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Statement of  
Alan Greenspan  
Chairman  
Board of Governors of the Federal Reserve System  
before the  
Committee on Education and the Workforce  
U.S. House of Representatives

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The United States economy has long been characterized by a strong tradition of entrepreneurial spirit among our business people, a high level of skill among our workers, and an openness by firms and workers alike to intense competition within and beyond our borders. Those attributes have given us a standard of living unparalleled for so large a population--and one that has risen steadily over the history of our nation.

But with that bounty have also come the inevitable stresses and anxieties that accompany economic advance. One concern that has persisted for some time is the fear that we are irreversibly losing manufacturing jobs because of businesses' efforts to extract rapid gains in production efficiencies and to cut labor costs by tapping the lower-wage economies of Asia and Latin America.

More recently, similar concerns have arisen about the possibility that an increasing number of our better-paying white-collar jobs will be lost to outsourcing, especially to India and China. Many of these jobs are in the service sector, and they were previously perceived as secure and largely free from the international competition long faced in the manufacturing sector. There is a palpable unease that businesses and jobs are being drained from the United States, with potentially adverse long-run implications for employment and the standard of living of the average American. Job insecurity is understandably significant when nearly two million members of our workforce have been unemployed for more than six months.

The issue is both important and sensitive, dealing as it does with the longer-term wealth of our nation and with the immediate welfare of so many individuals and communities. In the debate that has ensued, a large gulf is often perceived between the arguments of economists, who almost always point to the considerable benefits offered over the long term

by exposure to free and open trade, and the obvious stress felt by those caught on the downside of turbulence created by that exposure. It is crucial that this gulf be bridged.

As history clearly shows, our economy is best served by full and vigorous engagement in the global economy. Consequently, we need to increase our efforts to ensure that as many of our citizens as possible have the opportunity to capture the benefits that flow from that engagement. For reasons that I shall elucidate shortly, one critical element in creating that opportunity is the provision of rigorous education and ongoing training to all members of our society. This proposal is not novel; it is, in fact, the strategy that we have followed successfully for most of the past century and a strategy that we now should embrace with renewed commitment.

Over the long sweep of American generations and waves of economic change, we simply have not experienced a net drain of jobs to advancing technology or to other nations. Since the end of World War II, for example, the unemployment rate in the United States has averaged less than 6 percent with no apparent trend; and as recently as 2000, it dipped below 4 percent.

Moreover, real earnings of the average worker have continued to rise. Over the past century, per capita real income has risen at an average rate of more than 2 percent per year, declining notably only during the Great Depression of the 1930s and immediately following World War II. Incomes trended higher whether we had a trade deficit or a trade surplus and whether international outsourcing was large or small. More fundamental economic forces have apparently been at work. Research on wealth creation in both emerging and developed nations strongly suggests that it is the knowledge and the skill of our population interacting

under our rule of law that determine our real incomes, irrespective of the specific jobs in which these incomes are earned and irrespective of the proportion of domestic consumption met by imports.

These upward trends in the standard of living, however, mask the stress that significant parts of our workforce endure. Joseph Schumpeter, the renowned Harvard professor, called the process of progress “creative destruction,” the continuous scrapping of old technologies to make way for the new. Standards of living rise because the cash flows of industries employing older, increasingly obsolescent, technologies are marshaled, along with new savings, to finance the production of capital assets that almost always embody cutting-edge technologies. Workers migrate with the capital. This is the process by which wealth is created, incremental step by incremental step.

The process of creative destruction has been accompanied by an ever-growing conceptualization of economic output. Ideas rather than materials or physical brawn have been by far the greatest contributors during the past half-century to our average annual increase of 3-1/4 percent in real gross domestic product.

Technological advance is continually altering the shape, nature, and complexity of our economic processes. To effectively manage this ever-increasing complexity, our labor force has had to become more and more technically oriented. Years of schooling, a rough proxy for skills, averaged nine and one-quarter years in 1950. A half-century later, schooling averaged more than twelve years.

At the risk of some oversimplification, if the skill composition of our workforce meshed fully with the needs of our increasingly complex capital stock, wage-skill differentials

would be stable, and percentage changes in wage rates would be the same for all job grades. This was largely the case through the 1960s when the addition of skilled college graduates to the labor force, in part the result of schooling financed by the GI Bill, was sufficient to hold wage increases among the highly skilled to average gains. Real wages of the lesser skilled also rose significantly, in part as a result of effective high-school educations and the many skills learned during the war. In the 1970s, the supply of skilled workers received another boost from the rapid expansion of our nation's community colleges. In short, technical proficiencies across all job grade levels appeared to rise about in line with the needs of our, even then, complex stock of capital.

But for the past twenty years the real incomes of skilled, especially highly skilled, workers have risen more than the average of all workers, whereas real wage rate increases for lesser-skilled workers have been below average, indeed virtually nonexistent. This difference in wage trends suggests that, at least in relative terms, we have developed a shortage of highly skilled workers and a surplus of lesser-skilled workers.

Although in recent years the proportion of our labor force made up of those with at least some college education has continued to grow, we appear, nonetheless, to be graduating too few skilled workers to address the apparent imbalance between the supply of such workers and the burgeoning demand for them. Perhaps the accelerated pace of high-tech equipment installations associated with the large increases in productivity growth in recent years is generating unachievable demands for skilled graduates over the short run. If the apparent acceleration in the demand for skilled workers to staff our high-tech capital stock is

temporary, as many presume, the pressure on our schools would ease as would the upward pressure on high-skilled wages.

More broadly, in considering the issue of expanding our skilled workforce, some have a gnawing sense that our problems may be more than temporary and that the roots of the problem may extend back through our education system. Many of our students languish at too low a level of skill, and the result is an apparent excess of supply relative to a declining demand. These changing balances are most evident in the failure of real wages at the lower end of our income distribution to rise during the past quarter-century.

The hypothesis that we should be able to improve upon the knowledge that our students acquire as they move from kindergarten to twelfth grade gains some support from international comparisons. A study conducted in 1995 revealed that, although our fourth-grade students were above average in both math and science, by the time they reached their last year of high school they had fallen well below the international average.<sup>1</sup> Accordingly, we apparently have quite a distance to go before we catch up.

Early last century, technological advance required workers with a higher level of cognitive skills--for instance the ability to read manuals, to interpret blueprints, or to understand formulas. Youth were pulled from rural areas, where opportunities were limited, into more-productive occupations in business and an advancing manufacturing sector. Our educational system responded: In the 1920s and 1930s, high-school enrollment in this country expanded rapidly. It became the job of these institutions to prepare students for work life. In

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<sup>1</sup>The Third International Math and Science Study is a project of the International Study Center, Lynch School of Education, Boston College. A complete set of TIMSS publications is available on the center's web site, <http://timss.bc.edu/timss1995i/TIMSSPublications.html>.

the context of the demands of the economy at that time, a high-school diploma represented the training needed to be successful in most aspects of American enterprise. The economic returns for having a high-school diploma rose and, as a result, high-school enrollment rates climbed.

By the time that the United States entered World War II, the median level of education for a seventeen-year-old was a high-school diploma--an accomplishment that set us apart from other countries. I cannot dismiss the notion that we can learn something from that period and perhaps from other countries. Still, I realize that the world was different from today in many ways. Societal changes have been numerous and profound, and our schools are being asked to do a great deal more than they have in the past. We need to be forward-looking in order to adapt our educational system to the evolving needs of the economy and the realities of our changing society.

One area in which educational investments appear to have paid off is our community colleges. These two-year institutions are playing a similar role in preparing our students for work life as did our early twentieth-century high schools in that less technically oriented era. But to an even greater extent, our population today is adjusting to an ever-faster turnover of jobs. We are also growing more aware that in the current intensely competitive economy, the pace of job creation and destruction implies that the average work life will span many jobs and even more than one profession.

The desire of workers to learn skills that build on their previous work experiences or to acquire new skills is apparent. Currently almost one in three of the enrollees in community colleges and almost one of two part-time enrollees at four-year undergraduate schools are

aged thirty or older, statistics that suggest that these individuals have had previous job experience. The increase in these enrollments over the past thirty years attests to the success of these institutions in imparting both general and practical job-related training. A rising proportion of the population is also taking advantage of work-related instruction.

More broadly, our system of higher education bears an important responsibility for ensuring that our workforce is prepared for the demands of economic change. America's reputation as the world's leader in higher education is grounded in the ability of these versatile institutions to serve the practical needs of the economy by teaching and training and, more significantly, by unleashing the creative thinking that moves our economy forward.

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I do not doubt that the vast majority of us would prefer to work in a less stressful, less competitive environment. Yet, in our roles as consumers, we seem to relentlessly seek the low product prices and high quality that are prominent features of our current frenetically competitive economic structure. Retailers who do not choose their suppliers, foreign or domestic, with price and quality uppermost in mind, risk losing their customers to retailers who do. Retailers are afforded little leeway in product sourcing. If consumers are stern taskmasters of their marketplace, business purchasers of capital equipment and production materials inputs have taken the competitive paradigm a step further and applied it on a global scale.

Those who have lost jobs as a consequence of this process, I know, are not readily consoled by the fact that job insecurity concerns are not new. But keeping the current period in context is instructive. Jobs in the United States were perceived as migrating to low-wage



Japan in the 1950s and 1960s, to low-wage Mexico in the 1990s, and most recently to low-wage China. Japan, of course, is no longer characterized by a low-wage workforce, and many in Mexico are now complaining of job losses to low-wage China.

In response to these strains and the dislocations they cause, a new round of protectionist steps is being proposed. These alleged cures would make matters worse rather than better. They would do little to create jobs; and if foreigners were to retaliate, we would surely lose jobs. Besides enhancing education, we need to further open markets here and abroad to allow our workers to compete effectively in the global marketplace.

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As our economy exhibits increasing signals of recovery, job loss continues to diminish. But new job creation is lagging badly--the ironic consequence of accelerated gains in productivity. In all likelihood, employment will begin to increase more quickly before long as output continues to expand. We have reason to be confident that new jobs will displace old ones as they always have, but America's job-turnover process will never be without pain for those caught on the downside of creative destruction.

We do have a choice. We can erect walls to foreign trade and even discourage job-displacing innovation. The pace of competition would surely slow, and tensions might appear to ease. But only for a short while. Our standard of living would soon begin to stagnate and perhaps even decline as a consequence. Time and again through our history, we have discovered that attempting merely to preserve the comfortable features of the present, rather than reaching for new levels of prosperity, is a sure path to stagnation.

In closing, I have emphasized the importance of redressing the apparent imbalances between the supply and demand for labor across the spectrum of skills. Those imbalances have the potential to hamper the adjustment flexibility of our economy overall. But these growing imbalances are also aggravating the inequality of incomes in this country.

Historically, we have placed much greater emphasis on the need to provide equality of opportunity than on equality of outcomes. But equal opportunity requires equal access to knowledge. We cannot expect everyone to be equally skilled. But we need to pursue equal access to knowledge to ensure that our economic system works at maximum efficiency and is perceived as just in its distribution of rewards.