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# AN ECONOMY DOING HALF ITS JOB

Findings of Harvard Business School's  
2013–14 Survey on U.S. Competitiveness

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# EXECUTIVE SUMMARY

In 2013–14, Harvard Business School (HBS) conducted its third alumni survey on U.S. competitiveness. Our report on the findings focuses on a troubling divergence in the American economy: large and midsize firms have rallied strongly from the Great Recession, and highly skilled individuals are prospering. But middle- and working-class citizens are struggling, as are small businesses. We argue that such a divergence is unsustainable, explore its root causes, and examine actions that might mitigate it. We ask in particular, how can we create a U.S. economy in which firms *both* thrive in global competition *and* lift the living standards of the average American?

Four patterns that shed light on this question emerged from survey respondents' assessments of the U.S. business environment:

- In gauging the future of U.S. competitiveness, the survey respondents were pessimistic on balance. By a ratio of three to two, those who foresaw a decline in U.S. competitiveness in the next three years outnumbered those who predicted an improvement. Reflecting the divergence described above, respondents were much more hopeful about the future competitive success of America's firms than they were about the future pay of America's workers.
- Though pessimistic overall, respondents were less negative about the future of U.S. competitiveness than they were in prior surveys. This trend seems to reflect the cyclical rebound of the U.S. economy. Accordingly, respondents were more favorable this year in their assessments of every element of the U.S. business environment. Respondents saw relatively small gains, however, in areas that pose some of the nation's toughest challenges, including America's tax code, its K–12 education system, its political system, and its regulations.
- Overall, respondents saw weaknesses in those aspects of the U.S. business environment that drive the prospects of middle- and working-class citizens—for instance, the education system, the quality of workplace skills, and the effectiveness of the political system. And they saw strengths in aspects that influence company success, such as the quality of management, the vibrancy of capital markets, and firm access to innovation. This dichotomy is likely at the root of the divergence described above.

- Compared to the typical respondent, alumni working in small businesses had more negative (or less positive) views of virtually every aspect of the U.S. business environment. This finding echoes growing evidence from other sources that small businesses are disadvantaged in America.

Beyond a general assessment of the U.S. business environment, the survey explored three areas of concern where smarter approaches might improve the prospects of the average American: the K–12 education system, workplace skills, and transportation infrastructure. In each of these areas, this report draws not only from the survey but also from wider HBS research efforts.

- In **K–12 education**, we found that business leaders are already engaged in many generous partnerships to support students and schools. However, business is mostly involved in fragmented, subscale efforts that alleviate weaknesses in the education system without strengthening the system for the long run. Fortunately, a number of new initiatives point toward better ways for business leaders to work with educators to improve U.S. education.
- Similarly, in the arena of **workplace skills**, we found that businesses are already involved in an array of internal and collaborative efforts to develop skills. But we also uncovered tendencies in firms to hire in ways that discourage skills investments; poor information flows along the “supply chain” for talent; and inadequate collaboration among companies, educational institutions, and government.
- In **transportation infrastructure**, we found a host of promising individual projects but no national strategy for increasing both the nation's mobility and the opportunity that accompanies mobility.

Cutting across these three areas, we see a need for business leaders to act—to move from an opportunistic patchwork of projects toward strategic, collaborative efforts that make the average American productive enough to command higher wages even in competitive global labor markets. Without such actions, the U.S. economy will continue to do only half its job, with many citizens struggling. And in the long run, American business will suffer from an inadequate workforce, a population of depleted consumers, and large blocs of anti-business voters. Businesses cannot thrive for long while their communities languish.

# A PIVOTAL MOMENT

Since early 2008, the American economy has faced a succession of intense storms: the collapses of Bear Stearns and Lehman Brothers, the credit crunch, the subprime mortgage crisis, the downgrading of U.S. government debt, the Great Recession, a brush with national default, and a federal government shutdown. As we write, the economy is slowly recovering. Many business leaders see smoother waters ahead, with the promise of stronger and steadier growth in America. This greater optimism is reflected in the survey findings we report below.

But oddly, the recovery makes this a decisive moment, and potentially a dangerous one. Will we as a society now sigh in relief and continue business as usual, grateful for calmer waters? Or will we seize the opportunity to repair the structural weaknesses in our economy that the storms revealed and that, arguably, brought on recent troubles and may bring them on again?

This choice emerges starkly from a careful look at U.S. competitiveness. The United States is competitive to the extent that firms operating here can (1) compete successfully in the global economy while also (2) supporting high and rising living standards for the average American. The nation's trajectories on those two goals point in very different directions.

A focus on the first goal alone could lead us simply to declare success. After all, corporate profits in America are at an all-time high, and the Dow Jones Industrial Average continues to hit new records. With wages now rising in emerging economies and energy costs falling in the U.S., some manufacturing and other activities are returning to America. America's technology sector is booming again, and total initial public offering proceeds in 2013 reached levels not seen since 2000. Particularly compared to other advanced economies, America seems to have the wind at its back.

Yet on the second goal—high and rising living standards for the average American—any thoughtful look at the data reveals reasons for deep concern. The U.S. economy has structural weaknesses that show up in a host of disturbing, long-run trends. In the lower and middle strata of the income distribution, household incomes have remained stagnant in real terms for decades. Long-run growth rates in private-sector jobs started falling from historical levels around 2000 and remain low. The meager job creation that has occurred has been

overwhelmingly in local industries, not those facing international competition. Labor force participation in America peaked in 1997 and has now fallen to levels not seen in three decades. Real hourly wages have stalled even among college-educated Americans; only those with advanced degrees have seen gains. Notably, all of these trends began well before the Great Recession. They are structural, not cyclical.

**THE RECOVERY MAKES THIS A DECISIVE MOMENT AND POTENTIALLY A DANGEROUS ONE. WILL WE AS A SOCIETY NOW SIGH IN RELIEF AND CONTINUE BUSINESS AS USUAL? OR WILL WE SEIZE THE OPPORTUNITY TO REPAIR THE STRUCTURAL WEAKNESSES IN OUR ECONOMY?**

Our sense that the American economy is doing only half its job is amplified by the recent business cycle, with its jobless, low-wage recovery. After the recession that began in late 2007, real gross domestic product recovered to pre-downturn levels in three and a half years, but it took three more years (until May 2014) for the number of jobs in America to return to its prior peak. During those six and a half years of net-zero job creation, the U.S. population grew by roughly 15 million. A recent report from the National Employment Law Project finds that jobs lost during the 2008–10 employment contraction were disproportionately in higher-wage industries such as construction and electronics manufacturing, while jobs gained during the recovery have been concentrated in low-wage industries such as food service and nursing home care.<sup>1</sup> Tellingly, all of the low-wage industries with job gains were local in character, not exposed to international competition.

The recent divergence of outcomes, with firms (especially larger firms) thriving and workers struggling, is unusual in the United States. Historically, American companies and citizens have tended either to thrive together, as in the boom after World War II, or to suffer together, as during the Great Depression. The survey results we report below shed some light on the roots of this divergence.

<sup>1</sup>National Employment Law Project, "The Low-Wage Recovery: Industry Employment and Wages Four Years into the Recovery," April 2014.

Shortsighted executives may be satisfied with an American economy whose firms win in global markets without lifting U.S. living standards. But any leader with a long view understands that business has a profound stake in the prosperity of the average American. Thriving citizens become more productive employees, more willing consumers, and stronger supporters of pro-business policies. Struggling citizens are disgruntled at work, frugal at the cash register, and anti-business at the ballot box. We agree strongly with this view: businesses cannot succeed for long while their communities languish.

**ANY LEADER WITH A LONG VIEW UNDERSTANDS THAT BUSINESS HAS A PROFOUND STAKE IN THE PROSPERITY OF THE AVERAGE AMERICAN.**

Indeed, those business leaders with a long view see not only hard-pressed citizens but also signs of trouble for companies. Yes, some firms are trying to bring business activity back to the United States. But once here, they often struggle to find the skilled labor, the reasonable costs of doing business, and the physical infrastructure they need. Entrepreneurship is growing in parts of the technology sector, but small business as a whole is a shrinking portion of the American economy. Moreover, the rate of formation of new firms has declined in every U.S. state during the past three decades.<sup>2</sup>

Confronting a mix of positive and negative economic signals, policymakers and business leaders alike face a tough task. To make wise choices about how to bolster U.S. competitiveness, they need an accurate and nuanced view of the structural strengths and weaknesses of the U.S. economy. Developing such a view has been a central goal of Harvard Business School's project on U.S. competitiveness, a multi-faculty effort launched in March 2011. A key tool toward achieving that goal has been a series of surveys of HBS alumni, who work on the front lines of all parts of the global economy. This report shares the findings of the third HBS alumni survey on U.S. competitiveness.

<sup>2</sup>Ian Hathaway and Robert E. Litan, "Declining Business Dynamism in the United States: A Look at States and Metros," *Economic Studies at Brookings*, May 2014.

# THE 2013–14 SURVEY

Like the 2011 and 2012 surveys, the 2013–14 survey asked HBS alumni to assess the state and trajectory of U.S. competitiveness and to evaluate elements of the business environment that prior research has shown to be drivers of national competitiveness. Posing the same battery of questions each year allows us to track how impressions of U.S. competitiveness have changed over time.

The 2013–14 survey also explored three specific elements of the business environment in depth:

- the education system through high school (K–12);
- the skills base of the workforce; and
- the nation's transportation infrastructure.

We chose to focus on those elements for several reasons. First, prior surveys and previous work identified each of these areas as a significant weakness or deteriorating strength in America. Second, a deeper understanding of each area may help to explain the central concern we described earlier—why the average American's living standard has stagnated even as U.S.-based firms succeed in global markets. Weaknesses in education or skills, for instance, could contribute to this divergence by making it difficult for U.S. workers to compete with peers around the world and thereby justify a higher living standard.

Third, each of the three elements is an arena in which business leaders have already taken actions to bolster U.S. competitiveness but can do much more. From its inception, the HBS project on U.S. competitiveness has focused on the ways that business leaders can make America more competitive. While much of the public discourse on U.S. competitiveness emphasizes the important role of government, our distinctive focus has been on the potential contributions of business. By supporting schools, training workers, or promoting investments in infrastructure, how can business leaders make the U.S. more competitive? Indeed, what are business leaders already doing in these arenas?

Fourth, HBS faculty members involved in the U.S. competitiveness project have significant research efforts under way in each of the three focal areas. The survey findings provide unique insights for those efforts.

It is important to keep in mind the timing of the survey since events at the time could influence responses. The survey was administered in December 2013 and January 2014. Two events seem especially pertinent:

- In a year marked by a government shutdown and gridlock, Congress ended 2013 on a high note. Just before Congress went into recess for the year-end holidays, members of the House and Senate averted a budget crisis and staved off the threat of sequestration for two years. Instead of brinkmanship and uncompromising positions, they reached an agreement on a bipartisan budget deal by focusing on common ground. As described in the next section, this seemed to influence respondents' assessment of the health of America's political system.
- Early in December 2013, the Program for International Student Assessment (PISA) announced the 2012 global rankings in which American teenagers continued to lag students in other advanced countries in math, reading, and science. The media attention given to the PISA results could have influenced some respondents' diagnosis of the state of public education in America.

An appendix describes the survey, our methodology, and the respondents in greater depth. The rest of this report presents our findings on the U.S. business environment, K–12 education, worker skills, and transportation infrastructure.

Alumni respondents were solicited with the help of Abt SRBI, a leading survey research firm, via an e-mail message to alumni of Harvard Business School's MBA, doctoral, and longer executive education programs. Prior survey efforts contacted all alumni, but this year, to guard against survey fatigue, we solicited a representative sample of all alumni—15,099 individuals. Of these, 1,947 (12.9%) completed the survey. Respondents weighed in from 46 U.S. states (66.7% of respondents with known locations) and 72 other countries (33.3%). They ranged in age from 26 to 98, and the 75.6% who currently work came from every sector of the economy, with heavy representation in the finance and insurance, manufacturing, professional, scientific, technical, and information sectors. Among the respondents who are currently working, just over 40% reported a title of chief executive, chair, president, founder, owner, managing director, managing partner, or a similar title at the very top of an organization.

# THE U.S. BUSINESS ENVIRONMENT IN 2013–14

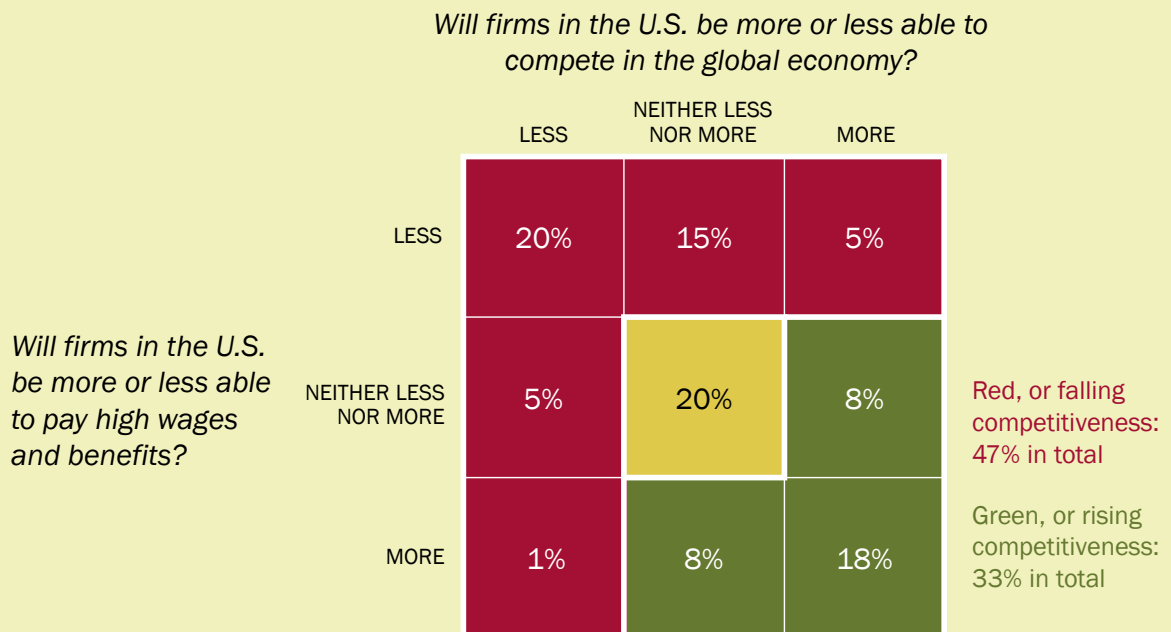
## Pessimism Abating

In each alumni survey, we gauge the overall trajectory of U.S. competitiveness by asking two questions that reflect the definition of competitiveness. In three years, will firms in the U.S. be more or less able to compete in the global economy? And in three years, will firms be more or less able to pay high wages and benefits?

In the 2013–14 survey, 47% of respondents expected U.S. competitiveness to deteriorate, with firms less able to compete, less able to pay well, or both (red boxes in Figure 1; numbers in red boxes do not sum to precisely 47% due to rounding). A smaller portion, 33%, was optimistic, anticipating one or both dimensions of U.S. competitiveness to improve and neither to decline (green boxes). The remaining 20% were neutral, expecting no change from current conditions on either dimension (yellow box).

Respondents expect the prospects of U.S. firms and workers to continue to diverge. Respondents were relatively bullish on the future of firms, with 31% expecting them to be better able to compete in global markets in three years and 26% expecting them to be less able. (See the right and left columns of Figure 1, respectively.) In contrast, 41% foresaw lower wages and benefits, and only 27% anticipated higher wages and benefits. (See the top and bottom rows, respectively. Numbers in the top row do not sum to precisely 41% due to rounding.)

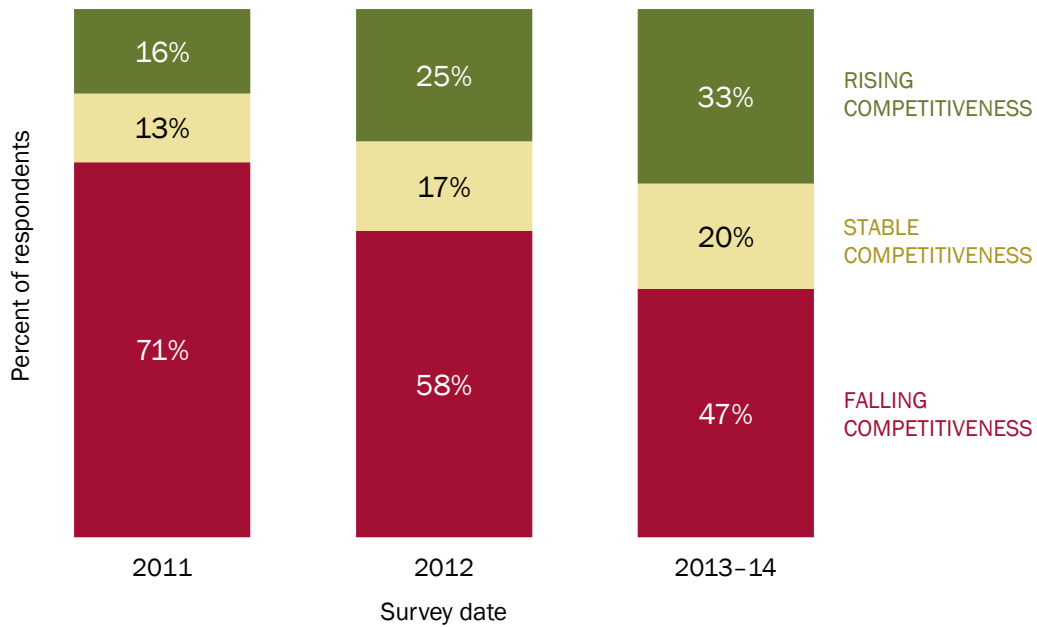
FIGURE 1: U.S. COMPETITIVENESS IN THREE YEARS (2013–14 FINDINGS)



Percentages in boxes may not sum to total because of rounding.



**FIGURE 2: U.S. COMPETITIVENESS IN THREE YEARS, ACROSS THREE ALUMNI SURVEYS**



In 2013–14 as in past years, those who saw U.S. competitiveness as waning outnumbered those who saw it as rising. But the overall level of pessimism has declined over time. For instance, the portion of respondents who expect U.S. competitiveness to decline in coming years fell from 71% in the 2011 survey to 47% in 2013–14. (See Figure 2.) One interpretation is that the typical respondent sees U.S. competitiveness as declining but doing so more slowly than in the recent past.

Pessimism about the trajectory of U.S. competitiveness has abated across respondents in all age groups, in both U.S. and non-U.S. locations, and in every industry with a large number of completed surveys. Between the 2011 and 2012 surveys, the reduction in pessimism we observed was concentrated especially in the subset of respondents with liberal political views. In contrast, liberal and conservative respondents expressed a roughly equal decline in pessimism between the 2012 and 2013–14 surveys.<sup>3</sup>

<sup>3</sup>The political leanings of respondents were inferred from policy preferences they expressed when completing the 2012 survey. Respondents who approved of the “Buffett rule” to place a minimum tax rate on high earners and disapproved of the Paul Ryan tax plan and budget proposal were deemed to be liberal. Respondents with the opposite preferences were considered to be conservative.

## A Recovering Business Environment

Rising confidence in America was also evident when we asked respondents to compare the overall U.S. business environment to that of other advanced economies and that of emerging economies. Figure 3 contrasts responses in 2011 and 2013–14. Across the board, the relative assessment of the U.S. business environment improved. Especially striking is the shift in trajectory versus emerging economies: the portion of respondents who perceived the United States as falling behind emerging economies fell from 66% in 2011 to 38% in 2013–14. This may, of course, reflect the well-publicized slowdown in emerging economies as much as progress in America.

To develop a more granular view of the U.S. business environment, we asked respondents to assess individual elements of the environment that prior research has shown to be drivers of competitiveness. The sidebar on page 9 describes the elements we examined. Note that in the 2013–14 survey, we added a new element for consideration: the quality of health care relative to cost. Health care is a major driver of workforce well-being and productivity in all countries, and especially in America, it is a large and growing cost of doing business.

Figure 4 summarizes the assessments in our original alumni survey, in 2011. The horizontal axis captures the current position of each element: it records the portion of respondents assessing each element in the United

States to be better than in other advanced economies, minus the portion assessing each to be worse. The vertical axis summarizes trajectory: the portion feeling that the United States is gaining versus other advanced economies on each element, minus the portion feeling that the nation is falling behind. In 2011, respondents saw great strengths in the U.S.—for instance, strong entrepreneurship and innovation, world-class research universities, high-quality management, and vibrant capital markets. They also noted historical strengths in decline, including infrastructure and workforce skills, as well as worsening weaknesses, including America’s political system, tax code, K–12 education system, and macroeconomic policies.

Figure 5 on page 10 shows subsequent shifts in assessments in the 2012 and 2013–14 surveys. The position and trajectory of every element improved between 2011 and 2013–14. To some extent, we attribute this movement to generalized sentiment about the United States and other economies rather than real change. It is implausible, for instance, that the actual state of America’s logistics infrastructure relative to Europe’s or Japan’s changed much in two to three years.

Nonetheless, the relative movements are revealing. Most improved from 2011 were America’s macroeconomic policies and capital markets. This probably reflects America’s comparatively rapid post-crisis stabilization and a return to normal conditions in its credit markets,

**FIGURE 3: ASSESSMENT OF THE OVERALL U.S. BUSINESS ENVIRONMENT**

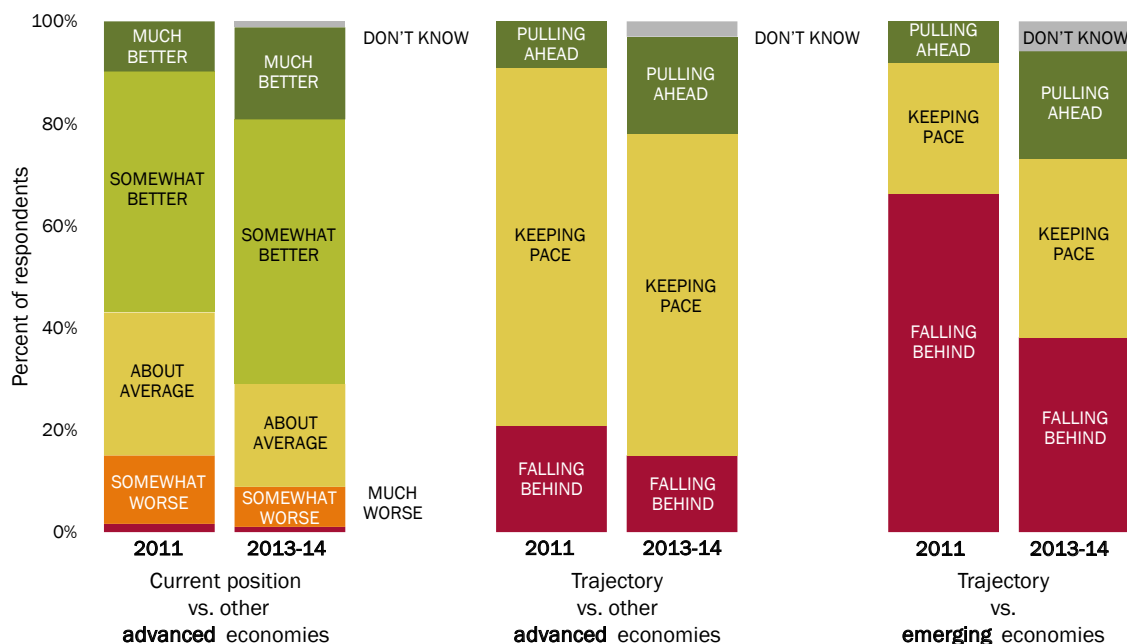
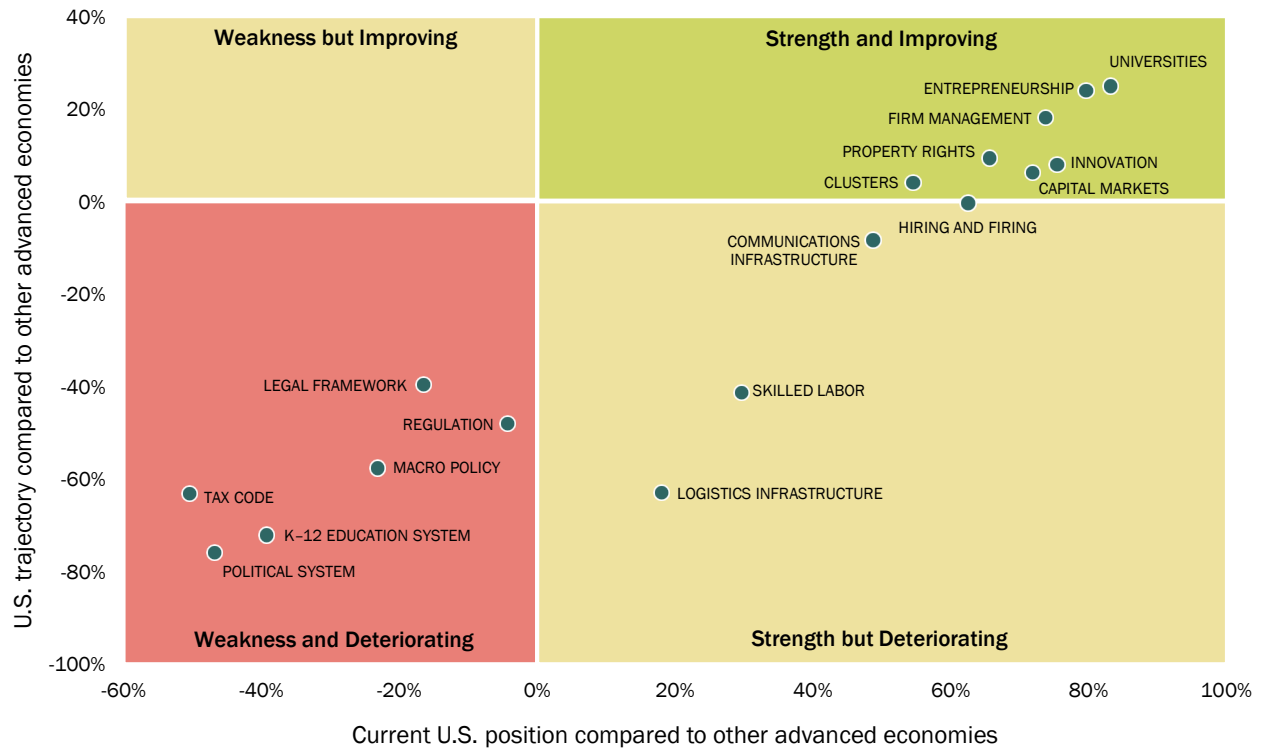


FIGURE 4: ASSESSMENTS OF ELEMENTS OF THE U.S. BUSINESS ENVIRONMENT IN 2011



## ELEMENTS OF THE NATIONAL BUSINESS ENVIRONMENT

### MACRO ELEMENTS

**Macroeconomic policy:** soundness of government budgetary, interest rate, and monetary policies

**Effectiveness of the political system:** ability of the government to pass effective laws

**Protection of physical and intellectual property rights and lack of corruption**

**Efficiency of legal framework:** modest legal costs; swift adjudication

**Complexity of the national tax code**

**Education system through high school:** universal access to high-quality education; curricula that prepare students for productive work

### MICRO ELEMENTS

**Logistics infrastructure:** high-quality highways, railroads, ports, and air transport

**Communications infrastructure:** high-quality and widely available telephony, Internet, and data access

**High-quality universities** with strong linkages to the private sector

**Context for entrepreneurship:** availability of capital for high-quality ideas; ease of setting up new businesses; lack of stigma for failure

**Availability of skilled labor**

**Flexibility in hiring and firing of workers**

**Innovation infrastructure:** high-quality scientific research institutions; availability of scientists and engineers

**Regulation:** effective and predictable regulations without unnecessary burden on firms

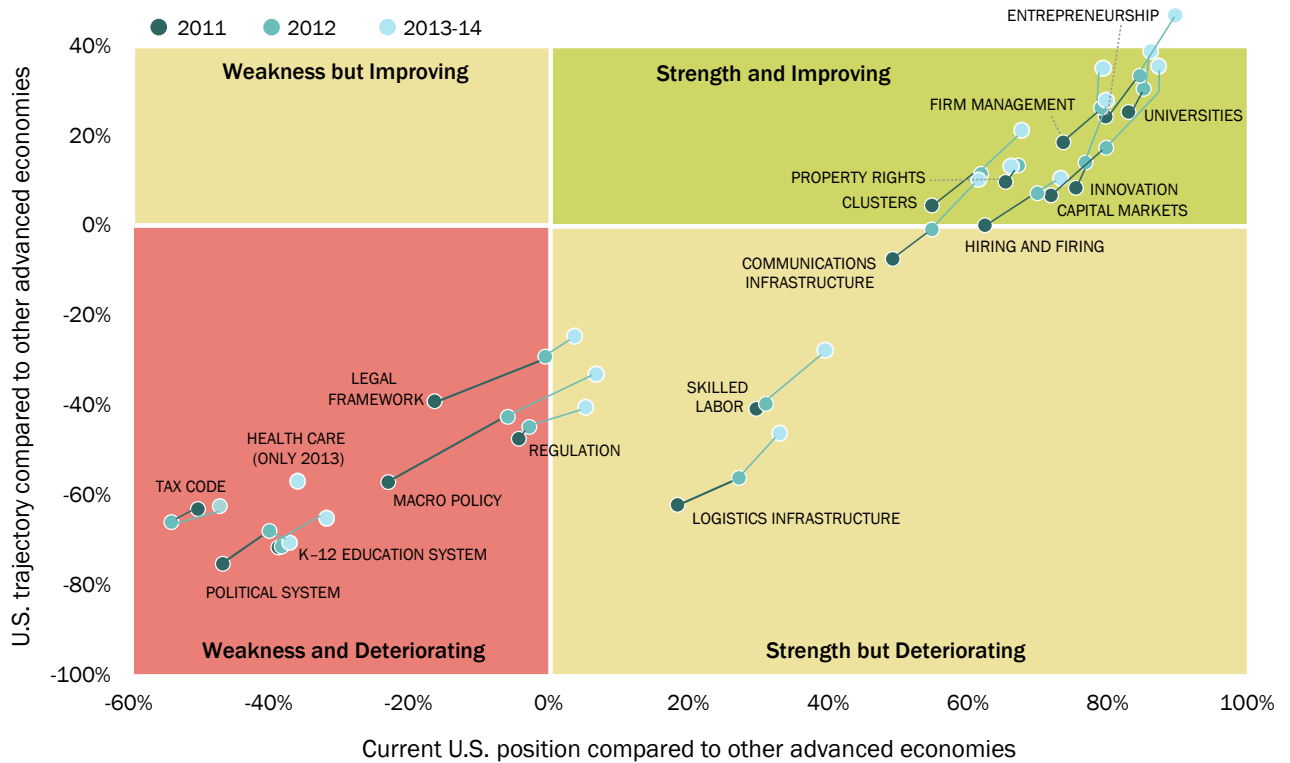
**Strength of clusters:** geographic concentrations of related firms, suppliers, service providers, and supporting institutions with effective collaboration

**Quality of capital markets:** ease of firm access to appropriate capital; capital allocated to most profitable investments

**Sophistication of firm management and operations:** use of sophisticated strategies, operating practices, management structures, and analytical techniques

**Quality of health care relative to cost**

FIGURE 5: SHIFTS IN ASSESSMENTS OF ELEMENTS OF THE U.S. BUSINESS ENVIRONMENT



contrasted to lingering doubts about the banking systems of Europe and Japan. Least improved were America's tax code and system of property rights, followed by its K-12 education system, its political system, and its regulatory framework. These findings point to some of the country's most stubborn long-term issues. Note also that health care debuted in the 2013-14 survey as a weakness that is getting worse.

significantly worse than did 2012 respondents. Individuals who responded after December 26 saw the political system as much improved.

*Figures 4 and 5 shed light on the diverging conditions of workers and firms in America. Workers and firms depend on quite different elements of the business environment. The economic fates of workers are bound up with the quality and scarcity of their human capital, which—particularly in the middle class—has been eroded by weaknesses in the nation's K-12 education system and workforce skills. Moreover, American workers cannot escape the consequences of a weak political system or a convoluted tax code, for instance. In contrast, the success of firms (and the highly educated professional class) depends not just on the human capital they can tap but also on the quality of American management, the vibrancy of U.S. capital markets, and access to innovation and world-class research universities. Global mobility allows firms to offset a poor business environment and break free from poor government policy, at least in the short run. In essence, workers are captives of the weakest aspects of the U.S. business environment, while firms are beneficiaries of America's greatest strengths.*

**WORKERS ARE CAPTIVES OF THE WEAKEST ASPECTS OF THE U.S. BUSINESS ENVIRONMENT, WHILE FIRMS ARE THE BENEFICIARIES OF AMERICA'S GREATEST STRENGTHS.**

The survey responses were clearly sensitive to current events. On December 26, in the very middle of our surveying period, President Obama signed into law a bipartisan federal budget compromise that had been negotiated by Democratic Senator Patty Murray and Republican Congressman Paul Ryan. The compromise eased automatic spending cuts and made a government shutdown less likely. Individuals who completed the 2013-14 survey before December 26 assessed the effectiveness of the U.S. political system as being

## Serious Concerns among Smaller Businesses

For the first time with the 2013–14 survey, we asked each respondent who was working to specify the number of employees in his or her firm. This allows us to uncover significant differences in how leaders of small and large businesses view America's business environment.

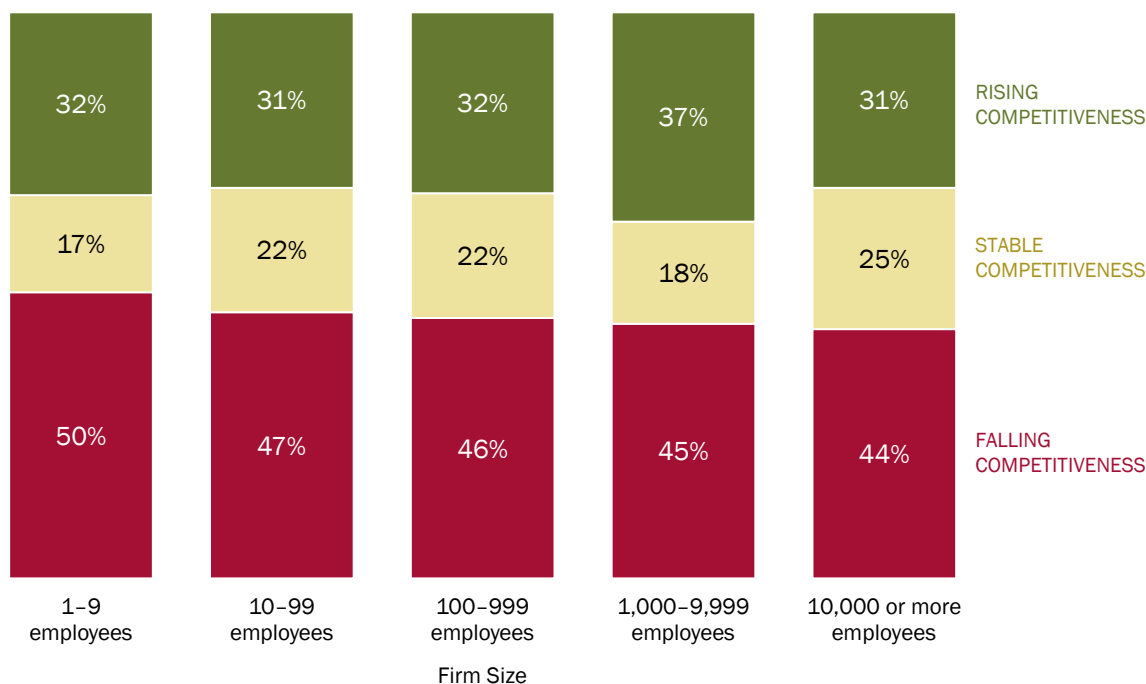
As Figure 6 reports, respondents working in small firms tended to be more pessimistic about the trajectory of U.S. competitiveness than those from large firms. At the other end of the spectrum, respondents working for relatively large—but not the largest—firms, with 1,000 to 9,999 employees, were the most likely to expect U.S. competitiveness to improve in the next three years.

Examining individual elements of the U.S. business environment gives us a clearer view of small businesses' concerns. In Figure 7 (see page 12), we look at how respondents in each firm-size class assessed the current position of each element of the business environment, compared to all survey respondents. A dark red box appears when the respondents in a particular firm-size class judged an aspect of the business environment to be much weaker (by 10 or more points) than the

corresponding aspect in 2013–14 in Figure 5. For instance, respondents from companies with 10,000 or more employees were more negative on the quality of America's health care relative to its cost. At the other extreme, dark green boxes signify that respondents in a firm-size class are unusually positive or far less negative on an element. For example, respondents from midsized firms with 100 to 999 employees were not nearly as negative on America's regulatory conditions as was the typical respondent.

Figure 7 reveals that respondents in the smallest firms, with one to nine employees, were more negative, or less positive, on virtually every element of America's business environment. The areas where the smaller businesses were especially pessimistic, or less optimistic, include the country's education system, regulations, infrastructure, and tax code. In contrast, respondents in firms with 1,000 to 9,999 employees were more positive than average on almost all aspects of the business environment. They were particularly more sanguine about the political system and several areas it affects, including macroeconomic policy, the tax code, and logistics infrastructure. Respondents from midsized firms with 100 to 999 employees were nearly as positive.

FIGURE 6: U.S. COMPETITIVENESS IN THREE YEARS, BY RESPONDENT'S FIRM SIZE



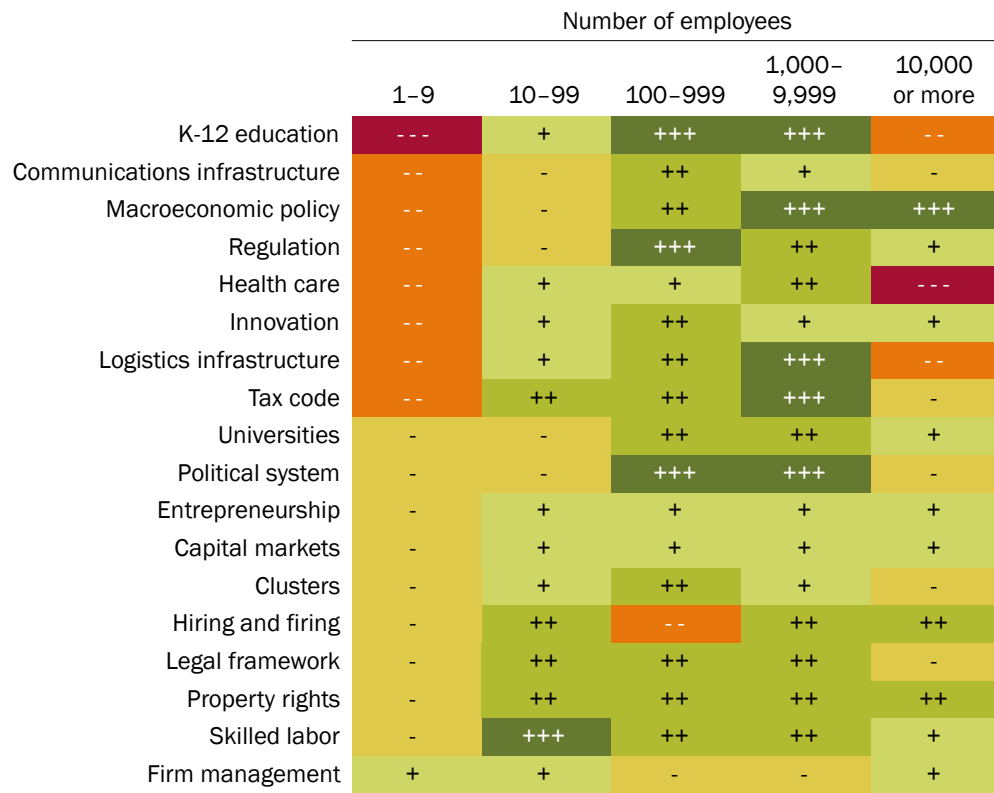
The deep concerns among survey respondents in the smallest firms echo broader, long-term evidence of problems facing America's small businesses and new companies. Figure 8 shows, for instance, that growth in total employment in small firms has not kept pace with growth in large firms in recent decades. And as Figure 9 reports, the number of companies dissolved in America each year has crept up on, and now surpasses, the number of new firms founded in America. In 2014–15, the HBS project on U.S. competitiveness will focus on the challenges that small and new businesses face in America, via a study co-led by Karen Mills, former head of the Small Business Administration and now a senior fellow at Harvard Business School. This work has begun in the working paper "The State of Small Business

Lending: Credit Access During the Recovery and How Technology May Change the Game."

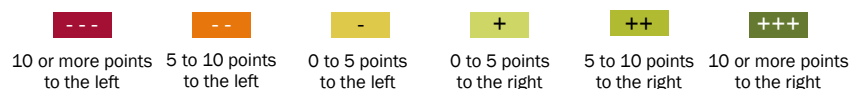
Overall, the survey findings on the U.S. business environment depict an economy that is on the mend in a cyclical sense and is faring better than some other advanced economies, but is not structurally equipped to do its full job: the prospects for broadly lifting living standards are dim, and smaller businesses, important job generators in the U.S. economy, are especially disadvantaged.

We turn next to three elements of the U.S. business environment that are key to any long-term improvement in the economic future of the average American.

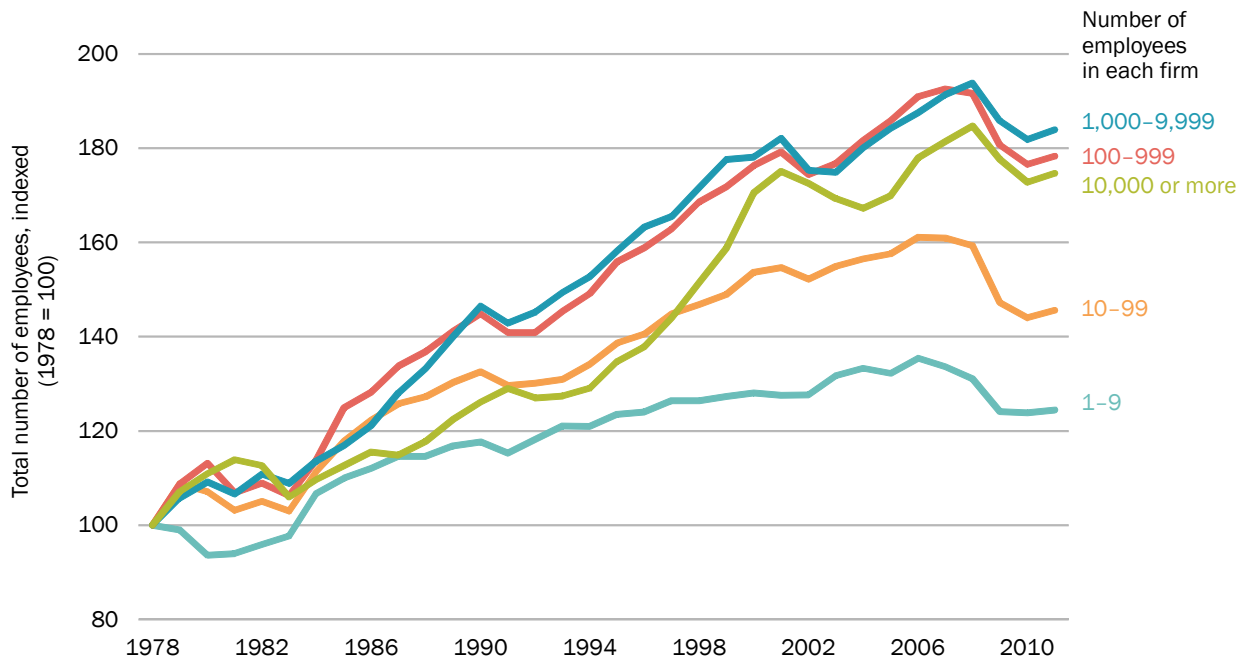
**FIGURE 7: RELATIVE ASSESSMENTS OF ELEMENTS OF THE U.S. BUSINESS ENVIRONMENT, BY RESPONDENT'S FIRM SIZE**



Compared to the average respondent as shown in Figure 5 in 2013–14, respondents in this firm-size class placed this element:

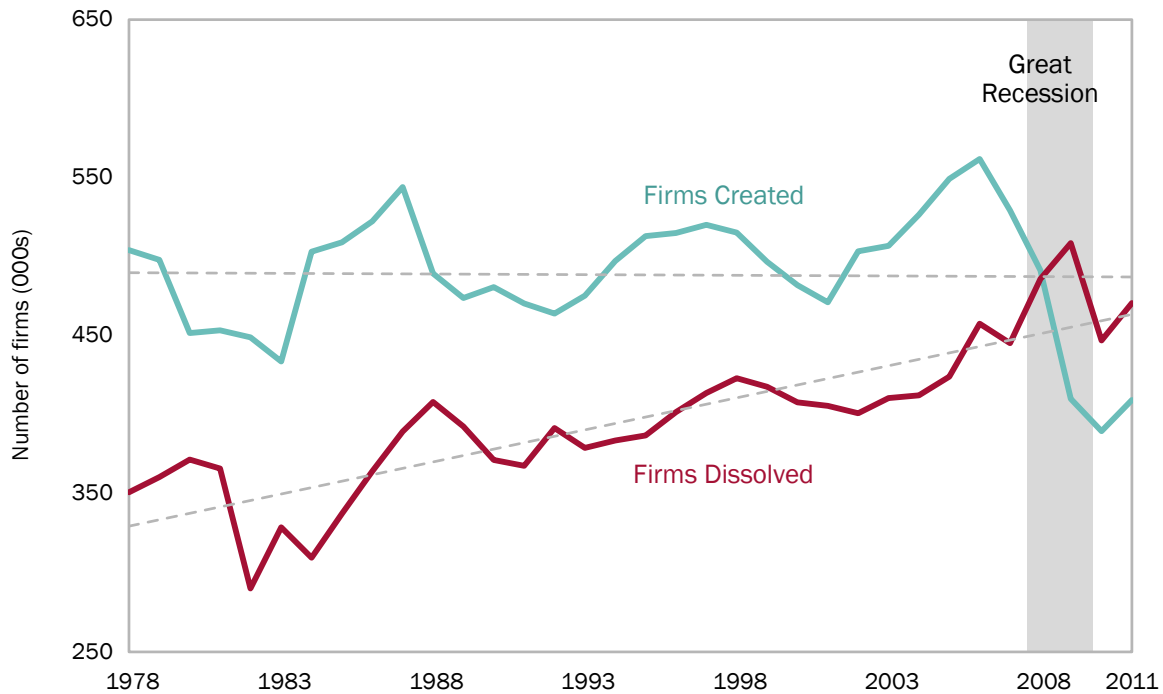


**FIGURE 8: INDEX OF TOTAL NUMBER OF EMPLOYEES IN FIRMS OF VARIOUS SIZES**



Source: U.S. Census Bureau Business Dynamics Statistics.

**FIGURE 9: U.S. FIRMS CREATED AND DISSOLVED**



Notes: Shaded area indicates the recession of December 2007 to June 2009 as defined by the National Bureau of Economic Research. Chart adapted from Ian Hathaway and Robert E. Litan, "Declining Business Dynamism in the United States: A Look at States and Metros," *Economic Studies at Brookings*, May 2014.

Sources: U.S. Census Bureau Business Dynamics Statistics.

# K–12 EDUCATION AND THE ROLE OF BUSINESS

Allen S. Grossman, Jan W. Rivkin, Kevin W. Sharer, and Michael E. Porter

## A Problem for Business

The challenge that America’s education system poses to U.S. competitiveness has been obscured by a lack of long-run information on student performance that is comparable across countries. Last fall, however, the Organisation for Economic Co-operation and Development (OECD) released new data that make it possible to see the issue in a fresh light. For the first time, the OECD evaluated the workplace competencies of adults—in literacy, numeracy, and problem-solving skills—by age and country.<sup>4</sup> The data allow us to examine adult competencies in successive age cohorts within a country and thereby get a sense of how well a country’s education and training systems have performed over long periods.

Figure 10 shows the OECD results for literacy, with a measure of proficiency on the vertical axis. The blue columns show that younger U.S. workers have better literacy skills than older workers. This reflects, presumably, an education system that is making progress in absolute terms. The challenge to America, however, is that the green columns, representing the international average, have progressed much faster than the blue columns. America has among the most literate 55- to 65-year-olds in the world, but the same is not true of younger cohorts.

Figure 11 shows that America faces similar challenges in problem-solving and numeracy skills. What were once American advantages in human capital have turned into disadvantages. Relative performance matters in global competition, where American workers must out-produce and out-innovate the world’s best.

Some would argue (and we would agree) that Figures 10 and 11 reveal an ethical issue: our society is not fulfilling its promise to children to educate and prepare them. Others would argue (and again we would agree) that the figures point to a political problem: our democracy cannot work well when many citizens are denied the opportunities that strong educations afford. We would add that the figures highlight a fundamental *business problem*: companies operating in the U.S. cannot succeed without well-educated, highly skilled

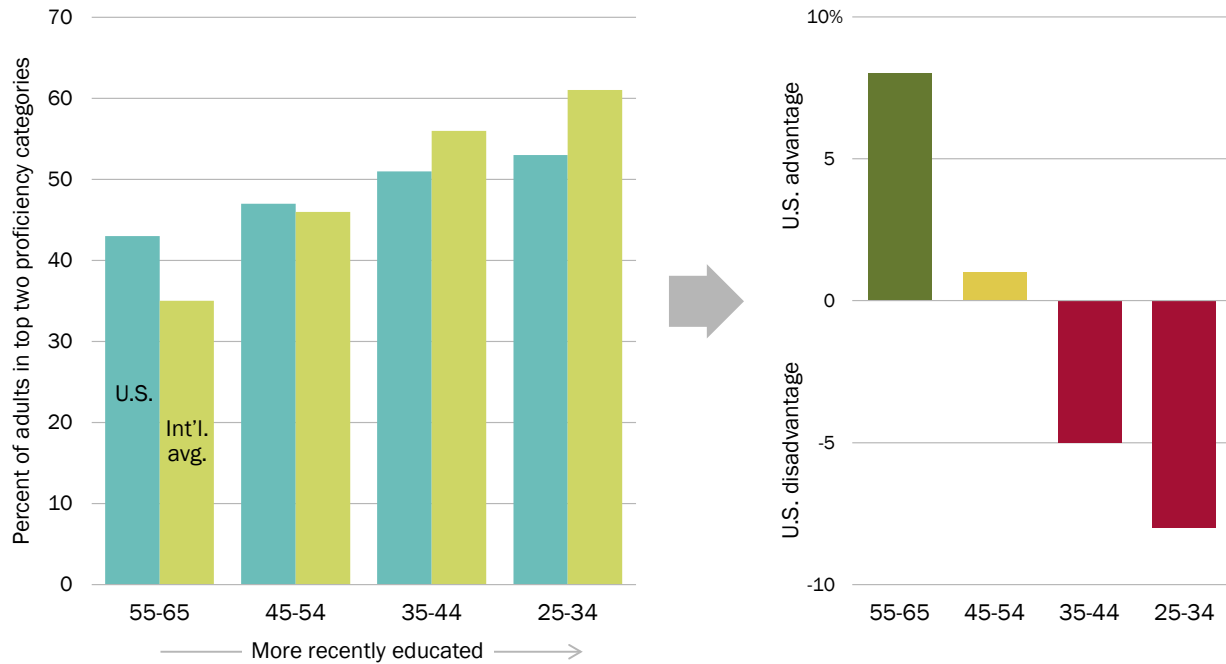
employees. Moreover, the living standards of most Americans will not rise if their workplace skills lag much of the world’s. The situation captured in the OECD data—and reflected also in the mediocre performance of U.S. students on international tests—does not allow business leaders to sit on the sidelines.

Furthermore, signs of progress in U.S. education make this a promising time for business to be on the field rather than on the sidelines. A number of trends, some a generation in the making, are converging in ways that make possible rapid improvement in America’s education system. In recent years, U.S. schools have seen marked investments in teaching and management talent; the adoption of rigorous standards, most recently with the Common Core State Standards; new technologies and modes of teaching that enable personalized learning; a wave of data collection and analysis that highlights what works in education; growth in options that allow parents a role in choosing their children’s schools; and new incentives that catalyze innovation such as the federal Race to the Top Fund. This new dynamism in K–12 education gives business an unprecedented opportunity to support changes that will bolster America’s future competitiveness.

<sup>4</sup>M. Goodman, R. Finnegan, L. Mohadjer, T. Krenzke, and J. Hogan (2013), *Literacy, Numeracy, and Problem Solving in Technology-Rich Environments Among U.S. Adults: Results from the Program for the International Assessment of Adult Competencies 2012: First Look* (NCES 2014-008), U.S. Department of Education, Washington, DC: National Center for Education Statistics.

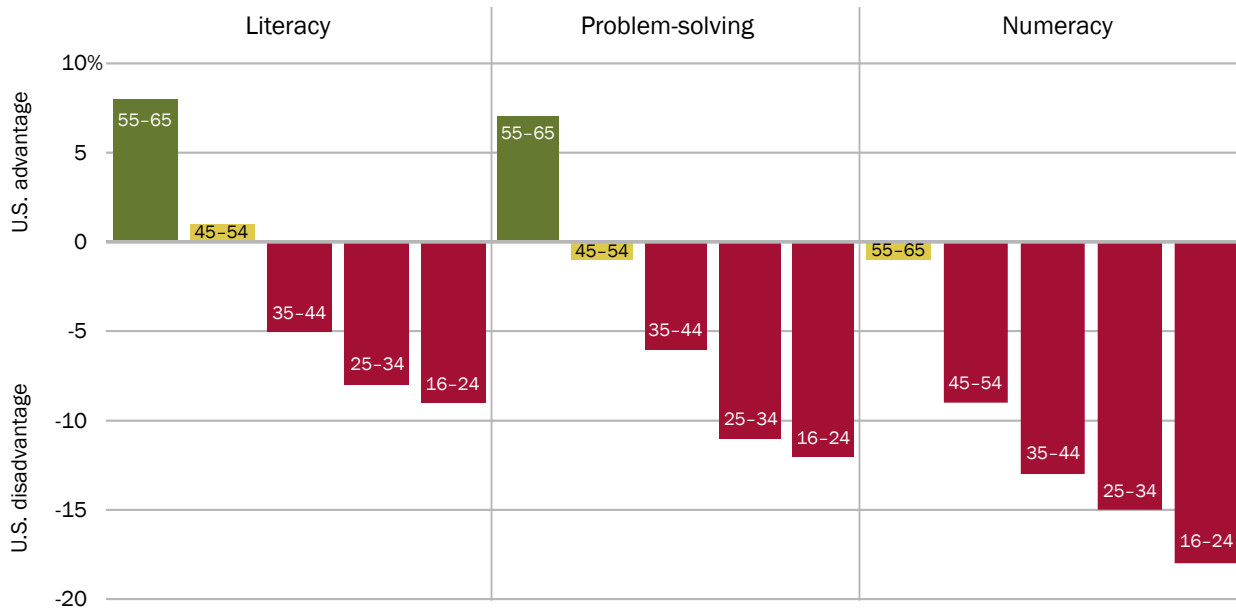


**FIGURE 10: ADULT LITERACY COMPETENCY BY AGE COHORT**



Source: Goodman, M., Finnegan, R., Mohadjer, L., Krenzke, T., and Hogan, J. (2013). *Literacy, Numeracy, and Problem Solving in Technology-Rich Environments Among U.S. Adults: Results from the Program for the International Assessment of Adult Competencies 2012: First Look* (NCES 2014-008). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

**FIGURE 11: RELATIVE ADULT COMPETENCIES BY AGE COHORT**



Vertical axis = % of U.S. adults in top two proficiency categories minus % of all international adults in top two proficiency categories.

Source: Goodman, M., Finnegan, R., Mohadjer, L., Krenzke, T., and Hogan, J. (2013). *Literacy, Numeracy, and Problem Solving in Technology-Rich Environments Among U.S. Adults: Results from the Program for the International Assessment of Adult Competencies 2012: First Look* (NCES 2014-008). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

# Broad, Generous, Helpful, and Inadequate Engagement

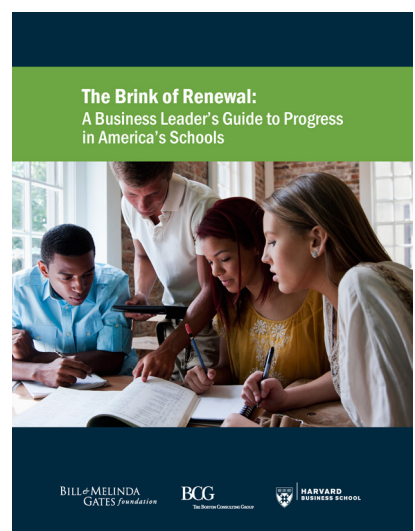
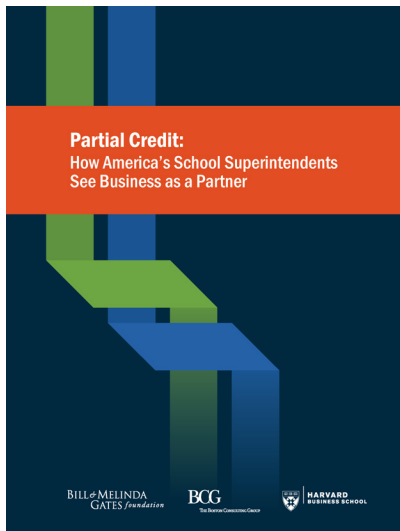
How well is business tapping this opportunity? We used the 2013–14 alumni survey to gauge how business leaders are involved in education today—whether they are on the sidelines, on the playing field, or elsewhere. More broadly, since late 2012, the HBS project on U.S. competitiveness has been working with the Bill and Melinda Gates Foundation and The Boston Consulting Group (BCG) to ask, “How can business leaders partner better with educators to support America’s students and schools?” The rest of this section draws on that work, including what we believe to be the first-ever national survey of school superintendents on the role of business in education. The survey invited the superintendents of the 10,000 largest school districts in America to participate, and more than 1,100 did. The full findings of the Gates/BCG/HBS joint effort appear in the publications shown at the bottom of this page.

The superintendent and alumni surveys agree that business is broadly engaged in supporting K–12 education in America. Among the superintendents, 95% reported at least one business-based effort in their school districts. Of the alumni working at firms with U.S. operations, 63% reported at least one company activity to support schools.

There are multiple signs, however, that this business engagement—while broad—is not deep. Only 12% of superintendents characterized their business communities as deeply involved in their school districts. And only 7% of alumni respondents described their firms as deeply involved in public education. (See Figure 12.) There seem to be many business bystanders.

Moreover, when asked *how* business engages, superintendents reported a great deal of “checkbook philanthropy”: businesses give money, support students through scholarships, donate backpacks or computers, and so on. (See the left half of Figure 13.) Deeper engagements to support the professional development of teachers or to align curricula with workplace needs were much less common. Like superintendents, alumni also reported a lot of checkbook philanthropy, and tellingly, they often didn’t know whether their firms supported schools in certain ways. (See the right half of Figure 13.)

Fortunately, the business engagements in schools seem to work. Well over 80% of surveyed superintendents said that business efforts have a positive effect on student outcomes, and virtually none reported a negative effect. Superintendents also reported that business-sponsored efforts in schools that were part of a larger state-wide or national program were more likely to have a major positive effect on students than were purely local programs. Yet collectively, they said that local programs



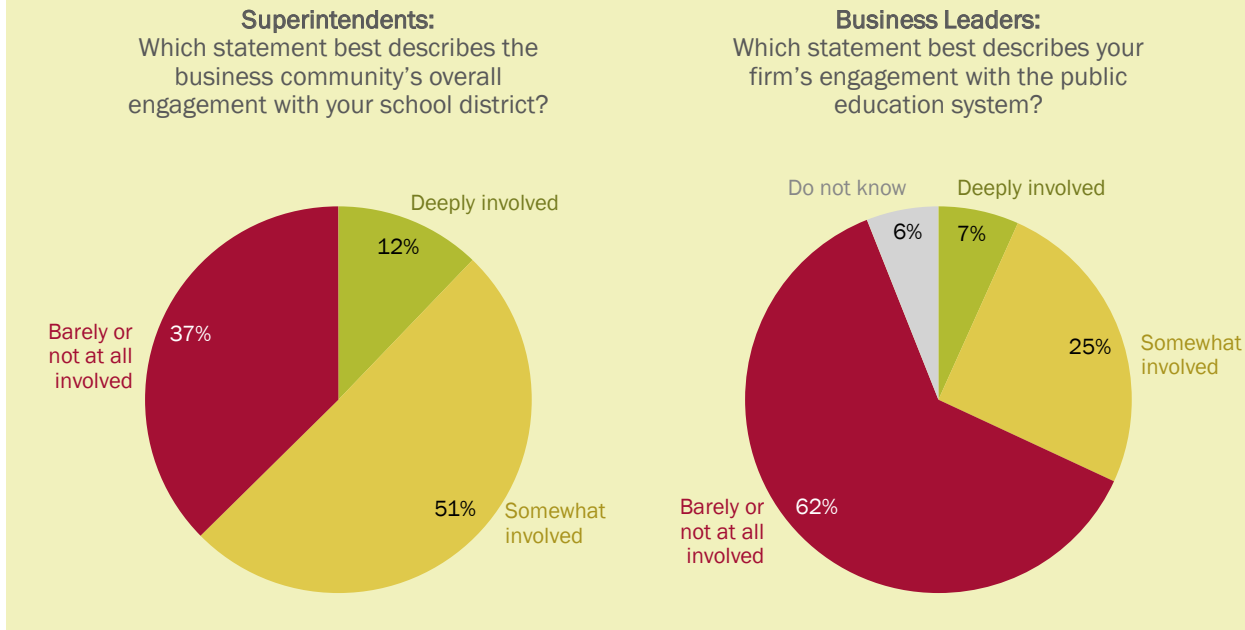
<http://www.hbs.edu/competitiveness/research/pk12-education/publications.html>

outnumbered larger efforts by six to one. Businesses seem to be allocating resources to local programs, perhaps pet projects, even though efforts associated with state-wide or national programs are more effective.

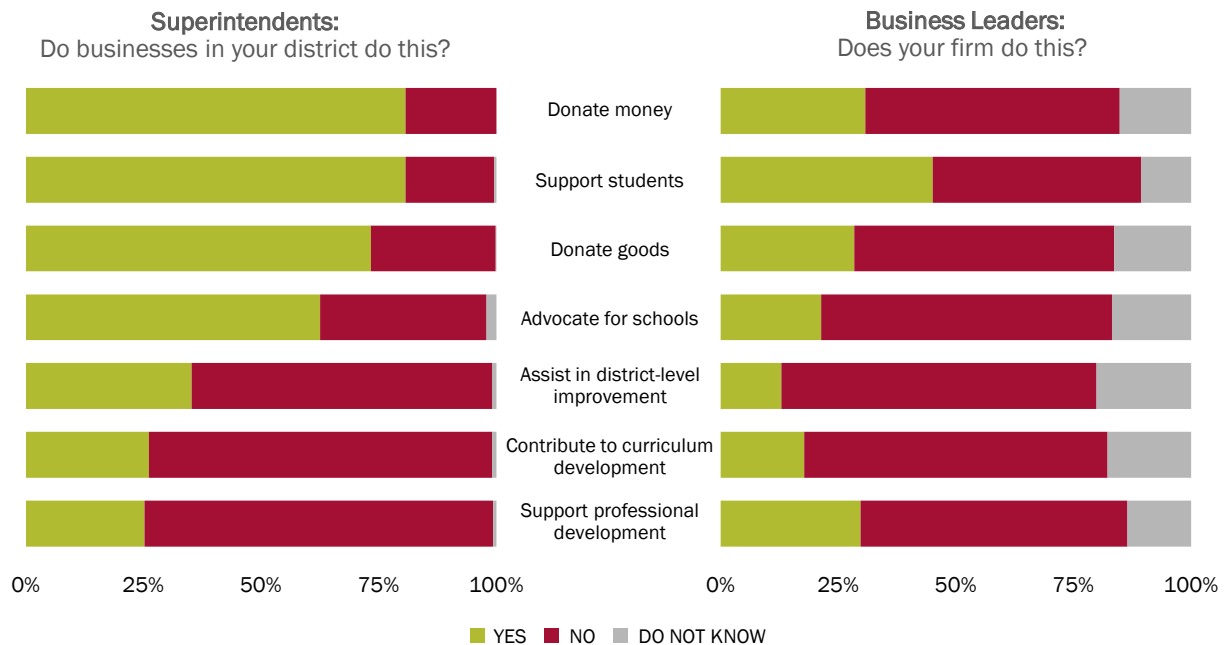
Overall, then, a strong impression emerges from the surveys as well as interviews with leaders in the field:

*today, business leaders support schools through a fragmented array of subscale efforts that are generous, well-intended, and effective at alleviating some of the symptoms of a weak educational system, but inadequate for helping to strengthen the system.*

**FIGURE 12: BUSINESS ENGAGEMENT IN EDUCATION**



**FIGURE 13: ACTIONS TAKEN BY BUSINESSES IN SCHOOLS**



## Promising Models of Deeper Engagement

Fortunately, our work with the Gates Foundation and BCG has identified progressive business leaders who are partnering with educators in creative ways that promise to have greater, lasting impact on the nation's education system and its students.

The models of deeper engagement fall into three categories:

- **Laying the policy foundations for education innovation.** Some business leaders are joining with educators and using their substantial local influence to advocate for policies, such as the Common Core State Standards, that enable innovation in education. In Denver, for instance, business leaders recently lobbied successfully for tax *increases* that would protect school innovation in the face of cuts in the wider city budget.
- **Scaling up proven innovations in education.** There is no lack of success stories in America's schools, but successful efforts that emerge in one locale are too rarely replicated elsewhere. A number of business leaders, working with educators, are now using their competence in scaling operations to expand programs proven to boost student outcomes. For example, ExxonMobil has sponsored the National Math and Science Initiative, enabling it to take two local efforts to improve science and math instruction and move them toward national scale.
- **Reinventing local education ecosystems.** Many American cities and towns have a host of programs to support children but lack strategies for aligning those programs, filling gaps between programs, eliminating redundancies, agreeing on goals, measuring success, and investing behind what works. In a growing number of cities, business leaders are bringing their strategic skills to bear on this problem. The GE Foundation, for instance, is investing deeply in seven school districts where GE has major operations, in efforts to upgrade the management processes and strategic capacity of local education systems.

The reports listed at the bottom of page 16 discuss these three types of transformational actions in depth.

School superintendents say that they are open to deeper business engagement. When surveyed, more than

80% of superintendents called for greater business involvement in their districts in the future, and most of them hoped to see new forms of engagement. Only 0.5% called for business to be less involved. Superintendents were especially eager for business engagements that would better prepare their students for the workforce.

## Overcoming Barriers to Business Engagement

Business leaders who aim to partner deeply with educators, however, should be aware that our surveys reveal at least four important barriers to such engagements:

- First, educators and businesspeople lack a shared view of the reality of U.S. education. We asked school superintendents to assess the very same elements of the U.S. business environment, in the very same way, as did alumni, and Figure 14 summarizes their responses. On most elements of the environment, superintendents and business leaders saw eye-to-eye; Figure 14 resembles Figures 4 and 5. But superintendents had a *much* more positive assessment of the nation's K–12 education system than did business leaders.
- Second, no one knows with confidence which business engagements in education work well and why. Only 10% of superintendents reported that the impact of any of the business activities in their districts had been evaluated and measured in formal studies.
- Third, superintendents have little confidence that business leaders deeply understand education. Only 3% of superintendents characterized their business communities as well informed about public education, while 14% described their business communities as misinformed. (See Figure 15.)

FIGURE 14: ASSESSMENTS OF ELEMENTS OF THE U.S. BUSINESS ENVIRONMENT BY SCHOOL SUPERINTENDENTS

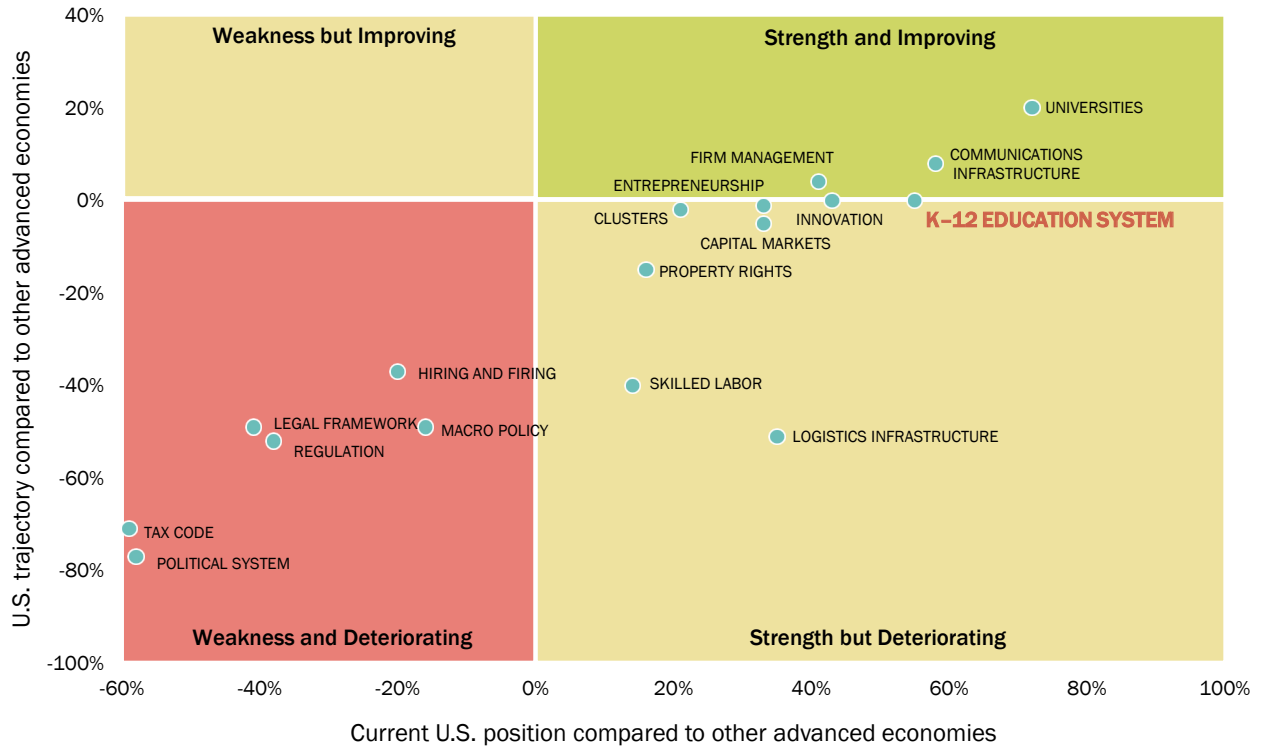
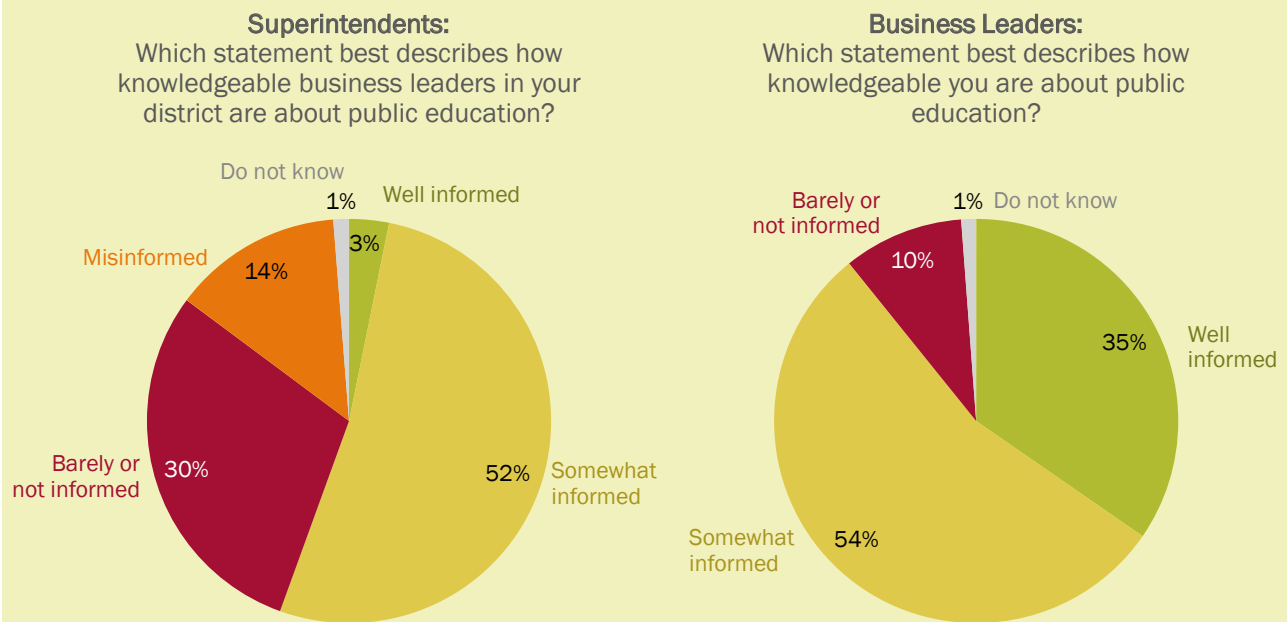


FIGURE 15: BUSINESS LEADERS' KNOWLEDGE OF PUBLIC EDUCATION

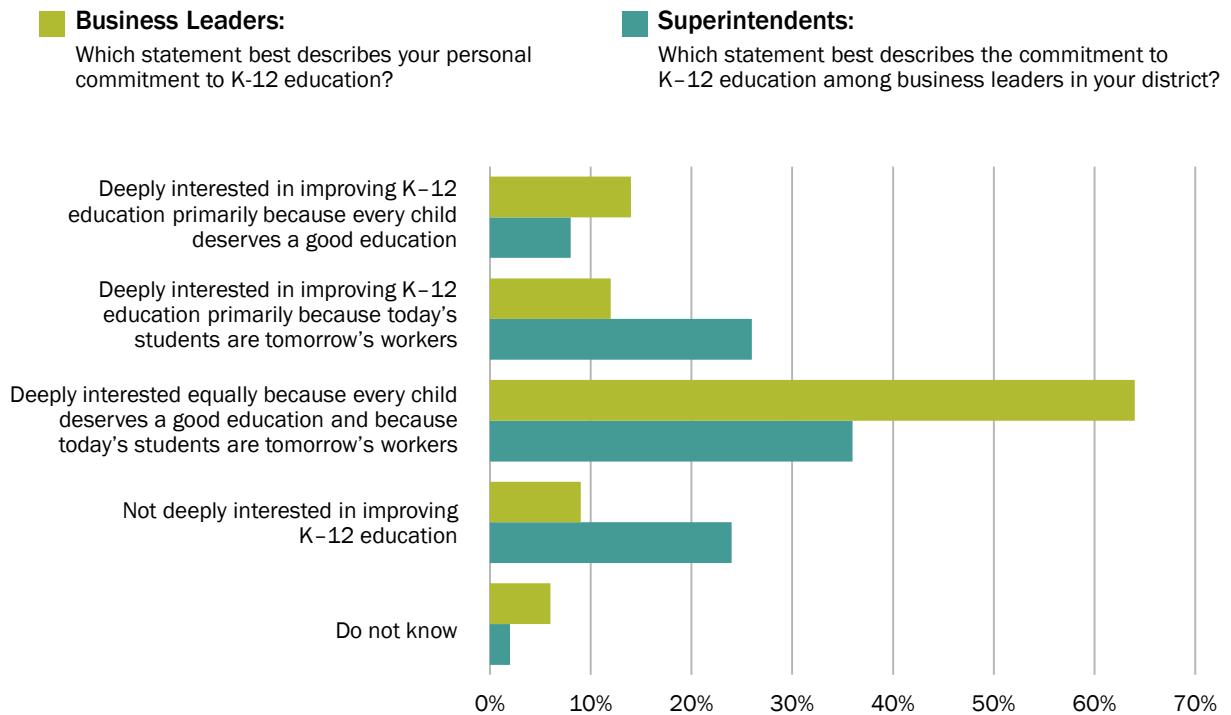


Meanwhile, 35% of alumni described themselves as well informed about public education. We may be in the worst scenario—in which business leaders are not well informed but believe they are.

- Finally, educators often question the motives of businesspeople who get involved in education. As Figure 16 shows, superintendents are much more likely than businesspeople themselves to believe that business leaders are not deeply interested in improving K–12 education or are engaged just for reasons related to workforce development.

We highlight these barriers not to discourage business leaders from deeper and enduring engagements with educators, but rather to raise the odds that such engagements will succeed. The barriers may be high, but so are the stakes. A stronger education system is vital not only for the economic future of the average American but also for the long-run health of U.S. enterprises. The time is right for every business in America to rethink how it supports schools and students—to move from programs that patch over weaknesses in the education system toward strategies that help educators transform the system.

**FIGURE 16: BUSINESS LEADERS' COMMITMENT TO EDUCATION IN THE UNITED STATES**



# WORKFORCE SKILLS

Joseph B. Fuller

The OECD data discussed on page 14—showing a growing U.S. disadvantage in adult competencies—point to weaknesses not only in America’s K–12 education system but also in the way we develop skills after high school and on the job. Troubles in workforce skills have been evident in the United States for years. In annual surveys conducted by ManpowerGroup since 2006, the portion of U.S. employers reporting difficulty in filling positions reached as high as 52%, with “lack of technical skills” in applicants among the top causes.<sup>5</sup> In the 2011 HBS survey on U.S. competitiveness, alumni involved in firm location choices reported that access to skilled labor was more often a reason to move a business activity out of the United States than it was a reason to keep an activity in America.<sup>6</sup> In 2013–14 as in past years, alumni assessed workforce skills as a U.S. strength that is in decline. (See Figure 5 on page 10.)

Skills shortages make it hard for firms operating in the United States to increase their productivity consistently, the major driver in sustaining their ability to compete and raising their capacity to pay workers. Thus, skills issues are at the heart of the aspect of U.S. competitiveness that worries us the most: the stagnation of living standards among most Americans. Historically, the prosperity of America’s middle class rested on a foundation of world-class workplace skills.

That has proven especially true for workers in so-called middle-skills jobs—roles that require more education and training than a high school diploma but less than a four-year college degree. Middle-skills jobs are estimated to account for as much as 48% of all work in America.<sup>7</sup> They have provided high and rising living standards for generations of American welders, machinists, health care workers, computer technicians, and others. Any path to greater U.S. competitiveness, and especially to higher living standards in America, will require reinvigorating the skill base of America’s workforce, particularly for middle-skills occupations.

The HBS project on U.S. competitiveness launched an effort in 2013–14 to examine deeply the past, present, and future of workforce skills in America. Led by Senior Lecturer Joseph Fuller, the effort has drawn as key partners Accenture, the global consulting and technology firm, and Burning Glass Technologies, an analytics company that focuses on workforce data. A full report on

the skills effort will be published in 2015. Early work, including questions on the 2013–14 alumni survey, reveals four overarching findings:

- Managers in America have developed approaches to hiring that discourage skills development and exacerbate the shortage of talent with highly demanded skills.
- America’s public discourse on skills takes place at a high level of aggregation, obscuring the true nature of the challenges facing the country. Real hiring occurs in a multitude of micro-markets that may or may not have skills gaps.
- Most of those micro-markets are marked by poor information flow, resulting in a perverse combination of outcomes: employers can’t find the skilled workers they need, but at the same time, a growing number of workers are overqualified for their jobs.
- Better skills development in America will require collaboration across traditional boundaries, but today in practice, such collaboration is rare.

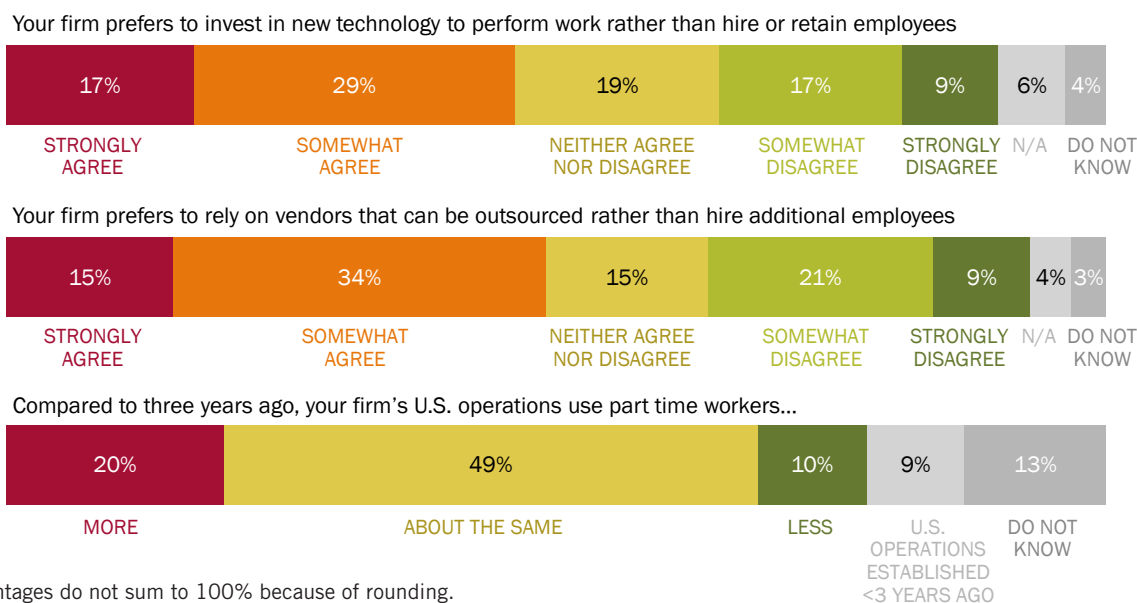
We will elaborate on each finding in turn.

<sup>5</sup>Annual ManpowerGroup Talent Shortage Surveys.

<sup>6</sup>Michael E. Porter and Jan W. Rivkin, “Prosperity at Risk: Findings of Harvard Business School’s Survey on U.S. Competitiveness,” page 15, January 2012. The report is available on the HBS U.S. Competitiveness Project website at <http://www.hbs.edu/competitiveness>.

<sup>7</sup>Thomas Kochan, David Finegold, and Paul Osterman, “Who Can Fix the ‘Middle-Skills’ Gap?” *Harvard Business Review* 90 (December 2012): 83. Harry J. Holzer and Robert I. Lerman, “The Future of Middle-Skill Jobs,” *Brookings Center on Children and Families*, February 2009.

**FIGURE 17: APPROACHES TO HIRING DECISIONS**



Percentages do not sum to 100% because of rounding.

## An Aversion to Full-time Hires

First, our survey reveals that business leaders in America are reluctant to hire full-time workers. When possible, they prefer instead to invest in technology to perform work, outsource activities to third parties, or hire part-time workers. For instance, 46% of survey respondents strongly or somewhat agreed that their firms' U.S. operations prefer to invest in technology to perform work rather than hire or retain employees, while only 25% disagreed.<sup>8</sup> (See Figure 17. Numbers in figure do not sum precisely to numbers in text due to rounding.)

Similarly, 49% said that their firms prefer to rely on vendors for work that can be outsourced, while only 29% reported that their firms would rather hire additional workers.<sup>9</sup> Respondent firms that increased their reliance on part-time workers during the past three years outnumbered those that relied less on part-timers by a ratio of two to one.

Those tendencies do not bode well for skills in the American workforce: firms invest most deeply in full-time employees, so preferences for automation, outsourcing, and part-time hires are likely to lead to less skills development. True, the workers who run the automated equipment, the employees of outside vendors, and the part-timers may receive some training, but that is unlikely to offset the skills that are no longer developed in equivalent full-timers. And indeed, by one estimate, spending on training in America fell from 0.52% of gross domestic product in 2000 to 0.34% in 2012.<sup>10</sup>

## A Multitude of Micro-markets

A lack of training by employers and insufficient skills-building by the education system can lead to “skills gaps”—situations in which employers seeking additional talent cannot find workers with relevant skills. In recent years, fierce debates have raged over the question of whether skills gaps are truly prevalent in the U.S.<sup>11</sup>

<sup>8</sup>We were concerned that the phrasing of the survey question would unduly influence responses. To guard against that possibility, we randomly split the respondents into two groups. Half were presented the statement, “My firm's U.S. operations prefer to invest in technology to perform work when possible rather than hire or retain employees,” and the other half read, “My firm's U.S. operations prefer to hire or retain workers when possible rather than invest in technology to perform work.” For the former statement, 53% agreed and 19% disagreed. For the latter, 39% disagreed and 32% agreed. The 46% reported in the text is the average of those who agreed with the former statement and those who disagreed with the latter.

<sup>9</sup>This question was also handled in the manner described in the previous footnote.

<sup>10</sup>Cait Murphy, “Is There Really a Skills Gap?” *Inc.*, April 2014, citing *Training* magazine. The figures are derived from Training Industry Reports, *Training* magazine, 2002 and 2013, and the Bureau of Economic Analysis, National Income and Product Accounts Tables.

<sup>11</sup>For example, see Edward P. Lazear and James R. Spletzer, “The United States Labor Market: Status Quo or A New Normal?” National Bureau of Economic Research Working Paper No. 18386, September 2012; Harold L. Sirkin, Michael Zinser, and Justin Rose, “The U.S. Skills Gap: Could It Threaten a Manufacturing Renaissance?” The Boston Consulting Group, August 2013; Heidi Shierholz, “Is There Really a Shortage of Skilled Workers?” Economic Policy Institute, January 23, 2014; Paul Krugman, “Jobs and Skills and Zombies,” *The New York Times*, March 30, 2014; Cait Murphy, “Is There Really a Skills Gap?” *Inc.*, April 2014.



Those who see major skills gaps in America typically point to two types of evidence. First, when surveyed, employers often report that they can't find the skilled workers they want to hire.<sup>12</sup> Our alumni survey provides some confirming evidence: pluralities of respondents say that it is difficult to fill middle-skills jobs in their U.S. operations; that it is harder to fill such positions than it was three years ago; and that they expect their demand for such employees to increase over the next three years. (See Figure 18.) Second, job postings have remained numerous even during periods of relatively high unemployment. In May 2014, for example, 9.8 million Americans were unemployed, but job postings listed 4.6 million open positions. The unemployed must be staying jobless, it is reasoned, because they lack the skills to fill the positions.

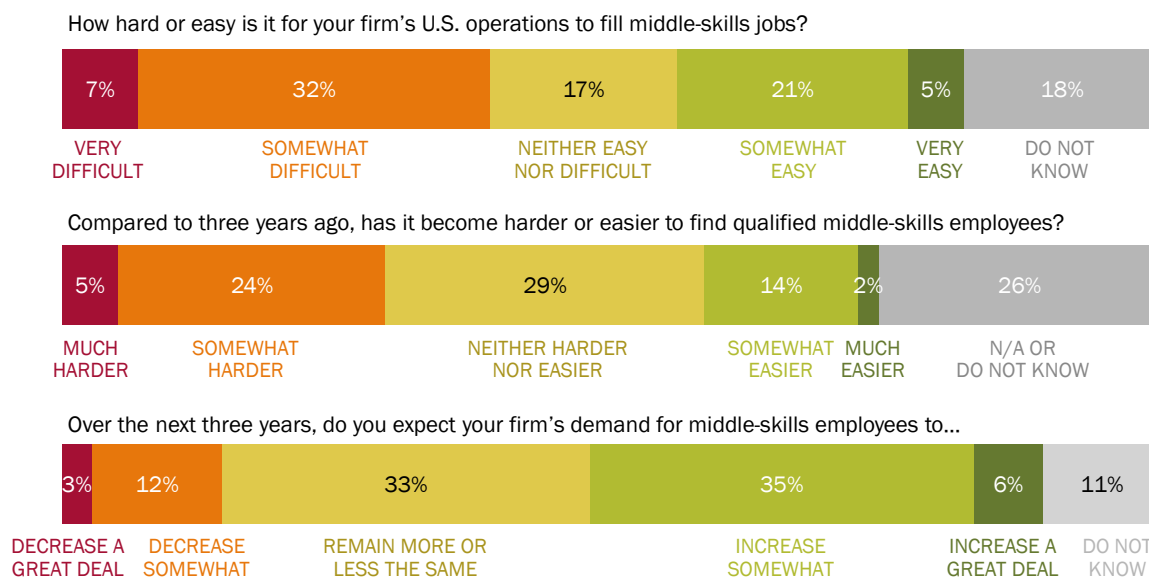
Skeptics of skills gaps counter by pointing out that job posting data are notoriously unreliable. Companies commonly post positions they don't intend to fill, make multiple postings for single jobs, and "up-credential" jobs (that is, raise requirements) when the labor market is slack. Likewise, skeptics argue, managers' claims that they can't find talent are not credible. If skills gaps are so prevalent, why aren't companies raising wages faster for skilled employees? If skills problems are so debilitating, why aren't companies investing more to develop workers with the requisite skills?

We find the debate about the presence or absence of a national skills gap to be misplaced. From an employer's and a job hunter's perspectives, the relevant question is not, "Do we have enough workers in America with middle skills?" or even "Do we have enough computer programmers in the U.S.?" Rather, the question is, "Do we have enough Java programmers with SQL experience to meet demand in Wichita this month?" The U.S. labor market consists of a multitude of micro-markets that may or may not have skills gaps.

Moreover, the pattern of demand for workers ebbs and flows with changes in technology, consumption in end markets, and competitive dynamics in industries. Even more relevant than the question "Do we have enough workers with the specific skills in demand at this moment?" is "Do we have workers with the requisite experience and capacity to learn to remain employed as job requirements change over the course of their careers?"

<sup>12</sup>For example, see "The Shocking Truth About the Skills Gap," CareerBuilder, 2014; ManpowerGroup 2013 Talent Shortage Survey; WSJ/Vistage Small Business CEO Survey, June 2014; and Accenture 2014 Manufacturing Skills and Training Study.

**FIGURE 18: CONDITIONS IN THE MIDDLE-SKILLS LABOR MARKET**



Similarly, we find wide categories like “middle-skills jobs” to be too broad and potentially misleading. The term has its origins in the late 1950s. Even were such a definition useful a half-century ago, it is inadequate for today’s economy. The middle-skills category in the 21st century encompasses jobs with vastly different career prospects, average incomes, and postsecondary educational requirements. Consider, for example, the jobs of pharmacy technician and entry-level computer helpdesk agent. Formally, both are middle-skills jobs. But pharmacy technician is a dead-end job—with an average annual salary below \$30,000, little upward mobility, and certifications that don’t port to other jobs—while helpdesk agents make nearly \$45,000 and can use their certifications as launching pads into advanced computer and network support roles that pay much more.<sup>13</sup>

## Poor Information Flow along the Workforce Development “Supply Chain”

America has, then, a huge number of heterogeneous and dynamic micro-markets for labor, in which workers and firms must make decisions about long-lived investments in skills. For such markets to work well, we need rich and timely flows of information about the skills that employers need today and expect to require in the future, the wages that the skills are likely to command, and the education and training credentials that will equip Americans with those skills.

To the contrary, however, we see poor information flows all along the “supply chain” for talent. Few employers engage in serious workforce planning, making it harder for them to project their future needs—let alone communicate those needs to schools and students. Employers appear to expect that they can fill many of their job requirements with little advance notice. That hamstring the “suppliers” of talent, such as community colleges, that often have inadequate connections to employers and lack the flexibility to respond to changes in employers’ needs with the speed employers seem to expect. Only faint market signals reach students as they decide how to invest precious time and tuition dollars. Many students choose careers with little hard information, based on hearsay, peer influence, parental input, and casual preferences. The absence of sufficient counseling resources across the high school and community, professional, and technical college systems compounds those problems. For example, the average high school counselor serves nearly 240 students and

has little granular information about local job-market conditions.<sup>14</sup>

Poor information seems partly to blame for the growing number of young workers who are *overqualified* for the jobs they hold. In one recent study, for instance, Neeta P. Fogg of Northeastern University and Paul E. Harrington of Drexel University documented the portion of college-educated workers in occupations that do not require the knowledge, skills, and abilities developed in college. As shown in Figure 19, the portion of such “mal-employed” individuals has climbed rapidly since 2000, especially among the youngest workers.<sup>15</sup> A related study from the New York Federal Reserve concurs that recent graduates are increasingly likely to be in jobs that do not require a college degree. When in such jobs, they are more likely than past cohorts to be in low-wage jobs that don’t require a college degree (think barista) rather than high-wage jobs that do not require a college degree (electrician, dental hygienist).<sup>16</sup> This suggests that college graduates are increasingly vying for jobs against individuals with associate’s degrees, technical certificates, and high school diplomas.

In sum, America’s talent system displays a classic hallmark of dysfunctional supply chains: oversupply alongside shortages. In this case, people are overqualified for the jobs they hold, but simultaneously, many positions that companies view as competitively important remain unfilled due to a lack of qualified applicants.

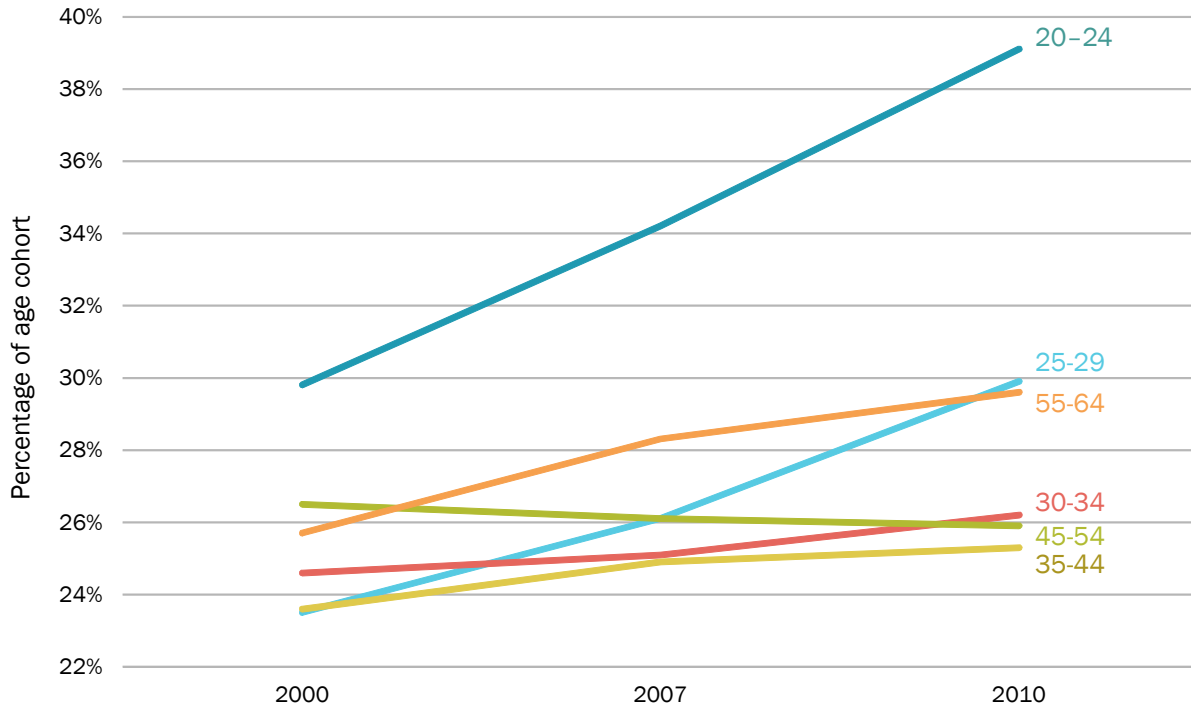
<sup>13</sup>The “middle-skills” classification is problematic for other reasons also. Middle-skills jobs are usually defined as roles that require more education and training than a high school diploma but less than a four-year college degree. This definition focuses on what an individual lacks (a college degree) rather than what skills he or she possesses. It suggests that there are standard skills conferred by a high school diploma and a college degree when, in fact, there are huge variations across schools, curricula, and jurisdictions.

<sup>14</sup>Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), “State Nonfiscal Public Elementary/Secondary Education Survey,” 2011-12 v.1a.

<sup>15</sup>Neeta P. Fogg and Paul E. Harrington, “Rising Mal-Employment and the Great Recession: The Growing Disconnection between Recent College Graduates and the College Labor Market,” *Continuing Higher Education Review* 75 (2011): 51-65.

<sup>16</sup>Jaison R. Abel, Richard Deitz, and Yaqin Su, “Are Recent College Graduates Finding Good Jobs?” *Current Issues in Economics and Finance* 20:1 (2014): 1-8.

FIGURE 19: “MAL-EMPLOYMENT” RATES AMONG EMPLOYED COLLEGE GRADUATES, BY AGE COHORT



Sources: U.S. Census Bureau Current Population Survey annual public use micro data files 2000, 2007, 2010; tabulations by Drexel University Center for Labor Markets and Policy. From Neeta P. Fogg, and Paul E. Harrington, “Rising Mal-Employment and the Great Recession: The Growing Disconnection between Recent College Graduates and the College Labor Market,” *Continuing Higher Education Review* 75 (2011): 51–65.

## Missed Opportunities for Collaboration

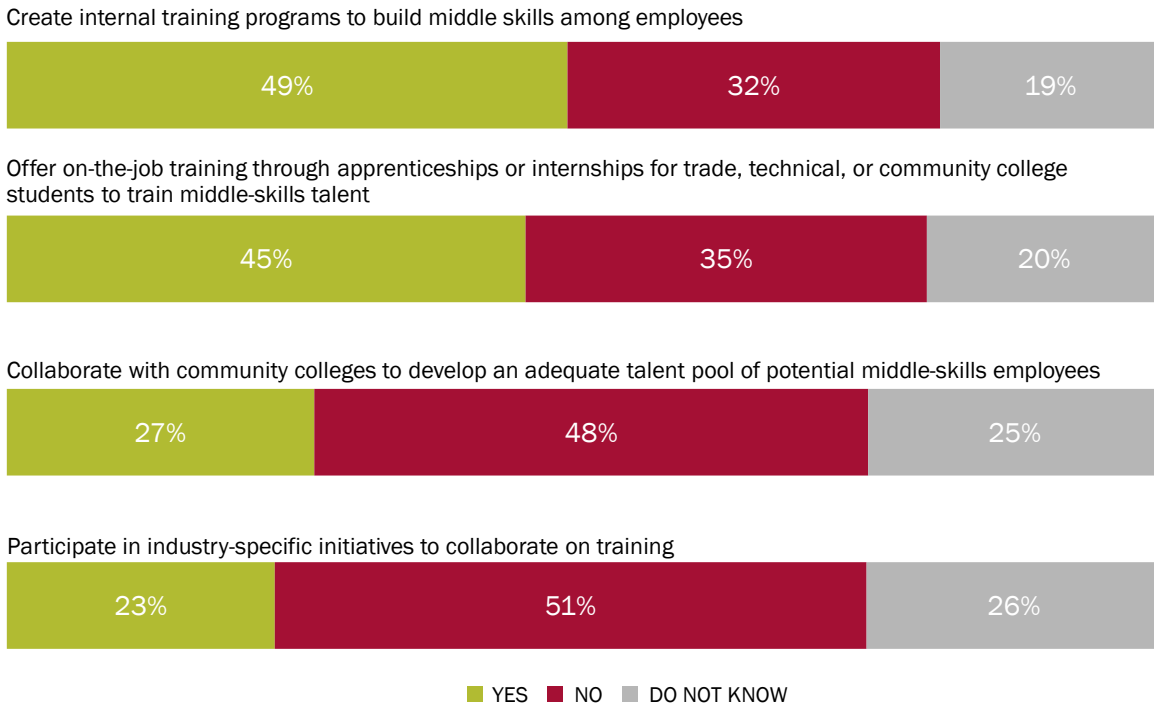
The situation we have portrayed calls for new approaches that rely on collaboration across traditional boundaries. Businesses should work with educational institutions to steer students onto career paths and into curricula that will make the students employable, the firms successful, and the nation competitive. Companies that need similar skills should work together to build future workforces rather than simply poach scarce talent from one another. And leaders in business, education, and government should cooperate to improve the quality of information available in dynamic micro-markets for labor. To do all this, companies and industries will have to articulate the skills and aptitudes required for jobs that are currently hard to fill or jobs likely to have excess demand in the future.

Indeed, some of the most effective skills-development initiatives we have seen have this collaborative character. In North Carolina, for instance, Siemens has responded to a shortage of advanced manufacturing workers by partnering with Central Piedmont Community College.

The company provides curriculum, equipment, apprenticeships, funding, and instructors that allow the college to develop the workers that the company would love to hire. In the electrical utility industry, where the workforce is aging rapidly, leading companies have banded together to form the Center for Energy Workforce Development. This nonprofit consortium works with educational institutions and unions to create successful career pathways into the industry. Their collective efforts focus, for example, on low-income young adults and veterans returning from active duty.

Yet in our 2013–14 HBS survey, when we asked respondents what their firms do to develop middle skills in their workforces, we found that such collaborative initiatives were relatively rare. (See Figure 20 on page 26.) Nearly half of the respondents’ firms offer their own, solo internal training programs or on-the-job training. But only 27% work with institutions such as community colleges, and only 23% of firms participate in industry-wide initiatives to collaborate on training. The dominant tendency is to “go it alone,” which seems unwise in the face of collective, cross-sector challenges.

**FIGURE 20: ACTIONS COMPANIES TAKE TO ADDRESS AVAILABILITY OF MIDDLE-SKILLS WORKERS**



In sum, the early work by Accenture, Burning Glass, and HBS on workforce skills reveals a labor market that is failing. All its major participants—employers, new entrants to the workforce, the unemployed, educators, and policymakers—complain that it yields unacceptable results. The supply chain for skilled talent is marked by poor information flows, inadequate collaboration, an education system not focused enough on cultivating skills that employers want, and companies that hire in ways that discourage investment in those skills. The persistence of these issues is unacceptable as structural problems in the U.S. economy make skills development an urgent priority. Tackling the skills challenge will require individual players both to acknowledge their roles in this outcome and to collaborate in new ways to create a far more efficient marketplace for skills and workers.

The importance of rising to that challenge cannot be overstated. Left unchecked, the problems facing aspiring workers, educators, and employers will only grow. Workers will not invest in developing their skills if it does not lead to employment and higher living standards. Employers will continue to turn to technology, vendors, or other alternatives to address their needs. The associated loss of productivity growth will further undermine both America’s economic growth and its

long-term competitiveness. Only by developing new information channels, collaborating more effectively, and spreading best practices within and across regions and industries will American employers gain sufficient access to the skilled workers they require and workers regain the opportunity to enjoy real income growth.

Toward this end, the HBS competitiveness team is continuing its work with a variety of partners and will disseminate its findings as the work develops. Monitor <http://www.hbs.edu/competitiveness> for progress.

# TRANSPORTATION INFRASTRUCTURE

Rosabeth Moss Kanter

It is widely understood that America's companies depend heavily on the nation's transportation infrastructure—to bring inputs into their operations, to deliver goods to customers, and to move personnel where they are needed. Infrastructure affects the costs, quality, speed, service, and safety of business in America. Transportation infrastructure also shapes the living standards of all U.S. citizens, by influencing commuting times and the cost of living, for instance. Transportation infrastructure has an especially profound impact on less affluent citizens, who are more likely to rely on public transportation and to live in neighborhoods with few transport options. For them in particular, mobility is opportunity.

Because it is so vital to America's businesses and citizens, transportation infrastructure has been a focal topic for the HBS project on U.S. competitiveness. In 2013–14, Professor Rosabeth Moss Kanter, the head of HBS's transportation infrastructure efforts and an expert on change leadership, added a set of infrastructure questions to the alumni survey. She also convened a national summit of 200 top leaders across sectors and industries to define an agenda for action, "America on the Move: Transportation and Infrastructure for the 21st Century." (For more information on the summit and agenda, see <http://www.hbs.edu/competitiveness/research/transportation-infrastructure/america-on-the-move.html>.) This section draws lessons from both the survey and the summit.

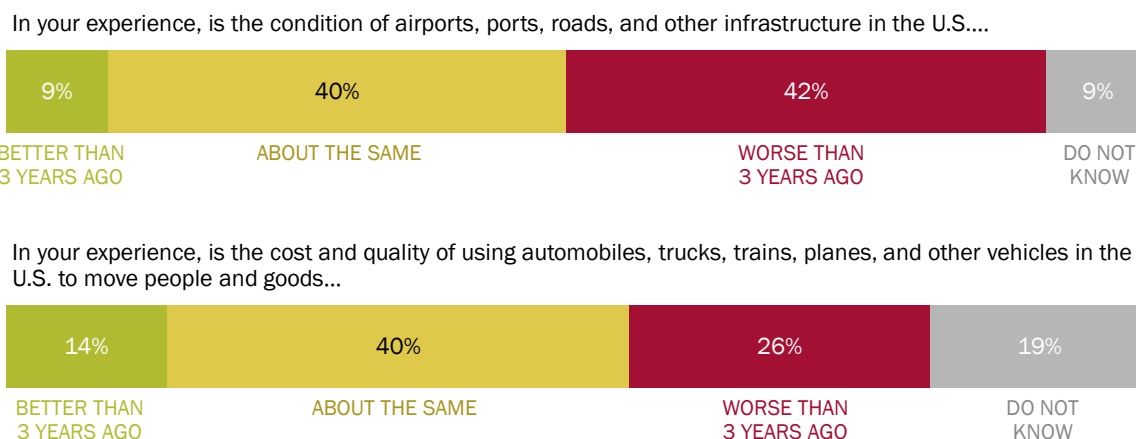
## A Strength, but in Decline

The challenges to American transportation and logistics infrastructure are well publicized. The American Society of Civil Engineers recently gave the United States a D+ grade for the quality of its infrastructure. The federal Highway Trust Fund nearly became insolvent in 2014. Congress recently extended funding until May 2015, but there is no plan for a longer-term funding solution. Such challenges have contributed to increasing concerns about what has historically been a U.S. strength.

Respondents to the 2012 HBS survey on U.S. competitiveness rated logistics infrastructure as a competitive strength but were overwhelmingly pessimistic about its trajectory—significantly more so than a sample of the general population.<sup>17</sup> On the 2013–14 survey, a majority of respondents, 75%, reported that logistics infrastructure—railroads, highways, ports, and airports—was at least average compared to other advanced economies, with 52% rating it better or much better than average. However, the majority, 51%, also reported that this infrastructure is falling behind that of other advanced economies, with only 8% indicating optimism about its trajectory. Compared to past years, there is a slight upswing in optimism: in 2013–14, 10% fewer business leaders reported a belief that logistics infrastructure was declining than in 2012.

<sup>17</sup>Michael E. Porter, Jan W. Rivkin, and Rosabeth Moss Kanter, "Competitiveness at a Crossroads: Findings of Harvard Business School's Survey on U.S. Competitiveness," February 2013.

FIGURE 21: THE CONDITION OF INFRASTRUCTURE AND THE TRAJECTORY OF MOVING PEOPLE AND GOODS



Asked to consider changes in the transportation system during the past three years, respondents reported declines in both the condition of physical infrastructure and the cost and quality of using it. (See Figure 21 on page 27.) Forty-two percent of respondents reported that the condition of infrastructure like airports, ports, and roads had declined over the past three years. For every respondent who thought the underlying infrastructure had improved, nearly five felt it had worsened. Twelve percent more respondents reported declines than reported improvements in their ability to use automobiles, trucks, trains, planes and other vehicles to move people and goods.

In their general assessments of U.S. logistics infrastructure, leaders of the smallest businesses were more likely than the typical respondent to rate America's logistics infrastructure as worse than that of other advanced economies. These findings are consistent with the slightly greater pessimism that small business leaders displayed about the general trajectory of U.S. competitiveness. (See page 11.)

Echoing many of the concerns of survey respondents, participants at the America on the Move (AOTM) summit expressed overarching pessimism about the competitiveness and trajectory of America's infrastructure. For instance, they noted that foreign companies often win the contracts for innovative city-level and regional efforts in the United States. This pattern raises questions about whether America has lost certain underlying capabilities related to transportation infrastructure. Participants did, however, highlight a number of bright spots and promising developments. For instance, America enjoys a highly efficient rail system for transporting freight; our airlines are emerging from decades of financial struggles with renewed profitability; vibrant entrepreneurs are beginning to apply new technology to old transportation problems; and cities such as Atlanta, Chicago, and Los Angeles have ambitious infrastructure efforts under way.

## Major Pain Points and Bottlenecks

Survey respondents were asked about issues that create problems, reduce quality, or raise costs for their firms' U.S. operations. (See Figure 22.) Large percentages pointed to highway traffic congestion (46%) and airport delays/inefficiencies (45%) among their top three complaints. These complaints were consistent across leaders from small (1–49 employees), medium-sized (50–2,499), and large enterprises (2,500+). Leaders from medium-sized enterprises tended to be more concerned about highway congestion, and leaders from large firms tended to be more concerned about delays at airports.

Other leading pain points among business leaders included deteriorating roads or bridges (32%) and lack of public transportation for employees or potential employees (28%). Leaders from large enterprises were particularly concerned about these issues, with 36% and 34%, respectively, ranking these issues among their top three.

Although on average only 18% of respondents were concerned about insufficient Internet and network speed or bandwidth, employees at small firms were more likely to see connectivity as an issue, with nearly a quarter (23%) ranking it as a top concern. This finding signifies a potential problem for small enterprises with limited resources, which could inhibit their ability to adopt new network technology and reap associated competitiveness gains. Small businesses were also more concerned than their larger peers about inadequate connections across transportation modes, with 19% ranking it as a concern compared to 14% and 15% from midsized and large firms, respectively.

Other potential concerns that did not rank as high included difficulties getting goods into the United States (11%) and moving goods between cities/regions within the nation (6%)—which, of course, are issues only for a subset of businesses, especially as many respondents came from service enterprises. Although these issues ranked relatively low, leaders from midsized and large firms were much more likely to rank them as concerns than leaders from small businesses, which tend to operate on a smaller geographic scale.

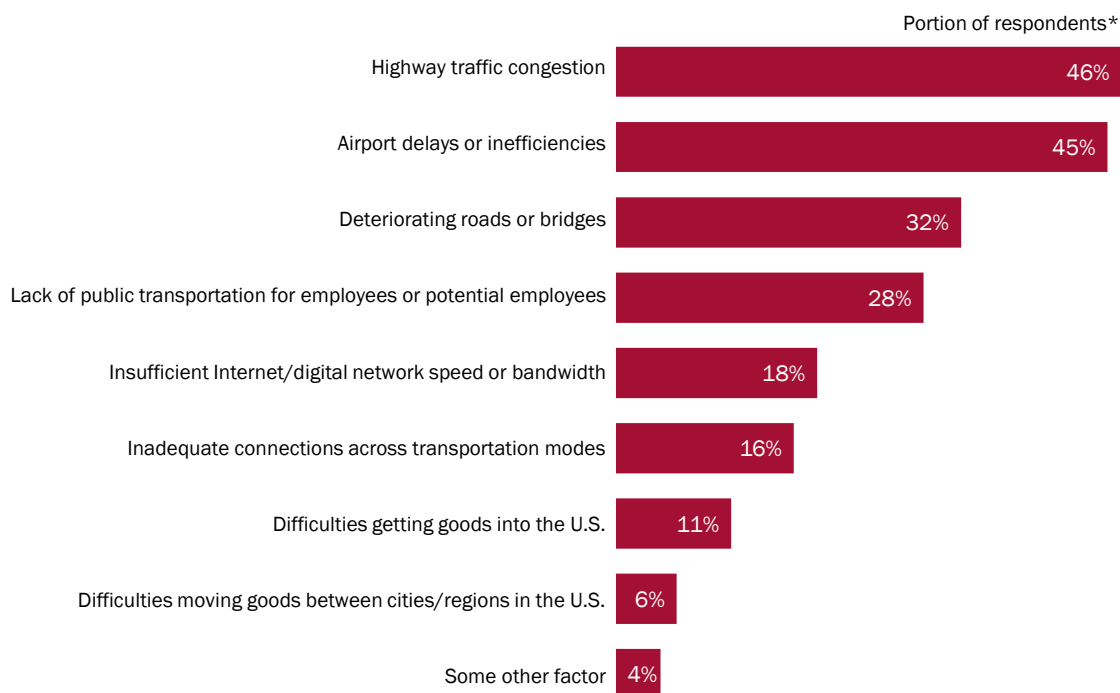
At the AOTM summit, participants agreed that airports are built without strategic priorities, contributing to the delays that trouble survey respondents. Summit participants also agreed that highway congestion in particular is a major drag on the American economy.

and logistics leaders at the summit decried port delays as a major pain point for their U.S. operations and echoed each other's calls for a national freight corridor strategy as well as regional freight strategies.

One noteworthy contrast is that top CEOs at the summit were much more concerned than survey respondents about difficulties getting goods into the country. Retail

**FIGURE 22: PAIN POINTS AND BOTTLENECKS IN U.S. TRANSPORTATION INFRASTRUCTURE**

Which deficiencies in transportation and other infrastructure in the U.S. create problems, reduce quality, or raise costs for your firm's U.S. operations?



\*Each respondent was asked to identify up to three deficiencies.

## Investment Priorities

Survey respondents were asked to rate the three improvements or innovations in transportation and infrastructure with the most promise to improve their firms' ability to succeed in the United States. (See Figure 23.) The top-ranked desire, with 39% of respondents including it among their top three, was high-quality public mass transit reaching more places. Leaders from large organizations evinced particularly strong support, with 43% ranking improved transit as a priority; small business leaders were somewhat more divided at only 34%. That there was a consensus for public transit among business leaders—who themselves can easily get private transportation—was striking.

The other top-ranked priority among survey respondents was universal high-speed broadband telecom networks, with 37% ranking it a priority. Support for universal broadband connectivity was consistent across firm sizes. High-speed networks are increasingly essential to the ability of all enterprises to be competitive.

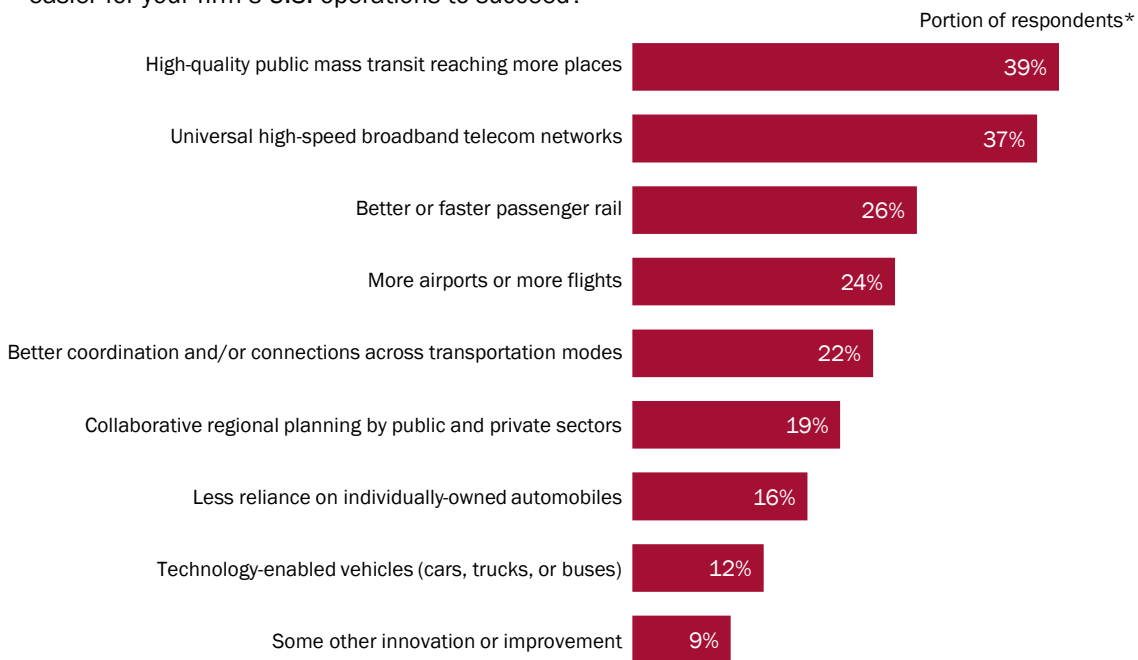
Other priorities for improvement included better or faster passenger rail (26%), more airports or flights (24%), better coordination or connections across passenger

modes (22%), and collaborative regional planning by the public and private sectors (19%). Across all these priorities, leaders from large enterprises tended to evince stronger support than the mean, while small business leaders were less interested, which presumably reflected the fact that mobility across regions can be less important to enterprises with limited geographic scope. In air transportation, particularly, this difference held: 27% and 26% of leaders from medium-sized and large firms, respectively, ranked more airports or more flights as a priority, while only 19% of those from small business thought better air transportation would improve their ability to compete.

Summit participants were optimistic about the potential of new technologies, such as connected vehicles and sensor-enabled roadway optimization, to improve the utilization of America's transportation assets. The contrast between summit discussions and survey results—e.g., only 12% of survey respondents expressed an interest in technology-enabled vehicles—likely reflects the fact that the CEOs and national leaders at the summit have a broad perspective, whereas many survey respondents come from smaller, more local enterprises.

**FIGURE 23: PRIORITIES FOR IMPROVEMENT AND INNOVATION IN U.S. TRANSPORTATION INFRASTRUCTURE**

Which improvements or innovations in transportation and other infrastructure would make it easier for your firm's U.S. operations to succeed?



\*Each respondent was asked to identify three improvements or innovations.



## Action Items

Based on discussions at the America on the Move summit and survey findings, Professor Kanter identified opportunities for business and government leaders to enhance the competitiveness of U.S. transportation infrastructure going forward. Specifically, we can:

1. Create **a new vision for a “Connected America.”** Such a vision would focus on corridors with economic impact potential, such as North American trade via north-south rail lines that connect Canada and Mexico; cross-state economic zones; and investments in sufficient broadband for high-speed communication networks.
2. Develop **a national infrastructure strategy** that acknowledges new realities such as the population shift from suburbia to cities and a need to change focus from single transportation modes to inter-modal connections. Transportation plays vital roles in addressing many other societal problems—including education, public health, job creation, and environmental protection—and the national strategy should reflect and refine those roles. A key step would be to modernize the international Open Skies agreements and air traffic control. Responsibility for infrastructure implementation might devolve to regional, often metropolitan, planning groups, with the flexibility to direct funding.
3. Rename the Highway Trust Fund **the Mobility Trust**, and expand its scope to back R&D and standards for new technologies that promote mobility.
4. Assemble **benchmarking information**—e.g., the comparative efficiencies of ports at moving goods, commuting times, buses to health providers, conditions of local roads and bridges. Open more government data, such as weather information, for analysis and communication by private companies.
5. Mount **a series of convenings across the country** to stimulate private-sector investor interest and capability for public-private partnerships. Develop toolkits and technical assistance both nationally and regionally. Learn from existing state and local infrastructure bank initiatives about what might work nationally.
6. Engage **entrepreneurs and emerging leaders** in the quest for mobility. Provide publicity, seed funds, challenge grants, and research opportunities.

Overall, we see promising opportunities to boost America's competitiveness by building new connections—across regions, across modes of transportation, and across the public-private divide.

# PATHS FORWARD

A truly competitive U.S. economy would lift both firms and citizens. But our survey findings and other evidence reveal that that is not happening today in America. Instead, our “recovering” economy is doing just half its job: the typical large or mid-sized firm in America is rallying or even prospering, as are highly skilled individuals. But many middle- and working-class citizens and small businesses are struggling.

Some have argued that global and technological developments make economic stagnation inevitable for many in America. As changes in geopolitics and technology have opened the world for business, U.S. workers must compete for jobs with hundreds of millions of skilled, ambitious workers worldwide who are accustomed to lower wages. As computers grow capable of more tasks, businesses opt for more automation and fewer workers. Forces of labor supply and demand (this argument continues) leave only two paths forward. One

is to accept the decline of American living standards as the unfortunate but unavoidable consequence of today’s economic reality. The other is to try, often futilely, to resist the decline through policies that aim to slow globalization, stall technology, and redistribute gains.

We recognize that the dynamics of globalization and technological change are at work in the U.S. economy. But the result is not inevitable, and our findings suggest that many of America’s challenges are inflicted by our own actions or inaction. We see a very different path forward: *invest and set policies to make Americans so productive that they can command higher wages even in the face of these dynamics.* This path involves building up the commons, or the shared resources on which all business depends, to boost labor productivity—for instance, by giving Americans world-class opportunities for education and skills development that are aligned with the needs of the workplace; by surrounding them

## CONSENSUS ON FEDERAL POLICY PRIORITIES

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In our 2012 survey, we gauged whether U.S.-based HBS alumni and members of the general public approved of certain federal policy proposals that affect U.S. competitiveness. The findings revealed a striking consensus on what Washington must do.

Across the political spectrum, alumni and the general public strongly called on the President and Congress to:

- put the federal budget on a sustainable path by increasing revenue and controlling spending;
- reform the corporate tax code, reducing statutory rates and eliminating loopholes;
- enact a multiyear program to improve America’s infrastructure;
- address distortions of the international trading system that disadvantage the U.S.; and
- craft a responsible framework for developing newly accessible gas and oil reserves.

Both liberal and conservative alumni strongly supported moves by Washington to:

- streamline regulations; and
- ease immigration for high-skill workers.

Streamlined regulations won majority support among the general public but not across the political spectrum. High-skill immigration won a majority among liberal members of the general public but not among all members.

The broad consensus on federal policy priorities makes the gridlock in Washington all the more remarkable and regrettable.

with advanced infrastructure that provides mobility and opportunity; and by strengthening other elements of the business environment on which companies and workers depend.

An essential first step down this path is to recognize that we can do better than today's weak and uneven recovery. The cyclical upturn should give us the resources to improve America's business environment. But it must not trick us into believing that the U.S. economy is now on a good path.

Getting the American economy to do its full job will require concerted, coordinated, and sustained action—in other words, a strategy. State and local officials, federal policymakers, and business leaders must all contribute.

Among these stakeholders, we are especially impressed by the efforts of state and local officials. Across the country, entrepreneurial governors and mayors are moving with energy to build the local commons and boost competitiveness: they are overhauling their education systems, upgrading training programs, founding business accelerators and innovation districts, tackling the costs of doing business, pursuing foreign investment, improving local infrastructure, and so on. Perhaps most importantly, they are breaking down traditional silos—aligning policymakers, business leaders, educators, nonprofit leaders, and others—to make local economies more attractive places to do business.

We wish that federal policymakers were moving with equal urgency. Making progress on just a handful of federal policy priorities identified in our earlier work would materially improve U.S. competitiveness, and these priorities have bipartisan support, as evidenced in our 2012 survey. (See the sidebar on page 32.) Yet many federal officials appear more concerned with making partisan gains than improving America's economy. As a result, the federal government seems at times to be the biggest impediment to U.S. competitiveness.

With states and cities on the move but Washington at an impasse, business leaders may be decisive in determining the trajectory of U.S. competitiveness. Our 2013–14 survey shows that many businesses are already taking actions to improve education and build skills. Our 2012 survey uncovered similar business efforts to foster innovation, build clusters of related and supporting industries, and bolster regional competitiveness. The issues are scale, collaboration, and ambition. Will enough business leaders step up to such investments in the commons? Will business leaders collaborate

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effectively with educators, civic leaders, workers, nonprofits, and one another to multiply their impact? And will business aim to transform the commons, not simply apply band-aids? If so, business leaders will lift American living standards and, in the long run, benefit their companies.

# APPENDIX: METHODOLOGY AND RESPONDENT PROFILE

The 2013–14 HBS survey on U.S. competitiveness was designed and conducted by HBS faculty and researchers in conjunction with Abt SRBI, a leading survey research firm. A copy of the survey and a full report on methodology are available at: <http://www.hbs.edu/competitiveness/survey>.

Two prior versions of the HBS survey on U.S. competitiveness took a census approach. The survey was administered to all living HBS alumni in 2011 and then to all living alumni with email addresses in 2012. HBS alumni are defined as former students holding MBA and doctoral degrees as well as those who have completed comprehensive executive education courses such as the Advanced Management Program.

For the 2013–14 survey, we switched from a census approach to a sample of the total alumni population. This was done in order to prevent survey fatigue among HBS alumni. All living alumni with email addresses and a subset of alumni without email addresses—a total of 58,588 alumni—were eligible for inclusion in the sample. The population of alumni was divided into three strata: respondents to previous competitiveness surveys, non-respondents to previous competitiveness surveys, and new alumni who had not been invited to complete previous competitiveness surveys. From this population, 15,099 were sampled, which was estimated to be sufficient to yield at least 1,000 completed surveys. Within each stratum, a random sample was asked to complete the survey. The sample was chosen in a manner that ensured that the sample represented each stratum's population along certain characteristics: gender, age, location, and alumni type (MBA, doctoral, and executive education). The alumni contact information came from an internal HBS alumni list, which is based on original matriculation and graduation records and is actively managed and regularly updated.

The field period for the survey was December 12, 2013, to January 17, 2014. In order to ensure a high response rate, an advance letter was sent to 1,000 randomly selected alumni. On the first day of the field period, 15,099 HBS alumni were invited to participate in the survey via email. In the following weeks, three email reminders encouraged alumni to respond to the survey. At the completion of the survey, the overall response rate was 12.9% with 1,947 completions. This compares favorably with the response rate for the 2012 survey, 11.8%.

**Instrument.** The 2013–14 survey instrument was designed and vetted by HBS faculty in collaboration with survey methodologists. Every year, HBS' U.S. competitiveness survey is designed to capture longitudinal data for which the questions in the first three sections of the survey instrument maintain consistency. These sections gather background information on respondents, ask alumni to assess elements of the U.S.

business environment, and pose questions on the overall competitiveness of the United States.

In 2013–14, these sections were presented to alumni with two notable changes. First, in the section on background information, the 2013–14 survey asked each working respondent to indicate how many people were employed by his or her firm. This question allowed us to analyze survey findings based on firm size. Second, we asked respondents to assess an element of the U.S. business environment that prior surveys did not mention: the quality of healthcare relative to cost.

Each year, HBS faculty members customize the second half of the survey to examine topics relevant to the ongoing research of the U.S. Competitiveness Project. In 2012, for example, the survey asked respondents to register their approval or disapproval of possible federal policies and to identify the level of business' engagement with actions that may affect U.S. competitiveness. In 2013–14, the survey asked detailed questions on three specific elements of the U.S. business environment: the education system through high school, the skills base of the workforce, and the nation's transportation infrastructure.

In order to ensure that the survey was understood by respondents as intended by the survey designers, Abt SRBI conducted cognitive testing interviews via telephone.

**Weighting.** The sample of 15,099 alumni was allocated to three strata: respondents to previous competitiveness surveys, non-respondents to previous waves of the competitiveness survey, and new sample. Effective sample sizes were defined accounting for design effects. Weighting took place in four steps: design weights, nonresponse weights, base weights, and post-stratification weights.

**Precision of estimates.** As a sample survey, estimates from the 2013–14 competitiveness survey are subject to sampling error: variations from the extent to which responses to a survey may be expected to differ from those of the population from which the survey sample was drawn due to the sampling process. Due to the design of the survey as well as weighting adjustment for nonresponse, estimates from the 2013 competitiveness survey will have higher sampling error than would a simple random sample. The design effect was estimated at 1.43. Given the 1,947 completed surveys, the effective sample size would be  $n=1,359$ . Based on this effective sample size, the 95% confidence intervals for proportion of 50% would be  $\pm 2.7\%$ . Analyses based on a subset of cases will have wider confidence intervals, while percentages above or below 50% will have narrower confidence intervals. The specific confidence intervals for any item may, however, deviate from these estimates.

Nonresponse error is addressed in this survey by weighting the sample to the known characteristics of HBS alumni with email addresses with respect to age, sex, location, and stratum. In cases where concern existed about wording effects, the text

of the question was systematically varied in order to better understand the nature of any biases in selecting responses, and—to the extent they are offsetting—correct for them.

## Respondent Profile

The tables below report the distribution of respondents to the HBS alumni survey across countries and states, sectors of the economy, and age ranges.

### RESPONDENT LOCATION

IN THE UNITED STATES	
California	192
New York	168
Massachusetts	159
Texas	82
Illinois	55
Florida	54
Connecticut	52
Virginia	41
Maryland	36
New Jersey	35
38 other states, plus D.C. and territories	389
<b>Subtotal</b>	<b>1,263</b>
OUTSIDE THE UNITED STATES	
United Kingdom	77
Japan	55
Canada	36
Switzerland	30
Singapore	28
Australia	26
Brazil	26
France	22
Germany	22
Mexico	22
63 other countries and territories	286
<b>Subtotal</b>	<b>630</b>
<b>UNKNOWN LOCATION</b>	<b>54</b>
<b>TOTAL</b>	<b>1,947</b>

### RESPONDENT SECTOR OF EMPLOYMENT\*

	NUMBER	PERCENT
Finance and Insurance	446	22.9%
Manufacturing	397	20.3%
<i>Metal and Machinery</i>	65	3.3%
<i>Computer, Electrical, and Appliance</i>	65	3.3%
<i>Petroleum, Chemicals, and Plastics</i>	63	3.2%
<i>Food and Beverage</i>	47	2.4%
<i>Wood, Paper, and Printing</i>	20	1.0%
<i>Textile and Apparel</i>	9	0.5%
<i>Other Manufacturing</i>	128	6.6%
Professional, Scientific, and Technical	321	16.5%
Information: Media, Telecom, and Data Processing	141	7.2%
Other Services	111	5.7%
Educational Services	99	5.1%
Wholesale and Retail Trade	86	4.4%
Health Care and Social Assistance	80	4.1%
Construction and Real Estate	77	4.0%
Mining and Oil & Gas Extraction	52	2.7%
Transportation and Logistics	36	1.9%
Utilities	24	1.2%
Public Administration	22	1.1%
Agriculture, Forestry, and Fishing	21	1.1%
Accommodation and Food Services	17	0.9%
Arts, Entertainment, and Recreation	15	0.8%
<b>Subtotal</b>	<b>1,945</b>	<b>99.9%**</b>
Gave no response	2	
<b>Total</b>	<b>1,947</b>	

\*Includes working and nonworking respondents. Working respondents were asked, "In what sector do you work?" Nonworking respondents were asked, "In what sector did you work?"

\*\*Percentages do not sum to 100% because of rounding.

### RESPONDENT AGE

	NUMBER	PERCENT
Under 30	59	3.0%
30-39	231	11.9%
40-49	256	13.1%
50-59	385	19.8%
60-69	394	20.2%
70 and older	364	18.7%
Unknown	258	13.3%
<b>Total</b>	<b>1,947</b>	<b>100%</b>

**Michael E. Porter** is the Bishop William Lawrence University Professor, based at Harvard Business School. **Jan W. Rivkin** is the Bruce V. Rauner Professor at Harvard Business School.

**Manjari Raman**, Program Director and Senior Researcher of the U.S. Competitiveness Project at Harvard Business School, was instrumental in designing this survey, executing it, and reporting the findings.

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For more information on Harvard Business School's U.S. Competitiveness Project, please visit <http://www.hbs.edu/competitiveness/>

