary Solon, "The Association between Men's Economic Status and Their Family and Community Origins," *Journal of Human Resources,* Fall 1992, 575–601.

[13] Albert Rees and Wayne Gray, "Family Effects in Youth Employment," in Richard B. Freeman and David A. Wise, eds., *The Youth Labor Market Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1982), 453–64.

[14] Bruce A. Weinberg, Patricia B. Reagan, and Jeffrey J. Yankow, "Do Neighborhoods Matter? Evidence from the NLSY79." Unpublished paper, 1999.

[15] Bound and Freeman, "What Went Wrong…," 201–32.

[16] Richard B. Freeman, "Economic Determinants of Geographic and Individual Variation," in Richard B. Freeman and David A. Wise, eds., *The Youth Labor Market Problem: Its Nature, Causes, and Consequences* (Chicago, University of Chicago Press, 1982), 115–48.

[17] Freeman points out that these factors should be used to determine the employment rate of young workers—and not to distinguish between the states of unemployed and out of the labor force—since his findings indicate that factors that affect employment also affect labor force participation.

[18] Katherine M. O'Regan and John M. Quigley, "Teenage Employment and the Spatial Isolation of Minority and Poverty Households," *Journal of Human Resources,* Summer 1996, 692-702.

[19] Weinberg, et. al., "Do Neighborhoods Matter?…," 1999.

[20] John F. Kain, "Housing Segregation, Negro Employment, and Metropolitan Decentralization." *The Quarterly Journal of Economics,* May 1968, 175–97. Some disagreement exists over the extent to which the data support the spatial mismatch theory. For a review of this literature, see Harry J. Holzer, "The Spatial Mismatch Hypothesis: What Has the Evidence Shown?" *Urban Studies,* February 1991, 105–22 and John F. Kain, "The Spatial Mismatch Hypothesis: Three Decades Later," *Housing Policy Debate,* volume 3, issue 2, 1992, 371-462.

[21] Richard Arnott, "Economic Theory and the Spatial Mismatch Hypothesis." Unpublished paper, 1997.

[22] Harry Holzer, "Informal Job Search and Black Youth Unemployment." *American Economic Review,* June 1987, 446–52.

[23] See Keith R. Ihlanfeldt and David L. Sjoquist, "Job Accessibility and Racial Differences in Youth Employment Rates," *American Economic Review,* March 1990, 267–76; and Katherine O'Regan, Katherine and John M. Quigley, "Spatial Effects upon Employment Outcomes: The Case of New Jersey Teenagers." Unpublished paper, 1998.

[24] Harry J. Holzer, Keith R. Ihlanfeldt, and David L. Sjoquist, "Work, Search, and Travel among White and Black Youth," *Journal of Urban Economics* May 1994, 110–30.

[25] The NLSY97 sampling frame focused on youths who were 12 to 16 years old on December 31, 1996; round 1 interviews were conducted from January to October 1997 and from March to May 1998. For more information, see the *NLSY97 User's Guide* (Columbus, OH, Center for Human Resource Research, Ohio State University, 2001).

[26] The round 1 data are from an internal version of the NLSY97 Public Use & Event History Data (Release 1.1); the round 2 variables are from an internal version of the round 2 data from September 1999. Survey staff may edit these data as additional information becomes available.

[27] Hispanic was not a choice in the race question; some screener respondents reported that the household members did not fit into standard racial categories and specified "Hispanic" in answer to the race question.

[28] For each NLSY97 question, a value of 1 was assigned if the youth reported 75 percent or more of his or her peers engaged in that activity; otherwise, the variable was coded as a zero. When more than 1 activity is combined to form a dummy variable, the youth must have answered 75 percent to at least 1 of the NLSY97 questions for the value to equal one; otherwise the variable was coded as a zero.

[29] Freeman, "Who Escapes?…," *NBER Working Paper 1656,* June 1985.

[30] Respondents living in the northeast are coded as 1 if they reside in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, or Vermont and zero otherwise. Respondents coded as living in the north central region included those who lived in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The states that comprised the southern region included Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Residents of other states were coded as living in the West.

[31] This variable defines urban as a place with a population of 2,500 residents or more. Youths in urbanized areas with less than 2,500 youths are defined as "rural."

[32] *County and City Data Book: 1994* (U.S. Department of Commerce, Bureau of the Census, 1995).

[33] Using monthly totals from the CPS and aggregating to an annual figure, Diane Wescott (in "The youngest workers: 14- and 15-year-olds," *Monthly Labor Review,* February 1981, 65-69) found lower employment rates than did Michael and Tuma. She reports that nearly 21 percent of 14- and 15-year-olds worked in the late 1970s.

[34] It should be noted that Michael and Tuma used the CPS section from the NLSY79 to calculate their figures; this section asks about labor force activity in the week prior to the survey, regardless of month. The NLSY97 numbers come from the YEMP section, in which all employee-type jobs and all freelance jobs are collected in a roster. The percentages stated in this article refer to employee-type jobs that the respondent reported working in the 4 weeks prior to the survey or to freelance jobs that were current at the time of the survey. It should be noted that respondents ages 12 and 13 are only able to report jobs in the freelance section, regardless of the job type (for example,, freelance or employee-type). Undercounting of employee-type jobs at these ages is most likely minimal, as these youths are not legally allowed to hold most employee-type jobs.

[35] The 1979 field period for the NLSY79 was January 1979 to August 1979, with the majority of respondents interviewed during the school year when jobholding would have been lower. The round 1 NLSY97 field period began in January 1997 to October 1997 and March 1998 to May 1998. Due the screen-and-go method used in the NLSY97, more respondents were interviewed during the summer months than in late winter and spring. In addition, the NLSY79 did not distinguish between freelance jobs and employee-type jobs, whereas the NLSY97 prompted respondents to report each type of job separately. As a result, it is not possible to determine the extent to which the NLSY97 may collect information on more jobs due to survey design rather than actual increases in jobholding.

[36] Tables 5–9 contain probit estimates. The partial derivatives of probability of outcome associated with dependent variable with respect to independent variables, and standard errors of these estimated derivatives, are reported.

[37] Freeman, "Who Escapes?…," *NBER Working Paper 1656,* June 1985.

[38] A fixed effects model using NLSY97 sibling data may remove the family-specific portion of the unobserved heterogeneity; however, this cohort is not yet old enough to yield enough sibling pairs to do this type of estimation.

[39] Michael and Tuma, "Youth Employment…," 464–76.

Appendix: Sample construction

This appendix explains the selection of respondents for consideration in this research. Due to the types of information required for this study, some NLSY97 respondents had to be excluded if given variables were unavailable. The criteria for the two parts of the study are somewhat different; the restrictions for the examination of job holding at age 14 are described first and the restrictions for the examination of early employment as an indicator of employment at age 16 are then discussed.

The selection criteria for the sample one are as follows. Any member without a valid age, race, and ethnicity is deleted, leaving 8,960 respondents. Next, 359 youths without at least one biological parent, adoptive parent, stepparent, or foster parent listed on the household roster are deleted from the sample. Other relatives listed on the household roster may serve as a legal guardian (for example, grandparent, aunt, uncle); however, it is unclear in the literature whether the employment behavior of a legal guardian has a different impact on the youth than the employment behavior of a parent. As a result, respondents living in this situation are dropped

from the sample. Nine respondents who have missing or incomplete freelance or employee-type job data are dropped from the sample, leaving 8,592 eligible sample members. Finally, 81 observations with other missing values are dropped from the sample. The final sample size from the round 1 data is 8,511 respondents; of these, 5,743 were age 14 or over at the time of the survey and were eligible to report employee-type jobs in the employment section (all respondents answered questions about freelance jobs).

The article examines whether work experience at the age of 14 has an impact on employment probabilities for youth aged 16 and older. Answering this question requires information on the youth's residence both at age 14 and at the most recent interview date because the spatial mismatch literature indicates that this may affect employment probability. Because most respondents had not reached age 16 at the time of the round 1 interview, the study also uses data from round 2 to increase the sample size. (Residence data in the round 1 survey are fairly limited; parents report the number of residences in which the youth respondent has lived since age 12 but do not provide any information about the location of these residences. Thus, youths who had moved cannot be included in the sample. Including the round 2 data increases the full sample size to 2,512; of these 581 respondents are black, 478 are Hispanic, and 1,451 are nonblack/non-Hispanic.)

The restrictions imposed for sample two are presented in table A-1. Construction of the sample for this section begins with the 8,511 respondents eligible in sample one. There are several additional requirements. First, all respondents must be age 16 or older by their most recent interview date. This decreases the sample to 4,930 respondents. Youths who lived outside of the parental home in round 2 were dropped from the sample, leaving a sample size of 4,628. As in the first sample, those with missing data for jobs and other variables were also deleted from sample two; 4,591 remained eligible.

Sample two further requires that the respondent must not have moved during the period under consideration to ensure that residence information is accurate. This requirement is needed because the locations of residences prior to the initial interview are not recorded and the round 2 geocode data were not available when this research was conducted. Respondents remaining in the sample had to fulfill one of the following restrictions.

1. The respondent was age 16 or older during round 1, had not moved since the age of 12, and was not interviewed in round 2. All information is from the round 1 interview.
2. The respondent was age 15 or older during round 1, had not moved since the age of 12, and did not move between round 1 and round 2. All information, except the since age 12 residence question, is from the round 2 interview. Round 2 location information is taken from the interviewer locator questions at the end of the survey, when respondents are asked to report changes to their address. However, including only those who report no changes understates the number of nonmovers since some respondents updated incorrect round 1 address information but had not moved. Regardless, this restriction is necessary (until the round 2 geocode data are available) to ensure that all county-level information is correct.
3. The respondent was age 14 or younger during round 1 and did not move between the round 1 and round 2 survey dates. All information is from the round 2 interview. As in the second restriction above, the location information is taken from the locator questions at the end of the survey and may understate the number of nonmovers.

This information about the construction of the sample is summarized in table A-1.

Table A-1. NLSY97 sample construction

Sample modification	Total sample remaining
Sample one	
Full round 1 sample	8,984
Delete observations with age, race, or ethnicity missing	8,960
Delete observations without parent listed on the household roster	8,601
Delete observations with employment data missing	8,592
Delete observations with other data missing	8,511
Sample two	
Delete observations less than 16 years of age by latest interview date	4,930
Delete observations without parent listed on household roster	4,628
Delete observations with employment data missing	4,591
Delete observations with other data missing	4,569
Delete observations with missing residence data	2,512

NOTE: Residence data in the round 1 survey are fairly limited; parents report the number of residences in which the youth has lived since age 12, but do not provide any information about the location of these residences. Thus, youths who had moved cannot be included in the sample. Including the round 2 data increases the full sample size to 2,512; of these, 581 respondents are black, 478 are Hispanic, and 1,451 are nonblack/non-Hispanic.