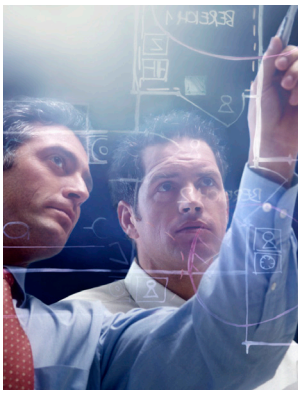
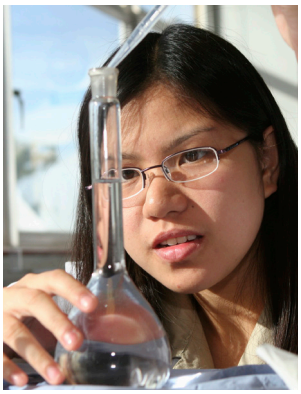
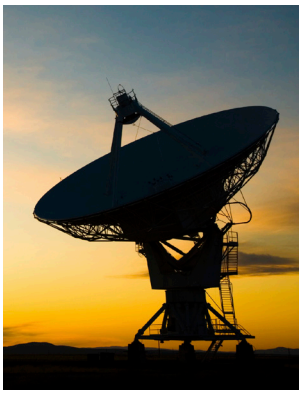
McKinsey Global Institute

June 2010

Growth and competitiveness in the United States: The role of its multinational companies

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 more than 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, 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.

McKinsey Global Institute

June 2010

Growth and competitiveness in the United States: The role of its multinational companies

Jonathan Cummings
James Manyika
Lenny Mendonca
Ezra Greenberg
Steven Aronowitz
Rohit Chopra
Katy Elkin
Sreenivas Ramaswamy
Jimmy Soni
Allison Watson

Preface

Growth and competitiveness in the United States: The role of its multinational companies is the latest research by the McKinsey Global Institute (MGI) on the subjects of economic growth, renewal, and competitiveness. In the past, MGI has examined the effects of different sectors on growth in productivity, GDP, and wealth around the world. In this report, we focus on the impacts of one group of economic participants—US multinational corporations—and examine how they choose where to participate and invest.

We selected this group, first, because multinational corporations are major actors in the US economy. Additionally, they have stirred great debate and keen interest in recent years as international competition for jobs and investment has grown. Finally, we focus on US multinationals because they are the companies most exposed to global competition. Since many other US companies are similarly exposed, US multinationals provide insights into how other companies, and indeed the economy as a whole, may respond to increasingly intense global competition.

The US Direct Investment Abroad (USDIA) surveys conducted by the Bureau of Economic Analysis provided our primary data on US multinational companies. Additionally, we drew upon research by academic scholars, think tanks, and international organizations. To gain further insights, we interviewed senior executives from 26 of the largest and best-known US multinationals and examined how they make investment decisions.

McKinsey & Company directors Jonathan Cummings, James Manyika, and Lenny Mendonca, and MGI senior fellow Ezra Greenberg led this research project. The project team comprised the following MGI fellows: Steven Aronowitz, Rohit Chopra , Katy Elkin, Sreenivas Ramaswamy, Jimmy Soni, and Allison Watson. The team benefited from the contributions of MGI directors Richard Dobbs and Charles Roxburgh; Susan Lund, MGI director of research; and our other McKinsey colleagues, Jonathan Ablett, Imran Ahmed, Lizzie Burn, David Cheifetz, Karen Jones, David McCombie, Anh Nguyen, John Niehaus, Moira Pierce, Vivien Singer, Patrick Taaffe, Vanya Telpis, Soyoko Umeno, and Johann Von Hoffman. Deadra Henderson, MGI operations specialist; Tim Beacom, MGI knowledge operations specialist; and Rebeca Robboy, MGI external communications manager, aided the project. Janet Bush, Nell Henderson, and Joanne Mason provided editorial support.

We particularly wish to thank our external academic advisers, Martin N. Baily, a senior adviser to McKinsey & Company and a senior fellow at the Brookings Institution; Laura D'Andrea Tyson, professor of business administration and economics at the Haas School of Business at the University of California, Berkeley; and Matthew J. Slaughter, associate dean of the MBA program at the Tuck School of Business at Dartmouth.

We are grateful to Raymond J. Mataloni Jr., an economist at the US Bureau of Economic Analysis, for his extensive assistance. We also benefited from numerous interviews with external experts and practitioners in the field, including Barry P. Bosworth, a senior fellow at the Brookings Institution; Mihir A. Desai, a professor at Harvard Business School; and William G. Gale, a senior fellow at the Brookings Institution.

Finally, we offer special thanks to the 26 senior executives interviewed. We did so on condition that we would not identify them or their US multinational companies by name in the report. All references to specific companies in the report come from public sources.

Our aspiration is to provide business leaders and policy makers around the world with a fact base to better understand some of the most important trends shaping global financial markets today. As with all MGI projects, this research is independent and has not been commissioned or sponsored in any way by any business, government, or other institution.

Richard Dobbs
Director, McKinsey Global Institute
Director, McKinsey & Company, Seoul

James Manyika
Director, McKinsey Global Institute
Director, McKinsey & Company, San Francisco

Charles Roxburgh
Director, McKinsey Global Institute
Director, McKinsey & Company, London

Susan Lund
Director of Research, McKinsey Global Institute
Washington, DC

June 2010

US multinational companies as a percentage of all US companies

<1% the share of the total number of US companies accounted for by US multinationals

11% the share of private sector employment growth generated by US multinationals since 1990

19% the share of the private sector work force employed by US multinationals in 2007

25% the share of private sector wages paid by US multinationals in 2007

25% the share of total US private sector gross profits earned by US multinationals in 2007

31% the share of growth in real private sector GDP accounted for by US multinationals since 1990


37%
multinationals' share of total US goods imports in 2007
41%
the gains in labor productivity accounted for by US multinationals since 1990
48%
multinationals' share of total US goods exports in 2007
53%
the gains in labor productivity accounted for by US multinationals during periods of economic expansion since 1990
74%
the share of the nation's private sector R&D spending made by US multinationals
90%
the share of US multinationals' intermediate inputs purchased from other US-based firms

Contents

Executive summary

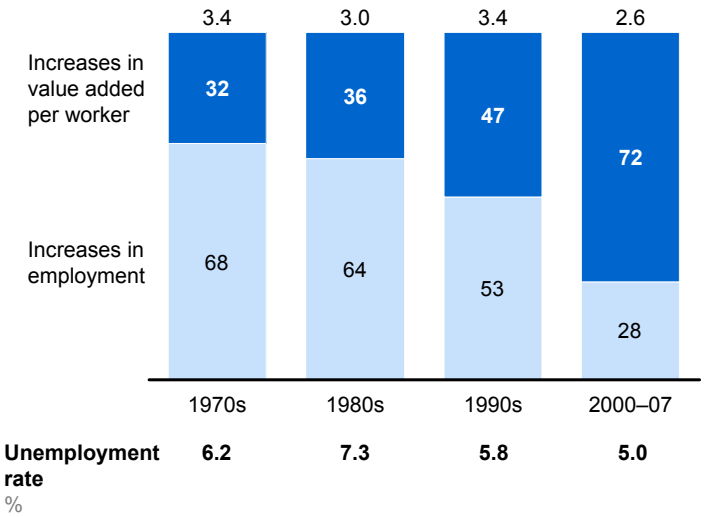
With the US economic recovery under way, government and business leaders are seeking to identify and nurture future sources of economic growth. These will include the contributions of large and small companies. Both types of companies are necessary, and both contribute differently to the performance of the economy. In this report, we focus on the contributions of US multinational corporations and examine the shifting global landscape in which these companies compete and make choices about where to participate and invest.

In summary, we find that, relative to their size, US multinational companies contribute disproportionately to private sector real GDP growth (or value added) and labor productivity. These metrics matter because productivity increases have delivered nearly three-quarters of US real GDP growth from 2000 through 2007, with the rest coming from employment gains—the reverse of the situation 30 years ago (Exhibit 1). Multinational companies' record on employment growth is mixed across sectors and business cycles. They are more concentrated than other companies in globally competitive sectors (such as manufacturing) that were hard hit in the 2001 recession, yet they have played a critical role in fueling the expansions that followed past recessions. Therefore, these companies could potentially play a similar role, contributing to growth in the current recovery and beyond through their continued strong participation in the US economy.

Exhibit 1

Labor productivity has become the dominant driver of US GDP growth

Growth in real GDP, nonfarm business sector
Average annual change (%)



SOURCE: Bureau of Economic Analysis

However, the global context in which these companies compete and invest is shifting. The United States retains many strengths that make it one of the most attractive markets for multinational companies' participation and investments. But numerous fast-growing emerging markets and some advanced economies are making huge strides in increasing their attractiveness, and are thereby influencing how multinationals decide where to participate and invest. Thus, the United States has entered a new era of global competition for multinational activity. Given the importance of multinationals to the US economy, it is critical that they compete—both at home and abroad—on at least an even basis against companies domiciled in other countries.

US policy makers can influence this race. They can recognize how the economic landscape is shifting and play to US strengths—free markets, a highly educated and skilled labor force, openness to foreign workers, and support for innovation. With the right policies, the United States can keep and attract multinationals, enable new ones to emerge, and create an environment that allows them to grow and thrive around the world. At stake is far more than the value of specific investments and related jobs. For with these investments and jobs comes the dynamism generated in an economy by the presence of these productive and globally competitive businesses.

Multinationals are the US companies most exposed to global competition. However, many other US companies—particularly those that rely on global customers, supply chains, and business networks—confront the same pressures and choices. Therefore, US multinationals may serve as a "canary in the coal mine" of the US economy, providing some indications of how other companies, and indeed the economy as a whole, may respond to increasingly intense global competition.

Because so much is at stake, US multinationals' increasing activities abroad often raise questions about their economic impacts at home and their reasons for expanding elsewhere. To address such questions, we analyzed the data, reviewed the academic literature, and drew on our prior research on sector competitiveness. To gain additional insights, we interviewed senior executives from 26 of the largest and best-known US multinationals and examined how they make investment decisions.[1] These companies have a combined market capitalization of nearly $2 trillion and annual sales of $1.5 trillion, and they employ 2 million US workers.[2]

1 The executives participated in the interviews on condition that they and their companies not be identified by name. Throughout this report, any references to specific companies are drawn from public information.

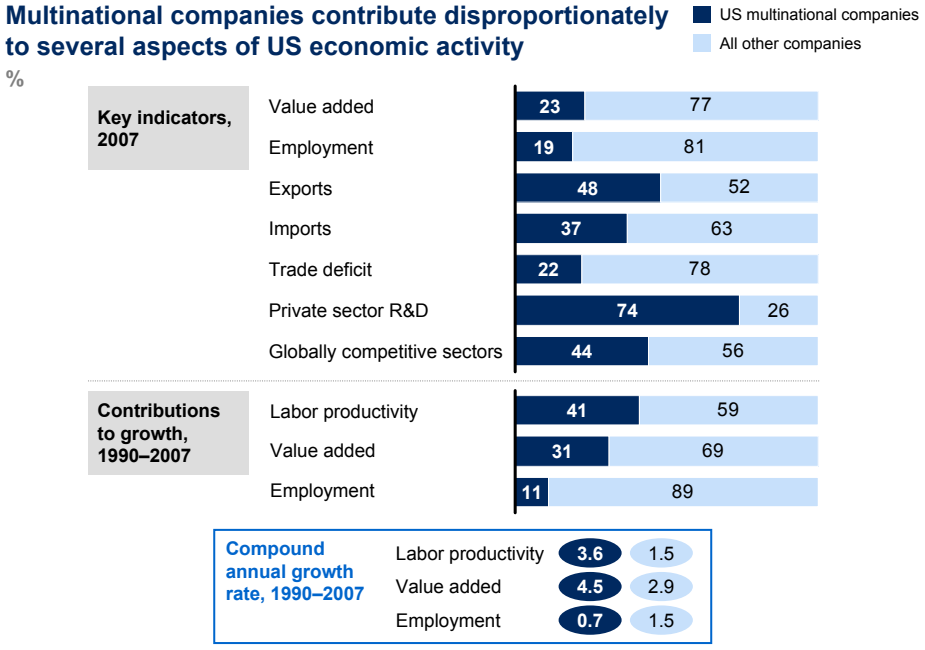
2 Based on the most recent annual reports as of February 2010 and market capitalization on February 9, 2010.

US MULTINATIONAL COMPANIES MAKE DISPROPORTIONATE CONTRIBUTIONS TO THE US ECONOMY

US multinational companies include some of the most famous brand names in the world, and they operate in a wide range of industries. Although they have foreign affiliates, these 2,270 companies operate primarily in the United States. In 2007, they generated 60 percent of their collective sales, employed two-thirds of their workforce, paid three-quarters of their total wages, and held 60 percent of their assets in the United States.[3] They account for less than 1 percent of all US companies, yet they contribute disproportionately to the US economy's growth and health in many ways (Exhibit 2).

Exhibit 2

Multinational companies contribute disproportionately to several aspects of US economic activity



SOURCE: McKinsey Global Institute analysis

Specifically:

- While US multinationals accounted for 23 percent of US private sector GDP in 2007, they contributed 31 percent of the growth in real GDP since 1990 and an average of 38 percent of the growth during the two economic expansions in this period.[4] The concentration of their activities in the most dynamic and globally competitive sectors helped fuel this growth.

- US multinationals accounted for 41 percent of US gains in labor productivity, or real value added per worker, since 1990 and an average of 53 percent of increases during periods of economic expansion. This partly reflects their commitment to the research and development that fuels innovation; US multinationals finance three-quarters of the nation's private sector R&D spending.

3 The latest complete US Bureau of Economic Analysis survey of US multinational activity was for 2007. Therefore, this report does not cover the effects of the recession that began in December 2007. The bureau has released advanced summary estimates data for 2008. For details, see *Appendix: Technical notes*.

4 Throughout this report, private sector GDP refers to the total value added by the private sector, excluding banks and educational services. See *Appendix: Technical notes* for details.

- US multinationals accounted for almost half of the nation's exports and more than a third of its imports in 2007, resulting in a more favorable trade balance than in the case of other US companies.

- US multinationals accounted for 19 percent of the private sector workforce in 2007 and contributed 11 percent of employment growth since 1990. They fueled a surge in job creation as they led the high-tech boom in the 1990s, but cut jobs during the dot-com bust in 2000. Since 2001, they have created jobs at a pace similar to that of other companies in their mix of sectors.

- US multinationals' employment record since 2000 partly reflects their significant presence in manufacturing, which has been shedding jobs for three decades. Three-quarters of US multinationals' job losses from 2000 through 2007 occurred in manufacturing. Other US manufacturers reduced their employment as well, and by a similar proportion, during this period.

- In addition to their direct impacts on the US economy, US multinationals have a significant indirect, or "multiplier," effect because they purchase approximately 90 percent of their intermediate inputs from other US-based firms. We estimate that adding the indirect effects raises their total contribution to US private sector GDP to 34 percent in 2007. Similarly, they were responsible—directly and indirectly—for 28 percent of US employment.

- US workers earn relatively high wages and benefits when employed by a US multinational. For managerial, professional, and technical employees (nearly one-third of their 22 million workers), US multinationals paid an average of $102,000 in 2007—37 percent higher than the national average; for all other employees, total compensation was an average of $45,000, or 13 percent higher.[5]

- US households also share in the wealth created by US multinationals. In 2007, US residents held 86 percent ($17.5 trillion) of the total market value of all US companies' equities either directly as individual investors or indirectly through pension funds, and retirement and insurance accounts.[6] In 2007, nearly 58 percent of US households had the rights to a defined benefit or other similar pension plan.

The impact of US multinationals on the US economy depends not only on their ability to win customers at home, but also on their success in serving markets abroad through their foreign affiliates and from a US base. US multinationals' investment in their foreign affiliates, and the resulting job creation and sales overseas, are associated with increases in these same activities in the parent company at home.[7]

---

5 The data do not allow us to examine how the median compensation per worker of multinationals compares with that of other companies.

6 US Federal Reserve Flow of Funds, third quarter of 2009, Table L.213. This table does not provide separate figures for multinational companies alone. Ownership of US equity by US residents has been over 90 percent for decades, although foreign holdings have been rising slowly over the years. After averaging 7 percent during the 1990s, the share of foreign holdings started rising from 9 percent in 2000 to 14 percent in 2007 and 2008.

7 See, for example, Mihir Desai, C. F. Foley, and J. R. Hines Jr., "Domestic Effects of the Foreign Activities of U.S. Multinationals," *American Economic Journal: Economic Policy* 1:1 (February 2009), 181-203; A. Ebenstein et al., "Estimating the Impact of Trade and Offshoring on American Workers Using the Current Population Surveys," National Bureau of Economic Research (NBER) Working Paper 15107, June 2009; N. Gregory Mankiw and Phillip Swagel, "The Politics and Economics of Offshore Outsourcing," NBER Working Paper 12398, July 2006.

MULTINATIONALS' PERFORMANCE REFLECTS THEIR CONCENTRATION IN GLOBALLY COMPETITIVE SECTORS

US multinationals' record on productivity, growth, and employment partly stems from their concentration in eight sectors—manufacturing, information, professional services, retailing, mining and resource products, finance, wholesale trade, and utilities. From 2000 through 2007—the period on which our sector analysis focuses—these eight sectors accounted for all the productivity growth and nearly 70 percent of the increases in value added in the US private sector.[8]

US multinationals' contributions to productivity reflect the fact that 44 percent of their economic activity is within globally competitive sectors. By comparison, just 24 percent of the activity of all companies is in such sectors.

Numerous MGI studies show that a competitive environment in an industry increases pressure on management to adopt best practices in its business processes.[9] Higher levels of competitive intensity produce stronger gains in productivity as businesses innovate to maintain and gain market share. At the same time, these pressures force businesses to maintain cost competitiveness relative to their peers. Recent academic work also demonstrates this link between competition and innovation growth.[10]

PARTS OF THE WORLD ARE CATCHING UP IN THE COMPETITION TO ATTRACT US MULTINATIONAL ACTIVITY

The United States possesses many of the economic and institutional attributes that attract and foster multinational activity. These include a large, growing economy; a highly educated and skilled workforce; political stability; a business-friendly legal and regulatory climate; and good physical and telecommunications infrastructure. But parts of the world are catching up.

The United States faces intensifying competition as other countries' economic prospects improve and they develop as better places to do business. Much of the increased attractiveness of markets outside the United States arises from organic factors, such as population growth, GDP growth, and rising affluence. While US real GDP rose at a 2.9 percent compound annual growth rate from 1995 through 2008, China's economy expanded at a 9.6 percent rate, India's at 6.9 percent, and Russia's at 4.7 percent. Real consumer spending is also growing much faster in emerging markets; from 1995 through 2008, real household consumption rose at a 3.3 percent annual rate in the United States, but at a 7.2 percent rate in China, a 6.7 percent rate in Russia, and a 5.1 percent rate in India.

Some countries are actively and successfully competing for new corporate investment through programs to improve their business climate, workers' skills, and infrastructure. They are providing companies with more consistent, and more

8 Consistent North American Industry Classification System (NAICS)-based industry information is available starting in the 1999 benchmark survey. Furthermore, real value added can be computed only at the industry level from 2000 to 2007 because of data requirements for the appropriate chain-weighted calculation. Thus our sector analysis focuses on this period. See *Appendix: Technical notes* for details.

9 See, for example, *US productivity growth 1995–2000: Understanding the contribution of information technology relative to other factors*, McKinsey Global Institute, October 2001, available online at www.mckinsey.com/mgi. Or see numerous country studies at www.mckinsey.com/mgi/rp/CSProductivity.

10 For example, P. Aghion, N. Bloom, R. Blundell, R. Griffith, and P. Howitt, "Competition and Innovation: An Inverted-U Relationship," *Quarterly Journal of Economics* 120:2 (May 2005), 701–728.

business-friendly, environments in which to operate. By some measures, the United States is losing ground. It slipped from 15th to 34th in overall institutional effectiveness since 1997, and it now ranks 20th in business and communications infrastructure, according to the World Economic Forum (WEF). And although the United States maintains a substantial advantage in human capital, pools of highly skilled labor are emerging in many countries.[11]

In 2000, 36 percent of Fortune Global 500 companies had their headquarters in the United States, and 16 percent were domiciled outside the G-7 countries.[12] By 2009, 28 percent had their headquarters in the United States, and 33 percent were based outside the G-7.

US MULTINATIONALS MAY BE THE "CANARY IN THE COAL MINE" OF THE US ECONOMY

US multinationals must pursue new growth opportunities and continually improve operations to remain globally competitive. They go where the markets are expanding, where the talent lives, and where they can earn superior returns. Increasingly, this means going after opportunities in emerging markets. To serve new markets, US multinationals often develop networks of foreign affiliates. Designed primarily to serve overseas markets (in 2007, only 10 percent of foreign affiliate production was "exported" to the United States), these affiliates have proven beneficial to the United States. The most recent academic research suggests that US multinationals' investments, job creation, and sales abroad are associated with increases in these same activities at home.

Many other US companies that operate only in the United States also face intensifying pressures from domestic and foreign rivals, particularly as the relative position of other countries improves. These companies may not respond by investing directly overseas, but they can move some of their operations offshore by contracting with foreign suppliers. This activity is hard to observe directly. But through the Bureau of Economic Analysis surveys, we have good data on US multinational corporations' investment in their foreign subsidiaries. Thus, the actions of US multinationals provide us with an indication of how other companies can use access to markets abroad to cope with similar competitive pressures. US multinationals may serve as a "canary in the coal mine" of the US economy, providing warnings of possible future risks. In this case, the risk is that the United States could lose future corporate investment—by both multinationals and other companies—if it loses its competitive advantage in certain areas. The risk is that foreign-domiciled companies will win the battle to create new industries or will leverage their advantaged position at home to capture US markets.

POLICY MAKERS MUST WORK TO MAINTAIN THE UNITED STATES' ECONOMIC COMPETITIVENESS

Many of the executives we spoke with emphasized the need to ensure they are competing on a level playing field. They believe that current US policies—particularly in the areas of corporate taxes, limits on the immigration of skilled workers, and bureaucratic hurdles and inconsistencies—handicap US companies when competing abroad and in some cases discourage investment at home. And several

11 See *The emerging global labor market*, McKinsey Global Institute, June 2005. Available at www.mckinsey.com/mgi.

12 Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

executives expressed concern or doubts about the ability of the United States to compete for corporate investment and jobs in the future.

However, our research does not suggest that corporate decisions turn solely on particular policies. And there are challenges to investing in other countries. MGI research has found that developing countries' attempts to lure multinational investment solely through tax and monetary subsidies were largely ineffective. Instead, US leaders should recognize all the factors that weigh into business decision making and determine the right policy responses.

The United States cannot rest on past success and assume it will win the intensifying global competition for corporate investment. It cannot take its multinationals—and the contributions they make to real GDP growth, productivity, and jobs—for granted. In this changing environment, US policy makers, working with businesses, must redouble their efforts to examine the array of choices they face and actively decide how to compete and maintain the United States' preeminence in an evolving global economy. US policy makers should seek to sustain an environment in which globally competitive businesses can emerge and continue to make significant contributions to the US economy's growth and performance.

□ □ □

Leaving the status quo in place is one option. However, if current trends continue, the United States' competitive edge could erode, making the country less attractive as a destination for investment and as a base for expanding global operations. This would reduce the contributions that multinational companies make to the growth and performance of the US economy. But this needn't happen. The right policies can enhance the competitiveness of the economy and multinationals, fueling the economy's continued growth and vibrancy for years to come.

1. The contributions of US multinationals to the US economy

US multinational companies maintain their headquarters in the United States and hold at least a 10 percent equity interest in a foreign affiliate.[13] However, while the companies operate internationally, most of their activities occur in the United States. By 2007, the last year for which complete survey data are available,this group comprised 2,270 companies—far less than 1 percent of the nation's total.[14] Yet in the aggregate, from 1990 through 2007, US multinationals contributed disproportionately more to the growth in US private sector GDP (or value added) and in productivity.[15] Indeed, these companies contributed significantly to the US economy's growth and health in several ways. In particular:

- By 2007, US multinationals directly accounted for 23 percent of US private sector GDP. Yet, US multinationals contributed 31 percent of the growth in real private sector GDP since 1990 and an average of 38 percent during economic expansions.
- US multinationals accounted for 41 percent of the productivity gains since 1990 and an average of 53 percent of gains during periods of economic expansion.
- US multinationals financed most—74 percent—of the nation's private sector research and development spending, fueling the innovation that is key to productivity growth.
- US multinationals contributed 11 percent of US private sector employment growth since 1990. They fueled a surge in job creation as they led the high-tech boom in the 1990s, and likewise cut jobs significantly during the dot-com bust in 2000. Since 2001, they have created jobs at a pace similar to that of other companies in their sectors.
- US workers earn relatively high wages and benefits when employed by a US multinational. By 2007, US multinationals paid average total compensation of $63,270 per worker—26 percent higher than the amount paid by other companies.[16] For managerial, professional, and technical employees (nearly one-third of their 22 million workers), US multinationals paid 37 percent higher compensation than the national average; they paid 13 percent higher compensation for all other employees.

13 The US Direct Investment Abroad (USDIA) surveys conducted by the Bureau of Economic Analysis provide the primary data source on US multinational companies. We use the survey's definitions of multinational companies and other concepts throughout this report. See *Appendix: Technical notes* for details.

14 The latest complete US Bureau of Economic Analysis survey of US multinational activity was for 2007. Therefore, this report does not cover the effects of the recession that began in December 2007. The bureau has released advanced summary estimates for 2008. For details, see *Appendix: Technical notes*.

15 Throughout this report, private sector GDP refers to the total value added by the private sector, excluding banks and educational services. See *Appendix: Technical notes* for details.

16 The data do not allow us to examine how the median compensation per worker of multinationals compares with that of other companies.

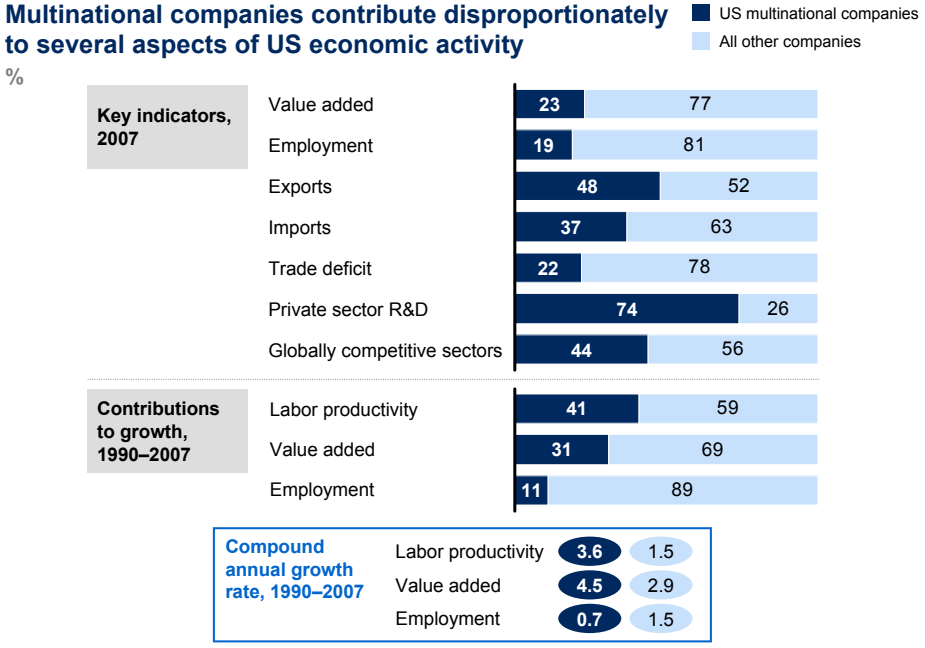
- US households also share in the wealth created by US multinationals. In 2007, US residents held 86 percent ($17.5 trillion) of the total market value of all US companies' equities either directly as individual investors or indirectly through pension funds and retirement and insurance accounts.[17] In 2007, nearly 58 percent of US families had the rights to a defined benefit or other similar pension plan.

- US multinationals account for almost half of the nation's exports and more than a third of its imports, resulting in a more favorable trade balance than in the case of other US companies.

Although US multinationals include many of the biggest companies in the country, the full extent of their economic impacts is less well known (Exhibit 3). In this chapter, we fill in many of the details to provide a fuller picture.

Exhibit 3

Multinational companies contribute disproportionately to several aspects of US economic activity



SOURCE: McKinsey Global Institute analysis

17 US Federal Reserve Flow of Funds, third quarter of 2009, Table L.213. This table does not provide separate figures for multinational companies alone. Ownership of US equity by US residents has exceeded 90 percent for decades, although foreign holdings have been rising slowly over the years. After averaging 7 percent during the 1990s, the share of foreign holdings started rising from 9 percent in 2000 to 14 percent in 2007 and 2008.

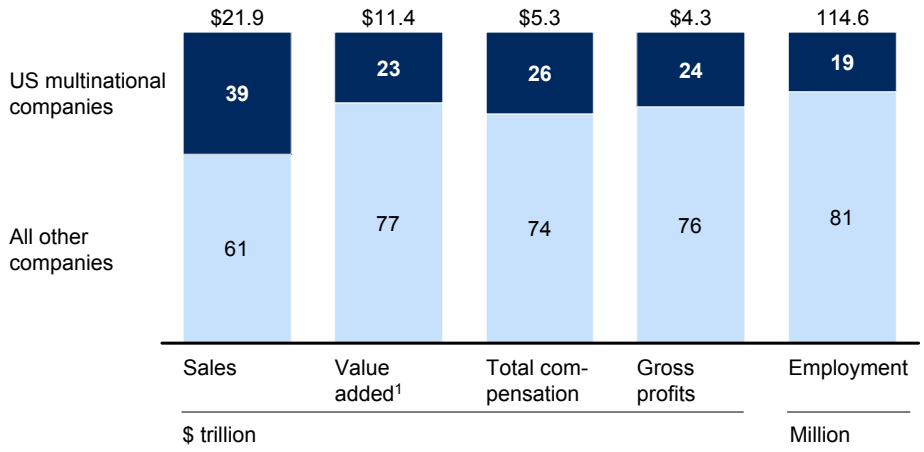
US MULTINATIONALS' ACTIVITIES ARE CONCENTRATED IN THE UNITED STATES, WHERE THEY HAVE A LARGE IMPACT

US multinationals operate primarily in the United States.[18] In 2007, they generated 60 percent of their collective sales, employed two-thirds of their workforce, paid three-quarters of their total wages, and held 60 percent of their assets in the United States. That year, they accounted for well over a third of US private sector sales and almost a quarter of US private sector GDP. They also employed one-fifth of the private sector workforce, paid a quarter of its wages, and generated a quarter of its gross profits (Exhibit 4).

Exhibit 4

As of 2007, US multinational companies represented about 20 percent of US private sector economic activity

Multinational companies' share of US private sector, 2007
%



1 Value added can be expressed as gross output minus the cost of intermediate inputs, and as the sum of total compensation, gross operating surplus (a proxy for gross profit), and taxes on production and imports less subsidies.

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

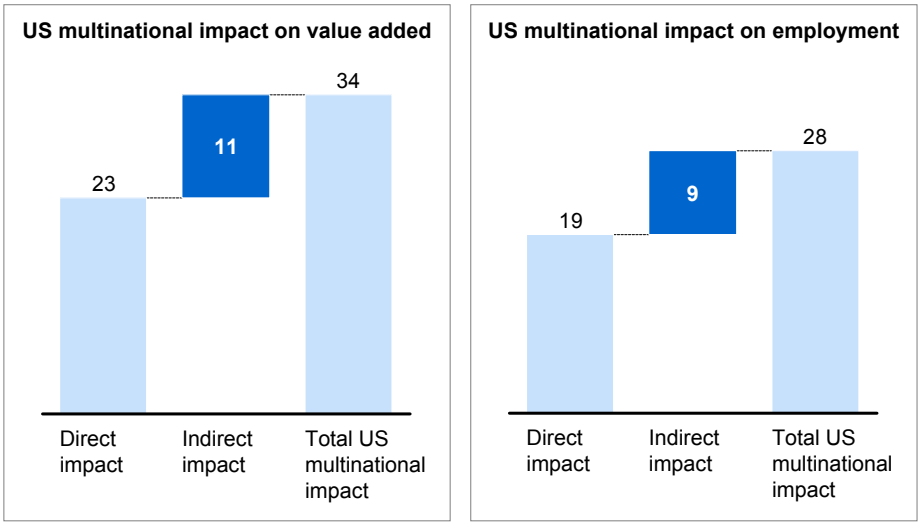
US multinationals also exert a significant indirect, or "multiplier," effect on the economy. They purchase approximately 90 percent of their intermediate inputs from US-based firms, which contribute to GDP and employ other workers. Also, US multinationals' workers spend their wages on goods and services provided by other firms. When we account for these additional indirect effects, we estimate that US multinationals' total contribution to private sector GDP (or value added) rises from 23 percent to 34 percent. Similarly, while multinational companies directly employ 19 percent of the private sector workforce, we estimate that their activities lead indirectly to the employment of an additional 9 percent, for a total of 28 percent (Exhibit 5).

18 Multinational companies based abroad also play an important role in the US economy, but their impacts fall outside the scope of this report. Foreign-based companies operating in the United States represent 5.2 percent of the overall economy and 20 percent of overall multinational corporate activity in the United States.

Exhibit 5

The indirect effect of US multinational activity raises their impact on value added and employment by nearly 50 percent

% of private sector, 2007



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

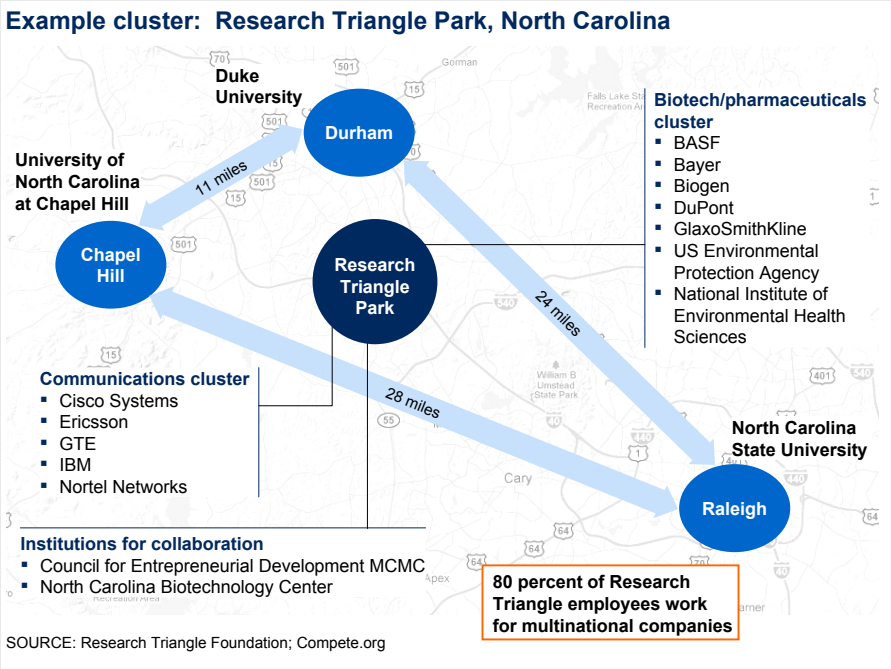
One example of how US multinationals influence domestic economic activity is the role they play in anchoring the numerous "economic clusters" around the United States, which are important centers of innovation and local employment. Silicon Valley in California, "Route 128" outside Boston, and the Research Triangle Park (RTP) in North Carolina are the best known, but economic clusters exist throughout the country (see sidebar, *Research Triangle Park*).

Research Triangle Park

US multinationals often anchor "economic clusters," which serve as important centers of innovation and local employment. These clusters group companies, their suppliers, their labor pools, research universities, and trade associations in close geographic proximity, fostering innovation and lowering transaction costs. In addition, the success of one company in the cluster increases the value added of the entire network. Multinationals have operations in 79 percent of research clusters around the world.[1]

Research Triangle Park (RTP), which is located between Chapel Hill, Durham, and Raleigh, North Carolina, was established in 1959 through a partnership between the state government and the area's universities, which include the University of North Carolina at Chapel Hill and Duke University. Growth took off in 1965 when IBM announced that it would locate a 400-acre, 600,000-square-foot research facility there. Between 1965 and 1970, RTP jobs increased 20-fold. Since then, RTP has established itself as one of the country's leading pharmaceutical and biotechnology clusters. It is anchored by such US multinationals as IBM, Cisco Systems, and Fidelity Investments, as well as such important foreign multinationals as BASF, Bayer, and GlaxoSmithKline (Exhibit 6).

Exhibit 6



Today, RTP employs nearly 40,000 people, 80 percent of whom work for multinational companies. Studies of the multiplier effects of research parks suggest that each research park job creates an additional 2.5 jobs, which means that RTP is responsible for approximately 140,000 jobs in North Carolina.[2] RTP's physical growth has also spurred real estate development in the region.

Research parks such as RTP serve as innovation engines. Close to 5,000 registered patents are based on RTP research, and the region was responsible for inventing products as diverse as the UPC bar code, Astroturf, and 3-D ultrasound. With the support of local universities, the region attracts and retains some of the world's top research talent. The region continually ranks among those with the highest concentrations of PhDs worldwide.

1 "Characteristics and trends in North American research parks: 21st Century directions," prepared by Battelle Technology Partnership Practice, developed in cooperation with Association of University Research Parks, October 2007.

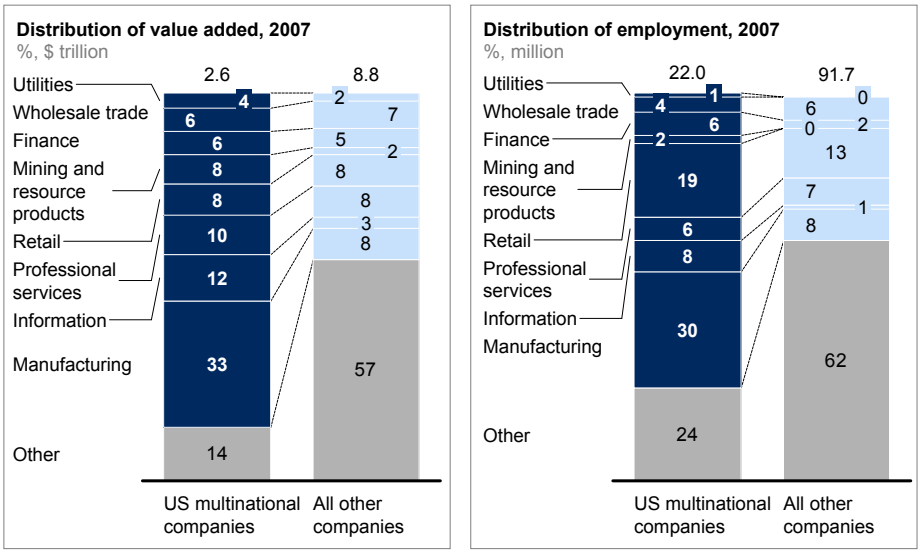
2 Ibid.

US MULTINATIONALS ARE TWICE AS CONCENTRATED IN GLOBALLY COMPETITIVE SECTORS AS OTHER COMPANIES

US multinational corporations operate in many industries, but their activities are concentrated in eight sectors—manufacturing, information, professional services, retail trade, mining and resource products, finance, wholesale trade, and utilities.[19] These eight sectors account for approximately 85 percent of US multinationals' total value added and three-quarters of their employment (Exhibit 7). In contrast, these same sectors account for approximately 40 percent of the activities of other companies. Three of these sectors—manufacturing, information, and professional services—account for more than half (55 percent) of US multinationals' total value added. US multinationals have much smaller operations in sectors such as construction, real estate services, health care, business administrative services, and accommodation and food services. These other categories account for almost 60 percent of the activity of other companies.

Exhibit 7

In 2007, eight sectors accounted for approximately 85 percent of US multinationals' value added and three-quarters of their employment



Note: See *Appendix: Technical notes* for sector definitions.
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Overall, the eight sectors we've singled out accounted for about half of US economic activity in 2007 (Exhibit 8). US multinationals play a significant role in many of these sectors—particularly manufacturing, mining and resource products, and information. More importantly, these sectors are major drivers of US economic growth. From 2000 through 2007—the period on which our sector analysis focuses—these eight sectors accounted for all the productivity growth and nearly 70 percent of the increases in value added in the US economy (Exhibit 9).[20] However, the top eight sectors' share of total US private sector employment slipped from 49 percent in 2000 to 45 percent seven years later.

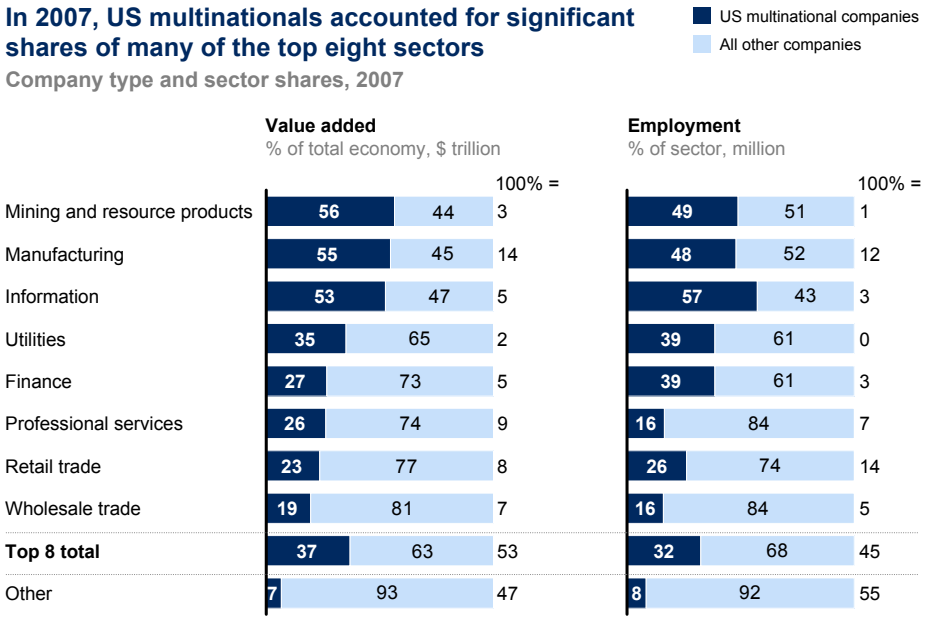
19 Petroleum and coal products manufacturing are included in mining and "resource products" throughout this report. See *Appendix: Technical notes* for sector definitions.

20 Consistent NAICS-based industry information is available starting in the 1999 benchmark survey. Furthermore, real value added can be computed only at the industry level from 2000 to 2007 because of data requirements for the appropriate chain-weighted calculation. Thus our sector analysis focuses on this period. See *Appendix: Technical notes* for details.

Exhibit 8

In 2007, US multinationals accounted for significant shares of many of the top eight sectors

Company type and sector shares, 2007

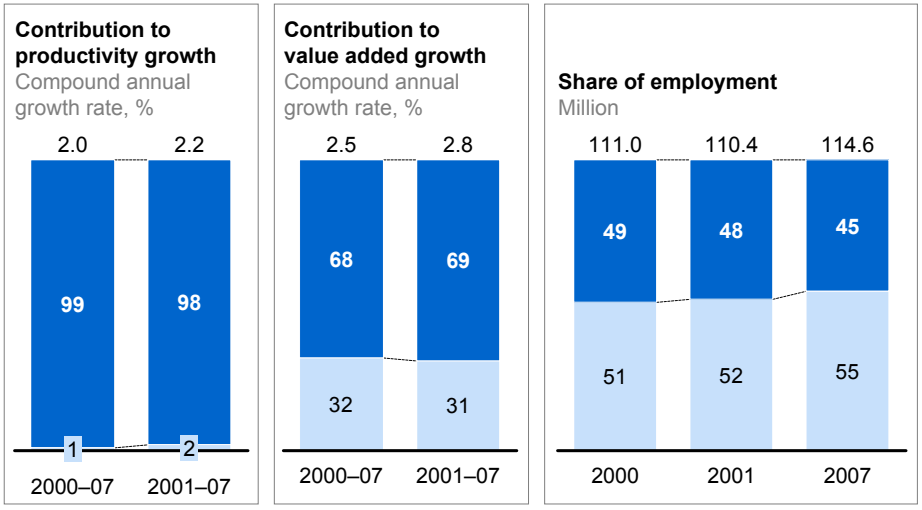


Note: See *Appendix: Technical notes* for sector definitions.
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 9

The top eight sectors accounted for all the productivity growth and 70 percent of value added growth, but lost employment share

%



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

US multinationals' performance and their contributions to the economy partly reflect the fact that 44 percent of their economic activity is within globally competitive sectors; by comparison, just 24 percent of the activity of all US companies is in such sectors. The degree of global competitive intensity in any sector can be measured by the extent to which they are open to competition from international companies through trade, and the degree of product or service standardization. The higher the standardization, the stiffer the competition (see sidebar, *US multinational companies are more concentrated in globally competitive sectors*).

US multinational companies are more concentrated in globally competitive sectors

To illustrate the fact that US multinationals are more concentrated in globally competitive sectors than are other US companies, we use an approach developed by MGI to analyze cross-country competitiveness.[1] This approach divides sectors into six groups that share common characteristics identifying their global exposure. We use two factors to create this classification:

- How tradable is a sector, and therefore how exposed is that sector to international competition? Companies in sectors with significant imports and exports compete internationally, and their performance relative to their counterparts in other regions matters for growth and employment performance. In contrast, sectors that largely focus on domestic markets—local services such as retail—tend to reflect local demand.

- What degree of differentiation—or standardization—does a sector display? For commodity products, cost and availability are critical competitiveness drivers; in sectors with more variance in quality and design, noncost factors such as expertise, innovation, and brand are key drivers. Creating economies of scale or reducing transportation costs may be critical for commodity sectors, while education and R&D may matter more in sectors where differentiation plays a bigger role.

Each of the six groups comprises sectors with similar underlying economics and industry dynamics.

- Infrastructure services. This group includes sectors such as utilities, telecommunications, and railroads—industries with large fixed costs and network infrastructures. In these sectors, economies of scale are a critical factor for success. Because of the fixed networks, they tend not to be subject to significant global competition.

- Local services. The sectors in this group provide services to local households and businesses (e.g., wholesale and retail trade; hotels and restaurants; finance and insurance). Together, they constitute the largest employment group in the United States. These are sectors in which business turnover tends to be high and in which growth comes from more productive companies gaining share or replacing less productive ones. Competition is intense, but it is strictly among players in the local market.

- Business services. These services (e.g., computer and related activities; R&D; professional services) can be either domestic or tradable and are the fastest-growing sector group globally. A successful business services sector typically requires a skilled workforce and sufficient intellectual property protections for sectors such as software and digital media.

- Resource-intensive industries. These industries—which includes oil, coal, and basic metals, as well as agriculture and forestry—typically are tradable commodity businesses that require substantial upfront capital investments. There is significant global competition in these sectors.

- Manufacturing. These sectors—which include motor vehicles; textiles and apparel; food, drink, and tobacco—compete on both cost and the capacity to differentiate on quality and brand. Competitiveness in these sectors depends on a broad set of factors that collectively determine the "value for money" delivered. Manufacturing is a global industry, where international best practices determine winners and losers.

- R&D-intensive manufacturing. In these fast-moving, globally traded sectors (e.g., pharmaceuticals; radio, TV, and communication equipment), the capacity to deliver differentiated products swiftly to market is critical. Local industry growth is determined by global industry dynamics and competition among companies. The intense global competition explains the rapid productivity growth in these sectors and ensures that the benefits from innovation pass on to consumers in the form of lower prices.

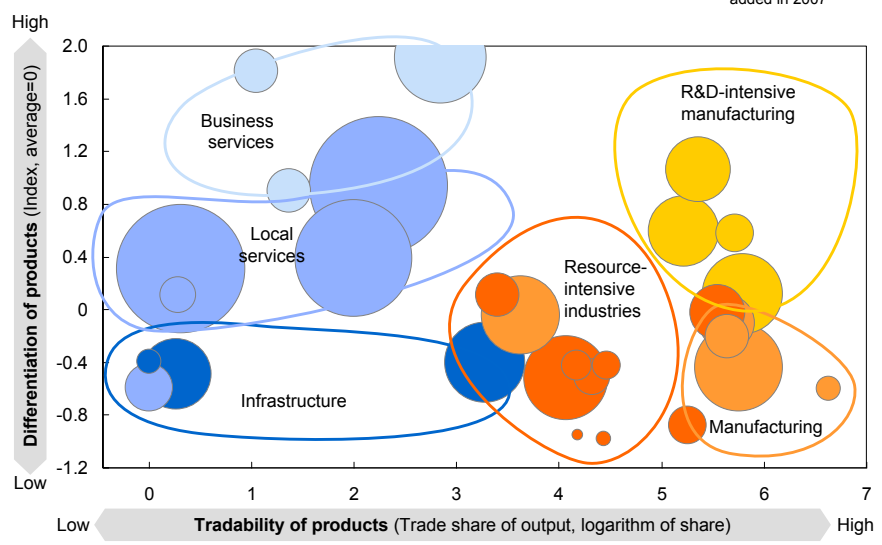
1 See *How to compete and grow: A sector guide to policy*, McKinsey Global Institute (March 2010). Available at www.mckinsey.com/mgi.

Classifying US multinational activity within these six sectors shows that 41 percent of its combined value added is produced in the most globally competitive sectors: manufacturing, R&D-intensive manufacturing, and resource-intensive industries (Exhibit 10). After adding the increasingly globally traded business services of computer systems design and R&D, this total rises to 44 percent. In contrast, for the private sector economy as a whole, 21 percent of value added occurs in the two types of manufacturing and resource-intensive industries (Exhibit 11). Adding globally traded business services brings this total to 24 percent—approximately half that of the US multinationals.

Exhibit 10

Nearly 45 percent of US multinationals' value added is produced in globally competitive sectors

US MULTINATIONAL COMPANIES

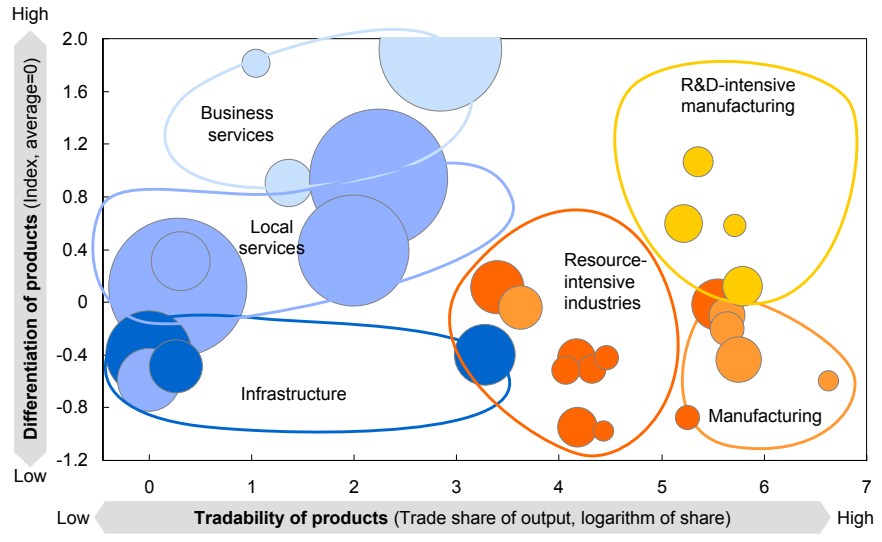


SOURCE: EU KLEMS growth and productivity accounts; OECD input-output tables; Bureau of Economic Analysis; McKinsey Global Institute analysis

Exhibit 11

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

PRIVATE ECONOMY



SOURCE: EU KLEMS growth and productivity accounts; OECD input-output tables; Bureau of Economic Analysis; McKinsey Global Institute analysis

Numerous MGI studies show that a competitive environment in an industry increases pressure on management to innovate or adopt best practices in its business process.[21] Higher levels of competitive intensity produce stronger gains in productivity as businesses must innovate to maintain and gain market share. At the same time, these pressures force businesses to maintain cost competitiveness relative to their peers. Recent academic work also has demonstrated this link between competition and innovation.[22]

These reactions to competitive pressures help explain the pattern of contributions made by US multinationals during economic expansions and recessions over the past two decades. During economic contractions, these companies generally contributed less to value added and productivity growth and sharply reduced their payrolls as they adjusted their business models to even stronger competitive pressures in an environment of reduced demand. But these adjustments and the innovations they produced also prepared US multinationals for the subsequent economic expansions, during which they made outsized contributions relative to their economic weight.

US MULTINATIONALS CONTRIBUTE DISPROPORTIONATELY TO PRODUCTIVITY GROWTH

US multinationals raised their productivity more quickly than other firms over the past two decades and contributed disproportionately to overall productivity improvements. In 1990, US multinationals' labor productivity—or contribution to real GDP per worker—was approximately the same as that of other private sector firms. However, from 1990 through 2007, they increased their productivity at more than twice the rate of the others. By 2007, their real value added per worker reached $110,000—40 percent higher than that of other companies in the economy (Exhibit 12).

US multinationals generated 41 percent of US private sector productivity gains since 1990—an outsized impact, given their smaller shares of private sector value added and employment. However, their contributions vary over the business cycle. During the expansion periods of 1991–2000 and 2001–07, they contributed 50 to 54 percent of productivity growth (Exhibit 13). But their productivity growth slowed during the recessions in 1991 and 2001.

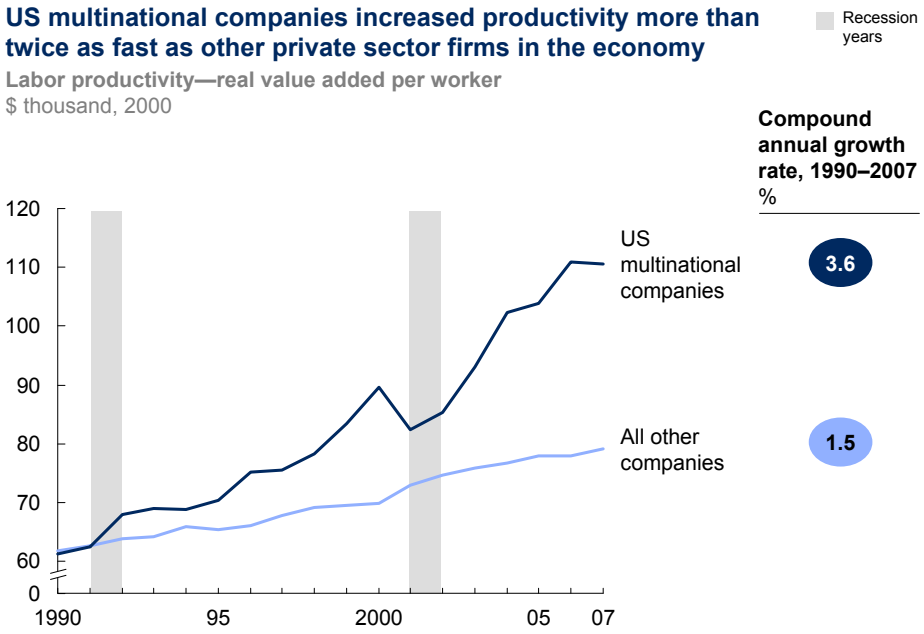
21 See, for example, *US productivity growth 1995–2000: Understanding the contribution of information technology relative to other factors*, McKinsey Global Institute, October 2001, available online at www.mckinsey.com/mgi. Or see numerous country studies at www.mckinsey.com/mgi/rp/CSProductivity.

22 For example, P. Aghion, N. Bloom, R. Blundell, R. Griffith, and P. Howitt, "Competition and Innovation: An Inverted-U Relationship," *Quarterly Journal of Economics*, May 2005, 120:2, 701–728.

Exhibit 12

US multinational companies increased productivity more than twice as fast as other private sector firms in the economy

Labor productivity—real value added per worker
$ thousand, 2000

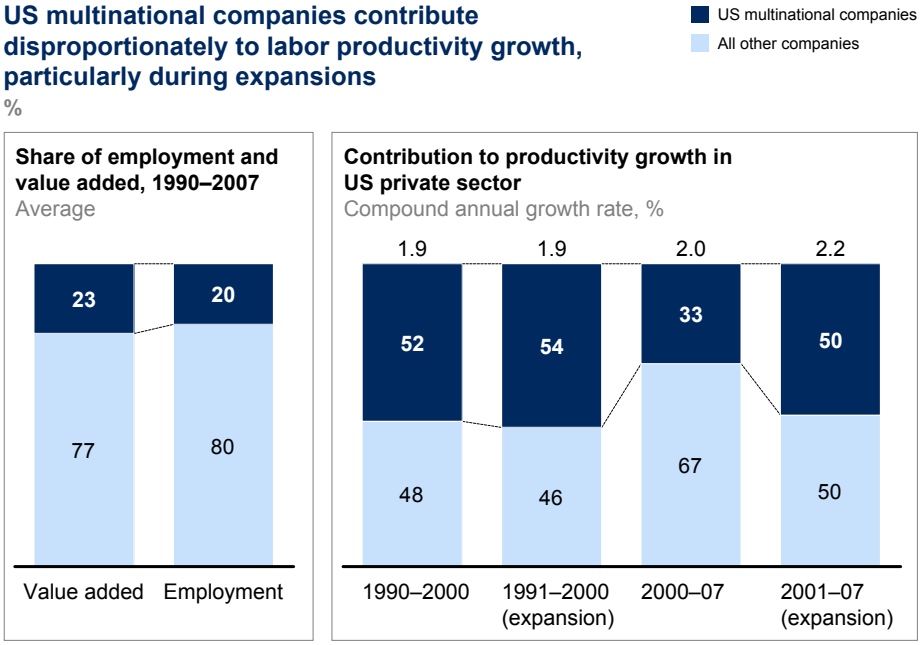


SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 13

US multinational companies contribute disproportionately to labor productivity growth, particularly during expansions

%

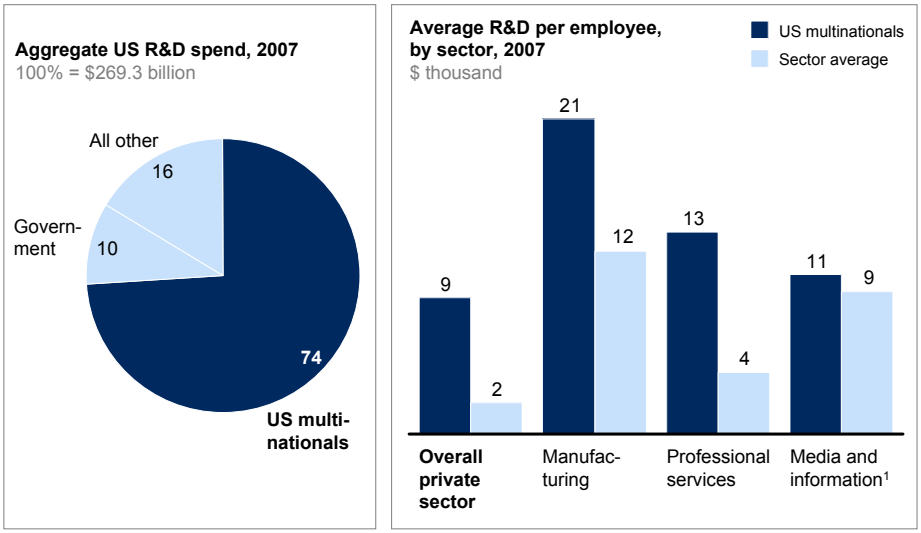


SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Labor productivity rises for three reasons: increased investment that raises capital per worker; innovations that produce new products; and managerial and technological innovations that improve firms' basic operations. R&D is one key to driving the innovations that help fuel productivity. In 2007, US multinationals accounted for 74 percent of private sector R&D in the United States and spent four times the private sector average on R&D per employee (Exhibit 14). Their R&D spending grew at an inflation-adjusted compound annual rate of more than 4 percent from 1997 through 2007. Private sector returns to R&D are notoriously difficult to

Exhibit 14

US multinational companies disproportionately drive total US R&D spending



1 Includes publishing, Internet, broadcasting, and motion picture industries.

SOURCE: Bureau of Economic Analysis, U.S. Department of Commerce; NSF Science Resource Statistics, 2009; McKinsey Global Institute analysis analysis

measure, but studies across multiple countries and industries provide estimates in the range of 20 to 30 percent, and some studies estimate returns more than twice this range.[23]

US multinationals' rapid productivity growth also reflects the concentration of their activities in certain sectors. Half of US multinationals' contributions to productivity growth occurred in the manufacturing sector, which in total (across all companies) contributed almost a third of productivity growth (Exhibit 15). Other big contributors included professional services, information, and retail trade, but manufacturing's contribution was more than twice that of the next largest sector.

It is natural to ask how much of these productivity gains reflects the fact that US multinationals operate in sectors with rising productivity—their "sector mix"—and how much reflects multinational companies' ability to boost productivity more than other companies within these sectors—their "company performance."[24] The answer depends on whether the period examined includes the 2001 recession. From 2000 through 2007, which includes the downturn, multinational companies collectively increased their productivity less than other companies in their sectors (the contributions of company performance was negative). However, during the expansion years beginning in 2001, US multinationals achieved about one-third more productivity gains than other firms in their sectors (Exhibit 16).

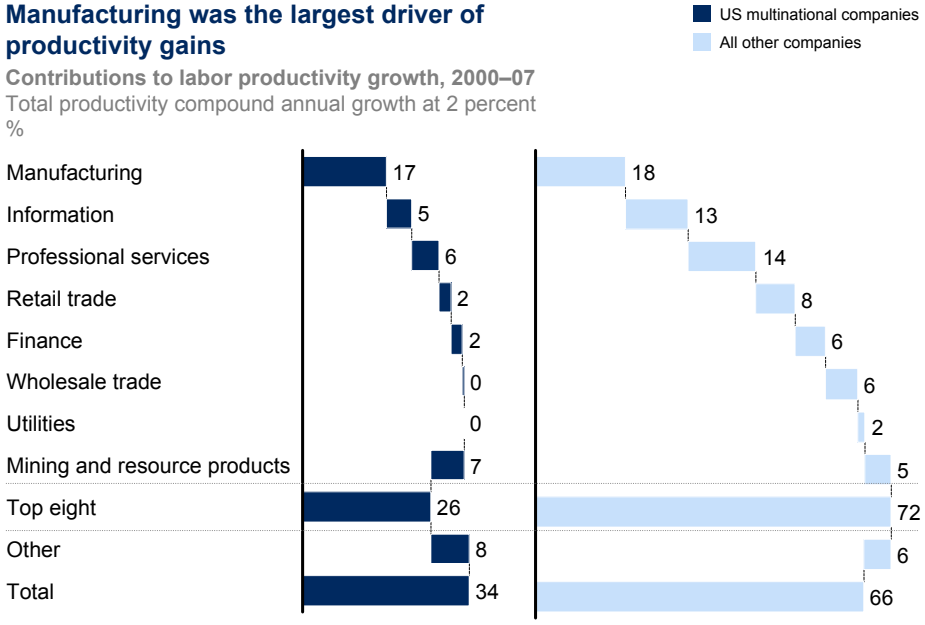
23 B. Hall, J. Mairesse, P. Mohnen, "Measuring Returns to R&D," NBER Working Paper 15622, December 2009. For a discussion of how different countries have pursued R&D strategies to drive innovation, productivity, and growth, see OECD (2009), "Innovation and Growth: Chasing a Moving Frontier," Eds. V. Chandra, D. Eröcal, P. C. Padoan, C. Primo Braga.

24 This calculation draws on Patrick Viguerie, Sven Smit, and Mehrdad Baghai, *The Granularity of Growth: Making Choices That Drive Enduring Company Performance*, Hoboken, NJ: John Wiley & Sons, Inc., 2008. See *Appendix: Technical notes* for details.

Exhibit 15

Manufacturing was the largest driver of productivity gains

Contributions to labor productivity growth, 2000–07
Total productivity compound annual growth at 2 percent
%

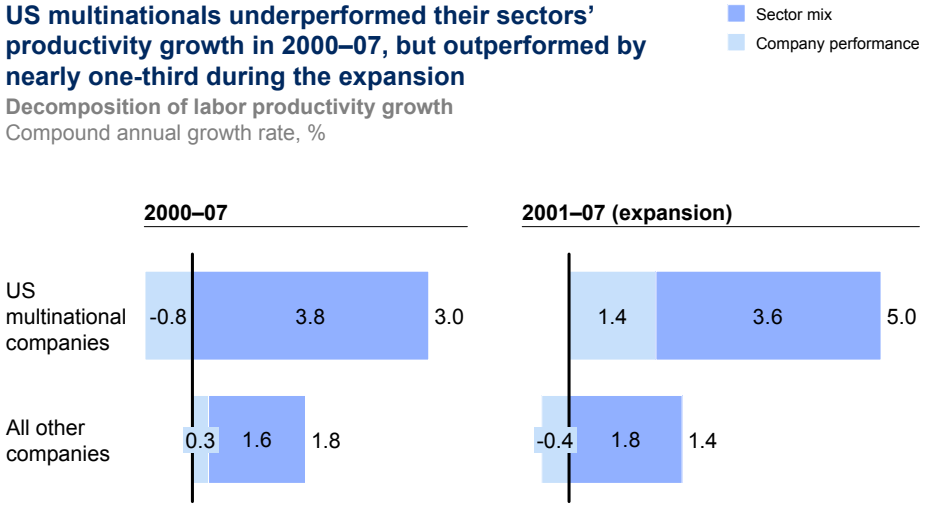


Note: See *Appendix: Technical notes* for sector definitions.
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 16

US multinationals underperformed their sectors' productivity growth in 2000–07, but outperformed by nearly one-third during the expansion

Decomposition of labor productivity growth
Compound annual growth rate, %



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

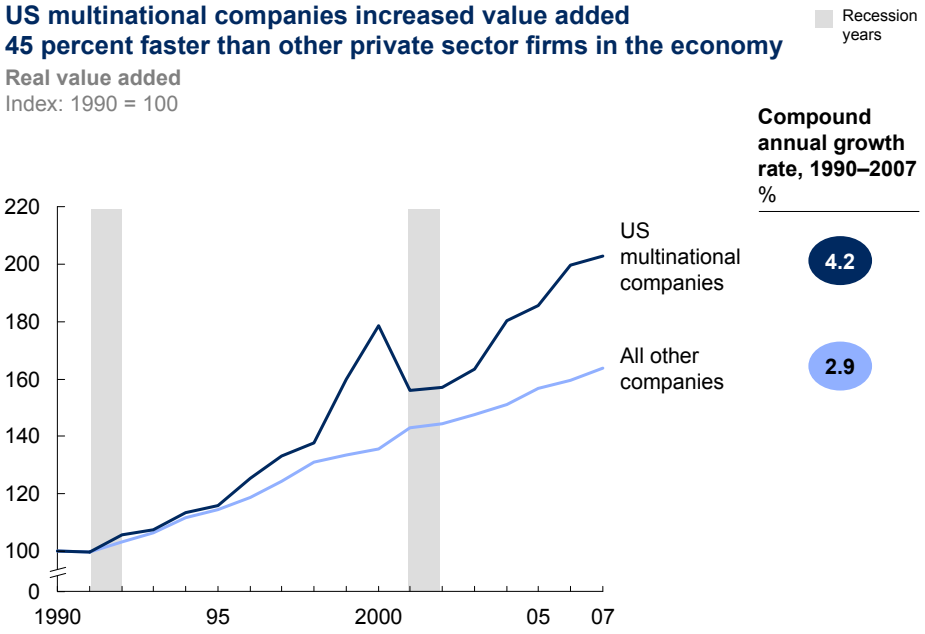
One way for labor productivity—the value of economic output per worker—to increase is for real value added to rise faster than employment. It can also increase when product, managerial, and technological innovation enable fewer workers to produce the same amount of output. Over the entire 1990–2007 period, US multinationals recorded increases in both value added and employment, and they produced outsized gains in productivity. Since 2000, 85 percent of the companies' productivity growth came from increases in value added.

US MULTINATIONALS PLAYED A KEY ROLE IN DRIVING GDP GROWTH DURING THE ECONOMIC EXPANSIONS OF THE PAST TWO DECADES

US multinationals raised their combined real value added at a compound annual rate of 4.2 percent from 1990 through 2007, which was 45 percent faster than other private sector firms (Exhibit 17). As a result, US multinationals generated 31 percent of the gains in private sector real value added in the United States since 1990. However, their contributions to value added varied over this period, accounting in large part for the differences in their contributions to labor productivity growth over the business cycles.

Exhibit 17

US multinational companies increased value added 45 percent faster than other private sector firms in the economy



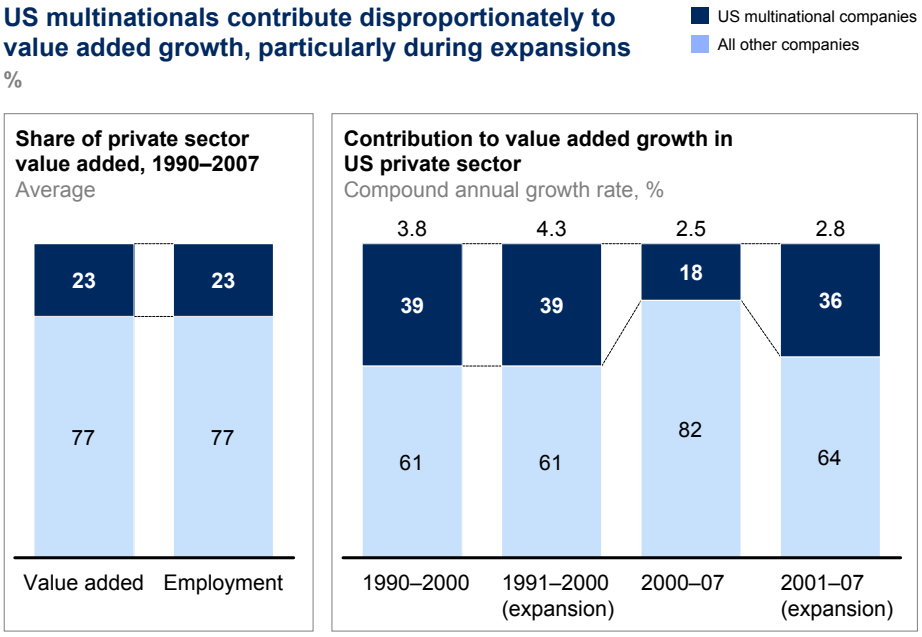
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

US multinationals drove the high-tech boom of the late 1990s, increasing real value added at a compound annual rate of 7.2 percent from 1991 to 2000. They accounted for nearly 40 percent of real private sector GDP growth during this period, well above their 23 percent share of nominal private sector value added (Exhibit 18). Part of this growth reflected US multinationals' role in trade. From 1990 to 2000, they accounted for 58 percent of goods exports and 38 percent of goods imports. During this period, these companies ran a collective trade surplus in goods that averaged nearly 1 percent of private sector value added, while all other companies ran a trade deficit that exceeded 3 percent (Exhibit 19).

Exhibit 18

US multinationals contribute disproportionately to value added growth, particularly during expansions

%

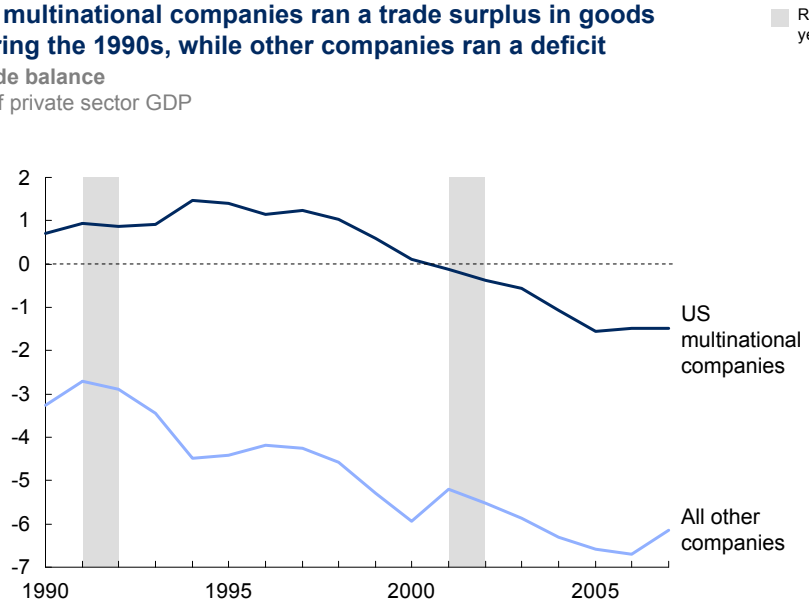


SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 19

US multinational companies ran a trade surplus in goods during the 1990s, while other companies ran a deficit

Trade balance
% of private sector GDP



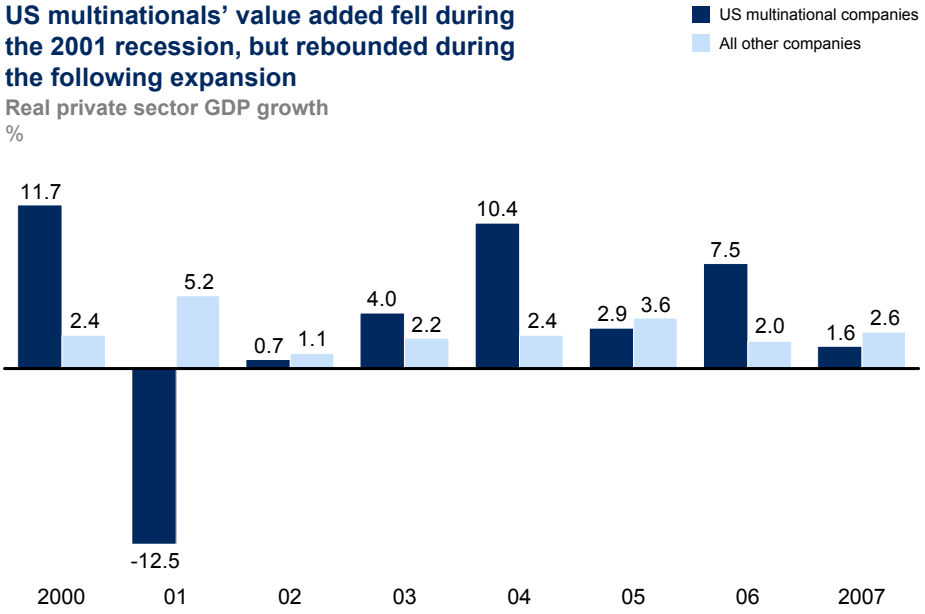
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Then the dot-com bubble burst in 2000, triggering the 2001 recession. US private sector GDP growth fell from 4.3 percent in 2000 to a meager 0.6 percent in 2001. US multinationals' real value added fell 12.5 percent in 2001, while all other companies managed to increase real value added by 5.2 percent that year (Exhibit 20). The 2001 recession resulted primarily from the collapse in manufacturing, particularly of computers and electronics (Exhibit 21). With US multinationals making up three-quarters of computers and electronics manufacturing in 2000, the collapse in this sector accounted for half the decline in US multinationals' real value added in 2001.

Exhibit 20

US multinationals' value added fell during the 2001 recession, but rebounded during the following expansion

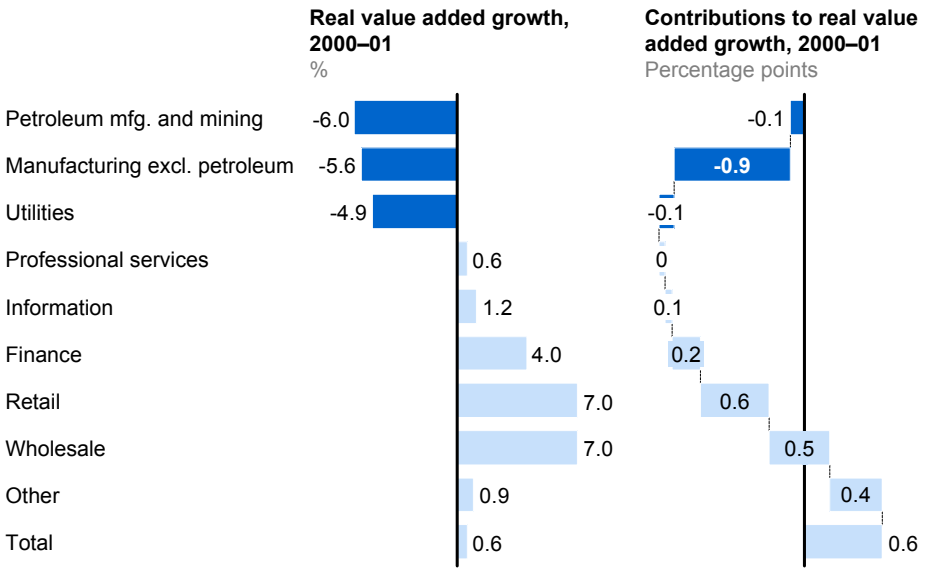
Real private sector GDP growth
%



SOURCE: Bureau of Economic Analysis; U.S. Department of Commerce; McKinsey Global Institute analysis

Exhibit 21

Manufacturing's value added dropped sharply during the dot-com bust



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

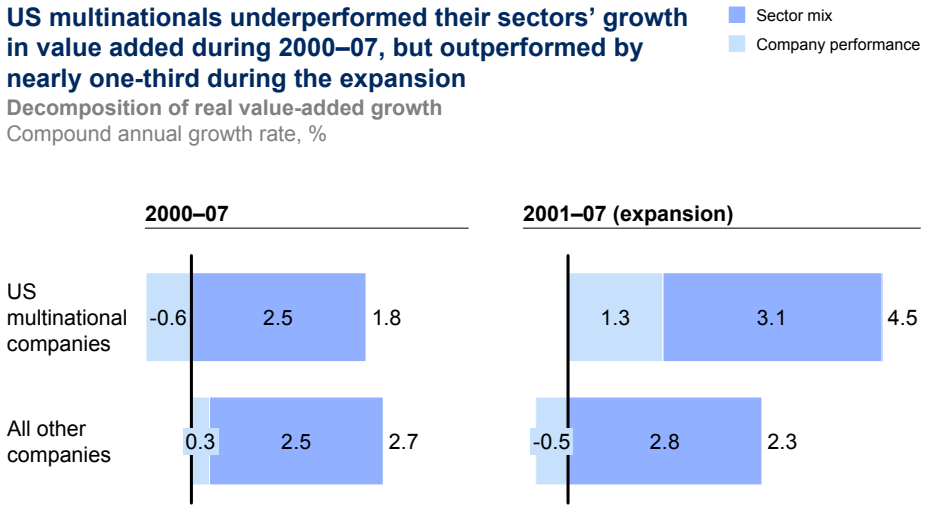
As with productivity, it is natural to ask how much of these gains in value added arise from company performance versus sector mix. We find that US multinationals' growth in real value added from 2000 through 2007 largely reflects their sector mix. To the extent that their growth lagged behind the industry average over this business cycle, it was because of the significant hit to company performance that they took in 2001 (Exhibit 22). But during the expansion from 2001 to 2007, they grew almost twice as fast as other companies. While sector mix accounted for more than two-thirds of US multinationals' growth, company performance accounted for 60 percent of the difference in performance between the multinationals and all other companies.

Exhibit 22

US multinationals underperformed their sectors' growth in value added during 2000–07, but outperformed by nearly one-third during the expansion

Decomposition of real value-added growth

Compound annual growth rate, %



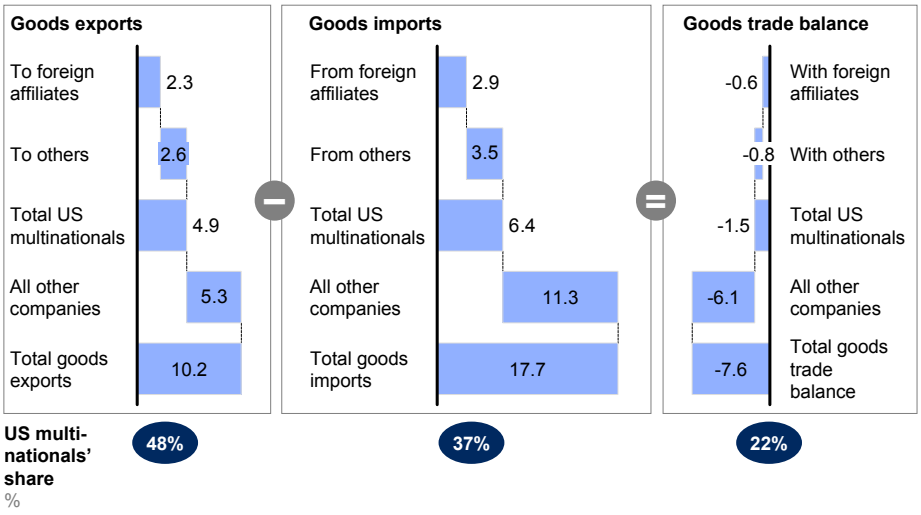
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Trade became a significant drag on the US economy beginning in 2000, with the trade deficit in goods rising from 4.7 percent of private sector value added to 7.6 percent in 2007. US multinationals also slipped into a trade deficit over this period, creating a drag on GDP growth. However, their deficit was significantly smaller than that of other companies in the economy, given their relative weight in trade (Exhibit 23).

Exhibit 23

US multinationals are responsible for almost half of exports and more than a third of imports, giving them a more favorable trade balance than others

Imports and exports, 2007
% of private sector GDP



SOURCE: Bureau of Economic Analysis; Bureau of the Census; McKinsey Global Institute analysis

US MULTINATIONALS' EMPLOYMENT RECORD LARGELY REFLECTS THEIR SECTOR MIX

From an employment perspective, the record economic expansion of the 1990s got off to a slow start. The 1991 recession resulted in the loss of 1.8 million private sector jobs. During a period labeled "the jobless recovery," the economy expanded for two years before employment started rising again in 1993. Over the next seven years, however, the economy produced more than 22 million net new private sector jobs, and the unemployment rate dropped to 4 percent, the lowest in a generation. US multinationals played an important role in job creation during this period because they dominated the sectors driving the boom. Their employment rose at a compound annual rate of 3.6 percent from 1993 to 2000, compared with 2.3 percent for other firms.

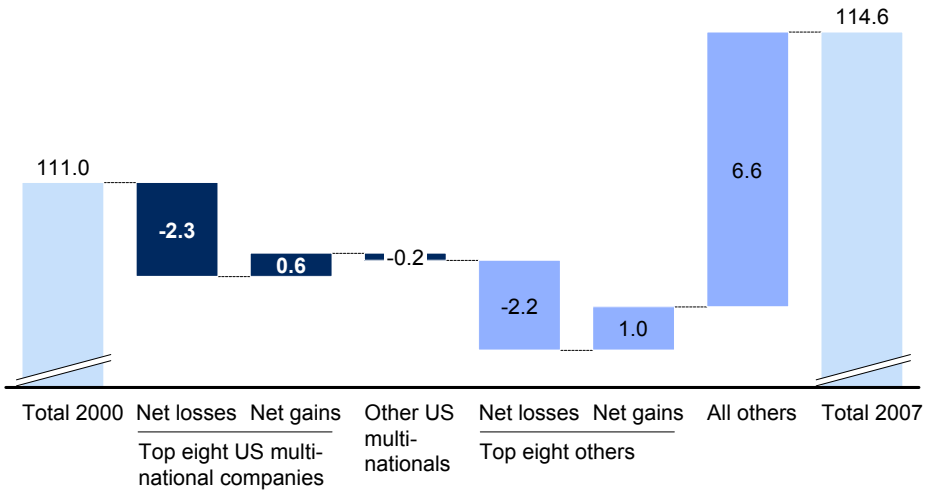
The bursting of the dot-com bubble sent the economy into recession in early 2001. Overall unemployment in the economy rose quickly from 4 percent in 2000 to above 6 percent by 2003, again remaining high even after the economy started growing again in late 2001—marking the second jobless recovery. Private sector employment dropped for three consecutive years, by a total of 2.7 million jobs. And net job creation for all sectors of the economy (public and private) averaged just 139,000 a month during the subsequent expansion—the slowest rate during any economic expansion since the 1960s. From 2003 through 2007, the economy added a meager 7.5 million net new private sector jobs.

Nearly all of the net private sector employment gains from 2000 through 2007 occurred outside the top eight sectors we identified earlier. Over this period, marked by an unprecedented, credit-fueled boom in housing and consumption, the vast majority of job creation occurred in local services sectors such as health care, finance (outside of banks), construction, and real estate services (Exhibit 24). The firms that dominated these sectors—generally not multinationals—drove employment gains over this period. US multinationals' share of overall private sector employment fell from 21.5 percent in 2000 to 19.2 percent in 2007.

Exhibit 24

Employment gains during the 2000–07 cycle were generated in sectors not dominated by multinationals

Change in employment, 2000–07
Million



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

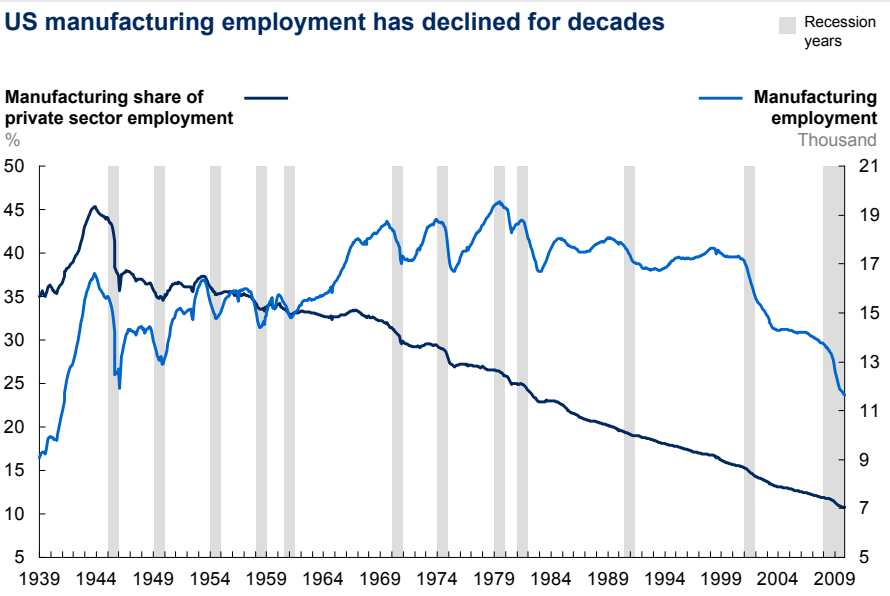
US multinationals' employment grew after the 2001 recession

To understand the US multinationals' job story, their contributions, and their performance relative to other companies, it is helpful to consider manufacturing separately from other sectors in the economy. The total number of US manufacturing jobs has been declining since 1979—a three-decade trend that accelerated after the dot-com bust in 2000 (see sidebar, *Long-term trends in manufacturing employment*). Three-quarters of US multinationals' job losses from 2000 through 2007 occurred in manufacturing.

Long-term trends in manufacturing employment

The manufacturing sector's contribution to US employment began declining decades ago. Manufacturing jobs as a share of private sector fell from a peak above 40 percent during the Second World War to approximately 10 percent today. Additionally, the absolute number of manufacturing jobs reached its high point in 1979. The number dropped more sharply after 2000 and took another downward turn during the recession that began in late 2007 (Exhibit 25). Two important drivers of this decline are technological change and import competition.[1]

Exhibit 25



SOURCE: Bureau of Labor Statistics; National Bureau of Economic Research

Some of the job losses in manufacturing resulted from the changing nature of the manufacturing process. New technologies automated many industrial processes and machines. Automation led to higher-quality products and increased productivity, and it also led to a shift in demand toward higher-skilled workers. Computerization easily replaces routine tasks that can be well-defined in terms of explicit rules, leading to less demand for some midlevel and lower-skilled workers. Nonroutine tasks that benefit from the availability of new technologies create the demand for higher-skilled workers.[2]

Additionally, competition from imported goods caused some of the losses in US manufacturing jobs. Many emerging markets—equipped with improved business climates, modernized infrastructure, lower trade barriers, and falling transportation costs—successfully used their low labor costs to compete with US-based manufacturers.

1 Andrew Bernard, J. Bradford Jensen, and Peter K. Schott, "Survival of the Best Fit: Exposure to Low-Wage Countries and the (Uneven) Growth of US Manufacturing Plants," *Journal of International Economics* 68:1 (2006), 219-237; Congressional Budget Office, "Factors Underlying the Decline in Manufacturing Employment Since 2000," Economic and Budget Issue Brief, December 23, 2008.

2 See, for example, David H. Autor, Frank Levy, Richard J. Murnane, "The Skill Content of Recent Technological Change: An Empirical Exploration," *Quarterly Journal of Economics*, 118:4 (2003); David H. Autor, Lawrence F. Katz, and Melissa S. Kearney, "The Polarization of the US Labor Market," American Economic Association Papers and Proceedings, 96:2 (May 2006),189–194; Bradford C. Johnson, James M. Manyika, and Lareina A. Yee, "The Next Revolution in Interactions," *The McKinsey Quarterly*, November 2005.

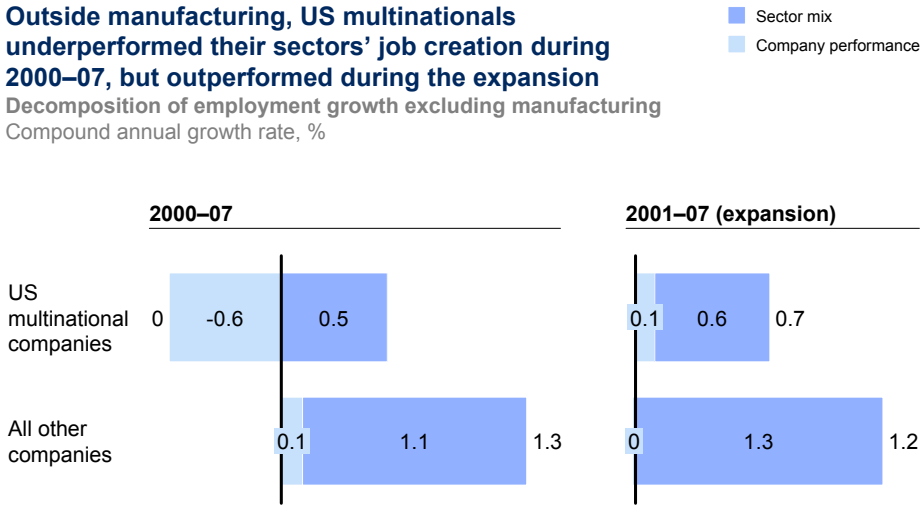
The 2001 recession also strongly affected US multinationals outside manufacturing. However, these nonmanufacturing companies resumed hiring during the expansion, bringing their job numbers back to their 2000 levels. For the 2000–07 period—which includes the recession—US multinationals outside manufacturing created fewer jobs, on average, than other companies in their sectors. However, from 2001 to 2007—during the expansion—they exceeded the average job creation rates in their sectors (Exhibit 26).

Exhibit 26

Outside manufacturing, US multinationals underperformed their sectors' job creation during 2000–07, but outperformed during the expansion

Decomposition of employment growth excluding manufacturing

Compound annual growth rate, %



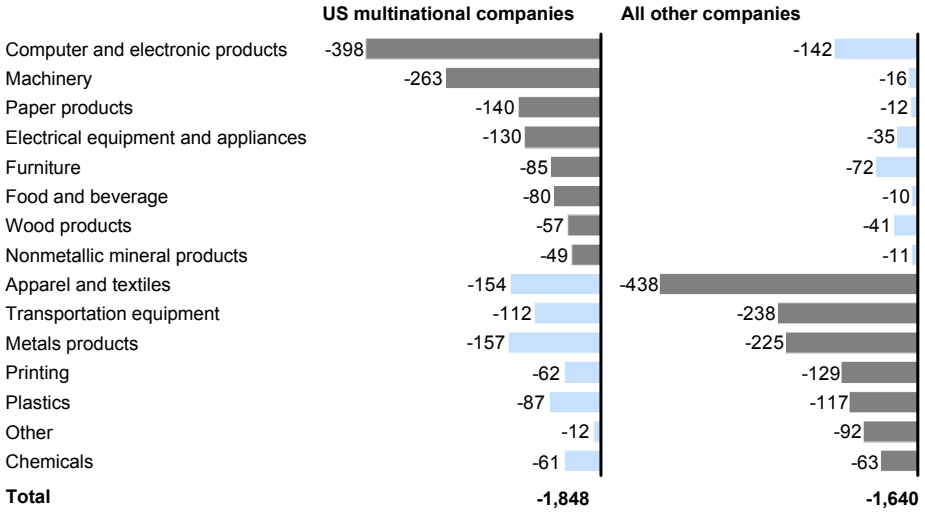
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

US multinationals accounted for approximately half of the existing jobs in manufacturing from 2000 through 2007 and shed about half the total US manufacturing jobs lost during this period. US multinationals cut approximately 1.9 million jobs (or 22 percent), while all other companies lost 1.6 million jobs (or 19 percent) (Exhibit 27). Thus, multinationals shed manufacturing jobs over the most recent cycle (and during the upturn) at a rate consistent with that of the overall manufacturing sector, as sector mix rather than company performance explains the job declines (Exhibit 28).

Exhibit 27

Within manufacturing, US multinational companies had more job losses in some sectors, but fewer in others

Change in employment for manufacturing sector, 2000–07
Million

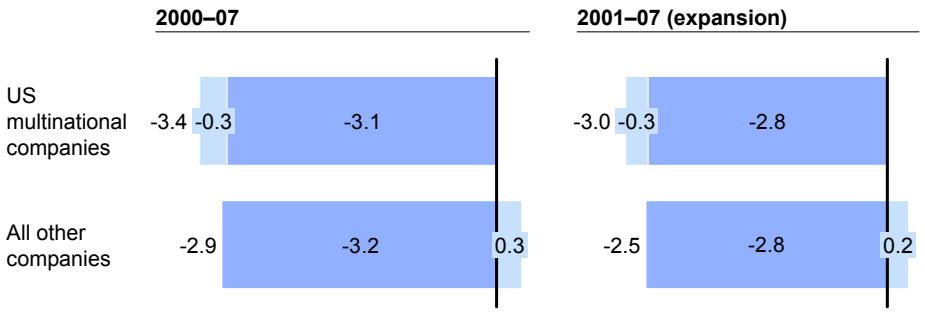


SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

Exhibit 28

Within manufacturing, sector mix explains job performance between 2000–07, but multinationals underperformed during the expansion

Decomposition of manufacturing employment growth
Compound annual growth rate, %



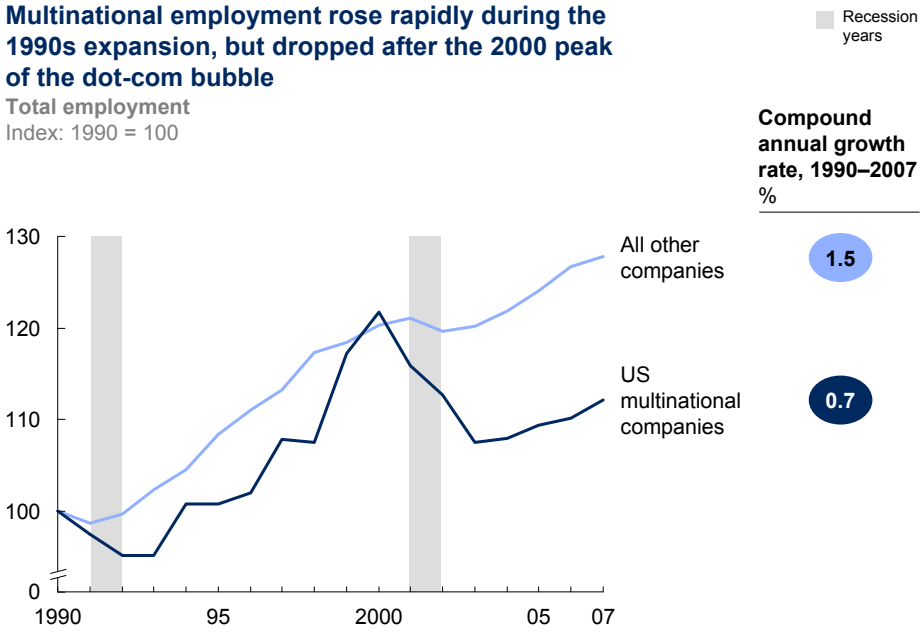
SOURCE: Bureau of Economic Analysis; Bureau of Labor Statistics; McKinsey Global Institute analysis

The 2001 recession hit US multinationals hard, and most of their US employment declines reflected their sector mix. During the economic expansion of 2001 through 2007, US multinationals' total employment rose as the continued job losses in manufacturing were exceeded by the gains in other sectors. However, by 2007, US multinationals' domestic employment remained below the 2000 peak (Exhibit 29).

Exhibit 29

Multinational employment rose rapidly during the 1990s expansion, but dropped after the 2000 peak of the dot-com bubble

Total employment
Index: 1990 = 100



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

US multinationals pay higher average wages than other companies, and their profits primarily benefit US households

A company divides its value added—what is left after all suppliers and other inputs are paid for—between employee compensation and gross profits.[25] One priority for US multinationals is attracting and retaining talent, and they pay to do so. From 2000 through 2007, US multinationals paid a greater share of their value added in total compensation (57 percent) than did other companies in the economy (53 percent). By 2007, US multinationals also paid higher average total compensation—$63,270 per worker, compared with the $49,940 paid by other companies.[26]

25 More precisely, value added is divided among total compensation, gross operating surplus, and taxes on production and imports (less subsidies). The latter is generally small.

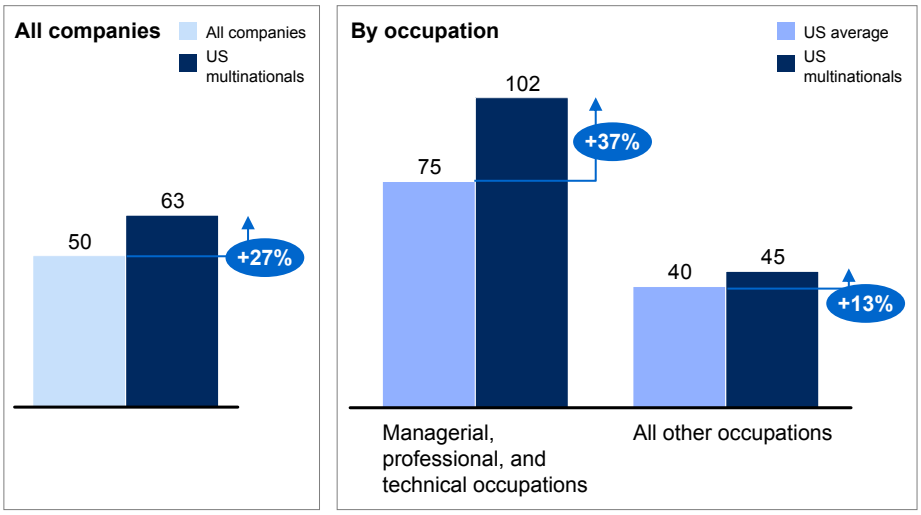
26 The publicly available data do not allow us to examine how the median compensation per worker of multinationals compares with that of other companies.

One question that naturally arises in comparing average compensation is whether US multinationals provide higher compensation because they have a different mix of occupations. The available data allow us to divide the employees into two groups and compare each group's compensation to US economy averages. For managerial, professional, and technical employees (nearly one-third of their 22 million workers), US multinationals paid 37 percent higher compensation in 2007; for all other employees, they paid 13 percent more (Exhibit 30).

Exhibit 30

As of 2007, US multinationals paid higher average compensation than other companies and the US average by broad occupation

Average compensation, 2007
$ thousand



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

US households also share in the wealth created by US multinationals, since most of these companies are publicly held and most of their shareholders are US residents. In 2007, the total market value of US companies' equities equaled $20.3 trillion.[27] Of this, US residents held $17.5 trillion, or 86 percent, either directly as individual investors or indirectly through pension funds, retirement accounts, and insurance accounts.[28] This means that 86 percent of profits generated by publicly held US corporations end up benefiting US residents.

Due in part to the rise of 401(k) retirement accounts and mutual funds that started in the 1980s, more US households now invest in corporate equities. By 2007, half of all US households and two-thirds of households earning between $36,500 and $98,200 owned corporate equities, either directly or indirectly.[29] In 2007, nearly 58 percent of US households had the rights to a defined benefit or other similar pension plan.

27 US Federal Reserve Flow of Funds, third quarter of 2009, Table L.213.

28 For decades, more than 90 percent of US equities has been owned by US residents, but foreign holdings have been rising slowly over the years. After averaging 7 percent during the 1990s, the share of foreign holdings started rising from 9 percent in 2000 to 14 percent in 2007 and 2008.

29 The Federal Reserve's 2007 Survey of Consumer Finance.

Expansion of activity in multinationals' foreign affiliates also spurs employment growth at home

A company's employment growth in its home country might be reduced for one of three reasons. First, the company improves its labor productivity through new technologies and process innovations. Second, demand for the company's goods or services falls. Third, the company eliminates domestic, in-house jobs by contracting the work out to third-party providers (located within the home country or abroad) or by shifting the work to the company's foreign subsidiaries.[30]

Multinationals, by definition, are the only companies that can expand operations through foreign subsidiaries. Therefore, we will highlight the findings of academic research into the impact of US companies' foreign operations on their domestic economic activity.

One key question is whether investment and job creation by US companies' foreign affiliates are substitutes for, or complements to, activities in the United States. An example of a substitute would be a case in which a company created a job producing power tools in Mexico to replace a job in Maryland—the practice known as offshore outsourcing. An example of complements would be a case in which a company adds management and production jobs in its US headquarters to support expanding operations and employment overseas. Jobs created in China to service a US-made elevator in an office building in Shanghai must be performed in the local market and are not replacing US jobs. But the investments and people required to support this global service from the US headquarters complement those Shanghai-based activities.

The data show that the decline in US multinational companies' domestic employment reflects more than the growth of overseas substitutes. For example, US multinationals lost approximately 1.9 million domestic manufacturing jobs from 2000 through 2007; their foreign affiliates added just 365,000 manufacturing jobs over the same period.[31] Over this period, changes in employment moved in the same direction for five of the seven broad industry groups for which we have data to compare.

Identifying a precise relationship between US multinational activities at home and abroad is challenging because many forces outside of foreign expansion drive US multinational activity at home. Over the years, academic research has produced a range of results.[32] Some recent academic research in this area suggests that US multinationals' investments, job creation, and sales abroad are associated with increases in these same activities at home. The foreign and domestic activities of US multinationals are complements rather than substitutes.

For example, in a recent paper, Desai, Foley, and Hines (2009) use the confidential company-based information underlying the aggregated BEA survey data to analyze the correlations between foreign affiliate and US-based activity. Using the company-

30 The large domestic multiplier impacts of US multinational activity show that these companies rely significantly on outside suppliers and service providers at home.

31 The comparison of US multinational employment and their foreign affiliates is done on an enterprise basis rather than an establishment basis. See *Appendix: Technical notes* for details.

32 For recent summaries of this literature see Mihir Desai, C. F. Foley, and J. R. Hines Jr., "Domestic Effects of Foreign Activities of U.S. Multinationals," *American Economic Journal*: Economic Policy 1:1 (February 2009), 181–203; A. Ebenstein et al., "Estimating the Impact of Trade and Offshoring on American Workers Using the Current Population Surveys," NBER Working Paper 15107, June 2009; N. Gregory Mankiw and Phillip Swagel, "The Politics and Economics of Offshore Outsourcing," NBER Working Paper 12398, July 2006.

level information is critical to this question because it enables the authors to capture specific activity that flows between US parents and their affiliates. These authors find that a 10 percent increase in capital investment abroad triggers a 2.6 percent increase in domestic investment and that a 10 percent increase in foreign employee compensation is associated with a 3.7 percent increase at home. Thus, foreign and domestic activities of US multinationals are complements.

Similarly, when considering the overall economic impact of offshore outsourcing of services, MGI found in a 2003 report that every dollar invested abroad generates $1.13 of economic activity within the United States.[33] In a recent paper, Liu and Trefler (2008) also examined the impact of offshore outsourcing of services to India and China, along with the "inshoring" of services that captures US exports of services to these countries.[34] They found that these activities have either a small positive impact or no net impact on the US labor market.

□ □ □

US multinational companies contribute more to the US economy than their share of GDP. While their activities create 23 percent of US private sector value added, they account for larger shares of productivity growth and US private R&D spending. They pay higher average wages than other US companies. They account for almost half of the nation's exports and more than a third of its imports, resulting in a more favorable trade balance than other US companies. US multinationals also exert a significant indirect, or "multiplier," effect on the economy, which magnifies their contributions further. However, their record on employment is mixed across sectors and business cycles.

US multinational companies helped fuel the expansions that followed past recessions. Therefore these companies could potentially play a similar role, contributing to growth in the current recovery and beyond through their continued strong participation in the US economy.

33 *Offshoring: Is it a win-win game?*, McKinsey Global Institute, August 2003. Available at www.mckinsey.com/mgi.

34 Runjuan Liu and Daniel Trefler, "Much ado about nothing: American jobs and the rise of service outsourcing to China and India," NBER Working Paper 14061, June 2008.

2. The United States faces growing competition for multinational investment

Over the past two decades, US multinationals expanded their operations abroad as global economic integration accelerated. The continuation of this process raises the question: to what extent will the United States be able to retain and attract multinational investment in the future? In this chapter, we examine the changing global context in which multinationals decide where to locate their business operations, and how executives make these decisions. We also look at the critical areas of policy that could influence these decisions. These considerations are important given the contributions by US multinationals to the growth and performance of the US economy, as discussed in chapter 1, and the need for these corporations to compete effectively against competitors domiciled elsewhere.

To gain insights into the changing global context, we examined the relative attractiveness of the United States versus other countries across several broad categories, and the progress that other countries were making in these categories. For that, we draw on our research and that of others who have examined these issues. To better understand the corporate investment decision-making process, we interviewed senior executives from 26 of the largest and best-known US multinationals.[35] The economic impact of the participating multinationals is immense: their combined market capitalization approaches $2 trillion; they generate annual sales of $1.5 trillion; and they employ 2 million workers.[36] Moreover, because US multinationals operate in the most globally competitive and innovative sectors, they may serve as a "canary in the coal mine" of the US economy—providing an indication of how other companies are likely to cope with similar pressures over time.

We conclude that policy makers and others who want to help the United States compete for business should recognize several key points:

- While the United States remains the most attractive market overall for economic activity, other countries are catching up. The United States displays many advantages in attracting corporate investment. These include a large, growing economy; a highly educated and skilled workforce; political stability; a business-friendly legal and regulatory climate; and good physical and telecommunications infrastructure. Today, many countries have made huge strides or even surpassed the United States in some specific areas.

- As a result, multinational companies face more choices on where to locate their operations. Some of these relocations have been well under way for some time, for example in manufacturing. As some countries continue to improve their attractiveness in particular areas, new battlegrounds for investment and jobs are emerging, particularly in the areas of R&D, management, sales and marketing, highly skilled business support services, and advanced manufacturing.

35 The executives participated in the interviews on condition that they and their companies not be identified by name. Throughout this report, any references to specific companies are drawn from public information.

36 Based on the most recent annual reports as of February 2010 and market capitalization on February 9, 2010.

- In pursuit of growth and competitive advantages, US multinationals must go where the markets are growing, where the talent lives, and where the business climate and infrastructure best allow them to compete effectively with their foreign rivals. Increasingly, this means looking outside the United States for opportunities and places to locate business operations.

- US policy makers can craft policies both to attract corporate investment and jobs to the United States and to enable US multinationals to compete with their foreign-domiciled rivals. Most of the executives we interviewed believe that current policies—particularly in the areas of corporate tax levels, immigration restrictions, and bureaucratic hurdles and inconsistencies—handicap US companies and in some cases discourage investment in the United States. They said this contrasts sharply with the more proactive, business-friendly, administratively consistent environments they encounter in many other countries.

- Our research does not suggest that corporate decisions turn solely on particular policies. And there are challenges to investing in other countries. MGI research has found that developing countries' attempts to lure multinational investment solely through tax and monetary subsidies have been largely ineffective. Instead, policy makers should recognize all the factors that weigh into business decision making and understand how specific policy choices affect overall business decision making.

US multinational corporations will continue to expand certain operations abroad—particularly sales and marketing, production, and low-skilled business support aimed at serving foreign markets. Today the United States is well positioned to attract new investment and employment in areas such as R&D, management and high value added, high-skilled types of manufacturing, and business services. These are exactly the types of high-paying jobs for which other countries are increasingly competing.

If current trends continue, the United States' competitive advantage could erode, making the US market less attractive as a place to locate business operations. Many executives believe that they will struggle to compete effectively against foreign rivals domiciled in countries with better growth prospects, more business-friendly policies, or both. If this happens, US multinational companies would be even more likely to look outside the United States for growth opportunities and for places to locate their business operations.

OTHER COUNTRIES ARE CATCHING UP IN THE COMPETITION FOR US MULTINATIONAL CORPORATE INVESTMENT

The United States remains an attractive location for multinational economic activity. The US economy is the largest in the world, with strong patent protection, stable government institutions, high-quality transportation and communications systems, and an abundance of skilled and highly productive workers. But the world is changing. Today, countries in both the developed and developing world are also attractive investment locations, eroding the United States' advantage (Exhibit 31). Many countries now provide large and growing markets, innovation, and talent that match or exceed those in the United States.

Exhibit 31

US performance on a sample of country attractiveness indicators is declining relative to other countries

	Key metrics	US relative position: Ten years ago	US relative position: Today	Trend
Economic fundamentals	Household consumption	Leader	Leader	▼
	Household consumption growth	Leader	Top quartile	▼
	GDP	Leader	Leader	▼
	Stock market capitalization	Leader	Leader	▼
	Industrial production	Leader	Top quartile	▼
	Trade as % of GDP	Average	Average	▼
	National spending on R&D	Average	Average	▼
Business climate	Statutory corporate tax rate	Average	Bottom quartile	▼
	Business environment	Leader	Top quartile	▼
	FDI as % of GDP	Average	Average	▼
	Growth of local innovation clusters	Leader	Leader	–
	Tax incentives for R&D	Top quartile	Average	▼
Human capital	Population and demographic profile	Top quartile	Top quartile	–
	Availability of high-quality labor	Leader	Leader	▼
	Retention of foreign-born talent	Leader	Leader	–
	Cost-adjusted labor productivity	Average	Average	–
	Public expenditure on education	Leader	Leader	–
	Number of patent applications	Leader	Top quartile	–
Infrastructure	Transportation	Leader	Top quartile	▼
	Telecommunications	Leader	Top quartile	▼

SOURCE: McKinsey Global Institute synthesis of data from numerous sources. See *Appendix: Technical notes* for details.

Countries' competitiveness in attracting investment generally depends on four groups of attributes: economic fundamentals, business climate, human capital, and infrastructure.[37] Historically, the developed economies, and the United States in particular, have performed best across these measures of country attractiveness, and it is these countries in the Organisation for Economic Co-operation and Development (OECD) that are home to the bulk of US multinationals' foreign activity.[38] In 2007, approximately 70 percent of US foreign affiliates, their sales, and capital expenditures were in OECD countries, excluding the United States. Approximately 40 percent were located in the G-7 countries, excluding the United States (Exhibit 32). But the developed country share of activity is declining slowly over time. Many more markets meet the bar on country attractiveness. In a recent United Nations survey of

37 See, for example, World Economic Forum, "The Global Competitiveness Report, 2009–10"; Council on Competitiveness, "Competitiveness Index: Where America Stands, 2007."

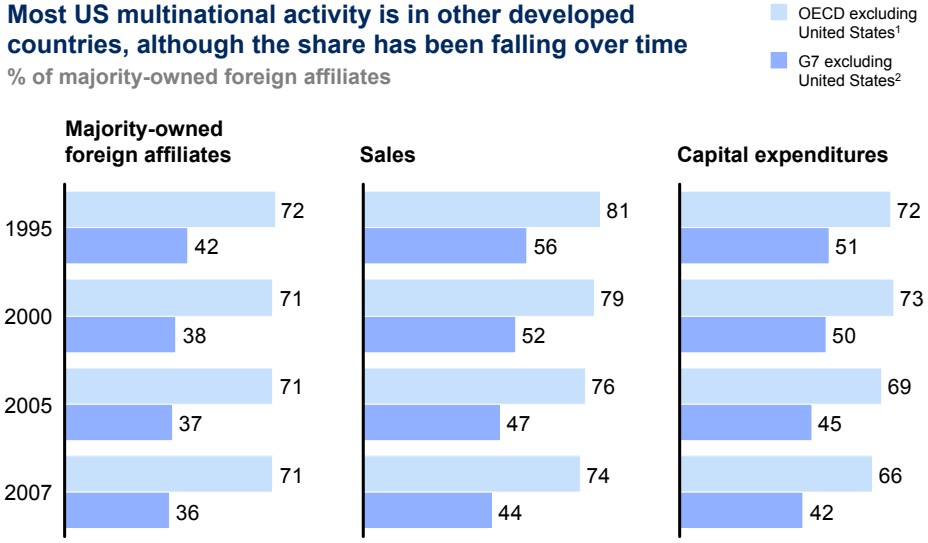
38 Investments in developed economies traditionally were thought to focus on serving these large prosperous markets. However, new research demonstrates that multinationals also seek supplier relationships in other developed countries to leverage world-class talent and keep critical parts of their value chain within the boundaries of the firm. More basic input processing has often been done with arm's-length relationships. See Laura Alfaro and Andrew Charlton, "Intra-Industry Foreign Direct Investment," *American Economic Review*, 99:5, 2009.

executives, respondents viewed Brazil, Russia, India, and China—the so-called BRIC countries—as four of the top five locations for foreign direct investment in 2009–11.[39] The United States ranked second (Exhibit 33).

Exhibit 32

Most US multinational activity is in other developed countries, although the share has been falling over time

% of majority-owned foreign affiliates



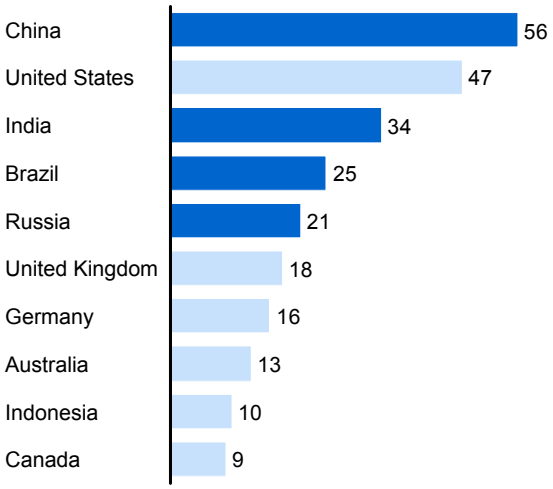
1 Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, South Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, and the United Kingdom.
2 Canada, France, Germany, Italy, Japan, and the United Kingdom.

SOURCE: Bureau of Economic Analysis; McKinsey Global Institute analysis

Exhibit 33

BRIC countries accounted for four out of the top five locations for FDI in 2009–11

Top ten most attractive economies for location of FDI, 2009–11
% of respondents



SOURCE: United Nations Conference on Trade and Development, World Investment Prospects Survey 2009–2011

39 United Nations Conference on Trade and Development (UNCTAD), World Investment Prospects Survey 2009–2011.

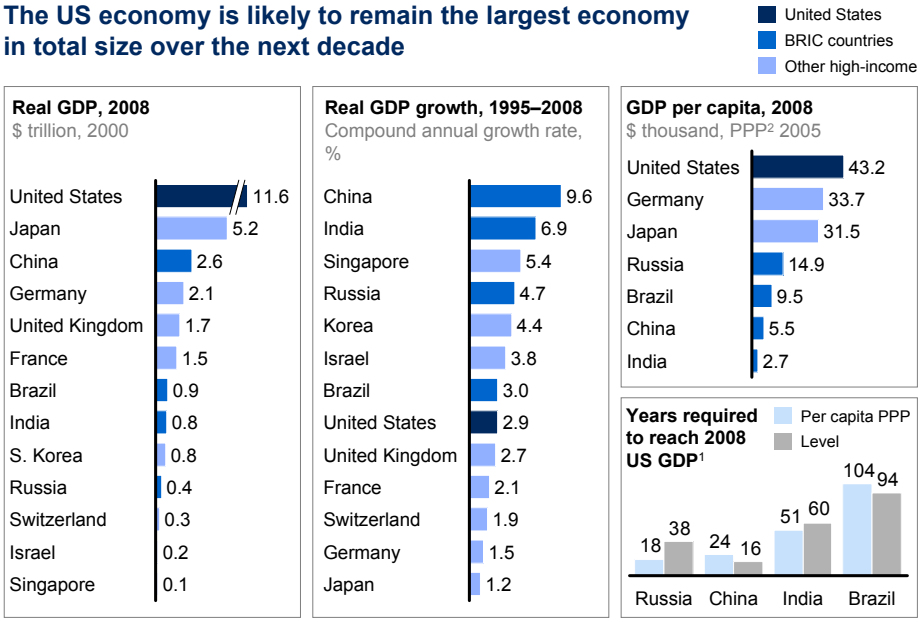
Companies seek to invest in large and growing markets

A primary driver of a country's attractiveness is its underlying economic fundamentals. Characteristics such as the size of the market and its capacity for growth provide the necessary conditions for a company to succeed. Historically, the major OECD economies earned the highest marks in these areas—with the US economy ranking highest for many years. To be sure, the United States still retains some specific advantages, but other countries such as China, India, and Brazil have developed attractive fundamentals as well and are catching up to, or surpassing, the United States on some measures.

With real GDP of $12 trillion in 2008, the US economy was twice as large as Japan's, the second-largest economy in the world, and more than four times as large as China's, the next biggest (Exhibit 34).[40] Before the latest recession, the United States accounted for close to 30 percent of global real GDP, one-third of global consumer spending, and more than one-third of global R&D spending.

Exhibit 34

The US economy is likely to remain the largest economy in total size over the next decade



1 GDP by country is assumed to grow at average annual rate achieved from 1997–2007.
2 Purchasing power parity (PPP) takes into account the relative prices of nontradable goods in different countries.
SOURCE: World Bank, World Development Indicators; McKinsey Global Institute analysis

However, the United States is also a mature market. Members of the giant baby boom generation, which helped propel economic growth during the last decades of the 20th century, are now retiring—entering a phase of life in which spending typically declines.[41] And US households generally are saving more and consuming less to reduce the leverage accumulated during the credit-driven housing boom that ended abruptly in 2008.[42] Therefore, the US economy is projected to grow more slowly than in the past.

40 Real GDP calculated by the World Bank in 2000 dollars.

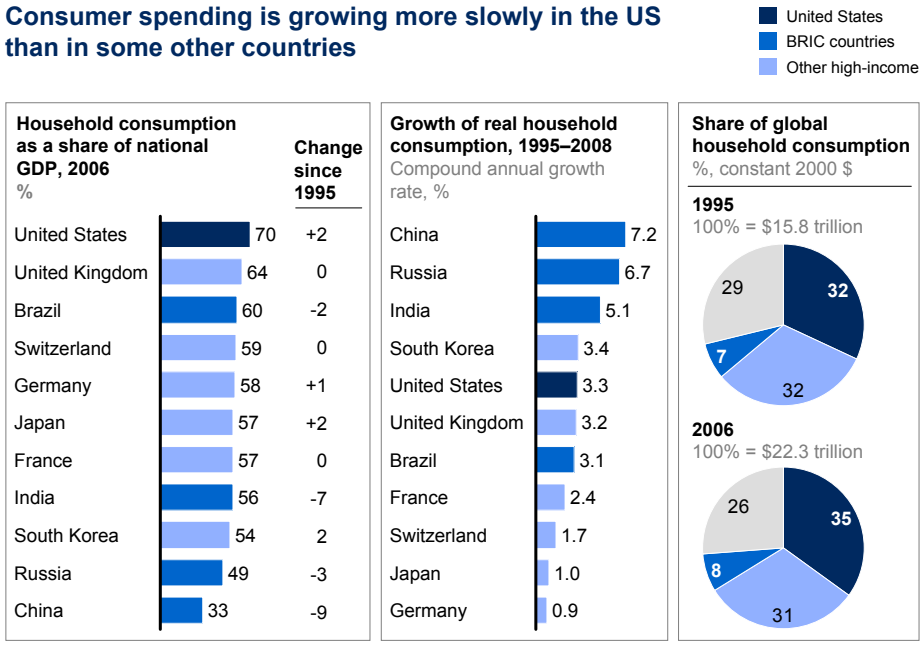
41 See *Talkin' 'bout my generation: The economic impact of aging US baby boomers*, McKinsey Global Institute, June 2008. Available at www.mckinsey.com/mgi.

42 See *Will US consumer debt reduction cripple the recovery?*, McKinsey Global Institute, March 2009, and *Debt and deleveraging: The global credit bubble and its economic consequences*, McKinsey Global Institute, January 2010. Both are available at www.mckinsey.com/mgi.

Growth, in particular, is what makes emerging markets so attractive for corporate investment. For example, while US GDP rose at a 2.9 percent annual rate from 1995 through 2008, China's economy grew at a 9.6 percent rate, India's at 6.9 percent, and Russia's at 4.7 percent. And real consumer spending in China grew at a 7.2 percent annual rate from 1995 through 2008—more than double the US rate. Consumer spending growth in Russia (6.7 percent) and India (5.1 percent) also exceeded the US rate of 3.3 percent (Exhibit 35). Brazil's consumer spending, equivalent to 60 percent of GDP, is the highest of the BRIC countries. MGI estimates that by 2020, the middle class in China and India will swell to approximately 800 million people, who will spend nearly $3 trillion in inflation-adjusted terms. And many other developing countries are following similar growth trajectories. While they remain small on a per capita spending basis, they will be important venues for US multinationals in the next generation.

Exhibit 35

Consumer spending is growing more slowly in the US than in some other countries



SOURCE: World Bank, World Development Indicators; country statistical agencies; McKinsey Global Institute analysis

Having a well-educated and adaptable workforce is critical for a modern economy

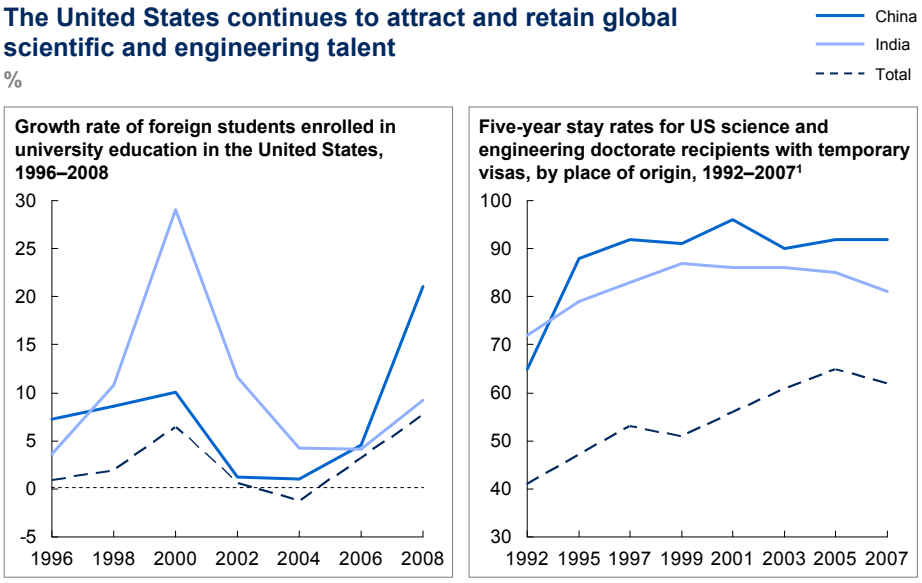
Companies need skilled labor to differentiate themselves by innovating and creating the best products and services. Multinational corporations view human capital—the skills, abilities, and education of the labor force—as a key quality in determining a market's attractiveness. The United States retains many advantages in this area.

The United States is still the world's leader in higher education, particularly scientific education and research. According to the WEF Global Competitiveness Index, the United States ranks first in university-industry collaboration in R&D and second in the quality of scientific research institutions. Not only do some of the brightest minds from around the world come to the United States for graduate study, but they also tend to stay (Exhibit 36). In 2007, 62 percent of foreign-born nationals who received a science or engineering doctorate stayed in the United States for at least five years following graduation; that was up from 41 percent in 1992. More than 80 percent of graduates of Indian origin and 90 percent of Chinese graduates were still in the country five years after graduation.

Exhibit 36

The United States continues to attract and retain global scientific and engineering talent

%



1 Indicates year of observation; e.g., five-year stay rate for the year 2005 indicates share of 2000 PhD graduates who remained in the United States in 2005.

SOURCE: National Science Board Science and Engineering Indicators 2008; M. Finn, "Stay Rates of Foreign Doctorate Recipients from US Universities: 2007," Oak Ridge Institute for Science and Education, 2010

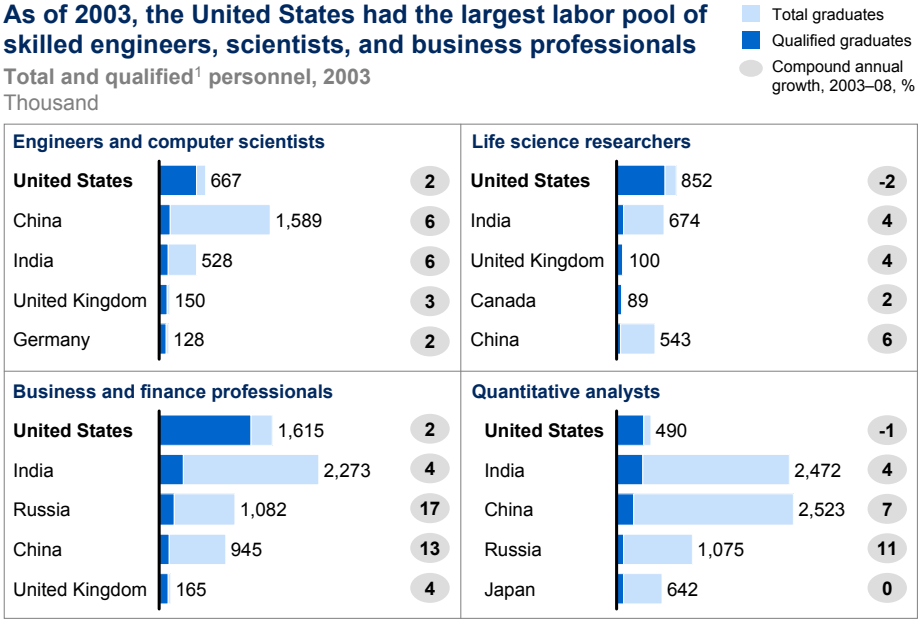
This helped the United States lead the world in terms of the number of engineers, scientists, and business professionals who are ready to work in a multinational company. Although China, India, and the United States all have large labor pools in these areas, the United States has by far the largest number that not only possess the requisite degree and the ability to relocate for work, but also the skills in interaction, critical thinking, and management that are essential to success in today's business environment (Exhibit 37).

Exhibit 37

As of 2003, the United States had the largest labor pool of skilled engineers, scientists, and business professionals

Total and qualified[1] personnel, 2003

Thousand



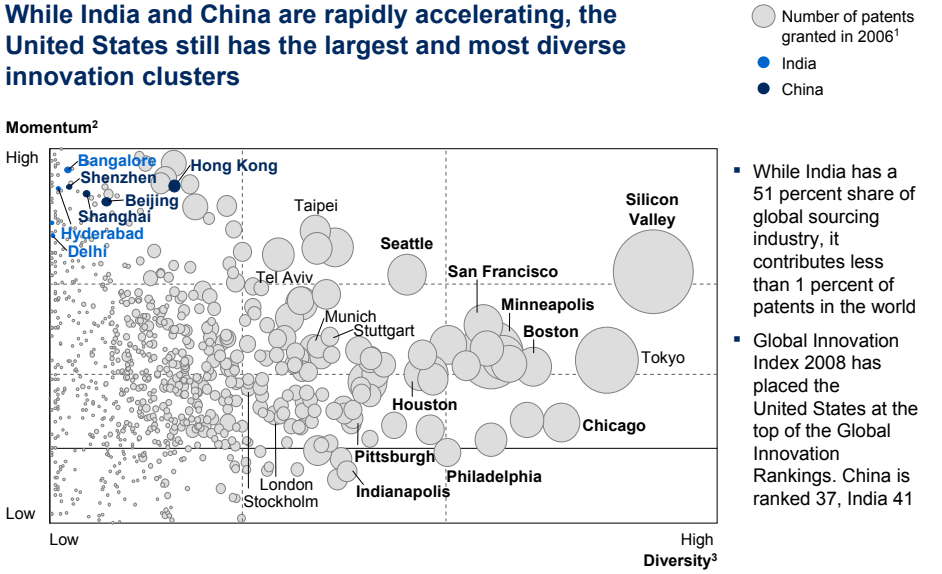
1 For the definition of "qualified" in each case, see *The emerging global labor market*, McKinsey Global Institute, June 2005.

SOURCE: *The emerging global labor market*, McKinsey Global Institute analysis, June 2005

The United States does not, however, have a monopoly on talent. Given that the demand for talent is high and the supply of talent in the United States is finite, US multinationals are finding pools of skilled labor in countries around the world. India, in particular, is rapidly producing skilled talent in nascent centers that have the potential to evolve into dynamic innovation clusters. While the United States still is home to the largest innovation clusters, those in India and China are growing rapidly (Exhibit 38).

Exhibit 38

While India and China are rapidly accelerating, the United States still has the largest and most diverse innovation clusters



- While India has a 51 percent share of global sourcing industry, it contributes less than 1 percent of patents in the world
- Global Innovation Index 2008 has placed the United States at the top of the Global Innovation Rankings. China is ranked 37, India 41

1 Overall patents granted by US Patent and Trademark Office, by inventor origin; partial ranking of selected cities.
2 Momentum is the rate of growth of patents in a cluster per year from 1997 to 2006.
3 Diversity measures the number of separate firms and industry sectors in a cluster in 2006.
SOURCE: *The global competitiveness report*, 2009–2010, World Economic Forum

The ability of the United States to sustain some of its advantages will depend in part on its relative performance in K-12 education. A report by the McKinsey & Company Social Sector Office found that the United States faces a significant international achievement gap in primary and secondary education.[43] Among the report's findings:

- In cross-country comparisons of fourth-grade reading, math, and science, US students scored in the top quarter or top half of advanced nations. By age 15, US students ranked in the bottom half.
- In 2006, the United States ranked 25th of 30 nations in math and 24th of 30 in science when the achievement of 15-year-old students was measured in OECD countries. The United States has among the smallest proportions of 15-year-olds performing at the highest levels of proficiency in math.
- Forty years ago, the United States was a leader in high school graduation rates; today, it ranks 18th out of 24 industrialized nations.

43 McKinsey & Company, *The economic impact of the achievement gap in America's schools*, April 2009. In addition to the international achievement gap, this report identified a "racial achievement gap," an "income achievement gap," and a "systems-based achievement gap," all of which are having a significant negative impact on educational attainment in the United States.

Finally, while US workers are highly productive, they are relatively costly. Examining labor productivity on a cost-adjusted basis, the United States beats its peer economies, including Japan, the United Kingdom, France, and Germany. But by the same measure, the United States lags behind Mexico, China, and India.

Other countries are developing favorable business climates

The ease of doing business in a country, or its business climate, reflects factors such as the strength of a nation's institutions, its regulatory environment, the costs associated with starting and running a business, political stability, and government attitudes toward commerce. The US economy continues to have a very favorable business climate. However, many other markets also have, or are developing, very favorable business climates, and in some cases are even more welcoming.

The WEF Global Competitiveness Index details many indicators of business climate favorability. The United States does very well on indicators such as labor market efficiency, competitive intensity, pay and productivity, and sophistication of consumers. However, the United States ranks poorly in areas related to the strength of institutions and the burden of regulation and taxation (Exhibit 39). The World Bank "Doing Business" report tells a similar story. Although the United States consistently ranks in the top five countries, it no longer enjoys a leading position on the ease of paying taxes, starting a business, and getting permits—significant factors when making a new investment.

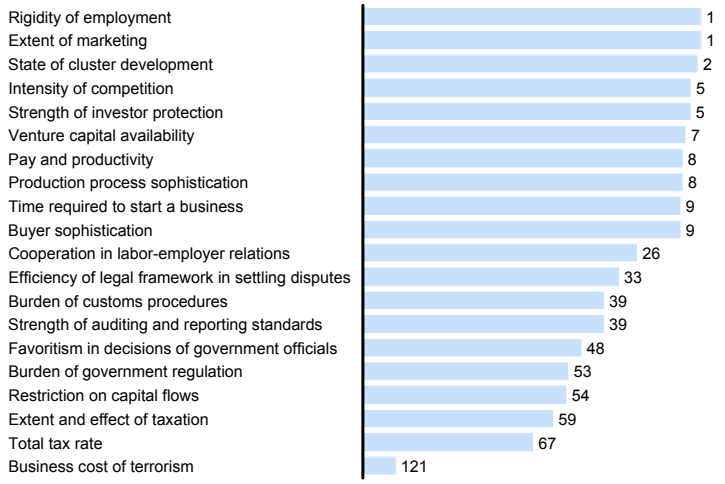
Exhibit 39

The Unites States ranks high on some indicators of business climate but not on others

EXAMPLES

Indicators of US business climate favorability

Rank out of 133 countries[1]



1 The Global Competitiveness Index is made up of 12 "pillars." Five pillars spanning 61 indicators describe business climate: institutions, goods market efficiency, labor market efficiency, financial market sophistication, and business sophistication.

SOURCE: The Global Competitiveness Report, 2009-2010, World Economic Forum

And many of these disadvantages have grown over time. For example, the strength of institutions encompasses a broad range of indicators from property rights and intellectual property protection to effectiveness of the legal framework and financial and accounting standards. The United States ranked 34th in the world on overall institutional effectiveness in 2009, down from 15th in 1997, according to the WEF Global Competitiveness Index. Similarly, statutory corporate tax rates have been dropping across all geographies since 1999, while US tax rates have remained

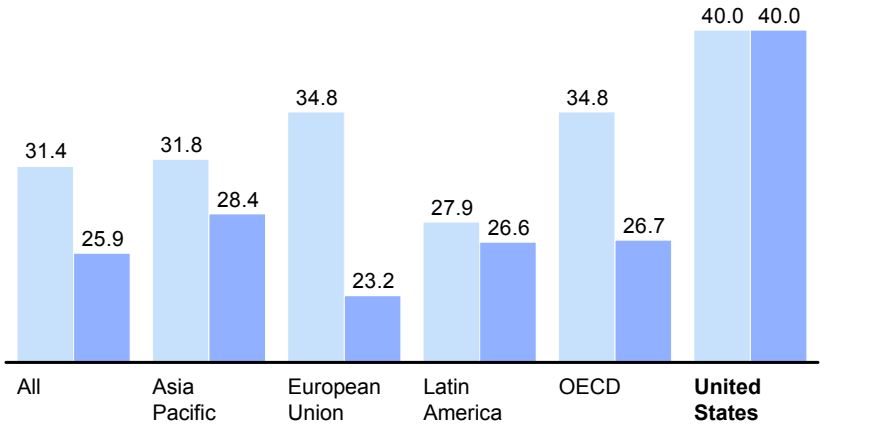
stable (Exhibit 40).[44] Tax rates, by affecting companies' cost of capital, rate of return, and relative competitive position, are among the factors that influence executives' decisions about where to retain or expand operations.[45]

Exhibit 40

Statutory tax rates have been falling worldwide, except in the United States

Average statutory central, state, and local government taxes on corporations, 1999–2008

%



SOURCE: KPMG Corporate and Indirect Tax Rate Survey, 2008

Infrastructure provides the necessary physical and technological conditions for companies' operations

Multinational corporations need adequate physical and technological infrastructure to operate their businesses. Access to good roads and ports is necessary, but that is no longer sufficient to attract global businesses. Rapid technological innovation makes efficient broadband and mobile communications essential as well. These technologies dramatically lowered the cost to collaborate—in some cases, to nearly nothing. New technologies also fueled more efficient transportation networks and energy delivery.

Although the United States created one of the first national highway systems and among the first mobile communications networks, many of the country's infrastructure assets need better maintenance or an upgrade. The American Society of Civil Engineers' "2009 Report Card for America's Infrastructure" gave an overall grade of "D," or poor, to US infrastructure, the same grade as in 1998, but down from a "C" grade in 1988. The engineers' society estimated that the United States needs a five-year, $2.2 trillion upgrade to bring its infrastructure up to par (Exhibit 41).

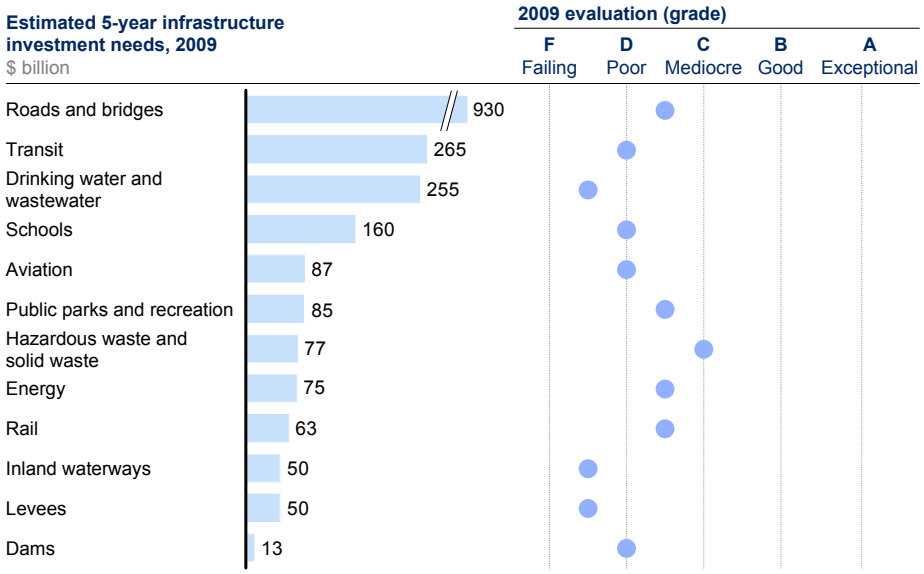
44 Multinational companies' average effective tax rates can vary considerably from the statutory rates of their home countries for many reasons, including their industries, the tax rates in the countries where they operate, and specific provisions that govern the taxation of international earnings.

45 Academic research has found that taxation does play a role in multinationals' investment and profit allocation decisions. See M. P. Devereux and G. Maffini, "The Impact of Taxation on the Location of Capital, Firms and Profit: A Survey of Empirical Evidence," Oxford University Centre for Business Taxation, Working Paper 07/02.

Similarly, the International Institute for Management Development (IMD) 2009 Executive Survey ranked the United States 17th globally in air transportation infrastructure, a drop from seventh place in 2002. Overall, the US global ranking in physical infrastructure slipped from third in 1997 to eighth in 2009, according to the WEF Global Competitiveness Index.

Exhibit 41

US infrastructure was graded a "D" in 2009 and needs over $2 trillion in investment

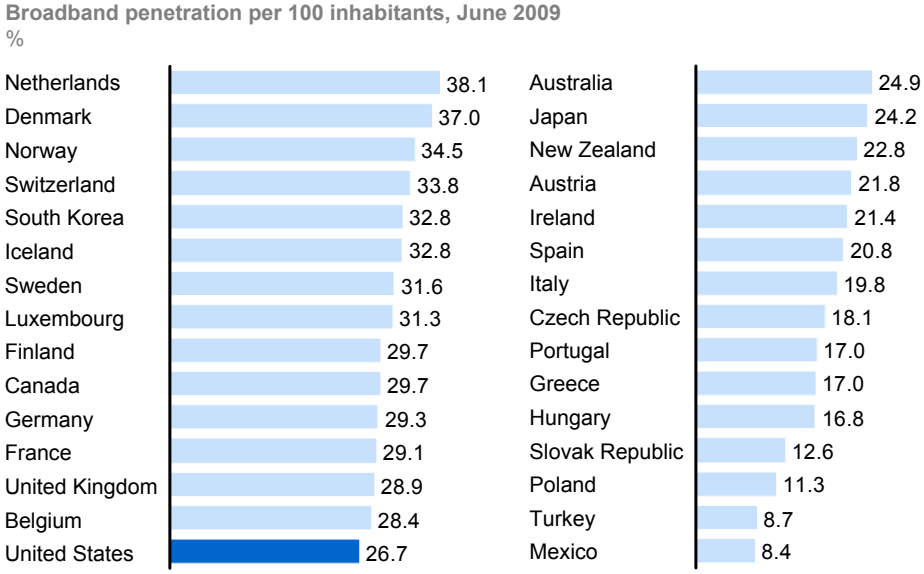


SOURCE: American Society of Civil Engineers; http://www.infrastructurereportcard.org/report-cards

The United States also is not always playing its traditional role as a leader in the adoption of new technologies. For example, many US households and communities lack high-speed broadband access; the United States ranks 15th among industrialized nations in broadband subscription penetration (Exhibit 42).

Exhibit 42

The United States is ranked 15th in broadband penetration among OECD countries



SOURCE: OECD broadband statistics; http://www.oecd.org/sti/ict/broadband

The United States ranks 24th among industrialized countries in terms of Internet download speeds. With an average speed of approximately 9.6 Mbps, the US rate was just about a tenth of the speed in Japan, the world leader.[46] Overall, the IMD 2009 Executive Survey ranked the United States 20th in business and communications infrastructure, down from 10th in 2004. Developing countries can capitalize on new wireless technologies creating state-of-the-art communications networks that are attractive to business while avoiding costly investment in wire-line-based physical infrastructure. This enables them to catch up to and potentially leapfrog the capabilities of established networks.

MANY COUNTRIES ARE ALSO SUCCESSFULLY COMPETING FOR CORPORATE INVESTMENT AND JOBS

Much of the increased attractiveness of foreign markets arises from such factors as population growth, economic growth, rising affluence, and consumer preferences. But in some countries, governments are also working to develop coordinated national programs to attract business investment. These governments recognize that attracting multinationals creates a virtuous cycle of economic growth.[47] In 2003, MGI research found that developing countries' attempts to lure multinational investment through tax and monetary subsidies and through operating regulations such as joint ventures or local content restrictions were largely ineffective. The costs of these programs almost always exceeded their benefits. In many cases, the incentives did not drive corporate decisions, and executives viewed them as counterproductive. Far more successful were emerging markets' efforts to improve their overall attractiveness by enhancing their economic fundamentals, business climate, human capital, and infrastructure.[48]

Many developing and developed countries are crafting integrated, holistic approaches to attract subsidiaries and headquarters of multinational companies. For example, several nations have streamlined their business approval processes and coordinated with local governments and institutions. Ireland created a high-profile government agency dedicated to linking foreign business with local partners and talent (see sidebar, *Ireland's investment promotion*). The Chinese city of Tianjin employs officials to market to foreign companies looking to manufacture high-tech goods. Now, Tianjin is home to more foreign companies than Shanghai. One example of the growing scale of some countries' efforts to lure foreign investment is South Korea's new Songdo International Business District, one of the largest private real estate developments in history, valued at more than $40 billion. Designed to serve as the new international business hub of northeast Asia, Songdo is situated near vast and growing markets, has access to high-quality infrastructure, and operates within a free trade zone that provides numerous business incentives (see sidebar, *Songdo International Business District*).

46 OECD broadband statistics (http://www.oecd.org/sti/ict/broadband).

47 See Laura Alfaro and Maggie Chen, "The Global Networks of Multinational Firms," NBER Working Paper 15576, December 2009.

48 See *New horizons: Multinational company investment in developing economies*, McKinsey Global Institute, October 2003.

Ireland's investment promotion

Before the global financial crisis, Ireland consistently outperformed its peers on a number of economic performance indicators. Executives credit much of this success to Ireland's ambitious National Development Plan for 2007–13, which aimed to build the economic, physical, and social infrastructure needed to integrate the country into the global economy. In addition, Ireland operates two investment promotion agencies: one to ensure that Irish business stays and grows and the other to induce foreign multinational corporations to invest in Ireland. The latter, IDA (Industrial Development Agency) Ireland, maintains offices all over the world, including six in the United States.

As a result, Ireland's business climate wins praise from the global business community. One chief financial officer we interviewed said, "In Ireland, the entire government is on the same page, and people ask you what you need. You have a single point of contact to help you interface with everyone."

Other executives have described how IDA Ireland helps multinational corporations link with Irish research institutions to tap pools of talented workers to collaborate on R&D initiatives. One company built a business support center in Ireland rather than in the United States, even though the wages in the two countries did not differ materially. Why? The Irish government and higher education institutions have pursued an agenda of producing more skilled talent with multiple foreign language and advanced business skills. In addition, Ireland and other countries provide financial incentives to businesses to train these workers in any additional skills needed.

Ireland's strategy has yielded significant progress, attracting investment from around the globe and making Ireland home to thousands of new jobs in life sciences, high-tech, and high-value manufacturing.

Songdo International Business District

South Korea's Songdo International Business District, which opened in 2009, is located near Incheon, within a four-hour flight from one-third of the world's population—including Japan and China. Songdo is minutes away from the Port of Incheon and Incheon International Airport, two heavily used facilities providing connections to locations all over the world. And Songdo's buildings are all wired with state-of-the-art communications systems. Moreover, within the Incheon Free Economic Zone, Songdo's foreign workers face few immigration restrictions. English is the common language. Foreign companies locating there receive corporate tax breaks and other benefits.

INCREASED GLOBAL COMPETITION IS CREATING NEW BATTLEGROUNDS FOR INVESTMENT AND JOBS

Over the years, we have seen the United States lose many low-value-added US manufacturing and business support jobs. Today, as other countries become more competitive for multinational corporate investment, new battlegrounds are emerging in higher-value-added industries and occupations. The actions of US multinationals provide a leading indicator of how this competition could play out.

US multinationals may be the "canary in the coal mine" of the US economy

As discussed in chapter 1, US multinational companies operate on the front lines of global competition, with operations located worldwide and concentrated in most competitive sectors. They compete not only with foreign-based multinationals, but also with rising domestic companies in developing economies such as Brazil, China, and India. US companies have learned that they will thrive and survive only if they can grow, employ the most highly skilled talent, and remain cost-competitive. Many other US companies that operate only in the United States face similar pressures from domestic and foreign rivals. These companies may not respond by investing directly overseas, but they can move some of their operations offshore by contracting with foreign suppliers. This activity is hard to directly observe. But through the Bureau of Economic Analysis surveys, we have good data on US multinational corporations' investment in their foreign subsidiaries.

Thus, the actions of US multinationals provide us with an indication of how other companies can use access to markets abroad to cope with similar competitive pressures. US multinationals may serve as a "canary in the coal mine" of the US economy, providing warnings of possible future risks. In this case, one risk is that the United States could lose future corporate investment—by multinationals and other companies—if its competitive advantage erodes in certain areas. Another risk is that US companies could find it increasingly difficult to compete effectively with their foreign rivals.

Complex multinationals have global choices of where to locate their different business function

When companies consider how to enter new markets, they don't necessarily replicate all their operations near their new customers. It is often more effective to locate different activities in different locations. For example, this may mean creating just a sales office in the new market, expanding a plant in a neighboring country, and processing the bills in an already existing facility in a third country on another continent.

Executives view these various operations as functions in the business value chain. The five primary functions for a global business are sales and marketing, manufacturing, business support or back office, R&D, and management. Executives work to optimize the efficiency, effectiveness, and competitiveness of each of these business functions. To optimize each of these functions, corporations increasingly have many more choices around the world as to where to locate each of the functions, and the corresponding investments and jobs. More than ever, the United States now has to compete for these investments.

In the past, the United States lost many low-value-added manufacturing jobs for several reasons

The decline in US manufacturing employment partly reflects the deteriorating competitive position of the United States. Over the years, many countries with significantly lower wages became viable export platforms as they improved their infrastructure and business climates and as trade barriers and transportation costs dropped. In many industries, the United States was no longer cost-competitive, because other countries could produce these goods at substantially lower factor costs and export them. However, these trends did not spell the end of all manufacturing in the United States. Over time, the US manufacturing base shifted toward more capital- and skill-intensive sectors, such as the production of high-value medical devices and earthmovers.[49] Manufacturing, though smaller in terms of jobs, became a key driver of productivity growth in the United States.[50] However, the global trends have persisted, and indeed some researchers argue that even some of the more complex manufacturing jobs may be under threat or already gone.[51]

The United States has recently experienced a similar outflow of business support services

The drop in data and voice transmission costs unleashed the second broad wave of globalization by enabling US companies to tap the growing pools of educated, motivated, and English-speaking workers abroad. The phenomenon of business process outsourcing initially affected occupations involving transactions, or exchanges between people (perhaps customers) that can be scripted, routinized, and automated. These are the types of tasks performed remotely by workers answering customer calls, providing remote technical and IT support, or processing claims.

As in manufacturing, workers outside the United States have been able to deliver similar quality services at a much lower cost. But in the case of business support services, the location decision turned not just on cost competitiveness; many of these jobs required significant education and training in IT skills to deliver the quality of services required, even for the most basic functions. Many governments have added further inducements by creating business-friendly environments. Indeed, companies relocated jobs not just to India, but also to Ireland, Canada, and Israel.[52]

The next wave of global competition creates new battlegrounds, including R&D and management jobs

As other countries catch up with the United States in the ability to compete for corporate investment, the battlegrounds are expanding to include much higher-value-added business operations and occupations. These new battlegrounds include R&D, high-value-added business support, high-value-added manufacturing, and even management jobs. The United States cannot assume it will retain and

---

49 Andrew B. Bernard, J. Bradford Jensen, and Peter K. Schott, "Survival of the best fit: Exposure to low-wage countries and the (uneven) growth of US manufacturing plants," *Journal of International Economics* 68 (2006), 219–237.

50 Manufacturing was a critical driver to labor productivity growth in the nonfarm business sector over the last two business cycles. From 1990 to 2001, manufacturing was responsible for 43 percent of productivity growth, while from 2001 to 2007, it was responsible for 35 percent of growth.

51 Gary P. Pisano and Willy C. Shih, "Restoring American competitiveness," *Harvard Business Review* 87:7-8 (2009), 114–125.

52 See *The emerging global labor market*, McKinsey Global Institute, June 2005. Available at www.mckinsey.com/mgi.

attract these jobs without a fight. To understand why companies often locate these jobs abroad, one must appreciate the competitive imperatives confronted by global corporations.

CORPORATE EXECUTIVES GIVE MANY REASONS FOR INVESTING ABROAD

So what does the future hold for the ability of the United States to retain and attract corporate investment, and for its multinationals to grow and compete effectively? As previously noted, we interviewed executives from 26 US companies across a wide range of industries. While the executives expressed many different points of view, they also shared several common perspectives and concerns. We were able to distill from their comments a number of key themes.

The primary reason to invest overseas is to pursue growth opportunities

All the executives we interviewed said that they have no choice but to expand their operations in fast-growing foreign markets. In a recent United Nations survey, executives of multinational companies named the size and growth of local markets as the top two leading factors that will influence business location decisions in the years ahead. Fully one-third of the respondents ranked these two factors in the top five.[53]

In our interviews, the executives mentioned China, India, Brazil, and Russia as the most attractive foreign markets for investment (again consistent with the UN survey; see Exhibit 33). But executives are pursuing opportunities in emerging markets from Central and South America to Eastern Europe and emerging Asia. One executive at a high-tech company pointed out that "the number of PCs that will be purchased in China or Brazil in the next ten years dwarfs the number we expect will sell in the United States." If this company does not sell PCs to those overseas customers, a competitor will.

To serve these markets, US multinationals must develop significant local sales and marketing operations—jobs that must be done close to the customer. Similarly, many goods are not economical to transport or are dependent upon the availability of specific resources. So manufacturing is located near the end consumer or the resources. One executive said simply, "When we make a low-value, bulky product, it doesn't make sense to ship it all over the map. We make it in China so we can sell it in China."

US multinationals are marketing a wide range of products that need to be delivered "just in time" in order to efficiently distribute and sell them. Thus, as explained in chapter 1, the foreign jobs created by these investments are not substitutes for US jobs.

Indeed, these executives' comments reflect the fact that their companies' primary purpose in locating abroad is to serve those local markets. In 2007, approximately 60 percent of all sales by majority-owned foreign affiliates were in local markets. An additional 30 percent of these affiliates' sales came from exports to third countries, and the remaining 10 percent came from exports to the United States.[54] MGI research

53 United Nations Conference on Trade and Development (UNCTAD), World Investment Prospects Survey 2009–2011.

54 Bureau of Economic Analysis, US Direct Investment Abroad, 2007, http://www.bea.gov/scb/account_articles/international/iidguide.htm#USDIA1.

finds that corporations made 80 percent of their investments in foreign countries to serve the local markets, rather than to produce goods for export to the United States or other markets.[55]

Talent is particularly important to industries in which R&D is a significant driver of value added

All the executives we spoke with said that they are constantly searching for top R&D talent. Although US multinationals have historically located their R&D operations close to corporate headquarters, nearly all the executives we interviewed said they are expanding these operations abroad and are hiring an increasing number of high-skilled workers around the world. Echoing a theme we heard repeatedly, one executive remarked, "When we are looking for the next breakthrough innovation, we are looking for the most talented people, no matter where they are. If we have to, we will bring the R&D to the talent."[56]

Talent is particularly important to industries, such as high tech and pharmaceuticals, in which R&D is a significant driver of value added. Executives in these industries expressed frustration with the difficulties they encounter in finding, attracting, and retaining enough of the right talent in the United States. They also described the perceived difficulties of retaining non-US citizens who come for education in the United States but cannot easily secure the required visas to remain for long-term employment.

Thus, Google, with a 2008 R&D budget in excess of $2 billion, employs engineers and scientists in research centers around the world. Though closely associated with Silicon Valley, Google is tapping these pools of talent in large labs and R&D centers in the technology clusters of London, Tokyo, Hyderabad, and Sydney. Google is continuing to disperse its R&D activities in both developed and emerging economies such as China, South Korea, Russia, Israel, and Switzerland.[57]

Likewise, IBM launched a research agenda to help countries create a "smarter planet" by developing technologies that will improve roadways, health care systems, food production, and more. It launched research "collaboratories" in Saudi Arabia, Switzerland, China, Ireland, Taiwan, and India, with more in the pipeline, linking local talent, universities, and institutions with IBM's own R&D.[58]

One executive at a high-tech firm explained: "We innovate by acquiring smaller companies that have developed new technology, and we are finding increasing numbers of those companies abroad. So we bring them into the fold, which increases our investments outside the United States." Another executive provided a pragmatic perspective, saying, "It is still true that our highest-end R&D is in the United States, but there are different levels of R&D, and we can find plenty of people to do basic research that requires a lot of time and people in other parts of the world."

---

55 See *New horizons: Multinational company investment in developing economies*, McKinsey Global Institute, October 2003. Available at www.mckinsey.com/mgi.

56 These perspectives amplify the trends that have been emerging in recent years. See United Nations Conference on Trade and Development (UNCTAD), "World Investment Report 2005: Transnational Corporations and the Internationalization of R&D," 2005; OECD, "Staying Competitive in the Global Economy: Moving Up the Value Chain," 2007.

57 Google Web site press releases and job postings. See www.google.com/press/.

58 Steve Hamm, "Big Blue's Global Lab," *Bloomberg Businessweek*, August 27, 2009.

As sources of talent grow overseas, a few companies are moving management jobs overseas

Traditionally, US multinational corporations located their top management jobs at their US headquarters. But executives told us that in an era of advanced and inexpensive telecommunications, and given the growth in foreign markets and availability of talent in other parts of the world, even these jobs are increasingly located abroad.

A company's management is not just the top-level leadership, but also the experts overseeing different business operations—for example, the managers of the global supply chain, product development, brand strategy, and company financials. Some companies are moving these strategic leaders closer to the employees they manage, who are increasingly in new and growing markets. This helps them function in different locations more as a local company, with better market insights and customer relations.

One senior executive described this devolution of responsibility away from a geographic center, saying, "We are trying to break out of our headquarters. We keep sending people all over the world to run pieces of our business, and then they come back. But long term, we'd like to see more of them stay out there where the work and customers are increasing."

Cisco frequently refers to its new Bangalore facility as a "second headquarters" that will drive innovation for growing markets around the world. Top Cisco executives are not managing the Bangalore operations from the Bay Area; they are being deployed to India for the long term.[59] US multinational employees in foreign affiliates now have a career path to top management that does not necessarily require relocating to the United States.

Companies are expanding their more advanced business support services abroad

We noted earlier that the business support jobs most often located abroad are those involving *transactions*, the largely scripted, routinized tasks and exchanges. In contrast, *interactions* that involve specialized expertise, collaboration, and advanced problem-solving are more likely to be located within the United States. But executives told us that, once again, as the supply of talented foreign workers grows, businesses find that more higher-end support jobs such as accounting, financial reporting, and legal services can be performed offshore. Additionally, executives find other governments eagerly working with business to attract such activities. Indeed, most of the executives we interviewed said that their companies were either actively using these kinds of capabilities in offshore locations or were seriously considering developing them.

One executive noted an expansion of the range of activities that companies can centralize and perform anywhere. "In places like the Philippines, you can now find people qualified for even the higher-level back-office jobs—not just the repetitive rules-based work, but the analytical support work that makes up most of business support." Another noted, "Five years ago, I would have never thought you could have legal briefs written abroad, but now you can."

---

59 "Globalising the brand: Looking beyond lower costs," November 2007, http://knowledge.insead.edu/contents/GlobalbrandElfrink.cfm#.

And as noted above, multinational companies often find that it is only outside the United States that they can locate pools of workers who speak several languages, know about the legal and accounting systems of several countries, and have other skills needed to operate in the global market.

Executives say investing abroad creates high-paying jobs in the United States

Nearly all executives we interviewed said their activities outside the United States also create growth at home. They explained that many of their highest-value-added positions remained in the United States, and many headquarters jobs serve primarily to support global operations. We interviewed one executive at a company that earns 80 percent of its revenue overseas but employs 40 percent of its workforce in the United States. And these US employees fill most of the engineering and other high-value-added jobs required by the company.

Executives of two other manufacturers noted that although their companies manufacture many of their less complex, lower-value-added products abroad, they continue to design and manufacture their highest-value-added equipment in the United States. Their foreign subsidiaries perform sales, distribution, and maintenance functions. As discussed in chapter 1, academic research shows that US multinationals' activities overseas are broadly complementary to their activities in the United States.

POLICY DECISIONS HAVE A SIGNIFICANT IMPACT ON HOW MULTINATIONAL EXECUTIVES ACT

Many of the executives we interviewed expressed concerns about the ability of the United States to compete and win in the new battlegrounds. They said their companies are disadvantaged relative to their foreign rivals because of the extra headwinds created by US government policies. Indeed, all the executives we spoke with said they believe US policy has not kept up with the reality of the choices and pressures that global companies confront in either making investment decisions or competing with international rivals.

Around the world, the spectrum of government policy interventions aimed at encouraging foreign investment ranges from a hands-off approach—in which the government's role is limited to creating the necessary market institutions—to a more active approach in which the government becomes a major operator in a sector.[60] Policy choices across this spectrum will affect the factors that determine a country's attractiveness (Exhibit 43) and the ability of multinationals to compete effectively in overseas markets. These choices thereby influence multinational companies' decisions on where to invest and hire for each of their business functions.

60 See *How to compete and grow: A sector guide to policy*, McKinsey Global Institute, March 2010. Available at www.mckinsey.com/mgi.

Exhibit 43

Governments can choose from different types of interventions to create investment incentives across an economy's attributes

Some examples

Low — Degree of government intervention — High

	Setting the ground rules	Building enablers	Tilting the playing field	Government as principal actor
Economic fundamentals	▪ Independent central bank ▪ Workplace flexibility ▪ Free trade pacts	▪ Government support for basic research ▪ "Smart" urbanization for B-to-C markets	▪ Government purchase from local industry ▪ Local content restrictions	▪ State-owned firms ▪ Control structure of industry through monopolies powers
Business climate	▪ Universal access to primary, secondary, and higher education ▪ Immigration policy	▪ International finance and accounting skills ▪ English-speaking workforce	▪ Subsidies for worker training ▪ Incentives for ex-pat workers to return	▪ Publicly owned and operated educational institutions
Human capital	▪ Define IP rights and ensure enforcement ▪ Transparent finance and accounting standards	▪ Streamlined government permitting ▪ Foster development innovation clusters	▪ R&D tax credit ▪ Corporate tax rate ▪ FDI incentives	▪ Government creation of business cluster
Infrastructure	▪ National standards for construction, spectrum use, air traffic	▪ Air, water, rail, road, and communications networks ▪ Energy distribution	▪ Subsidize private infrastructure providers	▪ Government-owned utilities and major transportation networks

SOURCE: McKinsey Global Institute analysis

Setting the ground rules and direction

Governments can limit their role to setting the regulations covering labor and capital markets, creating the general business environment, and establishing broad national priorities and road maps.

China, for example, became a more attractive location for R&D investment by revising several laws relating to intellectual property protection, data piracy, and copyright infringement. Many countries negotiated free trade pacts to create favorable conditions for the expansion of manufacturing (Exhibit 44). And for all business functions, labor regulations significantly influence workplace flexibility and productivity.

Building enablers

Without interfering with market mechanisms, governments can support private sector activities by expanding hard and soft infrastructure, helping to ensure adequate skills through education and training, and supporting innovation.

As discussed above, the development of innovation clusters leads to significant R&D investment. And many governments around the world have fostered the development of these high-tech clusters (Exhibit 45). In South Korea, for example, the Songdo business district features enablers such as buildings with advanced telecommunications capacities and a location close to major transportation hubs. The Irish government, by nurturing a workforce with specific skills, enabled the development of a significant global business services sector. Many other countries are working to increase their workers' English-speaking capabilities so they can compete for business service jobs. In earlier research, we found that the lack of

English language skills hindered economic development in many countries. In response, Chile, Colombia, Vietnam, and India devised explicit policies to strengthen their workers' English skills.[61]

Exhibit 44

Negotiating free trade agreements is key to gaining access to export markets, achieving price competitiveness, and thus growth

AUTO EXAMPLES

Region/country	Free trade structures	Automotive tariffs to non-free trade partners
EU	▪ **No financial or regulatory barriers** on automotive trade among 27 members	▪ 10% on cars and parts ▪ 16.5% on trucks
NAFTA	▪ **Untaxed and unregulated trade** among US, Canada, and Mexico for automobiles with at least 62.5% of components originated in NAFTA	▪ US has a 2.5% tariff on vehicles and components ▪ Canada has a 6.1% automotive tariff ▪ Mexico has a 20% automotive tariff
AFTA/ASEAN[1]	▪ **Common effective preferential tariff** of just 0–5% on vehicles and components with at least 40% origin in ASEAN	▪ Each country sets its own external tariff ▪ Rates vary significantly – Singapore has 0% tariff on all automobiles – Thailand imposed tariffs of 80% on cars, 40% on trucks, and 20% on parts
Brazil and Argentina	▪ **Bilateral quota system** under which vehicles can be traded between the countries **duty-free** based on a negotiated ratio	▪ Argentina has import tariffs of 21.5% for cars, 18.5% for trucks, and 17.5% for parts ▪ Brazil has a 35% tariff for cars, 25% for trucks, and 16.8% for parts
Ukraine	▪ Ukraine uses a **2-tiered** "special" and "general" **tariff structure** ▪ The "special" rate—0% for cars and 10-30% for commercial vehicles— applies to 30 **favored partners** (EU and US) and some developing countries	▪ The "general" rate is 20% for cars and 20–40% for commercial vehicles

1 Consists of Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam, Laos, Myanmar, and Cambodia.
SOURCE: US Department of Commerce; McKinsey Global Institute analysis/McKinsey Public Sector Office Sector Competitiveness Project

Exhibit 45

Many governments have built on existing preconditions to develop successful clusters

	Met preconditions	Government role	Impact
Taiwan	▪ Anchor companies like TSMC ▪ Reputed technical institutes	▪ Attraction of ex-pat Taiwanese to return – Financial incentives – Nationalistic appeal – Similar quality of life ▪ Investments in key start-ups ▪ Foster close academic-industry cooperation	▪ Over 400 companies in 20 years ▪ More than $9 billion in revenue
Dresden	▪ Availability of talent ▪ Reputed technical institutes ▪ Center of East European micro-electronics industry	▪ Cash subsidies/loans to attract anchor companies ▪ Support to smaller companies in food chain ▪ Retraining of talent	▪ Over 200 companies in 10 years ▪ More than 25,000 employment ▪ Over $2 billion in revenue
Shanghai	▪ Access to large ODM clients/consumers	▪ Over $10 billion invested in physical infrastructure, incentives, and grants ▪ Aggressive attracting of anchor companies (SMIC, GE)	▪ Over 350 companies in 15 years ▪ More than 33,000 employees ▪ Over $1 billion in revenue

SOURCE: McKinsey Global Institute/McKinsey Public Sector Office Sector Competitiveness Project

61 See *The emerging global labor market*, McKinsey Global Institute, June 2005. Available at www.mckinsey.com/mgi.

One of the top issues raised by executives in our interviews was the challenge of attracting and retaining talented workers in the United States. Executives said that companies requiring a large number of engineers and scientists, such as those in the high-tech sector, cannot find enough US citizens and permanent resident applicants to fill those positions. Companies can hire highly educated foreign-born workers who obtain H-1B visas, which allow them to work in the United States for at least three years. However, the government caps the number of H-1B visas annually, and the level fluctuates over time. Currently, the government grants 65,000 regular H-1B visas per year and awards an additional 20,000 similar visas to foreign citizens with a master's degree or higher degree from a US university.

The demand for H-1B visas typically exceeds the number granted each year. Executives say a cumbersome and bureaucratic approval process puts additional barriers in the way of hiring foreign nationals. Some employers say they believe they must apply for an H-1B visa on the very first day of the application cycle in order to obtain approval to employ a particular foreign-born worker six months later.

To stay in the United States permanently, foreign-born skilled workers must acquire legal permanent resident status. One team of researchers estimated that as of October 1, 2006, there were 500,040 skilled workers waiting for legal permanent resident status in the United States; when their family members were counted as well, the number of people waiting for that status totaled more than 1 million.[62]

This is in stark contrast to other countries. In Singapore, for example, foreign-born engineers and scientists can gain approval to work in less than two weeks.

Tilting the playing field

Governments can choose to create favorable conditions for local production, typically through the provision of tax and other financial incentives for local operations, by shaping local demand growth through public purchasing or regulation, and sometimes through trade protection from global competition.

The software industry provides a good example of how governments can create "early demand" to foster the development of industries through direct purchases or indirect subsidies (Exhibit 46). In the early days of the emerging US semiconductor industry, government defense and aerospace contracts were a major source of revenue. Fairchild Semiconductor, the predecessor of Intel, received 80 percent of its revenue in the 1950s from government contracts.

All 26 of the executives we interviewed described tax policy as having a "major impact" on their competitiveness and investment decisions. They said that when they evaluate the costs of potential investments, taxes are "often one of the largest line items in the investment projection." Several echoed the statement in 1999 by Robert H. Perlman, who was then a vice president for Intel Corp., when he told the US Senate Finance Committee, "If I had known at Intel's founding [over 30 years ago] what I know today about the international tax rules, I would have advised that the parent company be established outside the U.S. This reflects the reality that our tax code competitively disadvantages multinationals simply because the parent is a U.S. corporation."[63]

62 Vivek Wadhwa, "A reverse brain drain," *Issues in Science and Technology* (Spring 2009).

63 Transcript of the US Senate Finance Committee hearing on March 11, 1999.

Exhibit 46

Some governments have directly procured goods and services from local software players, thereby stimulating demand in the domestic industry

Country	Description	Local companies from which goods/services procured
Brazil 	Software of electronic voting system introduced acquired from local companies	▪ SIB IT Consultoria ▪ Syhunt ▪ UniSoma
China 	National and regional governments procure all their software purchases from domestic vendors, from the operating systems to application software	▪ Kingsoft ▪ China National Software & Service Co. ▪ Infosec Technologies Co. Ltd.
Norway 	E-government services introduced in several departments sourced their software from local companies	▪ Opera Software ▪ Exense ▪ Visma
Singapore 	E-government services introduced in several departments sourced their software from local companies	▪ Infogrid Pacific ▪ Muvee Technologies

SOURCE: Press articles; McKinsey Global Institute/McKinsey Public Sector Office Sector Competitiveness Project

Executives uniformly pointed to the high US corporate income tax rate. As noted in Exhibit 40, the US combined corporate income tax rate remains at 40 percent, while the global average declined from 32.7 percent in 1999 to 25.5 percent in 2009. Executives also noted that the United States is one of only five OECD countries that taxes corporate income on a worldwide basis allowing for deferral (the other four are Ireland, South Korea, Mexico, and Poland). This approach requires businesses to pay domestic taxes on income earned abroad (typically after deducting the taxes paid in the foreign country), but it allows them to defer paying those taxes until the foreign income is repatriated. In contrast, all 25 other OECD countries now use a territorial tax system, which in its simplest form means that companies pay taxes in the country where they earn the income and do not face additional taxes in the country where they are domiciled. The United Kingdom, Canada, and Japan all recently switched to territorial systems in part because of concerns about international competitiveness.

All the executives interviewed worried that their companies would be at a competitive disadvantage if the United States were to remove the deferral option while leaving the statutory rate unchanged, because their costs would be higher than non-US multinationals and local firms when competing in foreign markets. They also worried that the status quo is creating competitive disadvantages for the United States: higher corporate taxes raise the hurdle rates for investment in the United States for all companies. And for US multinationals, it is often more costly to bring capital back to the United States than to invest it abroad.

Tax policy also can create investment incentives. Several countries, including China, Japan, and France, have adopted "super deductions" to attract R&D (Exhibit 47). And others, such as Ireland and Singapore, offer direct tax credits for business support investments.

Exhibit 47

Asian governments are particularly aggressive in offering R&D tax incentives

Mild incentive
Strong incentive

	R&D expense deduction	R&D tax credits	R&D tax holiday	Other incentives
United States		20% on spend over a base amount		
China	50% for 3 years; 50% for noncapitalized		2 years	SEZs[1] R&D pay lower rate of 15% (from 25%)
India	150% in select industries		15 years	Lifetime indirect tax exemption for exports from SEZs[1]
South Korea	100%	40% credit on increment over 4-year average spend		50-100% income exemption from SEZs[1]
Singapore	150%		5 years	
Japan		10-15%		
United Kingdom	125%			
France		50% 1st year, 40% 2nd year, 30% subsequent yrs		Extra 5% credit for R&D expenses >€100 million

1 Special Economic Zones, typically export-promotion zones.

SOURCE: "Tax treatment of business investments in intellectual assets: An international comparison," Jacek Warda, STI Working Paper 2006/4, 2006; Ernst & Young, April 2008

Playing the role of principal actor

At the most interventionist end of the policy spectrum, governments may play a direct role by establishing state-owned or -subsidized companies, funding existing businesses to ensure their survival, or forcing the restructuring of certain industries.

In many countries, governments have intervened significantly in the steel industry either to create local producers or to support the industry in times of market crisis. South Korea's government, for example, strongly supported the creation and growth of that nation's steel industry from the end of the 1960s through the mid-1980s (Exhibit 48). South Korea gradually pulled back government support over the ensuing two decades, and today the industry is fully privatized and successful.

A more recent example is the development of China's state-owned Chery automobile company. Beginning in 1997, Chery partnered with foreign automakers to adopt technology and focused its production and sales efforts on the emerging Chinese car market. A decade later, Chery produced more than 350,000 vehicles per year, exporting one-third of its production and opening its first plants overseas.

Exhibit 48

South Korea used strong government support to create and develop the steel sector during the country's growth phase

Government policy example
Evolution of Korean government support

Start-up
- Support for securing of low-cost and long-term foreign capital
- Discount on electricity input and rail transport
- Limit on the importation of foreign steel

Initial growth
- Financial support in exchange for risk taking
- Granting of a temporary monopoly over steel market structure
- Subsidies for infrastructure development

Government impact example

POSCO

Planning phase 1968–73

Initial plan to create a state steel monopoly
- Pohang Iron and Steel Company (POSCO)
- Organization of political support and appointment of top people
- Financial difficulties delayed inception but provided opportunity to study steel industry

Realization phase 1974–85

Direct government support and protection of domestic market
- Political and financial backing from government
- Management autonomous from government
- Permission for global input and capital sourcing
- Knowledge transfer from best practice companies (especially those in Japan)

SOURCE: Korea Electronics Association; Korean American Marketing Association; Korean Shipbuilders' Association; press reports; McKinsey Global Institute steel studies

The US government generally does not pursue these kinds of aggressive strategies. However, the government did play important roles in fostering the development of new industries such as aerospace, defense, infrastructure, and semiconductors through its support of basic scientific research and purchases of goods. More recently, the financial crisis and ensuing global recession of 2008–09 prompted extraordinary government interventions to stabilize the finance and automobile sectors.

□ □ □

US multinationals are a major driver of economic growth and innovation in the United States. These companies can make substantial contributions to the current economic recovery and future growth if they stay globally competitive. However, other countries are catching up with the United States in the race to attract multinational corporate investment. Going forward, the United States cannot passively rest on past success, assuming it will win the intensifying global competition for corporate investment, jobs, and all the related, broader benefits. In this changing environment, US policy makers, working with businesses, should examine the array of challenges and choices they face and actively decide how to compete.

Policy makers have many levers they can use to help the country retain and attract these corporate activities and jobs, and to ensure that US companies can compete on a level playing field with their foreign rivals. As current trends continue, if the United States does not adopt a more strategic and comprehensive approach, the country could lose future jobs and investment. But with the right policies in place, the United States can maintain its global competitiveness for years to come.

Appendix: Technical notes

These technical notes provide an overview of our key data sources and our analytical approaches. We do not attempt to be exhaustive, but rather to highlight the critical inputs and assumptions. This appendix has seven sections:

- **Information on US multinationals:** describes the main data source for multinational companies.
- **Multinational activity on an establishment basis:** outlines our approach to estimating multinational activity by industry so that it can be compared with national industry aggregates.
- **Private sector GDP and industry-specific aggregations:** provides specific definitions used throughout the report.
- **Adjusting for inflation and computing contributions to real value added and productivity growth:** describes how we control for increasing prices and compute real contributions to growth.
- **The multiplier impact of multinational activity:** outlines how we used the Input-Output tables to compute multinational specific multipliers.
- **Sector mix versus company performance:** outlines how we estimate the growth that can be attributed to the sectors within which multinationals operate and how much of that growth reflects their operational success.
- **Sources of measures of US attractiveness to business:** lists the sources for Exhibit 31 showing the US economy's performance declining on a sample of country attractiveness indicators.

INFORMATION ON US MULTINATIONALS

The Bureau of Economic Analysis (BEA) survey of US Direct Investment Abroad (USDIA) has collected information about US multinational companies and their affiliates since 1977. The surveys provide a detailed picture of the financial and operating characteristics of US parents and their foreign affiliates. The surveys also collect information on balance of payments and direct investment positions, which show the value of transactions between parents and affiliates, and the total investment of parents at home and abroad. All these data are organized by industry of operation, location of affiliates, and other important characteristics. A small percentage of companies counted as US multinationals (11 percent in 2007) have their headquarters in foreign countries. This is primarily because foreign-owned businesses that own foreign affiliates (e.g., the US arm of a Japanese car company that owns a plant in Mexico) are counted as US multinationals.

The USDIA surveys are compulsory for US multinational companies (penalties are assessed for noncompliance). Publicly available survey results are aggregated at the industry and country levels to ensure confidentiality. The BEA conducts surveys

annually, and the most comprehensive data are collected through benchmark surveys done every five years.

At the time of this writing, the latest complete survey was for 2007. Beginning in that year, the survey included both bank and non-bank companies. [64] However, prior to 2007, the USDIA surveyed only non-bank multinationals, except in benchmark years. Thus the most complete data available is for non-bank US multinationals, and this is the focus of our analysis.

There have been a number of changes to the USDIA survey over the years. Two changes in the 1999 benchmark survey year are material for the analysis presented in this study:[65]

- The USDIA switched its industry classification from a Standard Industrial Classification (SIC) to NAICS-based system. When analyzing US multinational activity by industry, we focus on the 1999–2007 period to have a consistent set of industry definitions.

- Prior to 1999, the BEA excluded estimates for "very small" foreign affiliates and for parents that had only "very small" foreign affiliates. (In 1999, a "very small" affiliate was one whose assets, sales, and net income—positive or negative—were each not greater than $7 million.) These parents and affiliates were included starting in 1999, which raised US parent employment by 6.1 percent that year and value added by 3.8 percent. To estimate a consistent long-term time series, the data from prior years were adjusted proportionally.

For aggregate activity, we are interested in understanding multinationals' contributions to real value added, employment, and labor productivity growth since 1990 so that we cover two full business cycles. Data on multinational employment are available since 1982. However, value-added data were not collected on an annual basis until 1994. Data on value added are also available in the years 1989 and 1982. To estimate a complete time series, we use a regression-based imputation procedure to first back-cast, then splice in estimates for missing data points.

Just prior to the completion of this report, the BEA released advance summary estimates of multinational activities from the 2008 survey.[66] This release provides a preliminary snapshot of how US multinationals reacted to the recession that picked up speed in the second half of that year. Between 2007 and 2008, employment by the parents of US multinationals (including bank and non-bank companies) fell 1.3 percent. Total private sector employment fell 1.0 percent over this period, according to the Bureau of Labor Statistics Establishment Survey. (For comparability, this is computed as the change in average employment in 2007 versus 2008 rather than the more often cited December 2007 to December 2008 drop of 3.3 percent). Capital expenditures in the United States by US parent companies increased 2.3 percent in nominal terms between 2007 and 2008, while total nonresidential fixed private fixed investment rose 3.3 percent according to the BEA National Income and Product Accounts.

---

64 See Kevin B. Barefoot and Raymond J. Mataloni Jr., "U.S. Multinational Companies: Operations in the United States and Abroad 2007," *Survey of Current Business*, August 2008.

65 See Raymond J. Mataloni Jr., and Daniel R.Yorgason, "Operations of U.S. Multinational Companies: Preliminary Results From the 1999 Benchmark Survey," *Survey of Current Business*, March 2002.

66 http://www.bea.gov/newsreleases/international/mnc/2010/mnc2008.htm

MULTINATIONAL ACTIVITY ON AN ESTABLISHMENT BASIS

An important objective of this study is to compare the contributions of US multinational companies to the contributions of other companies by industry. To make this comparison, we need to estimate multinational activity on the same basis as the economy-wide data that are collected by the BEA in its annual industry accounts. For our purposes, the most important difference between these two sources is that the annual industry data are compiled by establishment. This means that if, for example, a company owns both a food manufacturing plant and a wholesale distribution center, the activities of these two establishments are counted in their respective industries. The multinational surveys, meanwhile, are conducted by enterprise—the activity of all the establishments in a company are classified in the primary industry of the parent. So in our example, if the parent company was primarily a food manufacturer, all of the sales, value added, and employment would be classified in food manufacturing irrespective of the industries of each establishment.

To estimate US multinational activity by establishment, we use additional information collected in the benchmark surveys of 1999 and 2004.[67] In these years, the surveys also collect sales and employment of multinational companies by industry of sales. These data by industry of sales provide a close approximation to the distribution of establishment by industry,[68] and therefore provide a basis for estimating multinational activity by industry so it can be compared with economy-wide aggregates.

The BEA provides cross-tabulations of sales and employment by industry of parent versus industry of sales.[69] Although cross-tabulations for some industries are suppressed to protect confidentiality, footnotes are provided with ranges for these suppressed values. We use the midpoint of the ranges to provide initial estimates for sales and employment by industry of sales in suppressed sectors. With estimates for missing values, the column and row totals in the cross-tabulation no longer aggregate exactly. Therefore, we use a two-way iterative proportional fitting algorithm to develop an internally consistent set of estimates for the full cross-tabulation.

With a complete cross-tabulation, we can compute sales and employment by industry of sales as a share of total sales and employment by industry of parent. We then apply these shares to other measures of multinational activity by industry of parent to estimate activity by industry of sales. For example, using the sales shares, we can estimate total industry value added by industry of sales. These estimates can then be compared with total value added by industry as published in the BEA annual industry accounts. The 1999 benchmark was used to create estimates for 1999 through 2003, and the 2004 benchmark was used to create estimates for 2004 through 2007.

---

67 Our approach builds on the methodology developed in Carol Corrado, Paul Lengermann, and Larry Slifman, "The Contribution of Multinational Corporations to U.S. Productivity, Growth, 1977–2000, Finance and Economic Discussion Series (FEDS), Divisions of Research and Statistics and Monetary Affairs, Federal Reserve Board, February 9, 2007.

68 See William J. Zeile, "Foreign Direct Investment in the United States: Preliminary Results from the 1997 Benchmark Survey," *Survey of Current Business*, August 1999.

69 See, for example, Table II.Q 2.the page this links to goes to Table II. Q 1. Sales by U.S. Parents, Industry of U.S. Parent by Industry of Sales, (http://www.bea.gov/international/pdf/usdia_2004f/Table%20II%20Group/IItables-q1_r1.pdf) in the 2004 survey.

PRIVATE SECTOR GDP AND INDUSTRY-SPECIFIC AGGREGATIONS

The sizes of national economies are generally measured in terms of GDP—the value of all goods and services produced by both the public and private sectors. However, the USDIA surveys focus on the nonbank private sector. To evaluate the impact of US multinationals on the US economy, we therefore focus on a more narrow definition of economic output that we call "private sector GDP." Three adjustments are made to arrive at this definition:

- The activities of state, local, and federal governments are excluded.
- The BEA definition of banks includes bank holding companies, credit unions, and savings institutions as well as commercial banks.[70] Thus, we also exclude Federal Reserve banks, credit intermediation, and related activities from the annual industry accounts.
- Finally, because of the noncorporate structure of educational service providers, we have excluded this sector.

Accordingly, throughout this report, "private sector GDP" refers to the total value added by the private sector, excluding banks and educational services.

We discuss in the first chapter of the report how 85 percent of multinational company activity takes place in eight broad industries. The "top-eight" are:

- Mining and resource products
- Utilities
- Manufacturing, excluding resource products
- Wholesale trade
- Retail trade
- Information
- Nonbank financial services
- Professional services

All other industries are captured in an "other sectors" category, which includes agriculture, forestry, fishing, and hunting; construction; transportation and warehousing; real estate, rental, and leasing; management of nonbank companies and enterprises; health care and social assistance; accommodation and food services; computers and electronic products; and miscellaneous services.

As noted, resource products (which includes petroleum and coal products manufacturing) are aggregated with the mining sector throughout this report. We have adopted this approach because our estimates of resource products manufacturing on an establishment basis were implausibly large when compared with published industry aggregates. We have combined this activity with the resource extraction industries under the hypothesis that the available information does not allow us to accurately disaggregate the activities of large resource and petroleum companies.

70 See http://www.bea.gov/international/pdf/usdia_2004f/Text%20sections/methodology.pdf

For some parts of the analysis, the manufacturing sector, excluding resource products, is disaggregated into 15 subsectors: food, beverage, and tobacco; textiles, apparel, and leather products; wood products; paper; printing and related support activities; chemicals; plastics and rubber products; nonmetallic mineral products; primary and fabricated metals; machinery; computers and electronic products; electrical equipment, appliances and components; transportation equipment; furniture and related products; and miscellaneous manufacturing.

ADJUSTING FOR INFLATION AND COMPUTING CONTRIBUTIONS TO REAL VALUE ADDED AND PRODUCTIVITY GROWTH

The USDIA surveys collect data in current dollars. To create real value added by industry for multinational companies, we use the industry-specific chain-type value-added deflators published by the BEA in the annual industry accounts.

Because chain-weighted aggregates are sensitive to industry composition (and the industry concentration of US multinationals differs substantially from the average), we compute real value added from the bottom up using the appropriate chain-weighted aggregation procedures. For example, real value added for manufacturing, excluding resource products, is computed by aggregating the real value added of the 15 manufacturing subsectors. Furthermore, because real shares are not well defined under chain-weighted aggregation, we also compute the appropriate chain-weighted contributions to growth in real value added wherever necessary.[71] Because the chain-weighted aggregates require one lag to be computed, our real industry data are available from 2000 to 2007.

To show how we compute contributions to labor productivity growth, first let Z_t equal aggregate labor productivity, VAR_t equal real value added, and E_t equal employment at time t. Then labor productivity growth equals

$$\frac{Z_t}{Z_{t-1}} = \frac{VAR_t/E_t}{VAR_{t-1}/E_{t-1}} = \frac{VAR_t}{VAR_{t-1}} \times \frac{E_{t-1}}{E_t}$$

Subtracting one from both sides, rearranging, and denoting the growth rate of any variable X between t-1 and t as g_t^x, this can be rewritten as:

$$g_t^Z = \frac{1}{\left(1 + g_t^E\right)} \times \left(g_t^{VA} - g_t^E\right)$$

Total growth in labor productivity must also equal the sum of the contributions to productivity growth of all subcomponents $con_{i,t}^X$

$$g_t^X = \sum_i con_{i,t}^X$$

where the index i could range over the pair of US multinationals, and all other companies; or alternatively, a set of industry subsectors. Once we have computed the chain-weighted contributions to real value-added growth as well as the contributions to employment growth (which is simply the share of total employment

71 See Bureau of Economic Analysis, "A Guide to the National Income and Product Accounts of the United States," 2007; Karl Whelan, "A Guide to the Use of Chain Aggregated NIPA Data," Federal Reserve Board, June 2000.

change), we can compute the contributions to labor productivity growth of any group of subcomponents:

$$con_{i,t}^{Z} = \frac{1}{1 + g_t^E}\left(con_{i,t}^{VA} - con_{i,t}^{E}\right)$$

THE MULTIPLIER IMPACT OF US MULTINATIONAL ACTIVITY

To estimate the total impact of US multinationals, we measure both their direct contributions to economic activity as well as the indirect, or multiplier, impact they have on the activity of other companies. To estimate these multiplier effects, we developed an approach using the Input-Output tables published by the BEA. This approach provides an internally consistent way to measure the importance of US multinationals to the economy while taking full account of the dependencies among industries.[72]

The "direct requirements" or "A" matrix plays a central role in calculating multipliers within the Input-Output system. Derived from the "make" and "use" tables, the direct requirements matrix contains the technical coefficients that tell, for each industry, the intensity of inputs it uses from other industries.[73] To calculate the multiplier impacts, we first make two adjustments to the direct requirements matrix.

- The use matrix accounts for imports. To ensure that the multipliers we compute count only domestic production, we multiply the coefficients along each row of the direct requirements matrix by one minus the import share (defined as imports over domestic purchases) for that industry/commodity group.

- Multinational companies are present in most industries.[74] To ensure that our multipliers do not double-count activity that occurs between multinationals, we multiply the coefficients along each row of the direct requirements matrix by one minus the share of multinational sales for that industry/commodity group.

With these adjustments, we can then construct the total requirements matrix.[75] This allows us to compute the direct and indirect impact of a unit increase of multinational activity in one industry on all other industries. The sum of these direct and indirect effects provides the total or multiplier effect we are seeking to estimate.

72 We developed and executed this approach with the assistance of the economic consultancy Inforum, which specializes in Input-Output analysis (http://www.inforum.umd.edu/index.html).

73 For more details on the Input-Output system of accounts, see Bureau of Economic Analysis, "Measuring the Nation's Economy: An Industry Perspective," August 2009.

74 US multinational sales are available for 31 industries, while the Input-Output table we employ is based upon a 65 industry split. We estimate multinational activity at the 65 industry level by using the subindustry shares of the 31 industries available in the Input-Output table.

75 This is done in the usual way by inverting the identity matrix less the direct requirements matrix or $(I - A)^{-1}$.

SECTOR MIX VERSUS COMPANY PERFORMANCE

We are interested in estimating how much of the gains in real value added, employment, and labor productivity can be attributed to the sectors within which multinationals or other companies operate—their sector mix—and how much reflects the operational success of the companies themselves—their company performance.[76]

We measure the impact of sector mix by looking at how US multinationals and other companies would have performed with their actual industry portfolios if their real value added, employment, and productivity grew at industry averages. For example, let $GREMIX_{t-k}^{MNC}$ represent the growth in employment between time k and time t that can be attributed to the sector mix of multinational companies. Then,

$$GREMIX_{t-k}^{MNC} = \sum_{i \in I} \left(\frac{E_{i,t-k}^{MNC}}{E_{t-k}} \right) \times \left(\frac{E_{i,t}}{E_{i,t-k}} - 1 \right)$$

The first term on the right-hand side equals the share of total private sector employment contributed by multinational companies in sector i (a measure of portfolio weights; see below), while the second term equals the growth in total employment in that sector. For the calculations in this report, the industry set I over which the sum is taken is either the entire private sector economy defined by the top eight plus other industries, or the 15 subindustries in the manufacturing sector (excluding resource products).

Similarly, if we let $GREACT_{t-k}^{MNC}$ represent the actual weighted average growth in employment between time k and time t, then

$$GREACT_{t-k}^{MNC} = \sum_{i \in I} \left(\frac{E_{i,t-k}^{MNC}}{E_{t-k}} \right) \times \left(\frac{E_{i,t}^{MNC}}{E_{i,t-k}^{MNC}} - 1 \right)$$

The first term on the right-hand side is the same as above, while the second term is the growth rate in multinational employment in sector i. Now define $GREP_{t-k}^{MNC}$ as the contribution to total growth in employment attributable to the performance of multinationals:

$$GREP_{t-k}^{MNC} = GREACT_{t-k}^{MNC} - GREMIX_{t-k}^{MNC}$$

If multinationals performed better than their sector averages, $GREP_{t-k}^{MNC}$ will be positive. Similarly, if multinationals underperformed their sector mix, $GREP_{t-k}^{MNC}$ will be negative. There are equivalent expression for all other companies in the economy $GREMIX_{t-k}^{NMNC}$, $GREACT_{t-k}^{NMNC}$, and $GREP_{t-k}^{NMNC}$.

The portfolio shares in the calculations for $GREMIX_{t-k}^{MNC}$ and $GREACT_{t-k}^{MNC}$ are computed relative to the economy-wide totals so that the growth attributable to sector mix for multinationals and all other companies adds up to the total growth in private sector employment. This also ensures that over-/under-performance by multinational companies is equal and opposite to the over-/under-performance of

76 See Patrick Viguerie, Sven Smit, and Mehrdad Baghai, The Granularity of Growth: Making Choices that Drive Enduring Company Performance, Hoboken, NJ: John Wiley and Sons, Inc. 2008.

all other companies—if multinationals outperform, then all other companies in the economy must under-perform their sector averages.

Identical calculations were performed for real value added.[77] Contributions to productivity growth are then equal to the ratio of contributions to real value added and employment growth (e.g., $GRVARMIX_{t\text{-}k}^{MNC} / GREMIX_{t\text{-}k}^{MNC}$ where $GRVARMIX_{t\text{-}k}^{MNC}$ is the contribution of sector mix to real value added growth).

To generate the figures in Exhibits 22, 26, and 28 in chapter 1, the share of growth attributed to sector mix (e.g., $GREMIX_{t\text{-}k}^{MNC} / GREACT_{t\text{-}k}^{MNC}$) and company performance were applied to the compound annual growth rate over the period indicated.

SOURCES OF MEASURES OF US ATTRACTIVENESS TO BUSINESS

In chapter 2, Exhibit 31 shows the US economy's performance declining on a sample of country attractiveness indicators. This exhibit represents an MGI synthesis of data from numerous sources:

- The Confederation of Indian Industry
- The Conference Board
- Ernst & Young
- Euromonitor International
- M. Finn, "Stay rates of foreign doctorate recipients from US universities," Oak Ridge Institute for Science and Education, 2007
- Global Stock Markets Factbook 2008
- Groningen Growth and Development Center
- IMD
- INSEAD
- Institute of International Education
- International Telecommunications Union
- International Monetary Fund (IMF) International Finance Statistics database
- KPMG
- Organisation for Economic Co-operation and Development (OECD) Directorate for Science, Technology and Industry
- Standard & Poor's
- Tax Foundation
- United Nations Educational, Scientific, and Cultural Organization (UNESCO)

77 Our estimates in the case of real value added provide only an approximation, as we abstract from the requirements of chain-weighted aggregations for these calculations.

- US Congressional Budget Office
- US Department of Homeland Security
- US Senate Joint Committee on Taxation
- World Intellectual Property Organization
- World Telecommunication/ICT Indicators Development
- World Trade Organization

Bibliography

Aggarwal, R., Jenny Berril, E. Hutson, and Colm Kearney (2006), "Defining and Classifying MNCs in International Business: Implications for Research Design and Strategy." Presented to the UK Academy of International Business conference, Manchester, April 2006.

Aghion, P., N. Bloom, R. Blundell, R. Griffith, and P. Howitt, "Competition and innovation: An inverted-U relationship," *Quarterly Journal of Economics*, 2005, Volume 120, Number 2, pp. 701–28.

Ahearn, Raymond J., Mary Jane Bolle, William H. Cooper, J. F. Hornbeck, James K. Jackson, Vivian C. Jones, Dick K. Nanto, Angeles Villarreal, Craig K. Elwell, and Jeanne J. Grimmett, "Trade primer: Qs and As on trade concepts, performance, and policy," Congressional Research Service, RL33944, March 27, 2007.

Aldy, Joseph E., and William A. Pizer, "The competitiveness impacts of climate change mitigation policies," *Pew Center on Global Climate Change*, May 2009.

Alfaro, Laura, and Andrew Charlton, "Intra-industry foreign direct investment," *American Economic Review*, December 2009, Volume 99, Number 5, pp. 2096–2119.

Alfaro, Laura, and Maggie Chen, "The global networks of multinational firms," National Bureau of Economic Research (NBER) working paper number 15576, December 2009.

Anderson, Thomas, "US affiliates of foreign companies: Operations in 2006, *Survey of Current Business*, August 2008.

Autor, David H., Frank Levy, Richard J. Murnane, "The skill content of recent technological change: An empirical exploration," *Quarterly Journal of Economics*, November 2003, Volume 118, Number 4, pp. 1279–1333.

Autor, David H., Lawrence F. Katz, and Melissa S. Kearney, "The polarization of the US labor market," American Economic Association Papers and Proceedings, May 2006, Volume 96, Number 2, pp. 189–94.

Baldwin, Richard, and Simon J. Evenett, eds., *The Collapse of Global Trade, Murky Protectionism, and the Crisis: Recommendations for the G20*, London, U.K., Centre for Economic Policy Research, 2009.

Barrios, Salvador, Harry Huizinga, Luc Laeven and Gaëtan Nicodème, "International taxation and multinational firm location decisions," Centre Emile Bernheim: Research Institute in Management Sciences, CEB working paper number 08/037, 2008.

Battelle Technology Partnership Practice, "Characteristics and trends in North American research parks: 21st century directions," prepared by Battelle Technology Partnership Practice; developed in cooperation with Association of University Research Parks, October 2007.

Bernard, Andrew B., J. Bradford Jensen, and Peter K. Schott, "Survival of the best fit: Exposure to low-wage countries and the (uneven) growth of US manufacturing plants," *Journal of International Economics*, January 2006, Volume 68, Issue 1, pp. 219–37.

Birkinshaw, Julian, Pontus Braunerhjelm, Ulf Holm, and Siri Terjesen, "Why do some multinational corporations relocate their headquarters overseas?" *Strategic Management Journal*, July 2006, Volume 27, Number 7, pp. 681–700.

Brainard, S. Lael, and David A. Riker, "Are US multinationals exporting US jobs?" NBER working paper number 5958, March 1997.

Brumbaugh, David L., "Taxes and international competitiveness," Congressional Research Service, RS22445, May 19, 2006.

Bucks, Brian K., Arthur B. Kennickell, Traci L. Mach, and Kevin B. Moore, "Changes in US family finances from 2004 to 2007: Evidence from the survey of consumer finances," *Federal Reserve Bulletin*, February 2009.

Bureau of Economic Analysis, "A guide to the national income and product accounts of the United States," US Department of Commerce, 2007;

Bureau of Economic Analysis, "Measuring the nation's economy: An industry perspective; a primer on BEA's industry accounts," US Department of Commerce, August 2009.

Carlson, Carol Jean, Michael J. Keating, and Gary N. Keller, "The economic and social impact of university-related research parks in the United States," Xomix, Ltd., Michael J. Keating & Associates, 2001.

Chandra, V., D. Eröcal, P. C. Padoan, and C. Primo Braga, eds., *Innovation and Growth: Chasing a Moving Frontier*, OECD, 2009.

Chen, Maggie X., "Regional economic integration and geographic concentration of multinational firms," *European Economic Review*, April 2009, Volume 53, Number 3, pp. 355–75.

Congressional Budget Office, "Corporate income tax rates: International comparisons," November 2005.

Congressional Budget Office, "Factors underlying the decline in manufacturing employment since 2000," Economic and Budget Issue Brief, December 23, 2008.

Corrado, Carol, Paul Lengermann, and Larry Slifman, "The contribution of multinational corporations to US productivity growth, 1977–2000," Finance and Economics Discussion Series (FEDS), Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, February 9, 2007.

Council on Competitiveness, "Competitiveness index: Where America stands," January 2007.

Crespi, Gustavo, Chiara Criscuolo, Jonathan E. Haskel, and Matthew Slaughter, "Productivity Growth, Knowledge Flows, and Spillovers," NBER working paper number 13959, April 2008.

Criscuolo, Chiara, Jonathan E. Haskel, and Matthew J. Slaughter, "Global engagement and the innovation activities of firms," NBER working paper number 11479, June 2005.

Davis, Ian, and Elizabeth Stephenson, "Ten trends to watch in 2006," *The McKinsey Quarterly*, January 2006.

Debaere, Peter, Hongshik Lee, and Joonhyung Lee, "Does where you go matter? The impact of outward foreign direct investment on multinationals' employment at home," Center for Economic Policy Research (CEPR), discussion paper number 5737, July 2006.

Desai, Mihir A., Testimony before the Subcommittee on Select Revenue Measures,

Desai, Mihir A., C.F. Foley, and James R. Hines Jr., "Domestic effects of the foreign activities of U.S. multinationals," *American Economic Journal: Economic Policy*, February 2009, Volume 1, Number 1, pp. 181–203.

Desai, Mihir A., and James R. Hines Jr., "Evaluating international tax reform," *National Tax Journal*, September 2003, Volume 56, Number 3, pp. 487–502.

Desai, Mihir A., and James R. Hines Jr., "Expectations and expatriations: Tracing the causes and consequences of corporate inversions," *National Tax Journal*, September 2002, Volume 55, Number 3, pp. 409–41.

Committee on Ways and Means, US House of Representatives, May 9, 2006

Devereux, Michael P., and Giorgia Maffini, "The impact of taxation on the location of capital, firms and profit: A survey of empirical evidence," Oxford University Centre for Business Taxation, working paper number 07/02, 2007.

Dharmapala, Dhammika, C. Fritz Foley, and Kristin J. Forbes, "Watch what I do, not what I say: The unintended consequences of the Homeland Investment Act," NBER working paper number 15023, June 2009.

Doering, Don S., Amy Casara, Christian Layke, Janet Ranganathan, Carmen Revenga, Dan Tunstall, and Wendy Vanasselt, "Tomorrow's markets: Global trends and their implications for business, World Resources Institute, United Nations Environment Programme, World Resources Council for Sustainable Development, 2002.

Ebenstein, Avraham, Ann Harrison, Margaret McMillan, and Shannon Phillips, "Estimating the impact of trade and offshoring on American workers using the Current Population Surveys," NBER working paper number 15107, June 2009.

Ezell, Stephen, "America and the world: We're #40!" *Democracy: A Journal of Ideas*, Issue 14, Fall 2009.

Feldstein, Martin, "The effects of outbound foreign direct investment on the domestic capital stock," in Martin Feldstein, James R. Hines Jr., and R. Glenn Hubbard, eds., *The Effects of Taxation on Multinational Corporations*, Chicago, Ill.: University of Chicago Press, 1995, pp. 43-66.

"Global survey of business executives," *The McKinsey Quarterly*, March 2006.

Government Accountability Office, "U.S. multinational corporations: Effective tax rates are correlated with where income is reported," Report to the Committee on Finance, U.S. Senate, GAO-08-950, August 2008.

Hall, Bronwyn H., Jacques Mairesse, and Pierre Mohnen, "Measuring returns to R&D," NBER working paper number 15622, December 2009.

Hanna, Rema, "U.S. environmental regulation and FDI: Evidence from a panel of U.S. based multinational firms," November 30, 2004, accepted for publication in a forthcoming issue of *American Economic Journal: Applied Economics*.

Hanson, Gordon H., Raymond J. Mataloni Jr., and Matthew J. Slaughter, "Vertical production networks in multinational firms," *The Review of Economics and Statistics*, November 2005, Volume 87, Number 4, pp. 664–78.

Harrison, Ann E., and Margaret McMillan, "Offshoring jobs? Multinationals and US manufacturing employment," Tufts University Department of Economics working paper number 0741, July 2009.

Harrison, Ann E., Margaret S. McMillan, and Clair Null, "U.S. multinational activity abroad and U.S. jobs: Substitutes or complements?" *Industrial Relations*, April 2007, Volume 46, Number 2, pp. 347–65.

Huang, Chye-Ching, "Putting U.S. corporate taxes in perspective," Center on Budget and Policy Priorities, October 27, 2008.

Hufbauer, Gary Clyde, and Paul Grieco, "Senator Kerry on corporate tax reform: Right diagnosis, wrong prescription," Peterson Institute for International Economics, Number PB04-3, April 2004.

Hufbauer, Gary Clyde, and Jisun Kim, "U.S. taxation of multinational corporations: What makes sense, what doesn't," Peterson Institute for International Economics, Number PB0907, March 2009.

IBISWorld, "Global Apparel Manufacturing: C1311-GL," IBISWorld Industry Report, January 21, 2009.

Johansson, Asa, Christopher Heady, Jens Arnold, Bert Brys, and Laura Vartia, "Tax and economic growth," Organisation for Economic Co-operation and Development (OECD), Economics Department working paper number 620, July 11, 2008.

Johnson, Bradford C., James M. Manyika, and Lareina A. Yee, "The next revolution in interactions," *The McKinsey Quarterly*, November 2005.

Johnson, Jackie, and Mark Holub, "Corporate expatriations: Loosening the bonds of control," *Corporate Ownership & Control*, Fall 2007, Volume 5, Issue 1, pp. 202–13.

KPMG International, "KPMG's Corporate and indirect tax rate survey 2008," KPMG International.

Krywulak, Tim, and Vadim Kukushkin, "Big gains with small partners: What MNCs look for in their SME suppliers," The Conference Board of Canada, July 2009.

Krywulak, Tim, and Vadim Kukushkin, "Small companies, big connections: The benefits and challenges for SMEs in working with MNCs," The Conference Board of Canada, September 2009.

Leonard, Jeremy A., "The escalating cost crisis: An update on structural cost pressures facing U.S. manufacturers," Manufacturers Alliance/MAPI and National Association of Manufacturers, September 2006.

Liu, Runjuan, and Daniel Trefler, "Much ado about nothing: American jobs and the rise of service outsourcing to China and India," NBER working paper number 14061, June 2008.

Mankiw, N. Gregory, and Phillip Swagel, "The politics and economics of offshore outsourcing," NBER working paper number 12398, July 2006.

Mann, James, "Corporate inversions: A symptom of a larger problem, the corporate income tax," *Southern California Law Review*, January 2005, Volume 78, Number 2, pp. 521–58.

Markle, Kevin S., and Douglas Shackelford, "Do multinationals or domestic firms face higher effective tax rates?" NBER working paper number 15091, June 2009.

Mataloni Jr., Raymond J., "U.S. multinational companies: Operations in 2006," *Survey of Current Business*, Bureau of Economic Analysis, November 2008, Volume 88, Number 11, pp. 26–47.

Mataloni Jr., Raymond J., and Daniel R. Yorgason, "Operations of US multinational companies: Preliminary results from the 2004 benchmark survey," *Survey of Current Business*, November 2006.

Mataloni Jr., Raymond J., and Daniel R.Yorgason, "Operations of U.S. multinational companies: Preliminary results from the 1999 benchmark survey," *Survey of Current Business*, March 2002.

McKibbin, Warwick, and Peter Wilcoxen, "Energy and environmental security," in *Top 10 global economic challenges: An assessment of global risks and priorities*, Brookings Global Economy and Development, February 2007.

McKinsey & Company, *Innovation 100 Post-meeting Report*, synthesis of the proceedings at Stanford University, Sept. 3-4, 2008.

McKinsey & Company, *The Economic Impact of the Achievement Gap in America's Schools*, April 2009.

McKinsey Global Institute, *Debt and deleveraging: The global credit bubble and its economic consequences*, January 2010.

McKinsey Global Institute, *How to compete and grow: A sector guide to policy*, March 2010.

McKinsey Global Institute, New horizons: *Multinational company investment in developing economies*, October 2003.

McKinsey Global Institute, *Offshoring: Is it a win-win game?*, August 2003.

McKinsey Global Institute, *Talkin' 'bout my generation: The economic impact of aging US Baby Boomers*, June 2008.

McKinsey Global Institute, *The emerging global labor market*, June 2005.

McKinsey Global Institute, *US productivity growth 1995–2000: Understanding the contribution of information technology relative to other factors*, October 2001.

McKinsey Global Institute, *Will US consumer debt reduction cripple the recovery?*, March 2009.

Melnik, Steven V., "Corporate expatriations—The tip of the iceberg: Restoring the competitiveness of the United States in the global marketplace," *New York University Journal of Legislation and Public Policy*, Fall 2005, Volume 8, Number 1, pp. 81-128.

Metcalf, Gilbert E., "Tax reform and environmental taxation," NBER working paper number 11665, October 2005.

Nanto, Dick K., "Globalized supply chains and U.S. policy," Congressional Research Service, CRS Report R40167, January 16, 2009.

Nichols, Len M., and Sarah Axeen, "Employer health costs in a global economy: A competitive disadvantage for U.S. firms," New America Foundation, Health Policy Program, May 2008.

OECD, *Staying Competitive in the Global Economy: Moving Up the Value Chain*, 2007.

Office of Tax Policy, "Corporate inversion transactions: Tax policy implications," Department of the Treasury, May 2002.

Pisano, Gary P., and Willy C. Shih, "Restoring American competitiveness," *Harvard Business Review*, 2009, Volume 87, Number 7/8, pp. 114–25.

Porter, Michael E., "Clusters of innovation: Regional foundations of U.S. competitiveness," Council on Competitiveness, October 2001.

PricewaterhouseCoopers, "Paying taxes 2009: The global picture," PricewaterhouseCoopers and the World Bank Group.

Raman, Anand P., "How the global slowdown is reshaping competition from emerging markets," *Harvard Business Review*, July-August 2009.

Reich, Robert B., "Government in your business," *Harvard Business Review*, July 2009.

Robbins, Nick, Robert Clover, and Charanjit Singh, "A climate for recovery: The colour of the stimulus goes green," HSBC Global Research, February 25 2009.

Slaughter, Matthew J., "How U.S. multinational companies strengthen the U.S. economy," United States Council Foundation and Business Roundtable, Spring 2009.

"The race to innovate," *Democracy: A Journal of Ideas*, Issue 14, Fall 2009.

United Nations Conference on Trade and Development (UNCTAD), *World Investment Prospects Survey 2009–2011*, 2009.

United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2005: Transnational Corporations and the Internationalization of R&D*, 2005.

United Nations Conference on Trade and Development (UNCTAD), *World Investment Report 2009: Transnational Corporations, Agricultural Production and Development*, 2009.

Viguerie, Patrick, Sven Smit, and Mehrdad Baghai, *The Granularity of Growth: How to Identify the Sources of Growth and Drive Enduring Company Performance*, Hoboken, NJ: John Wiley & Sons, Inc., 2008.

Voget, Johannes, "Headquarter relocations and international taxation," Centre for Business Taxation, Oxford University, April 17, 2008.

Wadhwa, Vivek, "A reverse brain drain," *Issues in Science and Technology*, Spring 2009.

Wadhwa, Vivek, Guillermina Jasso, Ben Rissing, Gary Gereffi, and Richard Freeman, "Intellectual property, the immigration backlog, and a reverse brain-drain: American's new immigrant entrepreneurs, Part III," Ewing Marion Kauffman Foundation, Kansas City, Mo., August 22, 2007.

Warda, Jacek, "Tax treatment of business investments in intellectual assets: An international comparison," OECD Directorate for Science, Technology and Industry, STI working paper number 2006/4, 2006.

Whelan, Karl, "A guide to the use of chain aggregated NIPA Data," Federal Reserve Board, June 2000.

World Economic Forum, *The global competitiveness report, 2009–2010*, Geneva, Switzerland, 2009.

Zeile, William J., "Foreign direct investment in the United States: Preliminary results from the 1997 benchmark survey," *Survey of Current Business*, August 1999.

McKinsey Global Institute
June 2010
Designed by US Design Center

www.mckinsey.com/mgi