

# Active Labor Market Policies to Expand Employment and Opportunity

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All advanced industrial nations appear to be experiencing a jobs problem. There simply appear to be too few decent employment opportunities to go around. This difficulty manifests itself somewhat differently in different countries. But no Organization for Economic Cooperation and Development (OECD) nation appears to have been able to fully escape rising wage inequality (sometimes coupled with declining real earnings for low-wage workers), weak employment growth combined with secular increases in unemployment, or both of these phenomena.

Over the past two decades or so, most Western European nations have experienced substantial real wage growth that has benefited those who remain employed. But they have also experienced stagnation in employment growth, particularly in the private sector. The consequence has been unemployment rates that have ratcheted up over successive business cycles and persistent long-term unemployment. The unemployment/nonemployment problem has typically been concentrated among less-educated workers and new labor force entrants.

In contrast, the United States has produced relatively buoyant employment growth concentrated in the private sector over the same period. But the United States has also experienced slow real wage growth and a substantial increase in overall wage inequality and in educational wage differentials. The consequent large declines in the real earnings of less-educated and low-paid workers have been associated with

increased family income inequality and growing rates of poverty among working families.

Japan and Sweden are two nations that appeared to be a bit more successful in avoiding a jobs problem during the 1980s. Japan maintained low measured unemployment while expanding employment and experiencing rapid growth in real wages. Until recently Sweden's combination of fairly centralized wage-setting and active labor market policies served to generate an extremely egalitarian wage distribution and persistently low open unemployment. But both Sweden and Japan have faced difficult labor market problems with rising unemployment and signs of increasing inequality from the late 1980s into deep recessions in the early 1990s.

The jobs problem appears to be particularly concentrated in declining employment opportunities for less-educated and disadvantaged workers as well as difficult problems for experienced dislocated workers and for new entrants in some economies. While certainly much of the high unemployment experienced in the 1980s and the early 1990s has reflected weak macroeconomic situations, secular increases in some form of labor market distress in most advanced nations over the past twenty years substantially reflect structural problems. A key driving force appears to be a strong shift in relative labor demand *against* less-educated workers and those doing more routinized tasks and toward more-educated workers and those with problem solving skills. This relative demand shift appears to be largely associated with *skill-biased* technological change, but increased internationalization also plays some role. Although the shift in labor demand against the "less-skilled" appears fairly similar across OECD nations, the nature of the labor market outcomes generated by this trend has varied depending on labor market (particularly wage-setting) institutions, the generosity and operation of the social safety nets, and education and training systems.

The evidence that the United States has done better on employment growth but worse on real wage and productivity growth and has experienced larger increases in wage inequality than Europe raises the question of whether advanced industrial nations face an inevitable *tradeoff* between more jobs (combined with greater wage inequality

and slower real wage growth) and better jobs (combined with persistently high unemployment). Policies that limit market wage adjustments either through direct wage-setting interventions, restrictions on hiring and firing, and/or a generous social safety net not conditioned on work can prevent rising wage inequality but taken too far to an extreme may risk employment stagnation. More decentralized wage setting and "flexible" labor markets may produce better employment growth, but, without increased and more effective efforts to improve the prospects facing less-skilled and less-fortunate workers, such a strategy appears to generate rising wage and family income inequality as well as growing social problems in distressed communities that appear to have become increasingly disconnected from prosperous parts of the mainstream economy.

These two rather bleak scenarios raise the question of whether there exists a "third way" that increases the chances of producing both more and "better" jobs. The possibility of such an approach is highlighted through the realization that the underlying economic changes driving the relative labor demand shift against the less-skilled provide opportunities for more rapid increases in productivity, living standards, and employment opportunities. The jobs problem arises because many individuals (disproportionately the less-educated, dislocated workers, and those from disadvantaged backgrounds) are experiencing significant difficulties adapting to the emerging new economy. The third way needs to use some of the gains of economic change to invest in greater workforce adaptability and in improving the labor market prospects of those most vulnerable to change. Such an approach probably needs to be oriented around active labor market policies that deal directly with the market shifts favoring problem-solving and "soft" (or customer-oriented) skills and adversely impacting less-educated workers. Active labor market policies have the potential to improve the prospects of the disadvantaged and the unemployed by investing further in their education and training, stimulating employment opportunities through direct job creation in the private and public sectors, and providing assistance and information to more quickly match job seekers with job openings.

In this paper I evaluate the evidence for whether such a third way may be possible. I first examine in more detail how the deteriorating

labor market situation for the less-educated and those from economically disadvantaged backgrounds has manifested itself in the United States and other OECD nations. I next turn to a discussion of how active labor market policies might be able to improve the situation. I review the evidence on the macroeconomic effects of such policies and on their effectiveness in improving the earnings and employment of disadvantaged and experienced unemployed workers. I conclude that policies to create a more skilled and adaptable workforce can make a positive difference in terms of both economic growth and equity over the medium term and have the potential to produce some modest reduction in the "natural" rate of unemployment. But one should not expect such policies by themselves to be a short-run panacea for the jobs problem. Active labor market policies will be most effective if complemented by macroeconomic policies that accommodate structural improvements in the operation of labor markets.

### **Rising inequality in labor market outcomes**

In this section I first summarize the evidence on rising inequality in labor market outcomes in the United States. Second I examine the extent to which analogous changes are apparent in other OECD economies. I then present an explanation based on demand, supply, and institutional factors of why the twist in the labor market against the less-skilled has shown up in varied forms across advanced nations. Finally I briefly consider how these labor market changes have adversely affected individuals from disadvantaged backgrounds and have negatively interacted with other serious social problems in high-poverty and high-unemployment communities.

#### *Changes in the U.S. wage structure*

Family income inequality increased substantially in the United States over the last twenty years especially during the 1980s. The enormous disparities in the fortunes of American families in recent years have largely been associated with labor market changes that increased overall wage inequality and altered the wage and employment structure in favor of the more-educated and more-skilled. These changes have been carefully documented by researchers using a variety of data sets, including household survey data from the Current

Population Survey, other household surveys, and establishments surveys (for example, Bound and Johnson, 1992; Davis and Haltiwanger, 1991; Gottschalk and Moffitt, 1992; Juhn, Murphy, and Pierce, 1993; and Katz and Murphy, 1992.) The finding that wage inequality increased substantially is not sensitive to the precise choice of data set, sample, or wage measure.

Recent broad changes in the U.S. wage structure can be summarized as follows:

- From the 1970s to the early 1990s wage dispersion increased dramatically for both men and women reaching levels of wage inequality for men that are probably greater than at any time since 1940. The hourly earnings of a full-time worker in the 90th percentile of the U.S. earnings distribution (someone whose earnings exceeded those of 90 percent of all workers) relative to a worker in the 10th percentile (someone whose earnings exceeded those of just 10 percent of all workers) grew by approximately 20 percent for men and 25 percent for women from 1979 to 1989. The gap increased further in the early 1990s.
- Pay differentials by education and age increased. The college/high school wage premium doubled for young workers with weekly wages of young male college graduates increasing by some 30 percent relative to those of young males with twelve or fewer years of schooling in the 1980s. In addition, among workers without college degrees, the wages of older workers rose relative to those of younger workers. A major earnings differential that did fall was that between men and women, which dropped substantially in all education and age groups in the 1980s.
- Wage dispersion increased within demographic and skill groups. The wages of individuals of the same age, education, and sex, working in the same industry and occupation, were more unequal in the early 1990s than ten or twenty years earlier.

Since these changes in the wage structure occurred in a period of stagnation in overall real wage growth, the less-educated and other

low-wage workers suffered substantial real earnings losses relative to analogous individuals one or two decades earlier.

The timing of these changes in the U.S. wage structure from the late 1960s to the end of the 1980s is illustrated in Chart 1 using data on hourly wages for full-time workers from the March Current Population Surveys (CPSs) previously analyzed by Freeman and Katz (1994). The 1980s show some breaks from the past. The upsurge in the college wage premium in the 1980s followed some decline in this differential in the 1970s. The narrowing of the gender gap appears to have started at the end of the 1970s. But rising within group (or residual) inequality appears (at least in March CPS data) to be a fairly continuous process since the early 1970s.

In summary, both one's labor market "connections" and one's formal educational qualifications appear to matter more for one's earnings today than in the past. Hours of market work also have become increasingly more positively correlated with measures of skill. Coleman and Pencavel (1993a, 1993b) find that annual hours of market work have increased for highly educated men and women and decreased for less-educated men and women over the course of the last fifty years. Topel (1993) concludes that since the late 1960s unemployment and nonparticipation for males has become increasingly concentrated on those with low wages and the least education. Two groups of workers seem to have particularly suffered in terms of both wages and employment rates: young workers with limited education and experienced job losers (or dislocated workers). Permanent job losses for previously high-tenured workers are typically associated with substantial and permanent losses of earnings power as previously specialized skills appear to become obsolete or rents from insulated positions in an internal labor market are lost (Jacobson, LaLonde, and Sullivan, 1993).

#### *A comparative perspective on changes in the wage structure*

How do changes in labor market differentials by skill and overall wage inequality in other advanced nations compare to those in the United States? Much recent research has examined this issue (for example, Davis, 1992; Freeman and Katz, 1994, 1995; and OECD,

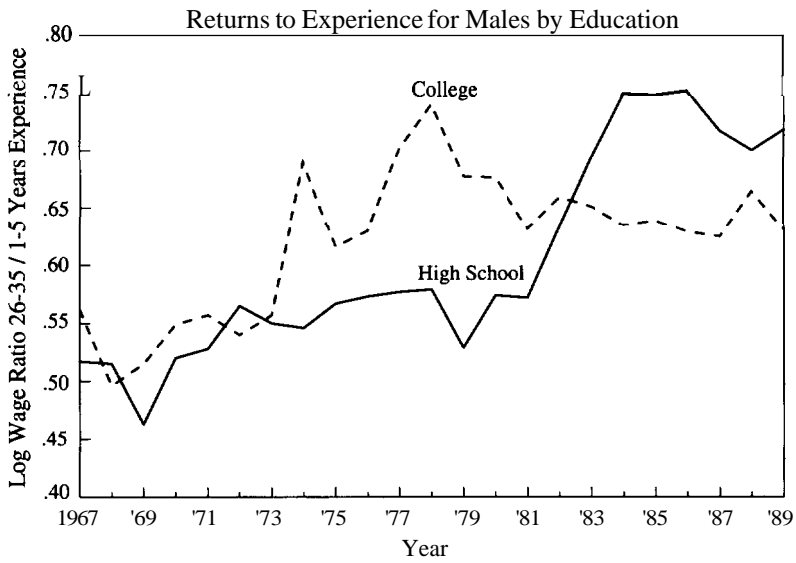
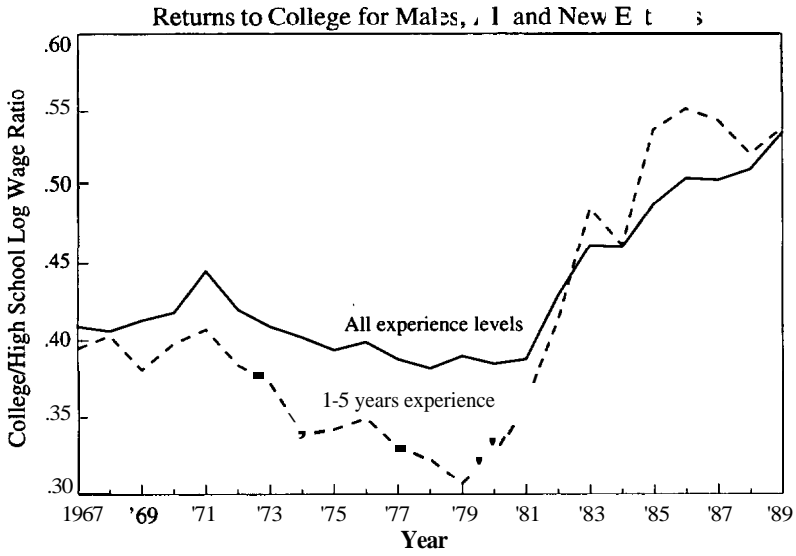
1993). Table 1 categorizes countries by the way their wage structures changed during the 1970s and 1980s. From the late 1960s to the end of the 1970s, educational and occupational wage differentials (skill differentials) narrowed in all advanced nations for which appropriate data is available. With the exception of men in the United States, overall wage inequality for men and women also decreased throughout the industrialized world in the 1970s.

Since the early 1980s the narrowing of skill differentials and wage inequality has ceased in most advanced nations. But, as shown in Table 1, not all OECD nations have experienced sharp increases in wage differentials by skill similar to the United States. Most developed countries (including Germany, France, Italy, Austria, Australia, Canada, Sweden, the Netherlands, and Japan) had moderate or in some cases effectively no rise in both educational wage differentials and overall wage inequality. The United States and Great Britain—countries with decentralized labor markets and systems of wage-setting—experienced exceptionally large increases in wage inequality and wage differentials by skill category. Chart 2 contrasts movements in overall wage inequality by sex for full-time workers in the United States, Great Britain, France, and Japan.<sup>1</sup> Only in the United States (with the possible exceptions of Australia and Canada) did these labor market changes in the 1980s translate into large declines in the real earnings of low-wage male workers who remained employed (even those in full-time employment). Nevertheless, most other nations with less increase in wage inequality and faster increases in real wages than the United States suffered from much slower employment growth and sharper increases in unemployment/nonemployment among less-educated and young workers (OECD, 1994). Finally, increased wage differentials by age and a narrowing of gender wage differentials is also apparent in most OECD nations in the 1980s.

### *Understanding rising labor market inequality*

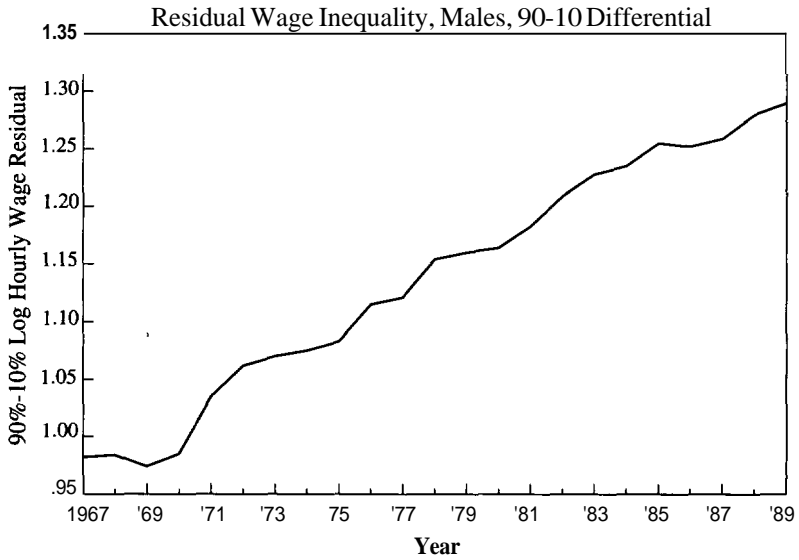
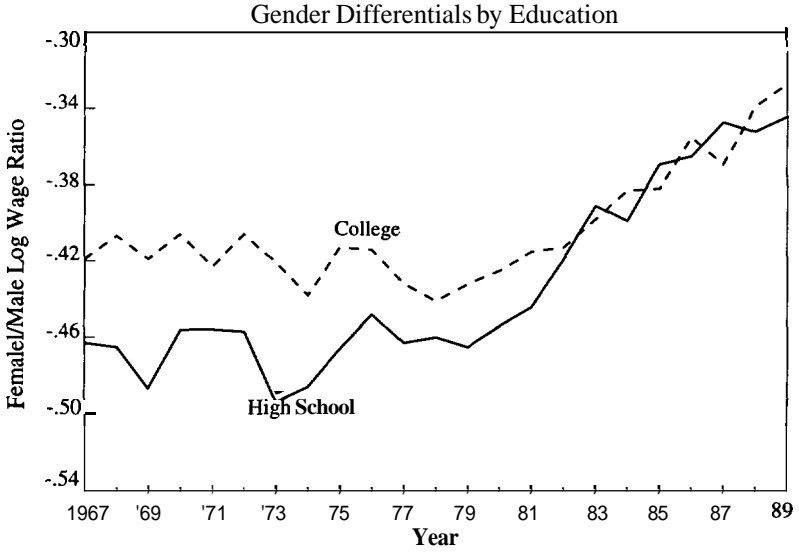
What explains recent changes in the relative economic position of less-skilled workers in different OECD countries? The wages and employment of different demographic, education, and skill groups depend both on the market forces of supply and demand and on labor market institutions. Changes in the supply of and demand for labor

**Chart 1**  
**U.S. Relative Hourly Wage Changes, 1967 to 1989**





**Chart 1**  
**U.S. Relative Hourly Wage Changes, 1967 to 1989**  
**continued**



Source: Freeman and Katz (1994)

**Table 1**  
**Changes in Educational/Occupational Skill Differentials**  
**in Advanced Countries**

Countries Which Experienced:	1970s	1980s
A Large Fall in Differentials	Australia Austria Canada Finland France Germany Italy Japan Netherlands Spain Sweden United Kingdom United States	
Modest Changes in Differentials: A Modest Fall in Differentials(↓)  No Noticeable Change in Differentials(-)  A Modest Rise in Differentials(↑)		Netherlands (↓) Finland (↓)  France (-) Germany (-) Italy (-)  United States (↑) United Kingdom (↑)
A Large Rise in Differentials:		United States United Kingdom

Sources: Freeman and Katz (1994) and OECD (1993).

skills tend to alter the wages and employment of different groups in the direction consistent with economists' supply-and-demand market clearing model under a wide variety of wage-setting **institutions**—individual bargaining, decentralized and centralized collective bargaining, government contract extensions, and minimum wages. But

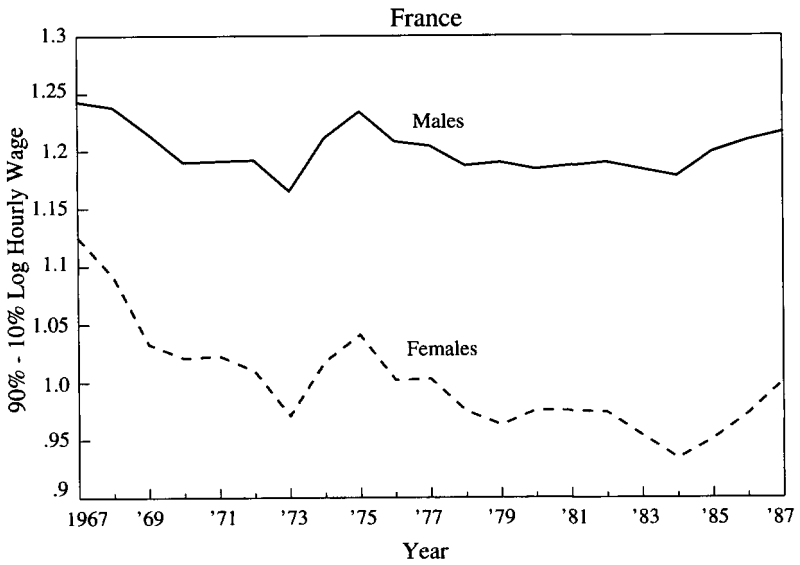
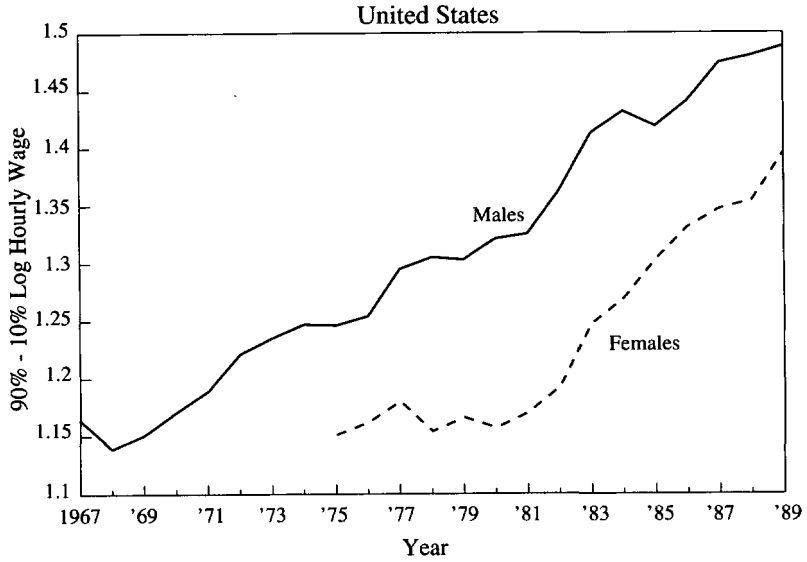
because supply and demand have moved in roughly similar ways in advanced countries, supply and demand factors can't fully explain cross-country variation in changes in wage inequality. Secular changes in demand for skill are unlikely to differ significantly among developed economies since all have access to similar technologies, have quite similar industry and occupation mixes, and operate in the same world markets. Supply changes may show some more divergence because of different rates and timing of expansion of higher education, but a strong trend toward an increased proportion with college training is universal in the OECD.

To fully understand differences in labor market outcomes across countries, institutional factors must be considered. Identical shifts in supply and demand will have different quantitative impacts on wages and employment depending on a nation's wage-setting institutions and norms, training and education system, and social insurance policies. The more prominent is the role of institutions in wage setting, the smaller will be the effect of market shifts on relative wages and the larger the likely effect on relative employment levels. Education and training policies that generate a more egalitarian distribution of skills and more adaptable workforce to changes in skill requirements are likely to weaken the effects of supply and demand shifts on wages and employment. And a system of income maintenance that provides generous benefits to the unemployed for a long duration may also reduce the responsiveness of wages of the unskilled to adverse demand shocks. Changes in institutions themselves can also affect the wage structure. Important institutional changes, such as recent declines in unionization in the United States and United Kingdom, may reflect independent political factors (for example, the emergence and persistence of conservative governments) or simply be the personification of shifting labor market forces.

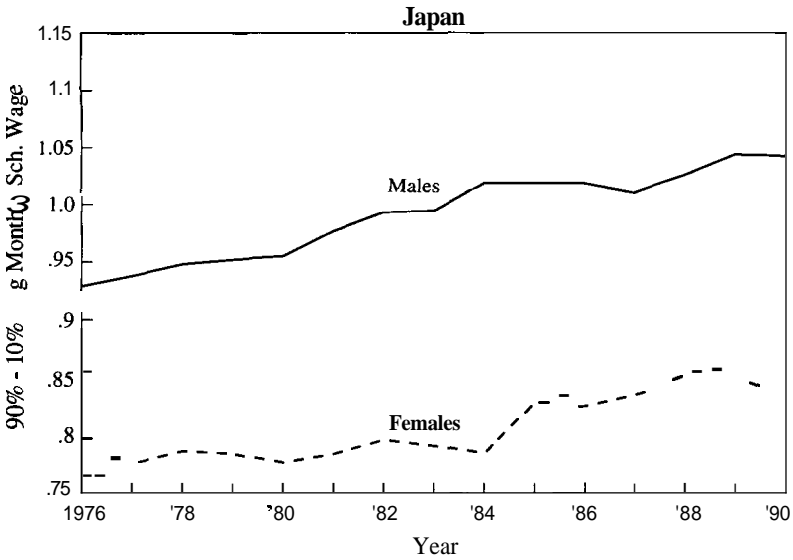
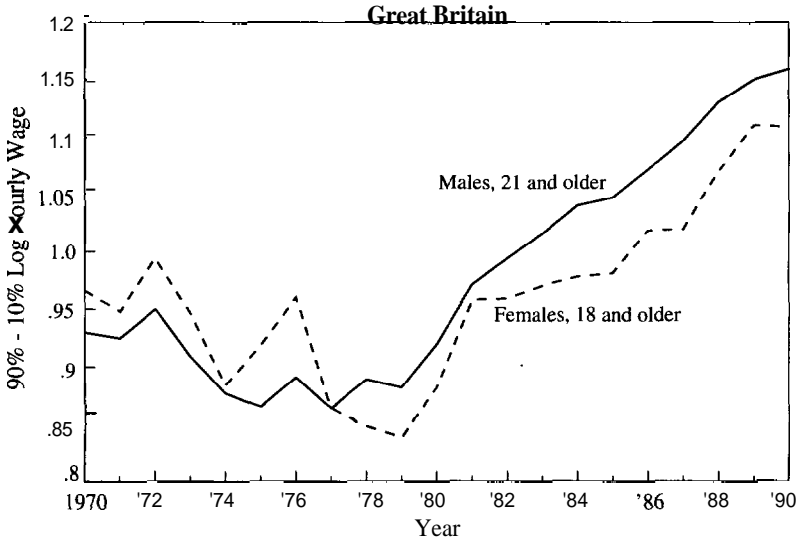
### *Understanding the U.S. experience*

What roles did supply, demand, and institutional factors play in explaining rising wage inequality in the United States? Most researchers conclude that the major cause of rising wage dispersion and educational wage differentials is a strong secular shift in labor demand favoring more-skilled workers (Bound and Johnson, 1992; Juhn,

### Chart 2 Changes in Overall Wage Inequality by Sex



**Chart 2**  
**Changes in Overall Wage Inequality by Sex**  
 continued



Murphy and Pierce, 1993; Katz and Murphy, 1992).<sup>2</sup> The industrial and occupational distribution of U.S. employment has been shifting strongly in favor of college graduates and women for many years. Employment has declined in goods-producing sectors that have disproportionately provided high-wage opportunities for blue-collar men and expanded in professional, medical, business, and other services that employ many college graduates and women. The internationalization of the U.S. economy has contributed some to these between industry shifts, but (possibly naive) calculations of the factor content of U.S. trade flows indicate that even the large trade deficits of the 1980s could only explain a modest proportion (5 to 20 percent) of the shift in demand against less-educated workers necessary to be consistent with observed changes in educational wage differentials (Borjas, Freeman, and Katz, 1992). Most of the change in employment structure has occurred inside detailed industries with firms increasing their relative use of more-educated workers. (The vast majority of the increase in educational wage differentials and wage inequality has also occurred within industries.) Within-industry changes in labor demand appear to be strongly related to technological and organizational changes favoring skills and (at least within the manufacturing sector) are positively correlated with investments in computers and research and development (Berman, Bound, and Griliches, 1994). The use of computers spread in the workplace rapidly in the 1980s, and a large and growing computer wage premium was apparent at the end of the decade (Krueger, 1993).

Demand side factors are not the entire story. Demand shifted in favor of more-educated workers in both the 1970s and the 1980s, but educational wage differentials narrowed in the 1970s and expanded dramatically in the 1980s. The supply side of the market helps explain the difference between the two decades. The relative supply of college graduates grew extremely rapidly in the 1970s with the enrollment of baby boomers and incentives from the Vietnam War to enter and remain in college. The rate of growth of relative supply of college graduates declined substantially in the 1980s with the "baby-bust" cohorts and the "apparent" decline in the return to college education in the 1970s. A large influx of immigrants with less than a high school education also contributed to slower growth in the supply of highly educated workers relative to less educated workers in the 1980s

(Borjas, Freeman, and Katz, 1992). A smooth secular shift in demand favoring more educated workers combined with variation in supply growth across decades goes a fair distance to explaining the time pattern of the evolution of U.S. skill differentials from the 1960s to the late 1980s. Nevertheless, some acceleration in the rate of demand shifts against the less-skilled is required to more fully explain the magnitude of the growth of skill differentials in the 1980s. In fact, whether because of the increased use of computers, increased international outsourcing, or other causes, the pace of within-sector relative demand shifts favoring more skilled workers appears to have accelerated in the 1980s (Katz and Murphy, 1992).

Two institutional changes further contributed to rising U.S. wage inequality in the 1980s. The precipitous decline in unionism is estimated to explain as much as one-fifth of the growth in educational wage differentials and wage dispersion among males (Freeman, 1993; Card, 1992). Changes in unionization do not appear to be an important factor in the evolution of the female wage structure. The large decline in the real value of the federal minimum wage from 1981 to 1990 also assisted in rising wage inequality especially for women (Dinardo, Fortin, and Lemieux, 1994). Furthermore, much recent research finds that modest increases in minimum wages at both the state and federal level from historically low levels in the late 1980s and early 1990s were associated with increases in real earnings for low-wage workers, reductions in wage and income inequality, and no detectable adverse employment effects (Card and Krueger, 1994). Thus a minimum wage set at a relatively low level appears to be able to improve earnings at the bottom with little employment cost, but this does not rule out the possibility that substantially higher minimum wages have significant negative employment impacts.

In summary, sizable and somewhat accelerated demand shifts favoring more-educated workers, a reduction in the rate of growth in their supply, and institutional changes all contributed to sharp increases in U.S. wage inequality in the 1980s.

### *Understanding differences among advanced economies*

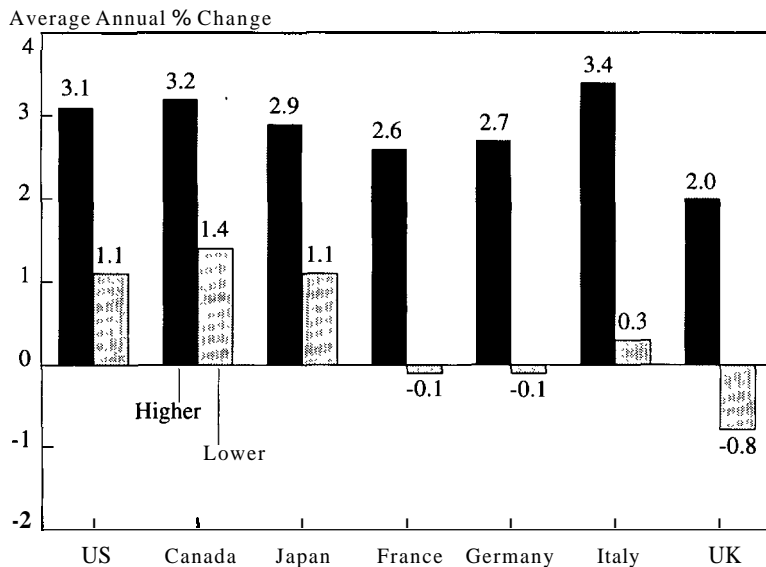
Why did wage inequality grow by more in the United States than in

most other OECD countries? National differences in labor demand factors are unlikely to be the dominant factor in explaining variation among advanced countries in recent changes in the wage structure. Labor demand appears to be shifting rapidly in favor of more-skilled workers both between and within industries and occupations in all OECD nations. Chart 3 illustrates that the industrial distribution of employment has been sharply shifting into sectors that use a greater proportion of more educated workers in all G-7 nations over the past quarter-century.<sup>3</sup> In each G-7 economy, employment grew more rapidly from 1970 to 1993 in more education-intensive sectors than in less education-intensive sectors. More formal demand shift measures also show sharp secular between-industry shifts in labor demand favoring the more-educated and women in countries for which reasonably comparable data are available (Katz, Loveman, and Blanchflower, 1993). But within-sector shifts toward the more-skilled generally appear to be more sizable than the between-industry shifts dominated by the move from goods to services.

But differential changes in the rates of growth of the supply of workers by level of education help explain differences among countries in changes in skill differentials in the 1980s. Rapid expansions of systems of higher education meant that the supply of highly educated workers grew extremely rapidly in all OECD nations in the 1970s. The rapid supply growth appears to have outstripped demand shifts favoring the more skilled and generated narrowing skill differentials in every country. Explicit government and union policies to reduce wage differentials often reinforced these market trends during the 1970s. In the 1980s, the average educational qualifications of workers continued to rise in all countries, but the rate of growth of the college educated workforce decelerated in some nations. A sharp slowdown in supply growth in the United States (in which the share of young men with college degrees actually fell for a period) was associated with large increases in differentials. The continued rapid expansion in Canada helps explain its much more modest increase in educational differential than the United States. Other countries with at least modest increases in skill differentials by the end of the decade—United Kingdom, Sweden, Australia, and Japan—experienced some decline in the rate of growth of the supply of college graduates. Countries whose education differentials did not expand in



**Chart 3**  
**Employment Growth by Higher and Lower Educational Attainment Sectors, 1970-1993**



Notes: 1970-91 for France, Germany, and the UK. 1977-91 for Italy. Higher educational attainment sectors comprise sectors where 30% or more of full-time workers have college degrees in the United States. The lower sectors have less than 30% of workers with college degrees.

the 1980s—France, Germany, and the Netherlands—essentially maintained their 1970s rate of growth of supply of more educated workers into the 1980s (Freeman and Katz, 1994; OECD, 1993).

Institutional factors translated similar demand and supply shifts into differences in labor market outcomes. The two countries with the largest increases in wage inequality—the United States and the United Kingdom—have quite decentralized wage-setting systems, not very well structured pathways from school-to-work for those not going to college, and experienced significant declines in the influence of unions and minimum wages in wage determination during the 1980s. Countries with greater institutional interventions in wage setting—France, Italy, Sweden—were able to prevent wage inequality from rising during parts of the 1980s. But policies that limit market wage

adjustments without directly addressing changes in market conditions through appropriate human capital investments risk stagnant employment growth and persistently high unemployment for young and less-educated workers. While wage-setting institutions can constrain wage-setting over some range, they themselves do not appear immutable to market forces. Shifts in supply and demand that create market pressures for expanded wage differentials are likely to reduce the strength of centralized bargaining (as eventually occurred in Sweden and Italy) and reduce union influence in wage setting (as occurred in many OECD countries).

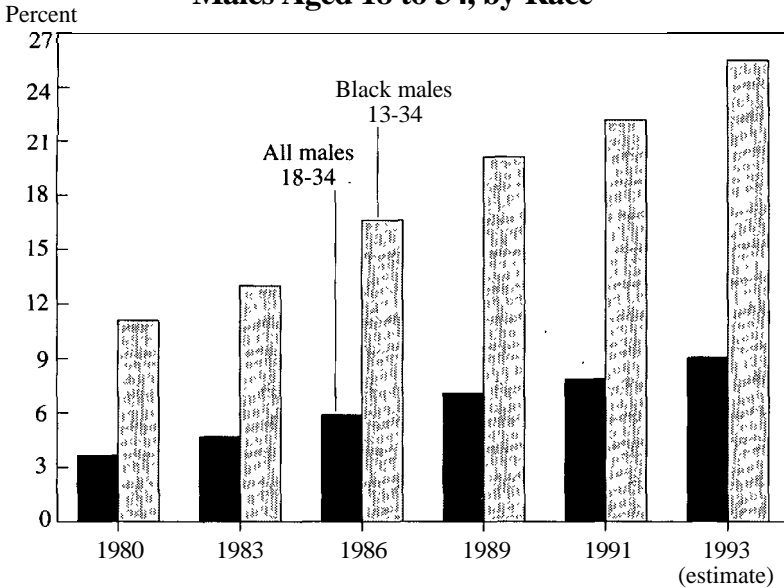
Institutional wage interventions appear to have the potential to be more successful at preventing widening wage inequality if they are combined with effective active labor market policies and education and training systems that invest heavily in the skills of non-college workers. Germany and Japan appeared fairly successful through much of the 1980s in maintaining the earnings and employment of non-college workers with training and education systems in which college and non-college workers appeared to be closer substitutes in production than in the United States. German institutions constrain wage-setting, but they also offer linked apprenticeships that try to make supply consistent with wage policies. The Japanese have succeeded with solid basic education and much informal firm-based training. Nevertheless, both of these economies clearly have run into some difficulties in the early 1990s.

No nation appears to have found an approach to fully escape increased labor market difficulties for less-educated workers. Policies to buffer the earnings of low-wage workers probably need to be combined with efforts to augment their skills and increase hiring incentives. The increasingly dire labor circumstances facing disadvantaged individuals in many OECD nations and the rising social costs of dependency and crime argue for strong efforts to develop such an agenda.

### *Labor market changes and the disadvantaged*

By almost any measure the economic and social well-being of disadvantaged American youths and young adults—those with limited

**Chart 4**  
**Criminal Supervision**  
**Males Aged 18 to 34, by Race**



Notes: Chart shows the proportion of the given group which is in jail, on parole, or on probation on a typical day of the year.

Source: Unpublished tabulations, Bureau of Justice Statistics; Current Population Survey.

education or skills, from poor families and impoverished neighborhoods, and from minority backgrounds—has deteriorated substantially over the last twenty years. A smaller proportion of young disadvantaged Americans are marrying and forming families than in the past, and those that do are increasingly likely to be poor. In a major departure from historic patterns, the real wages of the young and less-educated plummeted: in the early 1990s, the real hourly pay of recent male high school graduates and young dropouts was more than 20 percent below that of their counterparts twenty years earlier. Increasingly, disadvantaged young men and young women are *idle*—not in school, not working, and not looking for work. Roughly 50 percent of out-of-school American youth (aged 16 to 24 years old) without a high school degree are currently not employed. As Chart 4 illustrates, the proportion of young men in trouble with the law has increased dramatically.<sup>4</sup> In fact, the number of all U.S. adult males

under the supervision of the criminal justice system (those incarcerated, on parole, or on probation) measured as a proportion of the labor force was 6.6 percent in 1993, making it approximately the same as the proportion unemployed (Freeman, 1994). Trouble with the law is sharply concentrated among those from disadvantaged backgrounds without high school degrees. Freeman (1994) concludes in a recent review that much ethnographic evidence and more formal empirical work is consistent with the notion that criminal involvement responds to economic incentives (the returns to legitimate work relative to those from illicit opportunities).

The shift in relative labor demand against less-educated workers has disproportionately adversely affected those from disadvantaged backgrounds. The decline in blue collar jobs and increased importance of one's ability to directly deal with customers in the expanding service economy has particularly harmed disadvantaged minority males. Disadvantaged residents of inner cities, faced with decreasing opportunities for employment in the areas where they live, are often precluded by inadequate transportation, child care, discrimination, and other barriers from obtaining jobs in the suburbs where employment has been growing. And the disadvantaged have been hampered by the absence of effective hiring networks: in impoverished neighborhoods, where few adults hold jobs, the contacts that help people connect with employers are rare.

Economic changes (especially labor demand shifts away from manufacturing and generally weak labor markets throughout much of the last twenty years) may have started the downward cycle for disadvantaged youth, but the resultant joblessness has in turn contributed to a multitude of social changes in urban communities. These social problems—including crime, violence, and drug abuse, the disappearance of middle class role models, and the breakup of the traditional family—have made the labor market problems in inner cities much harder to solve (Wilson, 1987). This problem is not unique to U.S. urban areas. Persistent joblessness associated with industrial decline in the North of England appears to be connected to increased crime, drug use, and violence and a rapidly expanding "underclass" in formerly stable working class areas (Murray, 1990). Similar phenomena are becoming apparent in other high unemployment parts of

Europe (*The Economist*, 1994).

A stronger economy, rapid private sector employment growth, and tighter labor markets are a necessary condition for improving job prospects for disadvantaged groups in America's inner cities and Europe's high unemployment areas, but the extent of the problems and the experience of the boom of the late 1980s suggest economic growth by itself unassisted by policies designed to specifically deal with the labor market barriers facing the disadvantaged (for example, **skill** mismatch and lack of connections) may not be sufficient to reverse recent trends (Blank and Card, 1993; Cutler and Katz, 1991). The increasing gaps in outcomes between the more and less fortunate associated with the increasing importance of **skill** may increasingly lead to a "secession of the successful" if adequate steps are not taken to address these problems (Reich, 1991).

### **The role of active labor market policies**

Active labor market policies are measures targeted at the unemployed and disadvantaged (low-wage) workers with the intent of improving the functioning of the labor market. Such policies can be sorted into three broad categories: (1) supply-side policies that invest in education and training to upgrade the skills of the target groups; (2) demand-side policies that attempt to stimulate employment increases through direct job creation in form of public sector employment or the **subsidization** of private sector jobs; and (3) policies such as improved labor market information and job search assistance that attempt to enhance the efficiency of the process of matching job seekers with job openings. While the supply, demand, and matching functions are important analytical distinctions, they are sometimes blurred in practice. Successful programs often do all three: combining training in the classroom and on the job, the use of subsidies to encourage employers to provide jobs and training slots, and the matching of participants with openings.

Active labor market policies potentially have a role to play in achieving two important outcomes. The first is a reduction in structural and frictional unemployment so that the economy can operate at a lower unemployment rate without igniting inflationary

pressures. The second is improvements in the earnings and employment rates of the targeted groups. Much recent research has provided assessments of both the macroeconomic and microeconomic effects of active labor market policies.<sup>5</sup> In this section I provide an interpretation of this evidence and of the lessons for the design of more-effective policies.

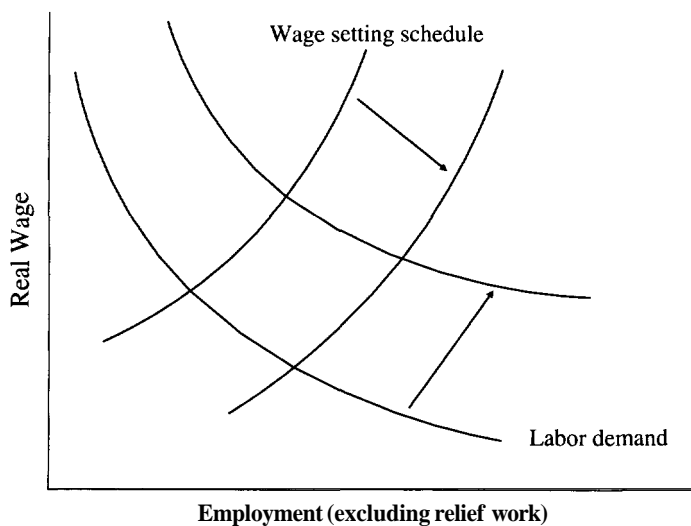
### *Macroeconomic effects of active labor market policies*

Layard, Nickell, and Jackman (1991), OECD (1993), and Calmfors (1994) have developed a fairly straightforward analytical framework for sorting out the aggregate labor market impacts of active labor market policies. This approach is illustrated by the two diagrams in Figure 1. The upward sloping curve in Panel A represents a wage-setting schedule indicating that higher aggregate employment causes pressure for higher real wages. Such a schedule can be derived from efficiency wage models (higher wages are required to optimally extract effort, recruit workers, and manage turnover when unemployment is lower), and bargaining models (unions and insiders are less constrained in wage demands in a tighter labor market), or it can be interpreted as a standard upward sloping labor supply curve. The downward sloping curve is a standard labor demand schedule. The intersection of the two represents the equilibrium employment and real wage levels. The employment level in Panel A is assumed to exclude those currently participating in active labor market programs (so that one needs to add those in subsidized employment to get total employment). Panel B presents a Beveridge-curve relationship between vacancies and total job seekers (the unemployed plus those in labor market programs not counted among the unemployed) reflecting the efficiency of the matching process in the labor market.

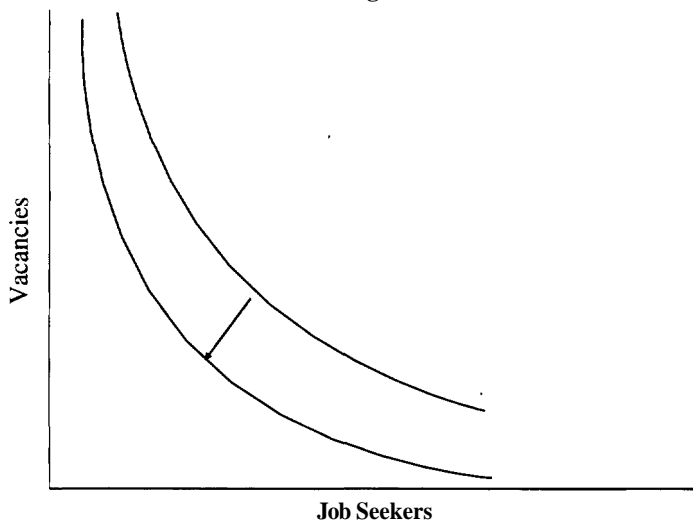
Policies that improve the efficiency of the matching process in the labor market—through better labor market information, job search and placement assistance, other incentives to increase the search intensity of job seekers, and training or work-experience schemes to raise the skills of job seekers and/or otherwise increase their attractiveness to employers—serve to shift the Beveridge curve inward in Panel B of Figure 1. This is likely to shift to the right both the labor demand and wage-setting schedules in Panel A. With vacancies filled

**Figure 1**

**The Effects of Active Labor Market Policies on Labor Market Equilibrium**



**Beveridge Curve**

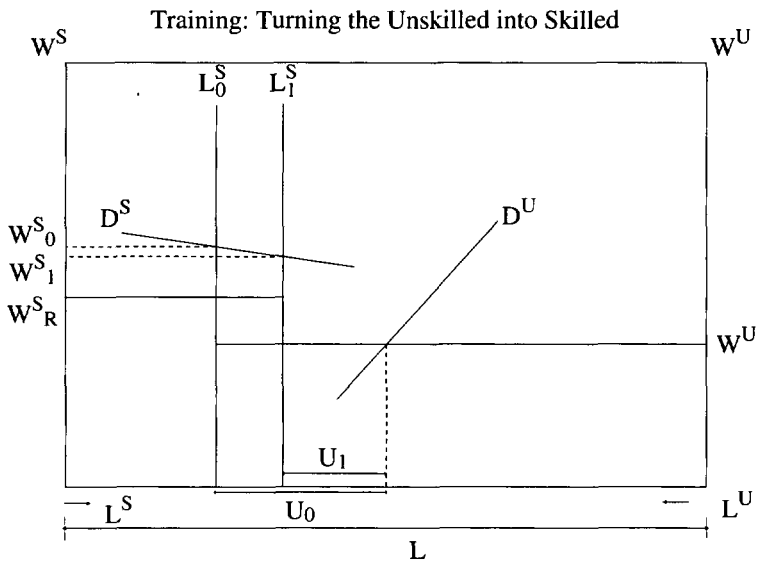


more quickly, they become less costly for employers, and more vacancies are opened leading to an increase in labor demand. Increased search effectiveness of job seekers puts downward pressure on the wage demands of insiders tending to shift the wage-setting schedule downward. Both effects serve to expand employment. Job search and placement assistance programs are likely to have such unambiguously positive effects on regular (non-subsidized employment), but training and direct job creation approaches may also have some effect in the opposite direction by reducing search intensity during program participation. But training and subsidized employment policies by increasing the productivity of the workforce may generate further outward (rightward) shifts in the aggregate labor demand schedule.

Job creation policies in the public and private sector will directly reduce open unemployment and expand total employment. But such approaches may also reduce regular employment through substitution (or displacement) effects in which employers replace unsubsidized employees with subsidized employees. This indirect effect represents a leftward shift in the labor demand schedule in Panel A of Figure 1. Thus there exists a tension between creating jobs that provide work experience similar to regular jobs (which raises the likelihood of substitution effects) and targeting job creation to productive activities unlikely to be undertaken without a subsidy (which may reduce the transferability of the acquired skills). Much existing research finds significant displacement effects ranging from 40 to 90 percent for subsidized private sector jobs and 30 to 70 percent for public sector creation (Calmfors, 1994; Forslund and Krueger, 1994), but the endogeneity of direct job creation efforts to economic conditions raises questions concerning the interpretation of the existing evidence. Furthermore, job creation schemes with significant substitution effects could still be cost-effective investments if they substantially raise the future earnings of assisted workers and if those who are not hired into specific jobs because of substitution effects have stronger labor market prospects than the program participants. Additionally, the evidence from improvements over time in the net job-creation impact of the U.S. Comprehensive Employment and Training Act (CETA) public service employment in the late 1970s with tighter program eligibility criteria and project oversight (Adams, Cook, and Maurice, 1983) and from the U.S. summer jobs program for disadvan-



**Figure 2**



tagged youth (Crane and Ellwood, 1984) suggests that direct job creation schemes generating temporary slots for those facing weak labor markets may be able to expand employment for the targeted group with only minor substitution effects.

An important motivation for active labor market policies based on training is to move labor out of the declining, slack labor market for "unskilled" labor into the expanding market for "skilled labor. The two sector model presented in Figure 2 illustrates this effect. The fixed total labor force is divided into the skilled and unskilled sectors. The reservation wage for skilled workers (the self-employment, illicit opportunities, or transfer benefits option) is assumed to be higher for the skilled than for the unskilled. The wage-setting (or supply) schedule in each sector is horizontal with unemployment and becomes vertical at full employment. Strong labor demand is apparent in the skilled sector and weak labor demand and unemployment in the unskilled sector. A training program that transforms unskilled workers

into skilled workers shifts the supply of skilled workers to the right, expanding employment in the skilled sector and reducing unemployment in the **unskilled** sector. Such a training policy increases the aggregate employment rate, narrows the earnings gap between more and less skilled workers, increases the employment rate of the remaining **unskilled** workers, and potentially reduces inflationary pressure emanating from the expanding part of the labor market. These qualitative conclusions will hold under less extreme wage-setting assumptions (Calmfors, 1994). But the effects are likely to be diminished when high unemployment is also present in the **high-skill** labor market. These results also depend on training and education policies being effective at improving the **skills** and earnings capacities of program participants.

The existing macroeconomic empirical research on the effects of active labor market policies (public expenditures on training, special youth measures, direct job creation, and public employment services) on wage setting and unemployment yields fairly ambiguous results, and the studies use methodologies (identifying assumptions) that are not particularly convincing. A nineteen-country Phillips-curve analysis by the OECD (1993) provides some evidence that higher expenditures on active programs may help macroeconomic performance by facilitating wage moderation. But Calmfors (1994) concludes that shifts from open unemployment to program participation in Sweden have been associated with increased wage pressure in Sweden. Sweden's maintenance of low unemployment in the 1980s has often been viewed as testament to the efficacy of active labor market policies, and its sharp increase in unemployment in the 1990s is now sometimes interpreted as showing the ineffectiveness of such policy efforts. In a similar spirit cross-country research for the OECD finds a negative relationship between a nation's active labor market expenditures and its unemployment rate in the 1980s (Layard, Jackman, and Nickell, 1991) and a positive (but statistically insignificant relationship) for the same specification with almost the same sample of countries in 1993 (Forslund and Krueger, 1993). The result for the 1993 study may largely reflect the deep recession in Sweden, but it does indicate the fragility of findings from this cross-country, cross-section approach. Finally, a pooled time-series analysis of aggregate data from Austria, France, Germany, Great Britain, Sweden, and the United States by

**Kraft** (1994) finds a positive impact on employment of active labor market expenditures per labor force participant and a negative impact on employment of passive labor market expenditures per unemployed person.

Research using national aggregate data on the macroeconomic effects of active labor market policies provides suggestive evidence of modest favorable impacts on the operation of the labor market. This research does not provide information on the impacts of such programs on the targeted groups (unemployed and disadvantaged workers). Nor does it address the issue of the role of overall human capital investments on aggregate labor market outcomes.

### *Re-employment policies to assist displaced workers*

Public spending on the unemployed in most OECD nations has been dominated for some time by passive income maintenance measures. But a consensus appears to be emerging around the idea that most OECD nations need to shift the focus of labor market policies for the unemployed from passive income support to more active interventions to facilitate re-employment (OECD, 1994). This raises the question of how effective are active re-employment services at moving the unemployed into new jobs and improving their earnings? Several results that may assist in the development of re-employment systems are available from recent microeconomic evaluation studies of programs providing employment services to job losers.

A quite robust finding across studies is that job search assistance appears to be a cost-effective method for reducing the duration of unemployment. A recent series of random assignment experiments in five U.S. states—Minnesota, Nevada, New Jersey, South Carolina, and Washington—has examined the effectiveness of job search assistance in reducing unemployment for unemployment insurance (UI) recipients (Meyer, 1992; U.S. Department of Labor, 1994a). Job search assistance clients found a new job more quickly, and receipt of unemployment benefits was reduced in all five demonstrations. Those receiving job search assistance found new employment an average of one-half of a week to four weeks sooner than similar individuals who did not receive assistance. And more rapid re-employment did not

come at the expense of lower wages. In each state experiment the savings in UI payments plus the increase in tax receipts due to faster re-employment were more than enough to pay for program costs. In the United States, job search assistance has also proven effective in increasing the earnings and employment of Aid to Families with Dependent Children (AFDC) recipients. Studies in Canada, the Netherlands, and the United Kingdom have also found favorable results from individual counseling targeted at individuals likely to have difficulty finding jobs (OECD, 1993). Job search assistance and counseling appear to be most effective when individual needs are assessed and services provided as soon as possible after the beginning of an unemployment spell.

A second finding is that alternative uses of UI funds can be a useful part of a re-employment system. For example, self-employment programs allow unemployed workers the option of starting a small business as an alternative to looking for wage and salary work. Unemployed workers are given training and assistance in setting up their business, and their UI payments are used as support while they do so. Two recent (random assignment) demonstrations in Massachusetts and Washington have relaxed UI rules to provide more help to unemployed workers who are interested in starting their own businesses. Self-employment is not for everyone; when offered the opportunity only 2 to 5 percent of UI recipients choose to avail themselves of a self-employment option. This group tends to be more highly educated and have higher previous earnings than typical UI recipients. The results of the two U.S. demonstrations indicate that these self-employment assistance programs significantly increased unemployed workers' chances of starting a successful new business (businesses started by recipients were no more likely to fail in the eighteen-month follow-up period than those of the control group), increased the total amount of time spent employed (either in self-employment or wage-and-salary employment) by program participants, and increased their earnings (Benus and others, 1993). Re-employment bonus programs in several U.S. demonstrations have also been found to accelerate the return of UI recipients to work, although their design raises some questions concerning displacement effects and overall cost effectiveness (Bassi, 1994).

Evidence on the effectiveness of retraining for displaced workers is somewhat ambiguous. Evaluations of several U.S. displaced worker demonstration projects show little impact of short-term skills training on subsequent earnings and employment over relatively short follow-up periods (Leigh, 1990). But some of the evaluated programs were temporary demonstrations that had difficulties finding training providers capable of putting together high-quality, short-duration training courses on short notice. Training services provided in a more stable and institutionalized system with stronger links to employers are likely to be more effective.

A few key lessons for moving from a passive unemployment system to an active re-employment system can be drawn from the evaluation research. First, early intervention and provision of services is a key to successful programs. The best approach to dealing with long-term unemployment is to prevent it in the first place. Second, job search assistance is quite effective and ought to be used as soon as possible in an unemployment spell for those who are job ready. Third, alternative uses of unemployment insurance (self-employment assistance and wage subsidies/re-employment bonuses) can pay off (at least if used selectively) and ought to be part of the policy portfolio. Fourth, not all displaced workers require training services. Many (probably most) displaced workers (those with marketable skills) really want and can be best helped by job search assistance, counseling, up-to-date labor market information, and flexibility in the use of UI benefits. Rapid re-employment also facilitates the receipt of market-driven, high payoff, on-the-job training attached to an actual job. Fifth, training services can be beneficial and should be available to those displaced workers who lack marketable skills and face difficult re-employment prospects. Retraining is likely to be most effective if it is delivered by a stable training provider with strong links to employers. Sixth, unemployment benefits and re-employment services need to be tightly coordinated. Long-term income support for those that are employable should be conditioned on the recipient **taking** active steps to gain employment (including **skill** upgrading activities). Seventh, targeted job creation measures (either **in the** public sector or through wage subsidies) can play a role in moving the long-term unemployed back to work. The movement from a passive system of income support to a re-employment system that acts as an active springboard to new jobs can improve

the operation of the labor market and potentially allow for economies to operate at higher employment rates without igniting inflation worries.

### *The role of human capital investments*

Recent sharp increases in the labor market returns to skill in advanced industrial nations have led many to argue that increased investments in human capital (particularly in those from disadvantaged backgrounds and those without college degrees) are a key component of a strategy to improve national economic performance and make progress on the jobs problem (for example, Reich, 1991). In fact, the burgeoning literature attempting to explain cross-country differences in economic growth rates (for samples that are typically much broader than the OECD) has consistently found that countries that invest more in human capital (as measured by either enrollment rates or educational attainment of the adult population) subsequently experience more rapid rates of growth in per capita income than other countries conditional on initial levels of per capita income and indicators of political stability (Barro, 1992). Increased educational investments appear to have a direct effect on growth even conditional on a nation's fertility rate and rate of investment in physical capital. This direct effect may partially reflect an enhanced ability of a more educated labor force both to innovate and to adopt new technologies and organizational improvements. Increases in national educational attainment also appear to enhance growth through an association with increased physical capital investment and lower fertility rates (which may imply greater investments in child "quality"). Furthermore, broad-based expansions in education not only appear to lead to faster growth but also are strongly associated with a more equitable distribution of the benefits of economic growth (Londoño, 1990; Birdsall and Sabot, 1994). Thus the broad sweep of postwar comparative economic development appears to be strongly consistent with the hypothesis that human capital investments are integral to growth with equity. But human capital investments will have the greatest payoff when balanced with investments in research and development and infrastructure in an environment conducive to private sector entrepreneurial activity and investments in physical capital.

Critics of a perceived overemphasis on human capital investments

to deal with growing labor market problems for the less-skilled argue that such investments take a long time to pay off and that the amount of additional investment needed to offset shifts in the labor market in the 1980s are likely to be extremely large. Heckman, Roselius, and Smith (1993) estimate that the aggregate investment required to entirely offset the 1980s expansion in the college/noncollege earnings gap for the adult U.S. population would be well over \$1 trillion. While this is quite a large amount relative to the likely amount of federal expenditures available for increased direct public training and education investments in the near future, one must remember that much educational investment involves private opportunity costs and that the U.S. stock of education capital is huge—estimated to be over \$26 trillion in 1993 and to have grown by approximately \$10 trillion over the last decade by the U.S. Office of Management and Budget (1994). Increased public investments in human capital make sense if they have a high return. But increased human capital investments alone are unlikely to be sufficient to fully reverse the last decade's growth in the earnings gap in the short to medium term. Greater human capital investments need to be strongly complemented by other policies to augment the earnings of the less-educated and disadvantaged.

Market incentives for increased individual educational investments appear to be playing some role in helping to alleviate growing inequality in the United States. The large increase in the college wage premium in the 1980s has been associated with a large increase in college enrollment rates from 49 percent of high school graduates in 1980 to more than 60 percent in the early 1990s despite rapidly rising tuition costs (U.S. Department of Education, 1993). This large change will likely act to accelerate the rate of growth of the college graduate workforce over the rest of the decade, although the small size of the cohort currently entering the labor market operates in the opposite direction. An increased supply of graduates will somewhat offset demand increases favoring the more educated and help to reduce the rate of growth of educational earnings differentials. A decline in the proportion of workers without college degrees also is likely to operate to lower downward pressure on the earnings of the less educated.

More rapid expansions in the supply of more educated workers appear to serve to narrow earnings differentials and improve the labor

market position of the less-educated. This conclusion is consistent with the cross-country evidence that those countries that maintained their rate of relative supply expansion of the 1970s into the 1980s are the ones that experienced the smallest increases in wage inequality. It is also implied by many national time-series studies (for the United States, Britain, Sweden, South Korea, Canada, and the Netherlands) that have found an inverse relationship between changes in the rate of increase in the supply of more-educated relative to less-educated workers and changes in the pay advantage of the more educated (Freeman and Katz, 1994). Holding constant measures of trend growth in labor demand, a 10 percent increase in the growth of the relative supply of the more educated has been associated with a 3 to 7 percent narrowing of the pay gap in a variety of countries.<sup>6</sup>

Recent empirical microeconomic research on the returns to education strongly suggests that the returns to increasing the educational attainment of those from disadvantaged family backgrounds are likely to be particularly high. A voluminous literature exists documenting a strong relationship between years of schooling and earnings. Typical recent U.S. cross-section, ordinary least squares (OLS) estimates indicate a 6 to 10 percent earnings gain for each additional year of schooling. But OLS estimates may provide an inaccurate guide to the true average return to schooling because of ability bias (those who get schooling may be unobservably more able than those getting less schooling) and measurement error in schooling variables.

Much new research has attempted to estimate the returns to education through the use of variation in education generated by "credible natural experiments" (or policy interventions) such as compulsory schooling laws (Angrist and Krueger, 1991) and geographic distance to two- and four-year colleges (Kane and Rouse, 1993; Card, 1993). The basic idea is that these natural experiments generate variation in education that can plausibly be argued to be uncorrelated with innate ability. For example, college proximity affects the likelihood that individuals from disadvantaged backgrounds go on to higher education but does not appear to be related to unmeasured determinants of earnings after conditioning on controls for demographics and family background (Card, 1993). The consistent finding in this literature is that instrumental variables estimates of the return to schooling based



on such policy interventions are quite high and tend to exceed the corresponding OLS estimates for the same samples (Card, 1994). While these estimates probably can't be interpreted as average returns to education for the entire population, they do represent plausibly accurate estimates of the returns to education for those individuals (primarily from relatively disadvantaged family backgrounds) whose schooling choices are affected by these interventions (that is, those more likely to get more education when a college is more geographically accessible or when the compulsory schooling age is increased). But this is exactly the type of information policymakers need to assess the returns to expanding the accessibility of further education. The conclusion is that the relatively low levels of educational attainment of those growing up in low-income families do not appear (at least on the margin) to reflect low returns to such investments, but partially result from barriers to further education (financing constraints, lack of information on the appropriate course of study, actions to prepare for college, and so on).

Policies to increase the years of schooling at mainstream educational institutions (high schools, community colleges, and universities) for the disadvantaged appear to have a high payoff. Card's (1994) recent survey of the literature suggests that an additional year of schooling increases the future earnings of those from disadvantaged families by approximately 8 percent to 13 percent a year. The college enrollment decisions of those from low-income families also appear to be somewhat sensitive to the direct college costs (Kane, 1992). Thus increased financial assistance for higher education targeted at the disadvantaged appears to be a good investment. These high returns to schooling indicate that interventions to reduce high school dropout rates are quite important (as are steps to generally improve academic achievements in primary and secondary school). This raises the question of how effective are dropout prevention policies and second chance programs to assist disadvantaged youth and adults.

### *The effectiveness of training and employment services for the disadvantaged*

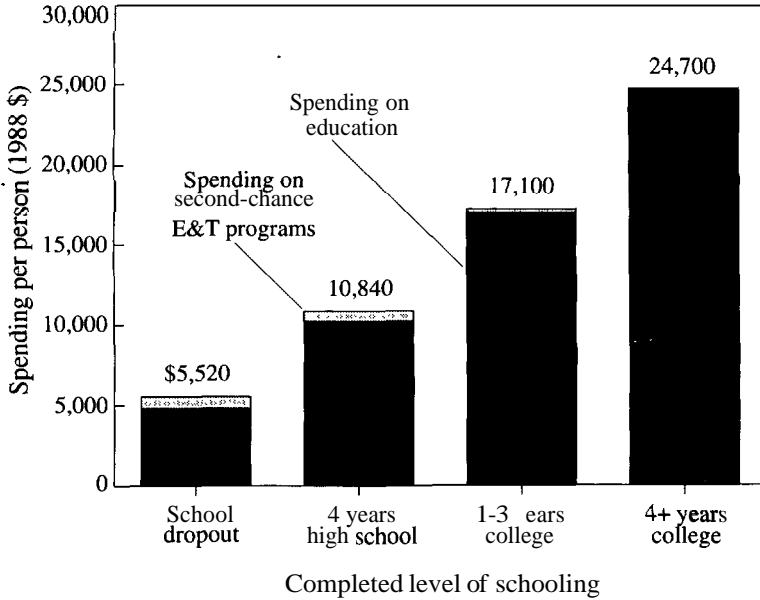
Since launching a War on Poverty in 1964, the U.S. federal government has funded a substantial number of programs to provide training

and employment opportunities to disadvantaged individuals. While significant gains were observed in the tight labor markets of the 1960s, the labor market outcomes for the disadvantaged have clearly deteriorated in terms of both employment and wages in the slower growing economy of the past two decades or so. There are two broad explanations for why, despite these government efforts, there has been essentially no improvement in aggregate labor market outcomes for disadvantaged workers: (1) the scale of employment and training programs for the disadvantaged has been too small to make much of an aggregate difference, even when the programs generate rates of return similar to other human capital investments, especially given a strong secular shift in the labor market against the less-skilled; and (2) the programs themselves may not have been very effective either because of their design or implementation. The first explanation clearly is quite important, and the second probably has some validity.

The roughly \$4.5 billion a year that the U.S. Department of Labor spends on employment and training programs for the disadvantaged (through the Job Training Partnership Act (JTPA) and the employment service) is fairly small in relation to the size of the population in need. Of the 25 million persons aged 16 to 55 who are eligible for these targeted programs, about 700,000 (or 3 percent) of them are served each year in training programs (excluding the summer jobs program). Many of the training programs provide only modest levels of investments lasting for a short duration. The major second-chance program for disadvantaged out-of-school youth and adults typically lasts less than six months and involves approximately \$3,000 in total direct expenditures per participant. Such investments have the potential to make a positive impact on participants' labor market prospects, but they do not appear substantial enough on their own even with a high rate of return to generate the quantum differences in earnings capacity required to move those with low initial earnings into the "middle class."

Chart 5 illustrates that there exists a great disparity in the United States between public investment in the education of youth who go on to college versus those who do not. On average, the public invests roughly \$5,000 in total between ages 16 and 24 educating a youth who drops out of school, compared to \$25,000 educating a youth who

**Chart 5**  
**Cumulative Public Spending per Person Aged 16-24 on Education and Training (Excl. Tax Subsidies to Firms)**



Source: U.S. General Accounting Office, "Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries" (May 1990), p. 24.

graduates from college. This disparity is magnified if the money parents spend on their children's education is included. Those from disadvantaged backgrounds are disproportionately represented in the dropout category. (Actually, U.S. taxpayers eventually do devote a large amount of resources on youth who drop out of school or do not go on to college—in the form of income transfers, food stamps, Medicaid, public housing, and rapidly increasing criminal justice costs.) In the United States, less-educated workers also receive less formal training on the job than college graduates (Bowers and Swaim, 1994).<sup>7</sup> In contrast, much more post-secondary training appears to be provided to those that don't go to college in other nations with strong school-to-work transitions and employer-training traditions such as Germany and Japan (Baily, Burtless, and Litan, 1993). These differ-

ences may play some role (along with wage-setting institutions) in the much larger educational earnings gap in the United States than in other advanced nations.

The next issue is that of the effectiveness of employment and training programs targeted at disadvantaged youth and adults. Do second chance programs for the disadvantaged significantly improve their future employment and earnings? Are there interventions that prevent disadvantaged youth from dropping out of high school given the apparent very high returns to schooling for this group?

A large literature has developed providing careful microeconomic evaluations of the impacts of U.S. training and employment programs on labor market and other socioeconomic outcomes of economically disadvantaged individuals.<sup>8</sup> The core question asked by evaluators is fairly straightforward: How different are the **participants'** outcomes (earnings) following entry into the program from the outcomes (earnings) that they would have experienced had they not participated in the program? But this question is often difficult to answer persuasively or precisely in practice. The assessment of program impacts requires the comparison of the outcomes of program participants to those of a similar group of individuals who did not participate. The most compelling evidence on program effectiveness comes from evaluations using a true experimental design in which eligible individuals are randomly assigned into a treatment group that receives program services and a control group that receives no services.<sup>9</sup> In this case, the simple difference between the treatments' and controls' mean earnings presents an unbiased estimate of the program's earnings impact. While a growing number of programs and demonstrations have received experimental evaluations using random assignment, program evaluators often must use nonexperimental methods to adjust for differences in the outcomes (earnings) between treatment and control groups that would have occurred even in the absence of the treatment group's program participation. The results of such nonexperimental studies are often quite sensitive to how the comparison group is chosen and to the specification of the earnings and program participation equations.<sup>10</sup> I focus my summary of the evidence on evaluations using random assignment or fairly convincing nonexperimental approaches.<sup>11</sup>

**Table 2**  
**Summaries of Selected Evaluations of Programs for Out-of-School Youth**

Program	Description	Sample Size and Follow-Up Period	Evaluation	Earnings/Employment Impacts	Comments/Sources
Center for Employment and Training (CET)	CET provides vocational instruction and job placement. CET students receive four to six months of intensive training in vocational skills, with classes taught by instructors from industry. Basic skills instruction is integrated into the vocational classes. Training is followed by job placement assistance. The program was evaluated in the late 1980s.	Four-year follow-up. 167 persons, divided between experimentals and controls.	Random assignment (regression adjusted).	Total over first four years after program enrollment: \$7,342*** (33%). Total over third and fourth years after program enrollment: \$6,547*** (53%).	In an independent random assignment experiment, CET also produced large and significant earnings gains for single mothers. Source: Cave and others (1993)
Comprehensive Employment Training Act (CETA)	Major federal training program of 1975-1980 served hundreds of thousands of youth each year. CETA services included public service employment, work experience, classroom training, and on-the-job training.	About 2,600 youth tracked for 2 years after program graduation.	Matched comparison group drawn from the CPS.	Generally, no significant earnings impacts for both male and female youth. But there exists considerable variation across specifications and samples in the estimated effects.	The wide range of nonexperimental estimates leave much uncertainty concerning the effectiveness of CETA for youth. Sources: Barnow (1987); LaLonde (1992)

**Table 2 (Continued)**

Program	Description	Sample Size and Follow-up Period	Evaluation	Earnings/Employment Impacts	Comments/Sources
JOBSTART	JOBSTART provided vocational training, basic education, and job placement to high school dropouts with low reading skills at 13 different sites. Average duration in the program was 7 months, and attendance was part-time. The experiment took place between 1985 and 1988.	Four-year follow-up. 988 experimentals; 933 controls.	Random assignment.	Total over first 4 years after entry: \$214 (1%)  4th year after entry:  Whole sample: \$410 (8%)  Men with previous arrest: \$1,560** (37%)	Significant reduction in arrest rates - from 12.6% for controls to 10.1% for experimentals - during program period. But by the 4th year, arrest rates were equal for experimentals and controls. Significant increase in GED attainment.
Job Training Partnership Act (JTPA)	JTPA is the federal government's major training program for disadvantaged youth. JTPA provides on-the-job training, classroom training, and job search assistance. In this experiment, youth received an average of about 420 hours of services (except for male youth arrestees, who received 320). The experiment was conducted in 1987-89.	30-month follow-up.  Total of 4,777 youth (treatment and control groups combined).	Random assignment.  Assignment took place after clients selected alternate service strategies.	Total over 30 months after enrollment:  Female youth: \$230 (1%)  Male youth non-arrestees: \$960 (-5%) Male youth arrestees: \$7 (0%)  Female youth, classroom training: \$930 (9%)	Significant increase in GED attainment for female youth.  Youth received only 127 (male youth arrestees) to 182 (female youth) more service hours than the control group.

Table 2 (Continued)

Program	Description	Sample Size and Follow-up	Evaluation	Earnings/Employment Impacts	Comments/Sources
Job Corps	The Job Corps is a residential program that provides intensive skills training, basic education, support services, and job placement to youth aged 16 to 21. Some 80% of enrollees are high school dropouts, and 75% have never held a job. The program takes about 1 year to complete, but one-third of the students drop out within 3 months. The program was evaluated in the late 1970s, but a new random assignment evaluation is being implemented.	Four-year follow-up.  Baseline: 4,334 program participants, 1,457 comparison group members.  Fourth-year follow-up: 2,791 participants and 1,118 comparison group members responded to survey.	Matched comparison group design. Extensive regression adjustment.	Average over first 4 years after program exit: \$1,350 per year** (15%). Fourth year after program exit: \$1,400** Earnings impacts varied depending on specification of regression model, but were always positive and significant. Significant employment increase of three weeks per year.	Significant reduction in serious (felony) crime.  Over a participant's lifetime, estimated social benefits are \$1.46 per dollar invested.  Large increases in educational attainment.  Source: Mallar and others, (1982).
Supported Work	Supported work provided about 12-15 months of full-time employment in closely supervised work to high school dropouts aged 17 to 20. About 75% of enrollees were male, 96% were minority, and 50% had criminal records. Job search assistance was provided at the end of the employment period. It operated from 1975 to 1979.	924 youth followed for 18 months; 506 youth followed 27 months; 155 followed 36 months. Half controls, half experimentals.	Random assignment. Results regression-adjusted.	(Time after entry)  Months 1 to 9: \$4,700*** (183%) Months 10 to 18: \$640 (15%) Months 19 to 27: \$410 (8%) Months 28 to 36: -\$860 (-12%)	Essentially no significant effects on arrests, even during program employment period.  Source: MDRC (1980).

\*\*Significant at 5 percent level

\*\*\*Significant at 1 percent level.

Earnings are presented in approximate 1993 dollars (using the CPI-X1) except for estimates from CET and JOBSTART which are in current dollars from the late 1980s.

**Disadvantaged out-of-school youth.** It has proven difficult to improve the labor market prospects of youth who drop out of high school, but some successes have been uncovered. Table 2 provides a summary of the results from selected U.S. programs for out-of-school youth (from ages 16 to 21). Subsidized work experience for disadvantaged youth has produced substantial gains in earnings and employment during the period of subsidized employment, but longer-term, post-program effects on employment and earnings typically have not been observed. Furthermore, evaluations of the major U.S. government programs offering relatively short-term skills training (lasting three to six months) to disadvantaged out-of-school youth—youth programs under CETA in the 1970s and under Title II of the JTPA which replaced CETA in the 1980s—indicate that they have not succeeded in significantly raising the employment or earnings of youth participants relative to comparison groups of youths.<sup>12</sup> The Job Corps program, which, in contrast, offers intensive services in a residential setting and takes about a year to complete, appears to have much success in improving the future earnings of participants and reducing their involvement in serious crime.

**JOBSTART** was an attempt to replicate the successes of the Job Corps in serving severely disadvantaged high school dropouts, but in a less-intensive, nonresidential setting. **JOBSTART** proved successful in raising the educational attainment of participants, as measured by **GEDs** (high school equivalency certificates) and vocational licenses, but these educational improvements did not translate into significant earnings gains in the first four years following entry into the program.<sup>13</sup> But the **JOBSTART** demonstration did have a bright spot in the impressive performance of one of the thirteen sites—the Center for Employment Training (CET) in San Jose, California. Youth at the San Jose CET site showed sustained annual earnings gains of over \$3,000 translating into a 40 percent earnings increase in the third and fourth years after entry into the program. CET produced similar large and persistent earnings increases for disadvantaged single mothers in an independent random assignment evaluation of the Minority Single Parent Demonstration (**Mathematica** Policy Research, 1993). CET is marked by an emphasis on vocational skills training, in which basic academics and vocational instruction are closely intertwined. The program has also forged very close connections to the local labor



**Table 3**  
**Summaries of Selected Evaluations of Programs for In-School Youth**

Program	Description	Evaluation	Impacts	Comments/Source
Quantum Opportunities Project (QUOP)	This program was managed by community organizations. It provided extensive academic assistance, college/career planning, and adult mentors to randomly selected (mostly minority) students from AFDC families in poor areas. Services were provided throughout high school, beginning in the ninth grade. The typical student received 1,300 hours of service at a total cost of \$10,600 over four years.	A random assignment evaluation with 200 participants (100 students and 100 controls) at four sites.	After 4½ years: High school dropout rate was cut from 50% for the control group to 23% for QUOP students. Participation in post-secondary education increased from 16% for the control group, to 42% for QUOP participants.	Results varied greatly by site. The aggregate results on dropout rates and post-secondary education are highly statistically significant.  At a fifth site, program implementation failed and the program had to be cancelled. Source: Hahn (1994).
Summer Training and Equipment Program (STEP)	STEP offered remedial academic education and summer jobs to disadvantaged youth aged 14 to 15. The program lasted 2 summers; participants received 110 hours of classes and 90 hours of work experience each summer.	Random assignment.	Short-term academic improvements were large and significant. Long term, there were no effects on high school graduation or employment	Source: Grossman and Sipe (1992).
Vocational Education and Dropout Prevention Demonstrations	Five high school dropout prevention programs offered vocational training, tutoring, and career counseling to at-risk students. The demonstrations were sponsored by the U.S. Dept. of Education. The reported findings are preliminary and based on a draft report that has not been approved by the U.S. Dept. of Education.	Random assignment.	In all five programs combined, the two-year dropout rate was reduced from 29% for the control group to 20% for participants. This reduction was statistically significant. Positive results were concentrated in two sites: urban Detroit and rural Oklahoma. These sites cut dropout rates by more than half, from about 25% to about 10%.	The two most successful sites provided several years of counseling, individual tutoring and academic assistance, and special study materials to at-risk students enrolled in vocational high schools. A similar random assignment evaluation of 4 sites on Indian reservations did not yield significant reductions in dropout rates. Source: Hayward and Talmadge (1993)

market. The CET example suggests that moderately intensive, short-term youth training can work if provided with a no-nonsense, work orientation (as opposed to a "warm and fuzzy" approach emphasizing GED attainment without a strong link between learning and the labor market).

***Disadvantaged in-school youth.*** The difficulty of effectively serving dropouts and the apparent high returns to additional formal schooling (as opposed to GEDs) for the disadvantaged both serve to underscore the importance of dropout prevention efforts. Table 3 summarizes three recent random assignment evaluations of interventions for in-school youth.

The Summer Training and Employment Program (STEP) provided remedial academic education and jobs to disadvantaged youth aged 14 to 15 during two summers. It did not include a school-year component. The program proved successful in offsetting "summer learning loss" and improving short-run academic achievement. But these gains did not translate into longer-run improvements in academic or labor market outcomes.

In contrast, there exists growing evidence that services for in-school disadvantaged youth which start early (when youth are 14 to 15 years old) and follow youth for multiple years through high school can reduce dropout rates. The Quantum Opportunities Project (QUOP) provided extensive long-term services to randomly selected students from families on public assistance in very poor neighborhoods. Although the sample sizes are small, QUOP appears to have substantially increased high school graduation and college attendance rates. Preliminary results from a new series of small-scale random assignment dropout prevention demonstrations sponsored by the Department of Education are also promising.<sup>14</sup>

***Disadvantaged adults:*** A number of training and job search assistance programs for disadvantaged adults have achieved significant improvements in earnings, especially for women. Although this training is typically short-term, the results for adults contrast sharply to the often disappointing impacts observed for youth. CETA training programs produced significant earnings gains only for women participants, while the programs under JTPA Title 11-A succeeded in

improving earnings for both men and women (LaLonde, 1992; U.S. Department of Labor, 1994b).

The large-scale experimental evaluation of JTPA found that disadvantaged adult participants earned an average of \$940 more than controls during the second year after leaving the program. This represented an increase of 10 percent for men and 15 percent for women as compared with what they would otherwise have earned. The impacts of the program varied according to the type of services provided: generally, short-term classroom training was the least successful, and a combination of on-the-job training and job search assistance produced the best results (Bloom and others, 1994). Subsidized employment approaches have also been successful in producing long-term earnings improvements for disadvantaged single mothers (Bell and Orr, 1994; Couch, 1992). A wide variety of employment and training programs for adult female public assistance (AFDC) recipients appear to generate modest (but statistically significant) earnings increases that persist for at least several years, and most of the evaluated interventions appear cost-effective. Evaluations in other OECD countries have also shown particular success for training and employment services to adult women entering or re-entering the labor market (OECD, 1993).

#### *Lessons from evaluations of programs for the disadvantaged*

The following lessons can be taken from evaluations of programs for the economically disadvantaged:

(1) *Efforts at reducing early school-leaving targeted on at-risk students are crucial and can be quite effective if they start early enough and are sustained throughout the period of secondary schooling.* The high returns to mainstream secondary and post-secondary schooling for the disadvantaged and low returns to less-intensive education (such as GEDs) argue strongly in favor of efforts at dropout prevention.

(2) *Early and comprehensive interventions may make sense for disadvantaged youth.* Research indicates that the problems of disadvantaged youth and adults—dropping out of school, teen

pregnancy, involvement in crime, drug abuse, employment difficulties—have their origins much earlier in life. Contacts between disadvantaged youth and adults who will take an active interest in them should be encouraged, the earlier the better. Besides providing guidance and support, mentors and role models can help to influence the attitudes, motivation, goals, and aspirations of youth. Young people also need more constructive activities during after-school and weekend hours, to reduce the amounts of time spent idly or hanging out around the neighborhood. Youth development experts maintain that some of the best programs incorporate a set of core principles, including safety, structure, membership, relationships with adults, and a sense of belonging and self-awareness. More than just content, this context is often what matters.

(3) *The most effective programs for the disadvantaged place an emphasis on work and mutual responsibility.* The CET in San Jose has performed well in random assignment evaluation of two separate target groups—dropout youth and young adult female single parents. Perhaps the reason for its success is that program staff take very seriously the tasks of teaching an occupational skill and finding a career-track job for enrollees. Everything in the program is geared to this. Similarly, the successful GAIN program for AFDC recipients operated in Riverside County, which focuses on quickly moving enrollees into jobs, has had much larger impacts on the earnings of former welfare recipients than the GAIN programs in other California counties were able to achieve (Riccio and others, 1994).

(4) *Continuing services following job placement are probably a sound investment.* Disadvantaged youth are likely to benefit from programs which continue to offer supportive services to them once they are placed in a job. Such help is especially important during the first two years after placement in a first job—a period during which most youth move from job to job before settling into a career progression. Staff should be available to help negotiate with employers and resolve problems. Although it has not been formally evaluated, Project STRIVE, with sites in New York City and Philadelphia, focuses on build-

ing relationships that will foster good employment experiences for youth from very disadvantaged backgrounds, and appears to be successful using this approach (Ofori-Mankata and Won, 1993). Rigorous evaluations of the effectiveness of program models using follow-up services are needed.

(5) *A consistent finding across many evaluations is that training and employment services for disadvantaged adults appear to be sound investments that raise employment and earnings, especially for women.*

(6) *The percentage earnings impacts of successful programs for the disadvantaged are similar to those of other human capital investment but the absolute increases in earnings are only modest on average. Thus training and employment services need to be augmented by other policies to make work pay such as earnings supplements for low-wage workers.* The gains created by training programs are important, and represent real gains for society and for the individuals involved. But they are often not enough to dramatically increase participants' income. For example, because of the low base earnings of single mothers on AFDC, even programs with a substantial positive effect haven't greatly reduced poverty rates among participants. The recent expansion of the U.S. earned income tax credit is an example of an important step toward linking income supplements to work.

(7) *Substantial variations in program effectiveness are apparent across providers using very similar models.* A very large gap exists between the best and worst service providers in the U.S. employment and training system. This gap does not depend so much on the types of services provided—classroom training, on-the-job training, or work experience—but rather on the quality of whatever service is provided. The management philosophy and organizational culture of training providers and brokers appear to be critical factors, as do the capabilities of the staff and quality of their interactions with participants.

## **Conclusions**

How should advanced nations cope with economic changes that appear to be creating a jobs problem for the less-skilled and the disadvantaged? A much more fruitful approach than trying to preserve activities that are no longer economical against the forces of change is to try to create a better-skilled workforce that is more adaptable to shifts in demand driven by technological change and globalization. The first element in such a strategy is the development of a system of life-long learning accessible to all workers. Such a system will require improved basic education, an effective school-to-work transition system, and incentives for employers to invest in their workforces. Adequate resources being devoted to second-chance programs with demonstrated records of payoff for disadvantaged youths and adults and experimentation with promising new approaches to improving labor market prospects for these groups also needs to be part of a strategy of enhanced human capital investments. And the availability of financing to make sure all qualified individuals can get higher education is also important, especially given much evidence of high returns to the additional post-secondary schooling associated with increases in accessibility (reductions in the effective cost) of such schooling. Increased investments in incumbent workers and productivity enhancements in the workplace can potentially be facilitated by the diffusion of a system of more cooperative worker-management relations found in emerging high performance work organizations (U.S. Department of Labor, 1993).

The second key factor in creating a more adaptable workforce is the movement from an unemployment system that primarily provides simple income maintenance to a more active "re-employment system" that empowers the unemployed with job search assistance and quality retraining opportunities. At least a small part of the social gains from improvements in productivity and purchasing power from technological change and increased internationalization should be used to assist displaced workers better make the transition to new jobs.

The third factor is to take steps to make sure work pays for the less-skilled and less-fortunate. All approaches to improve earnings at the bottom will involve some distortionary effects (for example,

increased marginal taxes on some groups to finance earnings supplements, potential employment effects of minimum wage, and so on). Thus a balanced portfolio of policy instruments should be used so one does not increase any specific distortion too far. The earned income tax credit is an important example of an instrument that links income supplements to work. Wage subsidies and a modest minimum wage also can play a role.

Microeconomic policies to create an adaptable workforce encourage open markets and the development and introduction of new technologies. A more adaptable workforce complements growth-oriented macroeconomic policies. Expanding markets and increased investments in research and development and the diffusion of new technology create further opportunities for high-wage jobs. Policies to buffer the earnings of the less-skilled through tax credits and institutional wage setting can help make sure the disadvantaged are not left behind in a more skill-intensive economy. Such policies to make work pay for the less-educated and disadvantaged are likely to be most effective when combined with policies to improve their skills and access to networks providing linkages to job opportunities. The experience of the 1980s shows that macroeconomic expansions, new technologies, and expanded trade can leave many behind when not accompanied by active measures to improve skills, assist reemployment, and make work pay.

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## Endnotes

<sup>1</sup>The chart plots the **time** series for overall wage inequality as measured by the log wage differential between the 90th and 10th percentile worker in each group.

<sup>2</sup>**Supply-side** changes in the composition in the workforce cannot explain recent **U.S.** wage structure changes since groups with relative wage increases, such as college graduates and women, also had substantial increases in their relative numbers in the workforce.

<sup>3</sup>The data in Chart 3 were kindly provided by Constance Sorrentino of the U.S. Bureau of Labor Statistics. Nine broad industry categories were categorized into high and low educational attainment sectors based on educational attainment data for the United States from the March 1985 Current Population Survey.

<sup>4</sup>Estimates of the number of males under correctional supervision (in prisons or jail, on parole, or on probation) by race and age for 1980, 1983, 1986, 1989, and 1991 were kindly provided by Darrell K. Gilliard and Allen J. Beck of the U.S. Bureau of Justice Statistics (BJS) using data from BJS surveys of prisoners (state, local, and federal), parolees, and probationers (U.S. Department of Justice, 1994). Criminal **supervision** rates for a group are given by the ratio of the estimated number of individuals under correctional supervision in the group to the total U.S. population in the relevant **age/sex/race** group. The total U.S. population for a group is given by the sum of the civilian noninstitutional population from the Current Population Survey; the prison and jail population from the BJS **estimates**; and the Armed Forces population. Data on the prison population is available for 1993 from Gilliard and Beck (1994), but data on 1993 parole and probation levels are not yet available. The 1993 **estimates** of criminal supervision rates are based on the assumption that the probation and parole rates grew at the same rates as the prison population from 1991 to 1993.

<sup>5</sup>OECD (1993) provides a fairly comprehensive recent survey of this literature and documents recent trends on spending on active and passive labor market measures in the OECD.

<sup>6</sup>The finding for the United States that these changes in educational wage differentials are apparent even when following fixed age cohorts over time indicates that these results do not just reflect a selection effect of a lowering of the relative quality of college graduates with an **expansion** in the fraction going to college.

<sup>7</sup>Of course, as Heckman, Roselius, and Smith (1993) point out, one must be cautious in drawing strong conclusions based on surveys of formal training activity because they do not account for informal on-the-job training.

<sup>8</sup>See Bassi (1994), Grossman (1992), LaLonde (1992), and U.S. Department of Labor (1994b) for recent surveys of the literature.

<sup>9</sup>See Heckman (1991) for a critical analysis of the use of random assignment experiments in social policy evaluation.

<sup>10</sup>See Heckman and Hotz (1989) for a thoughtful analysis of appropriate approaches to assessing the plausibility of alternative nonexperimental estimates of program impacts.

<sup>11</sup>It should also be remembered that even well-designed evaluations may be somewhat tricky to interpret. Standard estimates of program effects show only the marginal or additional impact



of the particular program being evaluated beyond any other services that are available in the community and received by the control group. The aggregate benefits of a program may be **overestimated** to the extent the labor market success of participants has displacement effects that adversely affect the labor market prospects of nonparticipants. In contrast, overall program benefits may be underestimated in the presence of peer or neighborhood effects in which participant **gains** have positive spillover effects on others in their communities. It is also typically not feasible to design an evaluation in a manner to learn about how the scale of operation of a program affects its effectiveness.

<sup>12</sup>An important caveat to the negative findings of evaluations of youth programs, such as the JTPA out-of-school youth component, is that youth in the control (comparison) groups also receive substantial **training** and education **services** (such as from Pell grants to finance further **education** at community colleges or proprietary schools or from local nonprofits). The gap in hours of training services between the treatment and control groups of youths in the recent national JTPA evaluation was not very large (approximately 200 hours).

<sup>13</sup>Cameron and Heckman (1993), as well as other nonexperimental and experimental studies, find that GED receipt by itself does not appear to improve the labor market outcomes of high school dropouts.

<sup>14</sup>These findings have not been officially approved by the U.S. Department of Education.

## References

- Adams, Charles F., Robert F. Cook, and Arthur J. Maurice. "A Pooled Time Series Analysis of the Job-Creation Impact of Public Service Employment Grants to Large Cities," *Journal of Human Resources* 17 (Spring 1983), pp. 283-94.
- Angrist, Joshua, and Alan Krueger. "Does Compulsory Schooling Affect Schooling and Earnings?" *Quarterly Journal of Economics* 106 (November 1991), pp. 979-1014.
- Baily, Martin Neil, Gary Burtless, and Robert E. Litan. *Growth with Equity*. Washington, D.C.: Brookings Institution, 1993.
- Barnow, Bert. "The Impact of CETA Programs on Earnings," *Journal of Human Resources* (Spring 1987).
- Bassi, Laune. "Stimulating Employment and Increasing Opportunity for the Current Workforce." Georgetown University, March 1994.
- Bell, Stephen, and Larry Orr. "Is Subsidized Employment Cost-Effective for Welfare Recipients?" *Journal of Human Resources* (Summer 1994).
- Benus, Jacob, and others. *A Comparative Analysis of the Washington and Massachusetts UI Self-Employment Demonstrations*. Bethesda, Maryland: Abt Associates, November 1993.
- Berman, Eli, John Bound, and Zvi Griliches. "Changes in the Demand for Skilled Labor within U.S. Manufacturing Industries: Evidence from the Annual Survey of Manufacturing," *Quarterly Journal of Economics* 109 (May 1994), pp. 367-97.
- Barro, Robert J. "Human Capital and Economic Growth," in *Policies for Long-Run Economic Growth*, papers and proceedings from a symposium sponsored by the Federal Reserve Bank of Kansas City in Jackson Hole, Wyoming, August 27-29, 1992.
- Birdsall, Nancy, and Richard Sabot. "Inequality and Growth Reconsidered." Unpublished paper, the World Bank, January 1994.
- Blank, Rebecca, and David Card. "Poverty, Income Distribution, and Growth: Are They Still Connected?" *Brookings Papers on Economic Activity*, 1993.
- Bloom, Howard, and others. "The National JTPA Study: Overview of Impacts, Benefits, and Costs of Title II-A." Bethesda, Maryland: Abt Associates, February 1994.
- Borjas, George, Richard Freeman, and Lawrence Katz. "On the Labor Market Effects of Immigration and Trade," in G. Borjas and R. Freeman, eds., *Immigration and the Work Force*. Chicago: University of Chicago and NBER, 1992, pp. 213-44.
- Bound, John, and George Johnson. "Changes in the Structure of Wages in the 1980s: An Evaluation of Alternative Explanations," *American Economic Review* 82 (June 1992), pp. 371-92.
- Bowers, Norman, and Paul Swaim. "Recent Trends in Job Training," *Contemporary Economic Policy* 12 (January 1994), pp. 79-88.
- Calmfors, Lars. "Active Labor Market Policy and Unemployment—A Framework for the Analysis of Crucial Design Features." OECD, Labor Market and Social Policy Occasional Paper No. 15, 1994.
- Cameron, Stephen, and James J. Heckman. "The Nonequivalence of High School Equivalents," *Journal of Labor Economics* 11 (January 1993), pp. 1-47.
- Card, David. "The Effect of Unions on the Distribution of Wages: Redistribution or Relabeling?" NBER Working Paper No. 4195, October 1992.
- \_\_\_\_\_. "Using Geographic Variation in College Proximity to Estimate the Return to Schooling." NBER Working Paper No. 4483, October 1993.
- \_\_\_\_\_. "Earnings, Schooling, and Ability Revisited." Princeton University, Industrial Relations Section Working Paper No. 311, May 1994.
- \_\_\_\_\_, and Alan Krueger. *Myth and Measurement: The New Economics of the Minimum Wage*. Princeton University Press, forthcoming 1994.
- Cave, George, and others. *JOBSTART: Final Report on a Program For High School Dropouts*. Manpower Demonstration Research Corporation, October 1993.
- Coleman, Mary T., and John Pencavel. "Changes in Work Hours of Male Employees Since 1940." *Industrial and Labor Relations Review* 46 (January 1993), pp. 262-83. (a)
- \_\_\_\_\_, and \_\_\_\_\_. "Trends in Market Work Behavior of Women Since 1940," *Industrial*

- and *Labor Relations Review* 46 (July 1993), pp. 653-76. (b)
- Couch, Kenneth. "New Evidence on the Long-Term Effects of Employment Training Programs," *Journal of Labor Economics* 10 (October 1992), pp. 380-88.
- Crane, Jonathan, and David Ellwood. "The Summer Youth Employment Program: Private Supplement or Substitute." Harvard University, March 1984.
- Cutler, David M., and Lawrence F. Katz. "Macroeconomic Performance and the Disadvantaged." *Brookings Papers on Economic Activity*. 1991:2, pp. 1-61.
- Davis, Steven J. "Cross-Country Patterns of Change in Relative Wages," in O.J. Blanchard and S. Fischer, eds., *NBER Macroeconomics Annual 1992*. Cambridge, Mass.: MIT Press, 1992.
- DiNardo, John, Nicole Fortin, and Thomas Lemieux. "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semi-parametric Approach." Unpublished paper, University of California-Irvine, January 1994.
- Forslund, Anders, and Alan B. Krueger. "An Evaluation of Swedish Active Labor Market Policy: New and Received Wisdom." NBER Working Paper No. 4802, July 1994.
- Freeman, Richard B. "How Much Has De-Unionization Contributed to the Rise in Male Earnings Inequality?" in Sheldon Danziger and Peter Gottschalk, eds., *Uneven Tides: Rising Inequality in America*. New York: Russell Sage Foundation, 1993, pp. 133-63.
- \_\_\_\_\_. "Crime and the Job Market." Harvard University, July 1994.
- \_\_\_\_\_, and Lawrence F. Katz. "Rising Wage Inequality: The United States vs. Other Advanced Countries," in R. Freeman, ed., *Working Under Different Rules*. New York: Russell Sage Foundation and NBER, 1994, pp. 29-62.
- \_\_\_\_\_, and \_\_\_\_\_, eds., *Differences and Changes in Wage Structures*. Chicago: University of Chicago and NBER, forthcoming 1995.
- Gilliard, Darrell K., and Allen J. Beck. "Prisoners in 1993." U.S. Department of Justice, Bureau of Justice Statistics Bulletin, NCJ-147036, June 1994.
- Gottschalk, Peter, and Robert Moffitt. "Earnings and Wage Distributions in the NLS, CPS, and PSID." Part I of Final Report to the U.S. Department of Labor. Providence: Brown University, 1992.
- Grossman, Jean Baldwin. "The Evolution of Youth Training Programs." *Public/Private Ventures*, November 1992.
- \_\_\_\_\_, and Cynthia Sipe. *The Long-Term Impacts of the Summer Training and Education Program*. Public/Private Ventures, 1992.
- Hahn, Andrew. "Evaluation of the Quantum Opportunities Program (QUOP): Did the Program Work?" Brandeis University, June 1994.
- Hayward, Becky Jon, and G. Kasten Tallmadge. *Evaluation of Dropout Prevention and Reentry Projects in Vocational Education*. Draft Final Report. Research Triangle Institute, November 1993.
- Heckman, James J. "Randomization and Social Policy Evaluation." NBER Technical Working Paper No. 107, July 1991.
- \_\_\_\_\_, and V. Joseph Hotz. "Choosing Among Alternative Nonexperimental Methods for Estimating the Impact of Social Programs: The Case of Manpower Training," *Journal of the American Statistical Association* 84 (December 1989), pp. 862-74.
- \_\_\_\_\_, Rebecca L. Roselius, and Jeffery A. Smith. "U.S. Education and Training Policy: A Re-evaluation of the Underlying Assumptions Behind the New Consensus." University of Chicago, December 1993.
- Jacobson, Lours, Robert LaLonde, and Daniel Sullivan. "Earnings Losses of Displaced Workers," *American Economic Review* 84 (September 1993), pp. 685-709.
- Juhn, Chinhui, Kevin M. Murphy, and Brooks Pierce. "Wage Inequality and the Rise in the Returns to Skill," *Journal of Political Economy* 101 (June 1993), pp. 410-42.
- Kane, Thomas J. "College Entry by Blacks Since 1970: The Role of College Costs, Family Background and the Returns to Education." Harvard University, February 1992.
- \_\_\_\_\_, and Cecilia E. Rouse. "Labor Market Returns to Two- and Four-Year Colleges: Is a Credit a Credit and Do Degrees Matter?" Princeton University, Industrial Relations Section Working Paper No. 311, January 1993.
- Katz, Lawrence F., Gary Loveman, and David Blanchflower. "A Comparison of Changes in the Structure of Wages in Four OECD Countries." NBER Working Paper No. 4297, March 1993.

- \_\_\_\_\_, and Kevin M. Murphy. "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *Quarterly Journal of Economics* 107 (February 1992), pp. 35-78.
- Kraft, Komelius. "An Evaluation of Active and Passive Labour Market Policy." WZB Discussion Paper FS I 94-208. Berlin: May 1994.
- Krueger, Alan B. "How Computers Have Changed the Wage Structure? Evidence from Micro Data," *Quarterly Journal of Economics* (February 1993), pp. 33-60.
- LaLonde, Robert. "The Earnings Impact of U.S. Employment and Training Programs." University of Chicago, December 1992.
- Layard, Richard, Stephen Nickell, and Richard Jackman. *Unemployment*. Oxford University Press, 1991.
- Leigh, Duane E. *Does Training Work for Displaced Workers?* Kalamazoo, Michigan: W.E. Upjohn Employment Institute, 1990.
- Londoio, Juan Luis. "Income Distribution During the Structural Transformation: Colombia, 1938-1988." Ph.D. dissertation, Harvard University, 1990.
- Mallar, Charles, and others. *Third Follow-Up Report of the Evaluation of the Economic Impact of the Job Corps Program*, Mathematica Policy Research, 1982.
- Manpower Demonstration Research Corporation. *Summary and Findings of the National Supported Work Demonstration*, 1980.
- Mathematica Policy Research. *Fifth Year Impacts at CET*, 1993.
- Meyer, Bruce. "Policy Lessons from the U.S. Unemployment Insurance Experiments." NBER Working Paper No. 4197, 1992.
- Murray, Charles. "The British Underclass," *The Public Interest*, (Spring 1990) pp. 4-28.
- OECD. *Employment Outlook*. Paris: OECD, July 1993.
- \_\_\_\_\_. *The OECD Jobs Study*. Paris: OECD, 1994.
- Ofori-Mankata, Juliet, and Bo-Young Won. "STRIVE's Results: Evaluating a Small Non-Profit Organization in East Harlem." NYU, Wagner Graduate School of Public Service, 1993.
- Reich, Robert B. *The Work of Nations*. New York: Vintage Books, 1991.
- Riccio, James, and others. *Gain: Benefits, Costs, and Three-Year Impacts of a Welfare-to-Work Program*. Manpower Demonstration Research Corporation, June 1994.
- The Economist*. "Europe and the Underclass," July 30, 1994, pp. 19-21.
- Topel, Robert. "What Have We Learned from Empirical Studies of Unemployment and Turnover?" *American Economic Review* 83 (May 1993), pp. 110-115.
- U.S. Department of Education. National Center for Education Statistics. *The Condition of Education 1993*. Washington, D.C.: U.S. Government Printing Office, 1993.
- U.S. Department of Justice. Bureau of Justice Statistics. "Males Under Correctional Supervision, By Race and Age." Unpublished tabulations, April 1994.
- U.S. Department of Labor. *High Performance Work Practices and Firm Performance*, August 1993.
- \_\_\_\_\_. *Reemployment Services: A Review of Their Effectiveness*, April 1994. (a)
- \_\_\_\_\_. Office of the Chief Economist. "What's Working and What's Not: What We Know About Getting People New Skills and New Jobs," forthcoming 1994. (b)
- U.S. Office of Management and Budget. *Budget of the United States Government: Analytical Perspectives, Fiscal Year 1995*. Washington, D.C.: U.S. Government Printing Office, 1994.
- Wilson, William Julius. *The Truly Disadvantaged*. Chicago: University of Chicago Press, 1987.