



## C H A P T E R 8

# STRENGTHENING THE AMERICAN LABOR FORCE

The recession has been extremely difficult for American workers and families. One in ten workers is now unemployed, wages and hours worked have fallen, and many families are struggling to make ends meet. Making matters worse, the recession followed a sustained period of rising inequality and stagnation in the living standards of typical American workers. A central challenge in coming years will be to smooth the transition to a sustainable growth path with more widely shared prosperity.

As we begin to recover from the recession, we will see a new and much-changed labor market. Some industries that grew unsustainably large in recent years, such as construction and finance, will recover but will not immediately return to past employment levels. The same may be true for traditional manufacturing, which has been shrinking as a share of the economy for decades. The pace of employment decline will surely moderate after the recession, but many former workers in traditional manufacturing will need to transition into new, growing sectors.

In the place of the declining industries will come new opportunities for American workers. Health care will remain an important source of growth in the labor market, as will high-technology sectors including clean energy industries and advanced manufacturing. Well-trained and highly skilled workers will be best positioned to secure good jobs in these new and growing sectors. The best way to prepare our workforce for the challenges and opportunities that lie ahead is by strengthening our education system, creating a seamless, efficient path for every American from childhood to entry into the labor market as a skilled worker ready to meet the needs of the new labor market.

Both individuals and the economy as a whole benefit from increased educational attainment and improved school quality. A focus on access, equity, and quality for all American students, from early childhood through high school and into postsecondary education and training throughout

workers' careers, will help ensure that the benefits of economic growth are widely shared.

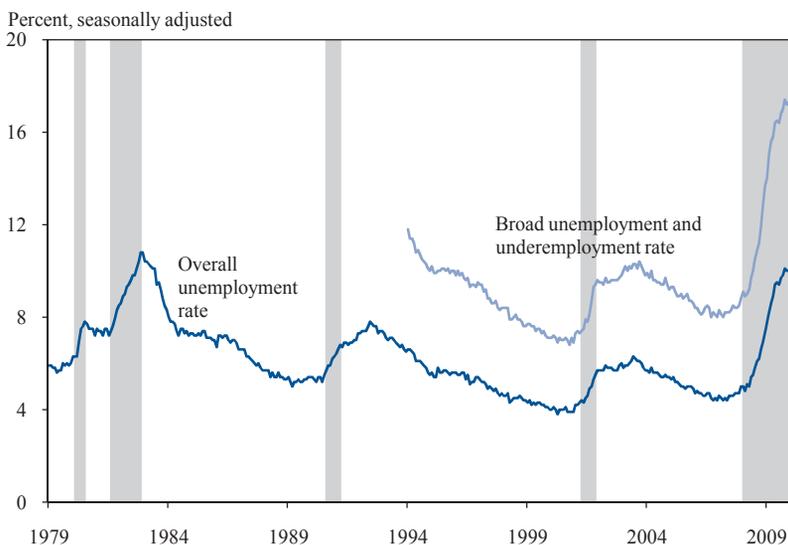
## CHALLENGES FACING AMERICAN WORKERS

The last few years have been a challenging time for American workers, with the high unemployment of the current recession compounding longer-run trends toward increased insecurity and inequality.

### *Unemployment*

As of December 2009, the unemployment rate was 10.0 percent, a rate that has been exceeded only once since the Great Depression. As high as it is, however, this rate understates just how weak the labor market is. Many Americans who would like to work have given up hope of finding a job and have dropped out of the labor force; others who would like full-time jobs have settled for part-time work. Figure 8-1 shows both the conventional unemployment rate and a broader measure of labor underutilization that includes not just unemployed workers but also those who would like jobs

Figure 8-1  
Unemployment and Underemployment Rates



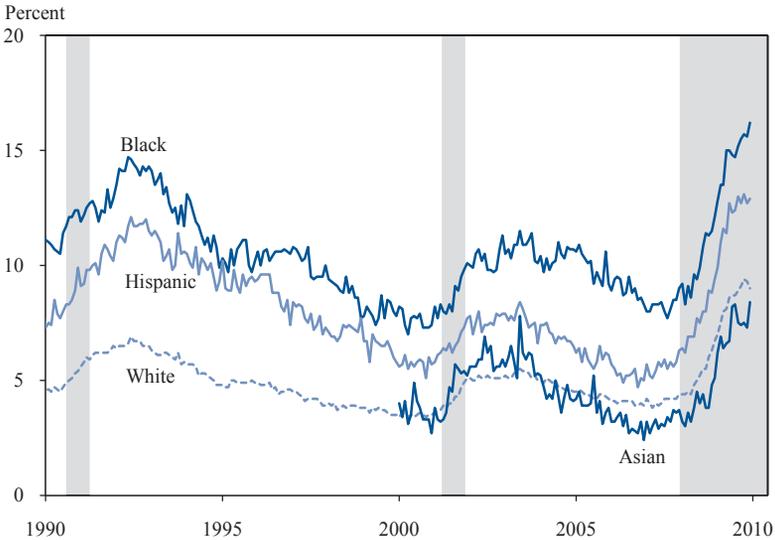
Notes: Grey shading indicates recessions. The overall unemployment rate represents the share of the labor force that is unemployed (those actively looking for work). The broad unemployment rate is a variant of the overall unemployment rate that adds marginally attached workers (those not actively looking for a job, but want one and have looked for one recently) as well as workers employed part-time for economic reasons to the numerator (the “unemployed”), and adds marginally attached workers to the denominator (the “labor force”).

Source: Department of Labor (Bureau of Labor Statistics), Employment Situation Table A-12, Series U-3 and U-6.

but have given up looking for work and those who are employed part-time for economic reasons. This measure indicates that more than one in six potential workers are unemployed or underemployed. Another measure of labor market conditions that accounts for those who have given up looking for work is the employment-to-population ratio. In December, fewer than six in ten adults were employed, the lowest ratio since 1983. A final useful labor market indicator is the number of long-term unemployed—those without jobs for 27 weeks or more. More than one-third of unemployed Americans have been seeking work for more than 26 weeks, the highest share since the series began in 1948.

The employment situation is even worse for members of racial and ethnic minorities. Figure 8-2 shows the unemployment rate for whites, blacks, Hispanics, and Asians. While the unemployment rate for whites topped out at 9.4 percent in October 2009 and has declined slightly since then, the rate for blacks exceeds 16 percent and has continued to rise, while that for Hispanics is nearly 13 percent. The disproportionate impact of the current recession on blacks and Hispanics mirrors that seen in past business cycles. It is critical that all Americans be able to participate fully and equally in our economic recovery.

Figure 8-2  
Unemployment Rates by Race



Notes: Grey shading indicates recessions. Hispanics may be of any race. Respondents with multiple races are excluded from the white, black, and Asian categories. Series for whites, blacks, and Hispanics are seasonally adjusted. Asian series is not seasonally adjusted and is not available before 2000.

Source: Department of Labor (Bureau of Labor Statistics), Employment Situation Table A-2.

Even a quick return to job growth will not immediately eliminate employment problems, as it will take time to create the millions of new jobs needed to return to normal employment levels. Many workers will have difficulty finding work for some time to come. Extended periods of high unemployment and low job creation rates mean that many displaced workers will exhaust their unemployment insurance benefits before jobs become available in large numbers. After months or even years of unemployment, most who exhaust their benefits will likely have used up whatever savings they had when they lost their jobs. Many will be forced to turn to public assistance—Temporary Assistance for Needy Families, Supplemental Nutritional Assistance (formerly known as food stamps), or other similar programs—to make ends meet.

Sustained periods of low labor demand also have negative repercussions for the long-run health of the economy. Mounting evidence indicates that displacement during bad economic times leads to long-run reductions in workers' productivity (Jacobson, LaLonde, and Sullivan 1993), likely because the displaced workers lose job skills, fall out of habits needed for successful employment, and have trouble convincing employers that they will be good employees. The resulting loss of "human capital" reduces workers' earning power, even after the economy recovers.

Deep downturns have particularly large effects on young Americans. The unemployment rate for teenagers in December was 27.1 percent. Research shows that teens who first enter the labor market during a recession can have trouble getting their feet onto the first rung of the career ladder, leaving them a step or more behind throughout their lives (Kahn forthcoming; Oreopoulos, von Wachter, and Heisz 2006; Oyer 2006). There is also evidence that when parents lose their jobs, their children's long-run economic opportunities suffer (Oreopoulos, Page, and Stevens 2008).

### *Sectoral Change*

The Great Recession has aggravated an already challenging trend: sectoral shifts that are changing the nature of work. While most American workers were once engaged in producing food and manufactured goods, often through physical labor that did not require a great deal of training, the United States is increasingly a knowledge-based society where workers produce services using analytical skills. The changing economy offers tremendous opportunities for American workers in high technology, in the new clean energy economy, in health care, and in other high-skill fields.

Accompanying these shifts in the composition of employment have been changes in the institutions that govern the labor market. The prototypical American career once involved working for a single employer for many

years, backed by a union that bargained for steady wage increases and for a pension that promised a stable, guaranteed income in retirement. The labor market has changed. Fewer than one in seven workers belongs to a union, and most people can count on changing employers several times over their careers. Moreover, the vast majority of retirement plans are now “defined contribution,” meaning that workers’ retirement incomes depend on the success of their individual investment decisions and on the performance of asset markets as a whole. This shift has meant added risk for workers, particularly those whose planned retirements coincide with downturns in asset prices.

### *Stagnating Incomes for Middle-Class Families*

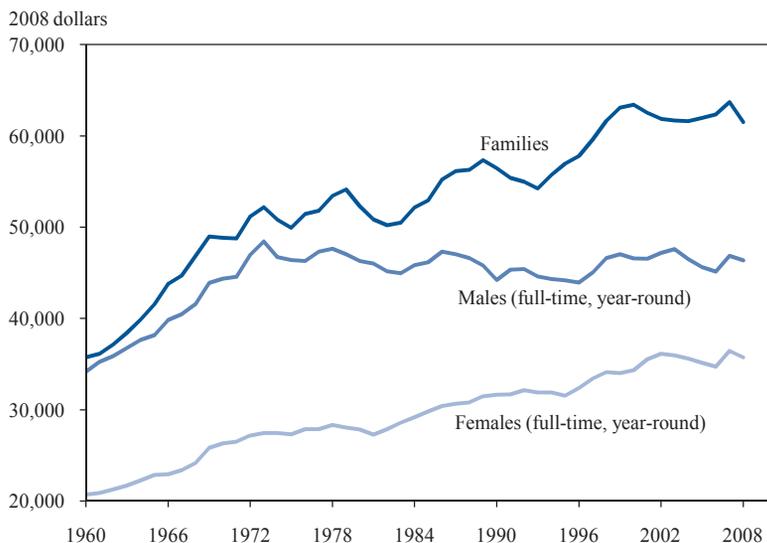
A final major challenge facing American workers is the decades-long stagnation in living standards for typical families and the related increase in inequality. Figure 8-3 offers two looks at income trends over the past half century. First, it shows real median family income—the level at which half of families have higher income and half have lower income—over time. The median rose steadily until 1970, but then the rate of growth slowed substantially, and since 2000, the median has actually fallen.

One determinant of family income is the number of individuals working outside of the home. Female labor force participation has risen dramatically: in 1960, just over 40 percent of adult women (aged 18–54) participated in the labor force; by 2000, approximately three-quarters did. This increase in female labor force participation contributed to the rise in family incomes. However, the female labor force participation rate has been roughly stable since 2000, and there are not likely to be future increases in participation as dramatic as those seen in the past. Further increases in family incomes will likely rely on growth in individual earnings.

The other two series in Figure 8-3 show the median earnings for men and women working full-time, year-round jobs. Real median female year-round earnings have grown steadily by about 1.1 percent per year on average since 1960, reflecting in part the gradual leveling of labor market barriers to women’s career advancement. But real male earnings have been essentially flat since the early 1970s. One source of the stagnation of median male earnings and the reduced growth rate of median female earnings is that productivity growth slowed between 1973 and 1995 (Chapter 10). But this is not a complete explanation. Even at a reduced growth rate, American workers’ productivity has more than doubled in the last 40 years.

A partial explanation for the divergence between productivity and earnings is the rapid rise in health care costs in recent years: an ever-greater share of the compensation paid by employers has gone toward health

Figure 8-3  
Real Median Family Income and Median Individual Earnings

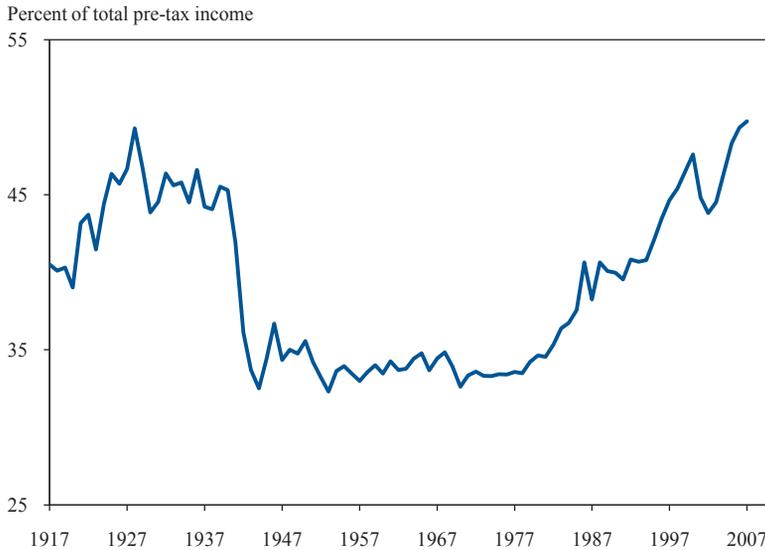


Notes: Family income measure is total money income excluding capital gains and before taxes. Median earnings series are for full-time, year-round workers; prior to 1989, only civilian workers are included. All series are deflated using CPI-U-RS.  
Sources: Department of Commerce (Census Bureau), Income, Poverty, and Health Insurance Coverage in the United States Table A-2; Current Population Survey, Annual Social and Economic Supplement, Historical Income Table F-12.

insurance premiums, which have risen much faster than inflation. This makes health reform an urgent priority. As discussed in Chapter 7, the proposals under consideration in Congress will slow the growth in health care costs, allowing American workers to realize more of the benefits of their hard work through increased take-home pay.

A second explanation is that per capita earnings are distributed in an increasingly unequal way, with ever-smaller shares going to workers in the middle and bottom of the distribution (Kopczuk, Saez, and Song forthcoming). Earnings inequality is compounded by inequality in nonlabor income, including dividends, interest, and capital gains. Figure 8-4 shows that in recent years nearly half of all income—including both wages and salaries and nonlabor income—has gone to 10 percent of families. The top 1 percent of families now receive nearly 25 percent of income, up from less than 10 percent in the 1970s (Piketty and Saez 2003). Today's income concentration is of a form not seen since the 1920s. Although there is nothing inherently wrong with high incomes at the top of the distribution, they are problematic if they come at the expense of the rest of workers. A major challenge for American public policy is to ensure that prosperity is again broadly shared.

Figure 8-4  
Share of Pre-Tax Income Going to the Top 10 Percent of Families



Note: Includes capital gains.

Sources: Piketty and Saez (2003); recent data from <http://elsa.berkeley.edu/~saez/TabFig2007.xls>.

## POLICIES TO SUPPORT WORKERS

The Administration's first priority upon taking office was to strengthen the economy and the labor market, helping to provide jobs for those who need them. According to Council of Economic Advisers estimates, the American Recovery and Reinvestment Act of 2009 had created or saved between 1.5 million and 2 million jobs as of the fourth quarter of 2009 (Council of Economic Advisers 2010).

At the same time, the Administration has worked to strengthen the safety net for those who remain unemployed. The Recovery Act provided unprecedented support for the jobless, with increased benefits for every unemployment insurance recipient, the longest extension of unemployment benefits in history, an expansion of the Supplemental Nutrition Assistance Program, and assistance with health insurance premiums for those who have lost their jobs. These provisions have directly helped millions of out-of-work Americans pay for housing, put food on the table, and maintain access to medical care. Moreover, because the unemployed are likely to spend any benefits they receive, these provisions have supported increased economic activity, strengthening the labor market and helping to create the job openings that will be needed to move people back into work. The safety net provisions in the Recovery Act are scheduled to expire at the end of

February 2010, but because of the ongoing weakness in the labor market, the Administration is working with Congress to extend them further.

The Recovery Act also included provisions to reform the unemployment insurance system, making it work more effectively in today's economy. These provisions extend unemployment insurance eligibility to many low-wage and part-time workers who were not previously eligible. These and other recent initiatives will also make it possible for many unemployed workers to draw out-of-work benefits while participating in training that prepares them to enter new fields.

Even after the labor market recovers, the dynamic American economy will continue to pose challenges—while also creating opportunities—for workers. Rapid technological change will cause shifts in the labor market, forcing some workers into unanticipated mid-life career changes. Policy can help to ease these transitions. Most important, it can ensure that workers who may switch careers several times during their lifetimes are able to maintain health insurance and to support themselves in retirement. As discussed in Chapter 7, comprehensive health care reform will eliminate preexisting conditions restrictions in health insurance and improve access to insurance in the individual market. These changes will make it much easier for people to maintain insurance when they change jobs or pursue entrepreneurial opportunities.

Declines in stock prices and home values have put serious pressure on many Americans' retirement plans and have highlighted the importance of improved retirement security. The Administration has proposed several measures to increase saving by low- and middle-income workers. Efforts include expanded access to retirement plans along with rule changes to streamline enrollment in 401(k) and IRA programs, facilitate simple saving strategies, and reorient program default options to emphasize saving. And, most important, the Administration is committed to protecting Social Security, thus ensuring that it can provide a reliable source of income for future retirees, as it has for their parents and grandparents.

Health and retirement security need to be accompanied by labor market institutions that support and protect workers. Labor unions have long been a force helping to raise standards of living for middle-class families. They remain important, and we need to reinforce the principle that workers who wish to join a union should have the right to do so.

Another set of institutions in need of attention is our immigration system. The current framework absorbs considerable resources but does not serve anyone—native workers, employers, taxpayers, or potential immigrants—well. Particular problems are posed by the presence of large numbers of unauthorized immigrants and the lengthy queues—some over 20 years—for legal residency.

Reform of the immigration system can strengthen our economy and labor market. Reform should provide a path for those who are currently here illegally to come out of the shadows. It should include strengthened border controls and better enforcement of laws against employing undocumented workers, along with programs to help immigrants and their children quickly integrate into their communities and American society. Future immigration policy should be more responsive to our economy's changing needs. Reform of the employment-based visa and permanent residency programs will also help reduce the incentives to immigrate illegally by giving potential immigrants a more viable legal path into the United States.

## **EDUCATION AND TRAINING: THE GROUNDWORK FOR LONG-TERM PROSPERITY**

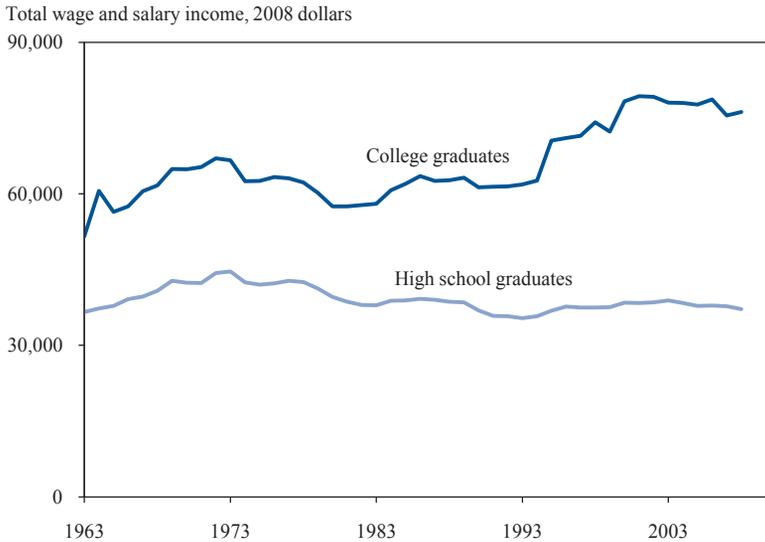
Rebuilding our economy on a more sustainable basis, investing in future productivity, fostering technological and other forms of innovation, and reforming our health care system to deliver better outcomes at lower costs are all crucial to long-run increases in living standards, and all are discussed elsewhere in this report. But one fundamental component of a strategy to ensure balanced, sustained, and widely shared growth is a robust system of education and training. The positive link between education and worker productivity—the cornerstone of economic prosperity—is well established. In fact, research has credited education with up to one-third of the productivity growth in the United States from the 1950s to the 1990s (Jones 2002).

### ***Benefits of Education***

At the individual level, there is a strong relationship between educational attainment and earnings (Card 1999). The earnings premium shows up at all levels of education. Those who complete one year of post-secondary education earn more than those who stop after high school, while those who complete two years or finish degrees earn more still. And job training for the unemployed has been shown by rigorous studies to raise participants' future earnings (Manpower Demonstration Research Corporation 1983; Jacobson, LaLonde, and Sullivan 2005).

The earnings premium associated with education is far larger than the cost—in tuition and forgone earnings—of remaining in school (Barrow and Rouse 2005), and it has grown in recent decades. Figure 8-5 shows the trends in the average annual earnings of individuals with high school diplomas but no college and of those with bachelor's degrees. In the mid-1960s, college graduates earned roughly 50 percent more than high school graduates, on average; by 2008, the premium had more than doubled.

Figure 8-5  
Total Wage and Salary Income by Educational Group



Notes: Figures for full-time workers aged 25-65 who worked 50-52 weeks in the calendar year. Before 1991, education groups are defined based on the highest grade of school or year of college completed. Beginning in 1991, groups are defined based on the highest degree or diploma earned. Incomes are deflated using the CPI-U.  
Source: Department of Labor (Bureau of Labor Statistics), March Current Population Survey, 1964-2009.

Education has other important benefits besides increased earnings. For example, recent studies have found that education improves people's health (Cutler and Lleras-Muney 2006; Grossman 2005). The explanation may be that better educated people make better health-related decisions, such as exercising or not smoking, or that education allows for easier navigation of a complex health care system. Education's benefits also extend beyond the individual. More educated people commit fewer crimes, vote more, and are more likely to support free speech (Dee 2004; Lochner and Moretti 2004). They also make their neighbors and coworkers more productive (Moretti 2004).

### *Trends in U.S. Educational Attainment*

The United States has historically had the world's best education system. Although most European countries once limited advanced education to the economic elite, the United States has historically made it broadly available. U.S. secondary schools have been free and generally accessible since early in the 20th century. By the 1950s, nearly 80 percent of older teens (aged 15-19) in the United States were enrolled in secondary school, compared with fewer than 40 percent in Western Europe. The

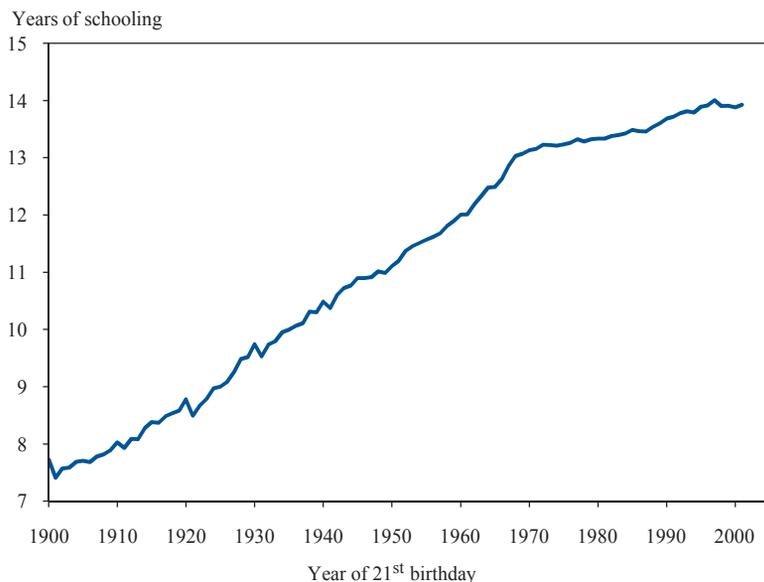
widespread expansion of state colleges and universities, begun under the Morrill Land Grant Act of 1862, led to even further advances in American education. Average educational attainment of people born in 1975 was over five years higher than that of those born in 1895. About 50 percent of the gain was attributable to increases in high school education, about 30 percent to increases in college and postcollege education, and the remainder to continued increases in elementary education (Goldin and Katz 2008). During the second half of the 20th century, as educational attainment rose worldwide, the United States became a clear leader in graduate education, attracting the brightest students from around the world. Some remained in the United States, adding importantly to the Nation's human capital stock and its diversity, while others returned to their home countries and used the education they got here to help increase prosperity there.

Harvard economists Claudia Goldin and Lawrence Katz contend that America's strong educational system helped make the United States the richest nation in the world (Goldin and Katz 2008). Over the past several decades, however, U.S. leadership in education has slipped. Although the Nation remains preeminent in postgraduate education, we can no longer claim to be home to the most educated people in the world.

For decades, the number of educated American workers grew faster than did the demand for them. But beginning with the cohort that completed its schooling in the early 1970s, the growth rate in the supply of educated Americans slowed significantly. This can be seen in Figure 8-6, which shows the mean years of schooling of Americans by year of birth. High school and college graduation rates, which grew steadily for many decades, began to stagnate, and younger generations no longer graduate at significantly higher rates than did previous generations. This slowdown in the growth of educational attainment has contributed to rising income inequality, as the shortage of college-educated workers has meant rising wages for high-skill work and falling wages for work requiring less education. The current recession may provide an opportunity to reverse this slowdown but only if our education system can keep up with increased demand (Box 8-1).

Meanwhile, other developed countries have continued to improve their educational outcomes, and the United States has slipped behind several other advanced countries at both the high school and postsecondary levels. Among the cohort born between 1943 and 1952—a group that largely completed its education by the late 1970s—the United States leads the world in the share with at least a bachelor's degree or the equivalent. In more recent cohorts, the percentage completing college has been roughly stable in the United States while increasing substantially in several peer countries. Figure 8-7 shows that only 40 percent of Americans born between 1973 and

Figure 8-6  
Mean Years of Schooling by Birth Cohort



Notes: Years of schooling at 30 years of age. Methodology described in Goldin and Katz (2007). Graph shows estimates of the average years of schooling at 30 years of age for each birth cohort, obtained from regressions of the log of mean years of schooling by birth cohort-year cell on a full set of birth cohort dummies and a quartic in age. Sample includes all native-born residents aged 25 to 64 in the 1940-2000 decennial census IPUMS samples and the 2005 CPS MORG. For further details on the method and data processing, see Goldin and Katz (2008, Figure 1.4) and DeLong, Goldin, and Katz (2003, Figure 2.1). Sources: Department of Commerce (Bureau of the Census), 1940-2000 Census IPUMS, 2005 CPS MORG; Goldin and Katz (2007).

### Box 8-1: The Recession's Impact on the Education System

Today's weak labor market is likely to lead to short- and medium-run increases in school enrollments, as high unemployment pushes many young people to increase their job skills through further education. Indeed, college enrollments rose substantially in 2008 relative to 2007, and preliminary reports suggest further increases in 2009. The resulting increase in educational attainment will offer long-run benefits for the economy, because today's students will be more productive workers when labor demand returns to full strength.

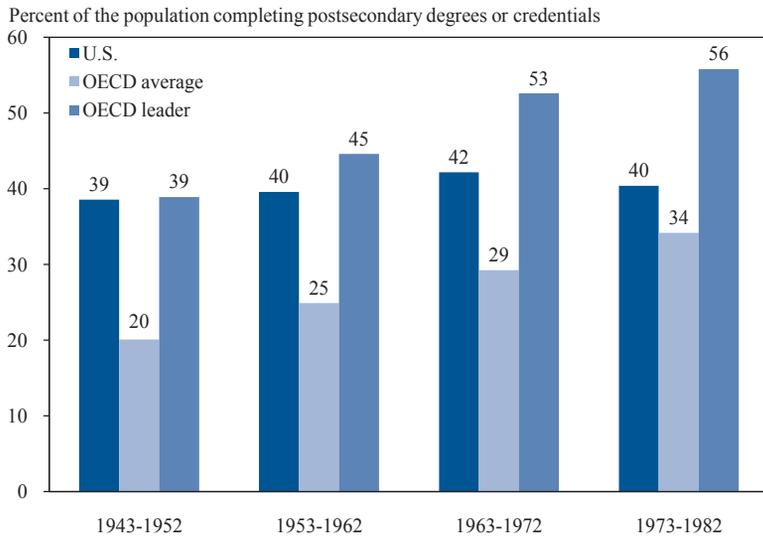
In the short run, however, elevated enrollments are placing strains on colleges, particularly the two-year colleges that are seeing most of the enrollment increase, as colleges' costs are rising at the same time state

*Continued on next page*

*Box 8-1, continued*

funding is being cut. Elementary and secondary schools are under similar strains. In part because of reduced state funding, schools employed roughly 70,000 fewer teachers and teachers' assistants in October 2009 than a year earlier, even though student enrollments were up. The reduction in per-pupil resources at both levels is an unfortunate budgetary response. At this time of high unemployment, it is desirable to encourage human capital formation, not make it more difficult. The State Fiscal Stabilization Fund, part of the Recovery Act, is helping in this regard, and recipients credit the Act with creating or saving at least 325,000 education jobs through the third quarter of 2009.

Figure 8-7  
Educational Attainment by Birth Cohort, 2007



Notes: Postsecondary degrees or credentials include only those of normal duration of two years or more and correspond to the Organisation for Economic Co-operation and Development (OECD) tertiary (types A and B) and advanced research qualifications. U.S. data reflect associate's, bachelor's, and more advanced degrees.

Sources: Organisation for Economic Co-operation and Development (2009); OECD Indicators Table A1.3a.

1982 have completed associate's degrees or better. Equivalent attainment rates are higher in nine other countries, led by Canada and Korea, where 56 percent completed some postsecondary degree or extended certificate program. High school graduation rates show a similar pattern, with the United States slipping from the top rank to the middle in recent decades.

## *U.S. Student Achievement*

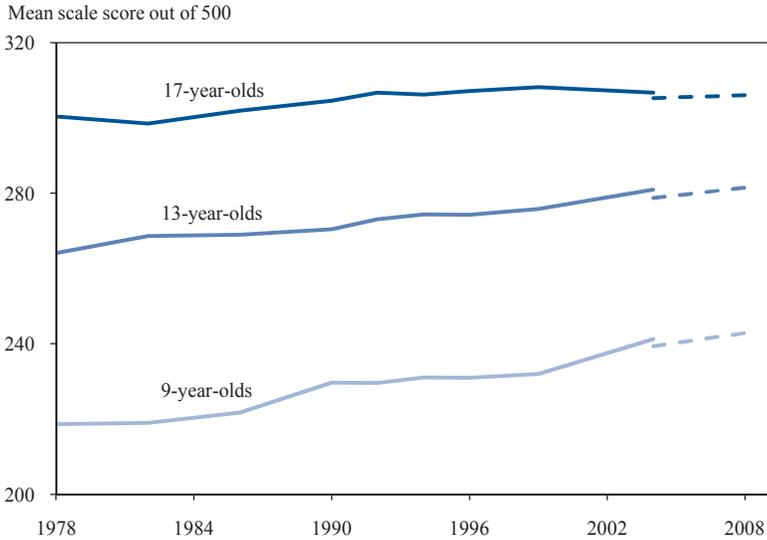
U.S. student achievement, as measured by assessments that capture how much students know at particular ages or grades, has improved notably in recent years, even as attainment has stagnated. The most reliable barometer is the National Assessment of Education Progress (NAEP), which has been administered consistently for more than three decades. Figure 8-8 shows average NAEP math scores for students at three different ages from 1978 through 2008. The performance of 9-year-olds (who are typically enrolled in 4th grade) and 13-year-olds (typically 8th grade) has improved over the past 35 years. The size of the achievement gains is impressive. Nearly three-quarters of 13-year-olds in 2008 scored above the 1978 median, with similar gains throughout the distribution. The performance of 17-year-olds (typically 12th graders) has also improved, although the gain was smaller.

Despite recent progress, American students are not doing as well as they should. In addition to average performance, the NAEP program measures the fraction of students who attain target achievement levels defined based on the skills that children at each age and grade should have mastered. A student is judged “proficient” if he or she demonstrates age- or grade-appropriate competency over challenging subject matter and shows an ability to apply knowledge to real-world situations. In the most recent tests, only 31 percent of 8th graders were proficient in reading and only 34 percent in math. Proficiency rates are similar in 4th grade.

For some subgroups, proficiency rates were much lower. Only 12 percent of black students and 17 percent of Hispanics were proficient in math in 8th grade. The low achievement in these subgroups is also reflected in low attainment. In 2000, only 81 percent of black young adults (aged 30–34) had graduated from high school, and only 15 percent had bachelor’s degrees. Although racial and ethnic gaps have narrowed importantly in recent decades—the black-white and Hispanic-white mathematics gaps at age 13 in the NAEP long-term trend data are each only two-thirds as large as in 1978—the low attainment and achievement of black and Hispanic students remain disturbing evidence of educational inequality in our society. Our future prosperity depends on ensuring that American children from all backgrounds have the opportunity to become productive workers.

Nowhere does low performance more acutely affect the health of the U.S. economy than in the areas of science, technology, engineering, and mathematics (known commonly by the acronym STEM). Employers frequently report that they have difficulty finding Americans with the qualifications needed for technical jobs and are forced to look abroad for suitably skilled workers. Indeed, international comparisons show that other countries achieve higher outcomes in STEM skills than we do. In

Figure 8-8  
Long-Term Trend Math Performance



Notes: In 2004 and thereafter, accommodations were made available for students with disabilities and for English language learners, and other changes in test administration conditions were introduced. Dashed lines represent data from tests given under the new conditions.

Source: Department of Education (Institute of Education Sciences, National Center for Education Statistics), National Assessment of Educational Progress (NAEP), Long-Term Trend Mathematics Assessments.

2006, U.S. 15-year-olds scored well below the Organisation for Economic Co-operation and Development (OECD) average for science literacy on the Programme for International Student Assessment, and behind most other OECD nations on critical skills and competencies, such as explaining scientific phenomena and using scientific evidence.

## A PATH TOWARD IMPROVED EDUCATIONAL PERFORMANCE

Concerned about the impact of stagnating educational outcomes on U.S. economic growth, the President has pledged to return our Nation to the path of increasing educational attainment. He has challenged every young American to commit to at least one year of higher education or career training. He also has set ambitious goals: by 2020, America should “once again have the highest proportion of college graduates in the world” (Obama 2009a), and U.S. students should move “from the middle to the top

of the pack in science and math” (Obama 2009b). Meeting these challenges will require substantial commitment and reform, not just at the postsecondary level but also in elementary and high schools and even in early childhood programs.

### *Postsecondary Education*

The Nation’s postsecondary education system encompasses a diverse group of institutions, including public, nonprofit, and for-profit organizations offering education ranging from short-term skill refresher programs up to doctoral degrees.

In many of our peer countries, postsecondary education is entirely or largely state funded, with little direct cost to the student. U.S. postsecondary students, however, are generally charged tuition and fees, which have risen substantially in real terms over the past three decades. It is important to keep in mind that most of our students do not pay full tuition, as more than 60 percent of full-time students receive grant aid, and millions more also benefit from Federal tax credits and deductions for tuition. But increases in financial aid and Federal assistance have not kept up with rising costs, and the net price of attendance at four-year public colleges has risen nearly 20 percent over the past decade (College Board 2009).

Young people may have trouble financing expensive investments in college education even when these investments will pay off through increased long-term earnings. Thus, rising college costs represent an important barrier to enrollment. One study indicates that a \$1,000 reduction in net college costs increases the probability of attending college by 5 percentage points and leads students to complete about one-fifth of a year more college (Dynarski 2003). Thus the dramatic increase in the price of college has likely had an adverse impact on college attendance and completion. Moreover, the impact of cost increases is not evenly distributed: while students from high-income families can relatively easily absorb the increases, students from lower-income families are disproportionately deterred.

The rising cost of college is affecting educational attainment and will continue to do so unless we find ways to make college more affordable. To this end, the Administration has secured historic investments in student aid, including more than \$100 billion over the next 10 years for more generous Pell Grants, much of it financed through the elimination of wasteful subsidies to private lenders in the student loan program. This will ensure that virtually all students eligible for Pell Grants will receive larger awards. In addition, the Administration is taking steps to dramatically simplify the student aid application process, the complexity of which deters

many aid-eligible students from even applying. This simplification will help millions more students benefit from the Federal investments in college accessibility and affordability.

Tuition is not the only barrier to college completion. A great many students, including nearly half of those at two-year institutions, begin college but fail to graduate. Completion rates are particularly low for low-income students. One way to raise completion rates is through better design of the institutional environment. Recent rigorous studies have shown that improvements such as enhanced student services, changes in how classes are organized, innovations in how remedial education is structured, and basing some portion of financial aid on student performance can all contribute to improved persistence (Scrivener et al. 2008; Scrivener, Sommo, and Collado 2009; Richburg-Hayes et al. 2009).

### ***Training and Adult Education***

An often-overlooked component of the Nation's education system, one in which the government makes a major investment, is job training and adult education. In 2009, the Federal Government devoted more than \$17 billion to job training and employment services and spent substantial additional funds on Pell Grants for vocational and adult education students. Training is provided by a diverse set of institutions, including proprietary (for-profit) schools, four-year colleges, community-based organizations, and public vocational and technical schools. Box 8-2 discusses a particularly important type of training provider, community colleges.

Studies have documented that training and adult education programs improve participants' labor market outcomes. For example, a recent study found that Workforce Investment Act training programs for adults boosted employment and earnings, on average, although results varied substantially across states (Heinrich, Mueser, and Troske 2008). Evidence is also growing that state training programs for adults can have large positive impacts on long-term earnings (Hotz, Imbens, and Klerman 2006; Dyke et al. 2006).

Education and training for adults play critical roles in helping displaced workers regain employment in the short term and in helping them obtain and refresh their skills in the face of an ever-changing workplace. For example, one study of displaced workers in Washington State suggests that attending a community college after displacement during the 1990s increased long-term earnings about 9 percent for men and about 13 percent for women (Jacobson, LaLonde, and Sullivan 2005). The benefits were greatest for academic courses in math and science, as well as for courses related to the health professions, technical trades (such as air conditioner repair), and technical professions (such as software development).

Although research demonstrates the value of training programs, there is no doubt that the current system could be more effective. Five strategies that could improve effectiveness are: aligning goals across different elements of the education and training system and constructing a cumulative curriculum; collaborating with employers to ensure that curricula are aligned with workforce needs and regional economies; making sure that scheduling is flexible and that curricula meet the needs of older and nontraditional students; providing incentives and flexibility for institutions and programs to continually improve and innovate; and establishing a stronger accountability system that measures the right things, makes performance data available in an easily understood format, and does not create perverse incentives to avoid serving populations that most need assistance. Reauthorization of the Workforce Investment Act will provide an opportunity to implement these strategies.

**Box 8-2: Community Colleges: A Crucial Component of Our Higher Education System**

Community colleges are an important but often overlooked component of the Nation’s postsecondary education system. These colleges may offer academic programs preparing students to transfer to four-year colleges to complete bachelor’s degrees, academic and vocational programs leading to terminal associate’s degrees or certificates, remedial education for those who want to attend college but who left high school insufficiently prepared, and short-term job training or other educational experiences. Most also offer contract training in which they work directly with the public sector, employers, and other clients (such as prisons) to develop and provide training for specific occupations or purposes.

Community colleges are public institutions that typically charge very low tuition and primarily serve commuters, which makes them accessible to people who do not have the resources for a four-year college. They generally have “open door” admissions policies, requiring only a high school diploma or an ability to benefit from the educational experience. This makes them a good choice for older and nontraditional students, as well as for potential students who want to pursue additional education and build their human capital but want or need to do so at relatively low cost.

More than 35 percent of first-time college freshmen enroll at community colleges. These colleges also serve about 35 percent of individuals receiving job training through the Workforce Investment Act, along with a notable proportion of adults attending adult basic education, English as a second language, and General Educational Development

*Continued on next page*

*Box 8-2, continued*

(GED) preparation classes. Researchers have estimated that attending a community college significantly raises earnings, even for individuals who do not complete degrees (Kane and Rouse 1999; Marcotte et al. 2005).

Community colleges will form the linchpin of efforts to increase college attendance and graduation rates. The Administration has proposed a new program of competitive grants for implementing college completion initiatives, with a focus on community colleges. Along with the sorts of strategies mentioned above for training programs more generally, community college initiatives could include building better partnerships between colleges, businesses, the workforce investment system, and other workforce partners to create career pathways for workers; expanding course offerings including those built on partnerships between colleges and high schools; and stronger accountability for results. These strategies will help both to strengthen colleges and to raise completion rates. The proposed program also recognizes the need to learn from such investment and therefore supports record levels of funding for research to evaluate the initiatives' effectiveness.

### *Elementary and Secondary Education*

Students who leave high school with inadequate academic preparation face greater challenges to success in postsecondary training. In 2001, nearly one-third of first-year college students in the United States needed to take remedial classes in reading, writing, or mathematics, at an estimated cost of more than \$1 billion (Bettinger and Long 2007). The need for remediation is a clear warning sign that a student may later drop out. In one study, students who needed the most remediation were only about half as likely to complete college as their peers who were better prepared (Adelman 1998). Of course, students who leave high school well prepared are more successful in the labor market as well as in college.

The task of improving college and labor market preparedness begins in elementary and secondary school, if not earlier. Among the most important contributors to enhanced student outcomes is effective teaching. Common sense and research both recognize the importance of high-quality teachers, and yet too few teachers reach that standard. Improvements are needed in teacher training, recruitment, evaluation, and in-service professional development.

Not only is the supply of high-quality teachers insufficient but their distribution across schools is inequitable. Frequently, schools with high

concentrations of minority and low-income students, the very schools that need quality teachers the most, cannot recruit and retain skilled educators. In New York State, 21 percent of black students had teachers who failed their general knowledge certification exam on the first attempt, compared with 7 percent of white students (Lankford, Loeb, and Wyckoff 2002). A particular problem is high teacher turnover: high-poverty and high-minority schools have much higher turnover than do schools with more advantaged students. Some districts have begun experimenting with financial incentives for teaching in high-need schools; these efforts need to be rigorously evaluated and, if they are found to be successful, disseminated widely.

Improving teacher quality, however, is not the only promising strategy for change. Others include extending both the school day and the school year. Many successful strategies have emerged from schools that were given freedom to explore new and creative approaches to long-standing problems. Although traditional public schools can be agents for change, the public charter school model is tailor-made for such innovation. The Nation's experience with charter schools has been fairly brief, but evidence to date suggests that some of these schools have found successful strategies for raising student achievement. An important future challenge will be to take these strategies and other innovative school models to scale, even as schools continue to search for ever-better approaches.

Although most reforms in recent years have focused on elementary schools, high school reform is now rising to the top of the education policy agenda. Promising approaches to improving secondary education include programs that offer opportunities for accelerated instruction and individualized learning, programs to expand access to early college coursework before finishing high school, residential schools for disadvantaged students, and specialty career-focused academies.

An environment that supports innovation must be coupled with strong accountability. Some innovations are bound to be unsuccessful, and indeed there is substantial variation in the quality of both public and charter schools. Strong accountability systems that promote effective instructional approaches can provide incentives for all school stakeholders to perform at their best and help to identify struggling schools in need of intervention. Systems are needed to identify failing schools, based on high-quality student assessments as well as other metrics. At the same time, accountability strategies must be carefully crafted to discourage “teaching to the test” and other approaches that aim at the measures used for evaluating schools rather than at true student learning. Accountability strategies must also recognize that student achievement reflects family, community, and peer influences as well as that of the school.

Providing incentives for schools identified as failing to improve can significantly improve student outcomes. Several states have done just that. Sixteen years ago, Massachusetts began setting curriculum frameworks and holding schools accountable for student performance. Massachusetts students have historically scored above the national average on various academic achievement measures, but since passing school accountability reform, Massachusetts has moved even farther ahead. In Florida, too, a strong school accountability plan, implemented in 1999, has shown positive results (Figlio and Rouse 2006; Rouse et al. 2007).

The Recovery Act included an unprecedented Federal investment in elementary and secondary education. The Race to the Top Fund provides competitive grants to reward and encourage states that have taken strong measures to improve teacher quality, develop meaningful incentives, incorporate data into decisionmaking, and raise student achievement in low-achieving schools. The upcoming reauthorization of the Elementary and Secondary Education Act provides an opportunity to make further progress.

### *Early Childhood Education*

High-quality elementary and secondary schools are necessary, but they are not enough. In recent years, researchers and educators have learned a great deal about how important the school readiness of entering kindergarteners is to later academic and labor market success. School readiness involves both academic skills, as measured by vocabulary size, complexity of spoken language, and basic counting, and social and emotional skills such as the ability to follow directions and self-regulate. Children who arrive at school without these skills lack the foundation on which later learning will build.

Recent research indicates that as many as 45 percent of entering kindergarteners are ill-prepared to succeed in school (Hair et al. 2006). Reducing the share of at-risk preschoolers is critical to strengthening America's educational system and its labor market in the long run. High-quality early childhood interventions can significantly improve school readiness, especially for low-income children. Intensive programs that combine high-quality preschool with home visits and parenting support have been shown to raise children's later test scores and educational attainment and also to reduce teen pregnancy rates and criminality (Karoly et al. 1998; Schweinhart et al. 1985).

The programs on which the most compelling research is based include small classes, highly educated teachers with training in early childhood education, and stimulating curricula. They feature parent training

components that help parents reinforce what the teachers do in the classroom. The programs also assist teachers in identifying health and behavior problems that can inhibit children's intellectual and emotional development. Importantly, even intensive, expensive programs are cost-effective. For example, one particularly intensive program was found to produce \$2.50 in long-run savings for taxpayers for every dollar spent, because in adulthood the participating children earned higher incomes, used fewer educational and government resources, and had lower health care costs (Barnett and Masse 2007).

Less intensive programs can be effective as well. The Head Start program provides an academically enriching preschool environment for 3- and 4-year-olds, at a cost in 2008 of only about \$7,000 per child per year. Although the quality of Head Start centers varies widely, studies have found that attendance at a well-run center improves children's later-life outcomes (Currie and Thomas 1995).

Ensuring that all families have access to the services and support they need to help prepare their children for kindergarten will require a strong system of high-quality preschools and other early-learning centers. Providers must be held to high standards and given the resources—including qualified staff and teachers—needed for success. And when children leave their preschool and prekindergarten programs, they must have access to quality kindergartens that ease the transition to elementary school.

## CONCLUSION

The recession has taken a severe toll on American workers and many will continue to suffer from its effects for some time to come. A strong safety net will be essential to helping working families through this trying time. As the economy strengthens, we must rebuild our labor market institutions in ways that ensure that prosperity and economic security are more widely shared.

Going forward, workers who have strong analytic and interactive skills will be best able to secure good jobs and to contribute to continued U.S. prosperity. Education must begin in preschool, because children's long-run success depends on arriving in kindergarten ready to learn, and be available throughout adulthood, because our increasingly dynamic economy requires lifelong learning. The Administration's education agenda will strengthen our education and training institutions at all levels.

## REFERENCES

- Adelman, Clifford. 1998. "The Kiss of Death? An Alternative View of College Remediation." *National Crosstalk* 6, no. 3: 11.
- Barnett, W. Steven, and Leonard N. Masse. 2007. "Comparative Benefit-Cost Analysis of the Abecedarian Program and Its Policy Implications." *Economics of Education Review* 26, no. 1: 113–25.
- Barrow, Lisa, and Cecilia Rouse. 2005. "Does College Still Pay?" *Economists' Voice* 2, no. 4, Article 3.
- Bettinger, Eric P., and Bridget Terry Long. 2007. "Institutional Responses to Reduce Inequalities in College Outcomes: Remedial and Developmental Courses in Higher Education." In *Economic Inequality and Higher Education: Access, Persistence, and Success*, edited by Stacy Dickert-Conlin and Ross Rubenstein, pp. 69–100. New York: Russell Sage Foundation Press.
- Card, David. 1999. "The Causal Effect of Education on Earnings." In *Handbook of Labor Economics*, Vol. 3, edited by Orley Ashenfelter and David Card, pp. 1801–63. Amsterdam: Elsevier Science.
- College Board. 2009. *Trends in College Pricing 2009*. Washington, DC.
- Council of Economic Advisers. 2010. "The Economic Impact of the American Recovery and Reinvestment Act of 2009." Second Quarterly Report to Congress. January.
- Currie, Janet, and Duncan Thomas. 1995. "Does Head Start Make a Difference?" *American Economic Review* 85, no. 3: 341–64.
- Cutler, David, and Adriana Lleras-Muney. 2006. "Education and Health: Evaluating Theories and Evidence." Working Paper 12352. Cambridge, MA: National Bureau of Economic Research (July).
- Dee, Thomas S. 2004. "Are There Civic Returns to Education?" *Journal of Public Economics* 88, no. 9–10: 1697–720.
- DeLong, J. Bradford, Claudia Goldin, and Lawrence F. Katz. 2003. "Sustaining U.S. Economic Growth." In *Agenda for the Nation*, edited by Henry J. Aaron, James M. Lindsay, and Pietro S. Nivola, pp. 17–60. Washington, DC: Brookings Institution.
- Dyke, Andrew, et al. 2006. "The Effects of Welfare-to-Work Program Activities on Labor Market Outcomes." *Journal of Labor Economics* 24, no. 3: 567–608.

- Dynarski, Susan. 2003. "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion." *American Economic Review* 93, no. 1: 279–88.
- Figlio, David, and Cecilia Rouse. 2006. "Do Accountability and Voucher Threats Improve Low-Performing Schools?" *Journal of Public Economics* 90, no. 1–2: 239–55.
- Goldin, Claudia, and Lawrence F. Katz. 2007. "Long-Run Changes in the Wage Structure: Narrowing, Widening, Polarizing." *Brookings Papers on Economic Activity*, no. 2: 135–67.
- . 2008. *The Race Between Education and Technology*. Cambridge, MA: Belknap Press of Harvard University Press.
- Grossman, Michael. 2005. "Education and Nonmarket Outcomes." Working Paper 11582. Cambridge, MA: National Bureau of Economic Research (August).
- Hair, Elizabeth, et al. 2006. "Children's School Readiness in the ECLS-K: Predictions to Academic, Health, and Social Outcomes in First Grade." *Early Childhood Research Quarterly* 21, no. 4: 431–54.
- Heinrich, Carolyn, Peter Mueser, and Kenneth Troske. 2008. "Workforce Investment Act Non-Experimental Net Impact Evaluation: Final Report." Columbia, MD: IMPAQ International.
- Hotz, V. Joseph, Guido Imbens, and Jacob Klerman. 2006. "Evaluating the Differential Effects of Alternative Welfare-to-Work Training Components: A Reanalysis of the California GAIN Program." *Journal of Labor Economics* 24, no. 3: 521–66.
- Jacobson, Louis, Robert J. LaLonde, and Daniel G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *American Economic Review* 83, no. 4: 685–709.
- . 2005. "Estimating the Returns to Community College Schooling for Displaced Workers." *Journal of Econometrics* 125, no. 1–2: 271–304.
- Jones, Charles I. 2002. "Sources of U.S. Economic Growth in a World of Ideas." *American Economic Review* 92, no. 1: 220–39.
- Kahn, Lisa. Forthcoming. "The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy." *Labour Economics*.
- Kane, Thomas J., and Cecilia E. Rouse. 1999. "The Community College: Educating Students at the Margin Between College and Work." *Journal of Economic Perspectives* 13, no. 1: 63–84.

- Karoly, Lynn A., et al. 1998. *Investing in Our Children: What We Know and Don't Know about the Costs and Benefits of Early Childhood Interventions*. Santa Monica, CA: RAND.
- Kopczuk, Wojciech, Emmanuel Saez, and Jae Song. Forthcoming. "Earnings Inequality and Mobility in the United States: Evidence from Social Security Data since 1937." *Quarterly Journal of Economics*.
- Lankford, Hamilton, Susanna Loeb, and James Wyckoff. 2002. "Teacher Sorting and the Plight of Urban Schools: A Descriptive Analysis." *Educational Evaluation and Policy Analysis* 22, no. 1: 37–62.
- Lochner, Lance, and Enrico Moretti. 2004. "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports." *American Economic Review* 94, no. 1: 155–89.
- Manpower Demonstration Research Corporation. 1983. *Summary and Findings of the National Supported Work Demonstration*. Cambridge, MA: Ballinger.
- Marcotte, Dave E., et al. 2005. "The Returns of a Community College Education: Evidence from the National Education Longitudinal Survey." *Educational Evaluation and Policy Analysis* 27, no. 2: 157–76.
- Moretti, Enrico. 2004. "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121, no. 1–2: 175–212.
- Obama, President Barack. 2009a. "Address to Joint Session of Congress." Washington, DC, February 24 ([www.whitehouse.gov/the\\_press\\_office/remarks-of-president-barack-obama-address-to-joint-session-of-congress](http://www.whitehouse.gov/the_press_office/remarks-of-president-barack-obama-address-to-joint-session-of-congress)).
- . 2009b. "Remarks at the Annual Meeting of the National Academy of Sciences." Washington, DC, April 27 ([www.whitehouse.gov/the\\_press\\_office/Remarks-by-the-President-at-the-National-Academy-of-Sciences-Annual-Meeting](http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-at-the-National-Academy-of-Sciences-Annual-Meeting)).
- Oreopoulos, Philip, Marianne Page, and Ann Huff Stevens. 2008. "The Intergenerational Effects of Worker Displacement." *Journal of Labor Economics* 26, no. 3: 455–500.
- Oreopoulos, Philip, Till von Wachter, and Andrew Heisz. 2006. "The Short- and Long-Term Career Effects of Graduating in a Recession: Hysteresis and Heterogeneity in the Market for College Graduates."

Working Paper 12159. Cambridge, MA: National Bureau of Economic Research (April).

Organisation for Economic Co-operation and Development. 2009. *Education at a Glance 2009: OECD Indicators*. Paris.

Oyer, Paul. 2006. "Initial Labour Market Conditions and Long-Term Outcomes for Economists." *Journal of Economic Perspectives* 20, no. 3: 143–60.

Piketty, Thomas, and Emmanuel Saez. 2003. "Income Inequality in the United States: 1913–1998." *Quarterly Journal of Economics* 118, no. 1: 1–39.

Richburg-Hayes, LaShawn, et al. 2009. "Rewarding Persistence: Effects of a Performance-Based Scholarship Program for Low-Income Parents." New York: MDRC.

Rouse, Cecilia, et al. 2007. "Feeling the Florida Heat? How Low-Performing Schools Respond to Voucher and Accountability Pressure." Working Paper 13681. Cambridge, MA: National Bureau of Economic Research (December).

Schweinhart, Lawrence, et al. 1985. "Effects of the Perry Preschool Program on Youths Through Age 19." *Topics in Early Childhood Special Education* 5, no. 2: 26–35.

Scrivener, Susan, Colleen Sommo, and Herbert Collado. 2009. "Getting Back on Track: Effects of a Community College Program for Probationary Students." New York: MDRC. April.

Scrivener, Susan, et al. 2008. "A Good Start: Two-Year Effects of a Freshman Learning Community Program at Kingsborough Community College." New York: MDRC. March.