

**Human Asset Development and the Transition from School to Work:
Policy Lessons for the 21st Century**

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I. Introduction

The transition from school to work is the lynchpin in the transition to adulthood. Because full-time employment usually permits financial independence as well as social and emotional independence, both of which are crucial for developing private (i.e., family) and public (i.e., civic) adult roles, there is great societal interest in youth negotiating this transition successfully. The ability of young adults to establish independent households and to be financially independent as well as socially and emotionally mature depends crucially on how well they prepare themselves to compete for and secure well-paying jobs and to participate in social, civic, and familial activities.

In the most general terms, the transition from school to work embraces youth ages 16 to 24—age limits that demarcate, respectively, the legal age to leave school and the age by which the majority of college goers have graduated and commenced full time work. Not only is this age group very heterogeneous developmentally, but the activities pursued over this phase of the life course vary considerably among demographic groups (Marini 1984; 1987; Hogan and Astone 1986; Ahituv, Tienda and Tsay 1998). The sequencing of life course activities does not follow an ordered progression because many youth combine school and work while others withdraw and return after testing the labor market (Hotz et al. 1995; Coleman 1984; Marini 1987). Some youth begin families before leaving school or entering the labor market, while others prolong marriage and family until they have established careers. Despite this bewildering variation in the timing of life course events during adolescence and young adulthood (Rindfuss 1991), increasing commitment to employment is a defining feature of the school-to-work

transition, which is considered complete when youth devote themselves full-time to labor market activities.

The problem, however, is that by various journalistic and academic accounts, today's adolescents and young adults are generations in crisis. America's youth confront many problems, ranging from drug and alcohol abuse, teenage childbearing, an increasing prevalence of poverty, decaying family structures, declining academic performance, alarming high school drop-out rates, and high rates of joblessness. Several of these problems relate specifically to the school-to-work transition. While during the 1960s and 1970s such portrayals focused on the most disadvantaged youth (mainly urban black youth), since the mid-1980s concerns have been broadened to include non-college bound youth—coined “The Forgotten Half” (W.T. Grant Commission on Work, Family and Citizenship 1988; Osterman 1995; Sum et al. 1997). However, it is not entirely clear that this perception of crisis is warranted or that such a substantial segment of American youth are really in danger of failing to make a successful transition to adulthood.

Drawing on various portrayals that emphasize the problematic aspects of the transition from school to work, a depiction of the circumstances confronting contemporary American youth might read as follows:

For a variety of reasons, many youth leave school ill-prepared for employment in a labor market that increasingly rewards and demands technical as well as cognitive skills. Due to a lack of institutional or personal ties to jobs or training programs and skill deficits accumulated over years of substandard and/or inappropriate schooling, non-college bound youth experience high unemployment and an extended period of ‘thrashing’ or ‘milling about.’ During this period, job turnover is high and the pattern of jobs held reveals no obvious career orientation. The jobs available to youth lacking college training provide low-wages, few benefits, and limited chances for upward mobility. These circumstances engender low levels of attachment to major social institutions and a period of extended economic and social adolescence.

This synopsis captures the key elements of the problem of the school-to-work transition process based on a critical reading of academic, philanthropic, and journalistic accounts. The dismal tone in which youth issues are often cast raises questions about whether America's youth are truly in crisis; whether and how the schooling and labor market problems confronted by youth today differ from those experienced by prior generations; or whether a contagion effect is operating, such that pessimism about youth prospects in one arena of life colors all others.

A discussion of the difficulties that youth face in making the transition from student to worker should begin with a clear conceptualization of the problem, one that is supported by empirical evidence rather than broad, undocumented assertions. To this aim, in this chapter we focus on two investment domains that are assumed to be problematic for some adolescents and young adults, namely education and employment, and the intersection of the two institutions that govern these arenas, schools and the labor market. Our first goal is to ask what aspects of the stylized depiction of the transition from school to work presented above are valid and to assess the scope and dimensions of the problem in light of relevant data and research findings. Several specific questions suggest themselves in this regard: Is this a new problem or, if not new, has the character of the transition from school to work changed in recent decades? If so, what aspects of the transition pose new problems for young adults? Are youth themselves to blame for their problems, or have market opportunities shifted in such a way as to undermine youth's economic footing? Finally, do all youth experience difficulties making the transition from students to independent workers, or are some groups at greater risk of failure?

In the second section of this chapter, we begin to answer these questions by examining trends in educational attainment and academic achievement. We seek to understand whether youth today are less prepared to enter the labor market than they were in the past or, in other

words, if evidence of an education and skills crisis in the young adult population exists. At this and several other points of our investigation, we utilize data on the cohort of young adults who entered the labor market in early 1980s to better document within-cohort heterogeneity of experience. Next, we look at the labor market experience of youth over time and document trends in labor supply and unemployment. We ask if these data suggest significant changes in the youth labor market. For a more detailed portrait of early labor market experiences, we consider the timing of arrival to stable employment and document the degree of heterogeneity of transition experiences among youth who entered the labor market during the tumultuous 1980s.

Our reading of the demographic evidence and relevant research literatures used to answer the questions laid out above leads us to refocus and redefine the nature and extent of the problems that young people face in making the transition from being a full-time student to becoming an economically independent adult. Having clarified the dimensions of the problem at hand, in the third section of this chapter we examine different options for human asset accumulation—investing in schooling or investing in early work experience—and how each pays off during the school-to-work transition. Clearly, though, the school-to-work transition can be shaped by forces beyond the control of individuals (e.g., labor market conditions), and recent policy initiatives such as the 1994 School to Work Opportunities Act (STWOA) reveal an increasing governmental desire to alter the structure to the transition process. Thus, in Section IV we also consider the advantages and disadvantages of two types of school-to-work programs: those focused on in-school youth (1st chance programs) that seek to more favorably organize the school-to-work transition by linking the domains of school and work and those focused on out-of-school youth (2nd chance programs) that aim to prevent or reverse unfavorable outcomes through both linking and redemption activities. Finally, in the final section we bring together

lessons from previous sections and make broad policy recommendations for improving the labor market prospects of adolescents and young adults.

II. The School to Work Transition—Past and Present

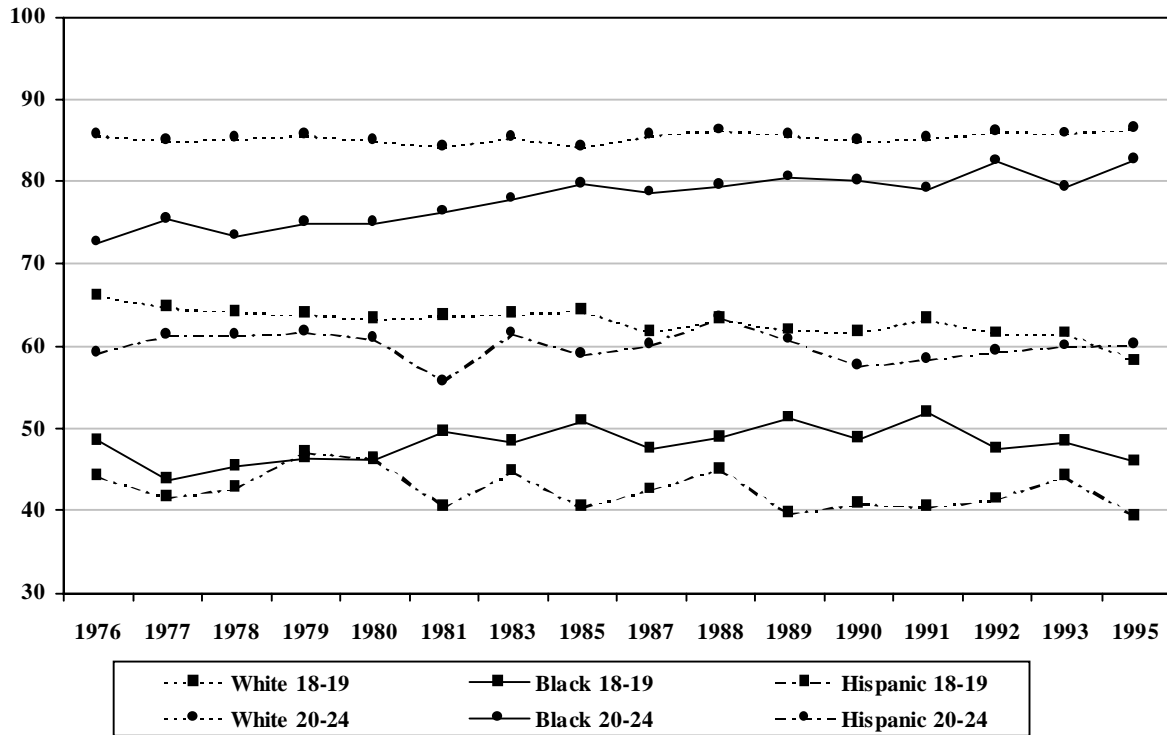
We begin our assessment of the transition from school to work with a description of macro trends in educational attainment, labor force participation, and unemployment to map the structural contours of the school to work transition since the mid-1970s. We also depict the transition from school to work for a cohort who left school and entered the labor market during the 1980s. In presenting these descriptive overviews, we seek to identify race/ethnic and sex heterogeneities in educational and employment outcomes to focus the discussion about the difficulties inherent in the school-to-work transition to those demographic groups most at risk.

Education and Skills Trends

Whether young adults are ill-prepared to enter the labor market is a complex question that in some sense rests at the core of the school-to-work debate. If it is for lack of appropriate skills that today's non-college bound youth face labor market difficulties, policies focusing on increasing academic rigor, appropriate vocational education, and opportunities for both public and private training would be warranted. If, on the other hand, youth's difficulties finding jobs are due to a lack of institutional linkages between schools and employers and to changes in the structure of employment opportunities and wages, federal policy to remedy these shortfalls should assume different foci. In this section we address two questions integral to the skills debate, namely: whether young workers today are more poorly trained than their counterparts in the recent past; or alternatively, whether skills obtained by students have changed relative to skills demanded by employers. We begin by summarizing recent trends in educational attainment.

Basically, there is no strong evidence that young workers are less prepared academically to work now than in the past. As shown in Figure 1, high school graduation rates of 20-24 year olds rose between 1976 and 1995, but differentially among blacks, whites and Hispanics (we do not present separate tabulations for young men and women because trends were nearly identical for both sexes). Already high in 1976, graduation rates of whites remained stable at 86 percent, but black rates converged with those of whites, rising from 72 to 82 percent over this period. Hispanic graduation rates showed no improvement over this period, remaining low at 59 to 60 percent owing to the influx of poorly educated immigrants. Sum et al. (1996) estimate that the number of immigrants ages 18 to 24 with less than a high school education nearly doubled between 1980 and 1995, compared to an 18 percent decline in high school drop outs for the population as a whole. Although we do not present data to this effect, similar trends obtain for college graduation rates. Mare's (1995) analysis of the 1990 census showed that average educational attainment has increased with age, partly owing to secular increases in college attendance and completion rates, coupled with greater numbers pursuing post-graduate degrees. However, differentials along race and ethnic lines in college graduation are even more pronounced than differential for high school completion, especially since immigration of unskilled workers increased after 1970 (Smith and Edmonston 1997; Tienda and Liang 1994).

Figure 1
Percent of Adolescents & Young Adults Completing High School By Race/Ethnicity, 1976 - 1995

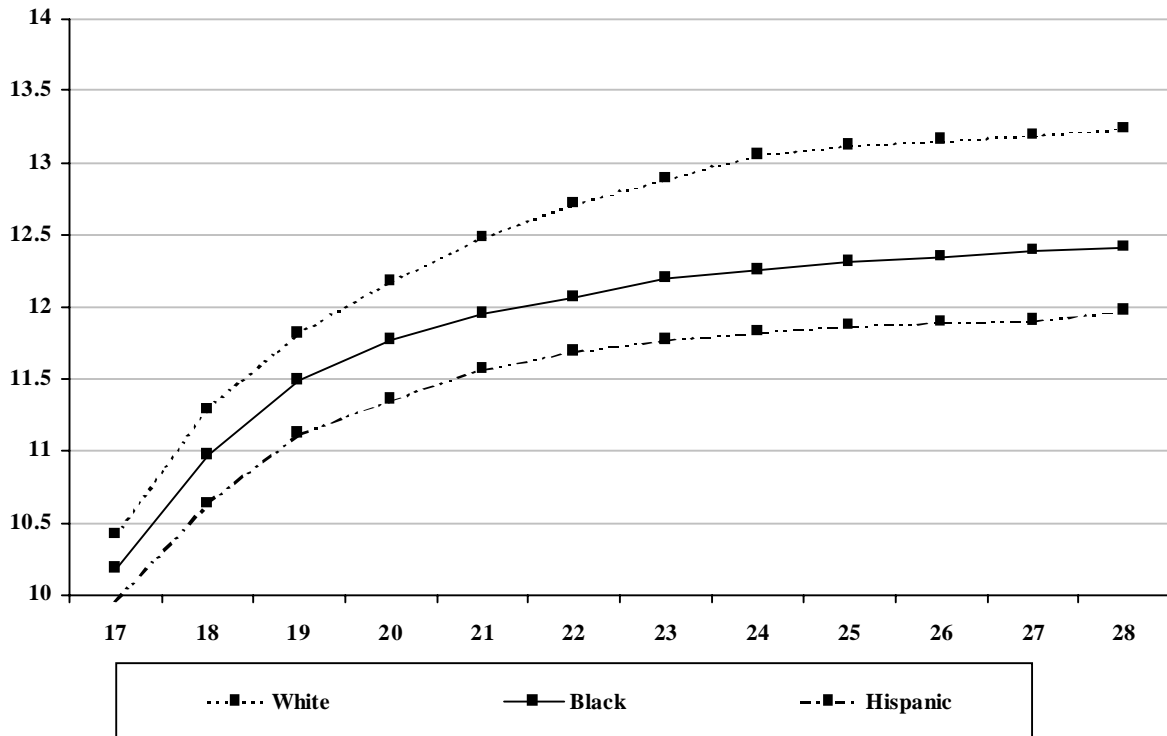


Source: U.S. Bureau of the Census, Current Population Reports, P 20-459, P20-462, P20-475

Data from the National Longitudinal Survey of Youth (NLSY), which features a cohort of young adults that entered the labor force in early 1980s, provides a more dramatic picture of the important racial and ethnic differences in educational attainment described above. Figure 2 charts the number of grades completed at different ages by white, black and Hispanic men (Figure 2a) and women (Figure 2b). Race and ethnic differences in levels of educational attainment emerge in secondary school, widen at the transition into college, and widen again at the transition to college completion (Tienda and Ahituv 1996; Ahituv, Tienda, and Tsay 1998). By age 24-25, white males complete almost one and one-half more grades of school than Hispanics, and almost one year more than blacks. For women, educational differentials by race

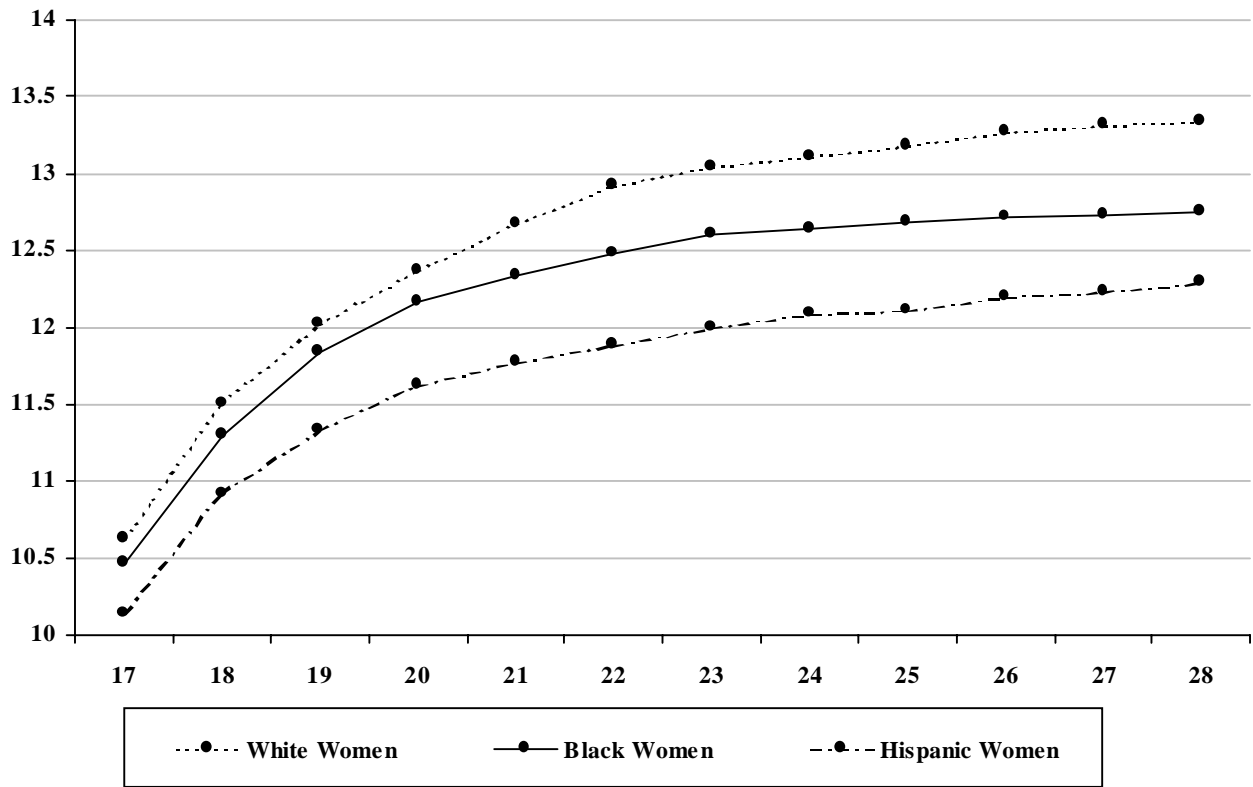
and Hispanic origin are slightly smaller, mainly because women average slightly higher education at every age than their male counterparts. To the extent that education determines labor market opportunities, these differentials indicate that large shares of Hispanics—more so than blacks and whites—are at high risk of experiencing labor market difficulties as young adults.

Figure 2A
Age-Specific Grades Completed: Young Men by Race and Hispanic Origin



Source: Tienda et al., 1998

Figure 2B
Age-Specific Grades Completed: Young Women by Race and Hispanic Origin



Source: Authors calculations from NLSY

Although average education attainment has remained constant or improved depending on the population group under consideration, concern about a decline in American achievement has been and continues to be widespread. Much of the fuel for this concern comes from widespread news coverage of declining test scores, especially SAT scores. While test scores did fall during the 1960s and 1970s, this decline was driven largely by changes in the composition of test-

takers. That is, in prior years SAT tests were taken mainly by the most advantaged students while later test takers included broader segments of the student population. Since the 1980s, test scores have rebounded, though recent gains appear not to have totally offset earlier declines. A positive note is that minority students, especially blacks, have made significant gains in achievement relative to non-Hispanic whites (Koretz 1992). Although SAT score changes receive a great deal of attention in the popular and academic press, the National Assessment of Educational Progress (NAEP) represents perhaps the best measure of achievement over time (Stedman 1998). NAEP trends in the math, science, reading, and writing scores of American 17 year-olds reveal little difference in achievement between the earliest points of evaluation—depending on the subject in question, from 1969 to 1984—and 1996 (Campbell et al. 1997). In short, trends in test scores also provide no evidence of a skills crisis among youth.

However, stability in both educational attainment and academic achievement does not mean that contemporary youth are adequately prepared for the jobs they confront. Trends notwithstanding, there exists a general consensus that both the basic and vocational skills of young non-college bound workers are inadequate for the jobs available to them (Bailey 1991; Levitan and Gallo 1991; Lynch 1994; Stedman 1998). Moreover, not surprising given the differentials we saw above, this problem is especially severe for some population groups, notably minorities and youth who reside in risky urban environments (Lerman 1996). International comparisons which show that U.S. students fare poorly on math and science tests provide troubling evidence of a skills deficit among American youth (Mullis 1998). Further evidence comes from employers themselves, who often cite poor ‘soft skills,’ such as dedication to work and discipline, as glaring deficiencies of non-college educated youth (Kantor 1994; Olson 1994). Thus, if young adults are ill-prepared to enter the workforce after high school graduation, it is not

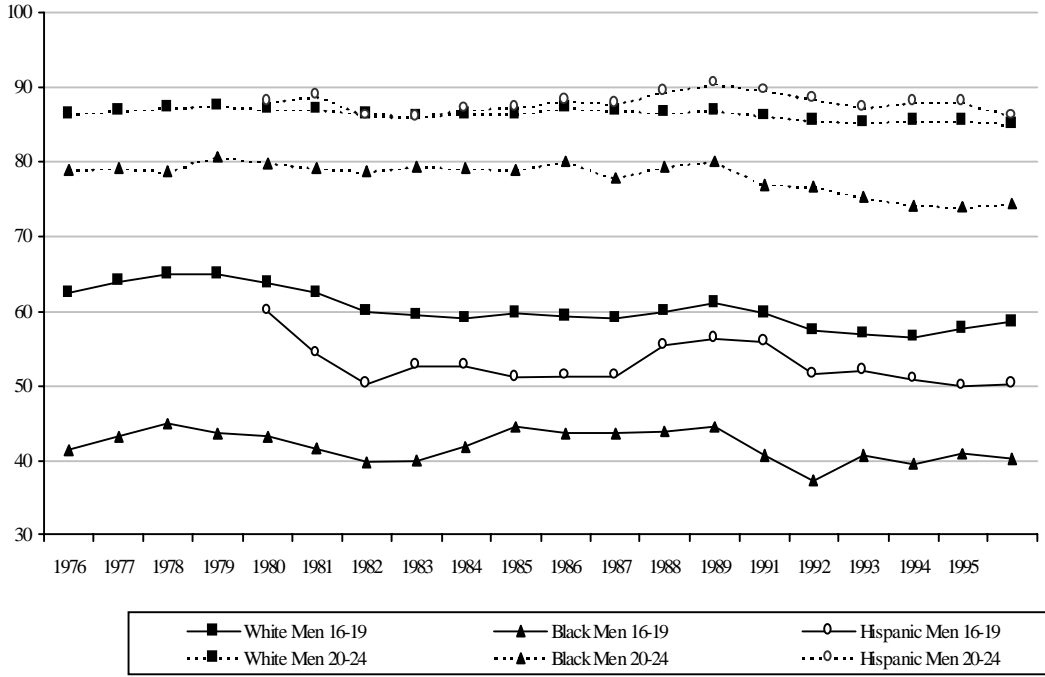
because of a precipitous decline in academic achievement or because of a decline in educational attainment. If, as our review indicates, it is not the skill level of young workers that has changed, one must seemingly look to the demand side of the equation, or to the skill content of today's jobs, to find evidence to support the assertion that workers' skills are inadequate. We return to this topic below, following a brief overview of recent trends in youth labor force activity.

Labor Force Participation and Unemployment Trends

Changes in youth labor force activity are central to understanding whether and how the transition from school to work has changed in recent years. In particular, we would like to document both whether youth are more or less likely to participate in the labor force now compared to the recent past and, perhaps more importantly, whether they are more or less likely to be unemployed now than in the past. Indications of increasing youth unemployment would provide at least partial evidence of an increasingly problematic school-to-work transition.

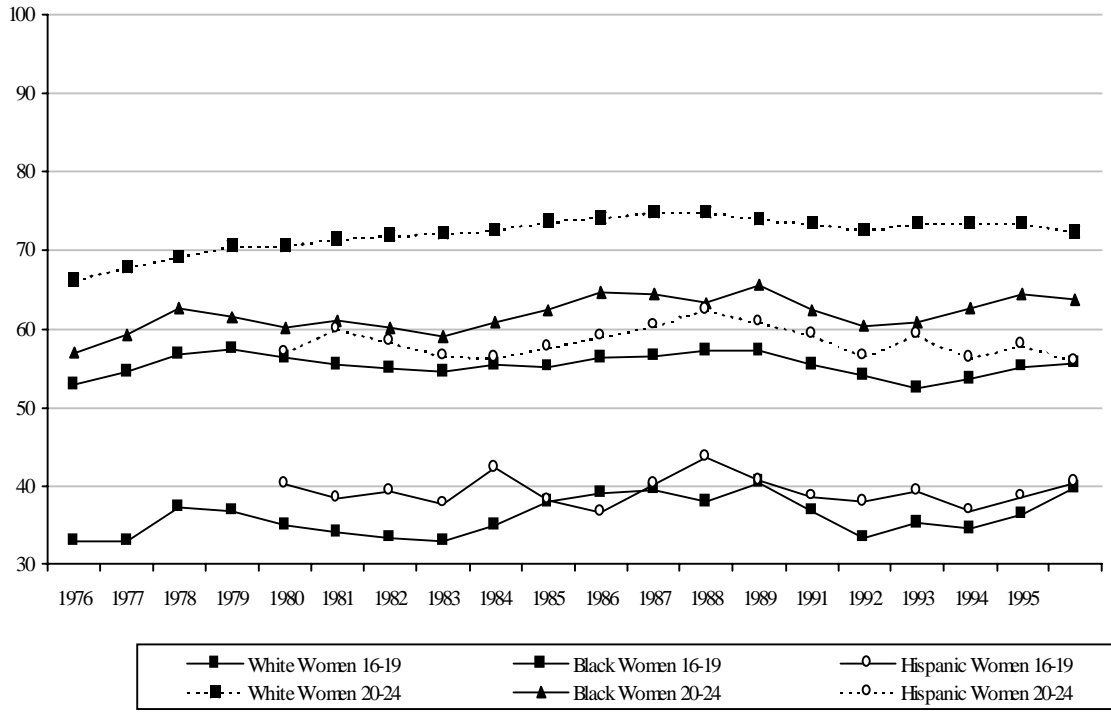
Figure 3 shows trends in labor force activity rates of adolescent and adult men (Figure 3a) and women (Figure 3b) by age, race, and Hispanic origin. These data do not signal trouble in the transition to employment for youth, as there is limited evidence that labor force participation is declining. Like participation rates of prime-age workers, labor force activity of youth fluctuates with the business cycle, falling slightly during recessions and rebounding somewhat during recovery and growth periods. Also paralleling trends for the adult population, labor force activity rates of young women have increased gradually, while rates of young men have fallen. Finally, race and ethnic differences in participation rates mirror those of the general population, with the highest participation rates for whites, the lowest for blacks, and Hispanics between these extremes.

Figure 3A
Labor Force Participation of Male Adolescents and Young Adults by Race/Ethnicity, 1976-1995



Source: US Bureau of Labor Statistics. Handbook of Labor Statistics. 1989 and 1997

Figure 3B
Labor Force Participation of Female Adolescents and Young Adults by Race/Ethnicity, 1976-1995



Source: US Bureau of Labor Statistics. Handbook of Labor Statistics. 1989 and 1997

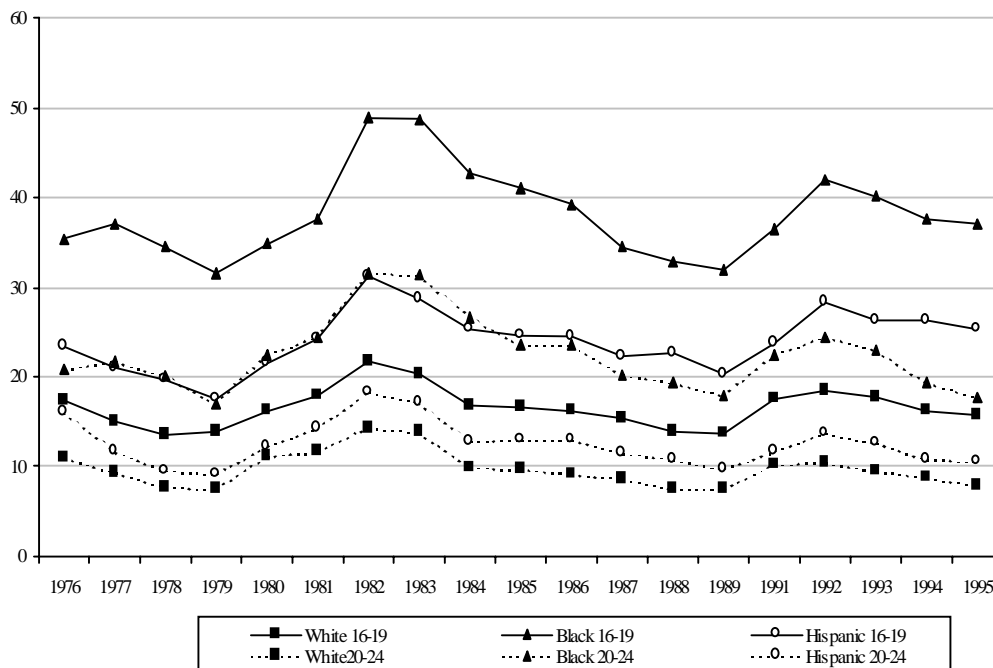
Specifically, between 1976 and 1995 participation rates of adolescent men (16 to 19 year-olds) fell from 62 to 58 percent for whites; from 41 to 40 percent for blacks and from 54 percent (in 1980) to 50 percent for Hispanics. Among adolescent women, participation rates rose gradually, from 53 percent to 56 percent for whites; from 33 percent to 40 percent for blacks; and from 38 percent (in 1981) to 40 percent for Hispanics in 1995. Similar trends obtained for young adult workers (20 to 24 year olds) except that the participation rates were higher, as evident in the curves depicted in Figure 3. What is striking about these trends is the relative stability of young men's participation rates, despite the dramatic business cycles during the period under consideration. Young women's participation rates appear to be somewhat more responsive to cyclical conditions (Tienda, Donahoe and Tsay 1998), but managed a gradual increase nonetheless. On balance, trends in labor force participation suggest no cause for alarm about youth labor market attachment. However, these aggregate generalizations may not apply to specific segments of the youth population, such as inner city youth (Foster 1995).

While the youngest group represented in the labor force participation figures presented above is the 16 to 19 year-olds, with parental consent youth can enter the labor force as young as 14 in the United States (Wescott 1981). Several studies have called attention to the fact that many 14 and 15 year old students acquire work experience and that race and ethnic differences in work activity are evident even at these very early ages (Hotz and Tienda 1998). Based on life table estimates and alternative definitions of first job, Hotz and Tienda (1998: Tables 2a and 2b) show that between 5 percent (blacks and Hispanics) and 8 percent (whites) of 14-year-old boys have worked for pay on a regular basis. The comparable figures for young girls are 2 percent (blacks) to 6 percent (whites). Among 15-year-olds 17 to 19 percent of minority boys had worked compared to 21 percent of white boys. Comparable statistics for 15-year-old girls

indicate that and between 10 percent (black) and 16 percent (white) have held a regular paid job for any length of time. These data indicate that race and ethnic variation in the accumulation of labor force experience, or the emergence of difference in the school-to-work transition process, begins very early in the life course.

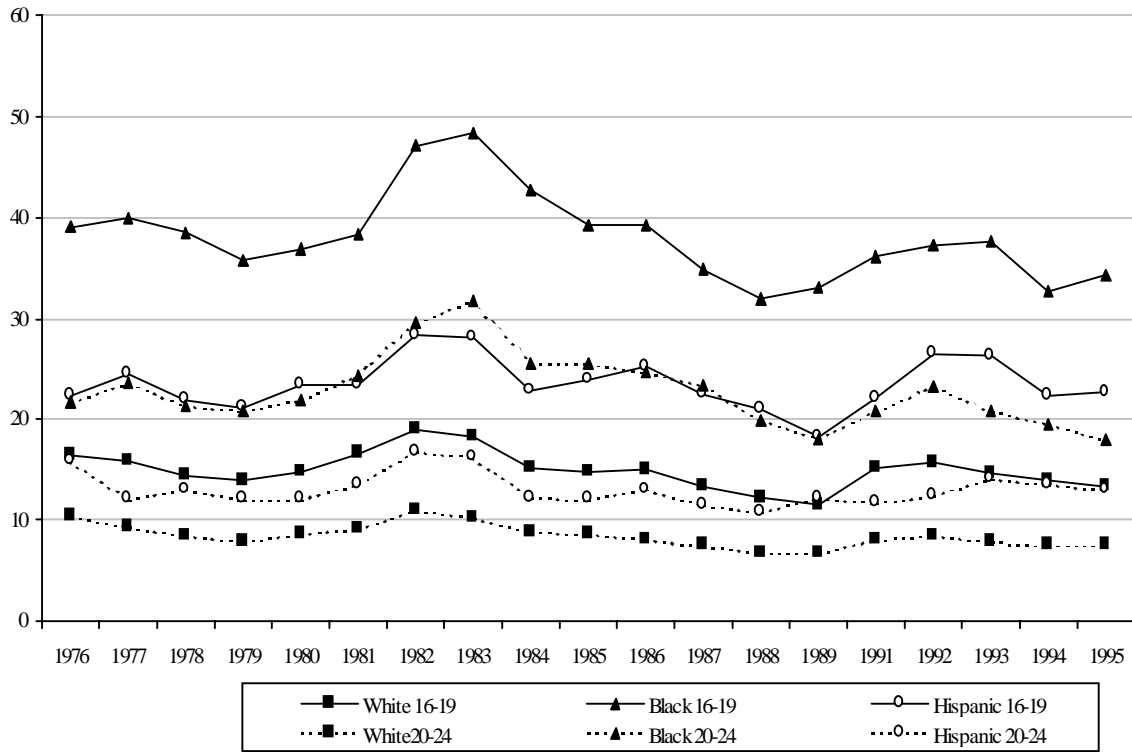
Of course, participation rates include both the employed and unemployed, and it is the latter which responds to business cycle oscillations. Unemployment rates are a better barometer of the difficulties youth experience in accessing the world of work. In fact, it was the sharp rise in black youth unemployment during the 1970s that resulted in concern about the “youth labor market crisis” (Freeman and Holzer 1986; Rees 1986). Figure 4, which maps unemployment rates from 1976 to 1995 for black, white, and Hispanic men (Figure 4a) and women (Figure 4b) aged 16 to 19 and 20 to 24, provides further evidence that unemployment rates of minority youth are both appreciably higher than nonminority youth and also more sensitive to cyclical variation (Rees 1986; Hirschman 1988).

Figure 4A
Unemployment Rates for Adolescent and Young Adult Men by Race/Ethnicity, 1970-1995



Source: US Bureau of Labor Statistics, *Employment and Earnings*: January Issues, annually

Figure 4B
Unemployment Rates for Adolescent and Young Adult Women by Race/Ethnicity, 1970-1995



Source: US Bureau of Labor Statistics, *Employment and Earnings*: January Issues, annually

Disregarding race and ethnic differences for a moment, unemployment of the younger male youth cohort (aged 16 to 19) is consistently higher than that of the older youth cohort (aged 20 to 24) throughout the period of observation (data not shown). Because the achievement of stable employment, which manifests as lower aggregate unemployment rates, is associated with completion of the transition from school to work, it is not surprising that adolescents have higher average unemployment rates than their young adult counterparts. The severity of the black male youth unemployment problem, however, is evidenced by fact that the *older* cohort of black youth has higher unemployment rates than the *younger* cohort of white youth at every year of observation. Furthermore, the *older* cohort of black youth has virtually the same unemployment as the *younger* cohort of Hispanic youth prior to 1985 and only slightly lower rates thereafter.

Adolescent black males aged 16 to 19 years old have the highest unemployment rates of any group throughout the 1976 to 1996 period.

Figure 4a shows that black adolescent unemployment peaked at nearly 50 percent during the 1981-82 recession and fell gradually thereafter to a low of 31 percent in 1989, rising again during the 1991-92 recession. The strong economic performance of the 1990s has lowered unemployment for this younger cohort of blacks to under 30 percent as of 1996—nearly 8 points below the 1976 rate of 35 percent. During this period, unemployment of white young adults of the same age fluctuated over a more narrow range, between 13 (1978) and 22 percent (1982), and was well below that of black youth in the best of times. Hispanic unemployment rates peaked at 31 percent during the 1982 recession but have proven resistant to declines commensurate with improvement in general economic conditions. Trends in adolescent female unemployment rates were quite similar to those of adolescent men, often but not always a couple of percent points lower.

Figure 4 shows not only that adolescent unemployment is higher than that of young adults, but also that secular variation in unemployment, or responsiveness to economic trends, is greater for younger men and women. For white adolescent males, for example, unemployment varies from a low of about 13 percent in 1978 to a high of nearly 22 percent in 1982, a 67 percent increase. For white male young adults, the range in unemployment is about 7 percent to 14 percent, about a 50 percent increase. The unemployment trend of white female young adults is especially flat, varying only about 4 points over the period of observation. Thus, as minorities, especially blacks, tend to be buffeted more violently by economic trends, so the labor force experiences of adolescents varies more than that of young adults.

Overall, while Figure 4 presents important evidence of significant differences in youth unemployment by race and ethnicity as well as notable differences by age, it does not present significant support for the conclusion that the transition from school to work has become more difficult in the recent past. Though problematic, unemployment of both male and female black adolescents and young adults is currently at or very near its lowest level in the 1976-1996 period. Unemployment for whites and Hispanics is also not far removed from its lowest levels during this period. Thus, similar to our investigation of educational attainment and academic achievement, our inquiry into both youth labor force participation and unemployment trends for the past twenty years or so suggests that labor market circumstances have not deteriorated in ways that make the school-to-work transition more difficult or problematic. However, aggregate trends such as those discussed above do not specifically address the issue of employment instability that characterizes the school-to-work transition and may determine whether youth settle into stable employment in young adulthood. It is to this topic which we now turn.

Timing of Arrival to Stable Employment

Youth employment instability plays a prominent role in nearly all discussions of the school-to-work transition process and the youth labor market in general (Rees 1986). Whether termed “churning” (Osterman and Iannozzi 1993), “shopping and thrashing” (Topel and Ward 1992), or, more technically, turnover or instability, at issue is the extent to which early youth labor market activity is characterized by shifting from job to job and from periods of working to periods of not working. Klerman and Karoly (1994) summarize several reasons why early employment and job instability may be detrimental for youth. Labor force instability increases the probability of unemployment, leading to decreases in accumulated labor force experience and, it is sometimes hypothesized, actual decay in skills and human assets. Job instability, on the

other hand, decreases the likelihood of accumulating firm-specific tenure. Furthermore, if firms perceive youth to be excessively unstable and, therefore, poor prospects for investment, young adults may not receive the work site training that is so important for human capital accumulation after school departure. For all these reasons, labor force instability may prove deleterious to wage growth and future labor market success and prolong the transition from economic adolescence to adulthood.

Whether or not these potential negative outcomes obtain, however, depends at least partially on the extent of early instability. Of interest, therefore, is the extent to which youth have difficulty establishing themselves in *stable* employment. However, there is no obvious or agreed upon definition of stable employment or accepted age by which a transition to stable employment should have occurred. The NLSY cohort has been used repeatedly to investigate this topic (Klerman and Karoly 1994; Osterman 1995; Hotz and Tienda 1998). Hotz and Tienda (1998) offer three definitions of first job, two of which might be used as benchmarks for stable employment: employment that lasts for at least 6 months and involves 15 or more hours of work per week (termed the intermediate definition) and employment that lasts for at least a year and is undertaken on a full-time basis (the restrictive definition). Accordingly, for young men the median age of arrival at first job is approximately 18 years old for the intermediate definition and 23 for the restrictive definition. For young women the respective medians are 19 and 23 years old. Race and ethnic variation in the timing of arrival at first job follows a predictable pattern, given the labor force participation and unemployment figures presented above: for men, blacks lag behind whites and Hispanics regardless of definition used and whites arrive at stable employment slightly earlier than Hispanics using the intermediate definition and slightly later

using the restrictive definition. For women, regardless of definition, whites arrive at stable employment first followed by Hispanics and then blacks.

Klerman and Karoly (1994) also adopt multiple definitions of stable employment in their investigation of early youth employment: a job that lasts one year, a job that lasts two years, and a job that lasts three years. They find that the median male high school graduate entered a job lasting more than one year shortly after turning 19, a job lasting two years after age 20, and a job lasting three years at age 22. Women hold fewer jobs than men but do not arrive at stable employment earlier. As the authors point out, though, these figures mask substantial diversity among educational and race/ethnic sub-population. Not surprisingly, given the evidence presented above, blacks and high school dropouts fare less well in the establishment of stable careers. Osterman (1995) examines job tenure for those aged 29 to 31 and finds that about two-thirds of men and half of women are in jobs that have lasted less than a year. For high school dropouts, half of men and 60 percent of women have not been at their job a full year.

Four conclusions emerge from this literature. First, the picture of youth and young adult labor force instability is highly dependent on the definition of stable employment used. Osterman's (1995) paints the bleakest picture, but is unique in not examining the *first* job lasting a certain duration. Second, as a whole, the evidence does not support a pessimistic interpretation for the statistically average youth. Stable employment is reached in the early rather than the later 20s. Third, if not a widespread problem, it does appear that delayed entry into stable employment is evident for a more narrowly focused group—those who do not finish high school and black youth. Finally, given our emphasis on trend, it is important to note that though there has not been an increasing difficulty in making the transition to stable employment for those with at least a high school degree, evidence from a comparison of the NLSY cohort with earlier CPS

data suggests worsening prospects for those without high school degrees over the past 20 years (Klerman and Karoly 1994; Danziger and Gottschalk 1993).

Current Labor Market Opportunities for Youth

That the average young adult currently does not have particular difficulty finding a job, as evidenced by unemployment data, or finding a job that is worth sticking with for some amount of time, as evidenced by stable employment data, does not mean that the jobs available to youth today are adequate for raising families and building careers. And, as suggested by our review of the skills debate, some consideration of recent changes in the structure of the American economy is in order to address questions about the nature of employment opportunities in the current labor market.

Several indisputable facts form the basis of the labor market problems of youth who underinvest in human capital. First, real wages have fallen substantially over the past two decades (Katz and Murphy 1992; Bound and Johnson 1992; Mishel, Bernstein and Schmitt 1997; Rasell, Bluestone and Mishel 1997). Inflation-adjusted median weekly earnings of full-time employed young male adults, those younger than 25, fell 31 percent between 1973-1995. For young women, the corresponding figure for this period was 13 percent. Real annual earnings are down 26 percent for young men and 6 percent for young women, who have been able to compensate for falling wage rates by increasing labor supply (Sum et al. 1996), as observed in Figure 3b. Second, though workers of all ages have seen their real wages fall, the earnings of young workers have declined at rates substantially greater than those experienced by older workers (Katz and Murphy 1992; Bound and Johnson 1992; Sum et al. 1996; Mishel, Bernstein and Schmitt 1997; Rasell, Bluestone and Mishel 1997). Third, educational attainment has come to play an even more crucial role in determining the workers' wages. The largest wage declines

during this period were experienced by entry-level workers, or those workers with less than 6 years of labor force experience who lack college education, the “forgotten half” (Rasell, Bluestone and Mishel 1997). As a result, there has been well-documented growth in the wage gap between high school and college-educated youth (Bailey 1991; Katz and Murphy 1992; Bound and Johnson 1992; Acs and Danziger 1993; Bound and Freeman 1992; Danziger and Gottschalk 1993).

While it is clear that the wage structure of the American economy has changed in fundamental ways, it is much less clear *why* these changes have occurred. De-industrialization is among the more frequently cited causes of the declining labor market prospects of young adults lacking college degrees. The United States has experienced a decline in the number of manufacturing jobs available and an increase in jobs in the retail and service industries, which feature below average wages. According to one analysis, however, shifts in the industrial structure of employment opportunities can account for only a moderate share, 15 percent, of the overall decline in young adult male wages. More important than shifts in the industrial composition of jobs are real earnings declines in all industries except agriculture and public administration sectors. In other words, declining returns to work effort are widespread (Sum et al. 1996).

If the simple availability of jobs is not a widespread problem for youth making the school-to-work transition today, job quality is. Wage trends suggest that to an increasing extent jobs that pay living wages, offer reasonable security, and provide benefits require more than a high school education. Thus for youth who do not pursue post-secondary training, income prospects, if not employment prospects, are bleak. That a college education is increasingly rewarded in the labor market implies that employers are willing to pay a premium for these skills

and that the returns to skills have increased. This also implies that even though American youth may not come to the labor market any less prepared now than they did in the recent past, on average their levels of preparation may be insufficient nonetheless. To the extent that skill requirements continue to increase, the skill deficit of non-college educated youth will present a growing human asset problem in negotiating the school-to-work transition (Bailey 1991; Osterman 1995). Youth with the most glaring skills deficits—high school dropouts, among whom minorities are over-represented—will be especially disadvantaged in making the transition to full-time employment in the years to come.

Recapitulation of the School-to-Work Transition Problem

We began our inquiry into the school-to-work transition by positing a stylized depiction of the transition process amalgamated from a variety of non-academic and academic sources. We used this depiction to motivate a reevaluation of the extent to which the passage from student to worker is problematic for youth today. In the course of this reevaluation, we examined trends in educational attainment and academic achievement; patterns of youth labor force participation and unemployment; the stability of early youth employment; and structural changes in employment opportunities for young workers. The evidence that we present above suggests that the severity of the difficulties encountered transiting from school to work are and will continue to be largely dependent on an adolescent's educational attainment level and race and ethnic background.

The problem of the “forgotten half,” those who do not further their education beyond high school, is not a lack of jobs, but a lack of good jobs for which they are qualified and which offer reasonable prospects for economic advancement (Bernhardt and Bailey 1997). Though

there is evidence that skill demands are rising and will likely continue to do so for the foreseeable future, it is also true that this increase has not been precipitous. Owing to the overall occupational composition of total employment, increases in the number of highly skilled jobs will be relatively small compared to growth in lower skilled jobs. In other words, while the rate of growth of highly skilled jobs may be higher, composition effects ensure that gross increases are larger for lower skilled jobs (Bailey 1991). Therefore, what is most troubling for the majority of youth today is not a lack of skills but rather the significant decline in wages that has occurred over the last two decades for those who lack college degrees. As the premium for college training continues to rise, those who do not attend either because they failed to prepare for college admission or because they can not afford to do so will fall further behind economically. By decreasing young adults' abilities to establish themselves economically, declining wages more than any other factor seems to drive economic adolescence, thus lengthening the school-to-work transition period (Marini 1984; 1987; Sum et al. 1996). Moreover, future demographic trends do not bode well for youth. During the period of falling wages, youth were to some extent protected by their small cohort size. This protection, however, has ended. The baby boomlet generation is entering young adulthood now, increasing youth cohort size and competition for resources, including labor market opportunities.

Though the problems of the non-college bound in general are real, the problems faced by minority youth are cause for even greater concern. While educational attainment has been rising, persistent inequality remains. Black rates of high school graduation continue to lag somewhat behind that of whites. Most disturbing, however, is the persistence of low Hispanic graduation rates; 40 percent of Hispanic youth ages 20 to 24 lack high school diplomas. Race and ethnic differences, in fact, were observed in all domains we investigated. Minority labor force

participation lags behind that of whites. Hispanic unemployment rates are higher than white rates, especially for adolescents, though they closely mirror white rates at older ages. And, while black unemployment has improved in the 1990s, it remains unacceptably high. Black youth also experience disproportionate difficulty in their arrival to full time employment, revealing that economic growth alone is insufficient to improve black labor market prospects. Another economic downturn will easily erase the labor market improvements this group made during the 1990s.

If the prevailing minority disadvantage continues, current demographic trends will exacerbate the labor markets problems of youth. Not only will the youth cohort grow in size in the coming decades, but the now well-know shifts in the race and ethnic composition of the population will continue as well, with minority populations increasing their share of the total. Hispanics, for example, comprised approximately 11 percent of youth and young adults ages 14 to 24 in 1990. By 1995, their population share had risen to nearly 13 percent and is projected to exceed 15 percent by 2005. Moderate projections indicate that Hispanics will comprise over 20 percent of all persons between the ages of 14 and 24 by the year 2025. Obviously, if current trends in educational under-achievement and the demand for high skills continue, Hispanic youth will confront even greater risks than they currently face.

III. Debates on Human Asset Accumulation via the School to Work Transition

The presumption that adolescent employment should be promoted to strengthen the transition from school to work has been implicit in the design of youth training programs since the 1960s, and explicit in recommendations of the 1974 President's Science Advisory Committee Report. The Panel on Youth explicitly recommended that high school students acquire work

experience to enhance their labor market prospects (President's Science Advisory Committee 1974). Advocates of this view believe that work socializes youth into adult roles and improves their subsequent labor market opportunities (Shore 1972; Meyer and Wise 1982; Ellwood 1982; Carr, Wright and Brody 1996). Less than a decade later, however, the National Commission on Excellence in Education (NCEE 1983) challenged this recommendation, questioning whether adolescent jobs actually provide opportunities for youth to practice responsibility, to interact with adult role models, and acquire work-related skills. Emphasizing possible deleterious consequences, the report claimed that for enrolled youth, time spent working could undermine investment in academic pursuits and perhaps possibly even accelerate early school withdrawal (Greenberger and Steinberg 1986; NCEE 1983; Greenberger and Steinberg 1981).

The voluminous literature on the transition from school to work has identified myriad ways that adolescent employment influences later adult experiences and, in the short term, shapes the transition to adulthood. In a literature laden with controversy and methodological difficulties, there is consensus that the vast majority of students acquire some work experience before leaving school (Levitan and Gallo 1991; Mortimer and Finch 1992; Lewin-Epstein 1981; Hotz and Tienda 1998); that students who work differ from those who do not (Keithly and Deseran 1995; O'Regan and Quigley 1991; Foster 1995); and that the personal, educational and subsequent labor market consequences of adolescent employment hinge crucially on the amount of time spent on the job (Tienda and Ahituv 1996; Marsh 1991; D'Amico 1984; Mortimer, Finch, Shanahan and Ryu 1992; Steel 1991; Steinberg, Fegley and Dornbush 1993). Specifically, men work more than women; blacks work less than whites or Hispanics; and the very rich and very poor work less than everyone else (Schoenhals, Tienda and Schneider 1998; Hotz and Tienda 1998; Lewin-Epstein 1981). There is also general agreement, not surprisingly,

that the consequences of summer employment differ from academic-year work (Marsh 1991), and that students who work long hours during the school year perform worse academically and are more likely to engage in transgressive behavior compared to those who work less (Tienda and Ahituv 1996; D'Amico 1984; Steinberg et al. 1982; Marsh 1991; Steinberg, Fegley and Dornbush 1993; Schoenhals et al. 1998).

There is much less agreement, however, about whether, how much and in what ways youth employment influences scholastic performance and educational attainment (Schoenhals, Tienda and Schneider 1998; Carr, Wright and Brody 1996; Tienda and Ahituv 1996; Ahituv, Tienda and Tsay 1998) or subsequent labor market outcomes (Ahituv, Tienda and Hotz 1997; Hotz et al. 1995; Freeman and Wise 1982; Meyer and Wise 1982; Ellwood 1982; Ruhm 1997; Chaplin and Hannaway 1996; Gritz and MaCurdy 1992). And, there are also many views about how youth employment is related to various dimensions of psychological and emotional wellbeing (Greenberger and Steinberg 1986; Steinberg, Greenberger, Jacobi and Garduque 1981; Markward 1991; Mortimer and Finch 1992; 1986; Lorence and Mortimer 1985; Mortimer and Yamoor 1987; Mortimer, Finch, Shanahan and Ryu 1992).

The idea that adolescent employment has value that extends into adulthood is reasonable on its face; work experience is a valuable human asset that yields returns over the entire work life course. But, if working while enrolled in school curtails the acquisition of basic academic skills by truncating educational careers, the net benefits of adolescent employment for young adults may be small or possibly even negative over the long run. This logic implies that the potential benefits of early labor market entry depend on the relative allocation of time between school and work; on how early work activities influence decisions about school continuation;

and on whether youth actually acquire work skills on the job (Mortimer and Finch 1992; Schoenhals, Tienda and Schneider 1998; Hotz et al. 1997).

There are several theoretical reasons to expect adolescent employment to influence both school continuation decisions and subsequent employment prospects. From a sociological perspective, such links are suggested by socialization theory, which postulates that early work experiences impart a realistic grasp of adult alternatives and also shape economic and social aspirations. Indeed, this is the logic used by the President's Science Advisory Committee in advocating for youth labor force activity. Even if adolescent employment does not confer economic gains in the form of higher wages for young adults, it may be positive in a developmental sense. From a socio-psychological perspective, "socialization through work" implies that success in a job as an adolescent can facilitate the development of self-esteem, foster independence, broaden the base of appropriate role models, and provide feedback to youth who are in the process of forging their adult roles (Shore 1972; Mortimer and Finch 1992; Coleman 1984; Mortimer et al. 1990; President's Science Advisory Committee 1974; Steinberg, Greenberger, Jacobi and Garduque 1981; Mortimer and Finch 1986).

From an economic perspective, human capital theory also applauds early work experience for enhancing subsequent labor market success. Most economic assessments of early work experience emphasize wage gains (Hotz et al. 1997; Ruhm 1997), but also consider odds of employment (Meyer and Wise 1982; Ellwood 1982) and unemployment (Becker and Hills 1983; D'Amico and Maxwell 1994; Lynch 1989; Gritz and MaCurdy 1992). The theoretical models developed by Mincer (1962) and Becker (1993) stress the value of work experience and on-the-job training in generating marketable skills that presumably increase workers' productivity in later years. However, empirical analysts have been less successful at predicting *what types of*

skills gained from early work have payoffs in later life (Levitan and Gallo 1991). This creates great difficulty drawing lessons about what types of experiences are most beneficial for program design or youth employment policy thrusts. Delineating skills acquired on-the-job would appear to be essential as an adjunct to school reform policy.

Given the long history of the debate about the costs and benefits of youth employment and the high prevalence of employment at early ages (Lewin-Epstein 1981; Nilsen 1984; Wescott 1981; Michael and Tuma 1984; Hotz and Tienda 1998), the lack of consensus regarding the benefits and costs of adolescent employment is quite remarkable. Disagreement about this critical matter is all the more striking because vast resources have been invested in youth employment and training programs since the 1960s, many of which are premised on the idea that employment during periods of school enrollment, if not economically beneficial, is at least not detrimental for youth (Friedlander et al. 1997; Grubb 1996; Carr, Wright and Brody 1996; but see Foster 1995, regarding disadvantaged black youth).

In this section we critically, albeit selectively, review evidence about the developmental, educational and labor market consequences of youth employment to assess what is known about these aspects of the transition from student to adult work roles. The aggregate trends in educational attainment, labor force participation, and unemployment described above can not reveal the complexity of the transition from school to work, and in particular, the propensity of youth to work while enrolled in school (Coleman 1984; Marini 1984; Ahituv et al. 1997; Hotz and Tienda 1998). Therefore, we first describe the pathways from school to work of black, white and Hispanic men and women during the 1980s and early 1990s. This profile helps understand the origins of diverse work experience profiles that produce unequal labor market outcomes among young adults. Subsequently we review empirical evidence about the advantages and

disadvantages of adolescent employment, focusing first on non-economic outcomes (i.e., psychological, development, and emotional well-being), and subsequently on the educational consequences and labor market returns to early work experience.

Labor Market Entry and Pathways from School to Work

Many researchers have documented the complex and varied set of paths by which youth move from full-time school to full-time work, as well as the bewildering variation in the temporal sequencing of school, employment, marriage and childbearing events during the early life course (Marini 1984; Hogan and Astone 1986; Rindfuss et al. 1987). These studies noted that the “usual” conception of the school-to-work transition as a move from full-time school to full-time work applies to only a small fraction of young men and women in the United States. Rather, most youth experience a range of part-time work activities, often while still in school, before they attain full-time employment. Coleman (1984) in particular underscored the extensive overlap between school and work, particularly for white men, who experienced both longer educational careers and earlier work activity than blacks.

From a human capital standpoint, the initial acquisition of work experience—when it occurs and how much is accumulated—is crucial for the degree of success of the transition from school to work because it has implications for employment and wage returns in subsequent years. Human capital theory and empirical evidence dictate that it is most advantageous for youth to invest maximally in schooling and/or to acquire work experience *prior* to their entry to full-time employment. Both types of human capital investment—formal education and years of work experience—improve youth’s subsequent employment prospects as well as the wage rates they obtain upon finding a job. Although there remains some controversy about the returns to early work experience, as we discuss below, there is widespread consensus that the most

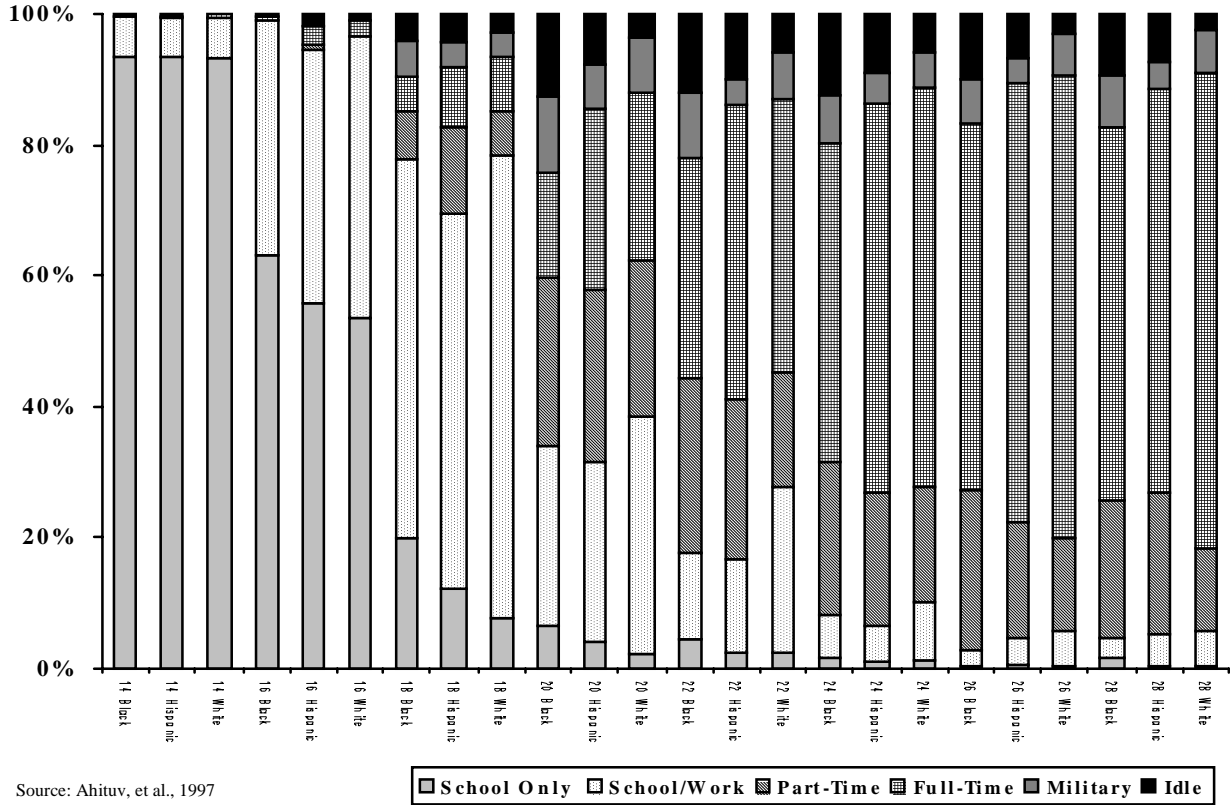
optimistic labor market prospects obtain for college-educated youth (Mishel, Bernstein and Schmitt 1997; Danziger and Gottschalk 1993; Levitan and Gallo 1991; W.T. Grant Foundation Commission on Work, Family and Citizenship 1988). This is because the employment and wage advantages that *may* accrue from early work experience eventually dissipate as better educated workers also become more experienced (Hotz et al. 1995; Mare 1995:193).

The latter point is important for understanding variation in young adult labor market outcomes in light of the educational trends presented above, and also recent evidence that the complexity of the transition to adulthood appears to be increasing as the period of “economic adolescence” is lengthened (Marini 1987; 1984; Hogan and Astone 1986). To illustrate, Figure 5 depicts this complexity in the sequencing of school, work, and military service over the early life course for the NLSY cohort of young men (Figure 5a) and women (Figure 5b). This Figure allocates youth at every age into six mutually exclusive activity states: (1) school only; (2) work and school; (3) part-time work; (4) full-time work; (5) military service; and (6) idleness.

The age-specific activity state distributions portray distinct *pathways* from school to work for white, black and Hispanic youth that result from differences in the timing of school departure with respect to labor market entry; differences in the likelihood of military activity across groups; and differences in the prevalence of idleness. Consistent with Coleman’s (1984) observations, whites, are much more likely to combine work and school than minorities; Hispanics are much more likely to withdraw from school prematurely and work part- or full-time, and blacks prolong schooling but delay labor market entry (Ahituv, Tienda and Hotz 1997). Another difference in pathways from school to work is that black men enlist in the military at higher rates than either white or Hispanic males (Kilburn 1993; Mare and Winship 1984). Yet a third difference is the large differentials in shares idle during young adulthood, which for young

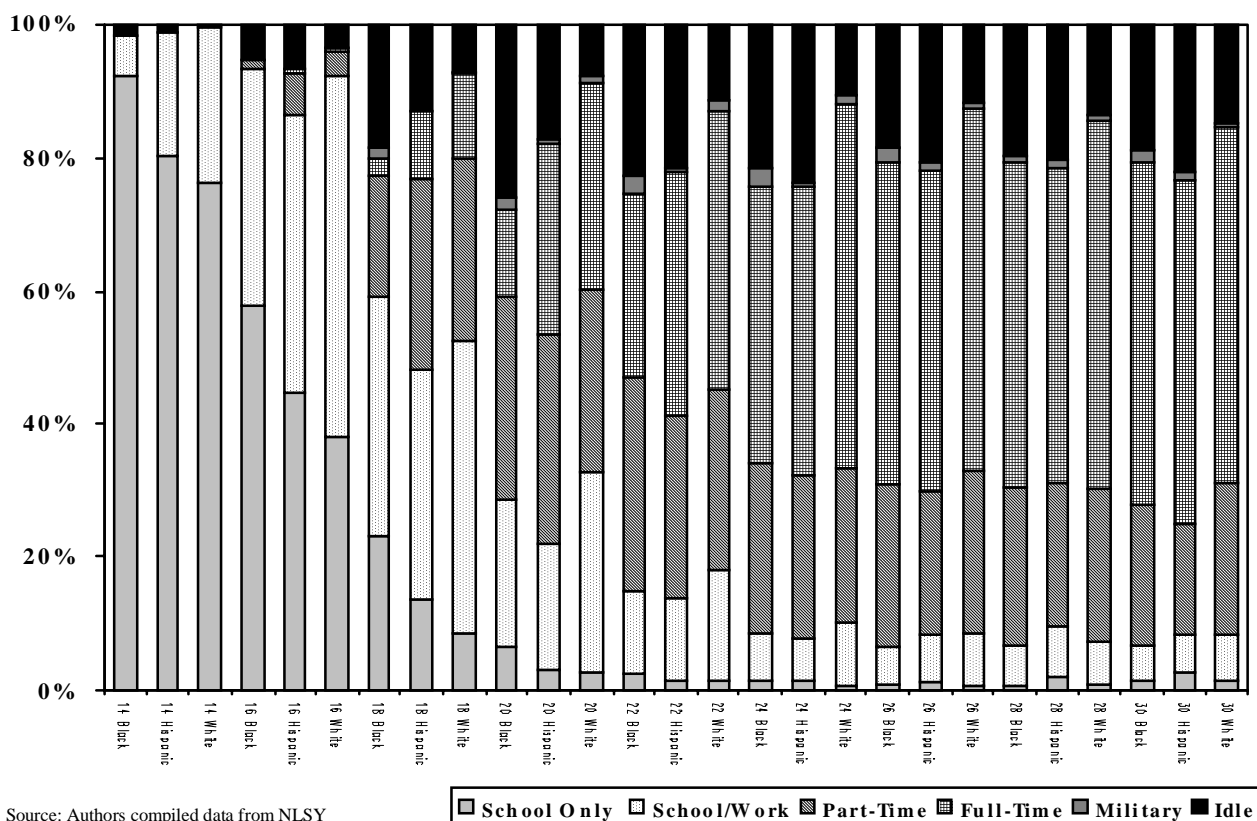
black men reaches double digits after age 20. Hispanic men experience less idleness than blacks, but higher rates than whites.

Figure 5A
Distribution of Young Men's Activity States by Age and Race/Ethnicity



Source: Ahituv, et al., 1997

Figure 5B
Distribution of Young Women’s Activity States by Age and Race/Ethnicity



Source: Authors compiled data from NLSY

For women, race and ethnic differences in school departure and labor market entry are governed only partly by the timing of births (Ahituv, Tienda and Tsay 1998). In general, women’s pathways from school to work parallel those of men except that Hispanic women both exit school prematurely and delay labor market entry compared to whites, which means that they are doubly disadvantaged in terms of accumulated human capital assets. Another difference is that higher shares of enrolled adolescent women work at young ages, probably because they are more likely than young men to participate in informal domestic jobs. Equally striking is the

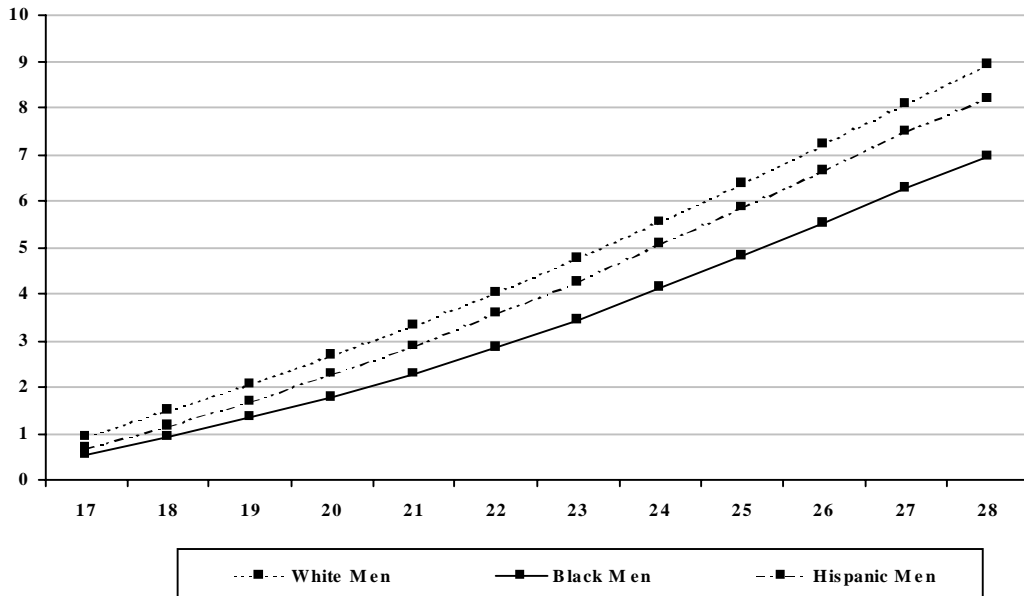
delayed labor market entry of young black women, despite their persistence in school at higher ages. Another noteworthy difference is the high level of idleness among minority women relative to whites after age 18.

These distinct pathways from school to work imply unequal levels of education and accumulated work experience, depending on the continuity of work activity subsequent to labor market entry. Obviously, youth who enter the labor force at younger ages have the opportunity to accumulate more work experience than their counterparts who delay employment activity. Acquiring work experience at the expense of further educational investments ultimately may have deleterious long-term consequences for labor market standing and economic well-being. But, acquisition of work experience as educational investments are also increased may result in compounded human capital assets. Because the consequences of youth employment depend on the continuity and intensity of early work activity, it is instructive to describe how demographic groups differ in their accumulation of work experience before reviewing studies of economic and non-economic impacts.

Figure 6 summarizes race and ethnic differences in accumulated work experience for young men (Figure 6a) and women (Figure 6b) as they transition from students to full-time workers. In contrast to the trends in graded schooling (Figures 2a and 2b), which revealed large schooling deficits between Hispanic versus black and white youth, during the 1980s and early 1990s Hispanic men and women acquired more work experience than their black counterparts, but less than whites. This is because, on average, Hispanic youth enter the labor market at younger ages, often at the expense of schooling (Ahituv, Tienda and Hotz 1997; Hotz and Tienda 1998). In both panels of Figure 6, the black experience curve is well below the white and Hispanic curves. Moreover, the ethno-racial experience gaps increase over time for both men and women. For

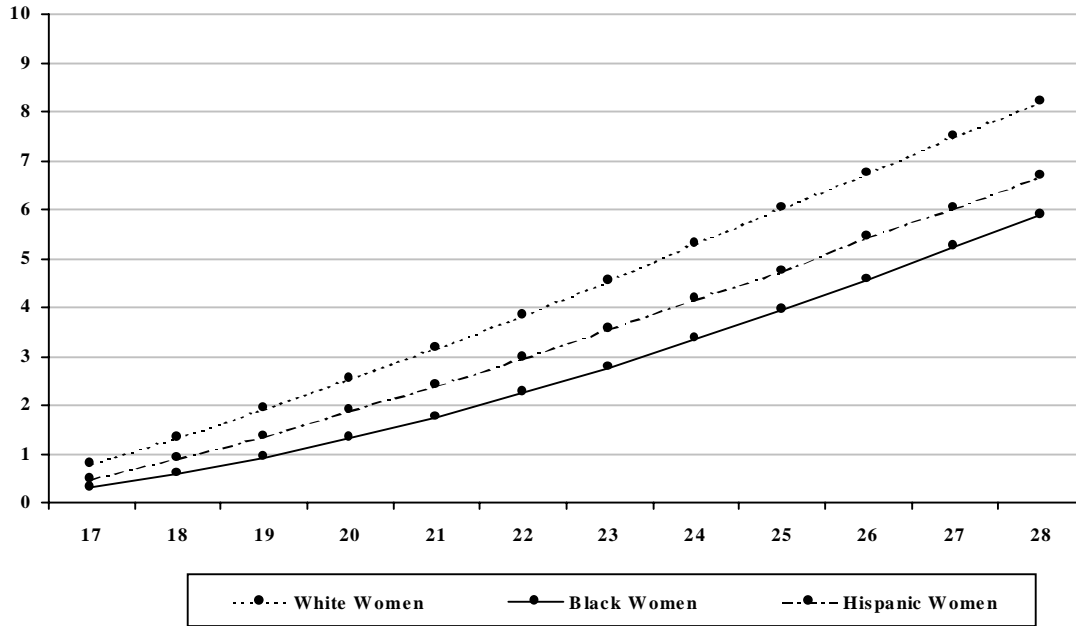
example, at age 18, black men had accumulated one-half year less work experience than white men, compared to one-third year less experience acquired by Hispanic men. By age 22, the experience gap between black and white young men rose to 1.2 years, but the Hispanic-white experience gap was only one-third as great at that age (0.4 years). At the last age we observe these youth, the experience gap between black and white men approached 2 years compared to only 0.7 years for Hispanic and white men.

Figure 6A
Age-Specific Cumulative Years of Work Experience: Young Men by Race and Hispanic Origin



Source: NLSY data. Tienda, et al., 1998

Figure 6B
Age-Specific Cumulative Years of Work Experience: Young Women by Race and Hispanic Origin



Source: NLSY data. Tienda, et al., 1998

For women, a roughly similar pattern obtains except that the magnitude of the experience differentials were roughly twice as large at most ages. For instance, at age 18, white women averaged .7 years more work experience than their black age counterparts and .4 years more than Hispanics. By age 22, the comparable differentials were 1.6 and .9 years for blacks and Hispanics, respectively. And, by the end of the observation period, white women averaged 2.3 years more experience than blacks and 1.5 years more than Hispanics. The lower levels of experience accumulated by women can be traced to their assumption of family responsibilities that limit the amount of time spent in the market (Forste and Tienda 1992; Ahituv, Tienda and Tsay 1998). However, widened experience differentials within sex groups suggest that other

factors are involved, notably group differences in educational investment decisions (Hispanics), in labor market opportunities (blacks), and differential selection into the three modal pathways from school to work (Ahituv, Tienda and Hotz 1997).

In sum, Figure 6 shows that black, white and Hispanic men and women accumulate unequal amounts of work experience in the transition from school to work because of group differences in the timing of labor force entry (Hotz and Tienda 1998) and in the stability of employment (Tienda, Donahoe and Tsay 1998). These differences in the acquisition of early labor market experience by race and ethnicity may help explain the differential success in employment and earnings growth that these groups experienced as they entered adulthood during the 1980s (Bound and Freeman 1992; Acs and Danziger 1993; and Moss and Tilly 1991). Moreover, as many studies have shown, the consequences of youth employment stem directly from the intensity of work as well as its continuity over the early life course, although there is more disagreement about whether the timing of labor force entry makes a difference for subsequent outcomes. In what follows we consider evidence about the consequences of adolescent employment for psychological development and economic well-being; for scholastic achievement and educational attainment; and for later labor market outcomes.

Psychological Development and Emotional Well-Being

The publication of the President's Science Advisory Committee report (1974) spawned a small industry of research to empirically evaluate claims that adolescent employment promoted positive socialization and developmental functions (see review by Mortimer and Finch 1992). Various studies examine whether and how work experiences of enrolled adolescents influence a range of attitudinal, cognitive and behavioral outcomes, including mastery of developmental tasks, mental health, control orientation, self-esteem and deviant activity. Researchers concerned

with psychological and developmental consequences of adolescent employment align in roughly two camps: those who emphasize positive benefits and those who underscore negative consequences.

In the former camp are developmental psychologists who argue that early work experience, even in entry-level dead-end jobs, socializes youth in ways conducive to later career success (Mortimer and Finch 1992; Shore 1972; see also Meyer and Wise 1982 for an economic perspective). For example, Lorence and Mortimer (1985) argue that there is a highly formative stage when youth can be imprinted about various aspects of work. Moreover, Mortimer, Finch, Owens and Shanahan (1990) claim that the process of frequent job changing among youth is developmental inasmuch as it represents a progression from less to more complex jobs, even in the absence of a parallel increases in higher wages. According to these authors, advancement from more to less complex jobs is often accompanied by more intense involvement in work activity. Steinberg, Greenberger, Jacobi and Garduque (1981) suggest that working may contribute to social development by requiring youth to shift between diverse roles and interact frequently with strangers. Mortimer, Ryu, Dennehy and Lee (1992) claim that opportunities to learn useful skills shape occupational value formation. Mortimer and Finch (1986) also believe that experiences with autonomy at work are crucial for raising self-esteem.

In a recent overview paper, Mortimer and Finch (1996) concede that the consequences of part-time work depend on the quality of work experience and the context in which it occurs (see also Markward 1991). Unfortunately, such highly conditional generalizations do little to clarify the concrete circumstances that translate adolescent employment experiences into positive adult outcomes. One reading of this statement is that studies are inconclusive about general points, and more conclusive about specific results for particular outcomes. Although Mortimer and

Finch (1992) conclude that working students do not necessarily fare worse academically, there is not consensus on this position, as we show in the following section. Moreover, several authors acknowledge that part time employment is linked to problem behavior, depending on the hours devoted to market activity (Mortimer, Finch, Shanahan and Ryu 1992; Greenberger and Steinberg 1986; Ruggiero, Greenberger and Steinberg 1982; Steinberg, Fegley and Dornbush 1993; Tanner and Krahn 1991).

Much of the conventional wisdom about positive socialization effects relies on a common sense understanding of the adolescent workplace. However, there is also ample evidence that youth work produces negative socialization experiences (Mortimer, Finch, Shanahan and Ryu 1992; Greenberger and Steinberg 1986:52), with some analysts arguing that this is because the adolescent workplace has been transformed in ways that make negative socialization more likely (Greenberger and Steinberg 1986). That is, students employed in jobs where they can develop skills experience less unemployment and higher wages in their early labor market experience, but fewer and fewer of employed students hold these kinds of jobs (Stern et al. 1990).

In a direct challenge to the assertions and recommendations of the President's Science Advisory Committee Panel on Youth (1974), Steinberg and his various associates claim that there is no evidence of a link between high school work experience and socialization of youth into the adult world (Greenberger and Steinberg 1986; 1981; Greenberger et al. 1980; Steinberg and Greenberger 1980; Steinberg 1982). In contrast to Shore (1972) and others who argue that working students are exposed to adult role models who shape occupational values and aspirations, Greenberger and Steinberg (1981) claim that age-segregated workplaces limit the amount of interaction between youth and adults. Manning (1990) shows that youth employment

diminishes parental surveillance, particularly when teens work long hours. Greenberger and Steinberg (1986) argued that early employment experience may actually strengthen peer culture and increase deviance (but not serious criminality) through negative socialization processes. These negative socialization experiences are manifested in more frequent absences from school as well as increased use of alcohol, nicotine and other drugs (Greenberger and Steinberg 1986; Mortimer, Finch, Shanahan and Ryu 1992; Ruggiero, Greenberg and Steinberg 1982; Tanner and Krahn 1991). Shanahan (1992) alleges that youth employment heightens depression, particularly among youth working long hours.

In sum, claims that youth employment experiences have important consequences for psychological well-being, however compelling theoretically, have proven difficult to establish empirically. Thus, there is little consensus about whether and how youth employment influences socio-psychological well-being. Mortimer and Finch (1992) acknowledge that youth's self-perceptions of the benefits of working may be more apparent than the actual measurable consequences, and if perceptions drive behavior, positive effects may dominate. Unfortunately, most studies that evaluate socio-psychological effects of adolescent employment suffer serious methodological flaws, most notably selection biases and failure to control for unobserved heterogeneity (Caspi et al. 1998). That is, identifying associations between work status and various socio-psychological outcomes can not address whether the differences arise from unobserved characteristics that sort youth into employment. In fact, many of the differences between workers and non-workers exist prior to employment (Schoenhals, Tienda and Schneider 1998) and have little bearing on how employment experiences influence socio-psychological well-being. Although more recent papers have attempted to address selection biases (e.g., Steinberg, Fegley and Dornbush 1993), few analysts of psychological outcomes have

satisfactorily resolved this problem and none has seriously considered the challenges of unobserved heterogeneity (but see Caspi et al. 1998).

Education Consequences of Adolescent Employment

Proposals to strengthen the transition from school to work by encouraging enrolled youth to work presume that employment does not undermine scholastic achievement or educational attainment (GAO 1991). This assertion is based on the pervasiveness of high school employment and the fact that the majority of enrolled workers graduate. Nevertheless, there remains considerable uncertainty about the educational consequences of adolescent employment (see reviews in Schoenhals, Tienda and Schneider 1998; Tienda and Ahituv 1996; Hotz et al. 1997). Empirical evidence about the effect of teenage employment on academic outcomes is mixed. Conclusions depend on the outcome of interest; the intensity, duration, and timing of employment; and on methodological considerations. The single clear point of consensus seems to be that deleterious educational consequences are more likely when enrolled teenagers work in excess of 20 weekly hours (Schoenhals, Tienda and Schneider 1998; D'Amico 1984; Levitan and Gallo 1991; Marsh 1991; Manning 1990; Steel 1991).

Several studies have investigated how adolescent employment affects scholastic performance. Most studies find that early employment reduces time spent on homework (D'Amico 1984; Marsh 1991; Lewin-Epstein 1981) and that working students have less "free time" at school for non-academic activities (D'Amico 1984). Also, teachers report that students who work seem more fatigued in class (Bills, Helms and Ozcan 1995). Student workers are also more likely to be absent from school (Marsh 1991). Finally, students who are unable to maintain their time commitment to school-related activities may find less time to enjoy adolescence (Greenberger and Steinberg 1986).

Schoenhals, Tienda and Schneider (1998) examine the short-term educational and personal consequences of youth employment and attempt to distinguish between time-allocation effects, through which employment cuts into leisure and homework time, and socialization effects, which foster attachment to the world of work. Finding no evidence that work during high school undermines scholastic performance of student workers, they argue that much of the adverse effect of youth employment on academic outcomes (grades and time spent on homework) found in previous research is attributable to pre-existing differences among youth who elect to work low, moderate or high hours per week. They show that the main effect of youth employment is on leisure activities: the more students work, the more they decrease the time they spend watching television relative to other students. These authors do not consider whether teenage employment influences the likelihood that youth withdraw from school.

Tienda and Ahituv (1996) evaluate the influence of average weekly hours worked on the odds of remaining in school using the NSLY. They find that excessive commitment to work among enrolled adolescents not only increases the likelihood of premature withdrawal, but also lowers the odds of continued education beyond secondary school among those who do graduate. They identify 11th grade as a particularly vulnerable point in adolescents' school careers because it represents the first real choice between school and work for students who are not age-grade delayed. Another key finding is that school continuation decisions of disadvantaged youth, especially disadvantaged Hispanic youth, are more sensitive to variation in hours worked than are decisions of non-disadvantaged youth. Steel (1991) also found race and ethnic differences in the influence of early work experience on subsequent school enrollment probabilities, with the magnitude of effects depending on the intensity of work activity. Tienda and Ahituv (1996) show that youth who do not work at all are at extremely high risk of dropping out of school. Taken

together, their findings that excessive work or no work at all are associated with premature school withdrawal suggests that a one-size-fits-all strategy to connect enrolled youth to jobs may be misguided. At a minimum, their findings, which are based solely on young men, suggest a need to re-evaluate the wisdom of requiring enrolled teenagers, particularly those from disadvantaged backgrounds, to work (see also Foster 1995).

Ahituv, Tienda and Tsay (1998) reached similar conclusions for young women. Consistent with Eckstein and Wolpin (1997), they show that young women who have some attachment to the labor market are significantly less likely to withdraw from school either during secondary school or college. This finding supports current policy initiatives that recommend employment as a way of strengthening the connection between school and work. However, a second result—the strong negative effect of average weekly hours on school continuation decisions—tempers this inference. Like most prior studies, Ahituv, Tienda and Tsay (1998) conclude that young women commit excessive time to work when they are enrolled are at great risk of premature school withdrawal and are highly unlikely to continue beyond secondary school if they do graduate.

Some research suggests that students are more vulnerable to the effects of employment early in their school careers (Greenberger and Steinberg 1986). Schoenhals, Tienda and Schneider (1998) show that the conflict between school and work may not begin until after the tenth grade. Their results, based on the National Educational Longitudinal Survey:88 are consistent with those produced by Tienda and Ahituv (1996) using the NLSY. This idea also accords with Lorence and Mortimer's (1985) notion that youth are more vulnerable to imprinting from work experience at certain periods of development. Because it is difficult to ascertain the period of vulnerability to imprinting, which probably differs among advantaged and

disadvantaged youth, this issue warrants further investigation. This line of inquiry promises new insight about the forces that predispose Hispanic youth to withdraw from school or truncate their educational careers. And, it is also worthwhile to inquire which groups are particularly vulnerable to working excessive hours while enrolled in school, and why this is so. Precision about the periods of greatest vulnerability would help target those youth at the highest risk of experiencing deleterious educational outcomes which could compromise their long term employment options.

Labor Market Consequences of Adolescent Employment

Labor market returns to work experience acquired at early ages has been the subject of extensive investigations, particularly since the availability of longitudinal data made linking early and later work episodes possible. Research on the impact of early work experience on the transition from full-time student to full-time worker has investigated the effect of initial, post-schooling employment experiences on subsequent employment, unemployment and wages (Ellwood 1982; Meyer and Wise 1982; D'Amico and Maxwell 1994; Freeman and Holzer 1986; Carr, Wright and Brody 1996; Wolpin 1989; Chaplin and Hannaway 1996; Lynch 1989); the effects of work while in college on college completion rates and subsequent wages (Ehrenberg and Sherman 1987; Hotz et al. 1997); and the effect of early job turnover on subsequent wage growth and job mobility (Bartel and Borjas 1982; Mincer 1986; Topel and Ward 1992; Loprest 1992; Light and McGarry 1998).

The vast majority of early studies generally find positive effects of working while in high school on subsequent rates of employment, hours of work and wage rates, especially when these initial work episodes do not involve excessive hours (Coleman 1984; Stevenson 1978; Stephenson 1981; Meyer and Wise 1982; D'Amico 1984; Smith 1985; Mortimer and Finch

1986; Carr, Wright, and Brody 1996; Ruhm 1997). For example, most researchers who have focused on short-term labor market benefits agree that youth who work during high school are less likely to be unemployed during early adulthood and may even enjoy modest early career wage benefits (Ellwood 1982; Meyer and Wise 1982; Becker and Hills 1983; Carr, Wright, and Brody 1996). However, several studies acknowledge that some groups (e.g., young blacks and economically disadvantaged youth) encounter greater labor market difficulties than whites (Freeman and Holzer 1986; Foster 1995; Chaplin and Hannaway 1996; Becker and Hills 1980; D'Amico and Maxwell 1994; Deseran and Keithly 1994).

Even early studies that were generally optimistic about the salutary benefits of adolescent work on subsequent employment outcomes questioned whether the positive benefits would endure into early adulthood (Meyer and Wise 1982; Ellwood 1982). However, because the definition of early work experience differs across studies, with most focusing on post-high school employment (Meyer and Wise 1982; Gritz and MaCurdy 1992; Lynch 1989), it is difficult to compare conclusions about the desirability of teenage employment because the long-term indirect effects via school continuation decisions can not be evaluated. This limitation is problematic not only because the vast majority of youth acquire some work experience before leaving high school (see Figures 5 and 6), but also because many youth, particularly the economically disadvantaged, withdraw from high school early, often because of excessive work (Ahituv, Tienda and Hotz 1997; Hotz et al. 1997).

Currently there exists diversity of opinion about the labor market consequences of early work experience, which range from strong optimism (Carr, Wright and Brody 1996), to caution about the endurance of positive effects on later outcomes (Meyer and Wise 1982; Ellwood 1982) to doubt about whether any significant effects exist at all (Hotz et al. 1997). At one extreme,

Ruhm (1997:770) asserts that “student employment raises future productivity through skills, knowledge, work habits, and experience provided on-the-job by far more than it detracts from educational human capital investments.” Accordingly, he concludes that light to moderate work commitments should be encouraged. Similarly, Carr, Wright and Brody (1996) find that the slight negative consequences of high school employment on academic attainment are overwhelmed by the positive employment effects a full decade later. Using a different methodology on the same data, as Hotz et al. (1997) reach the opposite conclusion. Specifically, they claim that working while in school does not generate a return over and above that accruing to the additional schooling that working students acquire. Thus, they argue that young men would achieve much higher wages by attending school full-time rather than combining school with work. This result is consistent with mounting empirical evidence that educational credentials had greater payoffs for wage growth during the 1980s relative to prior periods. One implication of these findings is that recent efforts encouraging enrolled youth to acquire work experience may not render the beneficial effects suggested by others.

The divergent conclusions of early and later studies may be attributable to changes in labor market opportunities confronting youth in the 1980s versus the 1970s (Tienda et al. 1998; Becker and Hills 1980; 1983; Lynch 1989; Meyer and Wise 1982). However, it is not obvious why Ruhm (1997) and Hotz et al. (1997) reach opposite conclusions using the same data. One important difference between these two studies is their implementation of controls for unobserved characteristics that sort youth into varied pathways from school to work, each with different implications for human capital accumulation. The many ways workers differ from non-workers are important because they signal pre-existing differences among youth that are likely to influence both investment and employment choices (Schoenhals, Tienda, and Schneider 1998;

Foster 1995). Ruhm (1997) uses a variant of the selection-correction methodology proposed in Heckman (1998) and instrumental variable (IV) methods, while Hotz et al. (1997) model a more comprehensive set of school-to-work activity states using a robust semi-parametric econometric strategy for estimating life-cycle behavior (Cameron and Heckman 1992).

That methodological differences result in divergent conclusions is troublesome and warrants additional replication to verify the reliability of the conclusions reached by Hotz and associates, particularly for the design of school-to-work programs for noncollege bound youth. Furthermore, there is a pressing need to conduct similar analyses for young women, whose labor force activity rates have been converging with those of men at earlier ages. Although the main inferences that Ahituv, Tienda and Tsay (1998) draw regarding young women's schooling choices do not directly address questions about the wage returns to education, they speculate that excessive commitment to work during school will likely induce long-run loss in wage growth via lower investments in formal schooling.

Summary and Recapitulation

The main take-away message from the youth employment literature is that the educational consequences of adolescent employment are more important than the acquisition of work experience per se. Of course, this conclusion depends on whether youth are bound for college, and how much they work while enrolled in school. Many effects of early employment do not register immediately as adult employment, unemployment and wage opportunities. Instead, they operate through short-term outcomes that determine eventual educational attainment and, ultimately, long-term labor market success. Student workers may be absent from school more often, invest less time in homework, and earn lower grades, for example. These

short-term behavioral consequences will have important long-term ramifications if students who achieve academically continue in school longer and eventually earn higher wages, surpassing those of students with greater amounts of work experience. Given rising returns to education, the effects of early work experience on educational attainment may be more important to longer-term stratification processes than the modest early-career wage benefits of labor market experience. Therefore, whether or not the labor market returns to adolescent employment were positive in the past, *for the future it would appear most prudent to emphasize strategies that increase educational attainment.*

Another clear message is that the amount of time devoted to the market should be kept to levels that do not undermine educational pursuits. Virtually all studies conclude that as the time enrolled youth devote to the labor market increases, the likelihood of deleterious educational, personal and social (e.g., deviance) consequences rises. Although some research suggests that students are more vulnerable to the effects of employment early in their school careers, there is no clear consensus about the period of greatest vulnerability which, in any event, appears to depend on the socioeconomic background of youth (Foster 1995; Greenberger and Steinberg 1986). This issue warrants further investigation because it has direct implications for the design of programs for noncollege bound youth. The available empirical evidence does not provide a sufficient basis for eliminating youth employment from the design of school-to-work programs, provided that the time commitment to work activities is kept to a minimum and work activity reinforces the goal of maximizing educational attainment. For noncollege bound youth, holding a job may be essential to forge institutional links between schools and firms (Levitan and Gallo 1991; Sum et al. 1996; 1997; Sum and Fogg 1996). We investigate this issue in the following section which reviews private and government school-to-work programs.

IV. Private and Government Programs for Youth

Given the prevailing perception that significant proportions of American youth experience a rocky transition from school to work; that there are no clear pathways from high school to career; that schools are not cultivating appropriate labor market skills; and that students often find class work irrelevant and unrewarding, the number of advocates for structured school to work programs has been growing. Undergirding efforts to revitalize the school to work movement are two significant pieces of legislation, the “twin pillars of the recent school-to-work effort” (Noble 1997): the 1990 Carl Perkins Act and the 1994 School to Work Opportunities Act (STWOA). The Carl Perkins Act provides funding for programs that encourage the integration of vocational and academic education, and as such envisions a less radical restructuring of schools’ approach to the school to work transition than the more recent STWOA legislation. Examples of programmatic efforts undertaken within the context of the Carl Perkins Act, for instance, include vocational schools trying to enhance the academic content of their educational programs and magnet schools moving to increase the amount of contextual learning in their curricula (Bodilly et al. 1993).

The more expansive STWOA legislation of 1994 reflects the shift in emphasis over the past decade or so from a national focus on the labor market problems of minority youth to a broadened concern with the transition process for the non-college bound in general (Osterman 1995). STWOA is a five-year effort to fund the creation of a school-to-work transition system that includes school-based, work-based, and connecting activity components. Unlike previous legislation, STWOA places particular importance on the construction of a school to work *system* involving collaboration between employers, organized labor, educators, public agencies and

community groups, and students rather than a disparate collection of unrelated programs (Hershey et al. 1997).

The School to Work Opportunity Act envisions a school to work system composed of several different elements. This includes (1) academic instruction, including the use of new pedagogies, such as more applied teaching methods; (2) career development activities to increase student awareness of their interests, options, and goals; (3) vocational skills training integrated with academic and/or remedial instruction as appropriate; (4) work-based education coordinated with school-based instruction; and (5) ‘connecting activities.’ The latter serve to link employers, students, and schools, including post-secondary institutions, to form an explicit hierarchy of education and training opportunities (Grubb 1996; Hershey et al. 1997). The STWOA legislation provides states with seed money which is distributed to local communities to finance the design and implementation of innovative school to work plans. States and localities have broad latitude about how to design their school to work systems and which of the many possible program types to include in their plans. Below, we describe the most common types of school to work programs, discuss their possible benefits and disadvantages, and review available program evaluations.

School to Work Programs

The most common approach to preparing the non-college bound for work in the American educational system has and continues to be vocational education (Rosenbaum 1996). While nearly all U.S. high school students completed at least one vocational course in the early 1990s, less than 10 percent majored in a vocational education curriculum (National Center for Education Statistics 1997). Vocational curricula are distinct from general or academic curricula and focus on a particular occupational area, such as allied health services, agriculture, business

and commerce, or trade and technical fields. Through a separate track organized around occupational education, vocational students continue to take academic classes that may or may not be tailored to their specific vocational interest. The original proponents of vocational education contended that occupational training more closely addressed the needs of students not planning to attend college by teaching necessary job and practical skills; that the programs served students better suited to applied than academic learning; that vocational tracks served as conduits to employers and prevented aimless drifting in the labor market; and that by increasing workers' skills, America would become more competitive in the international economy.

Evidence on the benefits of vocational education, though, is mixed. While some reviewers have concluded that there is little evidence of positive effects of vocational education in terms of wage gains or employment (Kantor 1994) specific studies do find significant job benefits. Analyses of early NLSY data and HSB data find positive effects of vocational education on wages and the likelihood of employment (Campbell et al. 1986 and Lewis et al. 1993 as cited in Rosenbaum 1996). Furthermore, positive effects seem to depend on the population segment under consideration and the specific focus of the vocational program itself. There is evidence that young women benefit more than men from enrollment in vocational tracks (Arum and Shavit 1995; Rumberger and Daymont 1984; Kang and Bishop 1989), that gains in employment and wages are larger for minority than non-minority youth (Lerman and Pouncy 1990; Foster 1995), and that positive benefits accrue only to business and commerce programs for women and trade and technical programs for men (Arum and Hout 1995). The benefits of vocational education may also depend on securing a job in the field within which training was received. If such a job is not obtained, vocational education yields no economic returns (Lerman and Pouncy 1990; Bishop 1988 and Wirt et al. 1989 as cited in Rosenbaum 1996). Less than

one-third of vocational students work in their field after graduation, and this mismatch between training and actual employment remains one of the most serious failures of vocational education today (Lerman and Pouncy 1990).

Cooperative education, or “co-op,” is a specialized form of vocational education that has been in existence in the United States since about the turn of the century. Like vocational education in general, it serves only a small number of the nation’s high school students: less than 4 percent of high school students were enrolled in cooperative education in the 1989-90 school year (Bailey and Merrit 1993). Co-op typically consists of part-time, paid employment filling half of the school day for which students receive high school credit. Though half of the day is spent in academic classes that are approved by a co-op coordinator, coordination between these classes and the work experience are usually weak, and students earn no recognized workplace credentials through their employment (Olson 1997). The purported benefits of cooperative education include work experience in better quality jobs than students could obtain of their own accord, the opportunity to earn wages while still in school, and the high school diploma itself (Bailey and Merrit 1993). While evaluations suggest that cooperative education clarifies career goals and increases student self-confidence, motivation, and school satisfaction (Kerka 1989), there is no evidence that it yields post-graduation employment gains (Stern et al. 1990 as cited in Bailey and Merrit 1993).

Career academies are a more recent innovation in the spectrum of school-to-work programs. First established in 1970 in Philadelphia, there are now more than 300 such programs nationwide (Olson 1997). A career academy is organized as a school-within-a-school that houses a relatively small number of students and teachers who focus on vocational, occupational, or industrial themes such as electronics, health careers, finance, or tourism. Academic

coursework is tailored to the particular occupational focus of the academy and should include more applied learning opportunities than general or college-preparatory curricula. Another feature of the career academy is the involvement, to varying degrees, of local employers who serve as advisors or mentors to students, help with curricula, and provide job shadows and/or in-school or summer internships or work experience. Career academy students are thought to benefit from the more intimate nature of the academy, the exposure to careers and concrete workplaces, and the increased relevancy of their academic coursework. A related but less intensive and restrictive program initiative is the career major or occupational-academic cluster. Schools pursuing the career major approach provide all students with the opportunity to explore career options by exposing them to a number of careers and then asking them to focus on one or more career pathways by participating in a series of courses related to their interests (Bailey 1995).

Evaluations of career academies find positive effects on intermediate outcomes such as student motivation and aspirations, but whether academies have longer-term effects on schooling and employment outcomes is indeterminate. Evaluations of California's academies found evidence of lower dropout rates compared to similar non-academy students, but no significant differences in employment and post-secondary school attendance patterns (Dayton et al. 1989 as cited in Bailey and Merritt 1993). Because the students under study were not involved in academies long enough to determine graduation and employment effects, MDRC's recent evaluation focuses instead on whether career academies provided an atmosphere more conducive to student motivation and learning than normal high schools. While students reported increased motivation and engagement in school, their behaviors did not actually indicate increased

engagement (Kemple 1997). Other anecdotal and qualitative studies of career academies find student satisfaction with their programs to be high (Olson 1997).

What distinguishes technical preparation, or “tech-prep” programs, is their linking of the last two years of high school with community college programs in specific occupational areas, such as health careers, industrial engineering, or automotive technologies (Olson 1997). By 1990, there were over 120 tech-prep programs in 33 states (Delaware Consortium on Technical Preparation Programs 1991 as cited in Bailey and Merritt 1993), and the Carl Perkins Act included funds to encourage the further implementation of this school-to-work model. During high school, students enrolled in tech-prep curricula are required to demonstrate proficiency in core subjects such as mathematics and science so that they are prepared for the technical coursework they will encounter at the post-secondary level. There may or may not be a work-based learning component to tech-prep programs, but local employers are expected to play at least coordination and consultation roles (Bailey and Merritt 1993).

The main impetus behind tech-prep is the idea that forging formal links between secondary and post-secondary education encourages students’ continued education. Because students take high school classes tailored to the community college program of their choice, they do not arrive unprepared and need not take remedial or repetitive classwork. As with many emerging school-to-work program designs, the impact of tech-prep programs on education and work outcomes has not been systemically evaluated. However, available evidence suggests that this approach can lead to higher academic achievement, decrease premature high school withdrawal, and increase post-secondary school enrollment (Bailey and Merritt 1993).

While traditional vocational education, cooperative education, career academies, career clusters, and tech-prep programs all contribute to the recent upswing in the school-to-work

movement, youth apprenticeships have attracted the most attention in the popular press and, to some extent, policy dialogues. Involving much more extensive employer-involvement and work-based learning components than other school-to-work programs, the youth apprenticeship model is the most ambitious program under discussion because it would require the most radical restructuring of the American educational system if implemented on a large scale. Youth apprenticeships can be thought of as one end of the spectrum of school-to-work programs, with basic educational improvement and reform occupying the other end and all other programs discussed above occupying the middle ground (Lerman 1996).

To a large extent, support for youth apprenticeships in the United States derives from the perceived success of the German apprenticeship system (Bailey and Merritt 1993). However, proponents recognize that differences between the American and German context would require the adaptation of the apprenticeship model to the realities of U.S. economic, political, and educational systems and U.S. social sensibilities (Lynch 1994). Basically, youth apprenticeship systems feature a “contractual agreement between employers, workers, and schools whereby a seventeen- to eighteen-year-old (high school junior or senior) combines work-based and school-based learning over a two- to three-year period to achieve a certified competency in a career field along with a high school degree” (Lerman 1996: 144). This rather simple sounding description, of course, belies the complexity of the arguments for and against the youth apprenticeship model and the complexity of any actual large-scale implementation.

Proponents of youth apprenticeships see many advantages to this type of school-to-work program. Overall, the high school experience of apprenticeship students is expected to be a more rewarding one. Contextual learning approaches would integrate the academic and work-based elements of the apprenticeship program and increase the relevancy of classwork to the world of

work, thus bettering the fit between school and the non-academically oriented student. Presumably, student motivation would increase as they visualized links between academic subjects and skills required for specific occupations. Assignments of more coveted apprenticeships and, hence, better post-graduation jobs to higher-achieving students also should increase incentives to perform scholastically and to appreciate the value of academic subjects. And, as school satisfaction and achievement increase, school retention should also improve. The work-based learning element of apprenticeships is thought to be particularly valuable. Students would have increased contact with mentoring adults concerned with their skill development. Because vocational training of apprentices occurs with real employers, the relevancy of the skills learned to current labor force needs would be assured. The quality of student employment—the apprenticeship—would be higher than jobs students found on their own and higher than those provided through traditional co-op programs. Finally, by providing explicit links between students, schools, and employers, the apprenticeship model should reduce the drifting or thrashing period characteristic of the current school-to-work transition, and hasten the onset of both social and economic adulthood.

Arguably, apprenticeships are particularly appealing for disadvantaged and minority youth, whose school-to-work transitions are often problematic. Apprenticeships offer disadvantaged students the constructive adult ties they often lack, discourage participation in illicit or harmful behaviors, and, most importantly, provide the formal links to employers upon which more advantaged youth depend (Lerman 1996; Osterman 1995; Lerman and Pouncy 1990; Olson 1997).

The apprenticeship model is not without its critics, though. One issue often raised is whether sufficient employer interest exists to expand apprenticeships programs to a meaningful

level. Olson (1997, p. 240) suggests that apprenticeships are most likely to succeed “in industries with a deep concern for quality, a desperate need for qualified workers, and enough prosperity to invest in the future.” Economists who critique the youth apprenticeship model, as summarized by Lerman (1996), contend that it creates barriers to employment and encourages discrimination against women and minorities. On a related note, the experiences of Turks in Germany, who participate in the apprenticeship system less extensively and in less desirable jobs than native Germans (Bailey and Merritt 1993), is a further caveat to the assertion that apprenticeships would offer particular benefits to minority youth. Lynch (1994) also cites the increased attachment to a specific occupation that may become obsolete in the future and the tendency to model apprenticeship training on manufacturing jobs that are declining as a share of all jobs, as potential weaknesses of the apprenticeship model.

Kantor (1994) questions the true severity of the youth labor market problem and the notion that focusing on training, as opposed to broader policies designed to discourage discrimination and ensure full employment, is the best way to improve young adult employment prospect. Furthermore, he cautions that the purported benefits of a youth apprenticeship system are remarkably similar to those originally attached to vocational education (benefits which he argues have not in fact accrued) and notes the possibility that apprenticeships can become yet another form of prejudicial tracking. The notion that underlying the youth labor market problem is a skills crisis and that apprenticeships would address this issue by improving skill levels, raising productivity and wages, and increasing the number of high-quality jobs available is also questioned (Kantor 1994; Osterman 1995).

While the programs reviewed above are intended to improve the school-to-work transition process for non-college bound youth, targeted or ‘second-chance’ job training

programs are designed to address the training needs of a narrower segment of the population, namely disadvantaged and/or minority youth whose labor market problems are most severe. The major economic rationale for these types of programs is that they correct market or institutional failures, such as the inability of the disadvantaged to pay for training, and that they compensate for poor public school performance by giving drop-outs another opportunity to achieve (Friedlander et al. 1997). Examples of federally-funded job training programs for youth have included Job Corps, the longest running youth employment program, JOBSTART, JTPA, CETA, and STEP.

With some caveats, however, the evidence overwhelmingly suggests that job training programs for youth have failed to provide significant employment or earnings gains, or have provided such limited benefits that they fail to move youth out of poverty (Grubb 1996; Osterman 1995; Friedlander et al. 1997; Sum and Fogg 1996; Heckman 1998). Why don't job training programs work? According to Grubb (1996) the reasons are many, including their limited scope and time frame; a misguided emphasis on job placement, which assumes that the problem is unemployment rather than lack of skills; the low quality of job-related training provided and its lack of relevance to jobs accessible to youth; the use of ineffective and inappropriate pedagogy; and the special problems of youth and the youth labor market, including a negative youth culture, the compounding of multiple social problems experienced by inner city youth, and the reluctance of employers to hire young workers. This is not to say that no youth programs have been produced positive effects. However, positive effects of second chance programs tend to be associated with smaller demonstration programs and these often are based on less rigorous evaluations than the random assignment experiments conducted on the major federal programs (see, for example, Walker 1997; and American Youth Policy Forum 1997).

Smaller, more intensive demonstration programs may indeed offer significant benefits (e.g., STRIVE), but their relevance to national policy is questionable since it is doubtful that they could be replicated on a scale large enough to recommend them as a viable policy alternative.

V. Research and Policy Implications

We began our investigation of the current school-to-work transition by seeking to reevaluate the extent of the problem faced by youth as they move from the student to the worker role. We found that early labor market difficulties remain concentrated among the most disadvantaged youth and ethnic minorities. Academic skills are lower among urban and ethnic minorities, and Hispanics continue to exhibit troubling high school drop-out rates. While minorities of both sexes show higher unemployment rates than whites, joblessness is most serious for black males. Groups experiencing a delayed transition to stable employment include black youth and high-school drop-outs.

Trends in wages, however, do present more generalized labor market problems for youth. Wages have fallen more for young workers than for experienced workers, though they have just recently begun to rebound. In addition, the gap between the wages of high school- and college-educated workers, although beginning to stabilize, has increased appreciably. Therefore, earning a living wage has become difficult for high school drop-outs and, increasingly, for those who do not pursue higher education. Minorities, because they disproportionately make up the lower educational groups, are again most impacted by these wage trends.

That school-to-work transition problems are not endemic does not mean that youth need not make careful human capital investment decisions. Wage trends, in fact, highlight the necessity of prudent early strategies. Given the opportunity to invest in schooling or acquire

early work experience, the empirical evidence demonstrates the clear advantage of maximizing educational attainment. Youth who underinvest in education face grim labor market prospects. Each additional year of schooling, whether at a junior college or a four-year institution, is associated with significant wage gains (Kane and Rouse 1995). Although there is debate about the consequences of early work on socio-psychological health, educational achievement, and later labor market outcomes, one thing is clear: extensive involvement in the labor market is detrimental to youth wellbeing. Negative outcomes across several domains are associated with long work hours while in school.

Thus, the amount of time devoted to the labor market while enrolled in school should be kept to levels that do not undermine educational pursuits. Although some research suggests that students are more vulnerable to the effects of employment early in their school careers, there is no clear consensus about the period of greatest vulnerability. The available evidence does not provide a sufficient basis for eliminating youth employment from the design of school-to-work programs provided that the time commitment to work activities is reasonable and that the work activity reinforces the goal of maximizing educational attainment.

Our review suggests that the growing interest and investment in school-to-work programs like vocational education, co-op, career academies, tech-prep, and apprenticeships can not be justified on the basis of a wide-spread and increasing crisis in young adult labor market outcomes. Furthermore, it is not clear that the problem of low wages, which is of more general concern for non-college bound youth, can be addressed by school-to-work programs or other forms of educational reform. In other words, demand factors are part of the problem, and work preparation programs focus on supply-side solutions (Kantor 1994; Osterman 1995).

However, there are compelling reasons to recommend the STOWA approach and some of its programs as sound public policy. As highlighted above, the key to a successful transition entails ensuring that educational investments are maximized. This suggests that school-to-work programs, at least for the general youth population, should be evaluated more on the basis of their effects on educational attainment than on the basis of their job-specific training. The value of school-to-work programs for most youth, thus, is in improving educational attainment both directly, through formal linkages between educational institutions (such as tech-prep programs), and indirectly, through improvement in educational quality and satisfaction. Most school-to-work advocates acknowledge as much. Programs are touted more for their value as educational reform than as a workforce preparation. Moreover, their value as workforce preparation is basic rather than specific. School-to-work advocates argue that integrating vocational and academic education will aid students in an economy that increasingly requires continual learning (Urquiola et al. 1997), not that programs will turn out legions of high school graduates with specialized job skills.

To succeed, school-to-work programs must be fashioned within the context of general educational reform. This includes continuing efforts to improve basic skills and further the adoption of integrated curricula by increasing the applied learning component of academic courses. We do not believe that the extent of the school-to-work transition problem warrants large-scale investment in youth apprenticeship programs. Rather, we would recommend pursuing those programs that require less intensive employer involvement. Reviews of career academies suggest that these programs are very promising as a form of basic educational reform that highlights career awareness. Tech- prep, because it smoothes the transition to community

college and higher education, is particularly laudable. Linking activities of all types, including those with employers, should be pursued for the benefit of the general youth population.

For those segments of the youth population that do have real difficulties establishing themselves in the labor market, school-to-work programs hold promises that targeted or “second-chance” programs can not offer. Job training on a large scale does not work for youth. Years of programs and evaluations attest to this fact such that is difficult to justify their existence. Nevertheless, it is also clear that certain youth need more help making the transition to work and achieving economic independence than can reasonably be expected from efforts aimed mainly at improving educational quality. While the needs of the so-called “forgotten half” can probably be met within the broader rubric of school reform, including school-to-work programs, disadvantaged youth and minorities, those youth who are both more likely not to work at all and drop out of school prematurely, should be targeted for special assistance.

Programs that explicitly connect students with high quality jobs are more appropriate for this segment of the youth population, a segment which often experiences difficulty securing employment on their own. Quality co-op jobs that teach real skills would be beneficial, as would be apprenticeships if they can be developed at the local level. The movement to develop skills certifications would give the non-college bound something to show for their work-based learning. It is vital, though, that the importance of academic skills is heightened rather than diminished, and that pathways to higher education are emphasized rather than blocked. The “non-college bound” should not lose the ability to attend college if they should so choose.

Of course, disadvantaged students will also benefit from reforms designed to help the majority. In fact, one of the most promising reform strategies involves melding the needs of both groups as much as possible while retaining special components for youth needing more

attention—targeting within universalism. For example, career academies could include extra time spent at internships and tech-prep programs could feature stronger work-based learning components for students identified as at-risk. This approach would avoid total separation of student groups—tracking—while giving targeted youth additional opportunities to acquire work skills.

This approach is not without its dangers. School-to-work advocates emphasize that in order to succeed, school-to-work programs must draw from a broad base of students and not simply become dumping grounds for poor achievers. Failure to attract a broad base of student participation will result in stigmatization, as has occurred with vocational education curricula and co-op programs in the past (Kantor 1994). However, it is unrealistic to expect one program to serve all youth. Negotiating a balance between school-to-work programs as educational reform for the majority and extra help for the minority will likely be one of the most difficult challenges faced as the movement progresses.

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