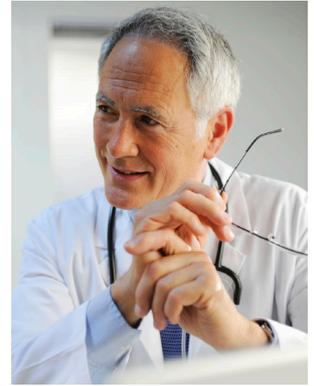
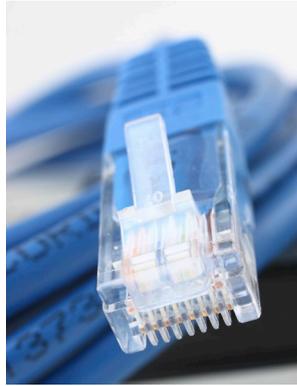


McKinsey Global Institute



February 2011

Growth and renewal in the United States: Retooling America's economic engine



The McKinsey Global Institute

The McKinsey Global Institute (MGI), established in 1990, is McKinsey & Company's business and economics research arm. MGI's mission is to help leaders in the commercial, public, and social sectors develop a deeper understanding of the evolution of the global economy and to provide a fact base that contributes to decision making on critical management and policy issues.

MGI combines three disciplines: economics, technology, and management. By integrating these three perspectives, MGI is able to gain insights into the microeconomic underpinnings of the long-term macroeconomic and business trends that affect company strategy and policy making. For nearly two decades, MGI has utilized this "micro-to-macro" approach in research covering some 20 countries and 30 industry sectors.

MGI's current research agenda focuses on global markets (capital, labor, and commodities), the dynamics of consumption and demographics, productivity and competitiveness, the impact of technology, and other topics at the intersection of business and economics. Recent research has examined the economic impact of aging consumers and household debt reduction in developed countries, the emerging middle class in developing countries, health care costs, energy demand trends and energy productivity, and long-term shifts in world financial assets.

MGI's work is conducted by a group of full-time senior fellows based in offices in Beijing, Brussels, Delhi, London, San Francisco, Singapore, and Washington, DC. MGI project teams include consultants from McKinsey's offices around the world and are supported by McKinsey's network of industry and management experts and worldwide partners. In addition, leading economists, including Nobel laureates and policy experts, act as advisers to our work.

MGI is funded by the partners of McKinsey & Company and our research is not commissioned by any business, government, or other institution. Further information about MGI and copies of MGI's published reports can be found at www.mckinsey.com/mgi. Comments or inquiries are welcome at mgi@mckinsey.com.

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February 2011

Growth and renewal in the United States: Retooling America's economic engine

James Manyika
David Hunt
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Lenny Mendonca
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Samantha Test

Preface

One of the big and troubling questions on the minds of business leaders and policy makers is how to drive growth and renewal in the United States after the recession. In this context, McKinsey & Company and the McKinsey Global Institute (MGI) have embarked on a multiyear and multifaceted effort to contribute to this dialogue by offering a series of perspectives on the most significant issues facing the United States.

Growth and renewal in the United States: Retooling America's economic engine is the second perspective arising out of this effort. The first was *Growth and competitiveness in the United States: The role of its multinational companies*, a report that examined the contribution of multinational corporations to the growth and health of the US economy. This latest report examines the growth challenge facing the United States and explores how US business and government can contribute to the economy's renewal by reinvigorating their drive toward higher productivity. The report builds not only on McKinsey's industry expertise but also on nearly two decades of sector-level analysis by the McKinsey Global Institute (MGI) on issues of growth, productivity, and competitiveness in some 20 countries and 30 industrial sectors.

McKinsey directors James Manyika, David Hunt, and Scott Nyquist, together with MGI senior fellow Jaana Remes, led this project, working closely with McKinsey directors Byron Auguste, Vik Malhotra, and Lenny Mendonca. Samantha Test managed the project team, which comprised Imran Ahmed, Paolo D'Aprile, Lucia Fiorito, and Levan Nadibaidze. Martin N. Baily, a senior adviser to McKinsey and a senior fellow at the Brookings Institution; and Laura D. Tyson, S. K. and Angela Chan Chair in Global Management at the Haas Business and Public Policy Group and former chairman of the National Economic Council, served as academic advisers to this work. The team benefited from the advice of McKinsey directors Toos Daruvala, Doug Haynes, Gary Pinkus, Vivian Riefberg, and Tim Welsh, all of whom are part of the leadership team focused on US growth and renewal. We would also like to thank MGI directors Richard Dobbs and Charles Roxburgh. The team also appreciates the contributions of Janet Bush, MGI senior editor, who provided editorial support; Rebeca Robboy, MGI external communications manager; and Marisa Carder, visual graphics specialist.

We are grateful for the vital input and support of numerous MGI colleagues past and present, including Ezra Greenberg and Baudouin Regout, and to McKinsey colleagues around the world. This report builds on multiple productivity studies that MGI has conducted over the last 20 years, including work recently completed with our colleagues on the Global Forces Initiative, Peter Bisson, Elizabeth Stephenson, and Patrick Viguerie. From the health care practice, we would like to thank Bede Broome, Jeremy Buzzard, Brandon Carrus, Sree Chaguturu, Connie Cibrone, Tim Darling, Eric David, Andrew Davis, Francois Laflamme, Asit Gosar, Eric Jensen, Bob Kocher, Scott Lichtenberger, Nick Lovegrove, Paul Mango, Ken Park, Russ Richmond, Jason Sanders, Brad Schiller, Navjot Singh, Shubham Singhal, Jocelyn So, and Arif Virani. We are grateful to Tyler Duvall, Rob Palter, and Julian Mills for their insights on the infrastructure sector. For retail expertise, we would like to thank Sarah

Bond, Julien Boudet, David Court, Mike Doheny, Jeffrey Helbling, Brad Johnson, Sajal Kohli, Josh Leibowitz, Chris Meyer, Stefan Niemeier, Andrew Ross, Jennifer Schmidt, Bart Sichel, and Rebecca Wahl. On aerospace, we would like to thank Justin Byars, Scott Gebicke, Nadine Griessmann, Sidhanth Kamath, Christoph Loos, Enrico Luciano, Mark Mitchke, Gary Moe, Fabrice Morin, Gabriele Mozzi, John Niehaus, Sree Ramaswamy, and Maxence Vancauwenberghe. For their help on payments, we are grateful to Rob Mau, Kausik Rajgopal, and Diogo Rau. We would also like to thank Kurt Adelberger and Rob Jenks for their input on energy productivity and to Vivien Singer for her expertise on macroeconomic theory and analytics.

Distinguished experts outside McKinsey provided invaluable insights and advice. We would particularly like to thank Bart van Ark, senior vice president and chief economist of The Conference Board, and Robert D. Atkinson, president of the Information Technology and Innovation Foundation in Washington, DC.

This report contributes to MGI's mission to help global leaders understand the forces transforming the global economy, improve company performance, and work for better national and international policies. As with all MGI research, we would like to emphasize that this work is independent and has not been commissioned or sponsored in any way by any business, government, or other institution.

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February 2011

Challenges and opportunities

In 2000–08,
productivity contributed
80% of annual
GDP growth

Without increased labor inputs,
productivity growth must accelerate
30%+ to sustain past
GDP growth rates

Americans born in 1960 saw
their per capita GDP grow
2.5 times by the age
of 40 . . .

Americans born in 2000
will see an increase of

1.6 times

Companies can close
3/4 of the gap to historic
GDP growth

Since 1929, US jobs and
productivity both grew in all but one

10-year period

From 2000 to 2008,
five sectors accounted for

35% of GDP,
but **75%** of productivity
growth

2008 labor productivity was

17% higher than the US
average in the Far West,
but **13%** lower in
the Plains

For the past 40 years, spending
on health care has grown at

4.9% while per capita GDP
has increased at **2.1%**

Over the next decade, the
United States could face a

1.9 million shortfall in technical
and analytical workers

Over the last decade, the US ranking in
infrastructure quality fell from

7th to **23rd**

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Executive summary

With the United States slowly recovering from recession, government and business leaders face the urgent task of reigniting growth and renewal in the American economy. They need to spur faster GDP growth, create jobs, and reestablish US competitiveness in a rapidly changing global economy. This is not only a short-term challenge; what matters more is the long-term growth pattern over the next several decades. A drop in the rate of GDP growth from its historic 50-year average of 3.3 percent per annum to, say, 1.5 percent for each of the next 20 years would be far more damaging to prosperity and jobs in the United States than even a double-dip recession sometime in the next 12 months.

To deliver economic prosperity for this generation and the ones that follow, the United States needs to retool the economy's engine so that it can run at a higher, sustainable growth rate for decades to come. The key to achieving this aim is productivity—the engine that has powered US growth in recent decades and been a source of US competitiveness. Research by the McKinsey Global Institute (MGI), the business and economics research arm of McKinsey & Company, finds that the United States needs to accelerate labor productivity growth to a rate not seen since the 1960s. Further, the United States needs to ensure that this productivity growth is broadly based, coming from efficiency gains, innovation, and increasing the value and quality of goods and services produced.

While this challenge is daunting, our research suggests that the United States can meet it. The US productivity engine has not run out of steam: we have identified sufficient opportunities to achieve the broad-based productivity acceleration necessary to match, and even surpass, historic GDP growth rates. However, to achieve this potential, we identify seven priority issues that need to be addressed by business leaders and policy makers.

MORE THAN EVER, THE UNITED STATES NEEDS TO RELY ON PRODUCTIVITY TO DELIVER GROWTH AND COMPETITIVENESS

For half a century, healthy increases in labor and productivity have together powered growth. The nation's labor force grew rapidly as the postwar baby-boom generation came of age and women streamed into the workplace. As a result, labor has contributed 1.6 percent to annual GDP growth since 1960. At the same time, productivity rose at an average 1.7 percent annual rate as business processes evolved and new technologies emerged. Together, they contributed to robust annual GDP growth of 3.3 percent in nearly equal proportions.

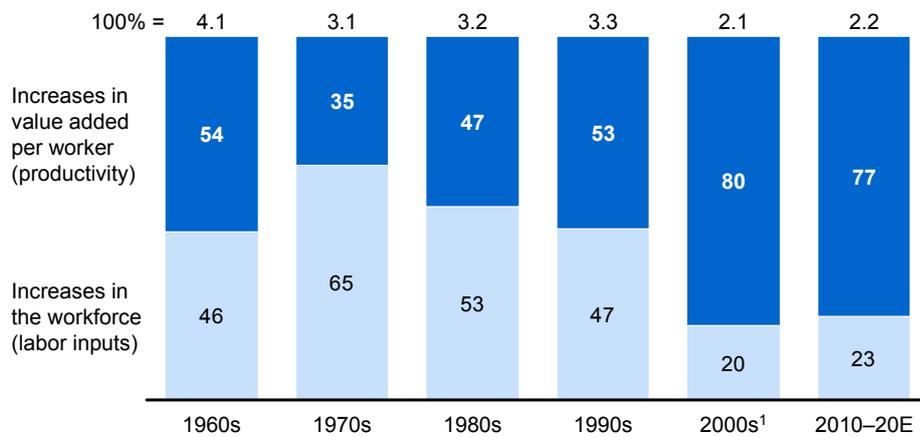
As baby boomers retire and the female participation rate plateaus, the US economy will receive significantly less lift from increases in the labor force and will therefore have to rely increasingly on productivity gains to fuel growth. In the first decade of the 21st century, productivity gains have already contributed 80 percent of total GDP growth compared with 35 percent in the 1970s. The expectation is that this trend of greater reliance on productivity for GDP growth will continue (Exhibit E1).

Exhibit E1

US GDP growth has been driven by increases in both labor and productivity, but labor's contribution is declining with demographic shifts

Contributions to growth in real US GDP, overall economy

Share of compound annual growth rate, 1960–2008, %



¹ 2000–08 data used for 2000s.

SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

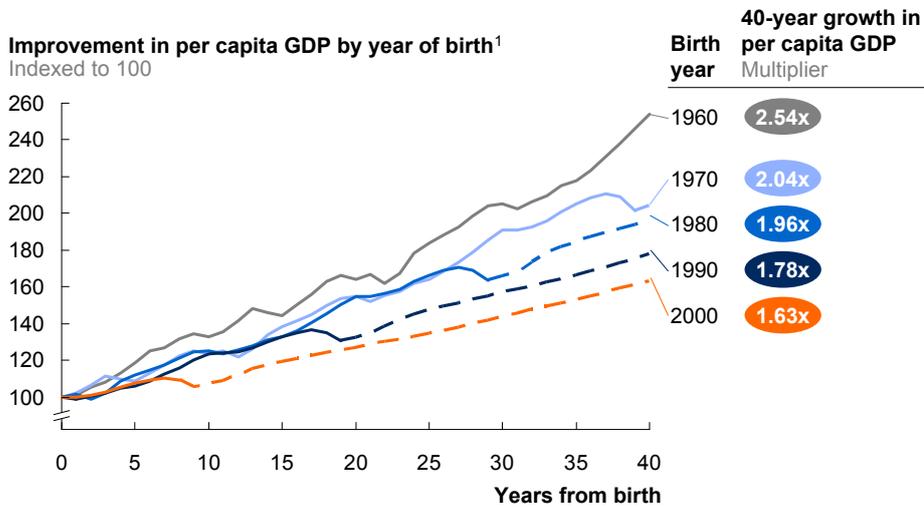
If, over the next ten years, the labor force were to grow as currently projected and productivity increases at the average 1.7 percent annual rate that the United States has posted both over the long term (1960 to 2008) and more recently (1990 to 2008¹), US GDP growth would decline to 2.2 percent per year. With the working-age population declining from 67 percent to 64 percent, Americans on average would experience slower gains in living standards than did their parents and grandparents (Exhibit E2).²

¹ Given the focus of this report on longer-term US productivity growth prospects, we have used 2000–2008 growth to understand pre-recession productivity trends in the last decade. For future growth projections, we assume a return to employment and GDP growth trends based on consensus estimates and apply productivity growth opportunity estimates to the underlying long-term trend.

² We use per capita GDP as the measure of living standards.

Exhibit E2

Without a productivity boost, younger generations will experience slower increases in their standard of living



1 GDP data for 2010–15 is based on McKinsey and Moody's consensus projections. Thereafter, we assume 1.7 percent productivity growth in line with the historical rate. The share of the working-age population will decline with UN projections (66 percent in 2009; 60 percent in 2030).

SOURCE: US Bureau of Economic Analysis; US Census Bureau; Moody's Economy.com; McKinsey Global Institute analysis

If we look just at the last two decades and aim to recapture the 2.8 percent growth in GDP of that period, labor productivity growth needs to increase from 1.7 percent per year to 2.3 percent—an acceleration of 34 percent. The United States is not alone in facing this productivity and growth challenge. Japan and Western Europe are already experiencing stronger demographic headwinds. The Japanese working-age population has started to decline, with a cumulative reduction of 9 percent projected by 2020. Within the EU-15, the working-age population is projected to fall by 4 percent over the next ten years.³ As a result, the productivity challenge in Japan and Europe is even larger than it is in the United States. Japan will need to accelerate productivity growth by more than 80 percent and the EU-15 by nearly 60 percent if they are to sustain their past growth rates.

GDP and productivity growth are also vital for competitiveness, ensuring that the United States remains an attractive place in which businesses can operate, invest, and expand. At the core of US competitive strength has been the economy's rapid rate of innovation and productivity growth, as well as the large, expanding, and dynamic US domestic market. The United States has led the world's developed nations in terms of productivity performance.⁴ Over the past two decades, while the US economy was delivering robust productivity growth of 1.7 percent annually, productivity growth in the EU-15 and Japan was 1.4 percent and 1.2 percent, respectively. By 2008, US labor productivity was 1.23 times that of Europe and 1.38 times that of Japan. However, it is important to note that emerging economies such as China and India are experiencing rapid GDP and productivity growth and are

3 Projections from the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World population prospects: The 2008 revision*. The EU-15 comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

4 Since 1995, McKinsey Global Institute has conducted a range of comparative productivity assessments on the United States, Western Europe, and Japan, drawing on McKinsey's industry-level expertise globally. For more, see www.mckinsey.com/mgi/.

intensifying the competitive pressure on the United States in an increasingly broad range of goods and services.

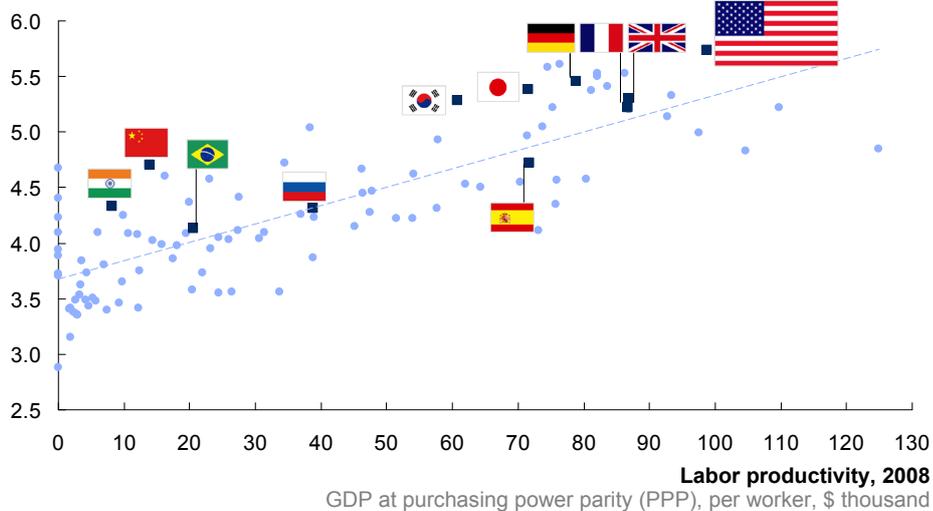
The correlation between productivity and competitiveness is well established and close, not only in the United States but also in economies around the world (Exhibit E3). Productivity is the key to ensuring competitiveness and growth, not just at the national level, but also for sectors and individual companies.

Exhibit E3

At the national level, productivity correlates closely with competitiveness

Correlation between productivity and competitiveness for a sample of countries

Global competitiveness score, 2008–09



SOURCE: World Economic Forum, *Global competitiveness report 2008–09*; The Conference Board

ACCELERATED PRODUCTIVITY GROWTH MUST INCLUDE BOTH EFFICIENCY GAINS AND INCREASES IN THE VALUE AND QUALITY OF GOODS AND SERVICES PRODUCED

By definition, the necessary acceleration in productivity can come either from efficiency gains—reducing inputs for given output—or by increasing the volume and value of outputs for any given input. The United States will need to see both kinds of productivity gains in order to experience balanced, sustainable growth. Efficiency gains are important not only for competitiveness—at the company, sector, and national levels—but also for facilitating the movement of labor and capital to new and growing sectors. Meanwhile, improving the quality and volume of goods and services facilitates a virtuous cycle of growth in which increases in value provide for rises in income that, in turn, fuel demand for more and better goods and services. This process ultimately spurs robust future growth and prosperity.

The productivity acceleration and rapid GDP growth that the United States enjoyed in the second half of 1990s was enabled by solid gains in both sources of productivity growth. Two sectors—large-employment retail, and very high-productivity semiconductors and electronics—collectively contributed 35 percent to that period's acceleration in productivity growth. This helped the private sector boost its

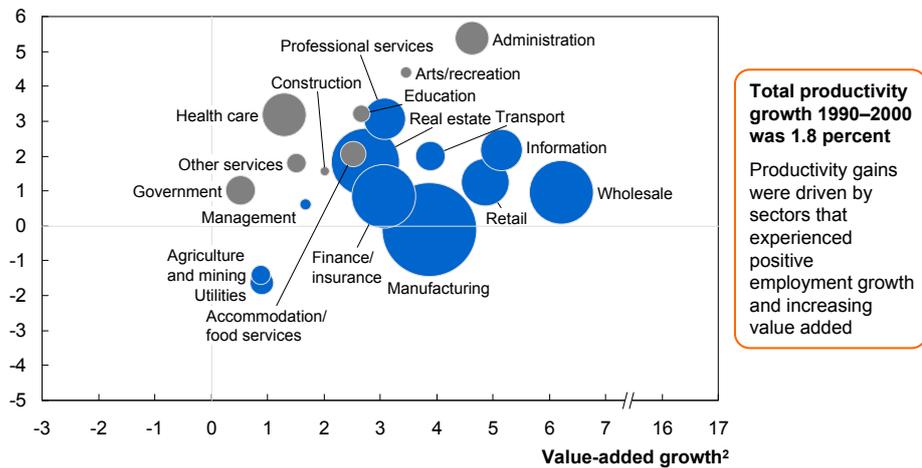
productivity growth from 1 percent in 1985 to 1995 to 2.4 percent in 1995 to 1999.⁵ At the same time, these two sectors added more than two million new jobs (Exhibit E4).

Exhibit E4

In the 1990s, productivity growth was driven by sectors with a virtuous cycle of jobs growth and increasing value added

Compound annual growth rate, 1990–2000, %

Employment growth



Total productivity growth 1990–2000 was 1.8 percent
Productivity gains were driven by sectors that experienced positive employment growth and increasing value added

1 Productivity contribution for 1990-2000 calculated using Moody's Economy.com data.
2 Value-added growth is the contribution of each sector to total GDP growth.
SOURCE: US Bureau of Economic Analysis; Moody's Economy.com; McKinsey Global Institute Sunrise Productivity Model

In contrast, the largest productivity gains since 2000 have come from sectors that experienced substantial employment reductions (Exhibit E5). Computers and related electronics, the rest of manufacturing, and information sectors have contributed around half of overall productivity growth since the turn of the century but reduced employment by almost 4.5 million jobs—more than 85 percent of which occurred before the onset of the recession. The sectors that added the most employment during this period tended to be ones with below-average productivity—notably the health sector.

Periods such as the years since 2000 have made many Americans suspicious that boosting productivity is a job-destroying exercise. But this does not hold true beyond the short term. Since 1929, every ten-year rolling period except one has recorded increases in both US productivity and employment. And even on a rolling annual basis, 69 percent of periods have delivered both productivity and jobs growth (Exhibit E6).⁶ What the United States needs is to return to the more broadly based productivity growth that the economy enjoyed in the 1990s. During that period, strong demand and a shift to products with a higher value per unit helped to ensure that sector employment expanded at the same time that productivity was growing—reigniting the virtuous cycle of growth in which productivity gains spur increased demand, in turn leading to higher economic growth.

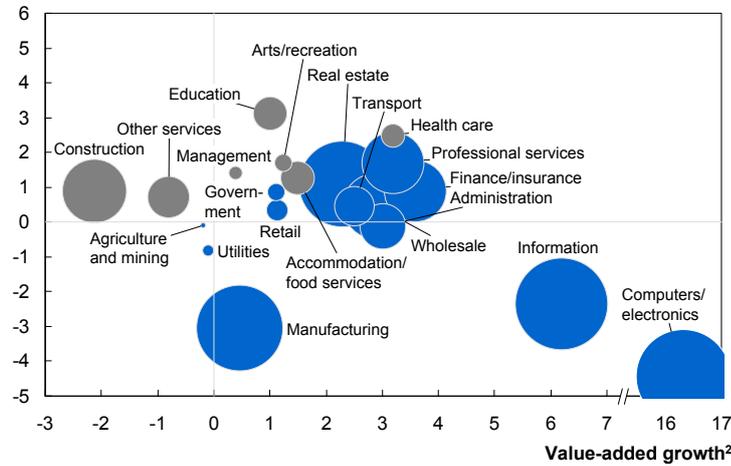
5 US productivity growth 1995–2000, McKinsey Global Institute, October 2001; *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi). Employment numbers come from the US Bureau of Economic Analysis.
6 The only exception is the period between 1944 and 1954 in the aftermath of the Second World War.

Exhibit E5

Since 2000, the largest contributions to productivity gain were driven by declining employment

Compound annual growth rate, 2000–08, %

Employment growth



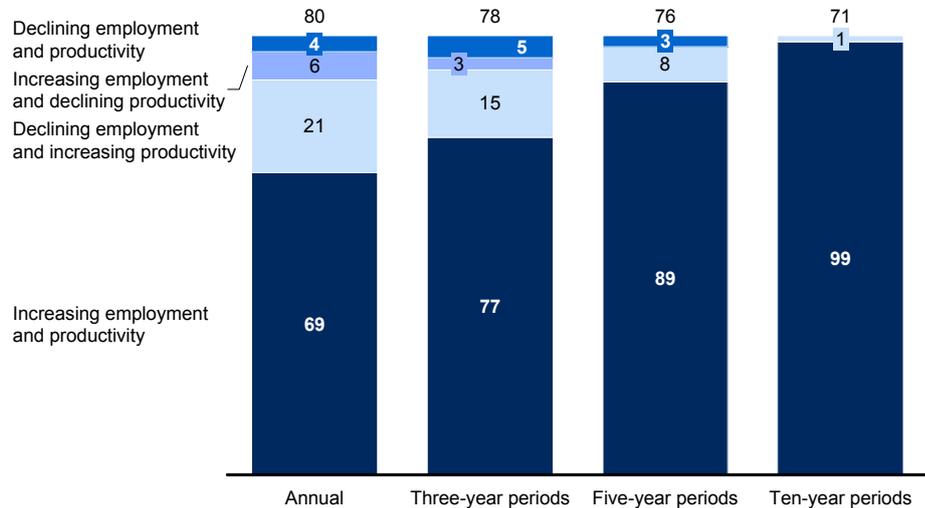
Total productivity growth 2000–08 was 1.6 percent
 Large share of productivity gains came from tradable sectors with large efficiency gains and job losses

1 Manufacturing sector excluding Computers/electronics sector.
 2 Value-added growth is the contribution of each sector to total GDP growth.
 SOURCE: US Bureau of Economic Analysis; McKinsey Global Institute Sunrise Productivity Model

Exhibit E6

The “trade-off” between aggregate employment and productivity levels is a short-term phenomenon

Rolling periods of employment and productivity change, 1929–2009
 %; periods



SOURCE: US Bureau of Economic Analysis

THE UNITED STATES HAS LARGE UNTAPPED POTENTIAL TO INCREASE PRODUCTIVITY AND GROWTH

Accelerating productivity to the degree necessary to maintain historic rates of GDP growth may seem a daunting challenge. However, our research finds that, despite strong aggregate productivity gains in the past two decades, the US productivity engine is not running out of steam. More than enough opportunities exist across the US economy to achieve the necessary productivity acceleration. We drew on McKinsey's industry expertise, 20 years of MGI research on US productivity covering 30 sectors, and recent MGI reports including an examination of the contribution of multinational corporations to the growth and health of the US economy. In this current report, we added to this body of work by examining sector contributions to aggregate growth and assessing opportunities for productivity improvement in three very different sectors—retail, aerospace, and health care.

We found evidence of productivity opportunities across these and other US sectors. Even sectors that have historically made large contributions to productivity growth have ample headroom to continue to innovate and become more efficient. Tradable sectors such as manufacturing will need to keep improving their productivity in the face of intense global competition; domestic sectors such as retail will need to do the same to cope with strong domestic competition. Unsurprisingly, sectors that have been persistent productivity laggards—notably the public sector and regulated sectors such as health care—have the potential for dramatic productivity gains. To capture all these opportunities will require large-scale changes (e.g., greater use of market-based mechanisms, including incentives to increase competition; leverage of technology; managerial innovations; and productivity best practices from the private sector).

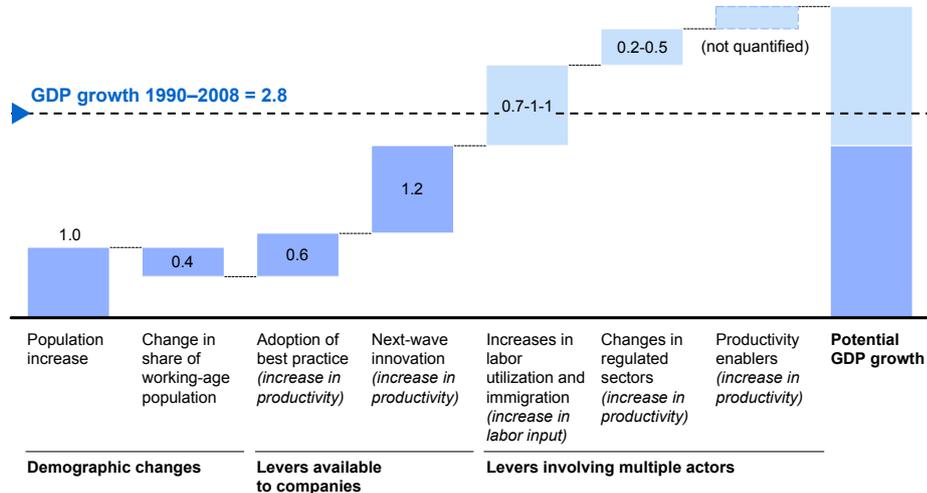
We have identified opportunities to diffuse best practices and implement emerging business and technology innovations that could achieve three-quarters of the productivity growth acceleration needed by the United States. The rest of the acceleration—and even more—can come from making structural changes in regulated sectors and strengthening productivity enablers. Furthermore, there is room to counteract demographic trends and increase the labor contribution to overall GDP growth. Government and business will need to take concerted action to change policies and practices across sectors and regions (Exhibit E7).

Exhibit E7

The United States can achieve historic levels of GDP growth—or better—by pursuing opportunities that require coordination across multiple actors

Potential GDP growth

Compound annual growth rate, 2010–20, %



SOURCE: Organisation for Economic Co-operation and Development; Central Intelligence Agency; World Bank; McKinsey Global Institute analysis

Adopting best practice more widely can deliver one-quarter of the necessary productivity acceleration

There is still considerable room for the United States to adopt best practice operational improvements. Take lean principles—the goal of which is to eliminate waste—as an example. Even in such sectors as retail, where US businesses have had a strong record on productivity, there is scope to do more. One way is to take lean practices from the stockroom to the storefront. Adjusting the scheduling of employee activities to account for peak shopping hours can substantially increase staff utilization and, at the same time, increase customer satisfaction.

Other sectors—US aerospace being an example—have thus far lagged behind in operational best practice. Despite being leading global exporters, aerospace companies have yet to adopt lean practices in the systematic way that we have seen among best-in-class automotive players, for instance. Public sector and regulated sectors such as health care have not faced strong pressure to use resources more efficiently, and this offers another significant opportunity.⁷ Health care players have only just begun to adopt lean operational principles. Hospitals, for example, have room to improve how nurses spend their time; at some hospitals, less than 40 percent of their time is spent with patients and the rest on tasks such as paperwork. Hospitals also can improve their discharge and admissions processes to reduce turnaround times and expand patient capacity.

⁷ Productivity in the public and regulated sectors is notoriously difficult to measure because there are no reliable metrics for sector output. Changes in value added are often poor indicators of changes in quality-adjusted output, whether in public sector activities such as federal or state governments, or regulated sectors like health care or education. Conversely, operational productivity improvements may not show up as changes in value added as measured. Despite these measurement issues, industry evidence suggests that quality-adjusted productivity growth in these sectors has significantly lagged behind that of private industries.

We have identified opportunities to adopt known best practices that, if applied across the private and relevant regulated sectors, could achieve one-quarter of the productivity acceleration necessary for sectors to return to historic rates of GDP growth.⁸ Forthcoming MGI research on Big Data and public sector productivity will shed further light on the biggest available opportunities.

Using the next wave of innovation could achieve a further half of the necessary productivity growth acceleration

Over the next ten years, many industries will tap into the productivity gains available from a wave of innovations coming on stream. To give a flavor of the opportunities available, we illustrate with three examples from our sector case studies. Economy-wide productivity gains are often the result of seemingly minor company-level changes that in combination can have large aggregate impact.

First, take enhanced business operations such as deeper supply chain integration. US companies have already made large gains in supply chain efficiency, but there is more to come (e.g., the declining cost of radio-frequency identification, or RFID, enables a new wave of end-to-end supply chain models). In retail, for instance, integrating physical and online supply chains both reduces costs through increasing the scale of inventory management and boosts revenue and value added by reducing markdowns.

Second, continued innovations in customer responsiveness and engagement can spur productivity growth. Companies can increase both revenue and customer satisfaction by improving how quickly and directly they respond to evolving customer preferences and behavior. Retailers can tailor targeted promotions as part of a peer review service and move toward self-service checkouts and information kiosks. The health care sector can encourage e-mail and phone communication rather than the frequent face-to-face visits that inflate outpatient care costs. The financial industry is looking to emerging service demands as a source of future growth (e.g., offering more effective management of personal finances through software that uses information across various accounts).

A third example is service and product innovation. Companies can boost productivity by innovating in what, and how, goods and services are provided to customers. Companies can provide services that supplement traditional product offerings (e.g., an office supply company can offer comprehensive procurement services). Retail banks and payment companies can find new ways to serve the nearly one-quarter of Americans who are unbanked or under-banked.

Many more such innovations are emerging from dynamic companies in a variety of sectors, and have the potential to transform industries and their value-added productivity growth, much like we saw in the 1990s with the "Wal-Mart effect." Continued innovation and its wide-scale adoption could capture half of the acceleration in productivity growth that the United States needs.

⁸ Lean principles do not necessarily apply uniformly across regulated sectors.

THE UNITED STATES SHOULD TACKLE SEVEN PRIORITIES TO ACHIEVE THE REMAINING PRODUCTIVITY ACCELERATION AND THEREBY DRIVE GROWTH AND PROSPERITY

The United States clearly faces a number of near-term challenges. The economy continues to fall short of creating the 200,000 jobs required each month to bring unemployment down to 5 percent by 2016. Meanwhile, government and consumer deleveraging will bear down on GDP growth, a pressure that could last three to five years beyond the recession.⁹ The United States needs to address issues of weak aggregate demand, debt and deleveraging, the stability of the financial system, and the deficit.¹⁰ While these are very important issues to tackle in the near term, they should not distract from the critical long-term imperative of sustaining growth through higher productivity. MGI is engaged in research on US jobs and labor market challenges, the results of which we will publish in 2011.

Some argue that economic development and technological innovation in the United States may have reached a plateau and that the US productivity engine is running out of steam. Our research suggests otherwise. We find that companies alone can deliver three-quarters of the acceleration in productivity growth that the United States needs to match historic growth rates by applying best practice across the economy and tapping the next wave of innovation. The United States has seen step changes in information technology and its application, and managerial innovations that have not yet worked their way fully through the economy. Furthermore, many new technologies—some in their early stages such as biotechnology and nanotechnology, others more developed such as cloud computing—could also accelerate productivity improvement.

But to obtain the last one-quarter of what's required—and potentially more—federal, state, and local governments need to tackle economy-wide barriers that have long hampered productivity growth. The key challenges are driving structural changes in public and regulated sectors (e.g., realigning incentives with productivity growth); and strengthening the skill base, infrastructure, and other underlying productivity enablers. An additional boost to growth is achievable by expanding labor force participation and migration to counteract demographic shifts.

We see seven major imperatives that the United States needs to meet if it is to achieve the productivity growth that is required to sustain its historic pace of GDP growth and continued prosperity. For each of these imperatives, there exists a rich set of potential solutions. Our examples are not meant to be exhaustive, and we invite others to contribute ideas to this ongoing dialogue about US growth and renewal and how the United States can address the seven priorities we highlight:

1. **Drive productivity gains in the public and regulated sectors.** Public and regulated sectors such as health care and education represent more than 20 percent of the US economy, but their persistently low productivity growth slows overall economic growth. McKinsey analysis has demonstrated that if the US public sector could halve the estimated productivity gap with similar private sector organizational functions, its productivity would be 5 to 15 percent higher

⁹ *Debt and deleveraging: The global credit bubble and its economic consequences*, McKinsey Global Institute, January 2010 (www.mckinsey.com/mgi).

¹⁰ Research from The Conference Board suggests that productivity improvements can alleviate the challenges of sovereign debt and fiscal deficits. The Conference Board, *Escaping the sovereign-debt crisis: Productivity-driven growth and moderate spending may offer a way out*, December 2010.

and would generate annual savings of \$100 billion to \$300 billion.¹¹ Many parts of these sectors could benefit from greater competitive intensity, more extensive use of technology, and applications of managerial innovations and productivity best practices learned from the private sector that are consistent with the broader goals of improved health and education outcomes.

2. **Reinvigorate the innovation economy.** Innovation can increase the quality and quantity of goods and services produced, contributing to productivity gains. US policy and regulation should provide the right incentives for private companies, which have a strong record of innovation, to continue to invest in innovation and expand their US-based R&D activities (e.g., extending and expanding R&D tax breaks)—thereby creating a virtuous cycle of US productivity growth.¹² Innovation has traditionally benefited from government contracts and research institutions such as DARPA, but, while the United States remains the global leader in R&D spending, others are rapidly catching up.¹³ Specifically, the United States needs to ensure that the IT infrastructure and technologies are in place to capture fully the transformational potential of digital technology. The potential ranges from Big Data—data-driven business decisions and actions—to cloud computing and the application of advances in biology and life science. All these new-wave innovations can potentially produce fresh productivity gains, notably in public and regulated sectors such as education and health care. Innovation that drives productivity is not limited to new technology. Managerial innovation, including the development of novel products and services, new business models, identifying fresh uses and markets for existing products, and better ways to organize business activities are equally critical aspects of innovation. Businesses and government need to address potential barriers to the productivity impact in these areas (e.g., privacy protection). MGI will publish new research on Big Data in spring 2011.
3. **Develop the US talent pool to match the economy of the future and harness the full capabilities of the US population.** The US talent pool is not growing fast enough to meet future demand, and the United States needs to work on multiple fronts to address this.¹⁴ We estimate that the United States may face a shortfall of almost two million technical and analytical workers and a shortage of several hundred thousand nurses and as many as 100,000 physicians over the next ten years. In the aerospace sector, 60 percent of the aerospace workforce is over 45 years old compared with 40 percent in the overall economy, posing a particularly acute skills challenge. The United States could alleviate these shortages by removing barriers to older workers staying in the workforce

11 See, for example, Thomas Dohrmann and Lenny T. Mendonca, "Boosting government productivity," *McKinsey Quarterly*, Number 4, 2004 (www.mckinseyquarterly.com); and *Accounting for the cost of US health care: A new look at why Americans spend more*, McKinsey Global Institute, November 2008 (www.mckinsey.com/mgi).

12 *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi).

13 The Defense Advanced Projects Research Agency (DARPA) is the research and development office of the US Department of Defense. For more on the role of government in innovative sectors, see *How to compete and grow: A sector guide to policy*, McKinsey Global Institute, March 2010 (www.mckinsey.com/mgi).

14 Previous McKinsey research found that a persistent gap in academic achievement between children in the United States and their counterparts in other countries deprived the US economy of as much as \$2.3 trillion in economic output in 2008. Interested readers can turn to Byron G. Auguste, Bryan Hancock, and Martha Laboissière, "The economic cost of the US education gap," *McKinsey Quarterly*, June 2009 (www.mckinseyquarterly.com).

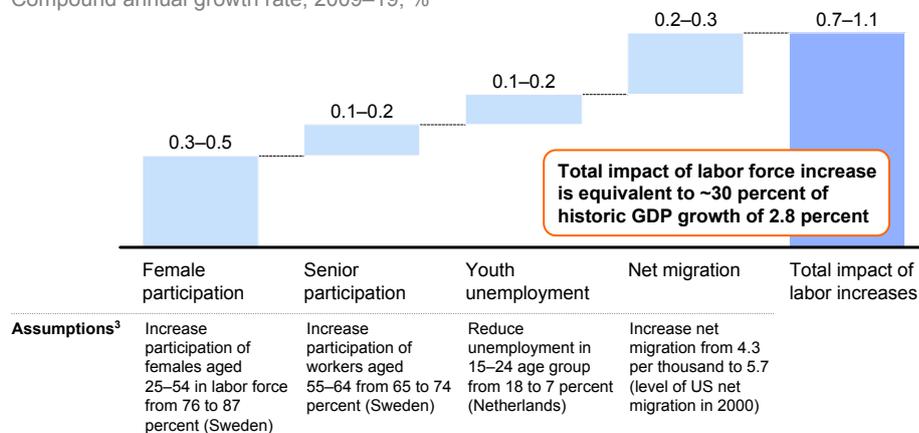
longer (e.g., altering disincentives in how health care costs for older workers are allocated; addressing defined benefit rules).¹⁵ The United States could also improve incentives to technical and analytical training, for example through innovative funding mechanisms and direct links between jobs and college or vocational training schools. Another front for action is immigration, where the United States could consider reducing barriers to the immigration of skilled workers by, for instance, increasing H-1B visa quotas, replacing quotas with a points-based system that rewards educational attainment, and/or easing barriers in the process of acquiring a green card (Exhibit E8).

Exhibit E8

Increasing the US labor force could add a significant amount to GDP growth but would likely require major changes in policy and practices

Increases in the workforce by lever¹

Compound annual growth rate, 2009–19, %²



1 Assumes all else remains constant (e.g., working hours and productivity levels). Numbers may not sum due to rounding.

2 Excludes impact of dynamic demographic changes over a ten-year period.

3 All assumptions are based on 2009 data comparing US with international levels; the exception is net migration, which compares US data for 2000 with US projections for 2010.

SOURCE: Organisation for Economic Co-operation and Development; Central Intelligence Agency; World Bank; McKinsey Global Institute analysis

4. **Build 21st-century infrastructure.** US infrastructure is inadequate to meet the needs of a dynamic, growing economy. At the same time, the quality of infrastructure from transportation to water systems has been in relative decline in the United States, which currently ranks 23rd in the quality of its overall infrastructure, undermining competitiveness.¹⁶ Multinational companies consistently rank infrastructure among the top four criteria they use to make decisions about where to invest.¹⁷ In addition, there is considerable scope for the United States to identify and implement leading-edge practices in infrastructure development from project selection to financing and delivery, sometimes using the vehicle of public-private partnerships.¹⁸ There is also scope to improve the use of demand-management techniques (e.g., city center congestion pricing; bridge tolls that vary by time of day).

15 *Talkin' 'bout my generation: The economic impact of aging US baby boomers*, McKinsey Global Institute, June 2008 (www.mckinsey.com/mgi).

16 World Economic Forum, *Global competitiveness report 2010–2011*.

17 *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi).

18 For a discussion of the infrastructure challenge and potential solutions in the United Kingdom, see *From austerity to prosperity: Seven priorities for the long term*, McKinsey & Company London and the McKinsey Global Institute, November 2010 (www.mckinsey.com/mgi).

5. **Enhance the competitiveness of the US business and regulatory environment.** The relative competitiveness of the US business and regulatory environment is declining—at a time when many international jurisdictions are streamlining processes for working with business and aggressively adjusting their regulatory framework in order to attract new investment. The United States, for example, scores particularly poorly on the burden of government regulation and red tape.¹⁹ The United States needs to reduce regulatory complexity, streamline the process of resolving disputes, and eliminate remaining sector-level barriers to more robust competition, particularly in small or developing segments (e.g., eliminate barriers to online auto sales or retail sales of pet medicines). As MGI has recently highlighted, countries are engaged in a global competition to attract companies to invest and participate in their economies. Many countries have taken huge steps to create attractive business environments. The United States should clearly not copy all the efforts that other countries have taken but should, at least, learn from them and realize the need to continue to cultivate an attractive business environment for the world's most innovative and competitive companies.²⁰
6. **Embrace the energy productivity challenge.** Global demand for energy is predicted to rise at an accelerating pace over the next 20 years, imposing increasing environmental costs and potentially straining supply.²¹ In this context, the global focus needs to shift to how to use existing energy supplies more productively. The United States has lagged behind other countries' efforts to pursue increased energy productivity—the level of GDP obtained from each unit of energy consumed. The United States also risks being left behind in important emerging technologies. Clear, long-term policy could encourage the market discipline that drives productivity. For example, fuel-economy standards could encourage the adoption of existing energy-saving technologies and spur the development of new ones. Labeling and innovations such as advanced metering can help make consumers more value conscious in their energy choices.
7. **Harness regional and local capacities to boost overall US growth and productivity.** Cities and regions in the United States have markedly different growth and productivity trajectories, and there is insufficient sharing of best practice among them. Yet there is a rich seam of experimentation with effective solutions at both the federal and local levels that offers scope for shared performance metrics (e.g., a defined set of tracking variables made transparent through digital media) and the transfer of best practice. All levels of government should also seek cross-regional alliances in economic development.

19 *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi).

20 *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi).

21 *Curbing global energy demand growth: The energy productivity opportunity*, McKinsey Global Institute, May 2007 (www.mckinsey.com/mgi).



Tackling this expansive agenda requires concerted action on several fronts. Private sector companies should take on the opportunities to improve productivity within their operations. Public sector entities should adopt productivity best practices from the private sector in areas where there are analogies between private sector activities (e.g., payroll processing) and their own. Equally important, policy makers will need to improve the alignment of incentives and investments to create an environment that spurs productivity. In some areas, progress will require partnership between public and private players to address system-wide challenges and bottlenecks. Policy makers should engage with the private sector, as well as learn from the actions that other economies are taking to create competitive economies. By doing so, they will reestablish the United States as a crucible from which new world-leading innovations and businesses emerge and ensure that the next generations of citizens enjoy the same pace of rising prosperity as did their parents and grandparents.

1. Retooling the US growth engine

Beyond the immediate priorities of ensuring that the economy rebounds after the recent recession, the United States needs to prepare for the long haul by retooling the engine that has been so important in driving US growth—labor productivity. The economy needs to boost productivity growth to a rate not seen since the 1960s if it is to counter a less positive demographic environment. Productivity growth needs to come from both efficiency gains and innovations that increase the quality and quantity of goods and services produced per worker in order to sustain GDP growth, create jobs, and retain the economy's competitive edge.

GDP and productivity growth are vital for competitiveness, ensuring that the United States remains an attractive place in which businesses can operate, invest, and expand. At the core of US competitive strength has been the economy's rapid rate of innovation and productivity growth, as well as its large and expanding domestic market. The United States has led the world's developed nations in terms of its productivity performance.²² Over the past two decades, the US economy delivered robust productivity growth of 1.7 percent annually, compared with 1.4 percent in the EU-15 and 1.2 percent in Japan. By 2009, compared with the world's largest economies, US labor productivity was 1.23 times that of Europe and 1.38 times that of Japan.

Strong productivity has fueled the economic growth that has positioned the United States as one of the world's largest and most dynamic domestic markets. The United States cannot compete with rapidly growing developing economies based on low wages and therefore must ensure that productivity-driven growth will continue to be the United States' true competitive advantage. Cultivating and enhancing this advantage is important to ensuring the United States' continued competitiveness in the world economy.

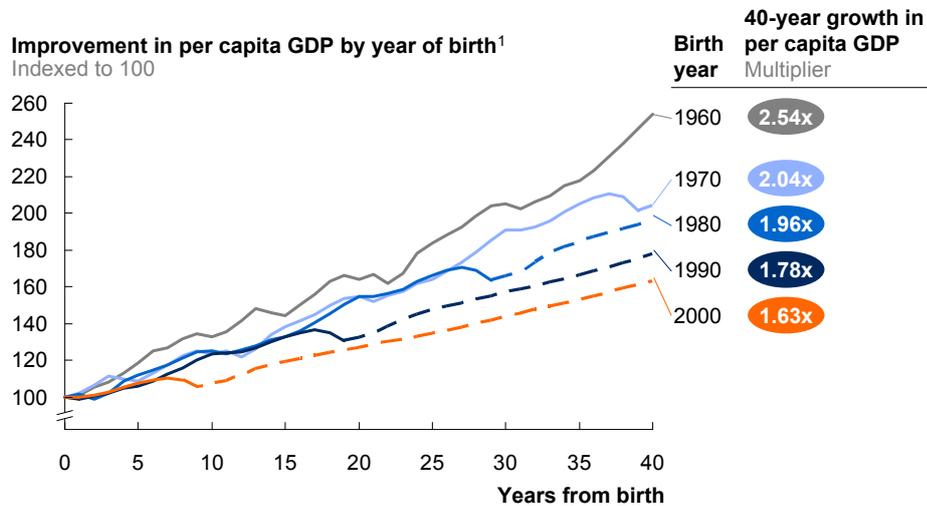
As favorable demographic trends are coming to an end, the US productivity imperative is more important than ever. The McKinsey Global Institute (MGI), the business and economics research arm of McKinsey & Company, finds that the United States needs to accelerate labor productivity growth by 34 percent from the rate of the past 20 years, from 1.7 percent per year to 2.3 percent. If it does not, Americans will experience slower gains in living standards than did their parents and grandparents, and the US economy would risk becoming less attractive as a location for businesses (Exhibit 1).

In this report, we discuss why productivity is important to maintain both rising living standards and national competitiveness. We also detail the size of the US productivity challenge, discuss some of the opportunities that exist to meet that challenge, and, finally, outline a seven-point agenda for government and business to address broad, economy-wide issues that today hinder fully capturing the productivity and growth potential.

22 Since 1995, McKinsey Global Institute has conducted a range of comparative productivity assessments on the United States, Western Europe, and Japan, drawing on McKinsey's industry-level expertise globally. For more, see www.mckinsey.com/mgi/.

Exhibit 1

Without a productivity boost, younger generations will experience slower increases in their standard of living



¹ GDP data for 2010–15 is based on McKinsey and Moody's consensus projections. Thereafter, we assume 1.7 percent productivity growth in line with the historical rate. The share of the working-age population will decline with UN projections (66 percent in 2009; 60 percent in 2030).

SOURCE: US Bureau of Economic Analysis; US Census Bureau; Moody's Economy.com; McKinsey Global Institute analysis

PRODUCTIVITY IS THE KEY TO RISING LIVING STANDARDS AND COMPETITIVENESS

Productivity gains make it possible for a country's economy to grow faster than its workforce, thereby increasing per capita GDP. This is true at the national, regional, and local levels. Between 2000 and 2008, employment as a share of population shrank in all regions across the United States, yet productivity growth drove increases in per capita GDP (Exhibit 2). For instance, the Mideast region is 11 percent more productive than the US average and enjoys a per capita GDP level that is 15 percent above average—with employment per capita just 2 percentage points above average. The Far West region, which has led the country on productivity growth, also experienced an increase in per capita GDP that has been 35 percent higher than the overall economy.

GDP and productivity growth also matter for competitiveness.²³ The correlation between productivity and competitiveness is well established and close, not only in the United States but also in economies around the world (Exhibit 3).

²³ There are two broad ways of assessing national competitiveness. An "outcome" view sees competitiveness as reflecting the GDP and productivity performance of an economy. An "input" view treats competitiveness as an amalgam of institutional and business characteristics that help create the conditions for a productive, growing economy. The competitiveness "ranking systems" published by the World Economic Forum (WEF) and International Institute for Management Development (IMD) are prime examples of this approach. These two perspectives correlate reasonably closely as countries with efficient businesses, markets, and government institutions (measured by the input view) also tend to have higher productivity (leading to outcomes) and enjoy higher GDP per worker.

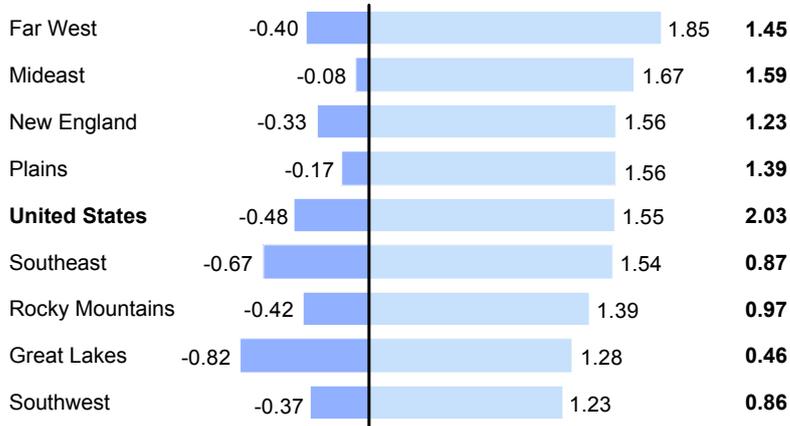
Exhibit 2

Productivity gains have led per capita GDP growth

Contribution to per capita GDP growth, 2000–08
Compound annual growth rate, %

Productivity growth
Per capita employment growth

Per capita GDP growth, 2000–08
Compound annual growth rate, %



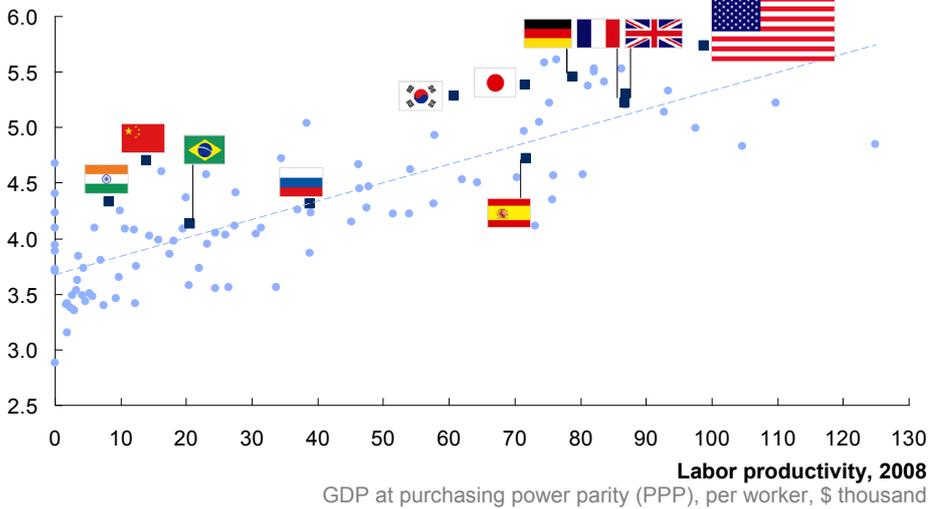
SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 3

At the national level, productivity correlates closely with competitiveness

Correlation between productivity and competitiveness for a sample of countries

Global competitiveness score, 2008–09



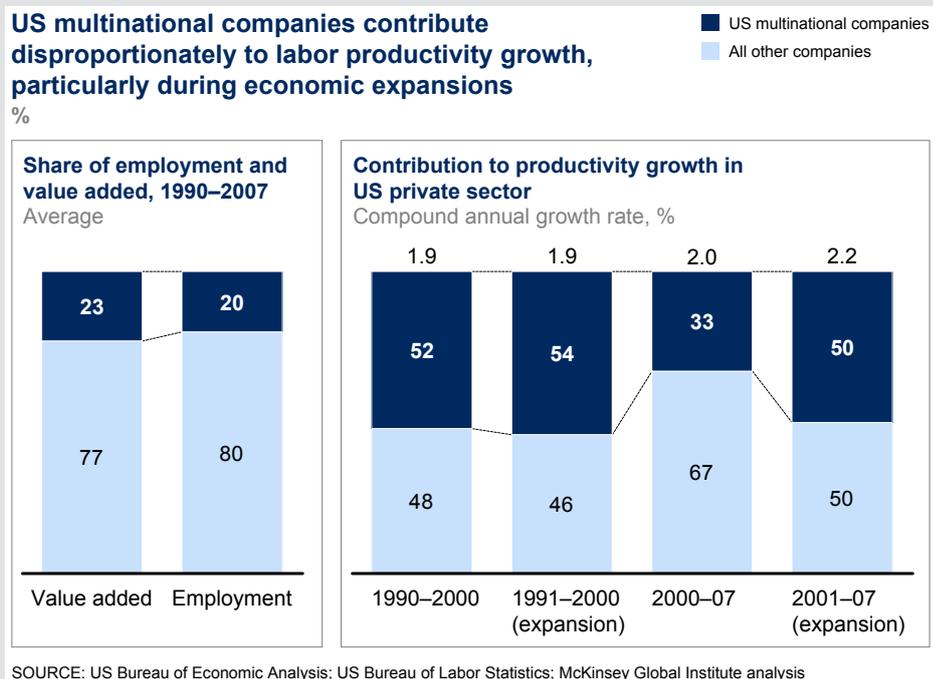
SOURCE: World Economic Forum, *Global competitiveness report 2008–09*; The Conference Board

Strong productivity has fueled the economic growth that has made the United States one of the world's largest and most dynamic domestic markets. Given that more than half of multinational company investments are located close to the markets they serve, expanding the local economy further enhances US attractiveness for businesses.²⁴ The experience of US multinational companies demonstrates how critical productivity is to success in an increasingly competitive global economy (see box 1, "Multinational corporations and US productivity growth").

Box 1. Multinational corporations and US productivity growth

Recent MGI work found that US multinational companies have played a critical role in driving private sector labor productivity growth, in particular during expansions that followed recessions. Despite representing only about 20 percent of economic activity (19 percent of employment and 23 percent of value added in 2007), multinational companies contributed 41 percent to overall productivity growth from 1990 to 2007 (Exhibit 4). Starting from levels similar to those for all other US companies in 1990, multinational companies increased productivity more than twice as fast, with an annual growth rate of 3.6 percent compared with 1.5 percent of the rest of private sector (Exhibit 5). By 2007, their value added per worker was 40 percent higher than that of other companies in the economy.

Exhibit 4

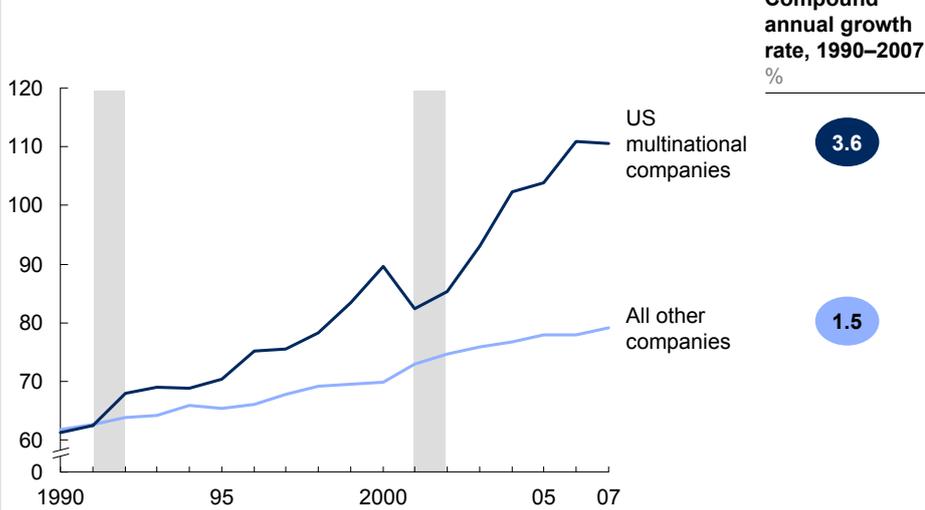


²⁴ *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi).

Exhibit 5

US multinational companies have increased productivity more than twice as fast as other US private sector firms

Labor productivity (real value added per worker)
\$ thousand, 2000



SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

Innovation and competition fuel the productivity performance of multinational companies. In 2007, US multinationals financed three-quarters of private sector R&D spending and spent four times the private sector's average R&D per employee, growing R&D spending at an inflation-adjusted rate of 4 percent over the decade. Multinationals concentrated on specific sectors: 44 percent of their economic activity is within globally competitive sectors, compared with 24 percent of all companies. Numerous MGI studies globally have shown the positive impact of competitive environment on productivity.

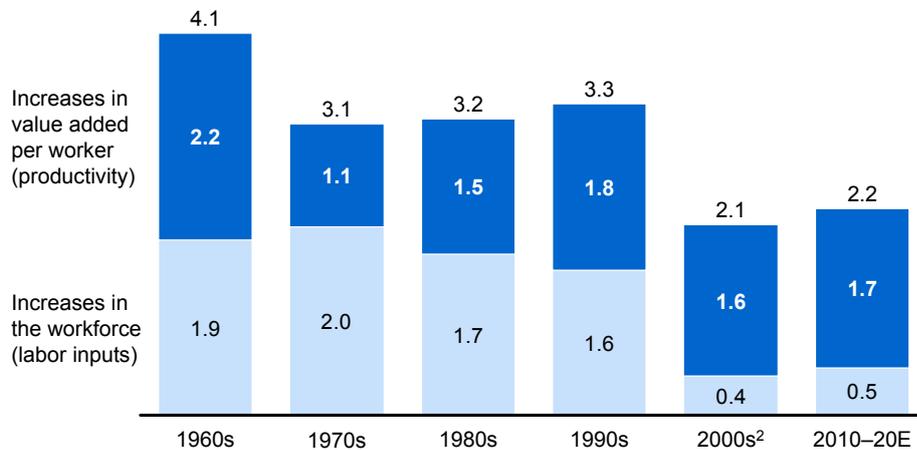
LESS FAVORABLE US DEMOGRAPHICS INTENSIFY THE PRODUCTIVITY IMPERATIVE

Since the 1960s, the US economy has achieved average annual growth of 3.3 percent, increased in size nearly fivefold, and tripled real per capita GDP.

Healthy increases in labor inputs and productivity have together fueled US economic growth. The nation's labor force grew rapidly as the postwar baby-boom generation came of age and women streamed into the workplace (Exhibit 6). Labor has contributed 1.6 percent to annual GDP growth of 3.3 percent since 1960, while productivity has increased at an average 1.7 percent annual rate as business processes evolved and new technologies emerged.

Exhibit 6**While the contribution of productivity to US GDP growth has been fairly constant, labor's contribution is declining with demographic shifts**

Contributions to growth in real US GDP, overall economy¹
Compound annual growth rate, 1960–2008, %



¹ Numbers may not sum due to rounding.

² 2000–08 data used for 2000s.

SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

Today, however, the contribution from labor is slowing down as baby boomers retire and female participation rate has plateaued. In the next ten years, the proportion of working-age Americans will decline from 67 percent to 64 percent. By the 2020s, the contribution of labor to US GDP growth rates is expected to decline to just 0.5 percent from a peak of 2.0 percent in the 1970s.

If labor force participation were to grow as currently projected and productivity continued to increase at its past average rate, US GDP growth would decline to 2.2 percent per year.

Our analysis suggests that there is room to add workers to the US economy by encouraging older Americans to continue to work longer and by expanding immigration and the participation of women and young people in the workforce. Boosting participation could potentially add up to 1 percentage point to GDP growth (Exhibit 7). Previous MGI research points to tangible changes—such as modifications to Social Security benefits—that could encourage older Americans to remain in the workforce longer.²⁵ However, the experience of other countries suggests that to boost participation across the board—including older Americans, youths, women, and immigrants—would require significant modifications in US public policy. Forthcoming MGI research will discuss several of these issues in greater depth.

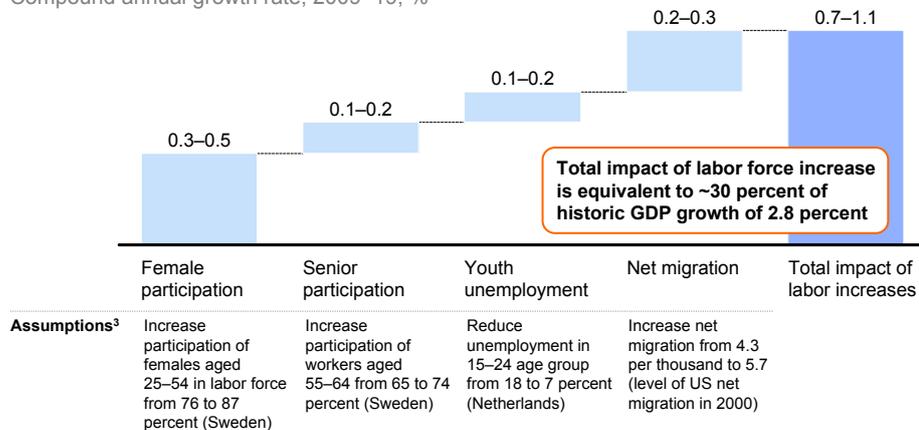
²⁵ *Talkin' 'bout my generation: The economic impact of aging US baby boomers*, McKinsey Global Institute, June 2008 (www.mckinsey.com/mgi).

Exhibit 7

Increasing the US labor force could add a significant amount to GDP growth but would likely require major changes in policy and practices

Increases in the workforce by lever¹

Compound annual growth rate, 2009–19, %²



1 Assumes all else remains constant (e.g., working hours and productivity levels). Numbers may not sum due to rounding.
 2 Excludes impact of dynamic demographic changes over a ten-year period.
 3 All assumptions are based on 2009 data comparing US with international levels; the exception is net migration, which compares US data for 2000 with US projections for 2010.
 SOURCE: Organisation for Economic Co-operation and Development; Central Intelligence Agency; World Bank; McKinsey Global Institute analysis

Without significant change in the labor market environment, the only remaining source of GDP growth is improved productivity. If labor productivity does not accelerate to compensate for a lower contribution from labor, annual GDP growth would slow from 2.8 percent in recent years to 2.2 percent by 2020. Per capita GDP growth would decelerate from 1.7 percent to 1.3 percent.²⁶ Some commentators have suggested that productivity growth could be even weaker than historically and are predicting that the United States will experience the slowest growth in living standards since George Washington was president (see the appendix for a short discussion on the range of external estimates of US productivity growth).²⁷

A SIGNIFICANT ACCELERATION IN PRODUCTIVITY GROWTH IS NECESSARY TO COUNTERACT THE DEMOGRAPHIC SHIFT

To maintain historical GDP growth rates, US productivity growth would need to accelerate by 34 percent from the rates seen in the past two decades. If we look at the productivity imperative from the point of view of the rising living standards—per capita GDP—that Americans have enjoyed for much of the country's history, the United States would need to see productivity growth rise by at least 23 percent above the already high baseline set over the past 20 years. These rates of productivity growth have not been achieved since the 1960s (Exhibit 8). Unless the United States meets this productivity challenge, US businesses will see slower growth in their domestic markets and global companies will find local production less attractive

26 By economic growth, we mean increases in GDP—the most commonly used measure of output—across all sectors. For growth in recent years, we refer to the annual average rate of growth from 1990 to 2008. When we discuss productivity, we mean labor productivity unless otherwise stated. However, our labor productivity measure intentionally includes productivity gains obtained from increasing capital intensity or resource inputs, as well as their productivity.

27 Robert J. Gordon, *The slowest potential output growth in U.S. history: Measurement and interpretation*, Symposium on the Outlook for Future Productivity Growth at the Federal Reserve Bank of San Francisco, November 2008.

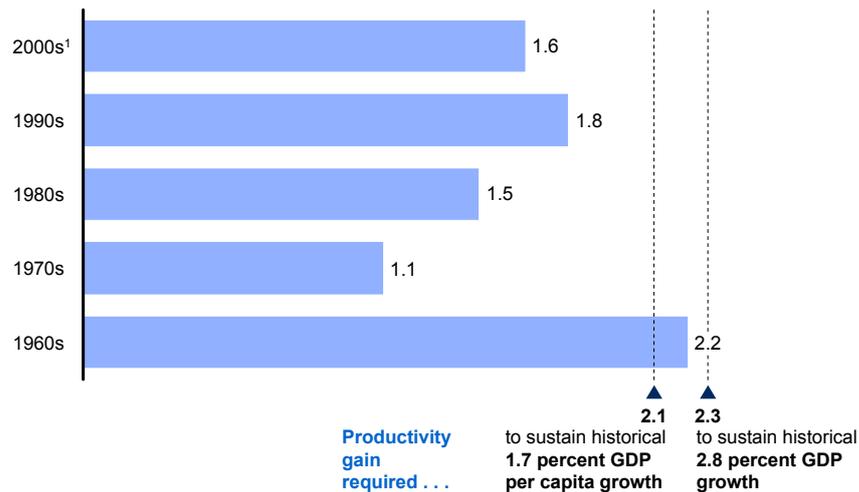
as the growth of the US economy slows down. Younger generations of Americans will not experience the growth in living standards their parents and grandparents enjoyed.

Exhibit 8

The productivity gains needed to sustain historic GDP growth rates are ambitious, having last been achieved more than 50 years ago

Productivity growth rates

Compound annual growth rate, %



¹ Includes 2000–08.

SOURCE: US Bureau of Economic Analysis; Census 2009 population estimates; McKinsey Global Institute analysis

The United States is not alone in facing this challenge. Japan, for instance, will need to boost productivity growth by more than 80 percent to counteract extreme demographic drag on growth. The EU-15 on average will have to increase productivity by nearly 60 percent to combat demographic challenges. Meanwhile, China has posted strong productivity-driven growth over the last two decades with average annual productivity gains of more than 8 percent. However, to sustain past rates of growth, it too will need faster productivity gains to counter the impact of aging over the coming decades (Exhibit 9).

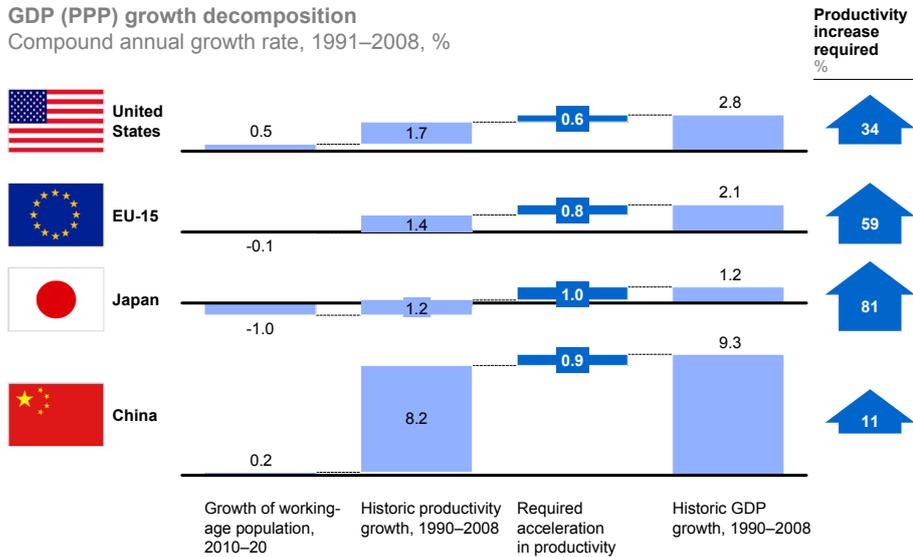
Cities and regions in the United States have varying productivity, employment, and growth rates and therefore are at different starting points from which to face this productivity challenge. From 2000 to 2008, 20 metropolitan areas accounted for more than half of total US productivity growth (Exhibit 10). The top contributors to nationwide productivity included cities with a range of population sizes, from the metropolitan area of Austin with 1.6 million people to the New York City area with nearly 19 million inhabitants. All but two of the top 20 contributors—San Jose and San Francisco—also saw positive employment gains during the period. Looking at the regional level, some areas lag behind the national average both in their absolute productivity and their productivity growth (Exhibit 11). Ensuring the geographic diffusion of best practices and innovations is another lever for boosting the overall productivity performance of the United States.

Exhibit 9

Many advanced economies will experience demographic shifts that intensify the productivity imperative

GDP (PPP) growth decomposition

Compound annual growth rate, 1991–2008, %



SOURCE: US Bureau of Economic Analysis; Census 2009 population estimates; The Conference Board; United Nations Population Division; McKinsey Global Institute analysis

Exhibit 10

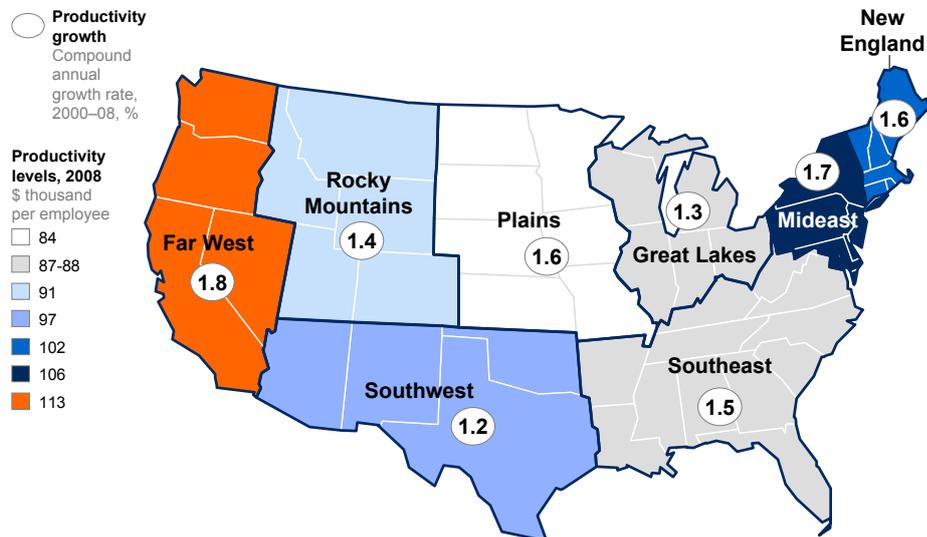
The top 20 US cities account for more than 50 percent of national productivity growth and approximately 40 percent of GDP

Metropolitan statistical area	Population, 2008 Million	Contribution (%)		Compound annual growth rate, 2000–08 %		
		Productivity growth, 2000–08	GDP, 2008	Productivity	GDP	Employment
New York	18.8	12.2	8.1	2.0	2.6	0.6
Los Angeles	12.9	6.7	4.9	1.8	2.4	0.5
Washington, DC	5.3	4.1	2.5	2.2	3.7	1.5
Dallas	6.1	3.3	2.3	2.0	2.9	0.9
Chicago	9.5	2.9	3.4	1.2	1.3	0.1
Boston	4.5	2.6	2.0	1.8	1.8	0.1
Houston	5.6	2.5	2.4	1.2	3.0	1.8
San Francisco	4.2	2.0	1.9	1.6	1.1	-0.4
Philadelphia	5.8	1.9	2.1	1.2	1.7	0.5
San Diego	3.0	1.9	1.2	2.1	3.4	1.3
Portland	2.2	1.8	0.7	3.5	4.3	0.8
Miami	5.4	1.7	1.6	1.6	3.0	1.4
San Jose	1.8	1.5	0.8	2.8	1.5	-1.3
Minneapolis	3.2	1.4	1.2	1.6	2.0	0.4
Pittsburgh	2.4	1.2	0.8	2.2	2.4	0.3
Austin	1.6	1.1	0.6	2.9	4.8	1.8
Baltimore	2.7	1.1	0.9	1.6	2.3	0.7
Phoenix	4.2	1.1	1.2	1.3	4.0	2.7
Tampa	2.7	1.0	0.8	1.8	2.5	0.7
Atlanta	5.3	0.9	1.7	0.7	2.0	1.3
Total		53%	41%			

SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; Moody's Economy.com; McKinsey Global Institute analysis

Exhibit 11**Productivity differs significantly across US regions**

Productivity levels and growth



SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

PRODUCTIVITY GROWTH SINCE 2000 HAS RELIED MORE ON EFFICIENCY GAINS THAN ON INCREASES IN THE VALUE AND QUALITY OF OUTPUTS

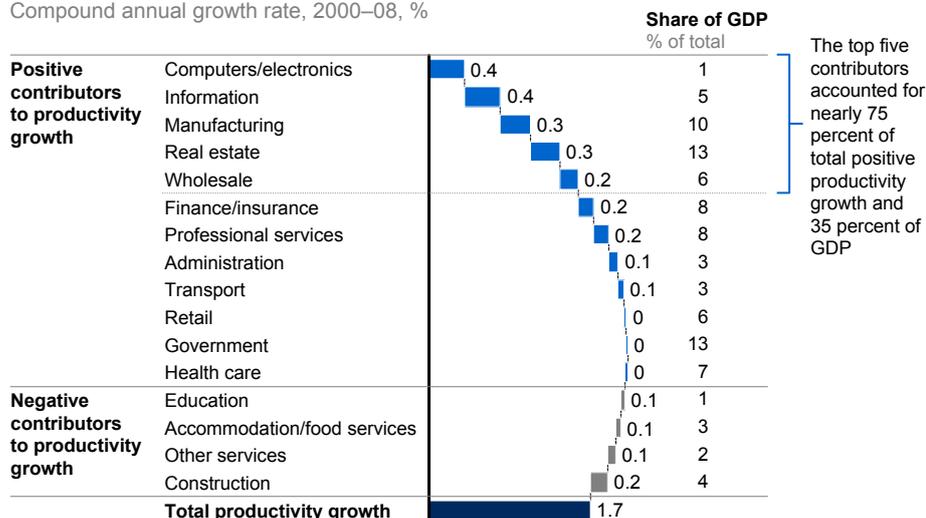
The US economy has experienced robust productivity growth over the past 20 years compared with other developed economies. The United States has posted annual productivity growth of 1.7 percent during this period, versus 1.4 percent in the EU-15 and 1.2 percent in Japan. In the United States, the private sector has fueled healthy economy-wide productivity growth, with businesses achieving an average increase in productivity of 1.9 percent a year in the 1990s and 1.7 percent in the 2000s. From 2000 to 2008, five sectors accounted for 75 percent of total positive productivity growth while accounting for just 35 percent of GDP (Exhibit 12).

Exhibit 12

The top five sector contributors had a disproportionate impact on total productivity growth between 2000 and 2008

Contributions to labor productivity growth¹

Compound annual growth rate, 2000–08, %



¹ Excludes sectors with contributions with an absolute value of less than 0.015 percent.

SOURCE: US Bureau of Economic Analysis; US Bureau of Labor Statistics; McKinsey Global Institute analysis

Although rates of aggregate US productivity growth have been similar in the 1990s and 2000s, the underlying nature of that growth has changed between the two decades. There are two major sources of productivity growth: efficiency gains that reduce inputs for given output; and expanding output through innovations that improve the quality or value of goods and services.

Efficiency is important. Less waste and more efficient operations reduce costs and can, on aggregate, lead to higher employment as long as the savings are put back to work elsewhere in the economy. Companies can pass on cost savings to their customers in the form of lower prices, leaving households and businesses with more money to spend elsewhere. Companies can also reinvest savings from more efficient operations into new activities. New purchases or investments are, in turn, a source of growth and jobs in the economy overall.

Yet productivity is not just about efficiency. It is as much about expanding output through innovations that improve the performance, quality, or value of goods and services. The productivity acceleration and rapid GDP growth that the United States enjoyed in the second half of the 1990s was enabled by solid gains in both sources of productivity growth.²⁸ Two sectors—large-employment retail and very high-productivity semiconductors and electronics—collectively contributed 35 percent to that period's acceleration in productivity growth. This helped the private sector boost its productivity growth from 1 percent in 1985 to 1995 to 2.4 percent in 1995 to 1999.²⁹ At the same time, these two sectors added more than two million new jobs (Exhibit 13).

²⁸ *US productivity growth 1995–2000*, McKinsey Global Institute, October 2001; *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi). Employment numbers come from the US Bureau of Economic Analysis.

²⁹ *US productivity growth 1995–2000*, McKinsey Global Institute, October 2001; *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi).

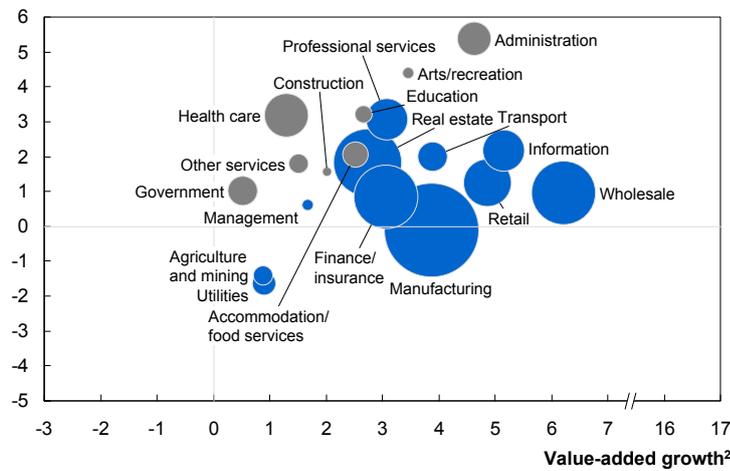
In contrast, the largest productivity gains since 2000 have come from sectors that have had substantial employment reductions (Exhibit 14). Computers and related electronics, the rest of manufacturing, and information sectors contributed around half of overall productivity growth since the turn of the century but reduced employment by almost 4.5 million jobs—more than 85 percent of which occurred before the onset of the recession. The sectors that added the most employment during this period tended to be ones with lower average productivity—notably the health sector.

Exhibit 13

In the 1990s, productivity growth was driven by sectors with a virtuous cycle of jobs growth and increasing value added

Compound annual growth rate, 1990–2000, %

Employment growth



Total productivity growth 1990–2000 was 1.8 percent
Productivity gains were driven by sectors that experienced positive employment growth and increasing value added

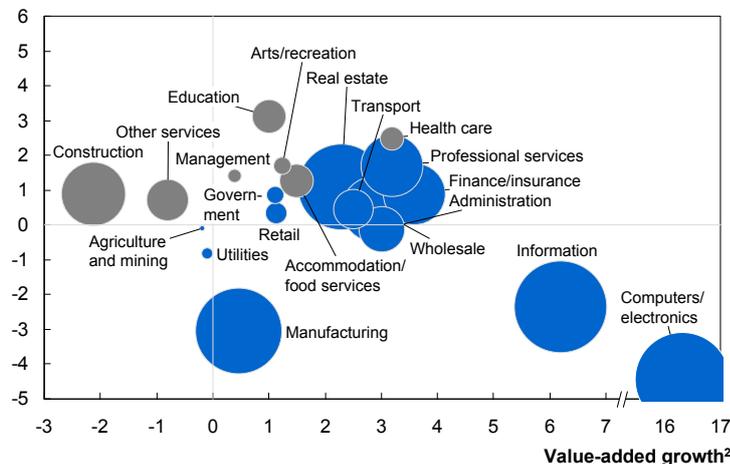
1 Productivity contribution for 1990-2000 calculated using Moody's Economy.com data.
2 Value-added growth is the contribution of each sector to total GDP growth.
SOURCE: US Bureau of Economic Analysis; Moody's Economy.com; McKinsey Global Institute Sunrise Productivity Model

Exhibit 14

Since 2000, the largest contributions to productivity gain were driven by declining employment

Compound annual growth rate, 2000–08, %

Employment growth



Total productivity growth 2000–08 was 1.6 percent
Large share of productivity gains came from tradable sectors with large efficiency gains and job losses

1 Manufacturing sector excluding Computers/electronics sector.
2 Value-added growth is the contribution of each sector to total GDP growth.
SOURCE: US Bureau of Economic Analysis; McKinsey Global Institute Sunrise Productivity Model

Periods such as the last ten years have made many Americans suspicious that boosting productivity is a job-destroying exercise. But this does not hold true beyond the short term (see box 2, “Long-term economic growth through higher productivity and more jobs”). Instead, our research shows that, to create jobs at the same time as achieving the substantial productivity growth acceleration it requires, the United States needs to return to the more broadly based productivity growth that the economy enjoyed in the 1990s.

Box 2. Long-term economic growth through higher productivity and more jobs

Economic growth comes from higher productivity and increasing employment, and—contrary to the view held by many people—productivity gains improve welfare over time without the need to reduce employment. This is true across economies. The United States has sustained both higher aggregate productivity levels and higher levels of employment than the EU-15 over the last five decades. In 2008, US labor productivity was about 15 percent above the average of the EU-15, while per capita labor inputs were 25 percent above EU-15 levels.³⁰ We have also seen parallel increases in productivity and employment over longer periods. Since 1960, US labor productivity has grown by a factor of 2.3 and the number of jobs in the US economy has increased twofold. Since 1929, every ten-year rolling period except one has had increases in both productivity and employment. The one exception is the period from 1944 to 1954, when the economy was adjusting to postwar dynamics and employment declined by 0.3 percent.

There are three reasons that productivity and job growth can—and often do—complement each other. First, there is the cost savings point we have noted—cost-reducing productivity gains can, on aggregate, lead to higher employment if consumers benefit from those savings in the form of lower prices and spend them. Sometimes price declines boost demand of the same good or service. For instance, the falling cost of telecommunications services means that consumers now not only spend more time talking on their phones than they did 20 years ago, but have dramatically broadened the ways they use telecommunications services for data, sound, and image transfers. In other cases, consumers can spend savings on one product elsewhere. Since 1990, higher energy efficiency in California has led to \$56 billion savings on household energy bills compared with other US states. Because households spent those savings on more labor-intensive goods and services, the state was able to create 1.5 million extra jobs.³¹

30 For more on the comparison of employment performance across Europe and the United States, see *Beyond austerity: A path to economic growth and renewal in Europe*, McKinsey Global Institute, October 2010 (www.mckinsey.com/mgi).

31 David Roland-Holst, *Energy efficiency, innovation, and job creation in California*, Center for Energy, Resources, and Economic Sustainability (CERES), University of California, Berkeley, October 2008.

Second, productivity growth is not only about reducing inputs for given output. Importantly, it is also about increasing the quality and value of outputs for any given input. This is not just true of new, high-value smart phones or GPS devices, for example. Take the US automotive industry during the 1990s. The diffusion of lean production methods introduced by Japanese car companies contributed 60 percent of productivity growth, with the rest coming from improved safety and functionality that raised the value of each vehicle produced.³² Improved goods and services tend to boost demand and help create jobs in the producing sector—as the introduction of minivans and SUVs did to the growth of the US auto industry in that decade.

And third, sustaining global competitiveness in many tradable industries requires ongoing productivity gains; strong productivity performance is therefore a necessary condition for attracting and maintaining local jobs. This is true particularly for high-income economies such as the United States that cannot compete on labor costs with low-wage locations. For the United States, the fast pace of innovation and high productivity have been the twin sources of competitive advantage in technology sectors from semiconductors to software and explain how the United States has been able to sustain more jobs in these sectors than most other high-income economies.³³

The benefits of long-term productivity growth without job losses are achievable even if this relationship does not always hold for shorter periods. From 2007 to 2009, the United States lost 7 million jobs while productivity grew at a fast rate of more than 2 percent per annum.³⁴ In response to the downturn, companies have focused on efficiency improvements, but the benefits have led to rising corporate and household savings rather than new expenditures. At the same time, consumers have reduced their spending and sought better-value products.

But past experience suggests there is reason to expect this to change. Over the longer term and at an aggregate level, our analysis suggests that the perceived trade-off between productivity growth and employment growth is a temporary phenomenon. More than two-thirds of the years since 1929 have seen positive gains in both productivity and employment (Exhibit 15). If we look at quarters, employment growth followed gains in productivity in 71 percent of quarters since 1947 (Exhibit 16). Today, US businesses have positioned themselves effectively for growth after a decade of substantial efficiency gains, and many companies have sufficient capital available for investments. Healthy US demand will eventually return, likely led by the business sector.

³² *Increasing global competition and labor productivity: Lessons from the US automotive industry*, McKinsey Global Institute, November 2005 (www.mckinsey.com/mgi).

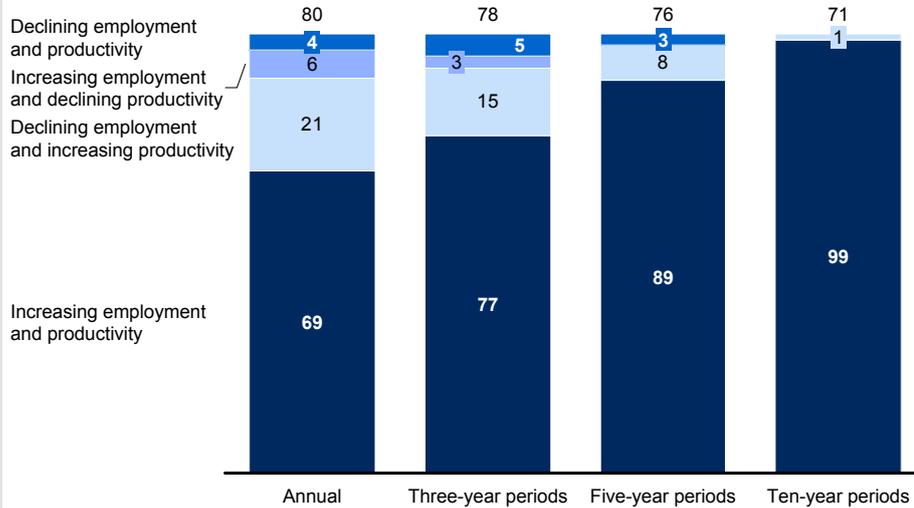
³³ Competitiveness and relatively strong employment performance in some cases may mean flat or even declining jobs in the industry—but at slower rates of decline than among peer economies. This can occur when technological change is causing global employment in the sector to decline—as has been the case in semiconductor manufacturing in the past ten years. For more, see *How to compete and grow: A sector guide to policy*, McKinsey Global Institute, March 2010 (www.mckinsey.com/mgi).

³⁴ In contrast, both job declines and productivity gains were smaller among EU-15 nations.

Exhibit 15

The “trade-off” between aggregate employment and productivity levels is a short-term phenomenon

Rolling periods of employment and productivity change, 1929–2009
%; periods



SOURCE: US Bureau of Economic Analysis

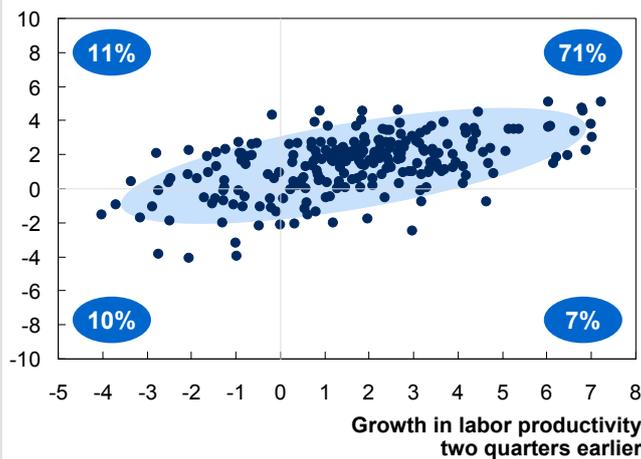
Exhibit 16

In the short term, employment growth has been positively related to productivity—but with a time lag

● Percent of total

Annual change, 1947–2010
%

Growth in US employment two quarters after productivity growth



- In 71 percent of quarters since 1947, productivity growth was followed by employment growth
- Only in 7 percent of periods did employment decline after productivity growth

In the United States, every point of GDP growth creates between 500,000 and 750,000 jobs

SOURCE: US Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute Analysis

2. The United States still has significant untapped potential to increase productivity

Some argue that economic development and technological innovation in the United States may have reached a plateau and that the US productivity engine is running out of steam. Our research suggests otherwise. With an effective retooling, the US economy has more than enough opportunities to achieve the necessary acceleration in productivity growth.

We found room for productivity gains across US industries. Different sectors have had widely varying trajectories of recent productivity and employment growth (Exhibit 17). However, even sectors that have historically made large contributions to productivity growth still have ample headroom to innovate and become more efficient. Given their continuing importance for the US private sector, tradable sectors such as manufacturing will need to continue to improve their productivity in the face of intense global competition (Exhibit 18). Domestic sectors such as retail will need to do the same to cope with strong domestic competition. And unsurprisingly, sectors that have been persistent laggards—notably the public sector and regulated sectors such as health care—have potential for dramatic productivity gains. To capture all these available opportunities will, however, require large-scale changes (e.g., to underlying systems of incentives and the way in which productivity is tracked).

Exhibit 17

Sectors have had different trajectories of productivity and employment growth

%

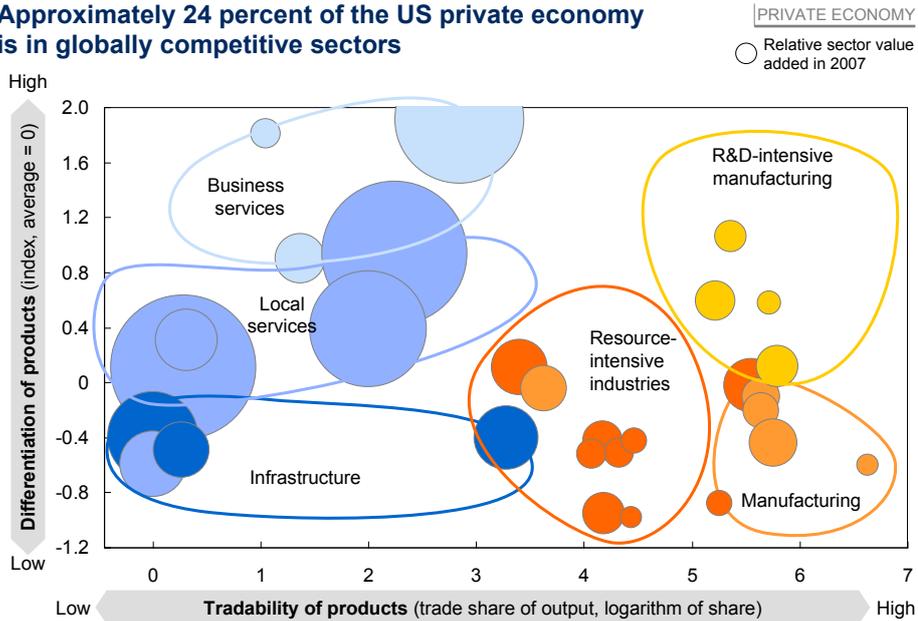
		Shares, 2008		Contribution to			
		Employment	GDP	Employment growth		Productivity growth ¹	
				1990–2000	2000–08	1990–2000	2000–08
Goods	Manufacturing	8.8	10.0	-4.5	-66.5	36.7	19.2
	Construction	6.5	4.3	6.9	12.4	-0.5	-11.0
	Natural resources	1.9	3.3	-2.5	-0.5	1.6	0.2
	Computer and electronic products	0.9	1.4	-1.0	-11.1	n/a	22.5
	Real estate and rental and leasing	1.8	13.0	1.9	4.1	19.8	18.4
	Wholesale trade	4.3	5.7	2.7	4.2	17.5	11.2
	Information	2.1	4.5	4.2	-12.5	7.4	21.6
Services	Transportation and warehousing	3.4	2.9	4.2	3.3	3.8	3.9
	Retail trade	10.4	5.8	9.0	7.5	9.8	1.5
	Administrative and other services	6.0	2.9	18.1	-1.7	-4.7	5.6
	Accommodation and food services	7.0	2.8	8.5	18.7	-2.8	-3.2
	Other services (except public admin.)	5.1	2.4	5.5	7.6	-1.7	-4.8
	Arts, entertainment, and recreation	1.5	0.9	3.5	5.4	-0.7	-0.8
	Finance and insurance	4.4	7.7	1.9	8.5	16.9	9.9
	Professional, scientific, technical services	6.3	7.6	11.1	22.2	7.3	9.7
Regulated and public	Management of companies	1.3	1.8	0.4	3.9	0.7	-0.6
	Government	14.8	12.9	9.5	27.3	-4.1	1.0
	Health care and social assistance	11.0	7.0	17.6	55.0	-8.1	-1.7
	Educational services	2.2	1.0	3.4	13.2	-1.5	-3.1
	Utilities	0.4	1.8	-0.6	-0.8	2.5	0.5

¹ Productivity contribution was calculated using Moody's Economy.com data.

SOURCE: US Bureau of Economic Analysis; Moody's Economy.com; McKinsey Global Institute Sunrise Productivity Model

Exhibit 18

Approximately 24 percent of the US private economy is in globally competitive sectors



SOURCE: EU KLEMS growth and productivity accounts; Organisation for Economic Co-operation and Development input-output tables; US Bureau of Economic Analysis; McKinsey Global Institute analysis

Our research findings draw on detailed reviews of sector contributions to US productivity in the late 1990s and 2000s; case studies assessing opportunities for productivity improvement in three very different sectors—retail, aerospace, and health care; as well as McKinsey’s industry expertise and 20 years of MGI research on US productivity (see box 3, “Lessons learned from MGI productivity research” for an overview).

We have identified opportunities to diffuse best practices and implement emerging business and technology innovations that could achieve three-quarters of the productivity growth acceleration needed by the United States. The United States has seen step changes in information technology and its application, and managerial innovations that have not yet worked their way fully through the economy. Furthermore, many new technologies—some in their early stages such as biotechnology and nanotechnology, others more developed such as cloud computing—could also accelerate productivity improvement.

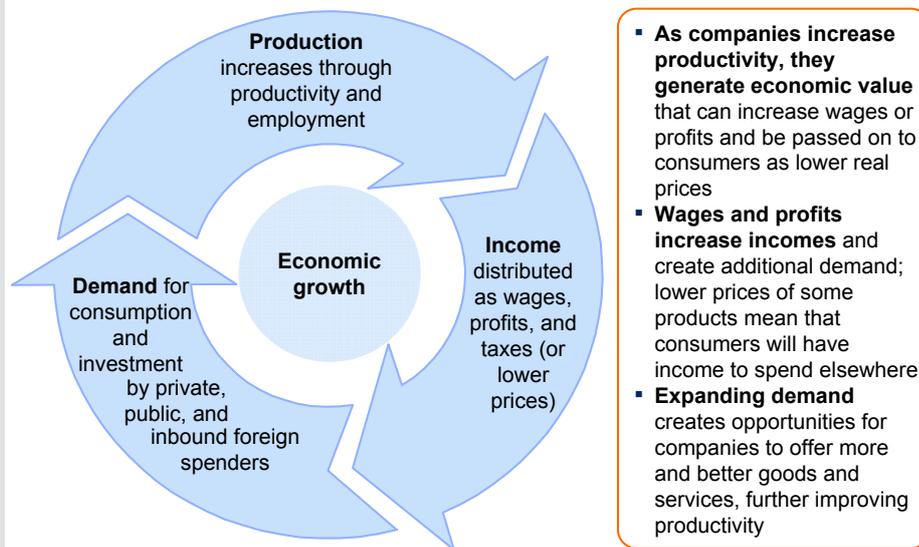
These opportunities are economically attractive in today’s regulatory and business environment. Take a few examples from our three case studies. In retail, continuing intense competition could drive greater integration of supply chains and produce improvements in the way customers are served online and in traditional stores. In aerospace, there are opportunities in the management and development of suppliers. In health care, higher sector productivity could come from innovation in the areas of improved patient flow in hospitals to using technology to expand the information available to patients.

Box 3. Lessons learned from MGI productivity research

For more than two decades, MGI has studied productivity and competitiveness across more than 20 countries and 30 industry sectors. Drawing on McKinsey's industry expertise, MGI research has shed light on the microeconomic underpinnings of aggregate growth, illustrating with company and industry-level case studies how the virtuous circle of growth has worked (Exhibit 19). Here we outline some major lessons that have emerged from this work.

Exhibit 19

A virtuous cycle of increases in production, income, and demand drives overall economic growth



SOURCE: McKinsey Global Institute analysis

- **The diffusion and scaling of productivity-enhancing innovation are the driving forces of aggregate economic growth.** Innovations that generate new products or better ways to produce them are a key source of long-term growth. Yet for overall economic impact, who makes an innovation or where it is made matters less than its adoption and diffusion throughout the innovative company and industry—and beyond. Take the Internet. The economic impact of the first connected computers was limited. It was the declining cost of computers and expanding telecommunications networks that enabled their broad adoption, and this, in turn, generated the productivity impact across sectors using them. The new technology platform in turn led to a second wave of product and service innovations and growth—from company intranets to social media—that have added yet another layer of benefits.

- **Competitive intensity is the primary driver of innovation and productivity growth in private companies.** Improving business processes and implementing organizational change is hard work for managers. MGI's more than 100 sector case studies around the world show that competitive pressure is a consistent incentive for companies to push for improvements that are needed to realize the full potential economic benefits from the diffusion and scaling of innovations. A regulatory environment that encourages competition, without unnecessary regulatory protection for inefficient players, provides the right incentives for the virtuous cycle of growth. In many cases, productivity growth comes from more productive companies gaining share and less productive ones exiting the market. This process of creative destruction is the source of long-term productivity growth.
- **Success in emerging innovative sectors is not enough to sustain overall productivity growth—large employment sectors need to pull their weight, too.** Employment in new technology production is simply too small on its own to boost aggregate productivity. The supply of semiconductors, biotech, and cleantech solutions represents less than 3 percent of US employment compared with 12 percent in the case of retail, 12 percent in health care, and 16 percent in the public sector. Similarly, emerging innovations in technology are important, but are not sufficient in themselves to drive productivity gains. Rather, it is a combination of cutting-edge technology, business process changes, and managerial innovation that drives productivity in emerging and traditional sectors alike.
- **Flexibility in labor and capital markets enables productivity gains.** Labor and capital mobility ensure that resources can be deployed quickly and efficiently where they will be most productive. Regulatory barriers to the movement of labor and capital—whether in the form of zoning requirements or restricted labor hours—hinder improvements in how that labor and capital can best be put to use by the economy as a whole.
- **Strong demand is an enabler for rapid productivity growth, facilitating balanced growth from both higher efficiency and the transition to higher value goods and services.** During boom years such as the late 1990s, rapid income growth fueled demand for higher value goods and services that enabled companies to rapidly boost productivity. But during economic downturns, weak demand can cause savings from higher productivity to be saved rather than spent, introducing friction to the virtuous cycle of growth and slowing down the economic recovery.
- **Small changes in large sectors can make a significant difference for the overall economy.** Through discrete, company-level decisions, large productive companies can increase competition and spur productivity in their sectors as a whole. We observed this effect in the late 1990s when large companies helped to generate industry-wide gains in the retail and semiconductor industries.

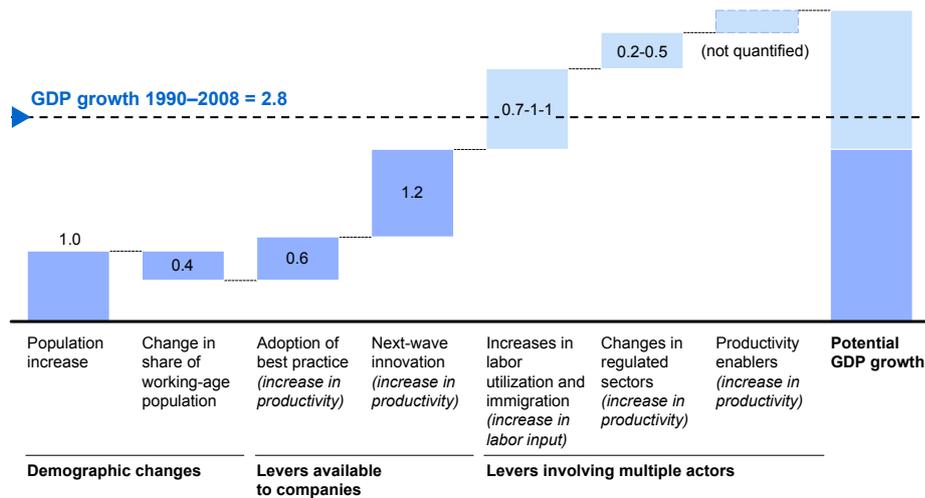
The rest of the acceleration—and even more—can come from making structural changes in regulated sectors and strengthening productivity enablers. Furthermore, there is room to counteract demographic trends and increase the labor contribution to overall GDP growth. Concerted action by government and business to change policies and practices across sectors and regions will be necessary (Exhibit 20).

Exhibit 20

The United States can achieve historic levels of GDP growth—or better—by pursuing opportunities that require coordination across multiple actors

Potential GDP growth

Compound annual growth rate, 2010–20, %



SOURCE: Organisation for Economic Co-operation and Development; Central Intelligence Agency; World Bank; McKinsey Global Institute analysis

Some of the opportunities that we have identified are well-trodden territory for US businesses that have set the productivity frontier in their respective industries. Such companies and sectors provide numerous examples of how to adopt best practice. In the past, US companies have proved to be relentless innovators—and US consumers to be voracious users of innovation—and there is good reason to think that both of these trends will continue with the next wave of innovations. While some productivity opportunities involve large, sweeping changes—such as those prompted by semiconductors in the late 1990s—it is often the case that aggregate productivity gains come from the cumulative effect of a large number of small improvements.

In the rest of this chapter, we discuss each group of opportunities in turn, drawing on our three sector case studies for examples and illustration.

COMPANIES HAVE A LARGE OPPORTUNITY TO CONTINUE TO DRIVE PRODUCTIVITY GROWTH BY ADOPTING BEST PRACTICE

There is still considerable room for companies to employ traditional best practice operational improvements across a variety of sectors. We have identified opportunities that could get the United States one-quarter of the productivity acceleration necessary for the economy to return to historic rates of growth.

The principles of lean operations are now familiar around the world. However, companies and sectors have not applied these principles as broadly as they could. Many US companies have adopted lean principles in their core operations but could make much more progress by taking lean principles from the stockroom to the

storefront. Look at the highly competitive retail sector as illustration. Lean inventory management is widespread practice, with Wal-Mart consistently setting the standard with its sophisticated, data-driven distribution network. While many retailers can still close the gap to that standard, only a few have introduced concepts to professionalize and “lean” the storefront. Relatively simple changes can help to better match personnel time with the number of customers in a sales department. One retailer adjusted scheduling practices so that salespeople were helping customers and staffing registers at the busy lunch hour rather than replenishing store shelves. This adjustment increased staff utilization by 20 to 30 percent and, as importantly, improved customer satisfaction by reducing waiting time in lines.

Many other sectors are far behind competitive retail in the discipline and intensity of their adoption of lean techniques and in performance management. Consistent with MGI's findings around the globe, sectors shielded from competitive pressure to reduce their costs tend to lag behind in adopting lean and other best operational practices. Take the highly advanced aerospace sector. The US industry is one of the largest exporters globally and a leader on many measures of innovation, but the sector lags behind in adopting cutting-edge manufacturing processes. The reasons for this are limited cost competition and the large role of government procurement. Although there are, of course, differences between constructing an airplane and building a car, certain basic metrics suggest aerospace has opportunities to improve. For example, on-time delivery rates in commercial aerospace are less than 70 percent, versus 95 percent for automobiles. In the next ten years, US aerospace will face increasing global competition, particularly from low-cost locations like China and Brazil, and this is likely to provide a strong incentive for change—starting with already proven practices adoptable on the factory floor (Exhibit 21).

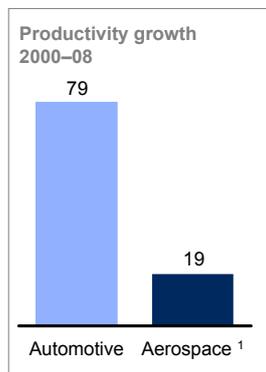
Exhibit 21

Aerospace can apply the lessons of lean manufacturing and performance management learned in other sectors such as best-in-class automotive

ESTIMATES

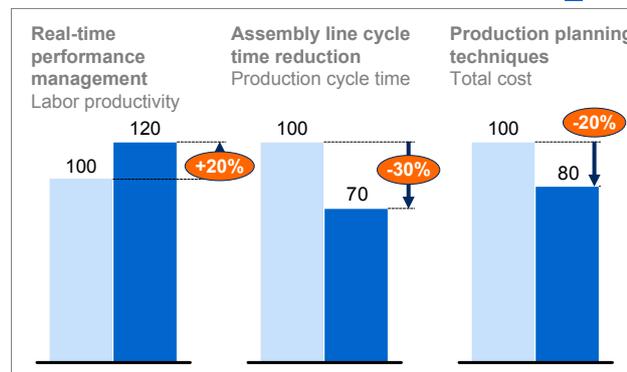
%

Productivity growth has been much faster in automotive than in aerospace¹



Applying several practices from best-in-class automotive could drive significant benefit for aerospace²

Before
After



1 Other transportation equipment in the North American Industry Classification System. Aircraft and spacecraft represented around 76 percent of value added in other transportation equipment in 2006.

2 The various practices complement each other; the sizing estimates should not be considered additive.

SOURCE: US Bureau of Economic Analysis; McKinsey Global Institute analysis

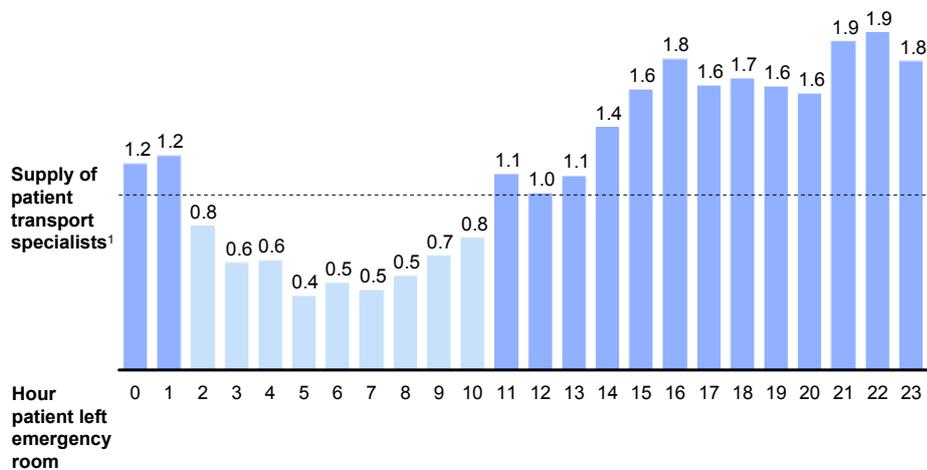
Health care is another sector in which the industry structure has traditionally provided only a limited incentive to focus efforts on sector-wide productivity improvement. Not surprisingly, health care players have only recently begun to adopt lean operational principles—some technology-enabled, others not—suggesting that very large benefits from broader adoption remain on the table. For example, relatively few acute care wards apply advanced process management tools to patient flow. Specifically, bed availability is often tracked manually, discharge planning is conducted unscientifically, and patients may be moved three to four times during a five- to six-day stay. Such systems create additional work that does not serve any clinical need.

Hospitals are a prime candidate for some of the operational improvements learned in other service industries. Virginia Mason Hospital in Seattle, for example, analyzed patient flows in its emergency department and created a system that allows the hospital to ensure optimal staffing levels. The hospital also introduced a “team sort” process to quickly filter incoming patients by the severity of their condition. This has allowed the hospital to admit and discharge patients requiring only minimal treatment without sending them to patient-care beds. In two years, these two measures have reduced by 90 percent the number of hours the emergency department was too crowded to receive new patients. In another case, improvements in staffing procedures reduced the waiting time for patients to be transferred to the wards from the emergency room, thereby enhancing the quality of care (Exhibit 22). Another area of opportunity for hospitals is purchasing. US hospitals have not universally implemented best-in-class procurement policies, including pooled purchasing. This practice combines small purchases from different departments or different hospitals in a system into one large purchase to take advantage of scale and reduce time spent on purchasing processes. Where used, such policies reduced costs by 5 to 10 percent on what can amount to one-third of a typical hospital's budget—or 1.5 to 3 percent of total costs.

Exhibit 22

In some US hospitals, fixed staffing of patient transport specialists means demand outstrips supply for 15 hours of the day

Admissions to the ward from the emergency room by time of day
Number of patients per hour per day



¹ Based on two specialists transporting patients up to wards 25 percent of their time; assumes 30 minutes per transport.
SOURCE: McKinsey analysis

In the outpatient segment of health care, improving operational effectiveness is more difficult because the majority of physician practices are small—with fewer than four doctors. Nevertheless, some small practices are adopting Internet-based scheduling and striving to make more productive use of available technology such as electronic record keeping and prescription refills that are automatically uploaded to the pharmacy. This not only frees up time for more valuable, patient-facing activities, but also offers patients greater convenience and potentially more reliable care. There remains a great deal of opportunity for small physicians' offices to move away from the full in-house administrative support that represents a large share of the sector's operations today.

USING THE NEXT WAVE OF INNOVATION COULD FURTHER BOOST PRODUCTIVITY GROWTH

Our research indicates that there is a wave of business innovations—in business processes, technology use, or new offerings—available to companies that could capture an additional half of the gap to historical GDP. While many of the truly disruptive innovations are hard to predict, we focus here on three areas to illustrate the range of opportunity.

Enhanced business operations

While business operations—how companies produce and deliver goods and services for customers—have been a traditional area of focus for productivity improvement, our research suggests room for additional gains. Despite the large gains in supply chain efficiency among US companies, for example, we see remaining opportunities in shifting the focus from optimizing pieces of the supply chain to integrating the different players in the whole chain, as well as the various channels of value delivery. Additionally, the advancement of cloud computing—computing capabilities provided through shared, remote servers rather than location-based servers—could usher in new business models for companies of all sizes.

The declining cost of RFID, a system that uses intelligent bar codes to track items in a store, can be a tool to significantly enhance supply chain processes in retail and wholesaling and enable a new wave of end-to-end supply chain models.³⁵ Europe is already beginning to use RFID to better facilitate communication between the retail store and the product manufacturer; market leaders are Germany's Metro AG and the United Kingdom's Tesco. In Norway, for example, this innovation has already been applied to fresh produce; RFID is employed in meat production, where monitoring can greatly enhance the safety of the food supply. In the United States, Wal-Mart has partnered with its suppliers to drive RFID adoption. The effort met with some initial difficulties, but continues to hold promise. With increasingly complex and more global value chains, the capacity to continuously optimize provides opportunity for yet another layer of cost and time savings (Exhibits 23 and 24).

³⁵ RFID has yet to reach the cost threshold—estimated by some to be less than a few cents per device—at which it is economical for low-margin products. Depending on the precise technology, current prices can hover between five cents per tag to nearly \$10 for highly sophisticated military applications. However, current trends suggest that RFID will become cheap enough to use even on low-margin products relatively soon; the price of the chip component is already coming down quickly, while the rest of the device (antenna and assembly) requires additional innovation. Once prices fall, RFID could prove useful for common household goods and groceries. These basic consumer items are relatively resistant to weak economic demand and make up a large share of total retail sales. Groceries and home wares accounted for around 40 percent of US retail sales in 2009.

Exhibit 23

Radio-frequency identification (RFID) could be used to manage an increasingly integrated supply chain

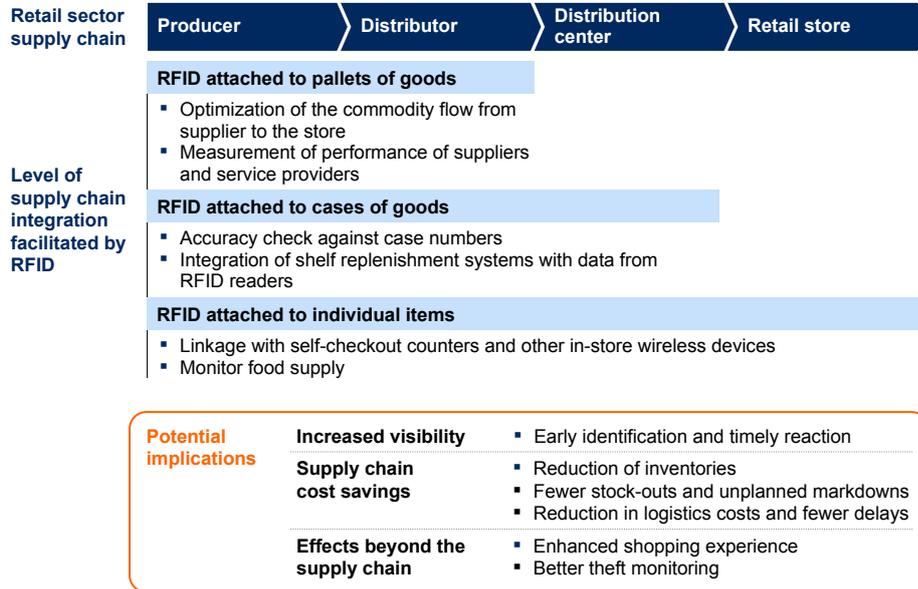
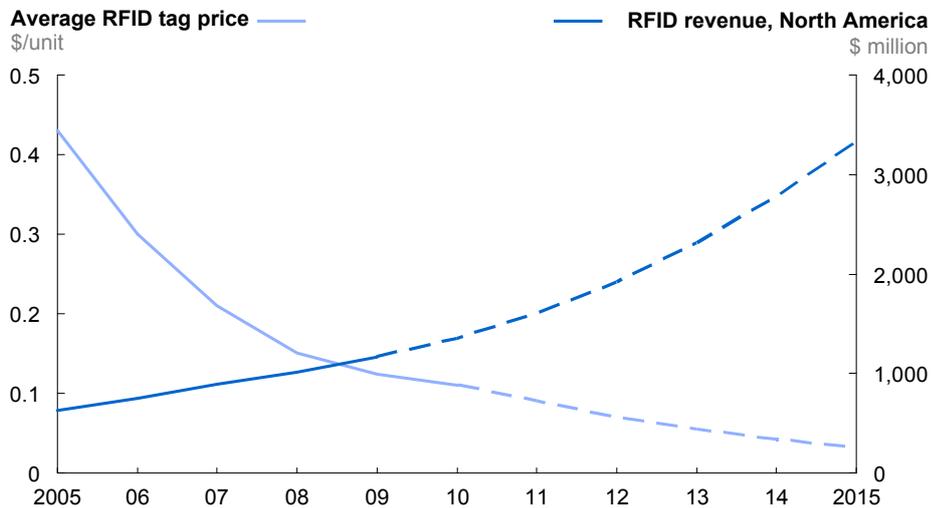


Exhibit 24

The declining cost of RFID will drive more widespread adoption of the technology in retail

--- Forecast



SOURCE: Frost & Sullivan; literature search; expert interviews; McKinsey Global Institute analysis

Just as there is opportunity in innovative “end-to-end” supply management, there is an imperative to integrate channel management more fully. The online and offline worlds are no longer separable. In retail, for instance, integrating physical and online supply chains both reduces costs through increasing the scale of inventory management and increases revenue by reducing markdowns. Retailer Nordstrom has made great strides in making the business changes required for such integrated management, achieving sizable margin increases. In 2009, Nordstrom integrated

individual stores' inventory to the Web site, essentially making all its stores serve as warehouses for its online channel. Nordstrom's same-store sales have outperformed the department store average since the change with an 8 percent same-store sales increase. To tap into these opportunities fully, retailers need to redesign business processes and overcome platform issues that arise when different IT systems built separately at different times cannot interface with each other.

Retail payments companies and retail banks have similar scope to address business processes and platform issues across their various product offerings. Even before the wave of mergers during and after the financial crisis, many financial institutions had competing legacy processes and systems that lacked sufficient integration. This tends to mean that employees spend an increasing amount of time on ad hoc workarounds to close gaps in these legacy systems rather than on adding new functionality for their customers. Beyond this, however, is the fact that competing systems limit a company's opportunity to manage its relationship with consumers, providing them with appropriate products at the right time in their life.

Cloud computing holds promise not only in addressing some of the platform issues faced by companies but also in boosting productivity by providing broader access to advanced computing capabilities. Many large enterprises have already moved toward a model of shared computer applications that can make data accessible to the entire organization and allow enterprise-wide optimization of the technology infrastructure. Such technology also holds promise for small and emerging businesses that are likely to lack the capital necessary for expensive hardware and software support. Rather than operate with suboptimal support, these companies can increase productivity by subscribing to cloud computing services from e-mail to customer relationship management.

Greater customer responsiveness and engagement

Companies can also make improvements in how quickly and directly they respond to evolving customer preferences and behavior and thereby increase both revenue and customer satisfaction. In a number of cases, such responsiveness relies on social media to engage with customers—or potential customers—in more meaningful and productive ways. A variety of companies have established Internet-based customer communities that they can tap into for feedback on emerging product offerings or to answer usage questions. Early customer influence on product development—or even co-development with the customer—can reduce wasteful research and increase the success of product launches. McKinsey experience suggests a peer-to-peer Internet-help center can significantly decrease support costs while building customer loyalty.

Other avenues of Internet-driven productivity gains are also promising. In retail, consumers are increasingly checking online peer reviews before making purchasing decisions. Estimates suggest that in 2011, more than one-third of all in-store retail sales will have been influenced by online research—double the 2006 share. If retailers offered such technology in stores—either through a mobile application or a kiosk—they would be providing an undoubted new benefit to their customers and could, at the same time, increase in-store sales by combining the facility to read reviews with the physical experience of the product. Retailers can link such reviews with automatic coupons offered to customers who contribute to, or browse, online reviews. A number of retailers today are experimenting with such systems with expectations that it will improve the effectiveness of their marketing and deliver higher customer value.

A similar logic applies to patient care. The health care sector can make progress on productivity by encouraging e-mail and phone communication rather than the frequent face-to-face visits that inflate outpatient care costs and may not serve the patient in the best way. Observers often cite Kaiser Permanente, the California-based integrated managed health care consortium, as a pioneer in this regard. Kaiser reduced outpatient visits by 10 percent by offering its patients online self-serve, e-health, and telehealth services to address non-urgent issues. Offering patients different means of communication requires not only altering the processes that define how care is provided (e.g., time set aside in the health care worker's day to make calls), but also changing incentives (e.g., how the health care worker's time is compensated), an issue taken up in the next section.

The financial industry is also poised to respond to the evolving needs of its customer base. As the industry faces a shifting regulatory environment, players are looking to emerging service demands as a source of future growth. For example, retail banking players are focusing on enabling more effective management of personal finances. We can see this in streamlined analytical tools that aggregate information across various accounts and new types of personal savings accounts. One example of the latter is SmartyPig, a Web-based savings vehicle that allows users to establish specific savings goals (e.g., to pay for a vacation). The service offers discounts with retailers and allows family and friends to contribute to the savings accounts.

For their part, payments players—incumbents and new entrants alike—are seeking to provide faster, simpler, on-the-go payment mechanisms. Significant progress has already been made in check processing. Consumers are now able to take a digital photograph of their checks instead of having to physically deposit them at a bank. While the technology for mobile payments has existed for some time—with widespread adoption particularly in Asia—players are only now beginning to address some of the non-technology issues that have so far stunted US growth.³⁶ This is consistent with MGI research on IT-driven productivity, which found that technology is not sufficient to drive productivity growth, but rather must be accompanied by changes in business processes and operations.³⁷ As an example, payments players in the United States aim to drive adoption of existing technology by combining mobile payment with other value-add offerings. For the customer, this could include rewards or automatic coupons when using a mobile payment mechanism. An additional benefit to the merchant is the fact that electronic payment, as opposed to cash payment, generates significant amounts of data. Different service providers can mine and analyze this data, which can act as a further driver of productivity for small and large businesses. Such changes in how and where payments can be made could significantly alter the format of traditional stores, moving salespeople from behind registers and facilitating their greater interaction with customers.

³⁶ Mobile interfaces in the United States today typically rely on short message service (SMS) technology in which payment is made by sending short messages to a mobile or IP address. The next wave of mobile payment technology is in contactless payment enabled by near field communication (NFC). Using this technology, customers make a purchase by waving a chip—typically attached to or embedded within a mobile device—near a merchant terminal. Such an approach is expected to account for a growing share of total mobile payments once it overcomes barriers to adoption and large-scale rollout (e.g., setting of industry-wide standards for information sharing).

³⁷ *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi)

Companies can also use technology to enable the customer to “do-it-yourself.” An example of this is in retail, where self-service checkout is increasingly commonplace. The next wave will be “one basket at a time” checkouts. Enabled by the decreasing cost of technology, this requires that each item is tagged with a small RFID. The customer passes the whole basket by a reader, creating a smooth and rapid walk-through checkout. This reduces customer waiting time and frees up salespeople's time for more productive activities. Another example of a next-wave change that would free up staff time would be the installation of a self-service kiosk in which customers can receive help finding a particular item in the store—or even to check whether an item is in stock in another store—as part of a modernized inventory management system. As a customer, you can find the item yourself—whether it's located in aisle 6 of the store you are in or in another store in the chain.

In health care, the empowerment of patients through the provision of improved access to information is an important enabler for getting the best value for money spent. Currently there is a large asymmetry in the information available to medical practitioners (a great deal) and their patients (far less). This makes it far more difficult for patients to make choices about care. Providing patients with simple, standard metrics would help them to make more informed choices about where to receive medical services. Some nascent services are available, including Hospital Compare, a national service run by the Department of Health and Human Services.³⁸ There are similar statewide services in Ohio and California, and Web-based offerings from private companies such as California-based Castlight Health. However, many of such services remain fragmented and incomplete in providing health care consumers with sufficiently relevant comparative data that would allow them to make genuine choices. For example, while it may be possible to find out how many people complained of unfriendliness in the emergency room, it is much more difficult to see how several hospitals compare on various types of treatment survival rates and complications. Other services, including Microsoft HealthVault and Google Health, aim to improve patients' access to their own medical data and information. While challenges remain to widespread adoption of these services, their aim of increasing the accuracy and accessibility of health care information should enable more productive decisions.

Service and product innovation

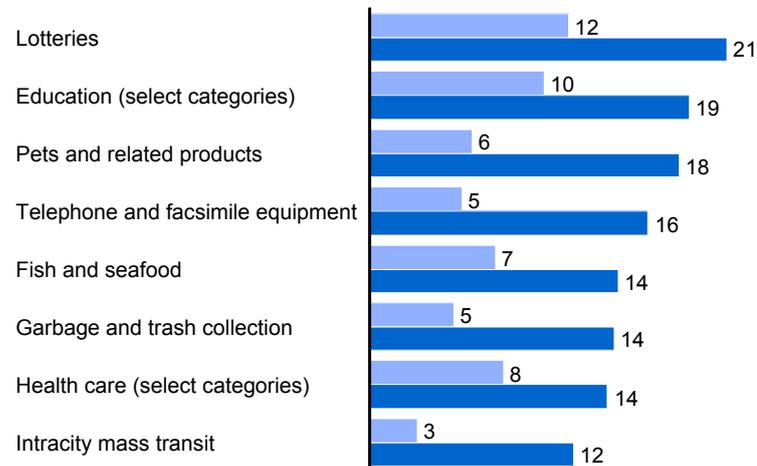
In addition to innovation in current business processes, productivity gains can be driven through innovation in what services and products companies provide for customers. US consumers have shown repeatedly that they will purchase innovative products when they are available. Products as divergent as pet services and mobile phones provide examples. Both pet supplies and products and telephone equipment have experienced double-digit increases in spending even since the start of the recession—18 and 16 percent, respectively (Exhibit 25).

³⁸ The Department of Health and Human Services is disseminating this and other health data through its recently formed Community Health Data initiative.

Exhibit 25**Since the onset of recession, US consumers have continued to increase spending in a variety of categories**Increases in US household consumption
%Change in spending from
December 2007 to

June 2009

November 2010



SOURCE: US Bureau of Economic Analysis; McKinsey Global Institute Analysis

The pet industry has been buoyed by an increasing array of service offerings, many with a focus on health and well-being. Specialty pet retailers PetCo and PetSmart both report strong growth in their service offerings, which include dog training and day care. The mobile phone market, meanwhile, continues to be driven by design and technology innovations. As many observers have noted, Apple is a leader in innovation and its strong products have allowed the company to perform very well even in difficult economic circumstances. Despite launching the iPhone in 2007 as the United States was poised for recession, Apple has sold an estimated 70 million units through 2010; Apple's iPad is reportedly selling at a rate exceeding that of any other consumer electronics product in history, surpassing the DVD player's record.³⁹ Google has also had considerable success in the launch of phones based on its Android operating system, despite otherwise flagging consumer demand. Android-based mobile phones surpassed iPhone sales for the first time in late 2010.

The United States can also take advantage of innovation opportunities that are evolving in providing services that supplement traditional product offerings. Such offerings have potential to create new markets where none had existed before—such as the market for dog hotels—or to significantly grow nascent markets. For example, an office supply company can offer comprehensive procurement services—including the sourcing and management of vendor relations—as well as simply stocking paper. Such an approach allows the expertise and scale of the larger company to drive productivity gains in the sector. The online retailer Amazon.com continues to expand in business-focused Web services, including technology design and Web site hosting.

Private label products—and innovative ways of offering them to customers—are another promising area that the United States should look at more closely. Today, the penetration of private labels among US retailers is around 20 percent, about half what

³⁹ Colin McGranahan, Bernstein Research, October 2010.

we see in Western Europe. Retailers that have succeeded in bringing forward private labels in the United States have done so by identifying a receptive customer segment and then innovating on format, message, or product. Trader Joe's, the specialist retail grocer, offers almost exclusively its own private label products, with 80 percent of the company's products falling under its own brand. The company has driven the success of its private labels first by cultivating a perception that they offer high quality and then providing a carefully edited, innovative selection. Whole Foods Market, the world's largest retailer of natural and organic foods, has leveraged its reputation for natural products to achieve consistent increases in its private label sales. Currently, sales of Whole Foods private label products account for 11 percent of total retail sales.

Private label goods can increase the overall impact on retailers' margin by 2 to 3 percent. In some cases, increased spending on private label goods will come at the expense of branded consumer packaged-goods manufacturers. However, as a result of private labels, overall productivity is likely to increase through two mechanisms. First, the uptick in competitive pressure ultimately drives innovation and enhanced productivity. MGI has identified numerous examples of this effect, including competition from Japanese automakers in the early 1990s and the influence of Wal-Mart on US retail sector competitiveness in the late 1990s. Second, private labels cost less and consumers can spend the savings elsewhere; this shifts gains to other retailers or indeed other sectors, but it doesn't eliminate those gains.

In health care, there is room for providers to innovate in the way they approach patient care. Most—but not all—payers and integrated health care systems have long been running disease management programs to make sure that patients with chronic diseases follow their prescribed regimen of care (for patients at risk of coronary heart disease, this means receiving an annual cholesterol screening; for diabetics, regular foot and eye exams). While such programs are not universally effective, in selected areas they can improve patients' health and can lower costs.⁴⁰ Another shift is toward treating the patient holistically, focusing on healthy living and disease prevention. Again, this can result in improved quality and lower costs. Numerous companies in industries as diverse as semiconductors and pharmaceuticals have instituted employee incentive programs that, for example, provide employees with gift certificates in exchange for routine health screenings. Such means of encouraging healthy behavior aim to decrease health care costs and increase worker productivity (e.g., through less frequent absences). Meanwhile, programs to manage end-of-life care offer terminally ill patients counseling and options such as palliative care and can thereby enable hospitals to avoid performing procedures that do not improve health outcomes.

More importantly, a national focus on reducing the skyrocketing rates of obesity—currently at 34 percent of the US population and constantly rising—could help to bring down the incidence of chronic conditions such as heart disease and diabetes and lower the direct and indirect costs of obesity. Research from the McKinsey health care payor and provider practice found that every point of body mass index (BMI)⁴¹ above 30—the level defined as obesity—is associated with an increase of about 8 percent in a person's annual health care expenses. Such costs, however, represent a small fraction of the overall economic burden to both individuals and

40 For more on the features of successful disease-management programs, see Stefan Brandt, Jan Hartmann, and Steffen Hehner, "How to design a successful disease-management program," *McKinsey Quarterly*, October 2010 (www.mckinseyquarterly.com).

41 Body mass index is an indicator of body fatness based on height and weight.

companies. Accounting for additional costs such as more expensive plus-sized clothing and the increased absenteeism of obese people raises the total annual cost of obesity to \$450 billion. Of course there is also a myriad of noneconomic costs to obesity, including a diminished quality of life. Public and private sector actors globally are beginning to make strides in designing services that address these issues, from company health-promotion programs to community-wide childhood obesity campaigns. McKinsey research suggests the most successful of these efforts entail a multipronged approach that involves the entire community.⁴²

Another form of product innovation is the ability to serve a new market segment. For example, retail banks and payment companies are beginning to find new ways to serve the nearly one-quarter of Americans who are unbanked or under-banked—meaning that they lack basic bank services such as a checking account. In this sector, as in retail in the 1990s, Wal-Mart has suggested avenues of opportunity through its prepayment card. While payments providers—established and emerging alike—have been interested in the unbanked market segment for some time, Wal-Mart was able to demonstrate the depth of the relationship—defined by the number of card refills—that would be possible with these consumers. This depth is very important and determines whether servicing this customer group is profitable. This is because the price points that are acceptable to these customers are fairly low, and profits are possible only through repeated refills; typically, three refills is the minimum to make prepayment profitable to the issuers. Intensified competition to serve this segment could drive a new wave of value creation, for the companies that succeed in this sector as well as for the customers who would have another set of valuable services.

42 Paul Mango and Vivian Riefberg, “Three imperatives for improving US health care,” *McKinsey Quarterly*, December 2008; and Jeffrey Algazy, Steven Gipstein, Farhad Riahi, and Katherine Tryon, “Why governments must lead the fight against obesity,” *McKinsey Quarterly*, October 2010 (www.mckinseyquarterly.com).

3. Seven priorities in the search for US growth and renewal

The United States clearly faces a number of near-term challenges. Today, the economy continues to fall short of creating the 200,000 jobs required each month to bring unemployment down to 5 percent by 2016.⁴³ Government and consumer deleveraging will bear down on GDP growth, a pressure that could last three to five years beyond the recession.⁴⁴ But while these are real and important issues, the United States must not allow them to distract from the long-term requirements of sustained growth through higher productivity.

In the previous chapter, we described the opportunities that companies alone can rely on to boost productivity and close three-quarters of the gap to past GDP growth. The United States can close the rest of the gap to historic growth rates—and even achieve higher rates—by removing barriers to productivity growth and boosting the labor component of growth through encouraging higher labor market participation among older Americans, youths, women, and immigrants. These efforts are likely to require concerted action from both government and business.

We see seven major imperatives that the United States needs to meet if it is to return to a higher pace of sustainable GDP growth. For each of these imperatives, there exists a rich set of potential solutions. We highlight several for consideration and invite others to contribute ideas to this ongoing dialogue on growth and renewal in the US economy.

1. DRIVE PRODUCTIVITY GAINS IN THE PUBLIC AND REGULATED SECTORS

Around the world, public and regulated sectors persistently lag behind the private sector on productivity growth, imposing a drag on economic growth. Improving the productivity of the health care sector will be an especially important challenge for the United States, as this sector is projected to account for an increasing share of the US economy. Health care spending has been growing at 4.9 percent a year in real terms for the past four decades, far outstripping growth in per capita GDP of 2.1 percent per annum.⁴⁵ Even during the recent recession, US household spending on health care continued to increase.

Public and regulated sectors such as health care lack the kind of competitive intensity that MGI research suggests is a key driver of productivity improvements in the private sector. Instead, these sectors need to institute both greater transparency through improved performance metrics and the closer alignment of individual incentives to broader goals, such as those of improved health and education outcomes. With transparency comes outside pressure—from voters, patients, or parents—to

43 MGI is engaged in research on US jobs and labor market challenges, the results of which we will publish in 2011.

44 *Debt and deleveraging: The global credit bubble and its economic consequences*, McKinsey Global Institute, January 2010 (www.mckinsey.com/mgi).

45 Congressional Budget Office, *Technological change and the growth of health care spending*, 2008.

improve productivity, while the alignment of individual incentives creates the drive to make necessary changes. If the United States were to act resolutely to improve transparency in such sectors and realign incentives, large gains in productivity are possible.

Regulated and public sectors have not performed well on transparency in the United States. The US government itself has not reported its own productivity outcomes since 1994.⁴⁶ Even when regulated and public sectors publish performance outcomes, they often lack sufficient comparable data, either historical or from peer groups, that would enable effective performance management.⁴⁷ In health care, outcome data tend to be very difficult to access at the level of the individual provider (i.e., a physician)—the point at which patients can make informed choices.⁴⁸ In education, meanwhile, standardized tests were designed in part to help in the evaluation of teachers but may fail to correctly measure the contribution to learning of individual teachers. Broadly speaking, these regulated sectors lack a fully developed information marketplace in which performance is comparable, accessible, and independently verifiable.

Better metrics and more transparency alone are not sufficient; they have to be combined with accountability and incentives that reinforce the need to change behavior. For example, performance reviews and budget allocation are often structurally separate—the timing of reviews and funding may not be aligned. In health care, the dominant system of pay-per-service for physicians encourages—at least in aggregate—a greater number of procedures and office visits, which may or may not contribute to better health outcomes but do increase total costs.⁴⁹ A more efficient system would probably feature a mix of fee-for-service, pay-for-performance (in which providers are paid for achieving certain patient health targets), and other approaches that reward value (i.e., flat payments per covered patient).

Getting the right mix will inevitably require a period of experimentation during which international experience may provide some guidance. Other countries, including Norway and the United Kingdom, have tried different mixes of payment arrangements, including fee-per-patient schemes. As a result of these trials, the United Kingdom recently introduced a capitation-type system for primary care physicians.⁵⁰ This improved the quality of care but at a higher cost. Norway tried capitation for primary care services, a move that cut emergency room visits. The lesson from this is that experimentation should be rich and transparent, with extensive sharing of best practices. The United States took a step in this direction when the recent health reform law established a Center for Innovation to experiment with different payment structures for Medicare and Medicaid, including, potentially, through the evolution of accountable care organizations.

46 The Bureau of Labor Statistics ended its Federal Productivity Measurement Program in 1996 in response to budget cuts; the last year of data published was for 1994.

47 *How can American government meet its productivity challenge?*, McKinsey & Company, July 2006.

48 Some services exist that provide such outcome data, but are in their nascent stages and have not developed traction for a variety of reasons.

49 *Accounting for the cost of US health care: A new look at why Americans spend more*, McKinsey Global Institute, December 2008 (www.mckinsey.com/mgi).

50 Capitation is a method of health care compensation in which providers (e.g., physicians) are paid a set amount for each enrolled patient, regardless of how often they seek care.

To achieve significant improvements in the productivity of regulated sectors, the United States would need to continue to experiment with different incentive systems, ascertain which routes prove effective, and then roll out changes to achieve broad impact. At the same time, the United States needs to align incentives throughout such sectors to ensure that the value that is identified is actually captured. Forthcoming research from MGI will address such issues of public sector productivity in greater depth.

2. REINVIGORATE THE INNOVATION ECONOMY

Innovation is the source of both incremental improvements and transformational step changes in growth and productivity. On their own, however, innovative solutions are not sufficient. Significant changes in business processes, organizational structures, and even talent are necessary to capture the full potential.⁵¹ While the United States has been a strong innovator as a whole, individual sectors and companies vary widely in how well they have harnessed the power of business and technology advances to drive productivity and growth. At the same time, other countries are promoting innovation aggressively. Although the United States remains the global leader in R&D spending, other countries such as China are rapidly catching up and the US economy risks losing its edge in spurring new innovations. This is particularly true in new, cutting-edge industries such as alternative energy. In 2009, China surpassed the United States for the first time in the size of clean energy investments, spending \$34.6 billion compared with \$18.6 billion in the United States.⁵²

US companies have been strong innovators and must continue to invest in longer-term development for the US economy to sustain its lead. As the examples we cite demonstrate, such innovations are the source of a virtuous cycle of productivity growth that generates the cost savings and new products that have enabled growth in US households' living standards. Again, cooperation between the private and public sectors is important; new innovative activities in the United States have traditionally benefited from government contracts and research institutions such as DARPA.

US policy and regulation should provide the right incentives for private companies to continue to expand their US-based R&D activities (e.g., extending and expanding R&D tax breaks). The United States also needs to ensure that the IT infrastructure and technologies are in place to capture fully the transformational potential of digital technology. A new wave of opportunities from Big Data—data-driven business decisions and actions—has the potential to produce new productivity gains particularly in such sectors as health care and government (e.g., more efficient tax collection). Businesses and government need to address potential barriers to the productivity impact in these areas.

Companies and policy makers should embrace technology-enabled change, despite the sometimes difficult near-term disruptions that it can cause. Reaping the benefits of technology requires careful planning and implementation with consideration of a wide array of business processes. The United States should devote attention to preparing institutions for the next wave of technology changes, an effort that is likely to benefit from cooperation between business and policy leaders.

51 *How IT enables productivity growth*, McKinsey Global Institute, October 2002 (www.mckinsey.com/mgi).

52 Pew Charitable Trusts, *Who's winning the clean energy race?*, 2010.

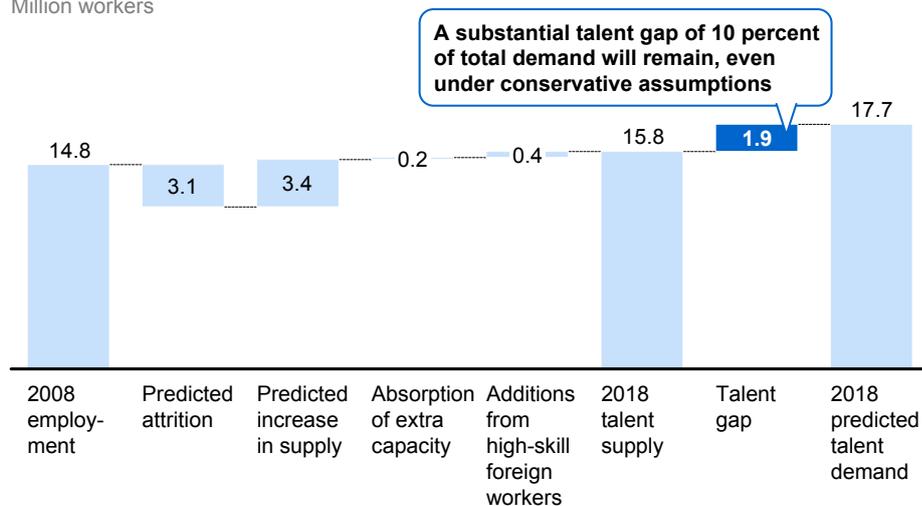
3. DEVELOP THE US TALENT POOL TO MATCH THE NEEDS OF THE FUTURE AND HARNESS THE FULL CAPABILITIES OF THE US POPULATION

The US talent pool is not growing fast enough to meet future demand, particularly in the technical and analytic workforce, a situation that could create a drag on future productivity growth. We estimate that there may be a shortfall of nearly two million technical and analytical workers over the next ten years (Exhibit 26).⁵³ If we look at individual sectors, in health care the United States faces a projected shortage of several hundred thousand nurses and as many as 100,000 physicians within ten years as well as a challenge in matching supply and demand geographically. In aerospace, the aging of the workforce is having a particularly acute negative impact on available skills: 60 percent of the aerospace workforce is over 45 years old compared with a share of about 40 percent in the economy as a whole. The issue is particularly acute in defense companies that risk losing the knowledge continuity that is key to their industry. While the United States has traditionally done well in attracting new workers into the labor force, data from other developed economies—and some US states—indicate that there is room in the workforce to increase the share of young people, women, and senior citizens (Exhibit 27).

Exhibit 26

Industries requiring analytical and technical workers are likely to experience a talent shortage over the next decade

Million workers



NOTE: Numbers may not sum due to rounding.

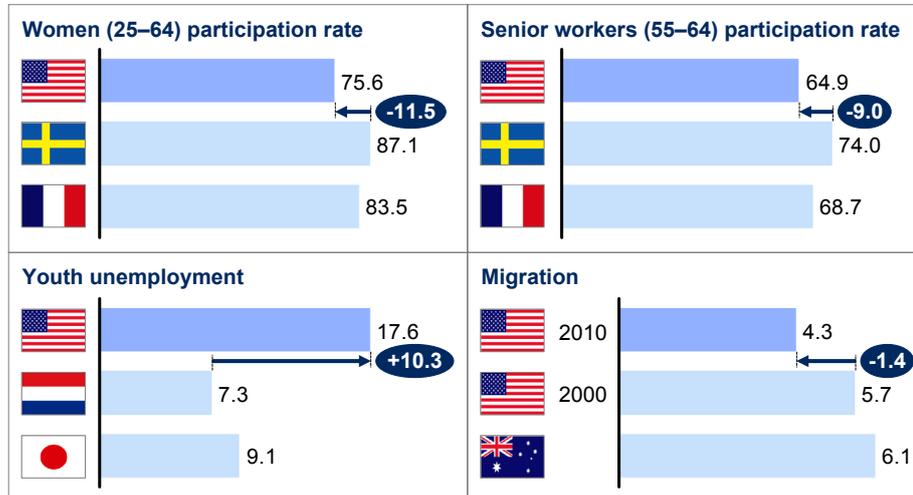
SOURCE: US Bureau of Labor Statistics; National Center for Education Statistics; National Science Foundation; McKinsey Global Institute analysis

⁵³ Analytical and technical occupations consist of computer science, mathematics and statistics occupations, engineers, physical scientists and technicians, health care practitioners and technicians. Attrition figures are based on BLS projections of replacement needs. The predicted increase in supply constitutes the number of bachelor's degrees, or higher, anticipated to be awarded in analytical and technical fields based on historical rates; the total is reduced by 50 percent in line with estimates from the National Science Foundation of the number of analytical or technical degree holders who join professions unrelated to those fields. Absorption of the extra unemployed assumes a return to the 2007 unemployment rate of 4.6 percent. The estimate of foreign workers' contribution to the talent supply assumes 50 percent of H1-B visas are granted to foreign workers working in analytical and technical occupations. The predicted demand for talent is based on BLS projections of 2018 employment in analytical and technical occupations.

Exhibit 27

International comparisons suggest there is room to increase the labor inputs to US growth through increased participation and migration

2009
%



SOURCE: Organisation for Economic Co-operation and Development; World Bank; CIA Fact Book; McKinsey Global Institute analysis

The United States could alleviate these shortages by removing current barriers to older workers staying in the workforce longer. Previous work by MGI estimated that increasing the median retirement age by about two years—from 62.6 today to 64.1 by 2015—could add more than \$12 trillion in GDP over the next three decades.⁵⁴ Such change is entirely possible given increasing life expectancy and willingness to work longer—85 percent of US baby boomers think it is at least somewhat likely they will continue to work. Moreover, international experience suggests there are a number of ways to tap into the potential of older workers. In Finland, for instance, coordinated government and business action helped to increase the average retirement age by four years within a decade.

But the United States needs to overcome significant legal and institutional barriers to enable older workers to remain in the workforce longer. There are a variety of disincentives for both employers and older workers. For instance, the burden of insurance costs that climb with age is borne by businesses, and this creates a disincentive to retain and hire older workers. Although Medicare covers retirees aged 65 and over, the program covers little or none of the health care costs of employees at this age if they work for companies providing insurance. Many older workers are willing to work if they can do so part time, work from home, or gradually reduce their hours and pay. Such programs are already widespread in government and educational institutions, but businesses have been reluctant to embrace such approaches due to concern that they might violate federal laws on taxes and pensions or be deemed to be discriminating on the grounds of age. In contrast, a lock manufacturer in Finland, Abloy Oy, gives workers over the age of 55 additional benefits, including more time off and free fitness club membership, in a bid to encourage them to remain in their jobs. Finland tackled another barrier—the fact that many defined benefit pension plans calculate benefits according to formulas that

⁵⁴ *Talkin' 'bout my generation: The economic impact of aging US baby boomers*, McKinsey Global Institute, June 2008 (www.mckinsey.com/mgi).

encourage workers to retire early—by increasing from 59 to 63 the minimum age at which retirees can receive a government-provided pension.

The participation of women is another issue that the United States, both public and private sector leaders alike, could choose to address. After decades of increase, participation by women in the US labor force appears to have leveled off—and at a lower level than in other developed countries, including Sweden. In 2009, Sweden had one of the highest rates of labor force participation—87 percent—among women aged 25 to 54 of any OECD country. Female participation levels in any country reflect a complex interplay of cultural, historical, and economic factors, but public policy has proved decisive in many countries. The participation of women in Sweden began to rise after the government switched from joint to individual filing in 1971, reducing the marginal tax rates on second earners. Sweden also boasts affordable and high-quality child care with one of the highest enrollment rates in nurseries among children under three, as well as care for the elderly and generous parental leave. Parental leave benefits depend on previous earnings and day care is for the nearly exclusive use of labor market participants, providing a strong incentive for women to work.⁵⁵ The United States should consider whether the broader economic gains of higher female participation outweigh the public expenditure that such policies entail. If so, the United States should consider removing regulatory disincentives to the participation of women, including the current marriage tax penalty, as well as encouraging the provision of child care, transportation, and remote working to facilitate greater choice for families in how they balance home and work life.

Overall, if the United States was to increase the labor force participation of women and seniors, decrease youth unemployment, and increase immigration to the levels achieved elsewhere, it could boost GDP by up to 1 percent over ten years (Exhibit 28). To achieve this would mean making broad system-wide changes, some of which could be based on policies that have proved effective elsewhere.⁵⁶ Forthcoming research from MGI will address several of these issues.

In addition to acting to remove barriers to older workers staying in the workforce, the public and private sectors should consider how they can encourage the pursuit of technical and analytical fields by creating innovative funding mechanisms and developing direct links between jobs and college or vocational training schools (e.g., corporate sponsorship of advanced education and science students).

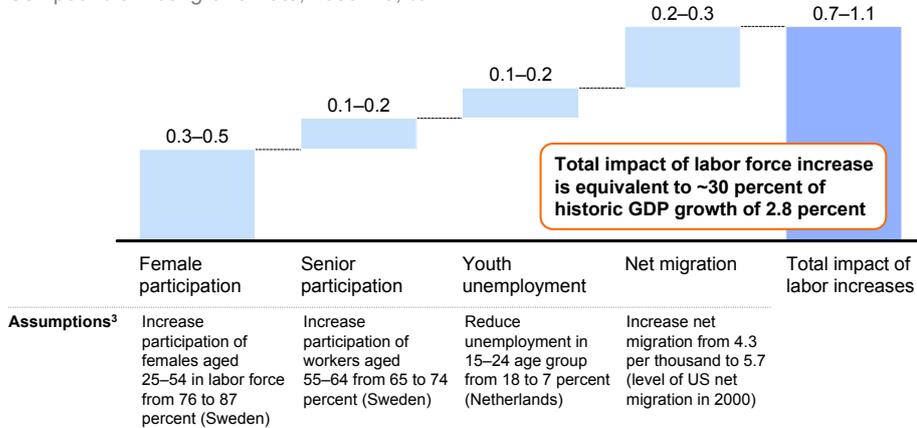
⁵⁵ *Beyond austerity: A path to economic growth and renewal in Europe*, McKinsey Global Institute, October 2010 (www.mckinsey.com/mgi).

⁵⁶ *Talkin' 'bout my generation: The economic impact of aging US baby boomers*, McKinsey Global Institute, June 2008 (www.mckinsey.com/mgi).

Exhibit 28

Increasing the US labor force could add a significant amount to GDP growth but would likely require major changes in policy and practices

Increases in the workforce by lever¹
Compound annual growth rate, 2009–19, %²



1 Assumes all else remains constant (e.g., working hours and productivity levels). Numbers may not sum due to rounding.
 2 Excludes impact of dynamic demographic changes over a ten-year period.
 3 All assumptions are based on 2009 data comparing US with international levels; the exception is net migration, which compares US data for 2000 with US projections for 2010.
 SOURCE: Organisation for Economic Co-operation and Development; Central Intelligence Agency; World Bank; McKinsey Global Institute analysis

Another action the United States might consider is the elimination of barriers to the immigration of skilled workers. Immigrants account for a high percentage of entrepreneurs and technology start-up leaders, and a large share of PhDs from US universities. The United States continues to operate a quota-based system, while other developed countries—most recently Australia and the United Kingdom—have adopted a points-based system. The latter system, pioneered by Canada, awards points for desirable qualities such as skill level and sets a minimum number of points for immigrants to meet. Governments manage these programs dynamically. Australia, for example, changes the requirements of the system annually to reflect the shifting labor and skills needs of its different regions. Instead of such a system, the United States today chooses to make targeted exceptions, for example to encourage the immigration of nurses, who are in short supply. However, this approach leads to extra processing and related delays that a more flexible system would not entail.

The United States should consider increasing H-1B visa quotas, replacing quotas with a points-based system that rewards educational attainment, and easing the path to citizenship for those who are likely to contribute positively to the economy.

4. BUILD 21ST-CENTURY INFRASTRUCTURE

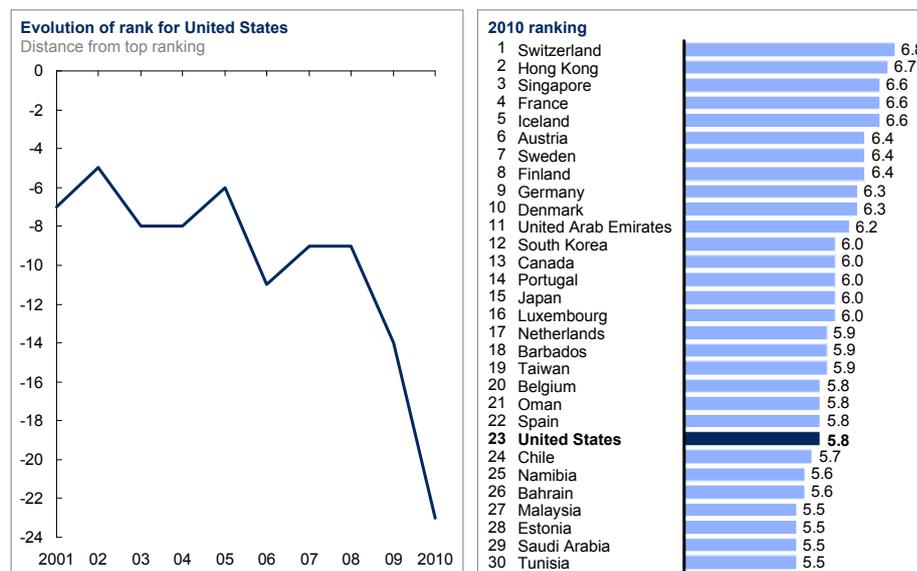
Infrastructure—both physical like transportation and virtual such as broadband connection—drives productivity directly and by acting as a platform for other productivity-enhancing innovations to build scale. These network and platform effects dramatically lower interaction costs, driving positive step changes in both productivity and competitiveness. To capture more of these opportunities, the United States could consider implementing best practices in infrastructure development from project selection to financing and delivery. Additionally, there is limited use of demand management techniques (e.g., congestion pricing) that could ease the strain on worn infrastructure in the near term.

The quality of hard infrastructure, from transportation to water systems, has been in relative decline in the United States (Exhibit 29). According to the World Economic Forum's *Global competitiveness report 2010-2011*, the United States ranked 23rd out of 139 countries on the overall quality of infrastructure, behind France, Germany, Canada, and Japan, among others. In the 2000 WEF report, the United States had ranked seventh. Observers estimate that the investments necessary to improve the quality of existing assets and build new infrastructure assets could total \$2.2 trillion over five years, which is likely to be beyond the capability of federal, state, and municipal governments to fund on their own.⁵⁷

Exhibit 29

The relative quality of US infrastructure has been declining

Quality of overall infrastructure



SOURCE: World Economic Forum, *Global competitiveness report 2010-2011*

Broadband penetration is also becoming a central issue for all economies, and penetration in the United States is relatively low at 27 subscribers out of 100 inhabitants. In comparison, Sweden has 41 broadband subscribers for every 100 inhabitants. The relatively low broadband penetration in the United States places limits on economic activity. In retail, for instance, the relative lack of rapid data connectivity is curtailing the industry's efforts to reap the productivity advantages of moving online. The nearly 40 percent of US households that do not subscribe to broadband represent \$450 billion in annual purchasing power of retail products (Exhibit 30).

As well as having relatively low broadband penetration, the United States appears ill-prepared for the next generation of technological infrastructure that will likely see the replacement of online commerce with mobile commerce (commerce using a mobile device as opposed to a computer). The United States has a low penetration of mobile phones in comparison with other countries, ranking 71st out of 139 on this metric.⁵⁸

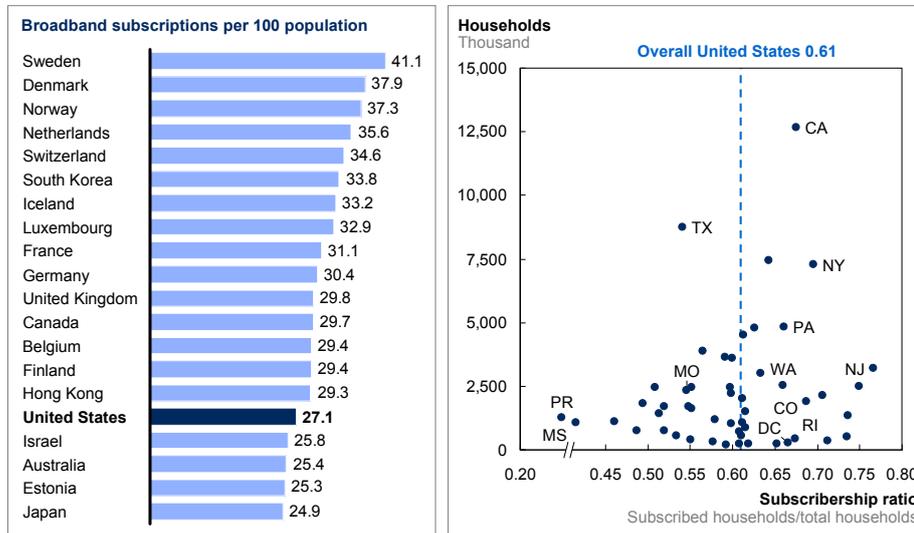
⁵⁷ American Society of Civil Engineers, *Report card for America's infrastructure*, 2009.

⁵⁸ World Economic Forum, *Global competitiveness report 2008-2009*.

Exhibit 30

Broadband penetration in the United States is lower than in other countries and varies widely across states

Broadband penetration



SOURCE: International Telecommunication Union; Federal Communications Commission

While the full economic impact of infrastructure is often hard to measure, MGI industry experience has shown that a lack of adequate infrastructure can be a barrier to growth. In India, for example, we know that the country's inadequate infrastructure severely delayed the growth of its IT services sector.⁵⁹ In the United States, the "supply" of transport infrastructure is struggling to keep pace with demand. Demand for road transport has increased by 3 percent per annum over the past two decades while capacity has increased by only 1 percent a year over the same period. Increasing road congestion in the United States already costs more than \$85 billion a year, with an average cost per traveler ranging from \$1,084 a year in very large urban areas to \$384 per traveler in less built-up locations.

There is considerable scope for the United States to identify and implement leading-edge practices, beginning with how it selects projects in the public sphere. One model currently in place in Canada creates an investment arm of the government to allocate funds to infrastructure projects. Underwritten by the government, the \$1.2 billion P3 Canada Fund reports to independent boards of directors and selects projects that have a positive economic payoff. Some countries have also made progress in designing public-private partnerships that yield positive social and private returns. Canada's privately operated Highway 407 is often cited as an example of a successful public-private partnership. The United Kingdom has experimented widely in this area, with some successes, notably in education and health care, but also instances of failure. All of the results of experimentation require closer examination.

The United States should consider ways of harnessing the power of financial sector product innovations to bridge the infrastructure funding gap. Financing structures should provide a revenue stream but must also reflect the public-good nature of infrastructure (e.g., by meeting goals for equity and ability to pay). Many users of public infrastructure are unaccustomed to the full market price of that infrastructure.

⁵⁹ *New horizons: Multinational company investment in developing economies*, McKinsey Global Institute, October 2003 (www.mckinsey.com/mgi).

This exacerbates the challenge of providing a revenue stream that is sufficient to meet the returns required by equity investors. Current funding approaches (e.g., municipal bond markets) are not scalable to the degree that will be necessary to provide for future US infrastructure needs.

Even achieving best practice in the selection of projects and securing the necessary funding is unlikely to be sufficient to address the infrastructure challenge. In addition, the United States needs to ensure that, once a project breaks ground, the investment is not wasted. The United States is well behind international best practice in the construction of infrastructure. While measuring productivity in the construction industry, most observers agree that it has at the very least stagnated and perhaps even declined over the last three-plus decades. The construction industry needs to deliver greater value with existing inputs, or even fewer inputs.

Finally, the United States should consider how to enhance its use of demand management techniques, including differential pricing (e.g., bridge tolls that vary with the time of day). Economists tend to agree that such pricing schemes can drive the more productive use of infrastructure, ease strain on that infrastructure, and draw attention to where investment is likely to yield the highest societal returns. In practice, however, such systems are difficult to design and implement effectively. Again, the United States should study cases of best practice being adopted elsewhere.

5. ENHANCE THE COMPETITIVENESS OF THE US BUSINESS AND REGULATORY ENVIRONMENT

The relative competitiveness of the US business and regulatory environment is declining—at a time when many international jurisdictions are aggressively adjusting their regulatory environment and streamlining processes for working with business to attract new investment. For example, the Dutch Innovation Platform has brought together the government, key business leaders, and other leading representatives of society to develop an explicit plan for how to attract 50 significant international businesses to Holland. France has an Ambassador for International Investment, who reports annually on jobs created. In the United States, the perception of multinationals is not only that there has been limited change but that what change there has been has gone in the wrong direction (e.g., Sarbanes-Oxley).⁶⁰

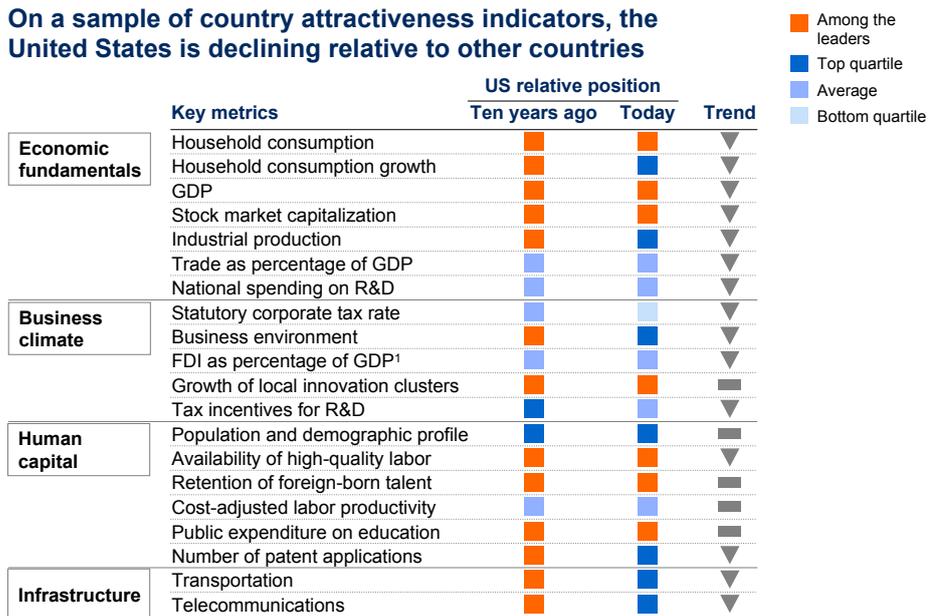
As competition increases for business investments, the United States needs urgently to consider how to regain its regulatory edge. On a variety of measures that gauge countries' attractiveness for business, the relative performance of the United States is trending downward, with particularly poor scores on the business climate (Exhibit 31).⁶¹

60 *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi). The Sarbanes-Oxley Act of 2002 set new or enhanced standards for US public company boards, management, and public accounting firms.

61 *Growth and competitiveness in the United States: The role of its multinational companies*, McKinsey Global Institute, June 2010 (www.mckinsey.com/mgi).

Exhibit 31

On a sample of country attractiveness indicators, the United States is declining relative to other countries



¹ Foreign direct investment.

SOURCE: McKinsey Global Institute synthesis of data from numerous sources

As a start, the United States could significantly reduce the complexity of regulations and streamline the process of resolving disputes. The United States scores relatively poorly on the degree to which this red tape burdens businesses. In the broadest possible terms, the United States needs to address unnecessary regulatory barriers that limit competition in pockets of the economy and the degree to which red tape burdens businesses, a measure on which the United States does not score well. For example, the United States does not permit big-box retailers to sell pet medicines, dampening competition. In the auto industry, rules curbing online distribution limit customization and increase costs to the end consumer.

Another useful approach would be to assess corporate tax rates and tax structures in the context of a global economy, focusing on the effective marginal tax rate rather than generic tax codes. The United States could also go further in eliminating remaining sector-level barriers to competition, particularly in small or developing segments (e.g., eliminate barriers to online auto sales).

Action that the United States also might consider is an international effort to secure more free trade agreements to ensure that US-based companies have access to rapidly growing emerging markets. Recent successes include agreements with India and South Korea, but the United States can do more (e.g., enlarging trade with Colombia and Panama). Where possible, the United States should aim to strike regional trade agreements that harmonize policy across multiple countries, facilitating the management of global supply chains.

6. EMBRACE THE ENERGY PRODUCTIVITY CHALLENGE

Global demand for energy is predicted to increase at an accelerating pace over the next 20 years, with developing economies accounting for 85 percent of that growth.⁶² Such an increase will impose increasing environmental costs and could strain the supply of energy, potentially limiting long-term growth prospects. While attention focuses on sourcing new supply, there is considerable scope for increasing how productively existing energy supplies are used.

The United States has lagged behind other countries' efforts to pursue increased energy productivity—the level of output achieved from the energy consumed. Previous MGI research found that, without a change in policy, US energy demand will accelerate slightly from its long-term growth rate to some 1.1 percent a year. Moreover, the research found that, in the absence of a change of policy, the United States is destined to remain the most energy-intensive developed economy and the country with the highest energy consumption per capita to 2020.⁶³ However, the research also showed that there are enough opportunities—using existing technologies with an internal rate of return of 10 percent or more—to boost energy productivity by 22 QBTUs, the equivalent of 11 million barrels of oil per day.⁶⁴ Capturing these opportunities would more than compensate for growing end-use demand and would enable the United States to cap annual energy consumption and carbon dioxide emissions at their current levels by 2020.

Market imperfections such as a lack of price transparency or insufficient financing of positive payback energy efficiency investments deter increases in energy productivity that are technically possible and economically attractive. Tangible changes in policy, such as fuel economy standards, could encourage the adoption of existing energy-saving technologies and spur the development of other technologies. Europe and Japan already have plans for a progressive increase in standards. If the United States were to match these efforts, the average fuel economy of the US vehicle stock would improve by 5 miles per gallon by 2020. This is the equivalent of cutting the US call on crude oil by up to 4 million barrels per day—or 20 percent of projected oil imports in 2020.

In the US residential sector, households, on average, have both larger houses with less insulation and bigger appliances with lower energy efficiency than is the case in several European countries, as well as Japan. With current policies, the United States will show a lower rate of energy efficiency improvement to 2020 than other developed economies. This means that other countries will pull even further ahead of the United States in terms of energy efficiency across all main end-use segments.

Action to inform consumers more clearly about their energy choices can have a significant impact. Advanced metering is a large area of opportunity. Utilities can establish technologies for two-way communication with their customers to facilitate changes in energy use. A number of large-scale implementations of advanced metering have begun as new two-way technologies are emerging, costs are declining, and, most important, there are some clear policy directives (e.g., a broadband-over-power-lines implementation mandate in Texas and regulated

62 *Curbing global energy demand growth: The energy productivity opportunity*, McKinsey Global Institute, May 2007 (www.mckinsey.com/mgi).

63 *Wasted energy: How the US can reach its energy productivity potential*, McKinsey Global Institute, June 2007 (www.mckinsey.com/mgi); and *Unlocking energy efficiency in the US economy*, McKinsey & Company, July 2009.

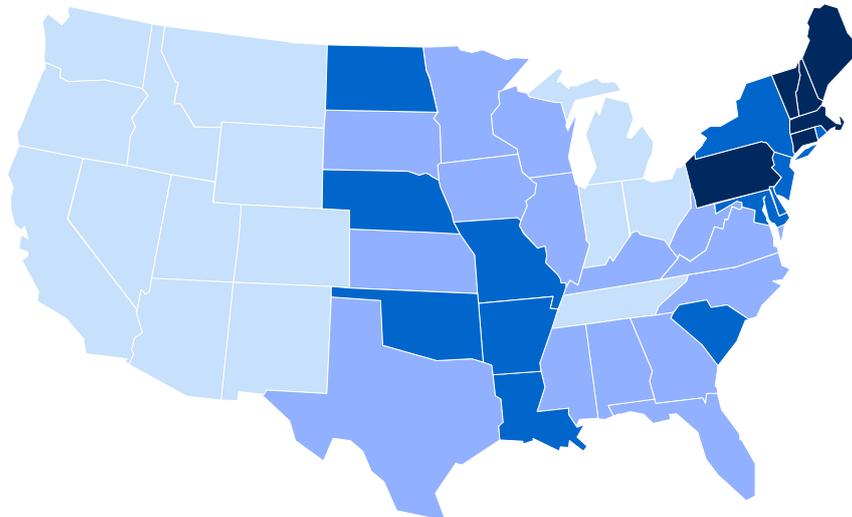
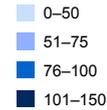
64 Quadrillion British Thermal Units.

advanced metering in California). The motive behind a push for advanced metering is that, if consumers understand their electricity consumption patterns over time and realize that they are paying premium prices for peak-time power, they are more likely to shift their consumption patterns away from peak times (e.g., by briefly cycling off energy-intensive appliances during these periods). States vary in the household savings that can be expected from an increase in energy efficiency, suggesting that solutions focused on prices and consumer choice will need to be tailored (Exhibit 32).

Exhibit 32

The economic benefit of a 5 percent increase in energy efficiency varies across states

Household electricity bill savings
\$ per year



SOURCE: US Energy Information Administration; McKinsey Low Carbon Economics tool

Households can be helped to invest in energy efficiency with energy intermediaries such as utility companies playing a potentially key role. Traditionally, the utilities' revenue has been tied to the volume of electricity delivered, encouraging growth in electricity demand rather than in energy efficiency. In recent years, a number of states have revived their energy efficiency programs by introducing energy efficiency resource standards (EERS), which set targets for reducing state electricity consumption. These are typically mandated through utilities and require the revision of their compensation mechanisms. Evidence from states that have introduced EERS indicates that, when utilities have an incentive to help overcome the information and agency barriers to higher productivity, they have been able to generate annual savings of around 1 percent of energy consumption.

7. HARNESS REGIONAL AND LOCAL CAPACITIES TO BOOST OVERALL US GROWTH AND PRODUCTIVITY

Cities and regions in the United States have markedly different growth and productivity trajectories, and there is insufficient sharing of best practice among them. There is a rich seam of experimentation with effective solutions at the federal and local levels, and this provides an opportunity that the United States is not utilizing today to identify and transfer best practice across regions.

There is considerable scope for establishing best practice tools and processes and sharing these across state and local government functions. These could include a defined set of tracking variables made transparent through digital media. All levels of government should also seek opportunities for cross-regional alliances in economic development. This could include packages in which private companies could invest that would coordinate across regions with strengths in different pieces of the supply chain (e.g., design in one state, manufacturing in another).

The public and private sectors can do much to further these seven agenda items, but effective execution of approaches is paramount. For all levels of government, the range of policy options runs through the spectrum from setting ground rules but allowing the private sector free rein, to establishing the government as a principal actor in a particular sector (Exhibit 33).⁶⁵ Approaches need to be tailored to the sector, taking into account historical realities and whether different policies have proved effective or not. As it discusses the policies likely to be most appropriate for meeting the growth and competitiveness imperative, the United States should not rule out any approach. At the same time, US policy makers should not seek to simply replicate the policies of other countries but rather be aware of the range of experiences that exist. With that understanding, the United States can put into practice those policies best suited to driving future growth and renewal.

Exhibit 33

Governments can pursue different levels of interventions

EXAMPLES

Agenda items for growth and renewal	Degree of intervention			
	Low			High
	Setting ground rules/direction	Building enablers	Tilting the playing field	Government as principal actor
1 Drive productivity gains in the public and regulated sectors	Establish and track key productivity metrics by sector	Fund enabling IT infrastructure and training	Set incentives that reward more productive providers/individuals	Conduct "lean" program through the public sector
2 Reinvigorate the innovation economy	Set clear regulatory environment (e.g., GHG ¹ fiscal)	Establish skill-based points system to manage immigration	Offer tax incentives for private R&D activities	Establish public R&D institutions on strategic industries
3 Cultivate the US talent pool	Set retirement incentives to reward staying in workforce	Establish skill-based points system to manage immigration	Provide subsidized low-cost study loans; attract ex-pats to return	Establish publicly funded educational systems
4 Build efficient and economically viable infrastructure	Set national standards for construction	Enable private infrastructure investments	Provide fiscal incentives for private infrastructure build-out	Expand and upgrade public infrastructure investment arm
5 Enhance the competitiveness of the business environment	Reduce regulatory complexity	Establish mechanism to share best practices across localities/states	Offer fiscal and other investment incentives	Target multinational companies to attract and pursue
6 Embrace the energy productivity challenge	Set evolving energy efficiency standards	Require energy efficiency reporting for goods and companies	Provide tax benefits to companies engaged in energy-saving activity	Improve efficiency of public buildings and purchasing
7 Harness regional and local capacities	Increase efficiency of local/state business regulation	Strengthen local schools/infrastructure	Offer local fiscal investment incentives	Establish public city broadband networks

1 Greenhouse gases.

SOURCE: McKinsey Global Institute analysis

⁶⁵ For a fuller discussion of different policy options and approaches, see *How to compete and grow: A sector guide to policy*, McKinsey Global Institute, March 2010 (www.mckinsey.com/mgi).



The United States has a superlative track record on productivity and possesses the tools necessary to retain that edge. Corporations are emerging from the recession with more efficient operations and healthy balance sheets, putting them in a strong position to take on the next wave of productivity improvements. Concerted action by the private or public sector can help, particularly in regulated and public sectors where incentives can be redesigned to drive step-change improvements in productivity.

The US economy can achieve three-quarters of the productivity growth acceleration it needs to match historic growth rates if it adopts and diffuses best practice more broadly and taps into the potential of emerging innovations. To obtain the rest of the necessary acceleration—and even achieve faster productivity growth and thereby improve on historic growth rates—the United States needs to take structural action across a range of potential levers. These include boosting labor market participation to counter adverse demographics, changing incentives in public and regulated sectors, and enhancing the underlying drivers of productivity. By doing so, the United States has every potential for ensuring that the next generations of citizens enjoy the same pace of rising prosperity as did their parents and grandparents.

Appendix: Estimating US productivity growth opportunities

In estimating the productivity potential of the US economy over the next ten years, MGI studied the patterns of sector contributions to growth in the past two decades and conducted deep-dive case studies of three industries: retail, health care, and aerospace. These sectors cut across a variety of categories and characteristics, representing goods, services, and regulated sectors as well as tradables and non-tradables. Each is also relevant to the US economy in its own right. The retail sector is one of the largest employers and was a strong contributor to US productivity acceleration in the late 1990s. Health care is a large and growing segment of the US economy both in terms of spending and employment, but its productivity performance has lagged behind the US average. Finally, the aerospace industry is a high-skill manufacturing industry that is the United States' largest exporter. Together, these three sectors represent more than 20 percent of US GDP and nearly 15 percent of employment, and they shed light on the industry-level dynamics in very different segments of the US economy.

For the case studies, we drew on industry-level data, past MGI and external research, and McKinsey's internal industry expertise to identify productivity improvement opportunities. Through the industry value chain, we identified specific actions that can improve efficiency, raise sales volumes, and/or enhance the quality of the product or service over the next ten years. For each productivity lever, we estimated how sector output per worker hour would change at a single establishment, and then assessed the industry-level impact on productivity if fully implemented in the relevant segments of the industry (Exhibit A1). In all sectors, we added up the productivity gains achievable across all levers over the next decade to size the productivity opportunity by sector. We assumed no changes in real prices.

The underlying data used to measure output varied by sector. For both retail and aerospace, we used gross margin as the core measure of output, although we also relied on other industry performance metrics for specific complementary analyses (e.g., unit volume of retail sales). In the case of health care, where value-added data are a particularly poor indicator of output, we relied on MGI's global benchmark data on health care costs. We focused on opportunities that reduce costs, but either maintain or improve the quality of health care outcomes.

We then extrapolated these microeconomic findings to the broader economy with a range of alternative assumptions on productivity opportunities in the sectors where we did not conduct deep dives. These include applying opportunities from our cases to sectors with similar characteristics; projecting past growth rates for other sectors with adjustments based on McKinsey's industry expertise on the sustainability of recent performance gains; and using productivity growth estimates from external sources for the sectors we did not cover in detail. The resulting aggregate productivity growth estimates clustered around 1.8 percent—our estimate for the productivity growth achievable in today's business environment. This is in line with a range of external estimates of US productivity growth through 2020 (Exhibit A2).

Exhibit A1

The productivity opportunity was sized based on estimates of the impact of company-level levers

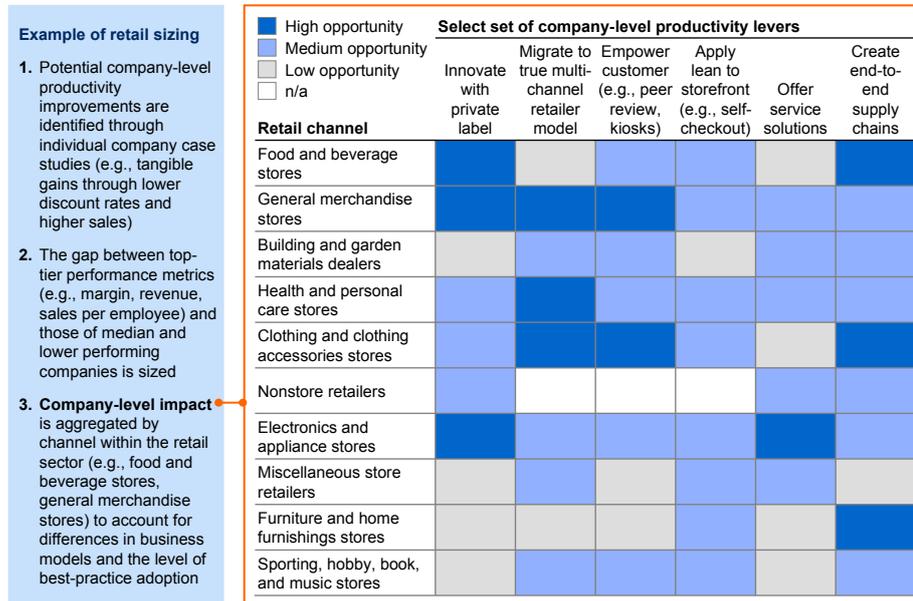
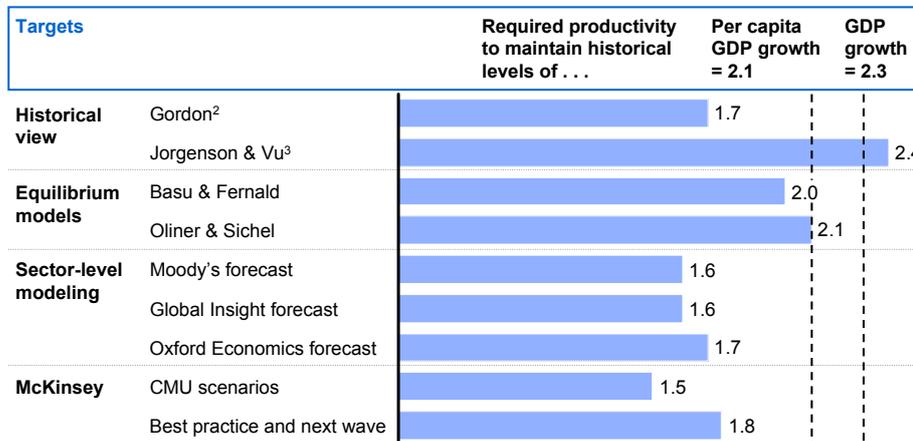


Exhibit A2

Most estimates of annual productivity growth hover around 1.7 percent

Estimated future productivity targets and growth rates in base case models¹

Compound annual growth rate, 2008–20 (unless otherwise stated), %



¹ Estimates for overall productivity (including the farm sector); Gordon’s estimate includes a 2.05% nonfarm productivity forecast.

² Estimate through 2027.

³ For full detail of forecast sources, see bibliography.

SOURCE: Moody’s; Global Insight; Oxford Economics; Federal Reserve Bank of San Francisco; press search; McKinsey Center for Managing Uncertainty (CMU) scenarios

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Relevant

McKinsey Global Institute publications



Growth and competitiveness in the United States: The role of its multinational companies (June 2010)

Although US multinationals include many of the biggest companies in the United States, the full extent of their economic impacts are less well known. MGI seeks to provide a fuller picture by assessing the contributions of MNCs across the key metrics of economic performance.



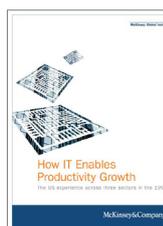
How to compete and grow: A sector guide to policy (March 2010)

Drawing on industry case studies from around the world, MGI analyzes policies and regulations that have succeeded and those that have failed in fostering economic growth and competitiveness at the sector level. What emerges are some surprising findings that run counter to the way many policy makers are thinking about the task at hand.



US productivity growth 1995–2000: Understanding the contributions of information technology relative to other factors (October 2001)

MGI's study of US productivity growth aimed to determine the causes of the sudden increase in the growth rate of labor productivity in the United States between 1995 and 2000. This increase was interpreted by key economists and policy makers as evidence of a "new economy," where IT applications would lead to faster US economic growth. The report lays out the nature and importance of the role played by six key sectors in the acceleration of productivity growth and its causes, with a focus on the role of IT.



How IT enables productivity growth (October 2002)

Looking at three sectors in detail—retail banking, retail trade, and semiconductors—MGI finds that while IT enabled productivity gains in each sector, its impact was complex and varied. IT applications that had a high impact on productivity shared three characteristics: They were tailored to sector-specific business processes and linked to performance levers; they were deployed in a sequence that allowed companies to leverage their previous IT investments effectively; and they evolved in conjunction with managerial innovation.



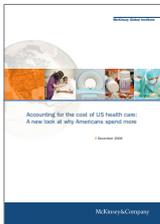
Debt and deleveraging: The global credit bubble and its economic consequences (January 2010)

The recent bursting of the great global credit bubble has left a large burden of debt weighing on many households, businesses, and governments, as well as on the broader prospects for economic recovery in countries around the world. Leverage levels are still very high in ten sectors of five major economies. If history is a guide, one would expect many years of debt reduction in these sectors, which would exert a significant drag on GDP growth.



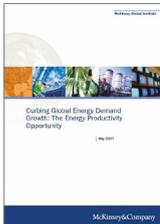
Beyond austerity: A path to economic growth and renewal in Europe (October 2010)

Europe faces pressures on GDP growth at a time when scope to stimulate growth from public funds is limited by high debt and deficit levels. The threat to growth is unlikely to dissipate in the short or even medium term, and significant imbalances in unit labor costs and current account positions between European economies intensify the strain. In this challenging context, Europe has little choice but to pursue structural reform to bolster growth. This report sets out a comprehensive agenda for European structural reform on the basis of analysis of existing best practice within the region, proposing action in three areas in parallel.



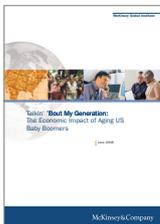
Accounting for the cost of US health care: A new look at why Americans spend more (December 2008)

The United States spends \$650 billion more on health care than expected, even when adjusting for the economy's relative wealth; MGI examines the underlying trends and key drivers of these higher costs. MGI finds that outpatient care, which includes same-day hospital and physician office visits, is by far the largest and fastest-growing part of the US health system. The next largest contributors are the cost of drugs, and administration and insurance.



Curbing global energy demand growth: The energy productivity opportunity (May 2007)

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Talkin' 'bout my generation: The economic impact of aging US baby boomers (June 2008)

Despite their aggregate wealth, a vast majority of US baby boomers are unprepared for retirement. Enabling them to work longer would significantly benefit both individuals and the broader economy, but policy makers and business leaders will need to take action.

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