Policy Information Report

America's Perfect Storm

Three Forces Changing Our Nation's Future

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This report was written by:

Irwin Kirsch, Henry Braun, and Kentaro Yamamoto of ETS, and Andrew Sum of Northeastern University.

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Preface

Dear God, be good to me;
The sea is so wide,
And my boat is so small.

These lines, from the Breton Fisherman's Prayer, strike an image of vulnerability for those who may not be adequately prepared for a challenging environment. A similar image is cast by Kirsch, Braun, Yamamoto, and Sum in *America's Perfect Storm: Three Forces Changing our Nation's Future*. The authors offer the image of our nation as a nautical convoy. Some boats are large, well built, and able to ride out the heaviest of turbulent seas. Others are smaller, but still quite sturdy, and able to survive. But, many are fragile, meagerly equipped, and easily capsized in rough waters. This convoy is in the midst of a perfect storm that is the result of a confluence of three powerful forces.

The authors document and describe these three forces — divergent skill distributions among U.S. population groups, a changing economy, and demographic trends of a growing, more diverse population. They project the impact of these interactions upon the nation 25 years into the future. Kirsch and his colleagues warn us that the confluence of these factors can create a powerful dynamic that continually feeds the storm — putting our nation at great risk. They offer hope, however, that if we act now and invest in policies that will help our nation grow together, we can meet our ideals as a nation offering real opportunity for all its citizens and continue our leading role in the world.

Michael T. Nettles
Senior Vice President
Policy Evaluation and Research Center

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Our nation is in the midst of a perfect storm — the result of the confluence of three powerful forces — that is having a considerable impact on our country. If we maintain our present policies, it is very likely that we will continue to grow apart, with greater inequity in wages and wealth, and increasing social and political polarization. If, however, we recognize the power of these forces as they interact over the years — and we change course accordingly — then we have an opportunity to reclaim the American dream in which each of us has a fair chance at sharing in any future prosperity.

What are the three forces comprising this perfect storm? They are divergent skill distributions, the changing economy, and demographic trends.

The first force contributing to our country's perfect storm is the wide disparity in literacy and numeracy skills among our school-age and adult populations.

- High school graduation rates peaked at 77 percent in 1969, fell back to 70 percent in 1995, and have stayed in this range into the current decade. The graduation rate for disadvantaged minorities is thought to be closer to 50 percent. A recent report by the Organisation for Economic Co-operation and Development (OECD) indicates that the United States ranked 16th out of 21 OECD countries with respect to high school graduation rates.[1]
- Data from the National Assessment of Educational Progress (NAEP) reveal that between 1984 and 2004 reading scores among 13- and 17-year-olds remained flat, and the achievement gaps were large and relatively stable. For mathematics the story is only slightly different. While the mean scores for both the nation's 13- and 17-year-olds improved slightly, they did so across all groups, with the result that the average size of the Black-White and Hispanic-White achievement gaps remained large and relatively stable.
- National surveys of our adult population indicate that large numbers of our nation's adults, 16 years of age and older, do not demonstrate sufficient literacy and numeracy skills needed to fully participate in an increasingly competitive work environment. These skills are also needed to function effectively in our complex society, with its large bureaucratic institutions and its complex legal, health care, and retirement systems.
- More importantly, these skills are not evenly distributed across groups defined by race/ethnicity, country of birth, and socioeconomic status. In fact, there are substantial differences in average proficiencies among these groups that influence their social, educational, and economic opportunities.
- International surveys of student and adult populations indicate that while our average performance is no better than mediocre, our degree of inequality (the gap between our best and least proficient) is among the highest in OECD countries.

The second force comprises the seismic changes in our economy that have resulted in new sources of wealth, novel patterns of international trade, and a shift in the balance between capital and labor. These changes have been driven by both technological innovation and globalization, resulting in a profound restructuring of the U.S. workplace. Indeed, the labor markets of today are markedly different from those of earlier decades. For example:

- In 1950, manufacturing's share of total employment in the United States was 33.1 percent. By 1989, it was down to 18.2 percent and, by 2003, it was 10.7 percent.
- Between 1984 and 2000 the number of employed persons 16 years of age and older grew by 29 percent, or some 30 million. At the same time, employment in jobs associated with college-level education grew by some 20 million, accounting for two-thirds of the job growth.
- The country's employment growth is expected to continue through the rest of this decade and into the next, with college labor market clusters (professional, management, technical, and high-level sales) expected to generate about 46 percent of all job growth between 2004 and 2014.

[1] A number of alternative methodologies have been developed by educational researchers to estimate high school graduation rates. For a discussion and review of various approaches see Gary Orfield (ed.), *Dropouts in America: Confronting the Graduation Rate Crisis*, Cambridge, MA, Harvard Education Press, 2004.

One important consequence of this shift in the composition of jobs in our country has been the increasing economic returns to schooling and skills. For example:

- The expected lifetime earnings of males with a bachelor's degree in 1979 were 51 percent higher than their peers with only a high school diploma. By 2004, however, this difference had widened to 96 percent.
- The earnings premiums accruing to a particular level of educational attainment (e.g., high school diploma, bachelor's degree) are substantially larger for individuals at that level who have higher cognitive skills, indicating that *both* education *and* skills contribute to individual opportunities. These opportunities include not only higher paying jobs but also the chance for individuals to take advantage of employer-sponsored training to enhance and broaden their skills throughout their working lives.

The third force involves sweeping demographic changes. The U.S. population is projected to grow from nearly 300 million in 2005 to more than 360 million in 2030. Over this period, our population will become increasingly older and more diverse, with immigration having a significant impact on the composition of the workforce, as well as of the general population.

- The U.S. labor force is projected to grow more slowly over the next 20 years than it did between 1980 and 2000. None of this growth is predicted to come from native-born workers of prime working age (25 to 54).
- During the 1980s, international migration accounted for about 21 percent of our nation's population growth; with that contribution rising to 31 percent in the 1990s. Moreover, the U.S. Census Bureau expects that between 2000 and 2015, net international migration will account for more than half of our nation's population growth.
- Fueled both by higher birth rates and by immigration, the Hispanic share of the population is expected to grow from 14 percent in 2005 to slightly more than 20 percent by 2030.
- In 2004, nearly 57 percent of the 16- to 64-year-old Hispanic population in the United States was foreign-born, up from 46 percent in 1990. More than half of these immigrant Hispanics lacked a high school diploma.
- The lack of a high school diploma by such a large proportion of Hispanic immigrants is of concern given the fact that almost 80 percent of immigrants who have not earned a high school diploma report not speaking English well or at all.

These three forces — substantial disparities in the distributions of skills, economic restructuring, and demographic trends — are each powerful in their own right. But as they play out together over time, the result is truly a perfect storm that, unlike the storm chronicled by Sebastian Junger[2], continues to gain strength with no end in sight.

- Employing demographic projections combined with current skill distributions, we estimate that by 2030 the average levels of literacy and numeracy in the working-age population will have decreased by about 5 percent while inequality will have increased by about 7 percent. Put crudely, over the next 25 years or so, as better-educated individuals leave the workforce they will be replaced by those who, on average, have lower levels of education and skill. Over this same period, nearly half of the projected job growth will be concentrated in occupations associated with higher education and skill levels. This means that tens of millions more of our students and adults will be less able to qualify for higher-paying jobs. Instead, they will be competing not only with each other and millions of newly arrived immigrants but also with equally (or better) skilled workers in lower-wage economies around the world.

As we argue in this report, it is both the growth of human capital and how it is distributed that is important for the United States. Human capital is critical, however, not just because of the economic implications. Benjamin Friedman[3] links our economic well-being to the fabric of our society, arguing that individuals and societies are more trusting, more inclusive,

[2] Sebastian Junger authored *The Perfect Storm: A True Story of Men Against the Sea*. Published in 1997, Junger's book recounts the tale of the October 1991 "perfect storm," focusing on the loss of the Gloucester sword-fishing boat Andrea Gail off the coast of Nova Scotia.
[3] See Benjamin M. Friedman, "Meltdown: A Case Study," *Atlantic Monthly*, July/August 2005.

and more open to change when they see their futures and that of their children as bright and secure. He concludes that "Economic growth is not merely the enabler of higher consumption; it is in many ways the wellspring from which democracy and civil society flow."

- Given the forces described in this report, a looming question is whether we will continue to grow apart or, as a nation, we will invest in policies that will help us to grow together. We strongly believe the latter is the better course of action over the long term.
- While new policies focusing only on education and skills will not solve all the challenges associated with existing inequalities, if our society's overall levels of learning and skills are not increased and the existing gaps are not narrowed, there is little chance that economic opportunities will improve among key segments of our population.

On a continent bounded by two oceans, our society has often employed nautical metaphors to generate evocative images. National political leaders used to speak, for example, of the "ship of state," and President John F. Kennedy, in arguing the case for economic growth in the early 1960s, claimed that "a rising tide lifts all boats."[4] Given our country's growing demographic diversity, however, perhaps it would be more appropriate now to imagine our nation as a convoy. Some of the boats are large, well built, and able to ride out the heaviest of seas. Others are somewhat smaller, less well-equipped, but still quite sturdy. But many are fragile, meagerly equipped, and easily swamped in rough waters. That convoy — the individuals, families and communities that make up our nation — is in the midst of a "perfect storm," the result of the confluence of three powerful sets of forces: divergent skill distributions, a changing economy, and demographic trends.

The first set of forces is evident in the findings of a number of large-scale national and international surveys conducted over the past decades, which show that large numbers of our nation's adults do not have sufficient command of the literacy and numeracy[5] skills needed to function effectively in an increasingly competitive work environment. Moreover, skills are not evenly distributed across groups defined by race/ethnicity, nativity,[6] and socioeconomic status. In fact, there are substantial differences in average literacy levels among these groups. In younger cohorts, these differences are mirrored by critical differences in academic achievement and educational attainment. Moreover, comparisons made possible by a number of international assessments, including PISA (Programme for International Student Assessment) and IALS (International Adult Literacy Survey), indicate that our younger cohorts are losing ground relative to their peers in many developed nations.[7]

The second set of forces is driven by the fact that the U.S. economy has undergone significant changes in recent years. The labor markets of today are markedly different from those of earlier decades as a result of several developments, including industrial and corporate restructuring, declines in unionization, technological change, and globalization. The last set of changes were made possible by the combination of a series of international trade agreements, the rapid development and diffusion of information and communications technology (ICT) infrastructure, advances in logistics, and foreign investment in developing countries. An important consequence of technological change and globalization is increasing economic returns to higher levels of education and skills.[8] For workers who possess these characteristics, opportunities abound. But for those who lack them, the economic future can be quite dismal.

The third set of forces is powered by demographic trends. The U.S. population is projected to grow from nearly 300 million in 2005 to more than 360 million by the year 2030. Certain minority groups, especially Hispanics, represent a considerable and growing proportion of the population. Immigration has accounted for an increasingly large fraction of U.S. population growth over the past few decades and is projected to do so over the remainder of this decade — and at least into the near future. According to the U.S. Census Bureau, these immigration patterns, coupled with differences in birth rates, will result in substantial increases in the racial/ethnic diversity of the nation's population over the next 20 to 25 years and beyond. For example, Hispanics, who now constitute about 14 percent of the population, will constitute more than 20 percent by 2030; and non-Hispanic African Americans, who now constitute some 12.5 percent of the population, will

[4] President Kennedy used this expression on a number of occasions during the 1960s. The earliest cited time was during the presidential campaign of 1960.

[5] The construct of numeracy was used in the Adult Literacy and Life Skills (ALLS) survey and was defined as the knowledge and skills required to effectively manage and respond to the mathematical demands of diverse situations.

[6] The term nativity is used to distinguish those who were born in the United States from those born outside of the United States.

[7] See Organisation for Economic Co-operation and Development, *Learning for Tomorrow's World: First Results from PISA 2003*, Programme for International Student Assessment, Paris, 2004, and Andrew Sum, Irwin Kirsch, and Robert Taggart, *The Twin Challenges of Mediocrity and Inequality: Literacy in the U.S. from an International Perspective*, Policy Information Report, Center for Global Assessment, Policy Information Center, ETS, 2002.

[8] See Richard J. Murnane and Frank Levy, *Teaching the New Basic Skills*, New York, The Free Press, 1996. For a review of the economic impacts of these basic skills on the weekly and annual earnings of workers in the United States, see Andrew Sum, *Literacy in the Labor Force*, National Center for Education Statistics, Washington, D.C., 1999, and Andrew Sum, Irwin Kirsch, and Kentaro Yamamoto, *Pathways to Labor Market Success: The Literacy Proficiency of U.S. Adults*, Policy Information Report, Policy Information Center, ETS, 2004.

then constitute nearly 14 percent. Over that same period, Asian Americans will see their share of the population increase from 4 percent to almost 7 percent.

This is not the first report to take note of one or more of these forces, or to warn of the challenges we face as a nation. Some of the reports discussed in the next section also talk about our mediocrity and inequality in literacy and numeracy skills, as well as the strong associations among education, literacy, and economic success.[9] This report uses data from recent national and international surveys to report on the skill distributions of our school-age and adult populations. It also looks at shifts taking place in the workforce, and at demographic projections made by the U.S. Census Bureau. Using statistical methodologies, we project what the literacy skills of the next generation will look like if projected changes in our demographics are allowed to interact with existing skill distributions.

While critics of the earlier reports sometimes suggest that their rhetoric exaggerates America's challenges, our analyses indicate that their rhetoric is not overblown. We are in the midst of a perfect storm in which these three powerful forces are combining to generate waves that already have had a considerable impact on our nation. Unlike the perfect storm chronicled in the novel written by Sebastian Junger, the forces behind this storm continue to gain strength, and calm seas are nowhere in sight. We can't hope to ride this one out. If we continue on our present heading and fail to take effective action, the storm will have a number of predictable and dire implications for future generations, with consequences that extend well beyond the economic realm to the ethos of our society.

On the other hand, if we respect the storm's power and change course appropriately, we still have a chance to help more Americans share in any future prosperity. Surely, our nation will be different than the one that sailed into the storm more than a decade ago — but it will retain many of the characteristics that have distinguished it from those of other countries. If, as a nation, we agree that strengthening the convoy and preserving its distinctiveness are important, then (perhaps) we will act more in concert with our ideals of a nation having real opportunity for all.

[9] Mediocrity and inequality refer to the performance of the United States on international surveys relative to other highly industrialized nations. These terms are taken from the title of a report written by Andrew Sum, Irwin Kirsch and Robert Taggart, *The Twin Challenges of Mediocrity and Inequality: Literacy in the U.S. from an International Perspective*, Policy Information Report, Policy Information Center, ETS, February 2002.

Historically, the United States has provided economic opportunity for most of those willing to work hard, invest in themselves, and act responsibly. For the most part, we still subscribe to that promise, and both the civil rights and women's rights movements have extended this promise to groups often neglected in previous decades. As the nation changed from a predominantly agrarian society to an industrial one in the late 19th and early 20th centuries, labor-market success increasingly depended on attaining at least a modest level of formal education, along with a willingness to "do a day's work for a day's pay." Over time, as the structure of jobs and the economy changed, occupational and basic literacy skills became more essential for obtaining a decent job and advancing in the workforce. Eventually, a high school diploma emerged as a key credential for economic success. Through much of the 20th century, the proportion of high school graduates,[10] as well as the proportion of adults who graduated from college, increased with each successive age cohort — although those proportions differed substantially by race/ethnicity and, in some cases (e.g., college education), by gender.

After World War II, the GI Bill of Rights provided the initial impetus for a rapid expansion in college attendance and, eventually, the number of college graduates. Although this policy was motivated by domestic policy considerations, it was certainly consistent with the American ethos and led to the development of a stronger human capital base that helped to drive productivity and economic growth. Not only did the education and skill levels of U.S. workers increase during this period, so did the number of individuals who were entering the workforce. Thus, businesses had a growing base of both men and women who were better-educated and better-skilled than those they replaced. This unprecedented fund of human capital, together with the fact that the United States (unlike Europe and Japan) had escaped the worst ravages of World War II, enabled this country to achieve a pre-eminent position in the global economy. The United States led most of the industrialized world in the percentage of adults with a high school and college education and accounted for a disproportionate share of world gross domestic product.

Several other post-World War II events are worthy of note. The launch of Sputnik in 1957, as well as the apparent growing economic power of the Soviet Union in the 1950s and early 1960s, alerted the nation to the need for strengthening mathematics and science education. The "War on Poverty," initially declared by President Johnson in 1964, committed the federal government to reducing poverty partly by improving education investments in the poor from pre-school (Head Start) through adulthood. The Civil Rights Act of 1964 represented an attempt to use federal legislation to spur greater equality in U.S. society — in part through providing more equitable access to educational opportunity.[11]

Over the past two decades, a series of reports have been published that focus on the links between educational performance, literacy skills, and the U.S. economy. In 1983, the National Commission on Excellence in Education (sometimes referred to as the Bell Commission) issued a report on the state of the nation's educational system. In that report, the commission made the following widely cited statement about the quality of our school system:

> The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. What was unimaginable a generation ago has begun to occur — others are matching and surpassing our educational attainments ... we have allowed this to happen to ourselves.[12]

Shortly following the publication of *A Nation at Risk*, the Committee for Economic Development issued its own report, *Strategy for U.S. Industrial Competitiveness*, which called for a variety of economic,

[10] See Paul Barton, *One-Third of a Nation: Rising Dropout Rates and Declining Opportunities*, Policy Information Report, Policy Information Center, ETS, February 2005. In this report, Barton notes that the percentage of high school graduates as a percentage of our nation's 17-year-olds peaked at 77 percent in 1969, dropped to 70 percent in 1995, and has stayed close to that level at least through 2001.

[11] Unlike previous initiatives, the Civil Rights Act was an explicit attempt to address the social and economic inequalities that continue to exist in our country.

[12] National Commission on Excellence in Education, *A Nation At Risk: The Imperative for Educational Reform*, U.S. Government Printing Office, Washington, D.C., 1983.

educational, and technological reforms to boost the future competitiveness of the U.S. economy.[13] The report identified the quality of education, particularly at the primary and secondary levels, as a key determinant of the future ability of the U.S. labor force to adjust to workplace changes that would be produced by new technologies designed to improve labor productivity.

In 1986, the Carnegie Corporation's Forum on Education and the Economy published a report documenting the changing structure of the economy, its likely impacts on the education and skill requirements of jobs, and the consequences for the nation's schools and the teaching profession. In *A Nation Prepared: Teachers for the 21st Century*, the commission argued that

> If America wants to compete on the same terms as it did in the past — making the most of the workers with low skill levels — then it must accept prevailing world wage levels for low-skilled and semi-skilled labor. That is we must be prepared for a massive decline in our standard of living. The alternative is to revise our view of the role of the worker in the economy. In the future, high-wage level societies will be those whose economies are based on the use of a wide scale of very skilled workers, backed up by the most advanced technologies available.[14]

The growing importance of basic academic skills (reading, math, and writing) in determining an array of educational, labor market, and social outcomes for America's youth was identified in a 1988 monograph published by the Ford Foundation's Project on Social Welfare and the American Future.[15] In *Toward a More Perfect Union*, the authors identified important associations between basic academic proficiencies of youth and their school performance, graduation rates, college attendance rates, childbearing behavior, experience with the criminal justice system, and annual earnings.

Concerns with slow productivity growth, real-wage stagnation, rising wage inequality, and international competitiveness continued throughout the remainder of the 1980s. In 1990, the National Center on Education and the Economy published a report on the workforce-development challenges facing the American economy if it wished to maintain high wages for the future workforce.[16] The report identified a number of critical choices the nation must make about the strategies it would pursue to bolster its economic competitiveness. The Commission on the Skills of the American Workforce, co-chaired by two former Secretaries of Labor, William Brock and Ray Marshall, called for a wide array of actions by national, state, and local governments and private-sector firms to increase investments in the education and training of both youth and adults to allow the country to maintain a high-productivity/high-wage trajectory.

In 2003, the Hoover Institution's Koret Task Force on K-12 Education issued its report on an appraisal of the state of the nation's educational system, updating findings that originally appeared in *A Nation at Risk*.[17] Their report was titled *Our Schools and Our Future: Are We Still at Risk?* The limited progress of the nation since the initial report, with respect to both improving high school graduation rates and strengthening the literacy and numeracy skills of our students, was cited by the task force. In their final report, the Koret Task Force described the accelerated consequences of globalization since the publication of *A Nation at Risk:*

> The shrinking globe has made it easier than anyone in 1983 could have imagined for investments and jobs to go anywhere on the planet that seems likeliest to succeed with them. Here we must look to our schools to produce the highly educated citizenry on which America's future economic vitality depends.[18]

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[13] Committee for Economic Development, *Strategy for U.S. Industrial Competitiveness*, New York, 1984.
[14] Carnegie Forum on Education and the Economy, *A Nation Prepared: Teachers for the 21st Century*, Carnegie Corporation of New York, New York, 1986.
[15] Gordon Berlin and Andrew Sum, *Toward a More Perfect Union: Basic Skills, Poor Families, and Our Economic Future*, Ford Foundation Project on Social Welfare and the American Future, New York, 1988.
[16] Commission on the Skills of the American Workforce, *America's Choice: High Skills or Low Wages!*, National Center on Education and the Economy, Rochester, New York, 1990.
[17] See Koret Task Force on K-12 Education, *Our Schools and Our Future: Are We Still at Risk?* Hoover Institution, Stanford University, 2003.
[18] A condensed version of the Koret Task Force report also appeared in the following article: "Our Schools, Our Future: Are We Still at Risk?" in *Education Next*, Spring 2003, pp. 9-15.

In November 2005, the National Center for Public Policy and Higher Education warned that unless states made significant efforts to improve the educational attainment of all residents, the personal income of Americans would decline over the next 15 years.[19] Similarly, the National Academy of Sciences issued its own report, warning the nation that it was "on a losing path" in global economic competition.[20] The report, titled *Rising Above the Gathering Storm*, contained a series of recommendations to bolster the nation's long-run economic competitiveness, including a strengthening of the math and science proficiencies of the nation's K-12 students and increased national commitments to basic research and the training and recruitment of scientists.

In response to these and other concerns, federal involvement in education over the past three decades has evolved through successive reauthorizations of the Elementary and Secondary Education Act, most recently in 2002 with the passage of the No Child Left Behind Act. This legislation explicitly addresses the importance of having every child meet state-mandated standards of proficiency and sets out a system of school and district accountability measures to encourage compliance. While educational analysts often disagree over the types of reforms needed to achieve these objectives, there is general agreement that too many children are leaving school too early, and too many of those who persist to earn (say) a high school diploma emerge with weak skills and insufficient knowledge.[21]

As the next section of this report will show, these warnings and concerns about our educational system and its influence on wages and the economy are well-grounded. Unless we are willing to make substantial changes, the next generation of Americans, on average, will be less literate and have a harder time sustaining existing standards of living.

[19] The National Center for Public Policy and Higher Education, *Income of U.S. Workforce Projected to Decline if Education Doesn't Improve*, Policy Alert, November 2005.

[20] Committee on Prospering in the Global Economy of the 21st Century: An Agenda for American Science and Technology, *Rising Above the Gathering Storm*, National Academy of Sciences, Washington, D.C., 2005.

[21] For a review of alternative views on the problems of our schools and the need for reform, see the Spring 2003 issue of *Education Next*.

In the following sections, we analyze each of the three sets of forces that constitute America's perfect storm. First, we examine the divergent skill distributions, using data from recent national and international surveys. Skill distributions have a prominent role in this report, not only because they are strongly associated with key social and economic outcomes of adults, but also because they have been shown to be associated with these outcomes over and above their effects on educational attainment. Differences in the distribution of both educational attainment and skills by major subgroups in our population mirror the variation in earnings, income, and wealth seen in American society.

Next we summarize key aspects of the economic forces that are changing the nature of work for many Americans. There has been a shift in the composition of jobs toward those employing individuals with higher levels of education and skills. This shift is predicted to continue through the remainder of this decade and well into the next, with important implications for who is most likely to gain access to these jobs.

Finally, we use information provided by the U.S. Bureau of the Census to examine recent and projected demographic changes. According to these projections, the U.S. population will continue to grow, but will become increasingly older and more diverse. Immigration will continue to have a significant effect on both the general population and those who enter the workforce. According to David Ellwood, America's labor force will grow much more slowly over the next 20 years than it did between 1980 and 2000, with almost none of the growth coming from native-born workers of prime working age (i.e., 25 to 54 years).[22] Between 2000 and 2005, two-thirds of the nation's civilian labor-force growth and 86 percent of its employment growth was generated by new immigrant arrivals.

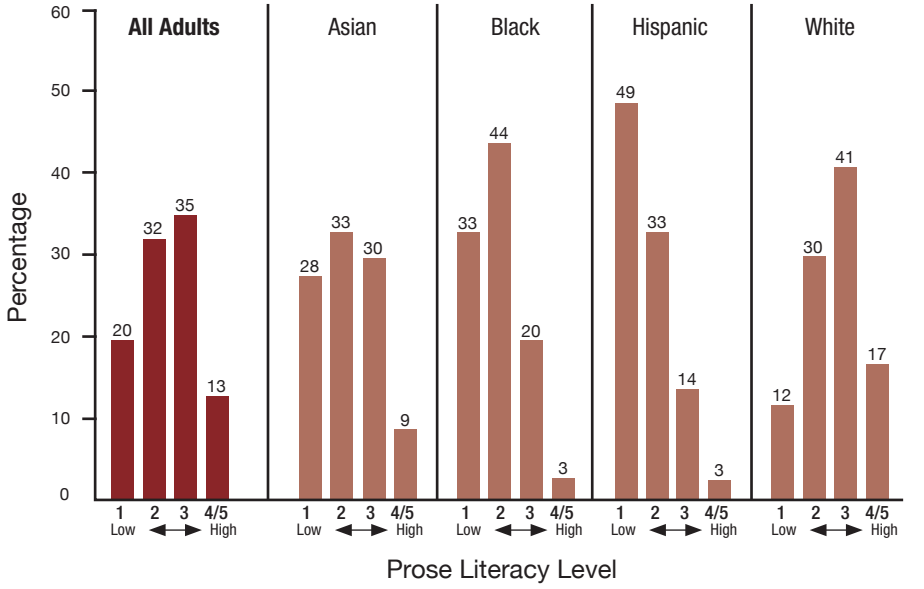
[22] See David Ellwood's contribution to the report *Grow Faster Together or Grow Slowly Apart: How Will America Work in the 21st Century?* The Aspen Institute, 1998.

One of the implications of a globalized, technologically-driven economy is that the notion of what characterizes high-skilled workers is changing as well. Murnane and Levy have written about the "new basic skills," which, they argue, comprise a broader range of both cognitive skills (the traditional three R's) along with a set of the so-called "soft skills."[23] In fact, one can argue that most critical are those foundational skills that enable individuals to learn throughout their lifespan and, thus, be able to adapt to changing work conditions and demands.

On that score, we are nowhere near where we need to be as a nation. Over the past 15 years, a number of literacy surveys of nationally representative samples of adults have been carried out.[24] In these surveys, adult proficiencies were measured along three distinct scales (prose literacy, document literacy, and quantitative literacy [numeracy]).[25] For each proficiency scale, adults were categorized into one of five levels, with Level 1 being the lowest and Level 5 the highest. Adults in Levels 1 and 2 are characterized as possessing, at best, basic- or intermediate-level skills, respectively. Although few of these adults would be considered illiterate in the historical meaning of the term, only a small percentage were judged to have the skills needed to fully participate in an increasingly complex society. Performance in Levels 3 and higher is considered to be a minimum standard for success in the labor market.[26] Findings from the National Adult Literacy Survey (NALS) indicate that in 1992 slightly more than half of the U.S. adult population ages 16 to 65 years of age performed in Level 3 or higher on each of the three scales. A decade later, results from the Adult Literacy and Life Skills Survey (ALLS) showed that the percentages decreased to below 50 percent.[27]

Figure 1

Percentage of Adults in Each Prose Literacy Proficiency Level, by Race/Ethnicity



Source: Adult Literacy and Life Skills (ALLS) Survey, 2005

[23] Murnane and Levy, 1996.

[24] These surveys include the National Adult Literacy Survey (NALS, 1992), the International Adult Literacy Survey (IALS, 1995), the Adult Literacy and Life Skills Survey (ALLS, 2005), and the National Assessment of Adult Literacy (NAAL, 2005).

[25] NALS and IALS employed a quantitative literacy scale, but ALLS employed a numeracy scale instead. While the quantitative scale dealt primarily with arithmetic skills embedded in texts, the numeracy scale focuses more on mathematical reasoning and, as such, represents a broader construct that is more relevant to technologically advanced societies. Relatively speaking, adults performed least well on the numeracy scale in the ALLS survey.

[26] A number of national and state organizations in the United States, including the National Governor's Association, identified proficiency in Level 3 as a minimum for success in today's labor market. See, for example, John Comings, Andrew Sum, and Johan Uvin, *New Skills for a New Economy: Adult Education's Role in Sustaining Economic Growth and Expanding Opportunity*, Massachusetts Institute for a New Commonwealth, Boston, December 2000.

[27] See Irwin Kirsch, Ann Jungeblut, Lynn Jenkins, and Andrew Kolstad, *Adult Literacy in America: A First Look at Results of the National Adult Literacy Survey*, U.S. Department of Education, September 2003. See also Organisation for Economic Co-operation and Development and Statistics Canada, *Learning a Living: First Results of the Adult Literacy and Life Skills Survey*, Paris, 2005.

An equally disturbing picture emerges when the proficiencies of adults from various subgroups of the population are compared. Figure 1, using ALLS data, shows the percentages of adults ages 16 to 65 in each prose proficiency level by race/ethnicity. According to the ALLS data, Black, Hispanic, and Asian adults are significantly more likely to perform in the lowest level on the prose scale when compared with White adults. The percentage of Hispanic adults who demonstrate skills in the lowest of the five literacy levels is four times that of White adults (49 percent compared with 12 percent). Among Black adults, this ratio is 2.8 times, while for Asian adults it is 2.3. Not surprisingly, therefore, much smaller percentages of these three racial/ethnic groups demonstrate skills in the highest two levels on the prose scale. Here we see 17 percent of White adults perform in Levels 4 and 5 compared with only 3 percent of Black and Hispanic adults and 9 percent of Asian adults.

Additional insight into the sources of these differences can be gained by considering these subgroups further divided by nativity status. In 2003, according to the U.S. Bureau of the Census, foreign-born individuals represented some 12 percent of the U.S. population, with about 25 percent coming from Asia and more than 50 percent coming from Latin America. When we compare the average differences in literacy scores with White adults of the same nativity, there are some interesting patterns. Non-native Black adults perform better on the prose scale than their native-born peers — the average skills gap among native Black adults compared with native White adults is three times larger than it is among non-native Black and White adults (42 points compared with 14 points on the prose scale). In contrast, among Hispanics, the skills gap between non-native Hispanic and White adults almost doubles, increasing from an average of 32 points to an average of 61 points. Yet another pattern holds for Asians: Native-born Asian adults outscore native-born White adults by more than 30 points on the prose scale, while non-native White adults perform only slightly better (11 points) than non-native Asian adults. Readers interested in more detail on these literacy data are referred to Appendix Tables A1 and A2.

Does it really matter where one falls on these literacy/numeracy scales? Yes. In fact, data from these same surveys reveal substantial differences by literacy level in labor-force participation rates, job skill-level requirements, weekly and annual earnings, and access to lifelong learning. For example, only 49 percent of adults in Level 1 on the prose scale reported participating in the workforce (i.e., being either employed or unemployed and looking for work). This percentage increased to 77 percent for adults in Level 3, and to 91 percent for those in Level 5. Similar trends were found for the document and quantitative/numeracy scales.

These differences in literacy skills and labor-market participation rates also are accompanied by considerable gaps in earnings.[28] In 1992, average weekly earnings were about $355 for adults in Level 1, about $530 for those in Level 3, and about $910 for those in Level 5 on the prose scale. That is, the weekly earnings of adults in Level 5 were some 2.6 times those of adults in Level 1. Furthermore, adults with higher literacy/numeracy skills were more likely to participate in formal education and training than those with more limited skills. The ALLS report noted that adults in Level 3 were nearly four times more likely to participate in these types of programs compared with adults in Level 1, with this ratio increasing to almost six times for adults in Levels 4 and 5 on the prose scale. Thus, not only are less-skilled adults less able to adapt to a changing employment climate, they are less likely to have the opportunity to develop the requisite skills.[29]

One might argue that while concerns about today's gaps in literacy and numeracy are understandable, the current focus on educational improvement, the institution of national and state standards, along with increased spending on K-12 education, ensure that the gaps are closing. Unfortunately, recent reports on high school graduation rates[30], as well as on student per-

[28] Estimates are based on those persons who reported full-time employment (i.e., working at least 35 hours per week).

[29] Sum, Kirsch, and Yamamoto, 2004, Organisation for Economic Co-operation and Development and Statistics Canada, 2005.

[30] A number of alternative methodologies have been developed by educational researchers to estimate high school graduation rates. For a comprehensive review of alternative estimates of high school dropout rates in the United States, and variations across regions, states, and demographic groups, see Orfield, 2004; Andrew Sum et al., *The Hidden Crisis in the High School Dropout Problems of Young Adults in the U.S.: Recent Trends in Overall School Dropout Rates and Gender Differences in Dropout Behavior*, report prepared by the Center for Labor Market Studies, Northeastern University, Boston, for the Business Roundtable, Washington, D.C., 2002.

formance in reading and mathematics, suggest otherwise. The 2001 public high school on-time graduation rates for Black (50 percent) and Hispanic (53 percent) students were well below those of White (75 percent) and Asian (77 percent) students.[31] International comparisons offer no comfort: For calendar year 2003, the United States ranked 16th out of 21 OECD countries with respect to high school graduation rates. Our graduation rate, estimated to be 73 percent, was well below the 90 percent or more reported for Germany, Greece, Ireland, Japan, Norway, and Switzerland.[32]

Performance data from national surveys are no more promising. Data from the National Assessment of Educational Progress (NAEP) indicate that between 1984 and 2004 average reading scores of both the nation's 13-year-olds and 17-year-olds have been essentially flat. During this same period, the Black-White and Hispanic-White achievement gaps have remained large and relatively stable. In math, the story is somewhat brighter. Between 1986 and 2004, average math scores in NAEP increased significantly for both 13-year-olds and 17-year-olds. The growth in math was shared among all groups of students, but the average size of the Black-White and Hispanic-White achievement gaps remained large and relatively stable.[33] There is also considerable evidence that these gaps are substantial even for students attending the same schools.[34] Readers interested in more detail on NAEP scores are referred to Appendix Tables A3 and A4.

Looking beyond our borders, data from PISA reveal that in no area of achievement is the United States among the world's leaders in terms of average educational output or yield at age 15 — despite the fact that we are among the leaders in per-pupil spending. Selected results from the mathematics, reading, and science assessments for 2003 are displayed in Table 1. In each content area, performance is described on measures that range from 0 to 800, with an overall mean of 500.

On the composite math scale, for example, the mean score of U.S. 15-year-olds was 483, which was 17 points below the OECD average score of 500. The difference is statistically significant, with the United States ranked 24th-highest among the 29 OECD countries for which data were available. In fact, the U.S. score was significantly lower than those of 20 countries, statistically the same as three countries, and significantly above only five OECD countries. On the science assessment, the U.S. mean score was 9 points below the OECD average. This performance merits a rank of 20th among 29 OECD countries. On the reading assessment, the U.S. results were more nearly in the middle of the pack. The value added by instruction through age 15 for many students seems to be considerably lower than in many other industrial countries.[35]

Table 1

Comparative Performance of U.S. 15-Year-Old Students on the 2003 PISA Math, Reading, and Science Assessments

	Math	Reading	Science
U.S. Average Score	483	495	491
OECD Average	500	494	500
U.S.-OECD Difference	-17	+1	-9
U.S. Rank Among 29 Countries	24th	15th	20th

Source: PISA, 2003.

[31] Christopher B. Swanson, "Sketching a Portrait of Public High School Graduation: Who Graduates? Who Doesn't" in *Dropouts in America: Confronting the Graduation Rate Crisis*, Cambridge, MA, Harvard Education Press, 2004.
[32] Organisation for Economic Co-operation and Development, *Education at a Glance*, OECD Indicators, 2005.
[33] Marianne Perie, Rebecca Moran, and Anthony D. Lutkus, *NAEP 2004 Trends in Academic Progress: Three Decades of Student Performance in Reading and Mathematics* (NCES 2005-464), U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Washington, D.C., July 2005.
[34] Henry Braun et al., "The Black-White Achievement Gap: Do State Policies Matter?" *Education Policy Analysis Archives*, 14 (8), March 20, 2006. Retrieved 4-20-06 from http://epaa.asu.edu/epaa/v14n8/.
[35] Herbert J. Walberg, "Examinations for Educational Productivity," in Williamson Evers and Herbert J. Walberg (eds.), *Testing Student Learning, Evaluating Teacher Effectiveness*, Hoover Institution Press, Stanford University, Stanford, 2004; and Herbert J. Walberg, *Spending More While Learning Less: U.S. School Productivity in International Perspective*, Thomas B. Fordham Foundation, July 1998.

This mediocre performance is not limited to our school-age populations. Data from the IALS shown in Table 2 provide a basis for comparing U.S. adults to adults in 19 other participating high-income countries. Only on the prose scale, where the United States ranked 9th highest, was the U.S. score significantly higher than the mean for all 20 high-income countries. Again, on none of the literacy measures is the United States a world leader. In fact, on each of the three scales, the U.S. average is approximately one-third to one-half of a standard deviation below the two international frontrunners: Sweden and Norway. On the IALS, as on PISA, the U.S. average is just that — average.

We are among the world leaders, however, in the amount of variability in our score distributions — the gap between our best and worst performers. In IALS, the United States was ranked either first or second on this measure. Similarly, in PISA 2000, the United States was among the countries with the highest standard deviation on the overall reading scale. Only Belgium, Germany, and New Zealand were reported to have larger standard deviations.

The combination of our relative (mediocre) position with respect to average performance and our leading position with respect to inequality in performance leads to concern about the growing danger to the well-being of our nation. This disparity in skills is related to the disparity we see in the educational attainment of our population and to the growing disparities in social and economic outcomes. Ignored, these differences may not only reduce our ability to compete internationally on a high-wage strategy, but also will surely threaten the cohesiveness of the nation.

Table 2

Comparison of Mean Scores on IALS for the United States and 20 High-Income Countries

	U.S.	High-Income Countries	U.S. Rank
Prose Literacy	273	267	9th
Document Literacy	267	267	13th
Quantitative Literacy	274	270	13th

Source: IALS, tabulations by authors, 2002.

The reorganization of work in the United States under competitive pressures, and the impetus of technological changes (particularly the introduction of information technologies), has had — and will continue to have — a substantial impact on the structure of jobs and the demand for certain skill sets in our labor market. Computerization and globalization have changed manufacturing enormously. To cite but one example, technological developments within the industry, such as computer-controlled lathes, automated assembly lines, and robotic quality control, have altered automobile production so that significantly fewer — but higher skilled — workers are needed to produce a fixed number of vehicles. These shifts have been accelerated by international trade agreements that have increased the share of imports in the industry, further reducing domestic employment. In other areas, such as textiles, large international wage differentials and dramatic reductions in the cost of shipping make it possible to send raw materials halfway around the world, use them to manufacture garments, and return the completed garments to the United States at a fraction of what it would cost to manufacture the same garments on our shores.

At the same time, large, structural trade deficits mirror the dramatic losses in employment in the nation's manufacturing industries. Between 1999 and 2004, payroll employment in the nation's manufacturing industries declined from 17.3 million to slightly under 14.4 million, a drop of nearly 17 percent. Looked at over a longer period, the situation is even worse. In 1950, manufacturing's share of total employment was 33.1 percent. By 1989, it was down to 18.2 percent and, by 2003, it was 10.7 percent.[36]

More recently, with the advent of substantial amounts of worldwide broadband capacity, outsourcing not only of manufacturing jobs but also of so-called knowledge worker jobs is becoming increasingly common.[37] From call centers and help desks to software development, income tax form preparation, financial research, engineering and architectural design, and medical diagnosis, it is both feasible and economically attractive to have work performed where wages and the cost of benefits are much lower than in the United States. In Thomas Friedman's memorable phrase, "the world is flat."[38] That is, barriers to the flow of work have been significantly reduced, with both positive and negative effects on U.S. workers and consumers, with the former facing downward pressures on wages and the latter benefiting from lower prices.

There also has been a dramatic shift in the composition of the job distribution in America toward professional, management and management support, technical, and high-level sales positions.[39] Many of the faster-growing private-sector services and financial industries employ a greater proportion of individuals in these college-labor-market occupations. At the same time, changes in technology and the mix of industries in manufacturing have also increased the demand for workers with these skills. For example, in 1984, only 21 percent of those employed in the nation's manufacturing industries held a job in a professional, managerial, or technical occupation.[40] By 2000, nearly 28 percent of workers in manufacturing were employed in these occupations.

From 1984 to 2000, the number of employed persons age 16 and older (wage and salary workers, as well as self-employed workers) increased by more than 30 million. This represented an increase of nearly 29 percent over the 16-year period. Within each of the management, professional, technical, and high-level sales categories, job growth exceeded that for all U.S.

[36] Eamonn Fingleton, *Unsustainable: How Economic Dogma is Destroying American Prosperity*, New York, Nation Books, 2003.

[37] For a review of outsourcing developments and their impacts on U.S. workers, see C. Alan Garner, "Offshoring in the Service Sector: Economic Impact and Policy Issues," Federal Reserve Bank of Kansas City, *Economic Review*, 3rd Quarter, pp. 5-37, and Timothy Sturgeon and Frank Levy, *Measuring the Offshoring of Service Work and Its Impact on the United States*, MIT, Cambridge, MA, March, 2005.

[38] Thomas Friedman, *The World Is Flat: A Brief History of the 21st Century*, New York: Farrar, Straus, and Giroux, 2005. For a more nuanced view of Friedman's book, see Edward Leamer, *A Flat World, a Level Playing Field, a Small World, After All, or None of the Above?* Available at uclaforecast.com/reviews/Leamer_FlatWorld_060221.pdf.

[39] Under the occupational coding system used by the U.S. Census Bureau in the CPS survey until 2003, occupations were classified on this 1990 Census occupational coding structure. From 2003 onward, the U.S. Census Bureau shifted to the new SOC Occupational Classification System that utilizes a different system for categorizing jobs into occupational clusters. We have combined SOC categories for the 2000-2005 and 2004-2014 periods to closely match the earlier concepts of management, professional, and technical positions.

[40] See U.S. Bureau of Labor Statistics, *Employment and Earnings*, January 1985, Table 25, p. 183.

workers. Employment growth in these four college-labor-market occupation clusters exceeded 20 million; that is, they accounted for two-thirds of all of the job growth in the nation even though they represented only one-third of all of the nation's workers at the start of this period in 1984. The two fastest-growing occupational categories were management-related positions, which increased by nearly 71 percent, and professional employment, which increased by nearly 59 percent, both more than doubling the average for all occupations.[41]

Over the 2000 to 2005 period, civilian employment is estimated by the U.S. Bureau of Labor Statistics to have risen by only some 5 million, or 3.7 percent. Employment in management-related, professional, and technical occupations combined grew by 2.9 million, or 6.4 percent — more than double the growth rate for all other occupations in the labor market.[42] The professional, management-related, and technical occupations generated just under 60 percent of the net growth in employment between 2000 and 2005. If high-level sales workers are included in the total, then their share of net job growth comes closer to 65 percent.[43]

National employment projections by the U.S. Bureau of Labor Statistics foresee a strengthening of job growth over the 2004 to 2014 period, with the total number of employed persons increasing by some 19 million, or 13 percent. If these projections hold true, then professional, management, technical, and high-level sales positions will generate about 46 percent of all job growth in the nation over the 2004-2014 decade.[44] Of the remaining mix of jobs in our economy, only service occupations, many of which are relatively low-skilled, are projected to grow at an above-average pace (19 percent). Employment of clerical/administrative support and production workers will increase at a rate well below the average for all occupations. Readers interested in more data on changes in the employment structure are referred to Appendix Tables A5, A6, and A7.

These changes in the occupational structure in the United States have important consequences for the educational and literacy requirements of jobholders. The demand for college-educated and more highly literate workers has increased over the past two decades, enhancing the economic returns to schooling and skills. The literacy and numeracy proficiencies of U.S. adults, as well as their educational attainment, have a strong influence on their ability to gain access to the more highly skilled professional, management, and technical occupations — the job categories that also provide more opportunities to apply reading, writing, and math skills as well as to participate in employer-sponsored training.

The proportion of employed adults who held professional, management-related, technical, or high-level sales occupations at the time of the 1992 NALS was strongly associated with their completed years of post-secondary schooling and their prose and quantitative proficiency scores. Among both associate degree and bachelor's degree recipients, the likelihood of an employed person holding a college-labor-market job was strongly and consistently correlated with their prose and quantitative proficiencies (see Table 3).

Interestingly, college graduates with weak literacy and numeracy proficiencies were much more likely than their more highly skilled peers to be underemployed — holding jobs that did not require a college degree and paid considerably less than their more highly skilled counterparts. For example, less than half of employed four-year college graduates whose prose proficiency placed them in Level 1, and only a slight majority of those in Level 2, were working in college-labor-market occupations.

The ALLS survey found that U.S. workers with strong skill profiles were much more likely to have jobs that required them to engage in reading and writing tasks at work.[45] In particular, the survey revealed

[41] The occupational employment estimates for calendar year 2000 are based on the use of population weights from the 1990 Census. These employment estimates were later revised by the Bureau of Labor Statistics (BLS) to reflect new population weights from the 2000 Census, but they did not revise the occupational employment estimates under this coding system.

[42] Between 2000 and 2005, the rate of growth for all other occupations was only 2.6 percent.

[43] In the SOC classification system, we consider sales supervisors and sales representatives as high-level sales workers, but we exclude real estate brokers.

[44] For a more detailed review of the employment outlook for the nation, see U.S. Bureau of Labor Statistics, "Employment Outlook: 2004-14," *Monthly Labor Review*, November 2005.

[45] Organisation for Economic Co-operation and Development and Statistics Canada, *Learning a Living: First Results of the Adult Literacy and Life Skills Survey*, Paris, 2005.

Table 3

Percentage of All Employed Workers and Two-Year and Four-Year College Graduates with Jobs in Professional, Technical, or Management Occupations, by Prose Proficiency Level, 1992

Schooling	Level 1	Level 2	Level 3	Level 4	Level 5	Overall
Two-Year Degree	28%	29%	37%	43%	40%	38%
Four-Year Degree or Higher	46	56	64	75	83	71
All Employed Workers	5	14	26	50	72	27

Source: Andrew Sum, *Literacy in the Labor Force: Results from the National Adult Literacy Survey*, 1999.

very strong links between the literacy proficiencies of workers and their access to knowledge-expert, managerial, and high-skill information-processing jobs.[46] For example, only 13 percent of U.S. adults were at Levels 4 or 5 on the numeracy scale, but they represented 36 percent of the workers in knowledge-expert jobs and one-fifth of those in high-skill information-processing occupations. Nearly three-fourths of the workers in low-skill service occupations had numeracy skills at or below Level 2.

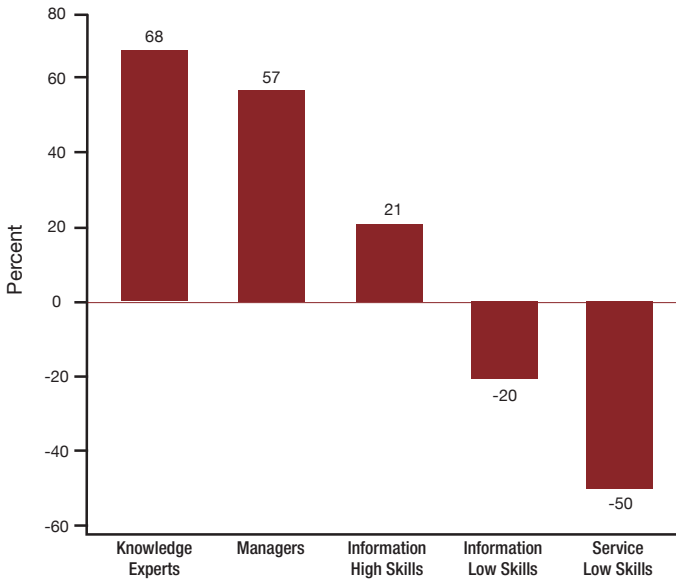
The average weekly pay gap between workers in knowledge-expert and management positions and those in low-skill service occupations is quite sizeable, with the former earning a positive premium of 68 percent, and the latter a negative premium of 50 percent relative to the estimated weekly earnings of manufacturing-related occupations (Figure 2). These differential premiums translate into a salary ratio of more than 3-to-1.

In fact, the relative wage gap in the United States between knowledge experts or managers and low-skill service workers was the second highest of the six countries studied in the 2003 ALLS assessment. Only Canada's was larger.

We can speculate as to the cause and effect of the increasing return on education and skills that we have seen in recent years; that is, whether it has resulted from a greater demand for credentials to gain access to existing jobs or from actual changes in education and skill requirements of jobs. Regardless, higher levels of skill and education are important not only for gaining access to better jobs, but also for negotiating our bureaucratic society and its complex legal, health care, and retirement systems, and for accessing and comprehending the seemingly limitless amount of information that comes our way. As the likelihood of long-term employment declines, and as greater numbers of individuals will be required to assume more responsibility for managing various aspects of their lives (including career planning, health care, and retirement), higher levels of skills will be required for full participation in our society. The growing divergence in labor-market outcomes and prospects based on education and skills, and the implications these trends have for our society, deserve serious attention from policymakers at all levels.

Figure 2

Estimated Weekly Earnings Premiums of Workers in Selected Occupations in the United States Relative to Manufacturing-Related Occupations (in Percentages)



Source: OECD and Statistics Canada, *Learning a Living*, 2005.

[46] Organisation for Economic Co-operation and Development and Statistics Canada, *Learning a Living*, "Chapter Six: Skills and the Nature of the Workplace," Paris, 2005.

The U.S. population is diverse and becoming more so. In recent years, foreign immigration to the United States has reached levels not seen in almost a century. This immigrant population has contributed at an increasingly high rate to the nation's population growth and, especially, to growth in the nation's civilian labor force.[47] During the 1980s, net international migration accounted for only 21 percent of the nation's population growth, but its contribution to population growth rose to 31 percent in the 1990s.[48] The U.S. Census Bureau projects that, over the 2000-2015 period, net international migration will continue to increase in both absolute terms and as a percentage of the nation's overall population growth. In fact, it will likely account for more than half of the nation's population growth during that period.

From April 2000 to July 2005, the U.S. population grew by about 15 million, with net international migration of 6.3 million constituting about 42 percent of the growth. The impact foreign immigration has had on the labor force and on employment growth over the same five years has been even greater because (1) a large proportion of foreign immigrants are of working age and (2) foreign immigrants, particularly men, participate at a relatively high rate in the nation's labor force. It is estimated that between 2000 and 2005 new immigrants contributed two-thirds of the nation's labor force growth and nearly 86 percent of the country's net employment growth, including more than 100 percent of the growth in jobs held by males. Clearly, as these numbers illustrate, foreign immigration constitutes an increasingly important factor in the U.S. economy (see Appendix Table A8).

As one might expect, new immigrants to the United States over the 2000 to 2004 period came from almost every locale around the globe. A large proportion, however, came from a relatively small number of countries (see Appendix Table A9). The 13 countries sending 100,000 or more immigrants during this period accounted for about two-thirds of all immigration. Mexico has been by far the largest source of new immigrants, with the 2.17 million arrivals from that country constituting one-third of the total. Only one of the other 12 countries, Canada, was a predominantly English-speaking country. Although a number of the highly educated immigrants from several of these countries did study English before coming to the United States, relatively few immigrants arrive in the United States with a strong base of English-speaking, -reading, and -writing skills.

New immigrants to the United States are quite heterogeneous with respect to both their educational attainment and their English-speaking skills. As shown in Table 4, among new immigrants age 18 and older who were living in the United States in 2004, approximately one-third lacked a high school diploma while some 28 percent held a bachelor's or higher academic degree. Not surprisingly, the educational attainment of these new immigrants varied considerably by region of origin. While 62 percent of the immigrants from Mexico and Central America lacked a high school diploma, only 9 percent of the immigrants from Europe lacked a high school diploma. A majority (56 percent)

Table 4

The Distribution of New Immigrants (Age 18 and older) into the United States, by Educational Attainment, 2000-2004

Educational Attainment	Number (thousands)	Percent
1 to 12 years, no diploma	1,671	34
12 years, high school diploma or GED	1,147	23
13 to 15 years	777	15
Bachelor's degree	828	17
Master's degree or higher	556	11
Total	4,979	100

Source: *2004 American Community Surveys*, public use files. Tabulations by the authors.

[47] For a recent review of the effects of new foreign immigration on population, labor force, and employment growth in the United States since 2000, see Andrew Sum, Paul Harrington, and Ishwar Khatiwada, *New Foreign Immigrants and the United States Labor Market: The Unprecedented Effects of New Foreign Immigration on the Growth of the Nation's Labor Force and Its Employed Population, 2000-2004*, paper presented to the U.S. Congress, House Subcommittee on Immigration, Border Security and Claims, May 4, 2005.

[48] Net international migration represents the difference between the flow of new immigrants into the United States and the flow of U.S. residents (including former immigrants) to other countries. The 1980s estimates were derived from *The Statistical Abstract of the United States, 1993-94*. Reference Press, Austin, Texas, 1994. The 1990s estimates of net international migration were based on U.S. Census Bureau estimates for the April 1990 – July 1999 period; but they were made before the 2000 Census findings, which revealed a larger total and immigrant population.

of the new immigrants from Asia held a bachelor's or higher degree, and 46 percent of those from Europe did so. However, only 6 percent of the immigrants from Mexico and Central America held a four-year college degree or a more advanced degree.

The self-reported English-speaking proficiencies of these new immigrants also varied quite widely, with 32 percent reporting that they either spoke English or spoke it well, while about half claimed that they either did not speak English at all (23 percent) or not well (26 percent). The English-speaking skills of these new immigrants were strongly associated with their formal educational attainment, as shown in Table 5. For example, nearly 8 of 10 new immigrants lacking a high school diploma reported that they either could not speak English at all or could not speak it well. Among those with a master's degree or higher, however, only 15 percent indicated an inability to speak English or speak it well.

Not surprisingly, the formal educational attainment of immigrants and their English-speaking skills were very strong predictors of their scores on national literacy assessments, including the IALS surveys. Overall, with their more limited years of schooling and weak English-speaking proficiencies, the immigrant population in the United States scored well below their native-born counterparts on recent literacy and numeracy assessments. For example, on the 1995 IALS, the average proficiency scores of U.S. immigrants were typically more than one standard deviation below those of their native-born counterparts on each of the three literacy scales.[49] The median score of immigrants on the composite literacy scale ranked only at the 17th percentile on the U.S. test distribution on that same scale.

As noted at the outset, the Hispanic population is projected to grow substantially over the next 25 years. By 2030, its share of the U.S. population will increase from 14 percent to some 20 percent. This growth is being fueled both by higher birth rates and by elevated immigration rates. According to the findings of the *American Community Surveys*, in 2004, nearly 57 percent of the 16- to 64-year-old Hispanic population in the United States was foreign-born, up from 46 percent in 1990. Slightly more than half of these immigrant Hispanics lacked a high school diploma. By contrast, only slightly more than one-fourth of their native-born counterparts lacked a high school diploma. The high proportion of immigrants among the Hispanic adult population, coupled with the limited schooling and English-speaking proficiencies of many of these immigrants, accounts for the relatively weak performance of Hispanics on national literacy assessments.

Table 5

Distribution of New Immigrants into the United States, Age 16 and Older, by Self-Reported English-Speaking Proficiency and by Educational Attainment, 2000-2004

Educational Attainment	Only Speaks English	Speaks English Very Well	Speaks English Well	Does Not Speak English Well	Does Not Speak English
1 to 12 years, no diploma	6%	6%	9%	32%	47%
12 years, high school diploma or GED	9	16	19	36	21
13 to 15 years	16	30	24	21	9
Bachelor's degree	14	36	28	17	5
Master's degree or higher	11	48	27	12	3
Total	10	22	19	26	23

Source: *2004 American Community Surveys*, public use files. Tabulations by the authors.

[49] Sum, Kirsch, and Yamamoto, 2004.

The three sets of forces we have described — highly divergent skill distributions; labor-market restructuring, including the forces of globalization; and demographic trends — are each powerful in their own right. But as they interact over time, their consequences can be truly momentous. Let's try to track the trajectory of this perfect storm.

Of course, predicting the future is fraught with uncertainty. However, trends in globalization and basic demographic projections provide a reasonably solid foundation for prognostication. Although we are less certain about future trends in overall skill levels, as well as the distribution of skills for different segments of the population, let's assume that the skill distributions within racial/ethnic and age groups remain much the same as they are now. While this may seem pessimistic, it is consistent with recent observations and it will, at the very least, provide us with a plausible scenario.

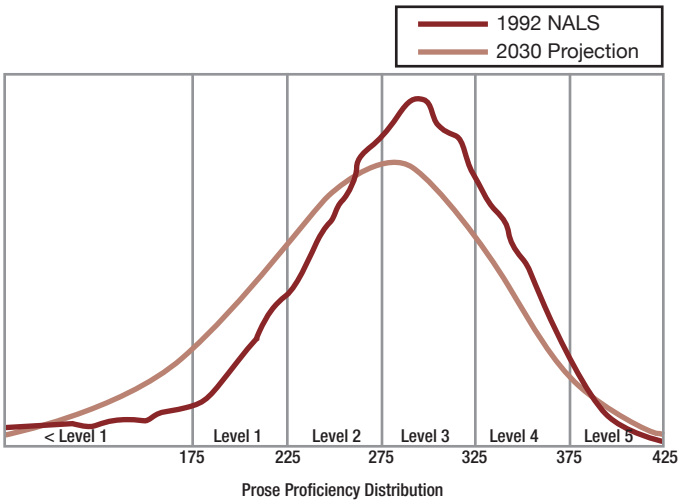
As we have already noted, two minority groups that will see increases in their proportions of the population between now and 2030 are Hispanics and non-Hispanic Blacks. Both groups lag considerably behind non-Hispanic Whites and Asians in their average literacy and numeracy skills. We can combine the current skill distributions by racial/ethnic groups and age groups with demographic projections to predict what the distribution of skills for the nation as a whole will look like in 2030.

Figure 3 shows the distribution of prose literacy proficiency as it was in 1992 and as it is projected to be in 2030. Changes are shown for each level in prose, document, and quantitative literacy in Figure 4 (also, see Appendix Table A10). It is clear from these graphs that the distribution of skills is expected to shift to the left, corresponding to a substantial reduction in the percentage of adults in Levels 3 and 4, with a concomitant — and dramatic — increase in the percentage of adults at or below Level 1, which jumps from 17 percent to 27 percent. Equally troubling is the fact that the distribution of prose proficiency becomes less peaked at Level 3 and more dispersed overall.[50]

The story is similar for the document and quantitative scales. On each of the literacy scales, the average score is predicted to decrease about 5 percent, and the variability of the distribution is expected to increase by about 6 to 8 percent.[51] One consequence of this change in the distribution of skills is that there will be tens of millions more adults (in Levels 1 and 2) who lack the education and skills they will need to thrive in the new economy. They will be less competitive with equally or better-skilled workers in lower-wage economies, and will not be well prepared to compete for higher-paying jobs in our economy. Obtaining access to higher earning opportunities as opposed to obtaining jobs will become the more formidable challenge.

Figure 3

The Distribution of Prose Literacy Proficiency from the 1992 NALS Compared with the Distribution Projected for 2030[52]



Source: Data for 1992 from National Adult Literacy Survey, 1992; data for 2030 projected by the authors. Data are for adults ages 16 to 65.

These literacy projections arise from the confluence of two of the forces: the existing skill distributions and the projected shift in demographics. What about the third force? How will changing proficiency distribu-

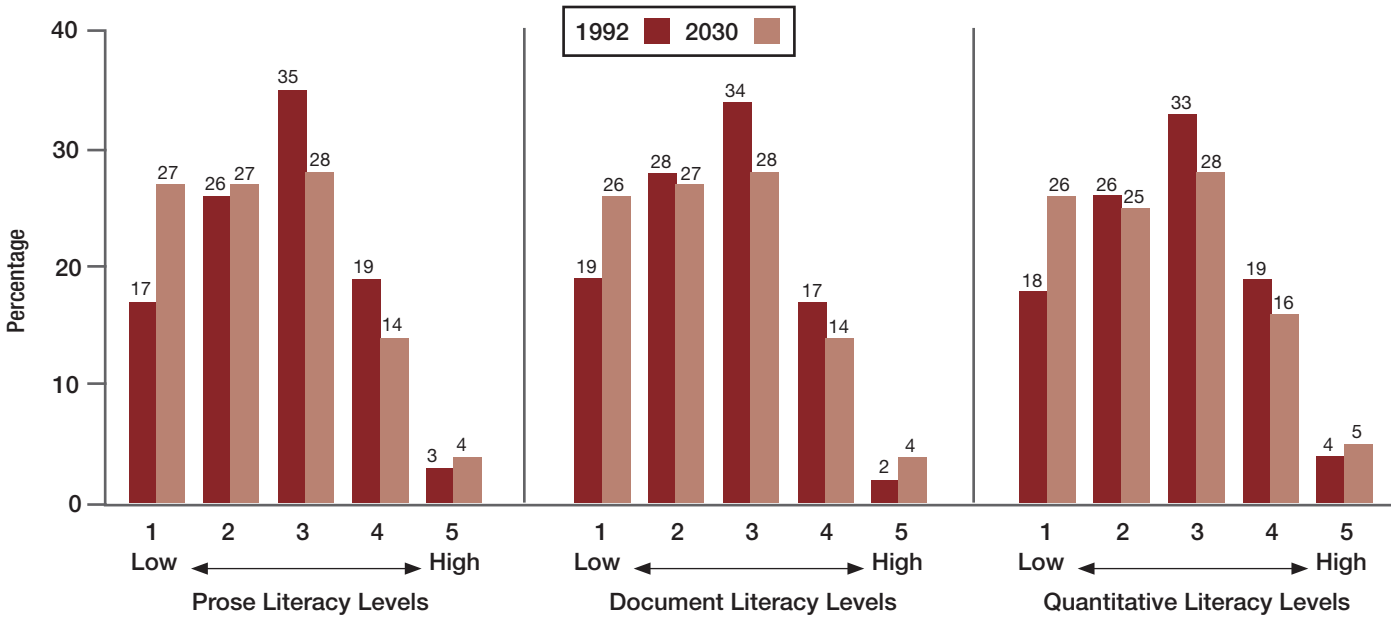
[50] The levels on each of the literacy scales are defined as follows: Level 1 = 0 to 225; Level 2 = 226 to 275; Level 3 = 276 to 325; Level 4 = 326 to 375; Level 5 = 376 and higher.

[51] An increase in variability corresponds to an increase in inequality in the sense that, relatively speaking, there are more individuals at the low and high ends of the scale.

[52] While the graph focuses on prose literacy, similar results were found for the document and quantitative literacy scales. These data for all three scales are shown in Figure 4 on the following page and Table A10 in this report's Appendix.

Figure 4

Change in the Distribution of Prose, Document, and Quantitative Literacy, 1992 and 2030 (Projected)



Source: Data for 1992 from National Adult Literacy Survey, 1992; data for 2030 projected by authors. Data are for adults, ages 16 to 65.

tions interact with the continuous economic restructuring that is placing a premium on higher literacy and numeracy skills? What are the likely consequences for the nation's future economic and social structure?

A recent report issued by the National Center for Public Policy and Higher Education cites U.S. Census data indicating that, in 2000, White adults ages 25 to 64 were twice as likely as African American adults to have a bachelor's degree and almost three times as likely as Hispanic adults.[53] According to the report, these differences in educational attainment, coupled with substantial increases in the proportions of African American and Hispanic adults comprising the working-age population, could result in a less-educated workforce over the next 20 years. One notable consequence would be a decline in personal income per capita across the United States in the absence of strengthened investments in the schooling of these groups.[54]

That report calls on the states to do a better job of improving the educational levels of all residents. It is important to recognize, however, that individuals with the same level of educational attainment can have very different literacy skills. Since earnings are influenced by both educational attainment and skills, increasing the former without increasing the latter will likely not result in the desired outcomes.

Further, recent data from the National Longitudinal Survey of Youth (NLSY 1979) and the National Education Longitudinal Study of 1988 reveal that literacy/numeracy skills are a critical factor in determining who in the long run earns a bachelor's or higher degree. Analyses of these data by one of the authors of this report reveals that almost 76 percent of 36- to 43-year-olds in the 10th (top) decile of the basic academic skills distribution from the NLSY 1979 cohort earned a bachelor's or higher degree, compared with only 15 percent of those in the 6th decile and only 2 percent of those in the lowest decile.[55] This strong relationship between academic skills and ultimate educational attainment holds regardless of gender or racial/ethnic background (see Appendix Table A11).[56] Formal

[53] The National Center for Public Policy and Higher Education, *Income of U.S. Workforce Projected to Decline if Education Doesn't Improve*, Policy Alert, November 2005.

[54] That is, crudely speaking, as better-educated White non-Hispanics leave the workforce over the next two decades, increasingly their places will be filled by workers from minority groups with lower levels of education.

[55] Analyses of the National Longitudinal Survey of Youth 1979 cohort. Data reported here and shown in Appendix Table A11 are from the 2002 survey round.

[56] It is interesting to note that, at the lower deciles, the likelihood of earning a bachelor's or higher degree favors women over men, and minority groups over Whites. That is, except at the highest decile, Blacks are more likely to obtain a college degree than White non-Hispanics within the same decile (i.e., having similar levels of cognitive skills).

schooling and literacy/numeracy skills clearly are becoming the great sorter in American society. As former President Clinton noted in a 1995 address to a national convention of newspaper editors: "... the technology revolution and the global economy. These are dividing opportunity at home and abroad. The middle class is splitting apart, and the fault line is education."[57]

Indeed, differences in educational levels and initial skills translate into gaps in annual earnings that, over the past two decades, have been widening. The lifetime earnings differences between adults with a bachelor's degree and those with only a high school diploma widened considerably between 1979 and 2004 (see Appendix Table A12). As young adults age, the relative size of the gap in the mean annual earnings between high school and college graduates grows considerably. Analysis of longitudinal data from the NLSY 1979 survey reveals that the mean annual earnings of 23- to 30-year-old adults with 16 or more years of schooling in 1988 were 58 percent higher than those of high school graduates. Nine years later, the gap in mean earnings between these two groups had widened to 81 percent — and would increase to 101 percent by 2001. By 2001, those adults (now 36 to 43 years of age) with 16 or more years of schooling had mean earnings twice as high as those of their peers with only a high school diploma. Perhaps more notable is the fact that the premiums for education are substantially greater for individuals with higher scores on a measure of cognitive skills than for individuals with lower scores.[58]

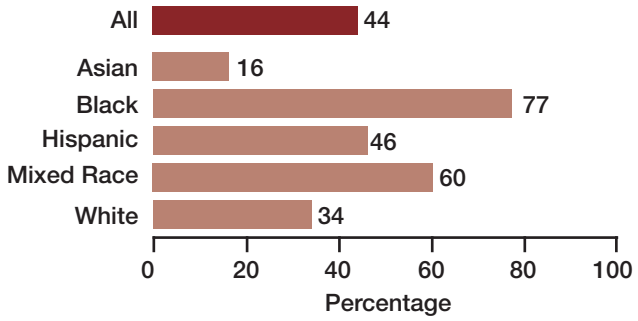
These and other data reveal that both educational attainment and skills are strongly and positively associated with annual earnings and access to the more highly skilled professional and management positions in the U.S. labor market (for additional data, see Appendix Table A14). Thus, while reducing inequalities in education and skills will not solve all the challenges associated with existing economic inequalities, without narrowing the overall skills and education gaps there is little chance of improving the economic opportunities among segments of our population, especially among key racial/ethnic groups.

Trends in family formation in the United States also play a role in rising inequality in education and family income. Findings from the *2004 American Community Surveys*, shown in Figure 5, indicate that at least 44 percent of all births to women under age 30 were out of wedlock. Among Black mothers in this age group, this proportion reaches 77 percent. The vast majority of these out-of-wedlock births have taken place among women with either no high school diploma or with no postsecondary education (see Appendix Tables A16 and A17). This trend in single-parent families, if it continues, will lead to ever-greater family income inequality, in view of the low earnings potential of many of these mothers.

Moreover, children raised in low-income, single-parent families often suffer from a number of critical cognitive, health, and nutritional deficits that are likely to limit their future academic achievement and educational attainment. To return to our metaphor, the result will be an increase in the number and relative proportion of small, poorly equipped boats in our fleet that will find it difficult to thrive — let alone survive — in the turbulent seas ahead.[59]

Figure 5

Percentage of Out-of-Wedlock Births to Women Under Age 30, by Racial/Ethnic Group, 2003-2004



Source: *2004 American Community Surveys*, public use files.
Tabulations by Center for Labor Market Studies.
Note: Out-of-wedlock births are modestly underreported on the ACS surveys.

[57] *The Boston Globe*, Saturday, April 5, 1995, p. 1.
[58] For example, for individuals who scored near the bottom of the Armed Forces Qualification Test (AFQT) distribution, the premium for a college degree over a high school diploma was 14 percent in 1998, rose to 18 percent in 1997 and to 29 percent in 2001. By comparison, for individuals who scored near the top of the AFQT distribution, the premium was 69 percent in 1988 and 122 percent in 2001. The data can be found in Appendix Table 13.
[59] Data reported here are from the *2004 American Community Surveys*. They were tabulated by one of the authors of this report and are shown in Appendix Tables A15, A16, and A17.

Continuous industrial restructuring, technological changes in the workplace, as well as accelerated outsourcing of services that were previously insulated from the forces of international competition mean that more and more types of jobs, including professional and management-support jobs, will be up for grabs in a global marketplace. To make matters worse, less-educated U.S.-born workers also face increased competition from newly arrived immigrants with limited schooling and skills. To prosper in this new labor-market environment, individuals must possess the skills, knowledge, flexibility, and credentials that will allow them to compete successfully.

If we continue on our current course, however, it is likely that our nation will gradually lose ground in relation to other countries, becoming more divided both socially and economically in the process. In a recent *Wall Street Journal* editorial, former Treasury Secretary Robert Rubin argued for changing our economic strategies — in part to achieve a prosperity that is more widely shared, stating: "Broad participation in economic well-being and growth is critical, both as a fundamental value and to realize our economic potential."[60]

If we are unable to substantially close the existing skill gaps among racial/ethnic groups and substantially boost the literacy levels of the population as a whole, demographic forces will result in a U.S. population in 2030 with tens of millions of adults unable to meet the requirements of the new economy. Moreover, a substantial proportion of those adults will be members of disadvantaged minority groups who will likely consider themselves outside the economic mainstream. Clearly, this is not the preferable direction for the nation to be moving.

Of course, a nation's economic competitiveness is not solely determined by the efficiency and effectiveness of its education system, or the literacy skills of its workforce. Many other factors, including the health and transparency of its financial system, the strength of its infrastructure, its regulatory and rule-of-law environment, natural resources, entrepreneurship, economic flexibility, monetary and fiscal policies, and culture all play key roles. In the long run, however, a broadly educated and skilled workforce is an important factor in achieving continuous economic growth and in reducing the current inequalities in earnings and wealth overall and among recognizable subgroups. Unfortunately, current skill gaps coupled with demographic trends portend diminishing human capital among the future prime-working-age population of the United States.[61]

Accordingly, we must set a national goal of equipping most (if not nearly all) adults with the ability to perform work that is highly valued in the marketplace and the capability to periodically renew themselves as the nature of that work evolves. In fact, with secure, long-term employment becoming rarer and society becoming more complex, there is a growing need for all individuals to become better educated and more skilled. Individuals must have a broad set of literacy and numeracy skills to successfully manage the various aspects of their lives: from planning their careers, to nurturing and guiding their children, to navigating the health-care system, to taking more personal responsibility for their financial future.

Why is the current distribution of educational attainment and academic achievement so problematic — quite apart from the large and persistent racial/ethnic gaps? Early dropouts, as well as many holders of high school diplomas or GEDs, typically lack strong foundational skills and the key noncognitive skills that would enable them to benefit from learning and training experiences later on in life. In fact, the lack of both cognitive and the so-called "soft skills" (e.g., persistence, teamwork skills, and communication skills) makes it more difficult for them to obtain and retain employment, especially for those jobs offering the potential for advancement. The employment they do find is unlikely to offer them opportunities to improve their skills either on the job or in formal training programs funded by the employer.

In contrast, individuals at the high end of the skill distribution are much more likely to find satisfactory employment as well as opportunities to enhance or broaden their skills over their working lives. In the United States, employer investment in the education and training of their workforce is strongly linked to

[60] Robert E. Rubin, "We Must Change Policy Direction," *The Wall Street Journal*, January 24, 2006, p. A-20.
[61] The National Center for Public Policy and Higher Education, 2005; Aspen Institute, 1998.

the educational attainment and literacy proficiencies workers bring with them to the job.[62] Because they have an adequate foundation, workers who possess these proficiencies are able to take full advantage of those opportunities.

These different dynamics at the two ends of the skills continuum have led to a widening gap between the haves and have-nots. Other factors also contribute to this dynamic. Globalization and the diffusion of information and communication technologies, as well as recent trade agreements, have given employers and corporations more leeway in reducing their commitments to workers, because they are less bound by national borders.[63] This means that a great many individuals and families are just one crisis away from disaster. For example, in New Orleans, those with more resources were better able to weather the onslaught of Hurricane Katrina.

It is not likely we will grow our way out of this problem any time soon. Evidence from NAEP has shown little improvement in reading and only modest improvement in math achievement of the nation's 13- and 17-year-olds over the past 20 years, and almost no change in the gaps between White and minority students. What if we are unsuccessful in substantially improving formal educational attainment and academic achievement over the course of the next 20 years? When we combine current skill distributions of the adult population with current and projected demographic trends to obtain a plausible projection of skill distributions in the future, the result is a nation characterized by lower average skills and increased variation. Today, skill distributions are mirrored by substantial variations in employment rates, access to skilled jobs, incarceration rates, earnings, incomes, wealth, health status, degree of civic participation, and so on. These gaps prevail across subgroups including gender, racial/ethnic, and whether or not individuals were born in the United States.

While the data from the large-scale national and international surveys show that literacy proficiencies appear to have a significant impact on labor-market outcomes over and above years of schooling, they do not address an important macroeconomic question: Do these proficiencies contribute to the overall GDP and productivity growth of a country? A recent study by a group of economists using IALS data from 14 OECD countries found that not only do direct measures of literacy have a significant and positive effect on levels of per capita GDP and productivity, they do a better job than measures of educational attainment in predicting economic growth. The study found that human capital as measured in these surveys is important for societal as well as for individual growth.[64]

As we argue in this report, the growth of human capital and how that growth is distributed are both important for America. Human capital is important, however, not just because of the economic implications. A recent book by Benjamin Friedman also links our economic well-being to the very fabric of our society.[65] Friedman argues that economic growth and stability are tied to the quality of our democracy. He shows that the history of the 20th century is replete with examples in which democratic institutions suffered during periods of economic stagnation and downturns. Friedman reasons that individuals and societies are more trusting, more inclusive, and more open to change when they see their futures and the futures of their children as bright and secure. He concludes that "Economic growth is not merely the enabler of higher consumption; it is in many ways the wellspring from which democracy and civil society flow."

America's perfect storm is greater than the simple sum of the three sets of forces that are discussed in this report. The confluence of those forces can create a powerful dynamic that continually feeds the storm — putting at risk not only greater numbers of individuals but the very fabric of our nation. A future reflecting

[62] Evidence on this issue is based on the IALS data; see Sum, Kirsch, and Yamamoto, 2004.
[63] Jeff Faux, *The Global Class War*, Hoboken, NJ: John Wiley & Sons, 2006.
[64] Serge Coulombe, Jean-Francois Trembly, and Sylvie Marchand, *Literacy Scores, Human Capital, and Growth Across Fourteen OECD Countries*, Ottawa: Statistics Canada, June 2004.
[65] See Benjamin M. Friedman, "Meltdown: A Case Study," *Atlantic Monthly*, July/August 2005. For a more comprehensive discussion, see Benjamin M. Friedman, *The Moral Consequences of Economic Growth*, New York: Knopf, 2005.

the projected changes in demographics and skill distributions is one in which there would be fundamental changes in existing economic and social structures. The implicit promise of every individual having a fighting chance to improve his or her station in life would be replaced by the reality of what columnist David Brooks has called an "inherited meritocracy." [66]

There are those in business and government who are not troubled by the recent concentration of wealth and power that contrasts with the more broadly shared prosperity America experienced in the decades following World War II. While there is little doubt that America will continue to grow and prosper, the challenge we face, given the forces described in this report, is to decide whether we allow our country's populations to continue to grow apart or, as a nation, we will invest in efforts to help us grow together. The authors of this report believe the latter course is better for America — and that the time to act is now.

[66] David Brooks, "Psst! Human Capital," *The New York Times*, November 13, 2005, p. A12.

Table A1

Average Scores of U.S. Adults 16 to 65 Years of Age and Percentages in Levels 3 and Higher on the Literacy and Numeracy Scales

	NALS		ALLS	
	Mean Score	Percent in Level 3+	Mean Score	Percent in Level 3+
Prose	280	58	269	47
Document	276	54	270	48
Quantitative	279	57		
Numeracy			261	42

Source: National Adult Literacy Survey 1992 and Adult Literacy and Life Skills Survey 2005. Tabulations by the authors.

Table A2

Trends in Average NAEP Scores for 13- and 17-Year-Old Students in Reading and Math

	NAEP Assessment Years			
	1984	1990	1996	2004
Reading				
Age 13	257	257	258	259
Age 17	289*	290	288	285
	1986	1992	1996	2004
Math				
Age 13	269*	273*	274*	281
Age 17	302*	307	307	307

Source: Marianne Perie, Rebecca Moran, and Anthony D. Lutkus, *NAEP 2004 Trends in Academic Progress: Three Decades of Student Performance in Reading and Mathematics* (NCES 2005-464), U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Washington, D.C., July 2005.

*Significantly different from 2004.

Table A3

Distribution and Average Proficiency of Adults on the ALLS Prose Scale, by Race/Ethnicity and Origin of Birth

	Level 1	Level 2	Level 3	Levels 4/5	Mean Prose Score
Total Adult Population	**20**	**32**	**35**	**13**	**269**
White (total)	**12**	**30**	**41**	**17**	**282**
Native	11	30	42	17	284
Non-Native	27	28	34	11	263
Black (total)	**33**	**44**	**20**	**3**	**242**
Native	34	43	20	3	242
Non-Native	20	60	17	3	249
Hispanic (total)	**49**	**33**	**14**	**3**	**225**
Native	30	38	27	5	252
Non-Native	67	27	5	1	202
Asian (total)	**28**	**33**	**30**	**9**	**256**
Native	5	21	52	22	297
Non-Native	29	34	30	7	252

Source: Adult Literacy and Life Skills (ALLS) Survey 2005. Tabulations by the authors.

Table A4

Trends in Average White-Black and White-Hispanic Differences Among 13- and 17-Year-Old Students in Reading and Mathematics

	1984	1994	2004
Reading			
White-Black			
Age 13	26	31*	22
Age 17	32	30	29
White-Hispanic			
Age 13	23	30*	24
Age 17	27	33	29
	1986	**1996**	**2004**
Math			
White-Black			
Age 13	24	29	27
Age 17	29	27	28
White-Hispanic			
Age 13	19	25	23
Age 17	24	21	24

Source: Marianne Perie, Rebecca Moran, and Anthony D. Lutkus, *NAEP 2004 Trends in Academic Progress: Three Decades of Student Performance in Reading and Mathematics* (NCES 2005-464), U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, Washington, D.C., July 2005.

* Significantly different from 2004.

Table A5

Changes in the Number of Employed Persons (Age 16+), Total and by Major Occupational Group, 1984-2000: United States (Annual Averages, Numbers in 1,000s)

Occupational Group	1984	2000(1)	Absolute Change	Percent Change
All 16+	105,005	135,208	30,203	28.8
Professional	13,286	21,113	7,827	58.9
Managers, executives, and management support	11,571	19,774	8,203	70.9
Technical	3,172	4,385	1,213	38.2
Sales				
• High-level	6,685	9,452	2,767	41.4
• Lower-level(2)	5,897	6,889	992	16.8
Administrative support	16,722	18,717	1,995	11.5
Service workers	14,151	18,278	4,127	29.2
Farm, forestry, fishing	3,600	3,399	-201	-5.6
Precision production, craft/installation, repair	13,057	14,882	1,825	14.0
Production workers and transport operatives	12,451	12,876	425	3.4
Laborers, helpers, cleaners	4,413	5,443	1,030	23.2

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings January 1985* and *Employment and Earnings January 2001*.

(1) The occupational employment estimates for calendar year 2000 are based on the population weights from the 1990 Census. These employment estimates were later revised by Bureau of Labor Statistics to reflect new population weights from the 2000 Census, but they did not revise the occupational employment estimates under this coding system.

(2) Lower-level sales workers include sales clerks, cashiers, counter clerks, door-to-door salespersons, and newspaper vendors.

Table A6

Estimated Changes in Civilian Employment in Selected Major Occupational Groups, United States: 2000-2005 (Numbers in 1,000s, Annual Averages)

Occupational Group	2000	2005	Absolute Change	Percent Change
All	137,101	142,127	5,026	3.7
Management occupations	14,348	14,707	359	2.5
Business and financial operations	5,277	5,771	493	9.4
Professional and technical, all	26,740	28,835	2,096	7.8
• Architecture and engineering	2,990	2,794	-196	-6.6
• Computer and mathematical science	3,318	3,245	-73	-2.2
• Education, training, and library	7,239	8,129	891	12.3
• Health care practitioner and technical	5,909	6,759	850	14.4
Management, professional, and technical combined	46,365	49,313	2,948	6.4

Source: 2000 and 2005 Current Population Surveys, public use files. Tabulations by the authors.

Table A7

Projected Changes in Occupational Employment in the United States, in Selected Occupational Groups, 2004-2014 (in 1,000s, Annual Averages)

Occupational Group	2004	2014	Absolute Change	Percent Change
All	145,612	164,540	18,928	13.0
Management, business, and financial occupations	14,987	17,142	2,155	14.4
Professional and technical, all	28,544	34,590	6,064	21.2
High-level sales	5,325	5,818	466	8.7
Retail Sales	8,445	9,382	937	11.1
Service occupations	27,673	32,930	5,257	19.0
Office and administrative support	23,907	25,287	1,380	5.8
Construction and extraction	7,738	8,669	931	12.0
Installation, maintenance, and repair	5,747	6,404	657	11.5
Production	10,562	10,483	- 79	- .7
Transportation and material moving	10,098	11,214	1,116	11.1

Source: Daniel Hecker, "Occupational Employment Projections to 2014," *Monthly Labor Review*, November 2005.

Table A8

The Contributions of Net International Migration to U.S. Population Growth, Selected Time Periods, 2000 to 2005

Time Period	Population Growth	Net International Migration	Net Immigration as a Percent of Population Change
April 2000-July 2005 (actual)	14,985,502	6,333,941	42
2005-2010, projected (1)	13,428,447	6,727,438	50
2010-2015, projected (2)	13,430,206	7,124,863	53

Source: U.S. Census Bureau, www.census.gov.

Note: (1) Sum of net international migration is for the 2006-2010 period only, since new immigrants in 2005 are included in the population count for that year. (2) Sum of net international migration is for the 2011-2015 period only, since new immigrants in 2010 are included in the population count for that year.

Table A9

Listing of Countries Sending 100,000 or More Immigrants to the United States Between 2000 and 2004 (All Ages)

Country	Number of Immigrants
Mexico	2,170,794
India	345,063
China	235,115
Philippines	202,314
Puerto Rico	185,364
El Salvador	160,712
Guatemala	129,131
Brazil	120,223
Colombia	112,795
Canada	109,962
Cuba	109,939
Japan	109,898
Dominican Republic	107,283

Source: *2004 American Community Surveys,* public use files. Tabulations by the authors.

Table A11

Percentage of 36- to 43-Year-Olds Who Have 16 or More Years of Schooling, by Gender, Race/Ethnicity, and Decile of the AFQT Distribution (2002)

Decile	All	Men	Women	White	Black	Hispanic
Total	26.5	25.8	27.2	30.3	14.9	14.6
First decile	1.6	1.7	1.4	0.0	2.6	0.8
Second decile	2.2	1.7	2.7	0.7	4.3	2.6
Third decile	4.3	4.0	4.7	2.7	8.3	5.3
Fourth decile	8.8	6.4	11.0	6.3	15.1	12.9
Fifth decile	8.8	9.8	8.1	7.0	18.4	10.0
Sixth decile	15.4	9.0	20.9	13.6	26.5	19.9
Seventh decile	21.7	18.2	24.8	20.8	36.2	22.2
Eighth decile	32.8	31.5	33.9	33.1	44.1	33.9
Ninth decile	51.4	45.1	58.1	50.4	73.6	62.5
Tenth decile	76.2	75.8	76.7	76.5	72.1	79.5

Source: National Longitudinal Survey of Youth. Tabulations by the authors.

Table A10

Percentage of Adults Ages 16 to 65 in Each Skill Level, 1992 NALS and Projections for 2030

	1992 NALS Data			Projected Distribution 2030		
	Prose	Document	Quant	Prose	Document	Quant
Level 1	17	19	18	27	26	26
Level 2	26	28	26	27	27	25
Level 3	35	34	33	28	28	28
Level 4	19	17	19	14	14	16
Level 5	3	2	4	4	4	5
Mean (sd)	280 (63)	275 (63)	279 (67)	266 (68)	262 (68)	266 (71)

Source: National Adult Literacy Survey data and authors' projections.

Table A12

Mean Lifetime Earnings of 18- to 64-Year-Old Males in the United States, by Educational Attainment, (in Constant 2005 CPI-U Dollars)

Educational Attainment	(A) 1979	(B) 2004	(C) Absolute Change	(D) Percent Change
No high school diploma or GED	$1,577,466	$960,365	-$617,101	-39.1
H.S. diploma/GED, no completed years of college	$1,814,595	$1,380,636	-$433,957	-23.9
1-3 years of college, including Associate's degree	$2,007,712	$1,738,411	-$269,301	-13.4
Bachelor's degree	$2,736,270	$2,702,793	-$33,478	-1.2
Master's or higher degree	$3,039,355	$3,506,939	$467,584	15.2
All	$1,879,696	$1,902,375	$22,679	1.2

Source: 1980 Census of Population and Housing, PUMS files, tabulations by the authors; and *2004 American Community Surveys*, public use files, tabulations by the authors.

Table A13

Relative Mean Annual Earnings of U.S. Adults* in Selected Educational Attainment and AFQT Decile Groups, 1988, 1997, 2001

Year	HS Grad to HS Dropout	Some College to HS Grad	B.A.+ to HS Grad	B.A.+ Avg Skills to HS Grad Avg Skills	B.A.+ Top Skills to HS Grad. Top Skills	B.A.+ Low Skills to HS Grad Low Skills
1988	1.38	1.20	1.58	1.01	1.69	1.14
1997	1.31	1.14	1.81	1.35	1.68	1.18
2001	1.35	1.17	2.01	1.47	2.22	1.29

Sources: National Longitudinal Survey of Youth (NLSY 1979), 1989, 1998, 2002 survey records. Tabulations by one of the authors.
Note: Average skills defined as AFQT in 5th to 6th decile; top skills as AFQT in 9th to 10th decile; and low skills as AFQT in 2nd to 3rd decile.
* The sample of adults were 23- to 30-years-old in 1988 and 36- to 43-years-old in 2001.

Table A14

Mean Weekly Earnings of U.S. Full-Time Employed Adults (Age 16 and Older) by Prose Proficiency Level and Educational Attainment

Educational Attainment	Level 1	Level 2	Level 3	Level 4	Level 5	Overall
0 to 8 years	$298	$351	---	---	---	$313
9 to 12 years	$364	$357	$414	---	---	$373
GED	$333	$364	$489	$529	---	$431
High school diploma	$369	$420	$436	$493	---	$430
Some postsecondary	$367	$455	$491	$597	---	$509
Two year degree	$386	$504	$578	$610	$630	$574
Four year degree or higher	$586	$677	$739	$866	$993	$830

Source: NALS Survey, 1992.
Note: --- Indicates that the number of cases is too small to provide reliable estimates.

Table A15

Total Births to Women Under Age 30, and Number and Percentage That Were Out of Wedlock, by Race/Ethnicity of Mother, United States: 2003-2004

Group	Total Births	Out-of-Wedlock Births*	Percent Out of Wedlock
All	2,298,318	1,011,187	44.0
Asian	77,173	12,586	16.3
Black	381,738	291,846	76.5
Hispanic	525,799	242,622	46.1
Mixed Race	335,517	19,972	60.0
White, not Hispanic	1,242,260	420,467	33.8

Source: *2004 American Community Surveys*, public use files. Tabulations by the authors.
*Out-of-wedlock births are modestly underreported on the ACS surveys.

Table A16

Number and Percentage of Births to Women Under Age 30 That Were Out of Wedlock, by Educational Attainment of the Mother, United States: 2003-2004

Educational Attainment	Total Births	Out-of-Wedlock Births*	Percent Out of Wedlock
<12 or 12, no diploma	563,288	350,847	62.2
12 years, diploma or GED	743,151	381,060	51.3
13 to 15 Years	666,328	242,920	36.7
Bachelor's degree	268,238	33,669	12.6
Master's degree or higher	62,313	2,691	4.3
All	2,298,318	1,011,077	44.0

Source: *2004 American Community Surveys*, public use files. Tabulations by the authors
*Out-of-wedlock births are modestly underreported on the ACS surveys.

Table A17

Percentage of Births to Women Under Age 30 That Were Out of Wedlock, by Educational Attainment and Race/Ethnicity of the Mother, United States: 2003-2004

Educational Attainment	Black Mothers	White Mothers	Hispanic Mothers
<12 or 12, no diploma	89.9	60.7	50.0
12 years, diploma or GED	80.0	42.1	48.6
13 to 15 years	69.1	28.0	38.6
Bachelor's degree	41.0	8.0	28.0
Master's degree or higher	11.3	3.3	15.3

Source: *2004 American Community Surveys*. Tabulations by the authors.

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