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CHAPTER 1

Rising Job Complexity and the Need for Government Guaranteed Work and Training

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> There is no extravagance more prejudicial to the growth of national wealth than that wasteful negligence which allows genius that happens to be born of lowly parentage to expend itself in lowly work.
>
> Marshall 1920, 176

> Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime.
>
> Chinese Proverb, credited to Lao Tzu, founder of Taoism, fourth to sixth century BC

> (The) real problem, fundamental yet essentially simple (is) to provide employment for everyone.
>
> Keynes 1980, 267

Introduction

Government, as Adam Smith pointed out over two centuries ago, must provide for certain public goods that would not be provided in adequate quantity by the private sector. He identified education as among these public

goods (1981[1776], 651). Until fairly recent times, however, government was controlled by a small elite whose members mistakenly did not generally recognize greatly expanding educational opportunity as in their own interest. Myopically, their more immediate short-term interest blinded them to how, in a longer term, a better educated workforce would make everyone, including members of their own class, richer.

In today's wealthy countries, a surge in the democratization of education evolved toward the end of the nineteenth century, along with an extension of the franchise and labor reform in response to threats from below of violence and revolution (Acemoglu and Robinson 2000). As the twentieth century unfolded, democratic pressures led to the progressive extension of years of publicly provided education. Even higher education became increasingly democratized, especially between the end of World War II and the mid-1970s.

However, over the past 35 years, inequality has dramatically increased in almost all wealthy societies, and substantially in a good number of them, challenging the expectations set forth by Kuznets (1955) that mature economic development would witness declining inequality. This reversal suggests a new "reversal" inflection point on the Kuznets curve. In the United States, the erosion of working class power and fraying of social safety nets since the mid-1970s has led to persistent educational achievement gaps, causing the poor to increasingly be locked out of educational opportunities. The educational achievement gap between children from rich and poor families is roughly 30–40 percent greater for those born in 2001 than those born in the mid-1970s and is now more than twice as large as the black-white achievement gap (Reardon 2011). This means that the formal education that society provides to some of its future workers is not adequate for the job market demands created by an ever-increasing pace of change.[2]

Further, in an evermore complex economy, the training most receive when young is not adequate for their full work lives. More and more need, and will need, continual retraining. While much of this training has been and will continue to be on the job, some workers will lose their jobs and for lack of necessary skills, not find comparable new ones. Although publicly provided formal schooling might provide some of the necessary reskilling, some workers who perform poorly in school settings learn well when training is part of their jobs.

The traditional model—that future workers receive their formation when young and any future reskilling occurs on the job—no longer suffices. To maintain skills and full employment in increasingly sophisticated workplaces, a new model is needed, one that provides those who do poorly

in school with needed skills while continually retraining those who become and remain unemployed because of obsolete skills. This chapter argues that it is in the best interest not only of workers but also of society generally that a critical component of a new model be a government employer of the last resort program that ensures not only continuous employment but also the necessary skills for workers to successfully enter and reenter the private labor market.

This chapter is organized as follows. After briefly surveying worker formation in premodern societies in which formal schooling was nonexistent or was provided for political and religious reasons to a small elite, it turns to the rising need for public education that accompanies industrialization. An examination is then provided of the intensified pace of churn and technological change in modern economies that leave an increasing number of workers with inadequate levels of human capital.[3] The result is greater job insecurity, higher long-term unemployment and its attendant loss of human capital, a polarized labor market, and the consequent high personal and social costs. The study concludes with an overview of how provision of guaranteed employment with a robust training component would provide workers with adequate human capital throughout their lifetimes, resulting in a healthier economy and more just society.

THE EARLY EVOLUTION OF EDUCATION

Due to low levels of technology and specialization, premodern agricultural societies had little need for formal education. Occupations were usually inherited, and children began participating in agricultural work at a young age, progressively learning the needed skills. Urban children often became apprentices within craft industries, picking up the needed skills to eventually become masters themselves. Beyond education given to the Church's priests or to Mandarins in China, some portion of the elite often received some formal education, but much of this served as a status signifier and method of socialization.

This small amount of formal education prior to modern times was, as Galor puts it, "motivated by a variety of reasons, such as religion, enlightenment, social control, moral conformity, sociopolitical stability, social and national cohesion, and military efficiency" (2005, 194). For instance, by the eleventh century, the Medieval Church in most of Europe had established schools to provide a small cohort with the necessary skills to manage its activities (Boyd 1966, 100). With the expansion of commerce, reading or song schools evolved in most small European towns and villages, while grammar schools developed in larger towns (Boyd

1966, 155). However, attendance was voluntary, and most parents could not afford having their children, among their most important economic assets, attend for very long. Incentives for investment in education were small.

With the rise of Protestantism, the demand for education expanded. Martin Luther and other early Protestant leaders were advocates of universal education, regardless of sex or class (Boyd 1966, 188–189). For them it was vital that all members of the community be able to read the Bible, and thereby have equal access to God's word. They also sought a transfer of authority over education from the Church to the state throughout a large portion of Western Europe (Boyd 1966, 183).

With the rise of industrialization, formal education became more economically important. Although it played but a minor role in the driving industry of textiles, Becker, Hornung, and Woessman argue that its role in other industries was more important, and that this importance only increased as the industrial revolution progressed.[4] Among economically and militarily competing nations, education was important for "technological catch-up" (2009, 2).

Yet except for a few intellectuals such as Adam Smith,[5] providing education to the working class was not generally viewed as an important end. Even the somewhat progressive Bernard de Mandeville argued that workers would work harder if they were kept not only poor, but also uneducated, or as he put it, it is "requisite that great Numbers of them should be Ignorant as well as Poor" (1924, 288).[6] Even the enlightened Voltaire feared that education would erode the deference of the poor for their superiors (Viner 1968, 33). It should also be noted that creating human capital would absorb part of the surplus that only the elite possessed.

The general failure to recognize the importance of human capital is not surprising in light of the fact that the first industrial revolution did not generally need highly trained workers.[7] Factories paired large amounts of physical capital with raw material, which enabled the replacement of the highly skilled artisans of the handicraft era with relatively unskilled workers.[8] Rather than complement human capital, physical capital became its substitute (Goldin and Katz 1998, 694–697). Indeed, in factories, workers under a regime of divided labor were generally de-skilled, a downward turn in worker welfare that did not go unnoticed by Adam Smith, who claimed that this form of work rendered them "as stupid and ignorant as it is possible for a human creature to become . . . unless government take some pains to prevent it" (1776: II, 782).[9] Although the second industrial revolution evolved upon a greater marriage of science and technology, many workers continued to be de-skilled well into the twentieth century (Braverman 1974).

WORKING PEOPLE FIGHT FOR UNIVERSAL EDUCATION

The evolution of capitalism created an industrial working class that became increasingly organized and aware of its political power as the nineteenth century unfolded. Through strikes and revolts it increasingly threatened the existing power structure. By the latter part of that century it achieved considerable advances in work reform, in franchise rights, and in publicly providing education for its children.

Providing for education—creating human capital—is expensive.[10] Because the incomes of workers generally barely exceeded subsistence, they were not financially capable of bearing the full costs. Funds would have to come from the wealthier classes. Understandably, the wealthy would resist giving up some of their incomes through higher taxes, even when some might recognize the long-term benefits because of stronger economic growth. Their short-term interests generally trumped their long-term interests. It took rising working class power to force a state, predominantly controlled by the wealthy until the state become more democratized, to extend educational opportunity.

The extent of these gains in education can be seen in England, where, as elsewhere, the state had been reluctant to enter into the business of educating the population well into the nineteenth century. The schools that were available for the poor depended heavily on donations from the wealthy for their existence, and the education they provided emphasized social control (Carpentier 2003, 9). However, popular demands increased such that by the 1860s, even some capitalists supported government provision of universal public education (Galor 2005, 208). The demands for universal education became so forceful that enrollment of ten-year-olds soared from 40 percent in 1870 to 100 percent in 1900 (Acemoglu and Robinson 2000, 1191). Public expenditure on education rose from about 0.1 percent of GDP in 1870 to roughly 1 percent by 1900 and almost 3 percent in the 1930s (Carpentier 2003, 5).

This occurred, evidence suggests, concomitantly with the inflection point of the Kuznets curve, whereby the rising inequality that accompanied early economic growth began to reverse. Acemoglu and Robinson find that for the countries they examine (Britain, France, Germany, and Sweden) "inequality peaked approximately at the time of the major political reforms, and fell sharply after the extension of the franchise. . . . in large part due to major redistributive efforts including increased taxation, investment in education of the poor, and labor market reform" (2000, 1193, 1180). Easterlin has also viewed the democratization of education as a response by the elites to the threat of violence and revolution: "To judge from the historical experience of the world's twenty-five largest nations, the establishment and experience of

formal schooling has depended in large part on political conditions and ideological influences. . . . A major commitment to mass education is frequently symptomatic of a major shift in political power and associated ideology in a direction conductive to greater upward mobility for a wider segment of the population" (1981, 1, 14).

The evolution of educational opportunities in the United States differed in important ways, although many of the same forces were at work. Protestants for whom education had religious importance had predominantly settled in the territory. Literacy rates were also higher among immigrants than the literacy rates of populations they left behind. Engerman and Sokoloff suggest that the development story of the United States be considered an anomaly among New World economies. Compared to other countries in the Western Hemisphere, Canada and the United States were extremely egalitarian (1994, 3). Notions of equity pervaded both the economic and governmental spheres in the United States, with titles of nobility specifically prohibited in its Constitution (article I, section 9). In addition to providing an incentive to develop a deep manufacturing base, with a working class that could afford cheap manufactured goods, greater equality meant that elites could not stymie efforts to provide education, at least outside of the American South. There was a belief that "schooling would help equip men for self-governance and participation in a democracy, as well as provide an avenue for self-improvement and upward mobility" (Black and Sokoloff 2006, 74). As a result, primary school enrollment rates in the United States passed Germany in the 1840s to become the highest in the world at the time (among the free population) (Easterlin 1981, 8).[11]

This occurred as US states gradually abolished property ownership requirements to vote, thereby extending the franchise to the (white male) working class. By 1815, seven out of twenty states had universal white male suffrage (Black and Sokoloff 2006, 77), and all states had abolished property requirements by 1856[12] (Engerman and Sokoloff 2005, 898). Such suffrage laws allowed local governments to raise money for schools primarily through property taxes, which fell disproportionately upon the wealthy (Black and Sokoloff 2006, 78).

The rural setting of much of the country also played a key role in the development of schools. In the Northeast, small farms dotted the countryside, and elites were relatively weak at the local level. School funding was tied to local trade networks among neighbors (Beadie 2008, 8). "Social capital appears to have been the handmaiden of human capital" (Goldin and Katz 1999, 684), and the first schools appeared where close-knit communities permitted the organizing of funding. Community funding of schools served to build trust, enabling coordination that resulted in further community

investments (Beadie 2008, 10–11). As markets expanded into the countryside, rural participants needed business and social skills to avoid being taken in by more savvy urban traders.

As industrialization advanced, primary schooling in urban settings in the United States had differing objectives. In Boston, for example, it was designed largely to pacify the lower classes, socialize rural migrants seeking factory work, and absorb Irish Catholic immigrants into Protestant Whig society (Urban and Wagoner Jr. 2004, 96–97). Many advocates of universal education at the time were also concerned about a perceived breakdown of the family accompanying agricultural migration into the manufacturing economy.

Educational opportunities continued to spread throughout the century. For example, in 1863, the Morrill Act began the creation of Land Grant Universities. Advocates for these universities argued that the government would reap the rewards of greater revenues by improving the skills of agricultural and industrial workers. By that time, "these colleges were needed because, just as the professions . . . needed training grounds, farmers and mechanics required special skills and appropriate literature" (Key 1996, 215).

The dominance of the state as a provider of education at all levels continued to evolve with the pace of the industrial revolution. Yet, until the early twentieth century, most children finished their formal education upon completing primary school. The relatively slow pace of technological change meant that on-the-job training sufficed. Further, a still large agricultural sector and the availability of low skilled manufacturing jobs meant that the opportunity cost of additional schooling was high (Goldin 1998, 368). In 1900, in the United States, secondary schools were still seen largely as preparatory institutions for college, emphasizing Latin, French, history, mathematics, and some science (Goldin 1998, 351).

An explosion in secondary school completion accompanied the surge of the United States toward industrial preeminence between 1910 and 1940. Whereas in 1910 less than 10 percent of youths graduated from high school, by 1940, 51 percent had done so (US Census Bureau 2006). Driving this additional schooling was a rise in white-collar jobs requiring higher levels of human capital and specific skills such as typing and bookkeeping (Goldin 1998, 352). Blue-collar occupations were also becoming more skilled, requiring training in subjects like chemistry, geometry, or mechanical drawing (Galor 2005, 212). The role of secondary schooling in the United States changed from preparing an elite minority of students for college to preparing a majority of pupils for work life. Vocational courses increasingly replaced courses in the traditional classical curriculum (Goldin 1998, 352).

It is noteworthy that this "high school movement" in the United States disproportionately occurred in relatively egalitarian areas where elites were not powerful enough to resist the taxes required for funding of schools. Goldin notes that by 1924, "the graduation rate in California or Nebraska was twice that in New Jersey and New York... as an institution [the secondary school] was rooted in egalitarianism and was often a by-product of the extensive state university systems in the United States" (1998, 349–350). As more opportunities for high school graduates became available, it was these more equal areas that first prepared their graduates to meet educational demands.

The extraordinary expansion of educational opportunity during the first half of the twentieth century came forth as physical and human capital were becoming more complementary, whereas during early industrialization they had generally been substitutes. With the advent of batch operations, assembly lines, and continuous-process methods in factories, the demand fell for unskilled workers to haul and assemble goods (Goldin and Katz 1999, 694–697). Changing technology quickly and decisively altered the model of education that was needed, and a more egalitarian political system created the wherewithal to produce huge numbers of high-school educated workers.

The growing and increasingly sophisticated economies of the industrialized countries continued to require more human capital. In the United States, following the World War II, the G.I. Bill began an era of dramatically increasing college enrollment, especially during the 1960s and

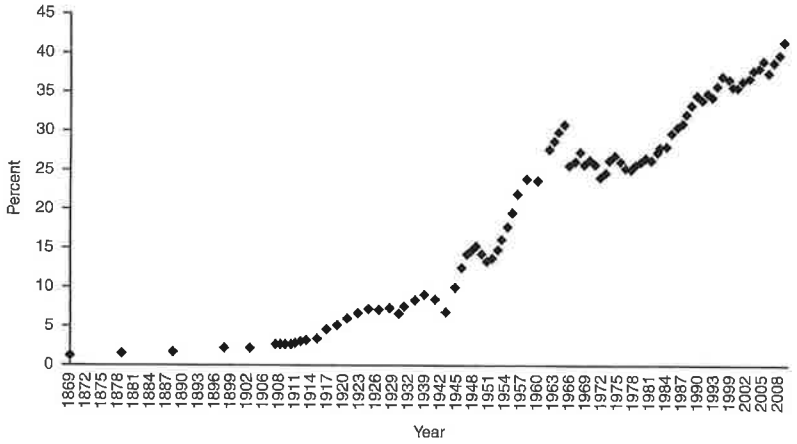

Figure 1.1 Total college enrollment as percentage of population 18–25 years old, 1869–2009.

Source: US Census Bureau and US Department of Education 2010, Table 212.[13]

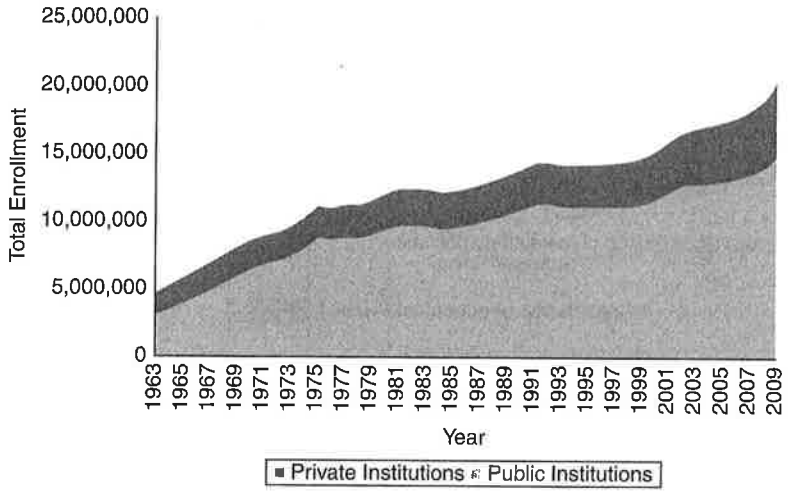

Figure 1.2 Public and private portions of student enrollment in higher education, 1963–2009.

Source: National Center for Education Statistics 2010, Table 198.

the mid-1980s to early 1990s (figure 1.1), mostly at public institutions (figure 1.2).

Such trends show that taxpayer supported public institutions, not on-the-job learning, have been the primary formal creators of human capital, ensuring that workers possess appropriate workplace skills. As technology and job demands advanced, these better-educated workers were generally able to gain needed new skills through on-the-job training.

POST 1975: LABOR BUSTED AND EDUCATIONAL STAGNATION

Political pressure to expand educational opportunity has varied with the relative political power possessed by labor, and the latter can readily be gauged by trends in income distribution. For instance, over the three decades following World War II, the United States became a more egalitarian society. Between 1946 and 1976, inflation-adjusted per capita income increased by about 90 percent. For the bottom 90 percent of households it increased by 83 percent, but for the top 1 percent only by 20 percent. Educational opportunity significantly expanded during this period. However, over the following three decades—between 1976 and 2006—whereas inflation-adjusted per capita income increased by 64 percent, for the bottom 90 percent of households it increased by only 10 percent. And over this latter period,

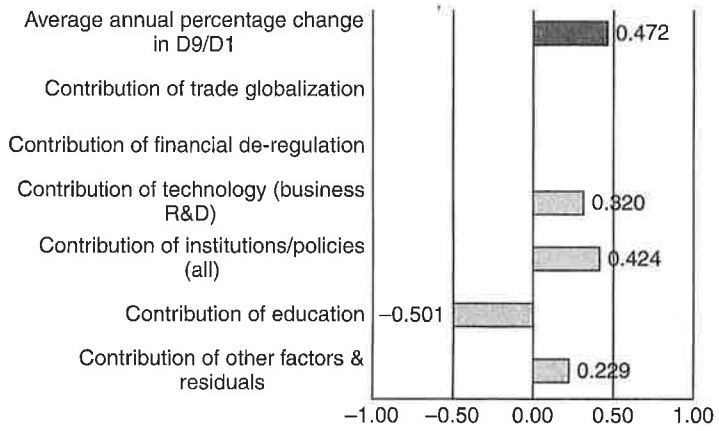

Figure 1.3 Accounting for changes in wage inequality: the role of globalization, technology, and labor market policies and institutions (average annual percentage changes).

Source: OECD 2011, 124, Figure 2.3

educational opportunities failed to keep pace with the economy's, and hence workers' needs (Baker 2007).[14]

A recent OECD (2011) report shows that this is the case throughout the developed world. Universally, education is the main inhibitor of increasing wage inequality, while policy, institutional, and technological changes have exacerbated it in recent decades. Figure 1.3 shows the OECD's estimates of the contributors to wage inequality between the top and bottom 10 percent of incomes (the "D9/D1 ratio") in recent decades. As Goldin and Katz (2008) suggest by the title of their book, whether wage inequality grows is largely determined by the winner of this "race between education and technology." The OECD report "firmly identifies *upskilling* of the workforce as one of the most powerful instruments at the disposal of governments to counter rising inequality. *Upskilling* is singled out as the only force which succeeds in not only reducing wage dispersion but also in increasing employment rates" (emphasis in original; 19).

Across the OECD, but especially in the United States, educational support has not been winning the race against forces generating greater inequality. While per-pupil public spending on primary and secondary education in the United States has continued to increase over time, as can be seen in Figure 1.4, support for education as a percentage of GDP has been relatively stagnant over the past 40 years. Figure 1.5 shows the increasing real costs of higher education in the United States since 1870. Especially important to note is that the real cost of attending a public college or university has more

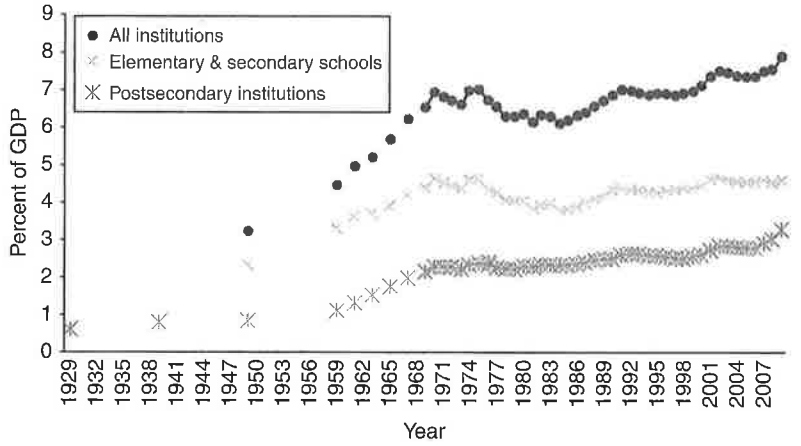

Figure 1.4 Expenditures on education by type of institution as a percentage of GDP, 1929–2009.

Source: National Center for Education Statistics 2010, Table 28.

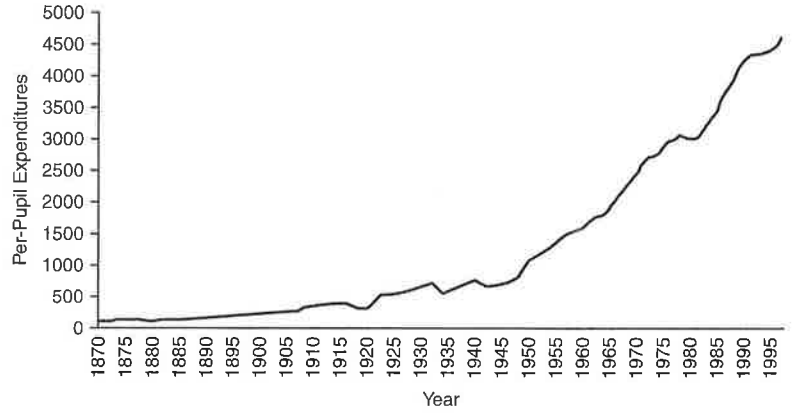

Figure 1.5 Public primary and secondary education expenditures per pupil in constant 1982–1984 dollars, 1869–1996.

Source: US Census Bureau 2006, Table Bc924.

than doubled since the early 1980s, from an average cost of $6,440 per year in 1982 to $12,861 in 2009 (in constant 1982–1984 dollars).

Figure 1.6 shows that while much of these cost increase has been offset by increase in student aid, most of this has taken the form of student loans, contributing to an exploding burden of student debt for graduates and their

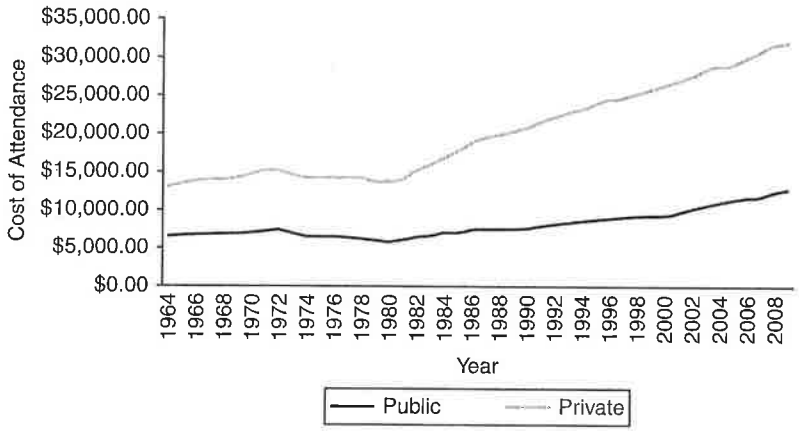

Figure 1.6 Total costs of undergraduate education by type of institution in constant 2008–2009 dollars, 1965–2009.

Source: National Center for Education Statistics 2010, Table 345.

families, and shifting some benefits of a degree from the student to the college or university. Since the early 1990s, when the earliest data are available, the average federal loan per full-time equivalent student has increased from about $1,600 per year to about $4,900 per year in the 2009–2010 school year. Over the course of four years, this amounts to a debt burden that is about $13,000 higher in real terms than it was in 1990; and this includes only *federal* student loans. Not included are private loans or other means families have drawn upon to meet the increasing costs of higher education, such as taking out a second mortgage on a home or simply paying a higher percentage of income as fees. Figure 1.7 shows that the gap between attending the cost of attending college and non-loan financial aid packages has been growing over the past two decades. Such cost increases have also occurred in the face of drastically rising income inequality, with real wages stagnating for most families since the early 1970s.[15]

Additionally, college completion rates in the United States have been falling since at least the early 1990s, when the first reliable data are available.[16] Five-year completion rates for first-time college students at both two- and four-year institutions were 51.2 percent for the cohort entering school in 1990, falling to 47.3 percent for the 1996 cohort, and 41.3 percent for the 2004 cohort. Six-year completion rates are only available for the latter two cohorts, but they tell a similar story. Completion rates for full-time students in the 1996 cohort were 65.3 percent and for the 2004 cohort, 62.6 percent (National Center for Education Statistics 2010). The cost to students of not completing is considerable. Investing in only half a degree's requirements may confer half the costs on a student, but it does not provide half the benefits in

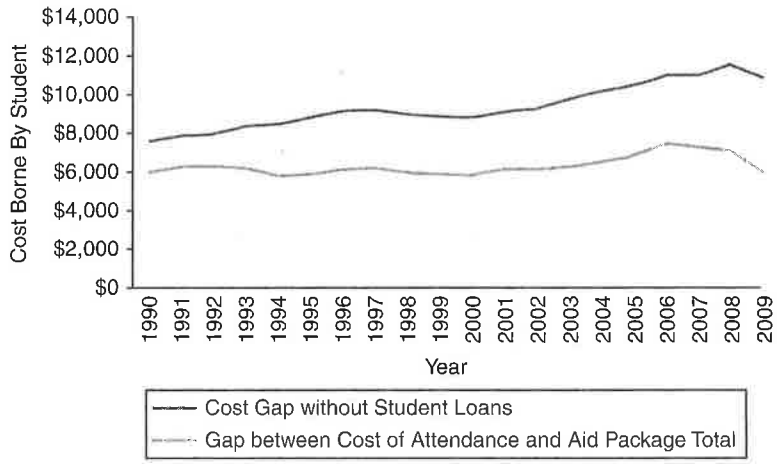

Figure 1.7 Gap between average undergraduate costs of college attendance and student aid per full-time equivalent student per year, in constant 2008–2009 dollars.

Sources: Authors' calculations from National Center for Education Statistics 2010, Table 345; College Board 2010, Table 3a.

terms of earnings. Stagnation in support paired with skyrocketing costs and increasing student loan burdens have occurred as the pace at which the United States is becoming a knowledge economy has been dramatically accelerating. With less pressure from below, educational expansion has become anemic. An assault has been made on public spending at all levels, heavily impacting education budgets, increasing inequality and handicapping the economy's performance.[17] Inequality reduces the effective pressure for further educational advances while the relative stagnation in educational advancement exacerbates inequality—a vicious destructive cycle.

ROBUST CREATIVE DESTRUCTION AND THE CHALLENGE OF MAINTAINING ADEQUATE WORKER SKILLS

Increasingly robust technological change, rising capital mobility, and globalization generally, combined with decreases in the rate of improvement of educational attainment in the United States, have led to decreasing job security, increasing long-term unemployment and underemployment, and a hollowing-out of the labor market.

AUTOMATION AND OUTSOURCING

Technological change and globalization continually augment specialization and an increasing international division of labor. When industrial

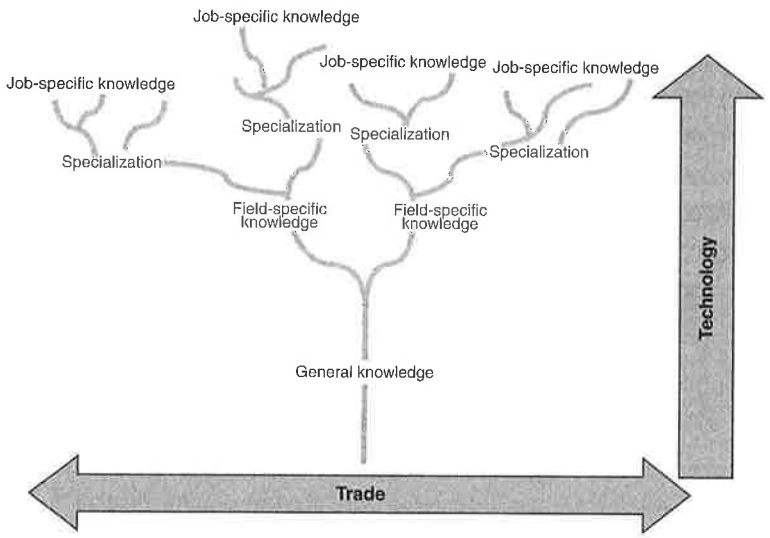

Figure 1.8 Human capital tree.

workers were unskilled, displaced workers could often find relatively similar work at another nearby firm. However, more advanced technology and increasing specialization have led to more specific investments in human capital that are inherently riskier. Hacker notes that the return on such specific investments increasingly depends on the performance of specific firms, industries, and occupations instead of the economy as a whole (2006, 79).

The idea of a human capital "tree" (figure 1.8) for any given set of jobs in the economy provides graphic clarity. Jobs require a certain amount of general knowledge, such as reading or a basic knowledge of mathematics, and they require a certain amount of specialized knowledge, but some can still be shared among occupations. Skill-biased technological change creates jobs that are more complex. That is, they have more branches and the skills required to perform them overlap with fewer other jobs as a result of specialization.

When a worker loses a job, there will be several jobs that he/she can qualify for in the same region of branches as the one lost. If he/she gets one of these jobs, the firm can train him/her to build up any specific human capital needed, in addition to any firm-specific human capital required. This happens in the vast majority of cases of reemployment. However, as technology becomes more advanced and specialization continues, the skills required for jobs increasingly branch off and differ. Technology can also

render some occupations obsolete through automation, removing a larger branch of the tree. Additionally, outsourcing can remove a large branch in a certain geographic area.

This leaves workers who are too far removed from the branches of the jobs that exist in that area, and they may be unable to migrate to an area that contains that branch, resulting in long-term unemployment. This is when additional education becomes necessary. Firms will only be willing to engage in a certain amount of on-the-job training for workers, since not only is additional training costly, but workers may also take their additional skills to competitors.

SLOWING EDUCATIONAL ATTAINMENT

Goldin and Katz (2007) have examined the rate of skill-biased technological change and found that it has been fairly constant for much of the twentieth century. However, because the total "stock" of technology is growing, workers must learn even more to still be considered highly skilled.[18] Skill-biased technological change increases demand for high-skilled high-wage jobs, leaving many middle-skill jobs to be automated or outsourced. The number of menial and low-skill jobs has also tended to grow, although at a slower rate than high-skill jobs (Autor 2010a, 2–3). These jobs are those involving nonroutine manual tasks, primarily in the service sector such as food preparation and service, cleaning and janitorial work, and maintenance that cannot be readily automated or outsourced (Autor 2010b, 4).

Goldin and Katz point to the increasing college-wage premium as evidence that the United States is not keeping up with the increasing demand for high-skilled jobs. Further evidence of the slowing of educational expansion is the fact that in the first half of the twentieth century, each generation of Americans had about two more years of schooling on average than their parents. Those born in 1975, however, had only 0.74 year more schooling on average than their parents' generation (Goldin and Katz 2007, 155). Figure 1.9 documents this attainment growth slowdown.

The wage premium of skilled over nonskilled workers is at its highest level since the early twentieth century (Goldin and Katz 2007, 32). From 1915 to 1980, the supply and demand for college educated workers grew at more or less the same pace, with supply growing an average of 3.1 percent and demand 2.9 percent. Between 1990 and 2010, however, supply grew at 1.5 percent whereas demand grew by 2.0 percent (Carnevale and Rose 2011, 18). The result has been a surge in the premium of a college degree over a high school degree from 40 percent to 74 percent (17). Carnevale and Rose project that if current supply trends continue, that

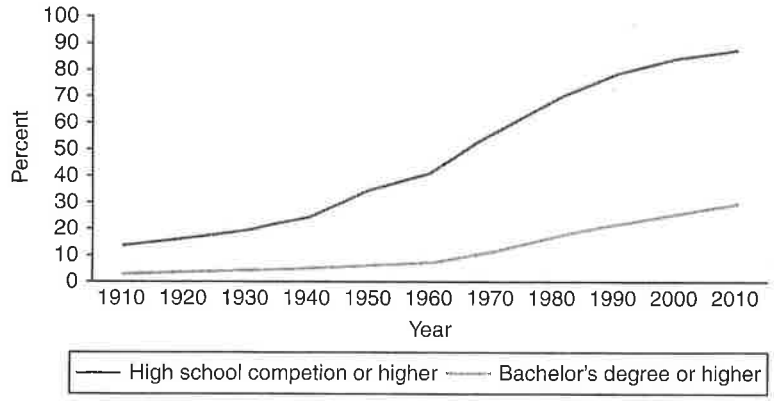

Figure 1.9 Percentage of persons 25 and over having completed high school or college, 1910–2010.

Source: National Center for Education Statistics 2010, Table 8.

premium will rise to 96 percent by 2025 due to a shortage of 20 million college degrees (10, 17).

Automation and outsourcing, combined with this shortage of highly trained labor, has created a polarized labor market. Thus, whereas between 1979 and 2007 real hourly earnings of college-educated workers rose between 10 percent and 37 percent, depending on their level of postbaccalaureate education, real earnings for workers with a high school diploma or less stagnated or declined (Autor 2010a). Among males, earnings fell by 12 percent for high school graduates and 16 percent for high school dropouts (6).

Part of the reason for the slowdown in the rate of increase in educational attainment in recent years can be attributed to the skyrocketing costs of higher education in the United States along with a failure of public support to grow at the same rate.

Job Insecurity

Aggregated statistics on the performance of the US economy in recent decades paint a deceptive picture of life for many workers. While there have been net job gains over the past 25 years, there has also been a large increase in job insecurity as jobs created in some sectors were partially offset by massive displacements of workers in others (Gosselin 2008, 113). Between 1977 and 2009, an annual average of 17.3 percent of jobs were created and 15.3 percent were destroyed (US Census Bureau 2011).

Though this hides the variations that exist across time and especially across industry, it shows that millions of workers are changing jobs as a result of this process of creative destruction. As such, this looks healthy: more new jobs are created than destroyed and presumably the new jobs have higher productivity.

However, workers have gained little from these productivity gains. Whereas productivity increased by 62.5 percent between 1989 and 2010, real hourly wages increased by only about 12 percent (Mishel and Shierholz 2011), which, for a 20-year period, is not far from full wage stagnation.

Creative destruction was conceptualized by Schumpeter as a "process of industrial mutation... that incessantly revolutionizes the economic structure from *within*, incessantly destroying the old one, incessantly creating a new one. The process of creative destruction is the essential fact about capitalism" (1962, 83). Indeed, this process of continuous churn occurs in modern economies at an accelerating rate, contributing to lower levels of job security.

Farber, for instance, has found that the average job tenure for men in the private sector fell by about 25 percent between 1973 and 2006 (2008, 9–10). In an earlier study he found that mean job tenure has been declining since at least 1920 for men and that the path has been approximately the same for male and female workers since the 1970s (2007, 9, 18).

Farber also examines another measure of churn: the relationship between the unemployment rate and the job loss rate. He finds that while the unemployment rate and job loss tended to move jointly in the past, beginning in the late 1990s, the job loss rate increased while unemployment was still falling. This led to a large increase in the gap between the two. In the period between 2001 and 2003, roughly 6 percent of workers were unemployed, while 12 percent lost their jobs involuntarily. This gap between the job loss rate and the unemployment rate became larger than at any other time in the previous two decades, leading Farber to conclude that "the structure of jobs in the private sector has moved away from long-term relationships" (2005, 14; 2008, 12).

Involuntarily displaced workers suffer lost human capital and face reduced bargaining power and hence lower wages. Since the early 1980s, this earnings decline has fluctuated between 10 percent and 20 percent. Not unexpectedly, the decline was 20 percent in the "recession" year of 2010 (Farber 2011, 6, 20). This level of churn, combined with earnings decline, suggests that either firms are responding to continuously changing market conditions and new technologies by changing workers and skill requirements or firms themselves are failing and being replaced by new firms tooled with

different technologies. Apparently many workers do not possess the skill sets necessary to keep up.

LONG-TERM UNEMPLOYMENT AND UNDEREMPLOYMENT

While employers in the modern economy have been shedding workers more frequently, the average unemployment spell has gone from 12 to 16 weeks since the 1960s (figures 1.10, 1.11), and the probability of an average family experiencing an income drop of half or more jumped from 7 percent in the early 1970s to 17 percent in 2007[19] (www.hamiltonproject.org). This trend suggests that while some of the current unemployment is cyclical—caused by a lack of demand—a rising share is also structural, the result of a skill mismatch between workers and firms.

A survey of manufacturing by Deloitte for the Manufacturing Institute finds that "high unemployment is not making it easier to fill positions, particularly in the areas of skilled production and production support" (cited in Whoriskey 2012, A14). According to Martin Schmidt, companies such as Apple report that "the challenge in setting up U.S. plants is finding a technical work force" (cited in Duhigg and Bradsher 2012). A current Apple executive has claimed: "We shouldn't be criticized for using

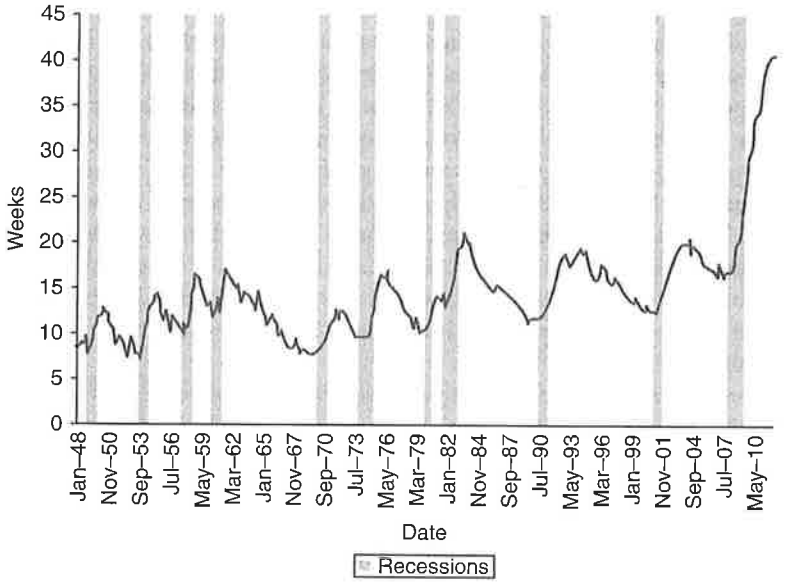

Figure 1.10 Average duration of unemployment, United States, 1947–2011.
Source: Bureau of Labor Statistics, 2012.

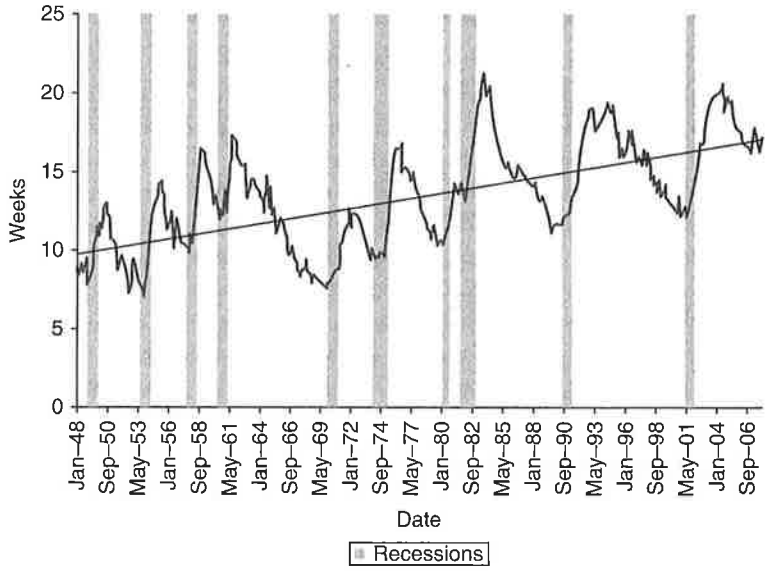

Figure 1.11 Average duration of unemployment, 1948–2007 around trend line.
Source: Authors' calculations with data from Bureau of Labor Statistics, 2012.

Chinese workers [in China]... The U.S. has stopped producing people with the skills we need" (ibid). This has led more and more companies to lobby for visa reform to permit more foreign highly trained workers to enter the United States. Doing so, however, lowers the pressure on the United States to produce the educated workers the economy needs.

These employment statistics do not take account of those who do not participate in the labor force. With their inclusion, the unemployment rate would be considerably higher. During the 1990s, more than half of high school dropouts (excluding the high percent of high school dropouts in prison) did not participate in the labor force, even though the economic expansion of the decade at its most robust reduced the official aggregate unemployment rate to 3.9 percent (Wray and Forstater 2004, 265).

Men have tended to be more impacted by these changes in employment and tenure than women. Juhn and Potter document the fall in labor force participation rates among prime-aged (25–54) men, which they attribute to a decline in demand for less-skilled workers (2006, 37). Between 1969 and 2004, total male participation rates fell by about 6 percent from 96 percent to 90 percent, a substantial decline considering they made up nearly 40 percent of the civilian labor force in 1969 and about 36 percent in 2004.

THE COSTS OF LONG-TERM UNEMPLOYMENT

Much of mainstream economics focuses primarily on the pecuniary costs to workers of being unemployed (e.g., Feldstein 1978). These principally include lost income and thus lower consumption, depreciation of human capital, and in some instances, loss of health insurance. These costs are substantial. Notably, because extended unemployment destroys human capital, it serves as an antieducation force, reducing the benefits of education.

Human capital—the full complement of skills and capabilities that a worker possesses in the labor market—generally depreciates during periods of unemployment. As Amartya Sen puts it, unemployment "may generate a loss of cognitive abilities as a result of the unemployed person's loss of confidence and sense of control" (1997, 161). Or, as he goes on to argue, "The discouragement that is induced by unemployment can lead to a weakening of motivation and make the long-term unemployed more resigned and passive... There is... considerable evidence suggesting that the typical effect, especially of long-term unemployment, is one of motivational decline and resignation. This can yield a hardening of future poverty and further unemployment" (1997, 162–163). Price et al. (1992) also note how unemployment can lower self-confidence, leading to lower social assertiveness that impairs effective job search. As the duration of unemployment grows, there is a decline in the perseverance needed to solve problems (Baum, Fleming, and Reddy 1986).[20] Kelvin and Jarrett report that the unemployed are preoccupied with time yet find themselves unable to use time effectively or productively (1985, Chapter 5). Calvo-Armengol finds that "long unemployment spells can generate a desocialization process leading to a progressive removal from labor market opportunities and to the formation of unemployment traps.... [Thus the] average probabilities of finding employment [are] on the order of 0.30 after one week of unemployment, 0.08 after eight weeks of unemployment and 0.02 after a year of unemployment" (2004, 443, 428; see also, Darity and Goldsmith 1993; 1996).

There are, however, many other costs than those noted by mainstream economics that are either consequent to these costs or in addition to them that receive less attention. Indeed, it has been claimed that these "nonpecuniary" costs drastically outweigh the monetary and consumption costs of not possessing a job (Winkelman and Winkelman 1998, 66). These additional personal costs of unemployment to its victims are well-documented. They include poorer health, mental distress, alcohol abuse, lowered social status, lowered self-esteem, marital instability, proneness to violence and crime, increased vulnerability to suicide, loss of networking opportunities, and lower levels of personal fulfillment.[21]

It should be noted that most if not all of these "other costs" of unemployment not only reduce human capital, but also impair ability to augment it. Indeed, there is an intergenerational cost insofar as it reduces the potential of the children of unemployed parents to do well in school.[22]

THE CURRENT CRISIS AND THE URGENCY FOR A NEW MODEL

A striking characteristic of the Great Recession is that the long-term unemployed—those unemployed for at least 27 weeks—make up 43 percent (as of February 2012) of the total unemployed in the United States (Bureau of Labor Statistics 2012). This level is by far the highest the country has seen since the Great Depression. Even in the severe "Reagan" recession, the long-term unemployed comprised only about 24 percent of the total number of unemployed (Congressional Budget Office 2007, 3).

The severity of the current crisis has forced an inordinate number of firms into bankruptcy. The new firms that are being and will continue to be created will generally deploy the most recent technological advances, often meaning that workers released by the defunct firms will not possess the skill mix needed by the new ones. Not only does this prolong their unemployment, but also the enhanced demand for more highly skilled workers augments the polarization referred to above.

The traditional model which has been based primarily on providing future workers with education when they are young is no longer adequate for our increasingly complex economies. It is no longer sufficient for two reasons: first, there are fewer jobs available for those who fail to finish secondary schooling. Second, for more and more workers, the skills learned when young are no longer sufficient for a full work life. The severity of the current crisis has magnified these two reasons.

The only viable long-term solution to unemployment and skill obsolescence is to guarantee employment and retraining. It is true that evaluations of job retraining programs in developed economies have produced mixed results, showing that the structure of the program can make a large difference in its effectiveness.[23] However, numerous evaluations of retraining programs in different countries have shown that it is possible to structure them so that they are effective. Moreover, no country has fully implemented an Employer of the Last Resort program (ELR) with a long-term commitment.[24]

Such a program might work as follows. Government offers employment to anyone who seeks work but would otherwise be without a job.[25] Government, as Mitchell and Wray put it, "hires off the bottom" (2005, 236). The offered wage serves as a price floor, a minimum wage for labor, presumably providing a "living wage."[26] After losing a job, unemployment

insurance could cover a set number of weeks for the individual's job search. If at the end of this period a job has not been located, then the individual could join the ELR program.[27]

It is important to note that for many, a universal training or reskilling program alone would not work well. This may help account for why much evidence on the success of training programs is ambiguous. Too many people do not fare well in classrooms when that is all they are doing. Plus, just having a job instills discipline and self-respect.

No other form of public support—welfare—need be available to unemployed able workers. Thus, those who would not accept such employment would be revealing that the offered wage is below their reservation wage (the lowest acceptable wage) and thus they could be considered voluntarily unemployed.[28]

Entering into the ELR program would entail working in a government created or supported job and/or receiving training. The goal would be to keep the entire workforce at work or in training and to move workers into the regular economy as quickly as possible. A job placement component could facilitate reentry. The fundamental goal is that all have socially useful jobs, with skills upgraded as needed in an evermore complex economy such that everyone winds up being a productive member of the human community![29]

The program could be decentralized so as to better meet local needs.[30] For instance, states could receive an ELR budget from the federal government relative to their rate of unemployment (Wray 1999, 485).[31] If the program were to be administered by states or even smaller political jurisdictions, then the ELR wage could be set in terms of the local cost of living. Further, the local ELR wage could be set lower the higher the percent of the local labor force absorbed into the program, so as to preserve incentives for mobility.[32]

CONCLUSION

A new model of education is needed to adapt to evolving contemporary economic conditions, just as in the past new education models have been implemented to meet changing industrial needs. There was little need for formal education when most people were peasant farmers, and the required human capital was formed on the job within the family and craft shops. Although the need for formal schooling slowly increased with the evolution of capitalism, the surge came as the second phase of the industrial revolution created large numbers of moderately skilled blue- and white-collar jobs. In response, workers demanded publicly provided formal education for their children, first in primary schools, then in secondary schools, and eventually postsecondary education.[33]

Rising educational levels have had a self-reinforcing or feedback effect. Not only did they increase productivity, but they also fueled evermore robust creative destruction, thereby requiring evermore sophisticated education and retraining. The traditional model of providing the youth with education and counting upon on the job training to take care of future training needs is no longer adequate.[34] A new model is needed, one that responds to the ever-quickened pace of capitalism that increasingly renders old skills obsolete or inadequate. It must address this challenge by creating an institutional structure that ensures continuous employment and the requisite education and retraining. An ELR program in which employment is socially guaranteed to everyone willing and able to work that includes a training component could constitute the key component of such a model.

FINAL REFLECTION: CAN IT HAPPEN?

The silver lining of the current prolonged crisis is that it creates new opportunities. As Milton Friedman put it, "Only a crisis—actual or perceived—produces real change (1962, ix). It was not until 1933, four years into the Great Depression, that worker power began to assert itself, resulting in a number of unprecedented acts that benefited labor.[35] It took time for workers to fully realize how unfair the system had been to their interests and that there were alternatives. Today, workers face a dual problem: they have lost relative political power, and the more robust process of creative destruction has made their employment less secure. Yet this second problem, along with the continuing crisis, creates an opportunity: to insist upon a fairer system that guarantees employment and retraining for those who are not given adequate skills in youth or whose skills become inadequate later in a dynamic economic world. Might the Occupy Wall Street movement be the harbinger of an awakening?

The crisis might also awaken those who have been instrumental in impeding the expansion of adequate education—generally the wealthy—to better grasp their own long run interest. Although the proposal might strike some in the current climate of conservatism as radical, it is actually, as noted above, a further extension of measures that have been taken over the course of modern history as the educational requirements of the economy expanded. Further, it is far less radical than the measures taken to combat the pains of the Great Depression. Moreover, in that it would eliminate welfare for able workers, it reaffirms a widely embraced value that all should work.[36]

But against such optimism, Jared Diamond reminds us that in past civilizations elites pursued their own immediate self-interest even when they had

before them the evidence of severe environmental decline, their civilization's decline, and thus the long-run ruin of the foundation upon which their own privileges and livelihoods depended (2005). However, the severe costs of unemployment and the benefits of education for economic performance are more readily visible and less in question than the consequences of ecological devastation. Guaranteeing employment and expanding educational opportunity promise to make the economy more robust, thereby raising living standards for the society as a whole, including that of the wealthy.

Finally, beyond the needs of a robust economy, there is something morally amiss in a rich economy that leaves a portion of its workforce unemployed and without adequate skills to readily find employment. That is, there is a moral imperative to guarantee employment and retraining (Wisman 2010). No matter the unemployment rate, it is morally wrong for an overwhelming majority of the population to condemn a portion of society—usually the least privileged—to a life of unemployment and underemployment.[37] The personal and social costs are far too high.[38]

NOTES

1. The authors are professor of Economics and PhD candidate respectively at American University, Washington, DC. Helpful comments from Stephen Rose and an anonymous referee are gratefully acknowledged.
2. Among 25–34 year olds with university degrees, the United States had sunk to twelfth place in 2010. The World Economic Forum ranked the United States fifty-second among 139 nations in the quality of its university math and science instruction in 2010. Almost half of all science graduates in the United States are foreigners.
3. Due to space constraints, after a brief discussion of the early evolution of education, this chapter focuses primarily on the United States during the twentieth century. Common elements are at work in other countries and where instructive, these will be briefly addressed.
4. As Mokyr notes, "the Industrial Revolution and the subsequent technological developments after 1760 led to many production processes that required a level of competence that was beyond the capability of the household" (2002, 140).
5. Smith is generally recognized as the father not only of modern economics, but also of the subfield of human capital.
6. If they received instruction, there was the danger that they be discontent with menial and demanding labor. Thus, humans, or at least their overwhelming majority, were viewed as mere means, to be maintained practically as beasts of burden and little more.
7. Most contemporary economic historians divide the industrial revolution into two major phases; the first saw skill-saving technological change, while the second required more human capital as it played an increasing role in the manufacturing process (Becker, Hornung, and Woessman 2008, 4). Galor dates the first phase between 1760 and 1830 (2005, 206). Entry into the second phase varied across countries, not truly taking over until the late nineteenth or early twentieth century.
8. Much of the education that these factories provided, Mokyr points out, "was not technical in nature but social and moral... [workers] had to be taught to follow orders, to respect the space and property rights of others, and to be punctual, docile, and sober" (2002, 129).
9. Specifically, Smith advocated universal public schooling, mostly at government expense.
10. In the United States today, about 6 percent of GDP is spent on education. About 3 percent of GDP is spent on advertising, which many business interests also view as education.
11. As noted earlier, advances in education were not exclusively due to rising working class power. National interests have also been influential. For instance, educational expansion on the Continent was stimulated by state competition, especially in response to the industrial surging ahead of England. France established artillery schools in the 1720s and for training military officers, the École du Génie in the 1740s (Mokyr 2002, 46). The US educational reaction to Sputnik is another significant example.
12. However, Massachusetts, Rhode Island, Delaware, North Carolina, and Pennsylvania maintained requirements until 1860 that citizens pay taxes in order to be eligible to vote (Engerman and Sokoloff 2005, 898).
13. Data includes enrollment in both two-year and four-year institutions. Because they include enrollment in professional degree programs, the data between 1940 and 1967 are believed to be inflated. Before the 1940s, a baccalaureate degree was not necessary for entrance into professional degree programs (Goldin 1995).
14. The manner in which the increasing inequality of the last several decades influences public expenditure on public goods such as education was addressed by Christopher Lasch in his last major work, *The Revolt of the Elites* (1996). He noted that as economic elites take an ever-greater share of income and wealth, they tend to isolate themselves in social enclaves such as gated communities, exclusive clubs, and private schools. They tend to work in jobs, live in neighborhoods, and move in circles where they literally do not see those struggling to stay on their feet. Because of elites' disproportionate political power, this withdrawal from the wider society and from direct contact with the concerns of other citizens erodes support for public services on which those further down the economic ladder depend—services such as public schools, parks, transportation, public safety, and a clean environment. As secretary of Labor during the Clinton administration, Robert B. Reich has put it, "members see no reason why they should pay to support families outside the gates when members are getting everything they need inside" (Reich 2001, 199).

15. Between 1973 and 2005, the average income of the bottom 90 percent of households fell by 11 percent in real terms, in spite of the fact that worker productivity grew by over 80 percent. Thus the top 10 percent gained all of the benefits of this productivity gain (Baker 2007).
16. *The Chronicle of Higher Education* reports that about 28 percent of Americans over the age of 25 have graduated with four years of college (Richards 2011). However, although "the United States used to lead the world in the number of 25- to 34-year-olds with college degrees, as of 2010 it ranks 12th among 36 developed nations" (Lewin 2010).
17. State support for public universities has drastically declined. For instance, over the past 20 years, state support for the University of Virginia has declined from 26 percent to 7 percent of the operating budget; at the University of Michigan, from 48 to 17 percent; at Berkley, from 47 to 11 percent (De Vise 2011, A1). Over these same two decades, states have spent six times more on prisons than on higher education (Gopnik 2012, 73).
18. The rate of technological change is very difficult to measure across all of society since it can be many different things. For example, one could consider the number of research breakthroughs, or one could attempt to determine how many of those breakthroughs are incorporated into production processes. One crude way to measure technological change is Moore's Law (1965), which predicted (correctly) that the number of transistors that can be placed on an integrated circuit at a reasonable cost doubles roughly every two years. Another measure is the number of patents issued per capita. In the United States, this number is higher than ever before, at about 40 per 100,000 people per year, though this has fluctuated throughout the twentieth century as government research laboratories have played a larger role in R&D (Engerman and Wright 2006). However, the United States with 232,000 patents in 2010 now rates second behind Japan in worldwide patent applications, with China rapidly catching up with 195,000. In any event, a report by the RAND Corporation for the US Department of Labor predicts that the pace of technological change will continue to increase unabated at least in the near future (Karoly and Panis 2004, 105).
19. Some of the increase in the chance of an income drop is the result of increasing medical costs and higher levels of indebtedness, in addition to increased job insecurity. Such increases in insecurity have occurred broadly across all demographic groups (see Hacker et al. 2011,13; 16).
20. This may help account for the fact that job ads have started to appear that stipulate that the unemployed need not apply.
21. For a fuller discussion of these costs, see Wisman 2010.
22. Adolescent boys with unemployed parents are less likely to be confident about the future or to be independent and hopeful than are boys from families that "were not plagued with unemployment" (Storm 2003, 399). Neighborhoods with high unemployment present bad role models for children. Further, adolescents who attempt suicide are more likely to have an unemployed father than adolescents who do not attempt suicide (Storm 2003, 401).

23. For a review of retraining program evaluations through the 1990s, see Heckman, LaLonde, and Smith (1999).
24. The closest approximation in a wealthy country to an ELR program is the so-called Danish Flexicurity program. The understanding behind the Danish model is that whereas the unemployed are expected to seek jobs, the government is expected to ensure that adequate jobs exist and that workers are adequately trained for the available jobs. To the extent that adequate jobs do not exist, the government is expected to provide them. Denmark's model could be seen as a hybrid approach that blends Anglo-Saxon flexible labor markets with state-supplied unemployment benefits, hence the name "flexicurity" (Madsen 2006, 139). After World War II, Sweden embraced a right to work, but it was dismantled by neoliberal EU policy (Gould 1999).
25. Or, in technical terms, the program would operate so as to provide an infinitely wage-elastic demand for labor. The price of labor in the program would be set independent of market conditions, and the program would absorb all redundant labor at that price. That is, the market sets the quantity, but not the price.
26. Given Adam Smith's stature as the widely acknowledged father of modern economics, it is noteworthy that he suggested a living wage: "By necessaries I understand, not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for a creditable people, even of the lowest order, to be without" (Smith 1981, 869–870). In the United States, the low level of the current minimum wage does not provide adequate income for a one-earner family to rise above the official poverty level. Although this state of affairs is widely lamented, it is alleged that the minimum wage cannot be raised without causing further unemployment. An ELR could circumvent this scenario. In a transitional period, those losing jobs as the minimum wage is slowly lifted would fall back into the buffer-employment sector where training would attempt to raise their skill level such that their productivity would make the higher wages profitable for their future employers. (Technically, the value of their marginal product would be raised to equal a higher wage level.)
27. An ELR program could also be crafted to provide part-time work for those who are able to find only part-time work in the private sector or who can only work part-time due to family responsibilities such as child or parental care.
28. Forecasting the long run costs of an ELR program would be difficult. It would entail estimating the value produced by ELR workers, the enhanced productivity of ELR-trained workers when they enter the non-ELR work sphere, the resulting increase in tax revenues and the decrease in current social costs resulting from unemployment. Unemployment benefits would disappear and social support cost would decline. Unemployment-generated health costs borne by Medicaid would be reduced, if not eliminated. Unemployment-generated crime would all but disappear.

29. Keynes argued that the "real problem, fundamental yet essentially simple [is] to provide employment for everyone." The goal is to create "a reduction of the unemployed to the sort of level we are experiencing in wartime, that is to say, an unemployed level of 120,000... or less than 1 percent unemployed at the present time (Keynes 1980, 267, 303).
30. Seemingly unknown to most Keynesians; Keynes advocated a permanent "on-the-spot" employment program (jobs that meet local needs and the qualifications of those in need of jobs) that would ensure full employment (1982).
31. Wray summarizes his idea of such a program as follows:

    > Program wages and benefits will be federally funded; the wage will be periodically adjusted to reflect inflation and rising average labor productivity to prevent erosion of purchasing power and to allow workers to share in rising national productivity so that real living standards will rise. Program administration and operation will be decentralized. All state and local governments and registered not-for-profit organizations can propose projects submitted to a Federal office for final approval and funding. Project proposals will be evaluated on the following criteria: a) value to the community, b) value to the participants, c) likelihood of successful implementation of project, and d) contribution to preparing workers for nonprogram employment (2011, 17).

32. For a discussion of different ELR program designs, see Wray 2007.
33. In most countries, the state pays for most of the costs of higher education. Even in the United States, with its huge number of private universities and colleges, over two-thirds of all university and college students attend public institutions, although the decline in working class political power has meant that an increasing portion of the costs are borne by students and their families, most often as debt.
34. If it ever was, since it almost always left some portion of the workforce beyond those changing jobs ("frictional unemployment") unemployed. In any event, the inadequacy is glaring today. For instance, about 13 percent of US adults have not completed high school, and of these, about half are not employed even when the economy is in a boom phase (Wray and Forstater 2004, 268). The inadequacy of many high school graduates is evident in that, as The Education Trust reports, 23 percent of recent high school graduates do not get the minimum qualifying score on the military entrance exams (Theokas 2010, 1).
35. The momentum gave its most significant results in 1935 when the Works Progress Administration (WPA) was created by executive order. It offered government jobs to the unemployed on an unprecedented scale. Also coming forth in 1935 was the National Labor Relations Act that set up a process for collective bargaining and the Old-Age, Survivors, and Disability Insurance (Social Security Act). Three years later, the Fair Labor Standards Act established the first minimum wage in the United States.

36. Practically everyone agrees with Keynes that in providing the unemployed with unemployment insurance, nothing is created, and thus we "have nothing to show for it except more men on the dole" (1982, 149). In his memoir, Ronald Reagan praised the WPA as "one of the most productive elements" of Roosevelt's New Deal, among the largest jobs programs of all time (cited in Frank 2011, 10). Indeed, in 1971, as governor of California, he proposed a WPA sort of program to replace the state's welfare system. Created in 1933, the Civil Works Administration (CWA) found jobs for 4 million people within two months. Indeed, Jack Reagan, Ronald Reagan's father, found employment in the CWA. The WPA created three million jobs per year between 1933 and 1938.
37. When unemployment declines to a certain level—the so-called natural rate of unemployment, the people's government hits the breaks of restrictive monetary policy so that it not decline further, lest inflation result. In this manner, the unemployed are sacrificed for the greater good. Incidentally, Keynes noted the difficulty of achieving full employment by increasing aggregate demand, especially when approaching full employment (Keynes 1964 (1936, 118), and it was for this reason that he was especially concerned that structural unemployment "be treated as something to be handled forcibly and not something to be defeatist about" (Keynes 1980, 357). The response is public works and these must be targeted to those geographic areas—the "special" or "distressed" areas—where unemployment is highest. Keynes was more concerned with the deficient demand for labor than the inadequate demand for output. To achieve full employment, we are "more in need... of a rightly distributed demand than of greater aggregate demand" (Keynes 1982, 395).
38. Avner Offer notes that "the strongest determinant of low life satisfaction is absence of social connection, particularly unemployment and separation..." (2007, 7). In his new book, professor of psychiatry, James Gilligan claims that the inability to find a job is the foremost driver of shame and worthlessness (2011).

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