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Report to Congressional Requesters

September 2004

INTERNATIONAL TRADE

Current Government Data Provide Limited Insight into Offshoring of Services

GAO-04-932

September 2004

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Highlights

Highlights of GAO-04-932, a report to congressional requesters

INTERNATIONAL TRADE

Current Government Data Provide Limited Insight into Offshoring of Services

Why GAO Did This Study

Much attention has focused on the topic of "offshoring" of information technology (IT) and other services to lower-wage locations abroad. "Offshoring" of services generally refers to an organization's purchase from other countries of services that it previously produced or purchased domestically, such as software programming or telephone call centers.

GAO was asked to (1) describe the nature of offshoring activities and the factors that encourage offshoring, (2) discuss what U.S. government data show about the extent of this practice by the private sector and federal and state governments, and (3) discuss available data on the potential effects of services offshoring on the U.S. economy.

GAO Observations

While we make no recommendations at this time, we observe that the reasons for the growth in offshoring are relatively well understood, but less is known about the extent and the policy consequences of this activity. To assess changes which occur in a dynamic economy, federal statisticians and other researchers use and sometimes modify existing data series and develop new measures to provide further insight into the extent of the phenomena as well as the longer-term implications. GAO will continue to monitor the statistics and other dimensions of offshoring in order to provide Congress with information it needs in its policy deliberations.

www.gao.gov/cgi-bin/getrpt?GAO-04-932.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Loren Yager at (202) 512-4347 or yagerl@gao.gov.

What GAO Found

No commonly accepted definition of "offshoring" exists, and the term has been used to include various international trade and foreign investment activities. Services that U.S.-based organizations purchase from abroad are considered imports. They may also be linked to U.S. firms' investments overseas—for example, U.S. firms may invest in overseas affiliates as a replacement for, or as an alternative to, domestic production. In recent years, services offshoring has been facilitated by factors, such as the Internet, infrastructure growth in developing countries, and decreasing data transmission costs. Organizations' decisions to offshore services are influenced by potential benefits such as the availability of cheaper skilled labor and access to foreign markets, and by risks, such as geopolitical issues and infrastructure instability in countries that supply the services.

U.S. government data provide some insight into the extent of services offshoring by the private sector, but they do not provide a complete picture of the business transactions that the term offshoring can encompass. Department of Commerce data show that private sector imports of some services are growing. For example, imports of business, professional, and technical services increased by 76.8 percent from $21.2 billion in 1997 to $37.5 billion in 2002. From another perspective, Commerce's data also show that in 2002 U.S. investments in developing countries that supply offshore services were small compared to those in developed countries and that most services produced abroad are sold primarily to non-U.S. markets. Regarding public sector offshoring, the total dollar value of the federal government's offshore services contracts increased from 1999 through 2003, but the trend in the dollar value shows little change relative to all federal services contracts. No comprehensive data or studies show the extent of services offshoring by state governments.

Government data provide limited information about the effects of services offshoring on U.S. employment levels and the U.S. economy. The Department of Labor's Mass Layoff Survey data show that layoffs attributable to overseas relocation represent a small fraction of overall total mass layoffs. However, the survey identifies only a portion of total layoffs because the survey does not cover establishments with fewer than 50 employees. Other government data show greater than average job declines since 2001 in occupations and industries commonly associated with offshoring, but other factors, such as the recent recession, may contribute to these declines. Some private researchers predict that offshoring may eliminate 100,000 to 500,000 IT jobs within the next few years, while others note that offshoring can also generate benefits, such as lower prices, productivity improvements, and overall economic growth.

The Department of Commerce commented on a draft of this report, noting its general agreement with the information we provided.

Contents

Letter

1

Results in Brief 2
Background 4
"Offshoring" of IT and Other Services Includes Several Types of Business Activities and Is Facilitated by Telecommunications Improvements 7
Federal Statistics Provide Limited Insight into Offshoring Trends 15
Federal Statistics and Private Sector Research Provide Limited Information about the Effects of Offshoring on the U.S. Workforce and the Broader Economy 32
Observations 47
Agency Comments and Our Evaluation 48

Appendixes

Appendix I: Scope and Methodology 51
Appendix II: Definitions of Offshoring 55
Appendix III: Data on U.S. Imports and Exports of Services and Their Limitations 59
Appendix IV: Data on U.S. Direct Investment Abroad, Multinational Company Operations, and their Limitations 64
Appendix V: Comments from the Department of Commerce 71
Appendix VI: GAO Contacts and Staff Acknowledgments 73
GAO Contact 73
Staff Acknowledgments 73

Tables

Table 1: Examples of Offshoring Business Activities and Potential Data Sources 9
Table 2: Selected Destinations for U.S. Foreign Direct Investment (FDI) Abroad: Total by Country, 2002; Share of Total FDI, 2002; and Percentage Change from 1999 25
Table 3: Employment in U.S. Multinational Companies in the United States and Abroad, 2001 26
Table 4: Change in Employment of Total Nonfarm and Selected Industries, Quarterly Averages, 2001–2004 37
Table 5: Average Hourly Wages and Employment Levels for Occupational Categories Associated with Offshoring, 2002 39

Table 6: Percentage Employment Change in Selected Occupations, 2001–2002 40
Table 7: Private Sector Estimates of Offshoring and Its Potential Effects 44
Table 8: Unaffiliated Business, Professional, and Technical (BPT) Services Exports and Imports by Selected Country, 2002 59
Table 9: Share of Total Unaffiliated Business, Professional, and Technical (BPT) Services Exports and Imports by Selected Country, 2002 60
Table 10: U.S. Foreign Direct Investment (FDI) Abroad, 2002; Share by Country, 2002; Change from 1999; and Share by Industry, 2002 64
Table 11: Value and Share of Intermediate Purchases (Outsourcing) in U.S. Multinational Companies' U.S.-based Operations, 1999-2001 67

Figures

Figure 1: U.S. Private Sector Gross Domestic Product, 2002 5
Figure 2: Share of Services in U.S. Imports and Exports, 2002 6
Figure 3: Worldwide Commercial Services Importers, 2002 7
Figure 4: Total Private Services and Other Private Services, 2002 17
Figure 5: Growth in Unaffiliated U.S. Imports of Selected Components of Business, Professional, and Technical Services, 1992-2002 19
Figure 6: U.S. Unaffiliated Imports and Exports of Business, Professional, and Technical Services, by Country of Origin, 2002 20
Figure 7: U.S. Unaffiliated Imports from India of Selected Business, Professional, and Technical Services 22
Figure 8: Total U.S. Services Trade and Unaffiliated Business, Professional, and Technical Services Trade, 1992-2002 23
Figure 9: Share of U.S. Majority-Owned Nonbank Foreign Affiliate's Total Sales of Services Exported to the United States, 2001 28
Figure 10: Change in Dollar Value of the Federal Government's Procurement of IT and Other Services by Performance Location between Fiscal Years 1999–2003 31
Figure 11: Annual Average Percentage Change in Private Sector Employment in Selected Industries, from March 2001–June 2004 36

Figure 12: Change in Private Sector Employment in Selected IT-Related Industries, Annual Averages, 1990-2001 38
Figure 13: Offshoring Activities, Related Data Sources, and Employment Impacts 57
Figure 14: Offshoring versus Outsourcing: a Company's Sourcing Options 58

Abbreviations

BEA	Bureau of Economic Analysis
BED	Business Employment Dynamics
BLS	Bureau of Labor Statistics
BPT	business, professional, and technical
CES	Current Employment Statistics
FDI	foreign direct investment
FPDS	Federal Procurement Data System
GAO	Government Accountability Office
GDP	gross domestic product
GSA	General Services Administration
IT	information technology
ITA	International Transactions Accounts
MLS	Mass Layoff Survey
MNC	multinational company
NAICS	North American Industry Classification System
OES	Occupational Employment Statistics
OMB	Office of Management and Budget
OPEC	Organization of the Petroleum Exporting Countries
QCEW	Quarterly Census of Employment and Wages
SIC	Standard Industrial Classification
USTR	Office of the U.S. Trade Representative

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United States Government Accountability Office
Washington, D.C. 20548

September 22, 2004

The Honorable Ike Skelton
Ranking Minority Member
Committee on Armed Services
House of Representatives

The Honorable John D. Dingell
Ranking Minority Member
Committee on Energy and Commerce
House of Representatives

The Honorable Tammy Baldwin
House of Representatives

The Honorable Jay Inslee
House of Representatives

The Honorable Adam Smith
House of Representatives

Although attention has long focused on offshoring in the manufacturing sector of the U.S. economy, more recently concerns have been raised about the nature and extent of offshoring in the services sector and its effects on the U.S. workforce. Offshoring generally refers to the practice, by either U.S. companies or government entities, of replacing services produced domestically with imported services. Advances in information technology (IT) and communications, coupled with a large pool of educated workers in some developing countries, allow organizations to move services jobs overseas as part of a larger trend towards globalization. Organizations move services jobs, such as those involved in software programming or telephone call centers, to lower-wage locations, such as India, the Philippines, and Eastern Europe. Offshoring causes controversy because some jobs are lost immediately and visibly, while other potential impacts such as lower costs, job creation in other sectors, and economic growth are less visible, more diffuse, and typically delayed.

You requested that we examine the available data to provide more information about the offshoring of information technology and other services. As agreed with your staffs, we (1) describe offshoring activities and describe factors that encourage offshoring, (2) discuss what U.S. government data show about the extent of this practice by the private

sector and federal and state governments, and (3) discuss what the data show about the effects of offshoring IT and other services on the U.S. economy.

To do so, we analyzed available U.S. government data and private sector studies on international trade-in-services and foreign investment. We also interviewed government officials familiar with the trade-in-services and employment data that provide the bases for most analyses of offshoring. We also met with private sector experts who have published analyses of services offshoring. We assessed the reliability of the federal government data discussed in this report and found it to be sufficiently reliable for the purposes of this report. We also provide information from private sector studies on offshoring and discuss the limitations of these studies. However, we did not assess the overall reliability of these studies. We conducted our analysis in accordance with generally accepted government auditing standards from January to August 2004. A detailed description of our scope and methodology appears in appendix I. This report is one of a series of reports that GAO plans to issue on offshoring.

Results in Brief

"Offshoring" of services generally refers to an organization's purchases from abroad (imports) of services that it previously produced in-house or purchased from another domestic source. Examples of such services include software programming and design, call center operations, accounting and payroll operations, medical records transcription, paralegal services, and software research and testing. The term offshoring has also been used in the public debate to include several other types of international trade and foreign investment activities, and no commonly accepted definition of offshoring exists. For example, U.S.-based firms may expand by investing in affiliates overseas rather than expanding their domestic operations, thus creating new jobs overseas while maintaining U.S. job levels. These activities may also affect profits, prices, and other economic factors in different ways. Information technology improvements, infrastructure growth in developing countries, and decreasing data transmission costs facilitate the increased use of offshoring. Organizations choose offshoring to gain such benefits as the use of cheaper, skilled labor and access to foreign markets. Nevertheless, offshoring also introduces risks, such as geopolitical concerns and cultural differences, which influence decisions on whether or not to offshore certain business functions.

U.S. government data provide some insight into the trends in offshoring of services by the private sector, but they do not provide a complete picture of the business transactions that the term offshoring can encompass. In particular, they do not identify U.S. imports of services previously produced by U.S. employees. The Department of Commerce's trade data show that imports of services associated with offshoring are growing. For example, U.S. imports of services associated with offshoring—business, professional, and technical (BPT) services—grew from $21.2 billion in 1997 to about $37.5 billion in 2002, an increase of 76.9 percent. During the same period, U.S. exports of BPT services increased 48.6 percent, with the United States maintaining a trade surplus in this category. Another approach to analyzing offshoring is to assess the extent to which U.S. companies have invested in foreign countries and are exporting services back to the United States. Commerce's data on direct investment abroad show that, as of 2002, U.S. investments in developing countries that supply offshore services (e.g., India and the Philippines) were relatively small—about 4 percent or less, for each country, of total U.S. direct investments abroad. These investments were primarily concentrated in the manufacturing sector. In addition, most services produced abroad by U.S. majority-owned foreign affiliates are sold to foreign markets rather than to the United States. Regarding public sector offshoring, the total dollar value of the federal government's services contracts with offshore performance or manufacturing locations has increased over the past 5 years; however, relative to all federal contracts for services, the trend in the dollar value of offshoring shows little change. In addition, although there are anecdotal accounts of state governments using offshore sources, no comprehensive data or studies of the extent to which state governments use these sources are available.

Federal statistics provide limited information about the effects of offshoring IT and other services on the U.S. labor force and the economy overall. The Department of Labor's Mass Layoff Survey (MLS) shows that layoffs attributable to overseas relocation have increased since 1999, but these layoffs represent a small fraction of workers laid off—of 1.5 million layoffs reported in the 2003 MLS, 13,000 (0.9 percent) were reportedly due to overseas relocation. The data also show that most of these layoffs were in the manufacturing sector. However, the survey identifies only a portion of total layoffs, because it covers relatively large establishments (50 or more employees) and relatively large layoffs (at least 50 in a 5-week period). Occupational Employment Statistics and Current Employment Statistics data series indicate that occupations and industries commonly associated with offshoring have experienced greater than average job

declines since 2001. However, the reasons for these declines cannot be specifically linked to offshoring because other factors, such as the collapse of the dot.com bubble, likely contributed to those job declines. Some private researchers have estimated the effects of offshoring on employment and other economic activity. For example, some predict that offshoring may eliminate 100,000 to 500,000 IT jobs within the next few years. However, some also predict economic benefits from offshoring, including lower prices, productivity improvements, job creation in sectors using offshored services, and overall higher growth for the U.S. economy.

Although we make no recommendations at this time, we observe that the reasons for the growth in offshoring are relatively well understood, but less is known about the extent and the policy implications of this activity. Discussion of this issue is similar in many ways to discussions of other changes that occur in a dynamic economy. In these cases, federal statisticians and other researchers attempt to use and modify existing series and develop new measures to provide insight into the phenomena. As more recent data are collected and additional studies are completed, some questions about the extent of offshoring will be addressed. Policymakers, analysts, and others inside and outside the government combine those statistics with theory and models of the economy to define the indirect and longer-term implications of the particular changes that are of policy interest. To some extent, the policy decisions are dependent upon the results of the ongoing research on the extent of the activity and a better understanding of the indirect effects of this activity on the U.S. workforce and the economy.

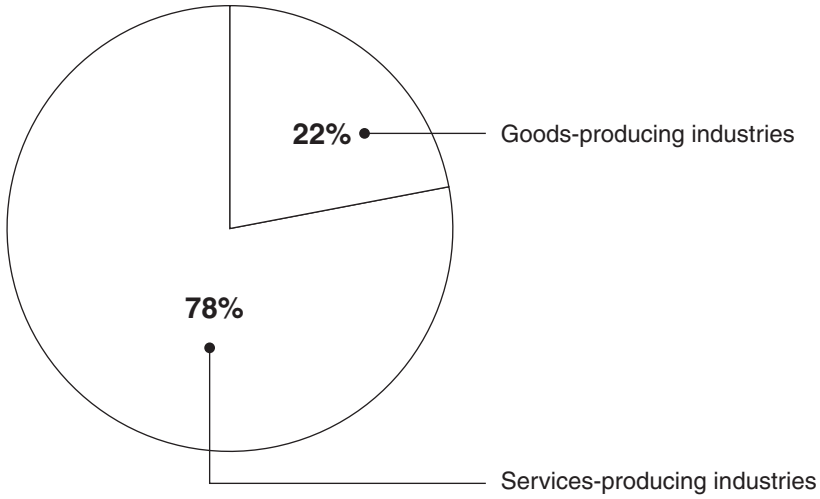
Background

Services purchased from foreigners are considered U.S. imports: a U.S. import occurs when a U.S.-based company pays for a service produced abroad and supplied to the United States (either to the company or directly to its customers, as in the case of the call center). Although the service (e.g., a computer program, a database, or a telephone call) may be supplied digitally through telecommunication lines, rather than physically crossing the border like a good (e.g., an automobile import), it still is supplied by a foreign-based producer and paid for by a U.S.-based importer.

Most U.S. domestic output consists of services. In 2002, services-producing industries accounted for about 78 percent of the U.S. private sector economy (when measured in terms of gross domestic product) compared

to 22 percent for goods-producing industries.[1] (See fig. 1.) Similarly, U.S. private sector employment is concentrated in service-producing industries (79 percent) compared to goods-producing industries (21 percent). However, it is important to note that goods-producing industries may also employ workers in "services" occupations (e.g., computer programmers or accountants).

Figure 1: U.S. Private Sector Gross Domestic Product, 2002



Total private-sector GDP = $9.2 trillion

Source: GAO presentation of Department of Commerce data.

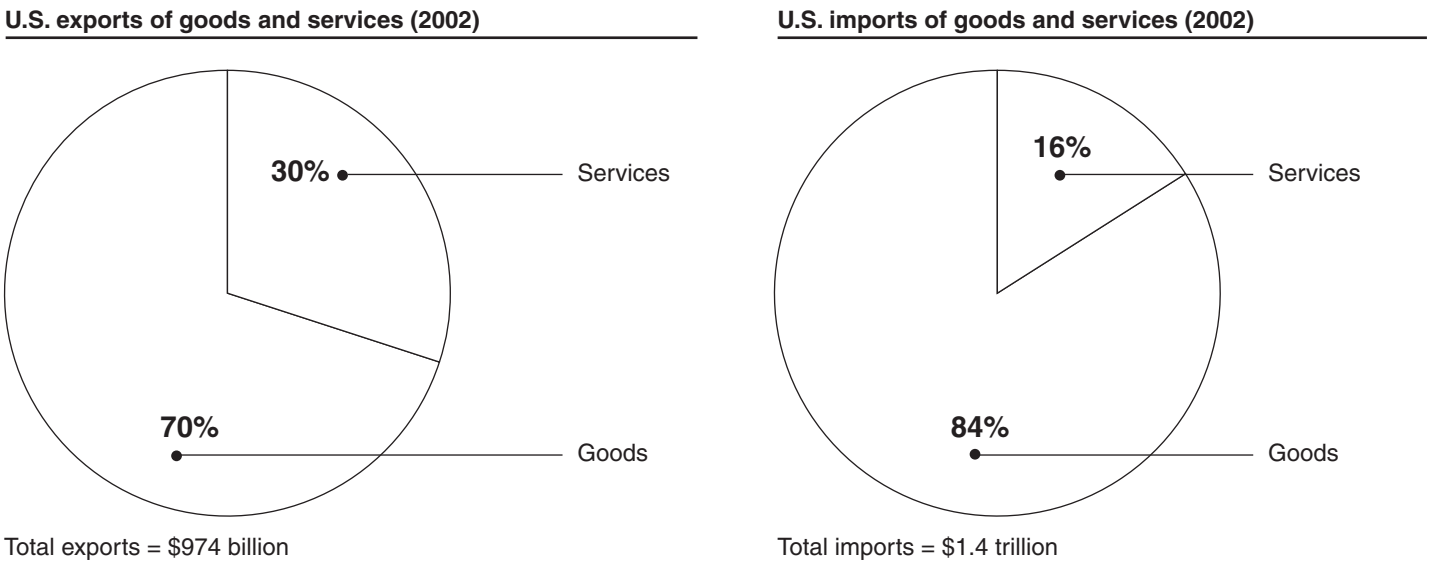
Note: The Commerce data are taken from the Bureau of Economic Analysis's *Survey of Current Business,* June 2004, p. 35.

Services are a relatively small share of U.S. imports, compared with their share of the U.S. economy. Services make up about 16 percent of total U.S. imports, compared with 84 percent of imports covered by goods. (See fig. 2.) Services make up a greater share of U.S. exports but still account for only 30 percent of the total. Services trade may be relatively small relative to the size of services output in the U.S. economy partly because some services (e.g., haircuts, housing, and hospitals) are difficult or impossible

[1]Data on gross domestic product are available for 2003, but data for some other series reported in this section were not. Gross domestic product data for 2003 show similar shares of services and goods production as in 2002.

to trade internationally. Overall, U.S. imports of services accounted for only about 3 percent of U.S. consumption of services in 2002.[2]

Figure 2: Share of Services in U.S. Imports and Exports, 2002

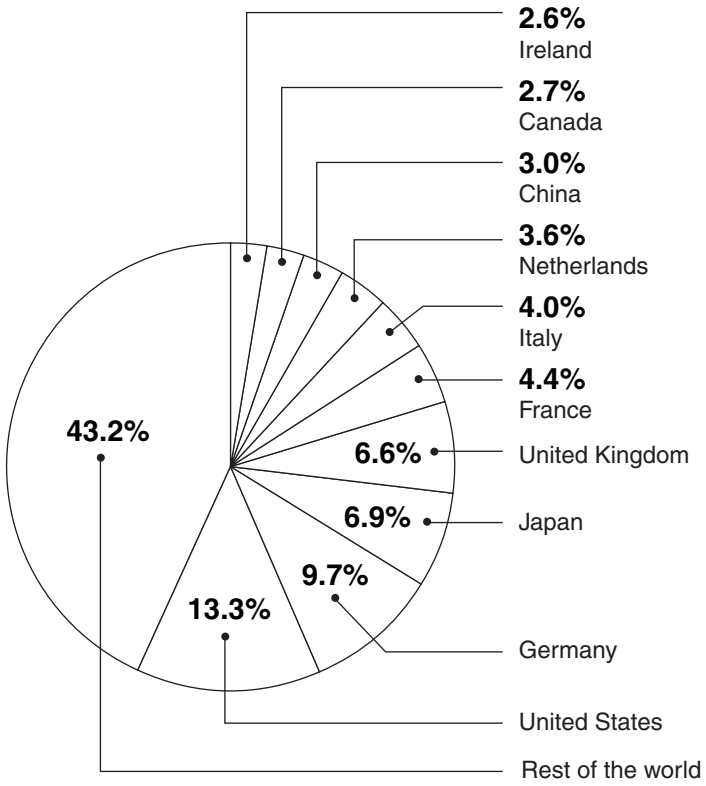


Source: GAO presentation of Department of Commerce data.

According to the World Trade Organization, the United States is the world's largest importer of commercial services, with 13.3 percent of the world's share. (See fig. 3.) The United States is the world's largest exporter of commercial services, as well. Overall the United States exports more services than it imports and therefore maintains a surplus in services trade.

[2]U.S. consumption of services (private domestic consumption) is calculated as U.S. production of services plus U.S. imports of services minus U.S. exports of services.

Figure 3: Worldwide Commercial Services Importers, 2002



Source: GAO presentation of World Trade Organization data.

Note: The World Trade Organization defines commercial services as services (as used by the Bureau of Economic Analysis) less government services.

"Offshoring" of IT and Other Services Includes Several Types of Business Activities and Is Facilitated by Telecommunications Improvements

The term "offshoring" generally refers to an organization replacing services produced domestically with imported services. However, no commonly accepted definition for offshoring exists, and the term has been used in public debate to include several other types of business activities. Services offshoring has been facilitated by improvements in information technology, decreasing data transmission costs, and expanded infrastructure in developing countries. Organizations may choose to move some business functions, such as accounting and payroll operations, offshore to gain certain benefits, such as lower labor costs and access to skilled workers. Nevertheless, organizations also face risks, which influence their decisions whether or not to offshore certain business functions. Business functions

that are offshored tend to share some common characteristics related to job content and customer focus. Based on BLS data and other sources, some analysts have also identified occupations that appear to be vulnerable to being offshored.

Offshoring Covers a Range of Activities

U.S. organizations, such as private firms or governments, may decide to import certain services from offshore that they had previously obtained domestically (whether through their own production or from another domestic firm). This is commonly called offshoring. However, no standard definition of offshoring exists, and the term has been used broadly to discuss a range of business activities related to international trade and foreign investment. In addition, definitions of offshoring frequently define it as imports or investment that result in the displacement of U.S. production and employment.

In table 1 we present several types of business and government activities associated with offshoring. We also indicate the potential data sources for each type of activity that we discuss later in this report. The first two activities in the table are widely associated with offshoring. The third, fourth, and fifth examples show more complex business activity, which may involve aspects of offshoring.[3] The sixth example involves government offshoring activities. Definitions of offshoring and related business activities are discussed in more detail in appendix II.

[3]Since no standard definition for offshoring exists, different definitions include varying types of business activity. For example, a business expanding its overseas operations (without changing its domestic operations) in order to supply a foreign market would generally not be included in offshoring definitions.

Table 1: Examples of Offshoring Business Activities and Potential Data Sources

Business activity	Potential data sources
1. A U.S.-based company stops producing its accounting, payroll, and call center services in-house and instead purchases them from a foreign-based company.	• Import statistics capture the U.S. company's payment for the offshored services. • Employment statistics capture the number of U.S. employees who were displaced.
2. A U.S.-based company moves its accounting, payroll, and call center services from its domestic operations to a new foreign-based affiliate set up to produce these services.	• Import statistics capture the U.S. company's payment to its foreign affiliate for the offshored services. • Foreign direct investment statistics capture the value of the U.S. company's investment in the affiliate, as well as operational information on employment and sales of the affiliate. • Employment statistics capture the number of U.S. employees who were displaced. • Multinational company data capture repatriated profits and income from the affiliate and exports from the U.S.-based company to its affiliate.
3. A U.S.-based company expands production by opening a new affiliate overseas, but maintains its existing production in the United States.	• Foreign direct investment statistics capture the value of the U.S. company's investment in the affiliate, as well as operational information on employment and sales of the affiliate. • Since the company maintains its current production, import and employment statistics will not capture any changes due to the new production overseas, nor will they capture the production and employment that might have occurred if the company expanded domestically rather than offshore. • Multinational company data capture repatriated profits and income from the affiliate and exports from the U.S.-based company to its affiliate.
4. A U.S.-based company that sells domestically and exports to foreign markets moves its production to an offshore location.	• Export statistics will capture the decline in U.S. exports due to the U.S. company shifting production. • Import statistics will capture the increase due to the new imports provided from offshore for the domestic market. • Foreign direct investment statistics capture the value of the U.S. company's investment in the affiliate, as well as operational information on employment and sales of the affiliate. • Employment statistics capture the number of U.S. employees who were displaced. • Multinational company data capture repatriated profits and income from the affiliate and exports from the U.S.-based company to its affiliate.
5. A U.S.-based company reorganizes its global production operations by concentrating its computer programming in a foreign affiliate in one country, its customer services operations in a foreign affiliate in another country, and splitting its production operations between the United States and its foreign affiliate in yet another country. The final products are produced in both the United States and abroad and sold globally.	• Import statistics capture the U.S. company's payment to its foreign affiliates for the services that are supplied to the U.S. operations. However, services supplied between foreign affiliates will not be captured. • Foreign direct investment statistics capture the value of the U.S. company's investment in the affiliates, as well as operational information on employment and sales of the affiliates. • Employment statistics capture both the number of U.S. employees who were displaced from production that the company moved abroad, as well as the number of new U.S. employees that result from expanded production in the United States. • Multinational company data capture repatriated profits and income from the affiliate and exports from the U.S.-based company to its affiliate.

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Business activity	Potential data sources
6. A state government agency contracts out its software programming for a particular program to a foreign-based company.	• Import statistics capture the state's payment for the offshored services. • State level procurement data, if collected, would capture the value of the contract. • Employment statistics capture the number of U.S. employees who were displaced, if the state agency eliminated some positions with the contract.

Source: GAO.

Note: Import, investment, and employment data are discussed later in this report. Other broad economic statistics may capture the effects of offshoring. These are also discussed below.

All the activities listed in table 1 also have the potential to impact a variety of economic measures. These impacts are typically identified through economic modeling and not through direct data reporting. This is because either the impacts are difficult to capture directly or because they are one of many impacts on broad, aggregate measures of economic activity. These measures can include, but are not limited to, consumer and producer prices, productivity, profits, job creation, and economic growth.

Information Technology Advances and Business Benefits Encourage Offshoring

Offshoring of services has been encouraged by information technology (IT) improvements and expected business benefits. In particular, recent developments in the telecommunications industry, such as technology improvements, infrastructure growth in developing countries, and decreasing data transmission costs, have facilitated the use of offshoring. First, according to several studies, improvements in telecommunications capabilities, such as advances in routing and switching technologies that enable the distribution of voice and data services, have increased the reliability and service quality of global voice, data, and Internet communications.[4] Second, the growth of the global telecommunications infrastructure has provided developing countries cost-effective infrastructure options, such as wired landline and satellite communication services to communicate across national borders. Third, global data traffic has substantially increased since the early 1990s, while the cost of

[4]Progressive Policy Institute, "Understanding the Offshoring Challenge" (May 2004); McKinsey and Company, "Offshoring: Is It a Win-Win Game?" (August 2003); American Electronics Association, "Offshore Outsourcing In An Increasingly Competitive And Rapidly Changing World" (March 2004), and Carnegie Mellon University School of Computer Science, "The Capability Model for IT-enabled Outsourcing Service Providers" (Nov. 19, 2001).

transporting data has declined, thereby making the offshoring of services that rely on the transmission of data more cost effective.[5]

Other IT advances, such as greater standardization of business applications and network protocols,[6] have increased system interoperability and thus further facilitated offshore sourcing. Among others, universal computing standards and protocols, such as the Transmission Control Protocol/Internet Protocol, have enabled businesses to communicate worldwide through the use of e-mail and collaborative tools, such as video conferencing, instant messaging, and shared whiteboard technologies. Additionally, the worldwide use of the personal computer in conjunction with the global availability of the Internet have enabled organizations to digitally share and transmit documents over private networks using encryption applications for added security. According to a technology research firm's forecast, the use of private networks will continue to increase due to widely available network-based solutions that support increased access options, security, and new applications.[7]

In addition to technological factors that allow services to be conducted offshore, an organization may choose this option because it expects to realize various benefits. According to several business studies, the primary reason organizations engage in offshore sourcing is to reduce costs.[8] Specifically, due to competitive pressures and increasing customer demand for innovative products, businesses are using offshoring as a way to reduce their internal costs structures, such as sales, general, and administrative costs. The labor cost differential between the United States and developing nations can be significant. According to a technology research firm, organizations that offshore accounting and customer service to China can potentially save 30 to 50 percent in labor costs compared to keeping those

[5]The Insight Research Corporation, "IP Telephony: Service Revenue and OSS Expenditures for Voice Over Packet Networks 2002-2007" (October 2002).

[6]A network protocol refers to a detailed process the sender and receiver agree upon for exchanging data.

[7]The Yankee Group Inc., "The Yankee Group Predictions for 2004" (January 2004).

[8]Forrester Research, Inc., "Unlocking the Savings in Offshore" (February 2003), and *Offshore Outsourcing: Business Models, ROI, and Best Practices*, Mivar Press, Inc, (January 2004), The Brookings Institution Policy Brief #132, "'Offshoring' Service Jobs: Bane or Boon-and What to Do?" (April 2004), and Booz Allen Hamilton, "Business Process Offshoring: Making the Right Decision" (December 2003).

processes in Tokyo, London, or Chicago.[9] Moreover, the hourly wage rate for programmers in the U.S. can be up to three times that of programmers in India.[10] For example, a leading e-business software company reportedly was able to achieve 40-45 percent lower costs per overseas employee compared to hiring equivalent senior developers in the United States.[11]

Other expected benefits of offshoring include access to skilled workers and providers that use disciplined processes and the facilitation of a round-the-clock work schedule. For example, according to the National Association of Software and Service Companies, India's chamber of commerce for the IT services and software industry, approximately 140,000 students graduated in an IT-related engineering field from degree and diploma colleges and universities in India during the 2003-2004 academic year. According to one study, a media and publishing company incorporated highly skilled overseas senior developers, architects, and project managers into its Web site development project, which reportedly led to an accelerated delivery schedule, reduced costs, and increased customer service.[12] In addition, as of July 14, 2004, of the 74 worldwide organizations that have been certified at the highest rating in the Capability Maturity Model Integration model created by the Software Engineering Institute at Carnegie Mellon University,[13] 48 are headquartered outside the United States.[14] This is important because our work and other best practices research have shown that the application of rigorous practices to the acquisition or development of IT systems or the acquisition of IT services

[9]Forrester Research, Inc., "3.3 Million U.S. Jobs to Go Offshore" (November 2002).

[10]Gartner, Inc., "Geosourcing: Is It Right For You?" U.S. Spring Symposium (Mar. 28, 2004 to Apr. 1, 2004).

[11]Aberdeen Group, "Offshore Software Outsourcing Best Practices: Building Successful Relationships on a Diverse Business Model" (September 2002).

[12]Aberdeen Group.

[13]Carnegie Mellon University's Software Engineering Institute is recognized for its expertise in developing models and methods that define and determine organizations' software systems process maturity.

[14]Of the organizations headquartered outside of the United States, 31 are in India, 5 are in Japan, 3 are in China; 2 each are in Hong Kong and the Republic of Korea; Australia, Colombia, Malaysia, Russia, and Thailand each have one organization.

improves the likelihood of success.[15] Moreover, offshoring can facilitate operating on a 24-hour, 7-day schedule across numerous time zones, thereby allowing companies to meet worldwide customer needs. For example, according to one study, a financial services unit of a Fortune 50 company has operations in overseas countries that provide around-the-clock in-bound and out-bound call centers, accounting services, IT help desks, document storage, and software implementation.[16]

Although offshoring can be beneficial, organizations also face risks that are relevant to decisions about whether or not to offshore services. Commonly cited offshore sourcing risks include unrealized cost savings due to unforeseen expenses, geopolitical concerns, cultural differences, and infrastructure instability. For example, organizations that engage in offshoring can incur additional costs in conducting overseas business operations in order to, for instance, establish high-speed telecommunications links, acquire new software licenses, and pay for travel expenses.[17] According to one study, expectations in cost reduction are not always met because outsourcing contracts can be developed with a poor understanding of current costs and little insight into how costs will change as the environment changes.[18] In addition, it is important to consider the destination country's stability, legal system, and contract enforcement in making offshoring decisions. For example, one factor in assessing the legal system is whether adequate intellectual property protections, such as laws and regulations, are in place to ensure that sensitive company data are protected from unauthorized disclosure or use. Cultural differences can also pose a potential risk because business attitudes, including timeliness and punctuality, country accents, and holiday schedules, may be different than those in the United States. For example, overseas call center and customer service employees have reportedly sometimes found it difficult to establish a rapport with consumers due to a lack of understanding of language accents. A leading

[15]GAO, *Major Management Challenges and Program Risks: A Governmentwide Perspective*, GAO-03-95 (Washington D.C.: January 2003).

[16]The Wharton School of the University of Pennsylvania, Knowledge@Wharton, "The Case For, and Against, Shifting Back-office Operations Overseas" (Sept. 25, 2002).

[17]Gartner, Inc., "Weigh These Eight Factors Before Deciding to Go Offshore," Decision Framework, #DF-IL-4293 (May 3, 2004).

[18]Gartner, Inc., "The IT Operations Group's Role in Outsourcing", Article Top View #AV-16-2110 (Apr. 30, 2002).

financial services company reportedly requires its application managers to go through a cultural exchange program designed to foster a better understanding of domestic and overseas business norms.[19] Lastly, despite public utility infrastructure improvements, some countries' businesses still face infrastructure risks, such as the reliance on energy, telephone, and networks that may be susceptible to intermittent disruptions and outages. Our prior work indicates the importance of organizations considering both the benefits and risks associated with sourcing decisions before adopting any particular approach, such as offshoring, into their business strategies and plans.[20]

Services Offshoring Affects Various Types of Business Functions and Occupations

Business functions and service occupations associated with offshoring, combined with other distinguishing process features, provide additional detail on offshoring of services. Business functions associated with offshoring tend to be those that are digitized, capable of being performed at a distance, and whose product delivery can be managed using relatively new forms of advanced telecommunications. Examples of these business functions include software programming and design, call center operations, accounting and payroll operations, medical records transcription, paralegal services, and software research and testing. According to some studies, the criteria for successful offshoring of services include business functions that involve 1) a high information content that can be standardized and digitized, 2) job processes that can be separated and documented step-by-step, and 3) no face-to-face customer service requirements. Although occupations associated with services offshoring were predominantly in the IT sector, IT-enabled jobs are also vulnerable to offshoring and span several occupational classifications. These categories include business and financial operations, office and administrative support, medical transcriptionists, paralegals and legal assistants, and architecture and engineering. In comparing services offshoring to the parallel offshoring dynamic in the manufacturing sector, one recent study states that services offshoring is structurally simpler in terms of resources

[19]Gartner, Inc., "'Geosourcing': Is It Right For You?" U.S. Spring Symposium (Mar. 28, 2004, to Apr. 1, 2004).

[20]GAO, *Desktop Outsourcing: Positive Results Reported, but Analyses Could Be Strengthened*, GAO-02-329 (Washington D.C.: Mar. 29, 2002).

and space and equipment requirements. The authors conclude that offshoring of services may therefore proceed more quickly.[21]

Federal Statistics Provide Limited Insight into Offshoring Trends

U.S. government data provide some insight into the trends in offshoring of services by the private sector, but they do not provide a complete picture of the business transactions that the term offshoring can encompass. In particular, they do not identify U.S. imports of services previously produced by U.S. employees. Similarly, federal procurement data on purchases of IT and other services provide some insights, but it can be difficult to determine where such work is performed. The available data indicate that the trend in offshoring show little change over the past 5 years.

Services Trade Data Cover Some Transactions Associated with Offshoring

U.S. government data provide some insight into the trends in offshore sourcing of services by the private sector, but they do not provide a complete picture of offshoring of the business transactions that the term offshoring can encompass. The Department of Commerce's Bureau of Economic Analysis (BEA) collects data on trade (imports and exports) in private services between the U.S. and foreign entities.[22] BEA includes in "Total Private Services" trade five subcategories: travel, passenger fares, other transportation (e.g., freight and shipping), royalties and license fees, and "Other Private Services." The category "Other Private Services" includes many of the services that are generally associated with offshoring. Imports in this category have grown from $23.9 billion in 1992 to $69.4 billion in 2002.[23] These imports represent about a third of 2002 services imports.

The category "Other Private Services" is further divided into six subcategories: education; financial services; insurance services;

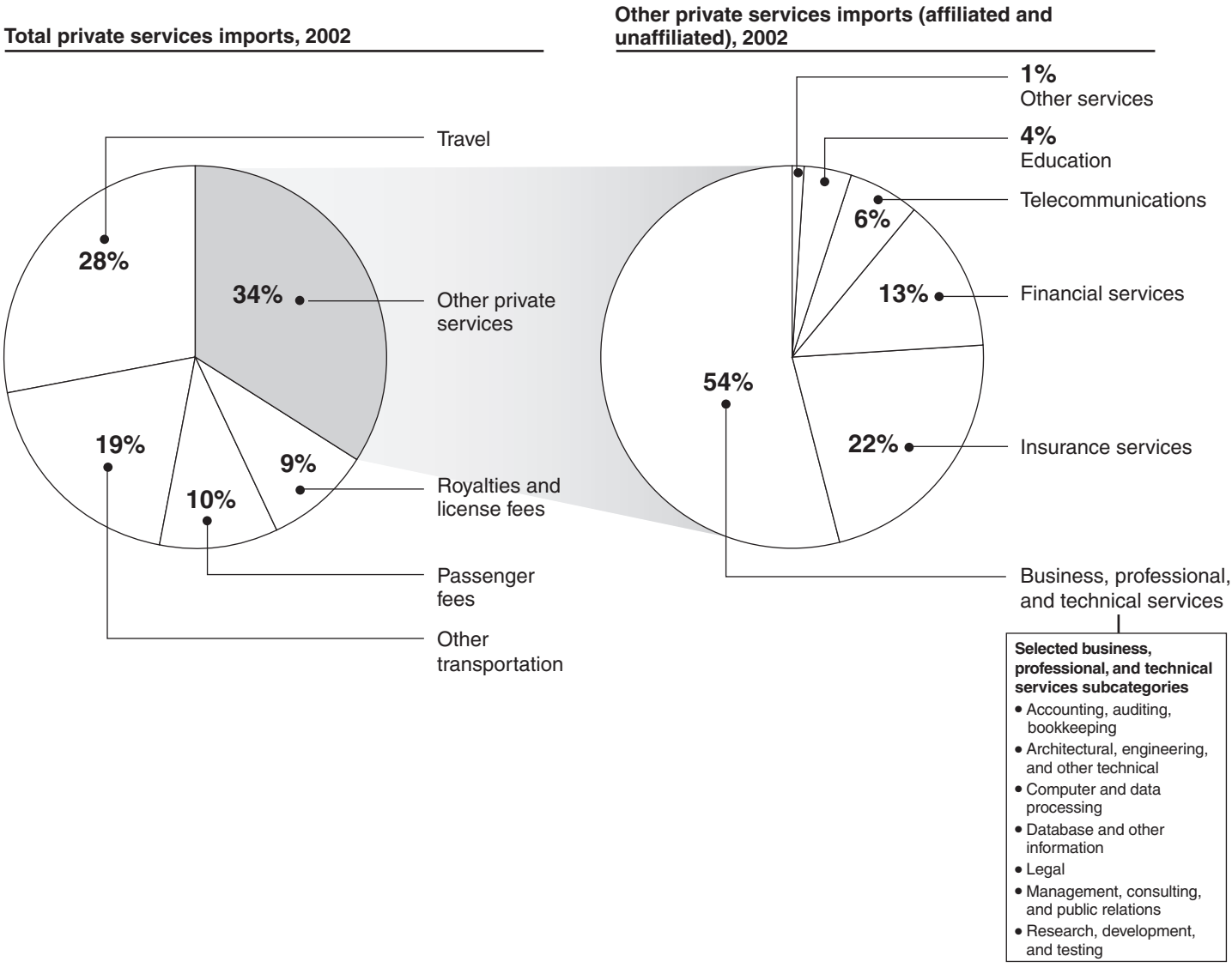
[21]Ashok Bardhan and Cynthia Kroll, "The New Wave of Outsourcing," Fisher Center for Real Estate and Urban Economics, University of California, Berkeley (Fall 2003).

[22]BEA refers to these entities as "persons," which can include either individuals or companies. Detailed data are published annually. See appendix III for more information on these data.

[23]Services trade data for 2003 are available, but primarily at an aggregate level (total private services and subcategories, such as other private services). Since data at a country and detailed service level are not yet available, we discuss 2002 data.

telecommunications; business, professional and technical services; and other services. Services captured in the subcategory of "Business, Professional, and Technical" (BPT) services are those that are generally associated with offshoring, such as accounting and bookkeeping and computer programming services. BEA publishes detailed data annually for more than 20 types of BPT services. In 2002, total BPT services accounted for $37.5 billion, or 54 percent of "Other Private Services." (See fig. 4.)

Figure 4: Total Private Services and Other Private Services, 2002



Source: GAO presentation of Department of Commerce data.

The Department of Commerce's trade data show that imports of services associated with offshoring are growing.[24] For example, U.S. imports of BPT services grew from $21.2 billion in 1997 to about $37.5 billion in 2002, an increase of 76.9 percent. U.S. exports of BPT services increased 48.6 percent during this same period. It is important to note that these import data show that U.S. entities have been purchasing these services offshore, but they do not indicate whether these entities had previously been purchasing these services from domestic U.S. sources.

In addition, BEA data differentiate between affiliated and unaffiliated trade, where affiliated trade occurs between foreign affiliates and their parent companies. In 2002, affiliated trade accounted for $26.8 billion, or 71 percent of all BPT services imports. Data for affiliated trade in BPT services are not broken down by country or by the particular subcategories of BPT services discussed below. Data for unaffiliated trade do provide this detail and show that U.S. imports of BPT unaffiliated services grew from $6.4 billion in 1997 to $10.7 billion in 2002, an increase of 67.2 percent.

This partial list of subcategories under BPT services include the following offshored services:

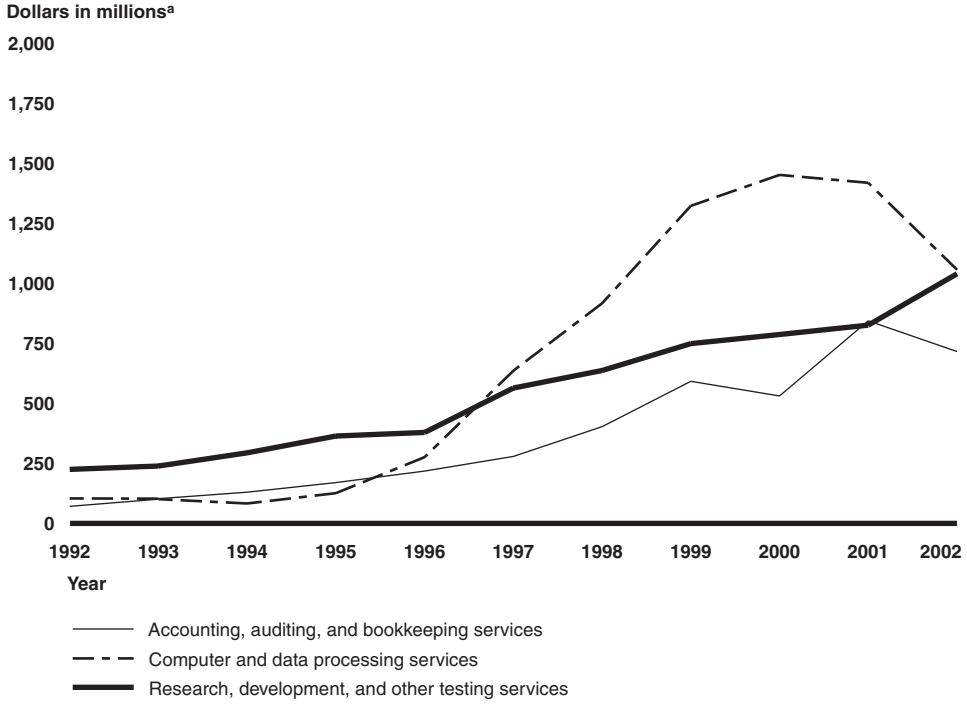
- accounting, auditing, and bookkeeping;
- architectural, engineering, and other technical;
- computer and data processing;
- database and other information;
- legal;
- management, consulting, and public relations; and
- research, development, and testing.

Certain unaffiliated BPT services imports—most notably accounting and auditing services; computer and data processing services; and research, development and testing services—have grown rapidly in recent years. For example, imports of computer and data processing services have grown

[24]Detailed data on U.S. services trade covering 2003 will be released in October 2004.

steadily from $636 million in 1997 to $1.5 billion in 2000 and declining to $1.1 billion in 2002 for an overall increase of 66.2 percent between 1997 and 2002. The increase in 2000 may be due in part to the Year 2000 date change crisis. U.S. firms, in response to a tight supply of computer programmers in the late 1990s, turned to companies principally located in India to make the code fixes needed to avert problems with computer systems when the year 2000 arrived. (See fig. 5.)

Figure 5: Growth in Unaffiliated U.S. Imports of Selected Components of Business, Professional, and Technical Services, 1992-2002



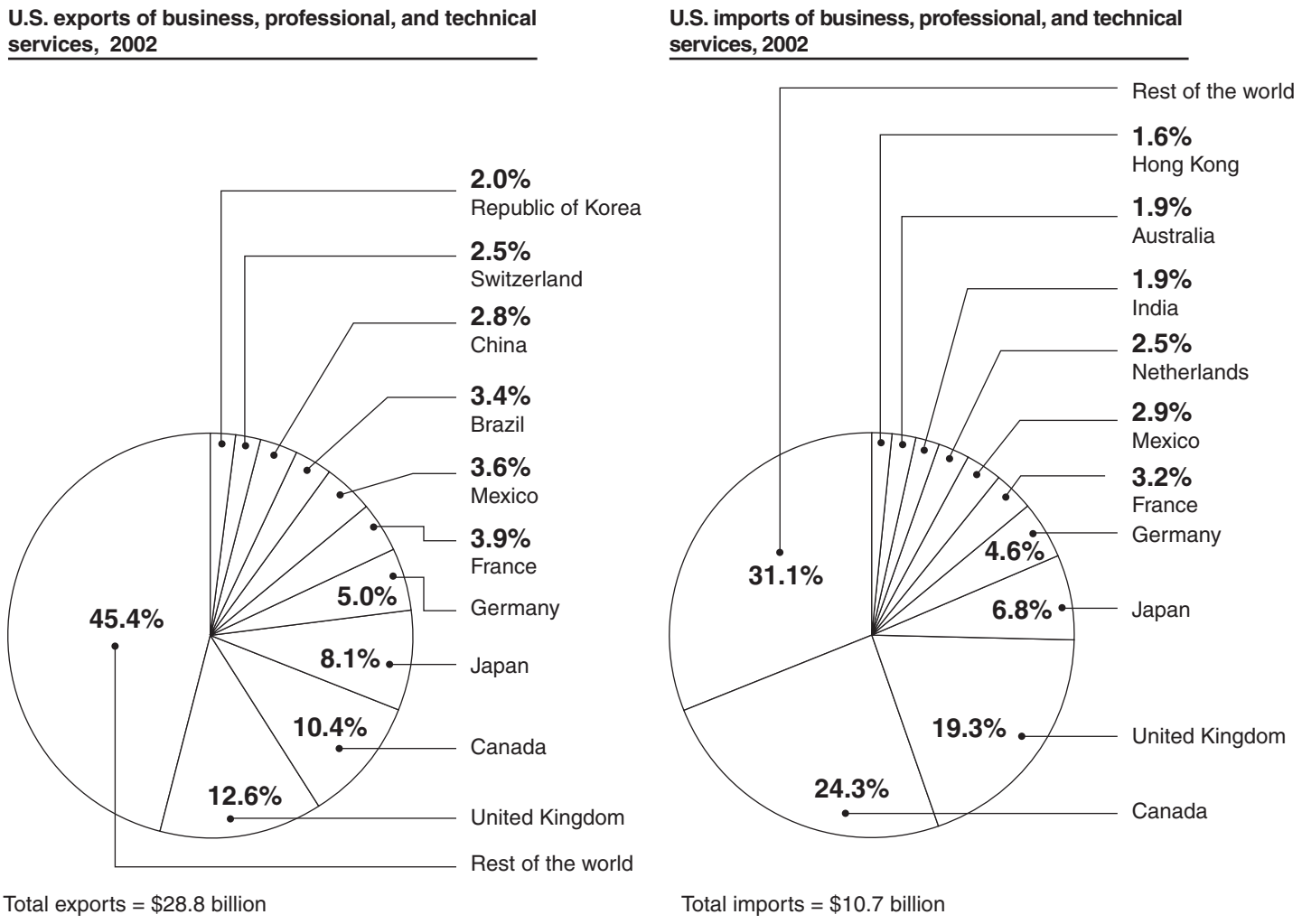
Source: GAO presentation of Department of Commerce data.

[a]Values are in nominal dollars. We did not adjust for possible changes in prices (e.g., inflation) because BEA does not produce price indexes at this detailed level of data.

Although much attention is currently focused on developing countries that are increasingly exporting services to the United States, Canada, and the United Kingdom, nevertheless these three countries remain the leading exporters of services, both for Total Private Services and the subcategory unaffiliated BPT services. In 2002, Canada and the United Kingdom

accounted for 43.6 percent of all imports of unaffiliated BPT services to the United States, and they were also major destinations for U.S. exports of these services. (See fig. 6.)

Figure 6: U.S. Unaffiliated Imports and Exports of Business, Professional, and Technical Services, by Country of Origin, 2002



Source: GAO presentation of Department of Commerce data.

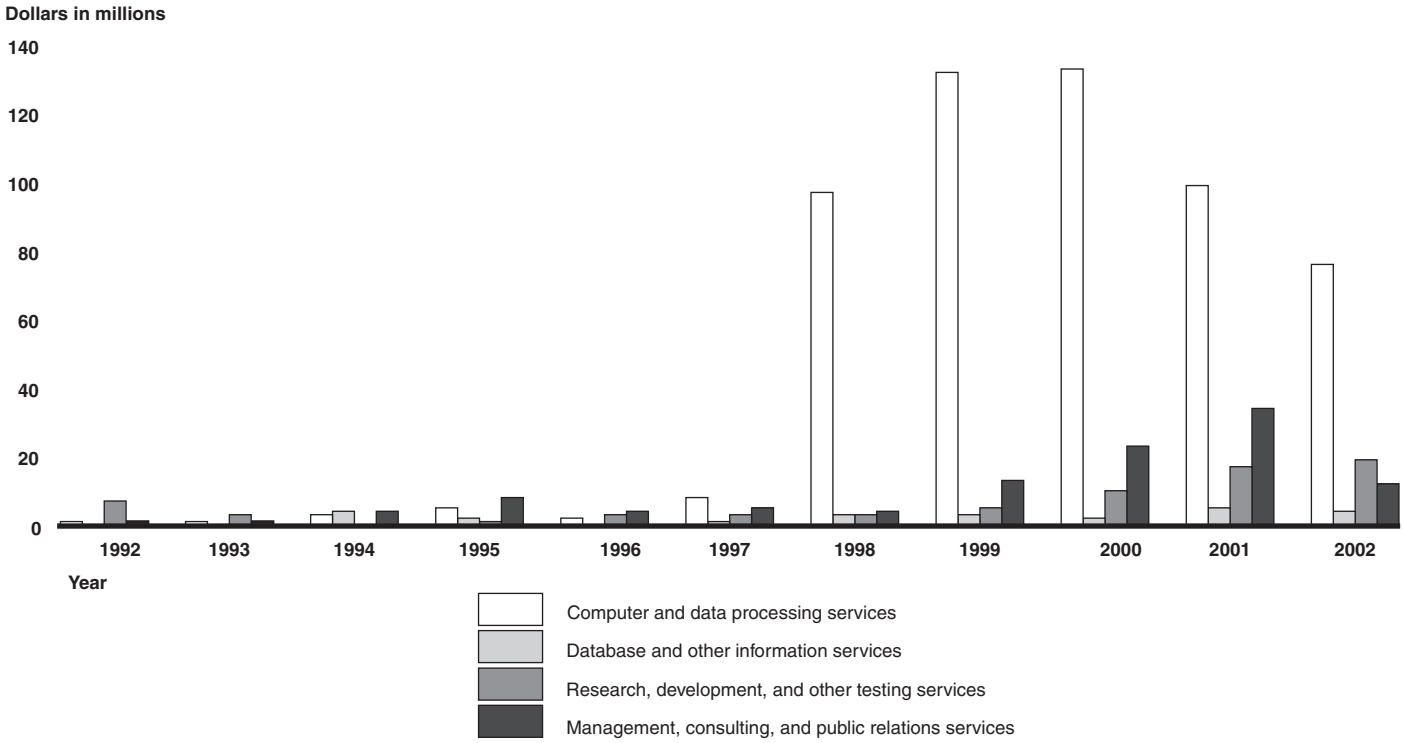
As figure 6 also shows, India is ranked eighth among countries from which the United States imported unaffiliated BPT services in 2002. Some BPT services' subcategories (e.g., data and computer processing services) are

available by country.[25] In some BPT services' subcategories, imports from India have increased. In particular, imports of India's computer and data processing services rose from $8.0 million in 1997 to $133.0 million in 2000, but then declined to $76.0 million in 2002, for an overall increase of 850 percent from 1997 to 2002.[26] (See fig. 7.)

[25]Some BPT subcategories are not broken down by country because the magnitude of the data is either too small, or the data could reveal the operations of individual entities and is therefore required to be suppressed.

[26]India's National Association of Software and Service Companies reports a larger dollar value for India's computer and data processing exports to the United States (as compared to U.S. data on those imports from India) because it includes the value of services supplied by Indian citizens residing in the United States in its international services transactions.

Figure 7: U.S. Unaffiliated Imports from India of Selected Business, Professional, and Technical Services

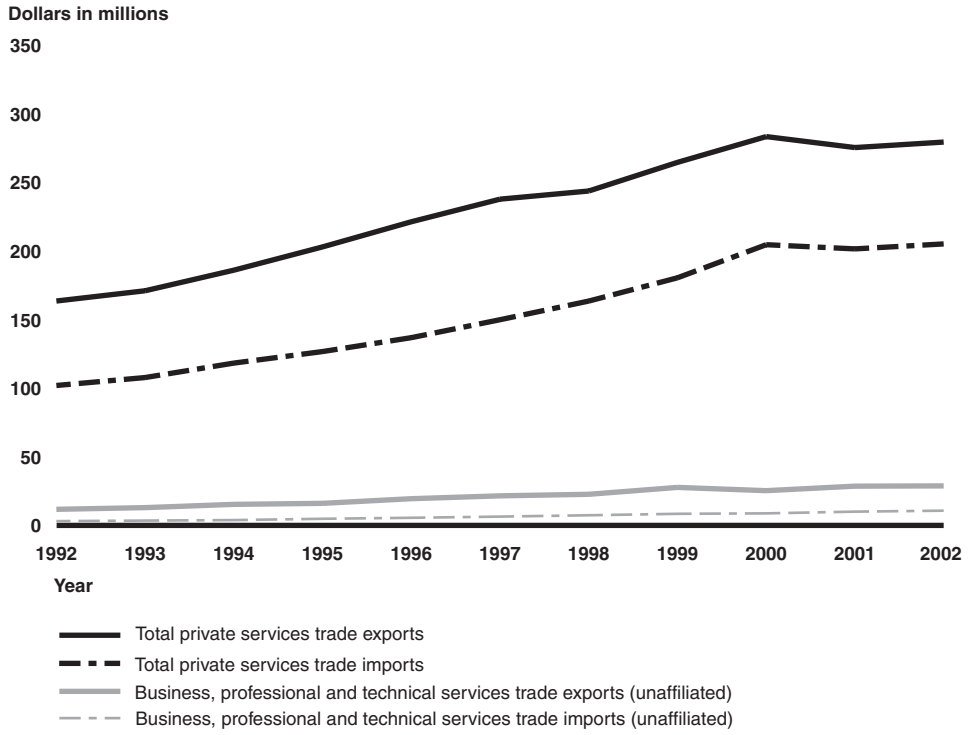


Source: GAO presentation of Department of Commerce data.

Note: Values are in nominal dollars. We did not adjust for possible changes in prices (e.g., inflation) since BEA does not produce price indexes at this detailed level of data.

Besides importing services provided offshore, the United States is also a supplier of services to the rest of the world. These U.S. services exports include some services that can be characterized as "inshoring." While we did not examine U.S. services exports in detail, some of these exports would contribute to domestic U.S. employment. In addition, the United States maintains a trade surplus in private services and most subcategories of services trade. BEA estimates that in 2002, the United States exported $279.5 billion and imported $205.2 billion in Total Private Services, for a surplus of $74.3 billion (down from a high of $87.9 billion in 1997). The average annual growth rate for U.S. Total Private Services from 1992 to 2002 was 5.6 percent for exports and 7.3 percent for imports. (See fig. 8.)

Figure 8: Total U.S. Services Trade and Unaffiliated Business, Professional, and Technical Services Trade, 1992-2002



Source: GAO presentation of Department of Commerce data.

Note: Values are in nominal dollars. We did not adjust for possible changes in prices (e.g., inflation) since BEA does not produce price indexes at this detailed level of data.

See appendix III for a table on U.S. imports and exports by country of trade in business, professional, and technical services and for further details on the limitations of that data for analysis of offshoring.

U.S. Foreign Investment Captures Other Aspects of Offshoring

U.S. government data on direct investment abroad by U.S. multinational companies producing services abroad provide information on aspects of offshoring, such as supplier countries and the distribution of labor between parent companies and affiliates.[27] U.S. direct investment in developing countries that are frequently cited as suppliers of offshore services (e.g., India, the Philippines, and Malaysia) is relatively small—about 4 percent or less of total U.S. direct investments in each case. U.S. direct investment in these countries tends to be concentrated in the manufacturing sector and, to a more limited extent, in certain services industries associated with offshoring, such as the professional, scientific, and technical industry, and the information industry.[28] However, the majority of U.S. direct investment is concentrated in other developed countries. For example, 60 percent of U.S. direct investment abroad in 2002 was accounted for by the European Union, Canada, and Japan. Table 2 lists selected developed and developing countries and their share of total U.S. direct investment abroad in 2002 (the most recent year available), as well as these countries' share of investment in different industries.[29] See appendix IV for a table on U.S. foreign direct investment and further details of the limitations of that data for analysis of offshoring.

[27]When discussing foreign investment, we are referring to investments to acquire a lasting ownership stake in a foreign affiliate (U.S. direct investment abroad) defined as ownership of at least 10 percent of the voting securities in an incorporated business or an equivalent interest in an unincorporated business.

[28]U.S. foreign affiliates classified as manufacturing use some services in their production processes and may also produce some services that are sold locally or exported. Data on the occupations of employees of U.S. foreign affiliates are not available.

[29]Detailed U.S. foreign investment data covering 2003 will be released in September 2004.

Table 2: Selected Destinations for U.S. Foreign Direct Investment (FDI) Abroad: Total by Country, 2002; Share of Total FDI, 2002; and Percentage Change from 1999

	U.S. FDI 2002 (billions U.S. dollars)	Share of total U.S. FDI, 2002	Percentage change 1999-2002
All countries	$1,521	100.00%	25%
Developed countries			
European Union (15)	700	46.02	24
United Kingdom	255	16.79	18
Ireland	42	2.74	66
Canada	153	10.03	28
Japan	66	4.32	19
Singapore	61	4.03	197
Australia	36	2.39	3
Hong Kong	36	2.35	57
Developing countries			
Mexico	58	3.82	56
Brazil	32	2.09	-15
China	10	0.68	9
Malaysia	9	0.56	38
Poland	5	0.31	45
Philippines	4	0.27	16
India	4	0.24	54
South Africa	3	0.23	-1
Hungary	2	0.16	2
Czech Republic	1	0.09	30
Russia	1	0.04	-63

Source: GAO analysis of Department of Commerce data.

Notes: Data are taken from the Bureau of Economic Analysis's *Survey of Current Business,* November 2003.

Country-level U.S. foreign direct investment abroad is valued on an historical cost basis. See www.bea.gov for more information.

Countries were selected because they are major recipients of U.S. direct investment or they are frequently cited as suppliers of offshore services. Developed countries are those countries classified as high-income economies by the World Bank. Developing countries are those countries classified as low-income economies through upper-middle income economies by the World Bank.

Data on U.S. multinational companies' operations also provide information on the distribution of labor and assets between the U.S.-based parent companies and their foreign-based affiliates.[30] These data show that the share of these companies' employment in the United States has declined somewhat over the past decade, although about 71 percent of their employment is still based in the United States and only 10 percent of their overseas employment is located in developing countries. (See table 3.) However, according to BEA, the labor force in low-wage countries is growing at a slightly faster rate (7 percent per year) than the labor force in high-wage countries (3 percent) from 1991 to 2001. Similarly, the great majority of U.S. companies' assets are located in the United States (70 percent) or in other developed countries (26 percent), rather than in developing countries (4 percent).

Table 3: Employment in U.S. Multinational Companies in the United States and Abroad, 2001

	Employment (in thousands)			
Countries	**1999**	**2000**	**2001**	**Share of total 2001**
Total MNC Employment (worldwide)	**32,227**	**33,598**	**33,226**	**100%**
U.S. parent companies	23,007	23,885	23,450	71
All foreign countries	9,220	9,713	9,776	29
Developed countries		6,269	6,348	19
European Union (15)	3,474	3,684	3,735	11
United Kingdom	1,162	1,272	1,280	4
Ireland	86	93	89	[a]
Canada	1,073	1,162	1,156	3
Japan	399	444	495	1
Singapore	120	123	117	[a]
Australia	312	322	317	1
Hong Kong	98	100	93	[a]
Developing countries		3,444	3,427	10
Mexico	995	1,066	1,017	3
Brazil	422	415	406	1

[30]Annual data on multinational companies' foreign affiliates excludes banks.

(Continued From Previous Page)

Countries	Employment (in thousands) 1999	2000	2001	Share of total 2001
China	294	293	314	1
Malaysia	128	132	129	[a]
Poland	72	84	77	[a]
Philippines	85	86	82	[a]
India	97	100	105	[a]
South Africa	138	139	136	[a]
Hungary	72	51	53	[a]
Czech Republic	49	54	57	[a]
Russia	34	32	34	[a]

Source: GAO analysis of Department of Commerce data.

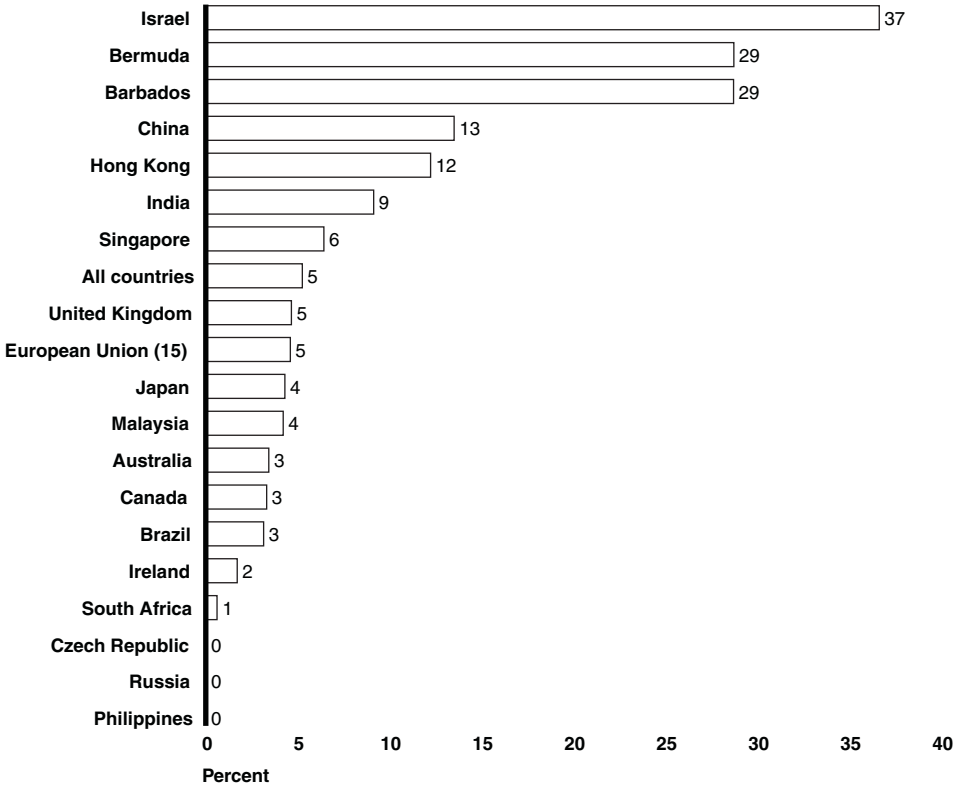
Notes: Countries were selected because they are major recipients of U.S. direct investment or they are frequently cited as suppliers of offshore services (as in table 1). Developed countries are those countries classified as high-income economies by the World Bank. Developing countries are those countries classified as low-income economies through upper-middle income economies by the World Bank.

Shares may not sum to 100 percent due to rounding.

[a]Less than 1 percent of total U.S. MNC employment worldwide

Data on operations of majority-owned foreign affiliates of U.S. multinational companies indicate that they are primarily investing in overseas markets to produce services for those markets, rather than supplying services back to the United States. As figure 9 shows, except for a few countries (e.g., Israel, Bermuda, and Barbados) less than 15 percent of the sales of U.S. companies' majority owned-foreign affiliates' services are exported to the United States. Rather, most of the services sales take place in the foreign market in which the affiliate operates or in another foreign market. According to BEA, the available data on U.S. multinational companies' operations do not show whether multinational companies' new investments are replacing their U.S.-based operations or substituting for exports to foreign markets that would have been supplied by their U.S.-based operations. However, the data currently available do not show any significant shifts or sizable investment in developing countries that may be used as a platform for offshoring. As more recent data become available, they will provide additional insight into the importance of these trends.

Figure 9: Share of U.S. Majority-Owned Nonbank Foreign Affiliate's Total Sales of Services Exported to the United States, 2001



Source: GAO presentation of Department of Commerce data.

Note: Countries were selected because they are major recipients of U.S. direct investment or they are frequently cited as suppliers of offshore services (as in table 1) or they were large exporters of services to the United States as a share of their total sales. Data was not available for all countries.

Recent Trends in Federal Government Offshoring Show Mixed Results, While Comprehensive State Data Do Not Exist

The total dollar value of the federal government's services contracts with offshore performance or manufacture locations has increased over the past 5 years; however, relative to all federal contracts for services, the 5-year trend in offshoring is relatively stable. In the federal government, the General Services Administration's Federal Procurement Data System (FPDS) is the central database of information on procurement actions. FPDS contains detailed information on contracting actions for amounts over $25,000, including the amount obligated, the types of goods and

services purchased, and information on principal place of performance[31] and country of manufacture. However, FPDS has limitations and may understate the total amount of IT and other services that are offshored by the federal government. For example, some agencies are not required to report their procurement activities to FPDS,[32] and the system excludes detailed information on contract actions of $25,000 or less and purchase card data. Moreover, as we have previously reported, because FPDS relies on federal agencies for procurement information, these data are only as reliable, accurate, and complete as the information provided by the agencies, and not all agency data are reliable.[33] In particular, the principal place of performance for the service can be difficult to determine, especially when work is performed at multiple contractor and/or subcontractor locations. According to a GSA official responsible for this system, agencies may report company billing or home office addresses if the place of performance cannot be determined.

Although a reliable total amount of the federal government's offshoring activities is not available from FPDS, the FPDS data over the last 5 years is sufficiently complete and consistent to be used to illustrate trends.[34] As shown in figure 10, from fiscal years 1999 through 2003, the total dollar value of all services contracting actions increased about 40 percent. Moreover, during the same period, the total dollar value of all services contracts with performance or manufacture locations in foreign countries

[31]Principal place of performance refers to the city, state, foreign country, or government installation where the service will be performed. If more than one location is involved, the agency is directed to report the location involving the largest dollar share of the contract. There is no data on the nationality of the persons who perform government services' contract work in the U.S. and offshore locations.

[32]The FPDS contains procurement data from approximately 60 executive branch agencies. The Federal Aviation Administration, the U.S. Postal Service, the legislative and judicial branches, and several other government entities are not required to report their procurement activities to FPDS.

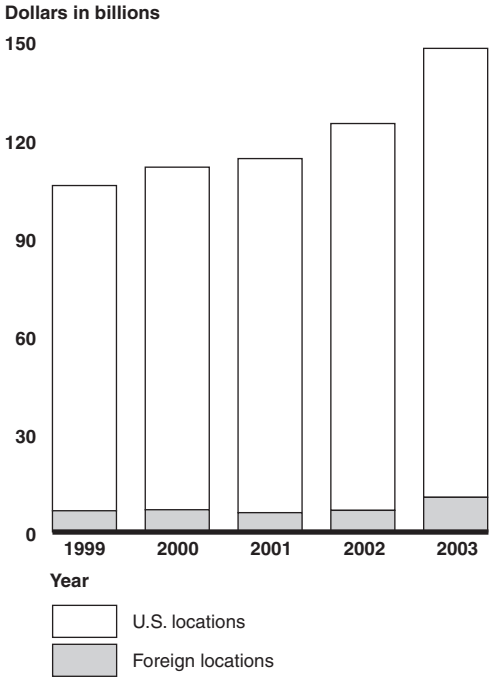
[33]GAO, *Reliability of Federal Procurement Data*, GAO-04-295R (Washington, D.C.: Dec. 30, 2003). Our work and that of agency inspectors general indicates that many of the errors in FPDS are due to data entry mistakes by agency contracting personnel. We have recommended steps to help improve data reliability in the planned successor to FPDS.

[34]We did not independently verify the information in the database, but we did perform electronic tests of relevant fields. For example, we tested for completeness by checking key fields for missing data and found missing values in all cases were 1 percent or less.

increased by about 64 percent,[35] from $6.4 billion in fiscal year 1999 to $10.6 billion in fiscal year 2003. However, the percentage of total dollars associated with foreign performance or manufacture locations relative to the total dollar value of all services contracts performed in all locations (U.S. and foreign) remained relatively stable, with a range of 5 percent to 7 percent over the 5-year period. Similarly, in the case of IT services alone, the percentage of total dollars associated with foreign performance or manufacture locations was relatively stable throughout the period, ranging from 1 to 3 percent of the total value of IT services contracts. In addition, there were large dollar value fluctuations (both increases and decreases) from year to year.

[35]The greatest percentage increase in contract dollars with performance or manufacture locations in foreign countries occurred between fiscal years 2002 and 2003 (approximately 61 percent increase). Most of this increase can be attributed to the U.S. war on terrorism, since countries such as Iraq and Afghanistan accounted for over half of the increase. Other countries that showed a large increase in the dollar value of services contracts from October 2002 to September 2003 were Bahrain, Germany, Italy, Kuwait, Russia, Saudi Arabia, and Turkey.

Figure 10: Change in Dollar Value of the Federal Government's Procurement of IT and Other Services by Performance Location between Fiscal Years 1999–2003



Source: GAO presentation of GSA data.

With respect to state governments' procurement of services from offshore sources, comprehensive data depicting the extent to which offshoring is used do not exist. However, there are anecdotal accounts of the use of offshoring by state governments. For example, in response to a legislative request, one state asked all its cabinet agencies, statewide elected officials, and institutions of higher education whether they had knowledge of any contracts awarded by their respective organizations in which all or part of the work was being performed overseas. Responses showed that 29 of 42 organizations reported knowledge of some contract awards that involved overseas work, such as contracts for software development performed by an Indian subsidiary of a U.S. firm. Nevertheless, organizations representing state executive and legislative officials, chief information officers, and procurement officials told us that they had no comprehensive data, studies, or research that indicated how much state governments were using offshore sourcing in procuring IT and other services.

Federal Statistics and Private Sector Research Provide Limited Information about the Effects of Offshoring on the U.S. Workforce and the Broader Economy

Offshoring has direct, short-term effects on U.S. employment that available data can partially capture. One federal employment data series identifies some job layoffs that are attributable to offshoring. In contrast, other federal employment data series provide contextual information about changes in employment levels for various industries and occupations, including those that have been associated with offshoring. Private sector studies have sought to analyze not only the employment effects of offshoring but also the indirect, longer-term effects on the broader economy.

Employment Data Provide Limited Information about Offshoring's Impact on the Workforce

The Department of Labor collects a range of labor market data that provide information on trends in employment, but generally its data series were not designed to identify causes for employment changes. As a result, these data do not lend themselves to providing information on the employment effects of offshoring. However, the Mass Layoff Survey provides some limited information on offshoring, and several other labor data series show general employment trends that provide a context for understanding offshoring's effects. In addition to offshoring, other factors affecting employment trends in the last few years include the economic recession and the collapse of the dot.com bubble. The Labor data series include the following:

- Mass Layoff Survey (MLS). The MLS is a national survey that collects information on reasons for long-term job losses with reports published by the Bureau of Labor Statistics (BLS) on a quarterly basis.[36] The survey is a federal-state program which tracks major job cutbacks based on state unemployment insurance databases. Establishments with over 50 employees that have at least 50 initial unemployment insurance claims during a 5-week period are contacted by the state agency. If the separations are for at least 31 days, data are collected from the employers on the total number of separations as well as the reasons for separation. The employers are asked to provide the reason for the layoff, and the state official then picks from a list of more than 25 possible reasons for the layoff action. Prior to 2004, one of these reasons was "overseas relocation" allowing the MLS to capture limited data on

[36]The latest survey of the first quarter of 2004 was released in June.

offshoring activity. In January 2004, to enhance its collection of offshoring-related data, the BLS began to ask specific questions about job losses involving domestic and overseas work relocation.[37] While this change will result in better information on offshoring in the future, the 2004 data on overseas relocation are not comparable to pre-2004 data.

- Current Employment Statistics (CES). The CES survey is an employer-based survey of payroll records that provides monthly data on the number of payroll jobs in nonfarm industries. CES data, which cover more than 300,000 businesses on a monthly basis and provide employment statistics by industry, are often used as indicators of current economic trends.[38] CES provides information on employment trends in industries, including those that have been associated with offshoring.

- Occupational Employment Statistics (OES). The OES program provides information on employment and wages by occupation. The OES survey gathers data from 400,000 establishments each year on employment and wages.[39] The survey covers 400 industries, 23 major occupational groups, and more than 770 detailed occupations. Until 2001, the OES survey sampled about 400,000 establishments during the fourth quarter of each year. In November 2002, the OES survey began sampling about 200,000 establishments in November and May of each year.[40] OES provides information on employment trends in occupations, including those that have been associated with offshoring.

[37]The new survey asks employers (except those citing seasonal work or vacation as a reason for layoffs) specifically whether their company's layoffs involved relocation. It further asks if the relocation involved an intracompany or intercompany move and whether it was a domestic or offshore relocation. The MLS does not collect data on the occupation.

[38]The CES survey collects separate data on production and nonproduction or supervisory and nonsupervisory employees; it does not collect data by occupation. Monthly CES data are generally available on the first Friday of the following month. For example, data for June 2004 reported in this study were released on July 2.

[39]The BLS surveys 1.2 million establishments over the full 3-year sampling period--400,000 each year.

[40]May 2003 data, the latest release, was published in April 2004. Data including the November 2003 sample will be released in October 2004.

- Employment Projections. BLS uses projections of the labor force and economic growth, as well as expert judgments about future trends in different occupations, to develop an occupational projection model.[41]

The Mass Layoff Survey Provides Limited Information on Services Offshoring

Because it is based on interviews with employers, MLS provides a vehicle for collecting direct, timely data on offshoring. Due to the MLS's coverage limitations, however, its data should be viewed as an imperfect indicator of offshoring-caused job losses. MLS identifies only a portion of total layoffs because it does not include small establishments or layoffs involving fewer than 50 employees. For example, in 2003, the survey covered 4.6 percent of all U.S. establishments and 56.7 percent of all U.S. workers. In addition, some employers may be unwilling to provide information when interviewed about reasons for layoffs. For the first quarter of 2004, 7.2 percent of firms with mass layoff events refused to participate in the survey. Pre-2004 MLS data had additional limitations regarding reasons for layoffs. According to BLS officials, in surveys prior to 2004, offshoring may have been involved in some instances when reasons such as "financial difficulty," "business ownership change," or "reorganization within the company" were provided by MLS respondents.

Even with these limitations, MLS data provide some information that is useful for understanding services offshoring. For example, the data show that "overseas relocation" was given as a reason for mass-layoff job loss for a small fraction of workers laid off during the 1996-2003 period—of 1.5 million layoffs reported in the 2003 MLS, 13,000 (0.9 percent) were reportedly due to overseas relocation. The data also indicate that almost all layoffs (about 96 percent) occurred in the manufacturing sector. The data also indicate that layoffs associated with "overseas relocation" reported by MLS peaked in 2002 (after rising sharply in 2001) but declined in 2003. Preliminary data for the first quarter of 2004 show that of a total of 239,361 separations, 4,633 (or 1.9 percent) were attributable to offshoring.[42] Domestic work relocation accounted for 9,985 separations (4.2 percent).

[41]The latest projections covering the period 2002-2012 were released in February 2004 and provide estimated 2012 employment levels for over 700 occupations.

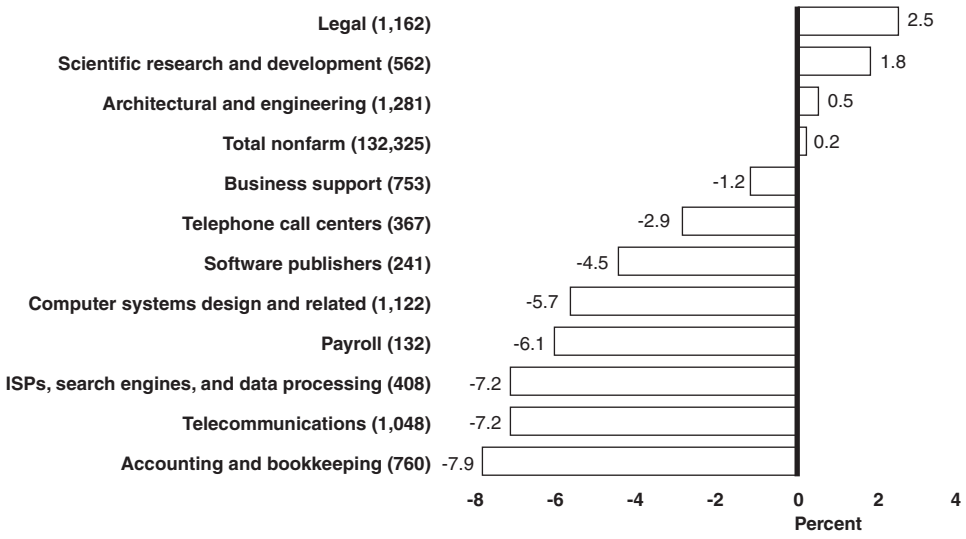
[42]Although data in the two surveys are not comparable, the 2004 survey data suggest that the new survey is identifying more offshoring-related separations than the older one, which identified 0.9 percent of layoffs as attributable to "overseas relocation" in 2003.

Current Employment Statistics Show Overall Trends in Offshoring-Associated Industries

Although general employment data such as CES are not designed to isolate job losses attributable to any specific causes, they can provide some contextual information relevant to understanding job losses. CES data indicate that overall employment, including industries associated with offshoring, began to decline after peaking in 2001. Figure 11 shows percentage changes in employment between March 2001 (the beginning of the recession) and June 2004 for selected industries associated with offshoring.[43] Job declines after March 2001 varied widely among industries associated with offshoring and generally were more severe than declines in the overall private-sector economy. For example, the average annual rate of decline over this period was 5.7 percent in computer systems design and related services industries and 7.9 percent for accounting and bookkeeping, while the decline in the business support services was about 1.2 percent. During this period, total nonfarm employment increased by 0.2 percent.

[43]The National Bureau of Economic Research identified March 2001 as the date that the 2001 recession began. We selected these industries based mainly on *Digital Economy 2003* by the U.S. Department of Commerce and Ashok Bardhan and Cynthia Kroll, "The New Wave of Outsourcing," Fisher Center for Real Estate and Urban Economics, University of California, Berkeley (Fall 2003).

Figure 11: Annual Average Percentage Change in Private Sector Employment in Selected Industries, from March 2001–June 2004



Source: GAO presentation of Department of Labor data.

Notes: June 2004 employment level is given in thousands in parentheses. The payroll category is a subset of accounting and bookkeeping, and the telephone call centers category is a subset of business support.

CES data show recent signs of improvement in employment. After falling in each of the first three quarters of 2003, total nonfarm employment edged up in the fourth quarter. (See table 4.) From the last quarter of 2003 until the second quarter of 2004, the overall economy gained about 1.1 million jobs (a 0.9 percent increase). By comparison, selected industries associated with offshoring saw deeper job losses and slower, more volatile recovery. Job loss for these industries began to gradually ease in the second quarter of 2003. Overall, employment in the selected industries has increased by about 21,000 jobs between the second quarter of 2003 and the first quarter of 2004 (a 0.3 percent increase). In a few of these industries, job losses appear to have reversed. The employment level in the architectural and engineering services industry began to rise in the second half of 2003. Other industries, such as legal services, computer systems design and related services, business support services, and Internet service providers, search engines, and data processing, experienced job gains in the second quarter of 2004.

Table 4: Change in Employment of Total Nonfarm and Selected Industries, Quarterly Averages, 2001–2004

Quarter	Employment level for total nonfarm (in thousands)	Percentage change from previous quarter	Employment level in selected industries associated with offshoring (in thousands)	Percentage change from previous quarter
Jan.-Mar. 2001	132,462		7,185	
Apr.-June	132,187	-0.21%	7,175	-0.15%
July-Sept.	131,789	-0.30	7,102	-1.01
Oct.-Dec.	130,911	-0.67	6,989	-1.59
Jan.-Mar. 2002	130,448	-0.35	6,844	-2.07
Apr.-June	130,389	-0.05	6,772	-1.05
July-Sept.	130,287	-0.08	6,694	-1.15
Oct.-Dec.	130,248	-0.03	6,632	-0.93
Jan.-Mar. 2003	130,047	-0.15	6,568	-0.95
Apr.-June	129,878	-0.13	6,531	-0.57
July-Sept.	129,820	-0.04	6,490	-0.63
Oct.-Dec.	130,002	0.14	6,508	0.29
Jan.-Mar. 2004	130,367	0.28	6,497	-0.17
Apr.-June	131,119	0.58	6,529	0.49

Source: GAO presentation of Department of Labor data.

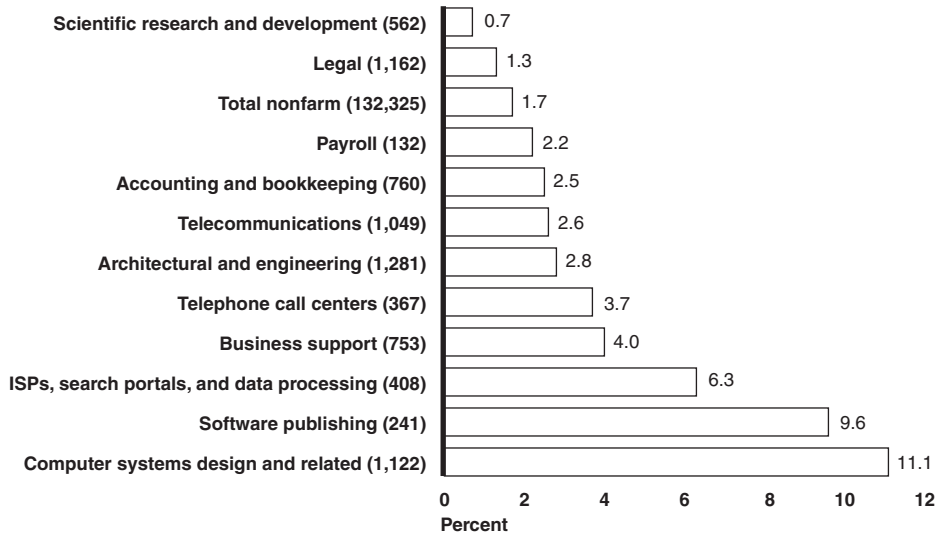
Notes: The selected industries are: telecommunications; ISPs, search portals, and data processing; legal services; accounting and bookkeeping services; architectural and engineering services; computer systems design and related services; and business support services. Only industries for which seasonally adjusted data were available were included. Industries for which seasonally adjusted data were not available, including scientific research and development, telephone call centers, and software publishers, were excluded.

Data are taken from BLS's Current Employment Statistics (seasonally adjusted).

The changes in the national employment level over time reflect the net result of jobs added and jobs eliminated—for all causes. Services offshoring has been frequently associated with the jobless recovery of 2003, but studies suggest that much of the job loss is due to the 2001 recession, increases in productivity, and corrections in the wake of the dot.com bubble. However, general employment data do not allow isolating job losses attributable to offshoring. It is also important to note that even if there were no net job losses during a particular time period—meaning that the number of job losses did not exceed the number of job gains—it is still possible that some jobs could have been lost as a result of offshoring.

Most industries associated with services offshoring that saw sharp declines after 2001 had also experienced unusually strong job growth during the previous decade. As figure 12 shows, during this expansion, growth in employment was especially strong in IT-related sectors. For example, employment in the computer systems and design industry grew at an average annual rate of 11.1 percent, compared with 1.7 percent in the total nonfarm employment. This supports the view that at least some of recent job losses are due to the collapse of the dot.com. bubble in IT-related sectors.

Figure 12: Change in Private Sector Employment in Selected IT-Related Industries, Annual Averages, 1990-2001



Source: GAO presentation of Department of Labor data.

Note: June 2004 employment level in thousands in parenthesis. The payroll category is a subset of accounting and bookkeeping, and the telephone call centers category is a subset of business support.

Occupational Employment Statistics Show Earnings in Occupations Associated with Offshoring

Although some analysts have raised concerns that services offshoring has been affecting higher-skill, higher-paying jobs, the occupational earnings data show a mixed picture. As shown in table 5, OES data indicate that average wages of most occupations associated with offshoring are above

the U.S. average wage.[44] However, the average wages for the two largest occupations in terms of numbers of workers (office and administrative support and sales and related occupations) are below the U.S. average wage.

Table 5: Average Hourly Wages and Employment Levels for Occupational Categories Associated with Offshoring, 2002

Major Standard Occupational Categories	Average hourly wage	Employment levels (in thousands)
Management	$37.92	7,092
Business and financial operations	25.65	4,772
Computer and mathematical	29.63	2,773
Architecture and engineering	27.89	2,411
Life, physical, and social science	25.19	1,079
Legal	37.18	935
Arts, design, entertainment, sports, and media	20.03	1,504
Sales and related occupations	14.72	13,340
Office and administrative support	13.42	22,755
All occupations	**$17.10**	**127,524**

Source: Bureau of Labor Statistics, Occupational Employment Statistics, 2002

Note: 2002 data are the latest available data for this data series.

Like CES, OES employment data are not designed to isolate employment changes attributable to specific causes. The data, however, offer recent employment trends by occupation relevant to understanding offshoring. The OES data indicate that some occupations associated with offshoring saw declines in employment, while others saw increases in employment between 2001 (the year of recession) and 2002—the latest year for which comparable occupational data are available.[45] Table 6 shows percentage changes in employment in 2001 and 2002 for selected occupations

[44]These occupations are selected based on the Forrester report and the Fisher study by Askok Bardham and Cynthia Kroll. The average hourly wages reported in the table may in some cases overstate the wages for some of the occupations in the category. For example, although the legal occupation includes lawyers (highly paid) and paralegals (relatively lower-paid), paralegals are associated with a higher risk of offshoring than are lawyers.

[45]Data for 2003 will be available in October 2004.

associated with offshoring. Employment in management, computer and mathematical science, and architecture and engineering declined by 1.7 percent, 1.9 percent, and 3.1 percent, respectively. Employment in business and financial operations, legal, and life, physical, and social science categories increased by 2.0 percent, 2.8 percent, and 1.0 percent, respectively. On average, employment in all occupations declined by 0.4 percent.

Table 6: Percentage Employment Change in Selected Occupations, 2001–2002

	Employment level (in thousands)		
Major standard occupational categories	**2001**	**2002**	**2001-2002 percentage change**
Management	7,212	7,092	-1.7%
Business and financial operations	4,677	4,772	2.0
Computer and mathematical	2,826	2,773	-1.9
Architecture and engineering	2,489	2,411	-3.1
Life, physical, and social science	1,068	1,079	1.0
Legal	909	935	2.8
Arts, design, entertainment, sports, and media	1,509	1,504	-0.3
Sales and related occupations	13,418	13,340	-0.6
Office and administrative support	22,799	22,755	-0.2
All occupations (U.S. total)	**127,980**	**127,524**	**-0.4**

Source: Bureau of Labor Statistics, Occupational Employment Statistics.

BLS Employment Projections Show Job Trends in Occupations Associated with Offshoring

BLS's employment projections for 2002 through 2012 provide some insight into the future trend of employment and, to some extent, of offshoring. Total employment is projected to increase by 21 million jobs to 165 million jobs in 2012. The projections, however, indicate a slower overall growth trajectory than the previous projections (for 2010), in part reflecting the impact of the 2001 recession. While total employment is projected to increase by 14.8 percent to 165.3 million jobs over the 2002 through 2012

period, this figure represents 2.4 million fewer jobs than the level projected for the 2000 through 2010 period.[46]

Projections indicate that IT-related occupations are expected to grow faster than most occupations by 2012. Seven of the 30 fastest-growing occupations are computer related, all requiring a bachelor's degree or higher. The rate of growth for these occupations for the 2002 through 2012 projections is significantly lower than the rate projected for the period 2000 through 2010. Thirteen of the occupations with the largest projected declines are office and administrative support, none requiring a bachelor's degree. Generally, the rate of decline for these occupations increased from the 2010 to 2012 projections.

According to BLS officials, BLS did not systematically take into account offshoring in its 2012 employment projections, prepared in 2003, but some analysts took offshoring into account during the survey when they were considering projected changes in occupational staffing patterns. Moreover, some of the impact of recent offshoring was likely reflected in the baseline employment level used in the projections.[47] As a result, the 2012 projections, which generally indicate a lower level of employment, a slower rate of growth for many occupations, and a faster rate of decline for some occupations than do the 2010 projections, might partially reflect the impact of offshoring. The difference between the two sets of projections, however, also reflects the impact of other factors, such as the collapse of the dot.com bubble, recession, and increases in productivity.

BLS is in the process of implementing changes to better capture the impact of offshoring trends on employment patterns for its 2014 projections. As part of this effort, BLS is developing a list of occupations that face high risk of offshoring; the list is intended to alert BLS analysts to systematically seek out better information on offshoring in determining employment

[46]This difference largely reflects different macroeconomic assumptions used for the two sets of the projections. GDP growth rates assumed for 2000 through 2010 and 2002 through 2012 were 3.4 percent and 3.0 percent, respectively. Long-run unemployment rates assumed for 2000 through 2010 and 2002 through 2012 were 4.0 percent and 5.2 percent, respectively.

[47]Michael Horrigan, "Employment Projections to 2012: Concepts and Context," *Monthly Labor Review* (February 2004). BLS employment projections are based on trend analyses of detailed establishment-based time-series data. Thus, the effects of the recent events are implicitly captured to the extent that the data reflect the recent past.

trends in those occupations.[48] BLS does not expect to produce quantitative assessments of offshoring.

Private Sector Research Studies Contribute to Discussion of Offshoring Data

Some private sector research studies have sought to provide projections of the likely number of jobs that might be affected by offshoring in future years. Other researchers have provided insight on, and to some extent quantified, the broader effects of offshoring on other economic factors such as productivity, prices, and economic growth.

Private Sector Studies Provide Forecasts of Potential Employment Effects

Private researchers and consultants have attempted to forecast the effects of offshoring on employment in certain occupations potentially affected by offshoring.[49] The studies vary by the range of industries or occupations examined, the economic variables measured, and the time frames of their analyses. However, these studies face challenges in estimating the effects of offshoring because these studies often base their projections on federal statistics, and, as previously described, federal statistics currently provide limited information on the current level and effects of offshoring.

A number of these studies forecast the effect of offshoring on U.S. employment in the industries or occupations that may be affected by offshoring. For example, some studies project that between 100,000 and 500,000 information technology jobs will be displaced within the next few years, and potentially several million jobs across all occupations will shift outside the United States over the next decade. A widely cited study by Forrester Research[50] estimates that about 3.3 million jobs across all occupations will be shifted outside the United States by 2015. Of the 3.3 million, Forrester estimates that about 600,000 will move between 2000 and

[48]For determining future employment trends by occupation, BLS analysts rely heavily on field interviews with occupation experts from organizations such as professional organizations, trade associations, academic institutions, research organizations, and unions.

[49]Although we discuss some of the methodological limitations of these studies, we are reporting the studies and their results primarily to provide information on how researchers have assessed the effects of offshoring on the U.S. economy and the challenges they faced in doing so. However, we have not assessed the overall validity, accuracy, or reliability of these studies. See appendix 1 for more information.

[50]Forrester Research, "3.3 Million U.S. Service Jobs to Go Offshore," by John McCarthy, November 11, 2002.

2005.[51] The study looks across services occupations from the OES series and subjectively weights the impact of offshoring on current employment in the occupation over time. Table 7 presents a summary of several studies that project the effect of offshoring on U.S. employment.

Many of these studies of job losses do not take into account other economic effects of offshoring that may offset the job losses, or they focus on only one industry, such as financial services. For example, Forrester does not try to estimate any other effects from offshoring, such as potential expansion of employment in other sectors. In addition, some studies base their estimates of future employment effects due to offshoring on the employment level at a given point in time, rather than taking into account how the size of the labor market or a particular industry may change over time due to other factors. Also, several of the studies rely on discussions and interviews with industry representatives, rather than statistically valid surveys.

Although the importance of these projected job losses to particular firms and industries may be considerable, overall they are relatively small in terms of the U.S. economy. For example, BLS's Business Employment Dynamics (BED) series shows that the U.S. economy creates and destroys millions of jobs each year. In 2002, for example, gross quarterly job gains and job losses averaged 7.9 million and 8 million, respectively. Even during the economic expansion period in the late 1990s, job losses ranged between 7.4 million and 8.4 million per quarter, although job gains were even larger.

[51]Forrester updated its original estimate, increasing the total number of jobs to 3.4 million by 2015. See Forrester Research, "Near-term Growth of Offshoring Accelerating," by John McCarthy, May 14, 2004.

Table 7: Private Sector Estimates of Offshoring and Its Potential Effects

Source	Scope and methodology	Findings
Bardhan & Kroll[a] (University of California, Berkeley)	Scope: All services occupations. Methodology: Identifies factors associated with offshoring, applies them to all occupations to determine which may be affected, and sums total 2001 employment in these "at-risk" occupations. Does not identify the extent to which offshoring occurs in any particular occupation.	Finds fourteen million jobs in "at-risk" occupations in 2001, or 11 percent of U.S. workforce. These occupations include both IT and other occupations. Describes this as the "outer limit" of potential direct job loss, not actual number of jobs that will be offshored. Study does not provide a lower limit of potential job losses.
Deloitte Research[b]	Scope: Global and U.S. financial services industry and employment. Methodology: Surveys major financial services firms and applies estimates of the value of planned offshoring to industry costs and employment. Uses an estimate of U.S. financial services labor based on the industry size in Germany. Note: Deloitte provides consulting services to companies.	In the financial services sector, 850,000 jobs may move offshore (15 percent of industry employment).
Forrester Research[c]	Scope: Examines 18 different occupational categories in the services sector of the U.S. economy. Methodology: Ranks each occupation by four factors related to offshoring, then applies a growing percentage share of jobs offshored (depending on the rank) for 2000, 2005, 2010, and 2015. Employment is based on 2000. Note: Forrester provides consulting services to companies.	Across all services occupations, 3.3 million jobs are projected to move offshore by 2015. About 600,000 jobs may be offshored by 2005.
Gartner, Inc.[d]	Scope: IT industry and employment (IT vendors, IT services providers, and IT jobs within non-IT enterprises). Methodology: Bases estimate on professional discussions with IT suppliers and purchasers about their offshoring plans and knowledge of industry. Uses Information Technology Association of America estimate of 10.3 million IT practitioners in the U.S. in 2003 as the employment base. Note: Gartner provides consulting services to companies.	By the end of 2004, 500,000 IT jobs may be displaced. One out of every 10 jobs within U.S.-based IT vendors and IT service providers may move to emerging markets, as may 1 of every 20 IT jobs within user enterprises (non-IT companies that employ IT workers).

(Continued From Previous Page)

Source	Scope and methodology	Findings
Goldman Sachs[e]	Scope: Examines both services and manufacturing industry offshoring. Methodology: For services occupations, bases estimates of offshoring on two approaches: 1) estimated the share of jobs that could be relocated abroad on a sector-by-sector basis, based on conversations with industry experts and 2) estimated the share of each occupation that could be offshored. Note: Goldman Sachs provides consulting services to companies.	Estimates that U.S. producers have cumulatively moved fewer than 200,000 jobs to overseas affiliates but could increase the number of jobs overseas to a few hundred thousand per year over the next 2 to 3 years. Up to six million jobs could be affected by offshoring over the next decade.
Global Insight, Inc.[f]	Scope: Examines offshoring in IT sector only (software and other IT services), but estimates economywide effects. Methodology: Forecasts 2004 to 2008 based on an assumed 40 percent savings to baseline cost associated with IT software and service offshore outsourcing. Model forecasts the economy with offshore outsourcing and without to compare the impact on key variables. Note: The Information Technology Association of America, a business group, funded the study. Global Insight provides consulting services to companies.	About 104,000 of the 372,000 IT jobs were lost from 2000 to 2003 owing to offshoring (or 2.8 percent of total core IT jobs in 2000). After initial higher unemployment (2000 to 2002) primarily due to displaced IT jobs, net employment rebounded with jobs being created in both the IT sector (though more slowly than if there were no offshoring) and in other sectors of the economy. Other effects include higher real earnings (due to lower inflation and higher productivity), increased spending on IT (diffusion through the economy), higher gross domestic product, and increased exports.
McKinsey Consulting[g]	Scope: Focuses on IT and Business Process Offshoring (BPO) costs. Methodology: Case study of BPO in India. Estimates costs and cost savings for steps in a re-engineered business process. Case study may not be representative of other offshoring cases. Note: McKinsey Consulting provides consulting services to companies.	Of the $1.45 to $1.47 of value created globally by offshoring $1.00 of U.S. labor costs, the United States captures $1.12 to $1.14, while receiving countries capture about $0.33. This effect is due to new revenue (U.S. exports), repatriated earnings, and redeployed labor.

Source: GAO presentation of information from private sector studies.

[a]Bardhan and Kroll, "The New Wave of Outsourcing," (University of California, Berkeley, Fall 2003).

[b]Deloitte Research, "The Cusp of a Revolution: How Offshoring Will Transform the Financial Services Industry" (2003).

[c]Forrester Research,"3.3 Million U.S. Services Jobs to Go Offshore" by John McCarthy (Nov. 11, 2002).

[d]Gartner, "U.S. Offshore Outsourcing: Structural Changes, Big Impact" by Diane Morello (July 15, 2003).

[e]Goldman Sachs, "Offshoring: Where Have All The Jobs Gone?" (Sept. 19, 2003).

[f]Global Insight, "The Impact of Offshore IT Software and Services Outsourcing on the U.S. Economy and the IT Industry" (March 2004).

[g]McKinsey Consulting, "Offshoring: Is It a Win-Win Game?" (August 2003).

Other Researchers Seek to Identify Additional Effects on the U.S. Economy

Some studies have attempted to further identify and, to some extent, quantify the impacts of offshoring beyond the potential number of jobs lost in particular occupations. For example, an Institute for International Economics study[52] argues that data on productivity are likely to be positively affected in industries that are now able to afford IT services that are relatively less expensive because of offshoring. The study compares services offshoring to the increased use of information technology hardware and the resulting productivity improvements by a range of industries during the 1990s due to falling prices from cheaper imports. Similarly, a study by the economic consulting firm Global Insights uses a macro-economic model to produce data estimates on productivity benefits, as well as other potential effects on the economy due to offshoring.[53] Assuming that offshoring leads to lower prices for information technology services, the study predicts that by 2008 offshoring will lead to lower inflationary pressures and, therefore, to lower interest rates and borrowing costs and ultimately a higher gross domestic product of more than $100 billion (an increase of more than 0.1 percent over estimated growth without offshoring).

Like other federal statistics discussed above, data on productivity, prices, and growth would capture these effects, but it may be difficult to differentiate the effects of offshoring from other economic phenomena occurring simultaneously. In addition, the magnitude of these effects may be limited. As discussed in the background section, annual U.S. imports of services only account for about 3 percent of total U.S. consumption of services, and offshored services comprise only a subset of total services imports.

Other researchers argue that the effects of offshoring may show up in data on the distribution of earnings among workers. For example, a study by the

[52]International Economics Policy Briefs, "Globalization of IT Services and White Collar Jobs: The Next Wave of Productivity Growth," Catherine L. Mann, Institute for International Economics (Washington, D.C.: December 2003.)

[53]"The Comprehensive Impact of Offshore IT Software and Services Outsourcing on the U.S. Economy and the IT Industry," prepared by Global Insight (USA), Inc. and sponsored by the Information Technology Association of America, (Arlington, Va.: March 2004.) Global Insight estimates the effects of offshoring by comparing two forecasts of data series, one with the offshoring occurring and one without, rather than by direct observation of a specific statistical series.

Brookings Institution[54] argues that offshoring may impact the compensation of different types of workers over the longer term, rather than on the overall level of employment in the United States, as well as affecting the share of returns that go to profits rather than workers. Similarly, Dani Rodrik of Harvard University has argued that in a global economy, international trade generally increases the size of the labor pool companies can draw upon to produce their products. Although this increased competition among laborers may not always result in direct job losses, it can place downward pressure on wages as businesses use the threat of relocation to affect the bargaining position of workers. Therefore, workers in occupations that face greater labor market competition from abroad may experience stagnant or declining wages and other compensation, relative to other workers.[55] These studies suggest that data on these types of distributional effects are important to examine, since the direct impact of offshoring on labor and other economic variables may be hard to capture or distinguish from other factors that affect the overall economy.

Observations

Recent growth in offshoring has created an extensive debate about the extent of this activity, as well as the advantages and disadvantages for U.S. workers, U.S.-based firms, and for the U.S. economy as a whole. The reasons for the rapid growth are relatively well understood and have to do with information technology and the adoption of offshoring as a business strategy. On the other hand, less is known about the specific extent of offshoring to date. Federal statistics provide some clues as to the extent of this activity and show that relative to imports of other services, offshoring is a small but growing trend in the U.S. economy. Private sector researchers have provided additional information in the form of forecasts as a result of the high level of interest in this activity.

However, a more complete understanding of the extent of this phenomenon will require further efforts. Discussion of this issue is similar in many ways to prior discussions of other significant changes that

[54]The Brookings Institution Policy Brief, "'Offshoring' Service Jobs: Bane or Boon—And What to Do?" Lael Brainard and Robert Litan, Brookings Institution (Washington D.C.: April 2004).

[55]See Dani Rodrik, *Has Globalization Gone Too Far* (Washington, D.C.: Institute for International Economics, 1997).

inevitably occur in a dynamic economy. In these cases, federal statisticians and other researchers attempt to use and modify existing series and develop new measures to provide insight into the phenomena.[56] As more recent data are collected and additional studies are completed, some questions about the extent of the offshoring phenomenon will be addressed.

Finally, the policy consequences of this change are an important component of this debate. Policymakers, analysts, and others inside and outside the government combine those statistics with theory and models of the economy to define the indirect and longer-term implications of the particular changes that are of policy interest. To some extent, the policy decisions are dependent upon the results of the ongoing research on the extent of the activity and a better understanding of the indirect effects of this activity on the U.S. workforce and the economy. This research will also help address questions as to the potential policy measures that might have some effect on this activity and that might enhance the advantages or reduce the disadvantages. This study, which focuses on the data that are available on the phenomenon of offshoring, is just one component in this evolving discussion.

Agency Comments and Our Evaluation

We provided a draft of this report to the Departments of Commerce and Labor, the General Services Administration, and the Office of Management and Budget. Representatives of Labor, the General Services Administration, and the Office of Management and Budget indicated that they did not have comments. We received written comments from Commerce, which generally agreed with our observations. (See app. V.) Commerce and Labor provided technical comments, which we incorporated in the report as appropriate.

[56]For example, the major shift in the economy from goods to services created challenges for measuring output, and the rapid technological changes in recent decades have created difficulties in measuring price change. See, for example, "Measuring the New Economy" by J. Steven Landefeld and Barbara Fraumei, *Survey of Current Business* (Washington, D.C.: Bureau of Economic Analysis, March 2001), 23-40; "Numbers Matter: The U.S. Statistical System and a Rapidly Changing Economy," by Barry Bosworth and Jack Triplett (Washington, D.C.: Brookings Institution, July 16, 2004) Policy Brief #63; and *National Bureau of Economic Research: Output Measurement in the Service Sectors*, Volume 56; Price Measurement and their Uses, Volume 57.

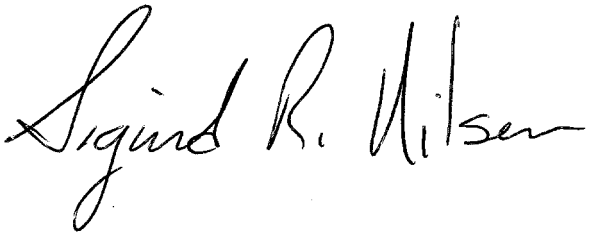
In her response to our draft report, the Under Secretary for Economics Affairs at the Department of Commerce stated that Commerce's statistical agencies are committed to refining their understanding of the issues surrounding offshoring. She noted that "disentangling the causes and effects of changes in production, employment, and incomes involves not simply added data collection but [also] complex analysis…." She characterized this report as a useful reference and suggested that we add a discussion of "inshoring." We clarified this point by adding the specific characterization of "inshoring" to our discussion in the report of U.S. net exports of services abroad.

As agreed with your offices, we are sending copies of this report to interested congressional committees, the Departments of Commerce and Labor, the General Services Administration, and the Office of Management and Budget. Copies will be made available to others on request. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staff have any questions about this report, please contact Mr. Yager on (202) 512-4128. Other GAO contacts and staff acknowledgments are listed in appendix VI.

Loren Yager
Director, International Affairs and Trade

Randolph C. Hite
Director, Information Technology Architecture
and Systems Issues



Sigurd R. Nilsen
Director, Education, Workforce, and
Income Security Issues

Scope and Methodology

We were asked to (1) describe the nature of the offshoring of IT and other services, (2) discuss what the data show about the extent of this practice, and (3) discuss what available data show about the effects of services offshoring on the U.S. economy, including labor and business.

To obtain information about the nature of offshoring sourcing of services, we reviewed available research studies, attended several conferences on the subject, interviewed high-level government representatives at the Departments of Commerce, Labor, and State; the Office of the U.S. Trade Representative (USTR); the General Services Administration (GSA) and the Office of Management and Budget (OMB). We interviewed representatives at several private sector associations representing business and labor interests. We also met with experts who have published on the offshoring phenomenon, and we interviewed representatives of several research organizations that provide industry-wide studies and data. To identify technical factors that encourage offshoring of information technology (IT) and other services and potential business benefits and risks associated with this offshoring technique, we performed a literature search and obtained information from private research firms, such as the Brookings Institution, Gartner, Inc., Meta Group, Inc., McKinsey and Company, Forrester Research, Inc., Yankee Group, and Aberdeen Group. In general, these sources provided consistent information regarding technical advances and potential business benefits and risks associated with offshoring. We determined that the data were sufficiently reliable for the descriptive purposes of the report. We also interviewed organizations representing IT services businesses and workers, including the Information Technology Association of America; India's IT services and software chamber of commerce, the National Association of Software and Service Companies; the Institute of Electrical and Electronics Engineers, Inc.; American Federation of Labor-Congress of Industrial Organizations; and the Washington Alliance of Technology Workers/Communications Workers of America.

To obtain information about the extent of services offshoring, we examined U.S. government data on international trade and foreign investment from the Bureau of Economic Analysis (BEA). We reviewed technical notes in BEA publications and related documentation to assess limitations and the reliability of various data series and discussed these topics with officials at BEA. We also reviewed available research studies, attended a conference on these data, interviewed persons in the private sector familiar with these data, and surveyed the available literature on the subject. We determined that the data were sufficiently reliable for the purposes of this report.

To identify trends in offshore sourcing of IT and other services contract work by the federal government over the past 5 years, we obtained data from the General Services Administration's Federal Procurement Data System (FPDS) on the federal government's procurement of IT and other services for fiscal year 1999 through fiscal year 2003.[1] To assess the reliability of the FPDS data fields required for this engagement, we performed electronic tests for obvious errors in completeness and accuracy (e.g., we tested for completeness by checking for missing data in key fields dealing with products and services, place of performance, and country of manufacture and found one percent or less missing in all cases). We also discussed the reliability of FPDS data with GSA officials. We determined that the relevant fields were sufficiently reliable for the comparative purposes of this report. Using FPDS data, we calculated for each fiscal year in the 5-year period (1) the total dollar value of IT and other services contracting actions in which an agency reported a foreign country as the principal place of performance or manufacture and (2) the percentage of total dollars associated with foreign performance or manufacture locations relative to the total dollar value of all services contracts performed in all locations (U.S. and foreign countries). All FPDS data cited in the report were adjusted for inflation and represent constant fiscal year 2003 dollars.

To identify trends in offshore sourcing of IT and other services by state governments, we contacted the following organizations to request data on states' use of offshore sources:

- Gartner, Inc.
- National Association of State Chief Information Officers
- National Conference of State Legislatures
- National Association of State Procurement Officers
- National Governors Association

[1]FPDS is the central database of information on federal procurement actions reported by approximately 60 executive branch agencies. It contains detailed information on contracting actions over $25,000, including the amount obligated, the types of goods and services purchased, various vendor characteristics, and the principal place of performance or country of manufacture. Principal place of performance refers to the city, state, foreign country, or government installation where the service will be performed.

- National Center for Policy Analysis
- National Association of Counties
- Washington Alliance of Technology Workers/Communications Workers of America
- American Federation of Labor-Congress of Industrial Organizations

Although none of these organizations could provide or were aware of any comprehensive data, we obtained anecdotal accounts and some limited data on contract awards by specific states in which all or part of the work was being performed in foreign countries. We did not independently verify this information.

To determine the effects of services offshoring on the U.S. economy, we examined available federal data as well as private sector studies on offshoring. To determine the effects on the U.S. workforce, we analyzed available U.S. government employment data from the Bureau of Labor Statistics (BLS), including some unpublished data. We cross-checked various employment data and reviewed technical notes in BLS publications to assess data limitations and the reliability of various data series. We compared changes in employment from March through the end of 2003 using the comprehensive Quarterly Census of Employment and Wages (QCEW) and the more timely sample-based Current Employment Statistics (CES) programs. These comparisons showed some divergence in magnitude and direction of change for detailed services industries associated with offshoring. Because the latest QCEW data are available for December 2003, we were unable to determine the extent to which the divergence might affect the March 2001 to June 2004 comparisons discussed in this report. (CES data for March 2003 to March 2004 will be revised to incorporate QCEW data in February 2005.) We also discussed the limitations and reliability of these data with officials at BLS and state employment agencies responsible for collecting them. We determined that these data were sufficiently reliable for the purposes of this report. We also reviewed available research studies, attended several conferences on the subject, and interviewed representatives of private sector associations representing business and labor interests. We also met with experts, interviewed representatives of research organizations that produced industrywide studies and data, and surveyed the available literature on the subject. With regard to private sector studies on the effects of offshoring, we are reporting these studies and their results primarily for descriptive

purposes since limited information about offshoring is available. Although we discuss some of the methodological limitations of these studies, we did not assess the studies' overall validity, accuracy, or reliability.

We conducted our review from January to August 2004 in accordance with generally accepted government auditing standards.

Definitions of Offshoring

No commonly accepted definition of offshoring currently exists, and the term has been used in the literature on the subject to include a wide range of business activities. Generally, offshoring is used to describe a business's (or a government's) decision to replace domestically supplied service functions with imported services produced offshore. This definition focuses on a business's *sourcing* decision—should it produce the services internally, source them domestically, or source them from offshore? The imported services can include a wide range of functions, such as computer programming, payroll and accounting, and customer call centers.[1] When a business replaces services it had produced internally (or had sourced from a domestic supplier) with imported services, those services and the domestic jobs associated with them are said to have been "offshored."

Offshoring, though, has also (though less frequently) been used to describe the movement of domestic production (and the related jobs) offshore. In this case, the definition focuses not on imports of services from abroad, but on U.S. companies investing offshore. The services that companies produce offshore may be used to supply imports to the U.S. market or to supply foreign markets. Companies may decide to invest abroad for a variety of reasons, such as accessing foreign markets, reducing their production costs, or utilizing foreign labor and expertise.

In either case, whether focusing on the use of imported services or on moving services production offshore through foreign investment, definitions of offshoring frequently define it in terms of the displacement of U.S. production and employment. U.S. production and employment are affected when U.S. producers replace services produced domestically with imported services. Similarly, when U.S. producers move production operations offshore, U.S. domestic production and employees are affected. Figure 13 shows the complex range of business activities that results from the intersection of imports, investment, and displacement of production and employment. The business activities captured by different definitions of offshoring may also be seen as subsets of the broader concept of globalization, which involves increasing interaction and interdependence among national product and factor markets.

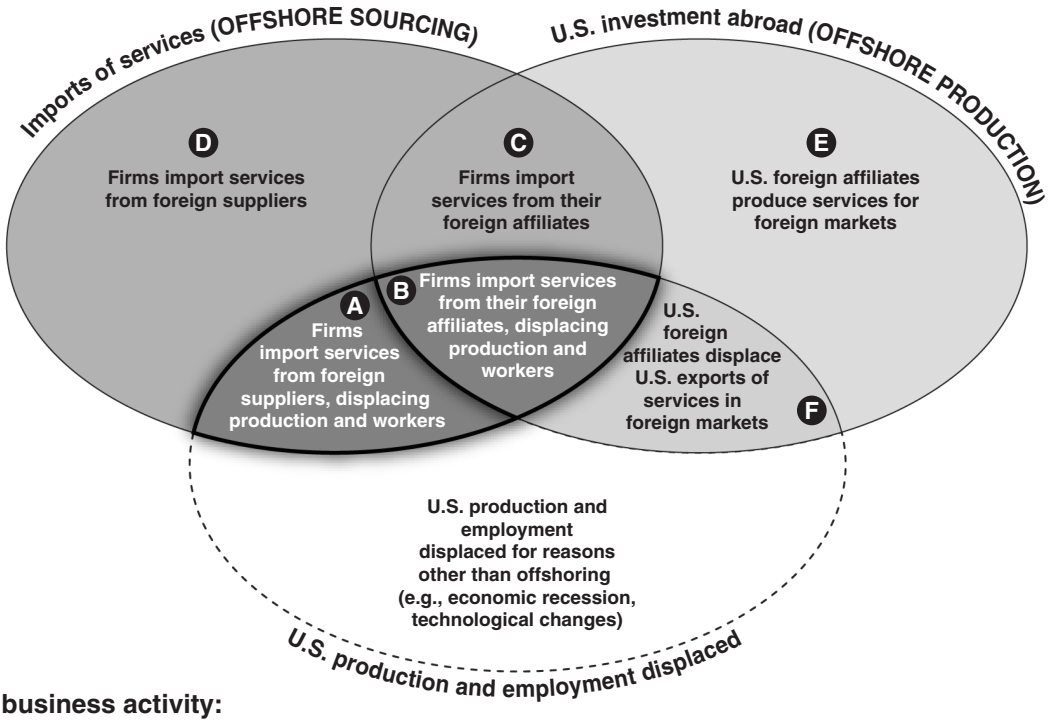
In the figure, the upper left oval represents imported services, the upper right oval represents U.S. investment offshore in services production, and

[1]Services (as well as goods) that are used by a company in its operations to produce other products are considered "intermediate" inputs.

the lower center oval represents U.S. production and employment displaced for reasons including offshoring. The darkest shaded regions (marked "A" and "B") are the business activities most commonly associated with the term "offshoring." Region A represents those imported services that directly replaced services (and therefore jobs) previously produced domestically. Region B also represents imported services that directly replaced domestically produced services. However, the imports in region B are provided by the U.S. company's offshore affiliate (either acquired or started through U.S. direct investment abroad).

Regions C through F include other business activities that are sometimes included in broader definitions of offshoring or are difficult to distinguish from offshoring in U.S. federal government statistics. For example, region C covers services imports from U.S. companies' foreign affiliates that did not directly displace U.S. employment. A company that decides to expand its operations by producing some services offshore, but does not reduce its U.S. workforce, would be included in this region. Whether or not this constitutes offshoring depends on whether the displacement of U.S. jobs is a factor in the definition of offshoring. Region D is similar to region C, except that the imported services are supplied by an unaffiliated company offshore (rather than a U.S. affiliate). Regions E and F are captured in broad definitions of offshoring that focus on the movement of services production offshore through investment, but don't focus on this production returning to the United States in the form of imports. Region F involves the case in which the offshore production actually displaces U.S. exports in the foreign market. That is, the product was previously produced in the United States and exported, but now it is produced by a U.S. company offshore and sold offshore.

Figure 13: Offshoring Activities, Related Data Sources, and Employment Impacts



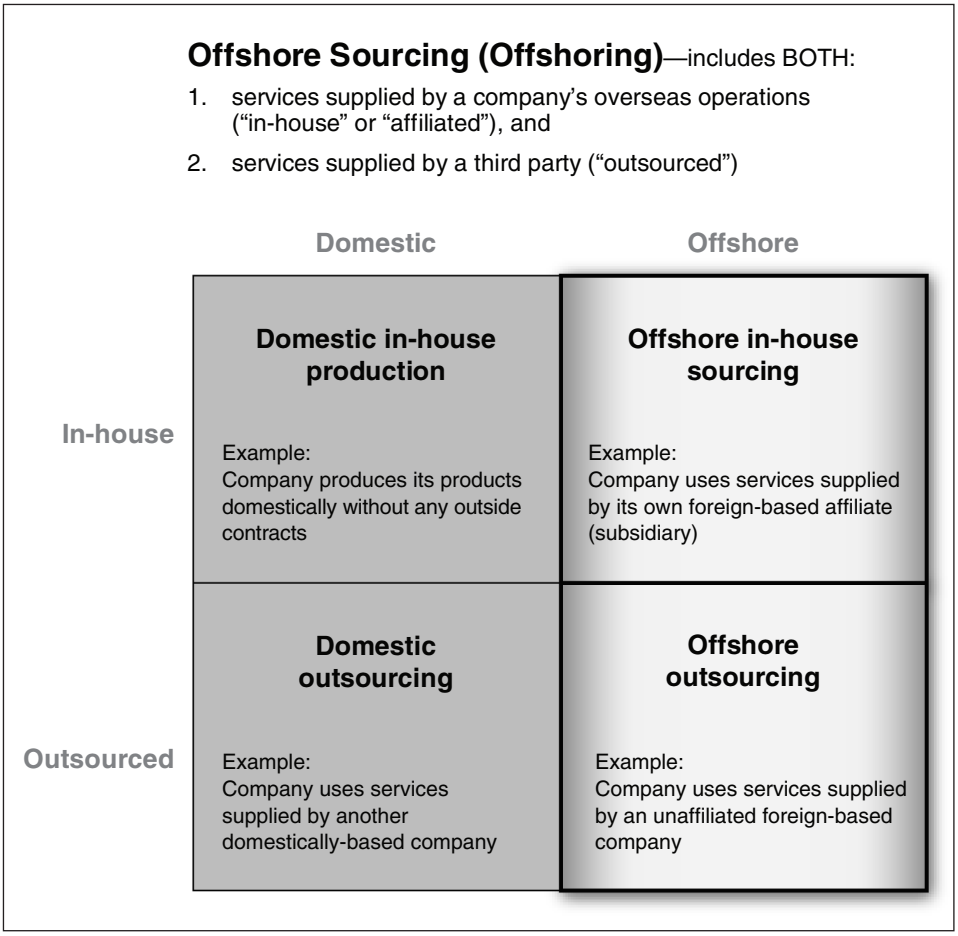
Examples of business activity:

A	A U.S.-based company stops producing its accounting and payroll services in-house and instead purchases them from a foreign-based company.
B	A U.S.-based company moves its accounting and payroll services from its domestic operations to its new foreign-based affiliate set up to produce these services.
	The most common definition of offshoring includes the types of activities represented by areas A and B.
C	A U.S.-based company imports additional accounting and payroll services to supply its expanding U.S. business, but does not displace any current domestic production or employment. The foreign supplier is the company's own foreign affiliate.
D	A U.S.-based company imports additional accounting and payroll services to supply its expanding U.S. business, but does not displace any current domestic production or employment. The foreign supplier is an unaffiliated foreign-based company.
E	A U.S. company produces accounting and payroll services abroad through its foreign affiliates and sells them to other companies abroad. These services do not directly compete against U.S. exports of services.
F	A U.S. company produces accounting and payroll services abroad through its foreign affiliates and sells them to other companies abroad. These services compete against U.S. exports of services, causing some U.S. production and employment to be displaced.

Source: GAO.

The term "offshoring" is sometimes used synonymously with the term "outsourcing." However, outsourcing means acquiring services from an outside (unaffiliated) company, which can be either another domestic company or an offshore supplier. In contrast, a company can source *offshore* services from either an unaffiliated foreign company (*offshore outsourcing*) or by investing in a foreign affiliate (*offshore in-house sourcing*). In the latter case, the services supplied by the company's foreign affiliate would not be considered *outsourcing* since the company has an ownership stake in both the U.S. and foreign operations. Figure 14 demonstrates the difference between outsourcing and offshoring.

Figure 14: Offshoring versus Outsourcing: a Company's Sourcing Options



Source: GAO.

Data on U.S. Imports and Exports of Services and Their Limitations

Trade in services data are cross-border transactions between U.S. residents and foreign residents and cover affiliated and unaffiliated transactions. Affiliated transactions consist of intrafirm trade within multinational companies—specifically, the trade between U.S. parent companies and their foreign affiliates and between U.S. affiliates and their foreign parent groups. Unaffiliated transactions are with foreigners that neither own, nor are owned by, the U.S. party to the transaction.

Cross-border trade in private services comprises five broad categories used in U.S. International Transactions Accounts (ITAs)—travel, passenger fares, "other transportation," royalties and license fees, and "other private services." Other private services, the focus of this report, include affiliated and unaffiliated services. The unaffiliated services consist of six major categories: education; financial services; insurance; telecommunications; business, professional, and technical services; and other unaffiliated services.

Business, Professional, and Technical Services Trade in 2002

Business, professional, and technical (BPT) services is further subdivided into several categories of particular interest in discussions of offshoring. Table 8 shows the value of unaffiliated U.S. exports and imports of BPT categories for selected U.S. trade partners. The United States maintained a trade surplus in categories of BPT services in 2002. For example, U.S. exports were more than $3 billion in computer and data processing services, compared with a little over $1 billion in U.S. imports. Table 9 presents the relative shares among these trade partners in exports and imports of BPT services.

Table 8: Unaffiliated Business, Professional, and Technical (BPT) Services Exports and Imports by Selected Country, 2002

	Computer and data processing		Database and other information		Research, development, and testing		Management, consulting, and PR	
Destination country	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**
Total (dollars in millions)	**$3,004**	**$1,057**	**$2,426**	**$236**	**$1,086**	**$1,040**	**$1,696**	**$1,188**
Canada	420	758	352	23	91	129	163	224
France	113	16	69	(D)	61	30	32	19
Germany	163	16	77	7	125	98	89	121
Italy	64	3	136	1	9	16	14	17
United Kingdom	975	50	436	52	149	250	131	188
Brazil	53	2	100	1	11	7	26	(D)

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	Computer and data processing		Database and other information		Research, development, and testing		Management, consulting, and PR	
Destination country	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**
Saudi Arabia	41	(*)	61	(*)	12	(*)	108	36
Australia	85	3	116	1	13	12	12	8
India	13	76	51	4	4	19	11	12
Japan	185	10	88	17	234	96	62	137
Philippines	11	20	6	3	2	1	17	9
China	15	1	18	4	12	8	13	3

Source: GAO analysis of Department of Commerce data.

(*) Less than $500,000

(D) Suppressed to avoid disclosure of individual companies.

Table 9: Share of Total Unaffiliated Business, Professional, and Technical (BPT) Services Exports and Imports by Selected Country, 2002

	Computer and data processing		Database and other information		Research, development, and testing		Management, consulting, and PR	
Destination country	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**	**Exports**	**Imports**
Total percentage	100	100	100	100	**100**	**100**	**100**	**100**
Canada	14.0	71.7	14.5	9.7	8.4	12.4	9.6	18.9
France	3.8	1.5	2.8	(D)	5.6	2.9	1.9	1.6
Germany	5.4	1.5	3.2	3.0	11.5	9.4	5.2	10.2
Italy	2.1	0.3	5.6	0.4	0.8	1.5	0.8	1.4
United Kingdom	32.5	4.7	18.0	22.0	13.7	24.0	7.7	15.8
Brazil	1.8	0.2	4.1	0.4	1.0	0.7	1.5	(D)
Saudi Arabia	1.4	(*)	2.5	(*)	1.1	(*)	6.4	3.0
Australia	2.8	0.3	4.8	0.4	1.2	1.2	0.7	0.7
India	0.4	7.2	2.1	1.7	0.4	1.8	0.6	1.0
Japan	6.2	0.9	3.6	7.2	21.5	9.2	3.7	11.5
Philippines	0.4	1.9	0.2	1.3	0.2	0.1	1.0	0.8
China	0.5	0.1	0.7	1.7	1.1	0.8	0.8	0.3

Source: GAO analysis of Department of Commerce data.

(*) Less than $500,000.

(D) Suppressed to avoid disclosure of individual companies.

Bureau of Economic Analysis Data Collection

To prepare the estimates of other private services, the Bureau of Economic Analysis (BEA) conducts benchmark and four annual surveys of cross-border trade with unaffiliated foreigners that cover (1) selected services (mainly miscellaneous business, professional, and technical services), (2) construction, engineering, architectural, and mining services, (3) insurance, and (4) financial services. Beginning in 2004, BEA began the collection of quarterly data that cover services for which data previously were collected annually. These services include detail of business, professional, and technical services, such as computer and data processing and legal and operational leasing services; financial and insurance services; and telecommunication services.

Separate surveys are conducted by BEA to collect cross-border trade with affiliated foreigners. Quarterly data are collected on all other private services; annual and benchmark data are collected (usually about every 4 to 5 years) for insurance; financial; computer and information; management and consulting; research, development, and testing; and other services.[1]

Data Limitations and Reliability

Quarterly estimates of other private services are released about 75 days after the end of the reference quarter as part of the U.S. International Transactions Accounts.[2] These estimates consist of six types of services for transactions with unaffiliated foreigners and a single estimate for transactions with affiliated foreigners. These estimates are subject to revision 90 days later and each June, as part of historical ITA revisions. The initial quarterly estimates of services transactions with unaffiliated foreigners are based on past trends, supplemented with data from other sources. The initial estimates of services transactions with affiliated foreigners are based on quarterly BEA surveys. In the first June revision, annual estimates for the past year are revised to reflect preliminary results of (1) an annual survey of transactions with unaffiliated foreigners and (2) annual data on transactions with affiliated foreigners. In the following June revision, more complete survey results are incorporated. However, the detailed types of services for transactions with both unaffiliated and

[1]The next benchmark survey will be for 2004.

[2]Monthly estimates are prepared about 45 days after the end of each month, but they are not discussed in this report. Also, because the results of the new quarterly surveys will not be available until 2005, they are not discussed in this section.

affiliated foreigners, as well as country data, are not released until October of each year. For example, the latest year for which we had annual survey-based detail was 2002.

In addition to the lack of quarterly survey data for unaffiliated transactions and lack of quarterly product detail for affiliated services, there are reliability issues related to the mandatory filing requirements and survey coverage. Under regulations[3] implementing the International Investment and Trade in Services Survey Act,[4] U.S. persons and intermediaries are required to furnish reports that are necessary to carry out BEA surveys and studies provided for by the Act.[5] Reporting annual transactions with unaffiliated foreigners is required for transactions of over $1 million in any one kind of service; the same size transaction is used for the benchmark survey. Respondents whose transactions fall below this level must report the total level of transactions in all services. For transactions with affiliated foreigners, the limitations are expressed in terms of the size of the affiliate. Quarterly and annual reporting are required only for affiliates whose total assets, sales, or net income exceed $30 million. Although the services surveys are mandatory, the mailing list BEA uses is constructed from publicly available information and not from a comprehensive business register such as those used by BLS and the Census Bureau for their surveys. Consequently it is likely that BEA's coverage of small or new firms is limited.[6] Finally, for transactions between affiliated firms, there are questions about the reliability of the prices used to value these intrafirm transfers.

A standard method for measuring data reliability is to compare initial estimates with subsequent revised estimates. This approach assumes that estimates based on benchmark surveys are more reliable than estimates based on annual estimates that, in turn, are more reliable than estimates

[3]15 C.F.R. § 806.

[4]22 U.S.C. §§ 3101-3108.

[5]The Act is intended to provide clear and unambiguous authority for the President to collect information on international investment and United States foreign trade in services. Id. § 3101(b).

[6]BEA officials have indicated that the coverage problem is likely to be greater for imports of services than for exports because there are more importers, and exporters tend to be larger firms. They also note that even if BEA had access to the Census business register, sampling all businesses would be very expensive significantly increase respondent reporting burden.

based on quarterly surveys. Thus, for the ITAs, preliminary quarterly estimates are released about 75 days after the end of the reference quarter and a "first revision" to these estimates occurs 90 days later. The following June, a historical revision is completed. These historical revisions usually cover the preceding 4 years and reflect the incorporation of more reliable source data, such as more complete or new survey data, as well as changes in definitions, data sources, and estimating procedures.

In accordance with the requirements of OMB's Statistical Policy Directive Number 3, "Statistical Policy Directive on Compilation, Release, and Evaluation of Principal Federal Economic Indicators," BEA recently prepared a report evaluating the accuracy of the ITAs. This evaluation, which covered the period from first quarter of 1999 to the fourth quarter of 2001, reported that large changes were made to the preliminary and first revised quarterly estimates with the release of historical revisions. However, the revision also reported that the changes primarily reflected major improvements to the accounts that were concentrated in the services and income accounts. According to BEA, "This study provides support for the observations that only relatively small revisions are made to the accounts in the 90 days following publication of the initial estimates, and that more sizable changes occur at the time of the first June estimate." For example, the report cited the incorporation of BEA's benchmark surveys of services as a major source of historical revision.

Data on U.S. Direct Investment Abroad, Multinational Company Operations, and their Limitations

The U.S. Bureau of Economic Analysis (BEA) collects data on an annual basis from U.S. multinational companies (MNCs). The data provide detail on U.S. foreign direct investment (FDI) abroad and the operations of U.S. multinational companies and their majority and minority-owned affiliates (e.g., assets, sales and purchases, employment). Table 10 presents information on U.S. FDI across countries for 2002. It also provides the growth rate of this investment from 1999 to 2002 and the share of investment in the manufacturing; information; and professional, scientific, and technical industries.[1]

Table 10: U.S. Foreign Direct Investment (FDI) Abroad, 2002; Share by Country, 2002; Change from 1999; and Share by Industry, 2002

	U.S. FDI 2002, (billions U.S. dollars)	Share of total U.S. FDI, 2002	Percentage change 1999-2002	Share in manufacturing	Share in information	Share in professional, scientific, and technical
All countries	$1,521	100.00%	25%	26%	4%	3%
Canada	153	10.03	28	44	1	1
Europe	797	52.4	27	25	5	2
Austria	4	0.26	4	44	[b]	7
Belgium	24	1.59	11	36	4	9
Czech Republic	1	0.09	30	49	[c]	4
Denmark	8	0.51	100	30	3	2
Finland	1	0.09	1	56	1	6
France	44	2.89	2	47	1	3
Germany	65	4.26	21	43	4	3
Greece	1	0.07	39	17	3	[c]
Hungary	2	0.16	2	68	1	3
Ireland	42	2.74	66	32	16	[c]
Italy	28	1.87	59	60	7	2
Luxembourg	36	2.35	61	8	0	0
Netherlands	145	9.56	20	18	2	1
Norway	7	0.48	24	10	1	1
Poland	5	0.31	45	54	6	1

[1]1999 is the earliest year data were available based on the current industry classification system, the North American Industry Classification System (NAICS). Prior to 1999, data are classified under the Standard Industrial Classification (SIC) system.

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	U.S. FDI 2002, (billions U.S. dollars)	Share of total U.S. FDI, 2002	Percentage change 1999-2002	Share in manufacturing	Share in information	Share in professional, scientific, and technical
Portugal	3	0.22	55	23	10	1
Russia	1	0.04	-63	14	23	3
Spain	24	1.57	20	30	2	1
Sweden	19	1.25	79	60	2	1
Switzerland	70	4.61	73	8	[b]	1
Turkey	2	0.12	5	38	1	1
United Kingdom	255	16.79	18	19	8	[c]
Other	8	0.56	20	6	[c]	7
Latin America and other Western Hemisphere	272	17.91	7	17	2	1
South America	75	4.91	-11	29	5	3
Argentina	11	0.74	-40	16	1	1
Brazil	32	2.09	-15	44	2	4
Chile	12	0.76	14	16	4	0
Colombia	4	0.25	-1	33	[c]	1
Ecuador	1	0.07	-3	9	[c]	0
Peru	3	0.21	3	4	1	1
Venezuela	11	0.71	46	21	[c]	8
Other	1	0.08	-36	18	9	1
Central America	81	5.34	10	25	2	1
Costa Rica	2	0.11	7	[c]	[c]	2
Honduras	a	0.01	-47	97	[c]	0
Mexico	58	3.82	56	33	[c]	1
Panama	20	1.32	-40	[c]	[c]	0
Other	1	0.09	5	34	[c]	9
Other Western Hemisphere	117	7.66	20	4	1	0
Barbados	1	0.1	-51	10	[c]	[b]
Bermuda	69	4.53	35	0	0	0
Dominican Republic	1	0.07	16	59	5	0
United Kingdom Islands, Caribbean	29	1.92	-2	3	1	2
Other	16	1.04	30	19	[c]	[b]
Africa	15	0.99	15	8	6	4
Egypt	3	0.19	34	[b]	[c]	0

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	U.S. FDI 2002, (billions U.S. dollars)	Share of total U.S. FDI, 2002	Percentage change 1999-2002	Share in manufacturing	Share in information	Share in professional, scientific, and technical
Nigeria	2	0.12	656	3	0	0
South Africa	3	0.23	-1	35	28	[c]
Other	7	0.45	-4	5	[c]	[c]
Middle East	14	0.93	29	25	13	7
Israel	5	0.34	9	55	[c]	16
Saudi Arabia	4	0.24	11	[c]	[c]	4
United Arab Emirates	1	0.09	159	[c]	0	3
Other	4	0.25	68	[c]	0	0
Asia and Pacific	270	17.75	42	27	2	4
Australia	36	2.39	3	30	1	3
China	10	0.68	9	60	1	1
Hong Kong	36	2.35	57	8	1	3
India	4	0.24	54	38	[b]	4
Indonesia	8	0.5	-10	7	[b]	1
Japan	66	4.32	19	19	4	12
Korea, Republic of	12	0.8	63	52	1	4
Malaysia	9	0.56	38	70	2	[c]
New Zealand	4	0.29	-10	7	6	0
Philippines	4	0.27	16	50	[b]	0
Singapore	61	4.03	197	28	2	[c]
Taiwan	10	0.66	50	38	0	1
Thailand	7	0.45	25	48	1	1
Other	3	0.2	40	7	0	1
Addenda						
Eastern Europe	17	1.09	15	32	4	4
European Union (15)	700	46.02	24	27	6	3
OPEC	31	2.03	31	12	7	4

Source: GAO analysis of Department of Commerce data.

[a]Rounds to less than 1 billion in U.S. foreign direct investment.

[b]Value of FDI in the industry is negative. FDI is negative when total values of inter-company debt or reinvested earnings are negative and greater than the value of the U.S. parent companies' equity in their foreign affiliates for that particular industry.

[c]Data were suppressed or below a certain threshold.

Note: Country-level U.S. foreign direct investment abroad is valued on an historical cost basis. See www.bea.gov for more information.

Industries other than manufacturing; information; and professional, scientific, and technical services; are not shown. These industries include mining, utilities, wholesale trade, depository institutions, finance and insurance, and other industries.

Data in this table include both majority and minority-owned foreign affiliates.

Multinational Companies' Outsourcing to Domestic and Foreign Suppliers

Data on U.S. MNC parent companies' operations in the United States, which lag by a year the data on direct investment, have the potential to determine the extent to which these companies are using offshore goods and services in their production. (See table 11.) The data show that U.S.-based operations have tended to increase their outsourcing over time, particularly in parent companies classified in manufacturing industries. However, these data do not indicate whether the outsourcing is to purchase goods or services or whether domestic or offshore companies are supplying the outsourcing. For example, in the manufacturing sector, the degree to which U.S. multinational companies are using intermediate inputs in their domestic production has risen from under 60 percent in the 1980s to over 70 percent in 2001. Industries such as the information industry and the professional, scientific, and technical industry are outsourcing around 50 percent of their production value. The Bureau of Economic Analysis has reported that it is evaluating the feasibility of preparing estimates of indirect purchases from offshore suppliers; it already collects data on direct purchases from offshore suppliers.

Table 11: Value and Share of Intermediate Purchases (Outsourcing) in U.S. Multinational Companies' U.S.-based Operations, 1999-2001

	Intermediate purchases (dollars in billions)			Share of intermediate purchases in total sales		
	1999	2000	2001	1999	2000	2001
All industries	$4,061	$4,554	$4,921	68%	68%	72%
Mining	21	29	28	53	51	44
Utilities	147	326	461	62	80	82
Manufacturing	1,800	2,034	2,031	66	67	70
Information	216	217	285	47	42	53
Publishing industries	35	34	41	47	41	49
Motion picture and sound recording industries	10	7	10	58	68	86
Broadcasting and telecommunications	150	158	190	45	42	52

(Continued From Previous Page)

	Intermediate purchases (dollars in billions)			Share of intermediate purchases in total sales		
	1999	2000	2001	1999	2000	2001
Broadcasting, cable networks, and program distribution	50	62	58	62	62	69
Telecommunications	100	96	132	40	35	47
Information services and data processing services	21	18	44	50	36	57
Professional, scientific, and technical services	94	101	103	50	50	50
Architectural, engineering, and related services	16	16	18	69	69	69
Computer systems design and related services	47	49	48	53	56	56
Management, scientific, and technical consulting	11	11	10	54	49	45
Advertising and related services	5	7	9	38	38	48
Other	16	18	19	35	36	34

Source: GAO analysis of Department of Commerce data.

Notes: Intermediate purchases are the industries' output minus gross product. Gross product is the portion of the industry's output that reflects its own production, often referred to as the industry's value added. Intermediate purchases (or inputs) are the products that the industry acquires from other industries to produce its output. In these calculations, sales are used to represent output. Output is equal to sales plus change in inventories, so sales may misrepresent output. However, for service industries, inventories will generally be insignificant, and for manufacturing, BEA's own calculations that incorporate inventories are nearly identical to the calculations we present in this table.

Selected industries shown. Wholesale trade, depository institutions, finance and insurance, and other industries not shown. In some of these categories, intermediate purchases may include values of goods sold with further processing. For example, wholesale trade sales and purchases include the value of these goods. This would change the share of intermediate purchases in total value.

Data Limitations and Reliability

BEA data on MNCs and their affiliates have limitations relating to firm and item coverage, timeliness, and frequency. The reliability of the BEA data on MNCs relates both the exemption levels of the annual and benchmark surveys and the collection of additional detail in the benchmark surveys.

To a large extent, the limitations and reliability of these BEA data relate to efforts to restrict respondent burden as required under provisions of the Paperwork Reduction Act of 1995.[2]

With regard to coverage, annual BEA surveys exclude banking activities of both U.S. and foreign MNCs and provide no data on employment by occupation of U.S. MNCs or their foreign affiliates. In addition, because some U.S. MNCs may be foreign owned, there is some duplication between the data on U.S. parent companies and on U.S. affiliates. BEA recommends that data on U.S. parents should not be added to U.S. affiliates to produce U.S. totals.[3] Certain data items relevant to offshoring, such as trade in selected services, are collected only in benchmark years and do not cover all types of services. In addition, in the benchmark survey, data on sales of goods and services by country of destination are not collected for minority-owned affiliates and small majority-owned affiliates.

With regard to timeliness and frequency, BEA data on MNC operations are not available quarterly, and annual data become available with a 2-year lag. For example, when this report was completed, the latest year for which we had annual survey-based detail was 2001. These estimates are subject to revision when the results of benchmark surveys are incorporated. The most recent benchmark data on U.S. MNCs and their foreign affiliates are for 1999. The most recent data on U.S. affiliates of foreign MNCs are for 1997. Results of the 2002 benchmark survey are scheduled to be released later this year.[4]

In 2004, BEA initiated an effort to improve the timeliness of these data. In April 2004, BEA released summary estimates for 2002 of employment, sales, and capital expenditures by U.S. MNCs and their foreign affiliates, and by U.S. affiliates of foreign MNCs. The 2002 estimates to be released

[2]See 44 U.S.C. §§ 3501-3521.

[3]For 2001, for example, BEA reported that U.S. parent companies that were, in turn, controlled by foreign parent companies accounted for 9 percent of the value added in production by all U.S. parents.

[4]See U.S. *Direct Investment Abroad: Final Results from the 1999 Benchmark Survey*, and *Foreign Direct Investment in the United States: Final Results from the 1997 Benchmark Survey.*

later in 2004 will be based on more complete source data and include country and industry detail.[5]

As noted above, the reliability of the BEA data on MNCs relates primarily to the exemption levels of both the annual and benchmark surveys, which, in turn, relate to efforts to restrict respondent burden. There are also several other reliability issues with the MNC data collected by BEA that could impact the data related to offshoring. The exemption levels for the reporting of affiliates in the annual surveys are based on the affiliates' total assets, sales, or net income. For majority-owned affiliates, detailed reporting is required if either of these is greater than $100 million; less detailed reporting is required for majority-owned affiliates with between $30 million and $100 million. For minority-owned affiliates, reporting is required if any of the three items is greater than $30 million. In the benchmark survey, the exemption limit for the short form for majority or minority-owned affiliates is $7 million of total assets, sales, or net income. This also means that smaller affiliates are covered only once every 5 years, so that the trends in the annual data would be misstated to the extent that the trends for smaller affiliates differ from the larger ones.[6] For example, if there were rapid increases in smaller affiliates relating to an increase in offshoring, the annual trends would understate the growth of employment in foreign affiliates of U.S. MNCs.

Other reliability issues relate to the universe frame used by BEA to ensure complete reporting. Although the MNC surveys are mandatory regardless of whether a firm receives a form, the mailing list used by BEA is constructed from publicly available information and not from comprehensive business registers such as those used by BLS and the Census Bureau for their own surveys. Consequently, it is possible that BEA's coverage of small and new firms is limited. In addition, the data reported to BEA are based largely on financial accounting records, and in recent years many of these earlier records have been restated. BEA has not reported that it has been obtaining revised reports from these firms. Although these restatements would impact on the reported profits data, it is not likely that they would affect the employment data.

[5]See April 16, 2004, Department of Commerce/BEA News, *"Summary Estimates of Multinational Companies: Employment, Sales, and Capital Expenditures for 2002."*

[6]In both the benchmark and annual surveys, BEA imputes values for majority-owned affiliates that are below the exemption limits. For minority-owned affiliates, imputation is limited to employment and some other items.

Comments from the Department of Commerce

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for Economics Affairs
Washington, D.C. 20230

AUG 27 2004

Mr. Loren Yager
Director
U.S. Government Accountability Office
International Affairs and Trade
Room 4344
Washington, DC 20548

Dear Mr. Yager:

Thank you for the opportunity to review and comment on the GAO draft report "International Trade: Current Government Data Provide Limited Insight Into Offshoring of Services." In the context of an $11 trillion economy with nearly 140 million workers, the number of U.S. jobs offshored in recent years is relatively small, even by the largest estimates. But we are all troubled when American workers lose their jobs, whether the reason is technological change, business restructuring, an economic slowdown, or offshoring. The most powerful remedy for this problem is a growing economy that can ensure every American who wants a job is able to find one.

As the report notes, even defining "offshoring" presents significant difficulties. In addition, many of our current statistical methods were not designed to measure the phenomenon, as your report carefully documents. These are some of the reasons why existing data were unable to provide immediate and clear guidance on this issue when public discussion first started. Despite these difficulties, Commerce's statistical agencies – the Bureau of the Census and the Bureau of Economic Analysis – are committed to refining their understanding of the issues surrounding offshoring. A dynamic economy requires a dynamic approach to defining and measuring economic data.

While more and better data will help us address this issue, the fundamental questions about offshoring cannot be answered by government surveys alone. Disentangling the causes and the effects of changes in patterns of production, employment, and incomes involves not simply added data collection, but complex analysis that also involves prices, exchange rates, and economic growth in the United States and abroad. GAO's intentions to follow up this study with additional reports on the topic should allow more careful consideration of the analysis – as well as the measurement – of offshoring.

ECONOMICS AND STATISTICS ADMINISTRATION

We appreciate the thoroughness of your review of government data pertaining directly and indirectly to offshoring of services. This report will be a useful reference for people wanting to know more about the causes, extent, and consequences of offshoring. However, the report could benefit from at least a brief discussion of "inshoring" of services and jobs by foreign-based firms. Such an exposition would complement the report as currently written. Moreover, it would place offshoring within the broader context of the benefits of free trade.

Thank you again for the opportunity to review the report. We are providing technical comments on the report separately.

Sincerely,

Kathleen B. Cooper

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Staff Acknowledgments

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