Offshoring (or Offshore Outsourcing) and Job Loss Among U.S. Workers

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January 21, 2011

Congressional Research Service
7-5700
www.crs.gov
RL32292

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

Offshoring, also known as offshore outsourcing, is the term now being used to describe a practice among companies located in the United States of contracting with businesses beyond U.S. borders to perform services that would otherwise have been provided by in-house employees in white-collar occupations (e.g., computer systems designers). The term is equally applicable to U.S. firms offshoring the jobs of blue-collar workers on textile and auto assembly lines, for example, which has been taking place for decades. The extension of offshoring from U.S. manufacturers to service providers has heightened public policy concerns about the extent of job loss and foregone employment opportunities among U.S. workers. This concern is especially pertinent to policymakers because of a national unemployment rate persistently exceeding 9% despite the end of the latest recession in June 2009.

The outsourcing of service sector jobs within the United States was a response to the early 1980s recessions when employers narrowed their focus to the company's core mission and contracted out peripheral activities (e.g., janitorial duties) to other U.S. businesses. The 2001 recession prompted employers to seek further efficiencies by tapping into the global supply of labor. U.S. businesses were able to outsource abroad the jobs of white-collar workers in some service-providing industries as a result of widely disseminated technological advancements that permit low cost, good quality, and high speed transmission of voice and data communications. Events, such as the educational systems of comparatively low-wage nations graduating large supplies of highly educated individuals, also occurred in the intervening years which enhanced the ability of other countries (e.g., India and China) to export services to the United States.

U.S. workers reportedly have become more concerned about the security of their jobs due to increased global economic integration since the early 2000s. Offshore outsourcing, which is one manifestation of globalization, is reported to have adversely affected the employment situations of U.S. white-collar workers in information technology (IT) jobs (e.g., computer systems analysts and software engineers) and IT-enabled jobs (e.g., telemarketers and accounting clerks). Data from the U.S. Bureau of Labor Statistics' Displaced Worker Survey nevertheless suggest that the vulnerability to job loss of white-collar workers preceded the expansion of offshoring from jobs in manufacturing industries to jobs in professional and business services, administrative support services, and financial services industries. In addition, the data on displaced workers that include the latest recession suggest that macroeconomic conditions rather than offshoring have likely accounted for most of the increase in job losses in recent years.

Congress historically has striven to assist workers who lose jobs through no fault of their own, whether the job losses are caused by economy-wide downturns (i.e., cyclical unemployment) or by shifts in the industry composition of jobs performed in the United States (i.e., structural unemployment). Some observers have expressed concern that federal employment policies may not be up to the task of assisting displaced workers who must adjust to the changing mix of U.S. jobs in order to become reemployed. The wide-ranging estimates that have been developed of the number of workers in jobs that are vulnerable to being offshored provide limited guidance to Congress in its deliberations about whether existing programs to assist displaced workers are sufficient or should be expanded.

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Introduction

Offshoring, also known as offshore outsourcing, initially referred to the practice of U.S. businesses contracting with firms beyond U.S. borders to provide services that would otherwise have been performed by in-house employees in white-collar occupations (e.g., computer systems designers and call center operators). However, sending abroad the jobs of blue-collar workers employed on textile and auto assembly lines, for example, has been taking place for decades. The extension of offshoring from U.S. manufacturers to service providers has heightened public policy concerns about the extent of job loss and foregone employment opportunities among U.S. workers. This concern is especially pertinent to policymakers because of a national unemployment rate persistently exceeding 9% despite the end of the latest recession in June 2009.

No regularly collected series currently provides data on the total number of U.S. workers who have lost their jobs due to offshore outsourcing, however. In 2004, the U.S. Bureau of Labor Statistics (BLS) adapted a survey of longlasting large-scale layoffs to ask firms about their movement of work to other nations.[1] Because the survey is limited to companies with at least 50 employees that have laid off workers en masse, it is more likely to capture jobs lost in manufacturing than in service-providing industries.[2]

Moreover, there is some debate about what should be considered offshoring.[3] Many observers appear to define it as the contracting out of work to non-U.S. companies located abroad and to the foreign subsidiaries of U.S. corporations. Others count as well U.S. multinational companies opening facilities overseas and importing some or all of the goods and services produced there to the United States. This conflates foreign direct investment with offshoring, however. Still others consider offshoring to include U.S. firms' purchasing services from outsourcing companies with locations in the United States (be they U.S.- or foreign-owned, such as Accenture and Wipro) that use at least some foreign workers (e.g., persons with H-1B professional specialty visas).

The short- and long-run labor market implications of offshore outsourcing are also unclear. Some observers claimed that the business practice explained much of the "jobless recovery" from the 2001 recession. Others asserted that the historical link between economic growth and job creation remained intact and, therefore, that the labor market would eventually recover from the short-run downturn in the business cycle. The labor market did in fact recover, which provided support for estimates of offshoring alone having accounted for perhaps 3% of net job loss (gross job gains minus gross job losses) early in the 2000s.[4] Some members of the public policy community are again arguing that offshoring is slowing the pace of recovery in the labor market from the 2007-2009 recession.[5]

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[1] U.S. Bureau of Labor Statistics, quarterly news releases on extended mass layoffs are available at http://stats.bls.gov/mls/. For additional information see CRS Report RL30799, *Unemployment Through Layoffs and Offshore Outsourcing*, by Linda Levine

[2] Service industries include firms that provide professional and business services (e.g., legal, accounting, engineering, and computer system design), office administrative services (e.g., billing and recordkeeping), and financial services (e.g., banks, credit card issuers, and mortgage lenders).

[3] For a review of the various meanings in the literature on offshoring see National Academy of Public Administration, *Off-Shoring: An Elusive Phenomenon*, Washington, DC, January 2006.

[4] The 3% figure was developed by William Dickens, Senior Fellow, Economic Studies, The Brookings Institution, and presented during a March 3, 2004 Brookings forum on offshoring.

[5] For example, as reported in *EPI News*, January 2011,"In a year when fewer than one million domestic jobs were (continued...)

While acknowledging that international trade and other forms of globalization (e.g., direct investment)[6] can cause painful dislocations for workers in some industries and occupations, many economists agree that it benefits the nation as a whole by enabling U.S. companies that import goods and services to sell a greater variety of higher quality products to consumers at lower prices, and by expanding markets for U.S. firms as workers in developing countries increase their demand for U.S.-made goods and services. However, some question whether this scenario applies to services offshoring. Milberg et al suggest that companies engaged in services offshoring may be its chief beneficiaries, using the profits gained from lower input costs to increase dividends to shareholders, raise stock prices through buy backs, and undertake more mergers and acquisitions to a greater degree than reinvesting and promoting growth in the U.S. economy.[7] Still others believe that domestic and offshore outsourcing have different implications for U.S. workers because firms operating in the United States are subject to federal and state minimum wage laws as well as other labor standards.[8]

Still others note that the current overseas movement of work is not defined by skill level (for which educational attainment is the commonly used proxy). In other words, the jobs of data-entry clerks and radiologists may be just as susceptible to offshoring. These individuals wonder whether offshoring will result in college graduates facing a dwindling supply of entry-level jobs that have traditionally served as stepping stones to higher skilled and higher paying positions. They also question the adequacy of the government's safety net to meet the needs of already well-educated workers who lose their jobs to offshore outsourcing.[9]

Congress historically has striven to promote U.S. job growth and assist workers who lose jobs through no fault of their own, whether job losses are caused by economy-wide downturns (i.e., cyclical unemployment) or by shifts in the industry composition of jobs performed in the United States (i.e., structural unemployment). The notion that offshoring depresses job growth in the United States appears to underlie support among some policymakers for measures meant to encourage U.S. firms to expand employment domestically rather than abroad.[10] While some members of the public policy community also support the adoption by other countries of trade and labor policies intended to level the playing field for U.S. companies and workers in the international marketplace, still others advocate for limited government intervention as the best means of promoting economic growth.[11] In addition, while most economists (trade and labor

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created, International Economist Robert Scott [of the Economic Policy Institute] calculates that the growth in the U.S. trade deficit in 2010 created 1.4 million jobs overseas in 2010 and that many of those jobs were outsourced by American companies."

[6] For more information on foreign companies investing in the United States, see CRS Report RS21857, *Foreign Direct Investment in the United States: An Economic Analysis*, by James K. Jackson.

[7] William Milberg, Melissa Mahoney, Markus Schneider, and Rudi von Arnim, "Dynamic Gains From U.S. Services Offshoring: A Critical View," in *Global Capitalism Unbound: Winners and Losers from Offshore Outsourcing*, ed. Eva Paus (New York: Palgrave Macmillan), pp. 77-93.

[8] John Sullivan, "Forum Reveals Divisions Over Effects of Exporting U.S. Jobs to Other Countries," *Daily Labor Report*, December 12, 2003.

[9] Alan S. Blinder, "Offshoring: The Next Industrial Revolution?," *Foreign Affairs*, vol. 85, issue 2, March/April 2006, pp. 113-128 (hereinafter cited as Blinder, *Offshoring: The Next Industrial Revolution?*); and Christopher Koch, "Backlash," *CIO Magazine*, September 1, 2003.

[10] See for example CRS Report RL31444, *Firms That Incorporate Abroad for Tax Purposes: Corporate "Inversions" and "Expatriation,"* by Donald J. Marples and CRS Report 97-765, *The Buy American Act: Requiring Government Procurements to Come from Domestic Sources*, by John R. Luckey.

[11] See for example CRS Report RL34091, *Globalization, Worker Insecurity, and Policy Approaches*, by Raymond J. (continued...)

alike) support federal policies to assist those adversely affected by shifts in the nature of U.S. jobs,[12] some are also concerned that existing retraining and income support programs may not be up to the task of helping workers who are displaced by the transfer of work abroad.[13]

This report does not attempt to sort through all the issues raised above, some of which are addressed in the above-referenced CRS reports. Instead, it begins by examining the antecedents of offshore outsourcing. The report next synthesizes the literature on offshoring, focusing on implications for employment in the United States. It closes with an analysis of data since the 1980s from the BLS's Displaced Worker Survey to determine the factors that appear to be associated with increases in the risk of workers being laid off from jobs to which they are unlikely to return.

The Development of Domestic and Offshore Outsourcing

The overseas relocation of manufacturing work predates by decades the recent wave of offshoring service-providing jobs.[14] Major U.S. companies, initially responding to heightened competition from Japanese and European multinational corporations, opened facilities abroad during the 1970s and 1980s that turned out goods formerly produced by comparatively well paid, often unionized U.S. factory workers (e.g., assembly-line workers in the auto industry).

Additionally, U.S. companies reacted to the back-to-back recessions of the early 1980s by focusing on their core missions and contracting out activities that specialized domestic enterprises could perform more efficiently (e.g., janitorial services). Firms also restructured their operations by outsourcing jobs to employees of temporary help agencies, professional and business services establishments (e.g., accounting firms), and independent contractors. U.S. demand for employment (including temporary help) services continued to increase during the 1990s. It is projected to be one of the industries experiencing the most job growth in future years,[15] thus indicating that domestic outsourcing of formerly in-house functions is a permanent reorganization of how work is performed.

The 2001 recession prompted employers to achieve further efficiencies by taking advantage of technological innovations that minimize the importance of physical distance between companies. The now widespread dissemination of technologies that enable relatively low cost, good quality,

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[12] Jagdish Bhagwati and Alan S. Blinder, ed., *Offshoring of American Jobs: What Response From U.S. Economic Policy?* (Cambridge, MA: MIT Press, 2009).

[13] For information on existing worker retraining and income support programs see CRS Report RS22718, *Trade Adjustment Assistance for Workers (TAA) and Reemployment Trade Adjustment Assistance (RTAA)*, by John J. Topoleski, CRS Report RL33687, *The Workforce Investment Act (WIA): Program-by-Program Overview and Funding of Title I Training Programs*, by David H. Bradley, and CRS Report RS22538, *Unemployment Compensation: The Cornerstone of Income Support for Unemployed Workers*, by Julie M. Whittaker.

[14] Jagdish Bhagwati, Arvind Panagariya, and R.N. Srinivasan, "The Muddles Over Outsourcing," *Journal of Economic Perspectives*, vol. 18, no. 4 (Fall 2004), pp. 93-114. (Hereinafter cited as Bhagwati, Panagariya, and Srinivasan, *The Muddles Over Outsourcing*.)

[15] Rose A. Woods, "Industry Output and Employment Projections to 2018," *Monthly Labor Review*, November 2009.

and high speed transmission of voice and data communications has enabled U.S. firms to extend offshoring beyond the factory jobs of blue-collar workers to the service jobs of white-collar workers (e.g., computer programmers and call center operators). Service-providing jobs at risk of being offshored thus are both those held by information technology (IT) workers and IT-enabled workers.

Events during the intervening decade of the 1990s enhanced the ability of other countries to export services—particularly IT services—to the United States and other developed countries (e.g., the United Kingdom). One such event was addressing the so-called Y2K 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; the domestic firms that utilized these programmers reportedly were pleased with the quality of their work.[16]

Another event was the educational systems of low-wage foreign nations graduating an abundant supply of well educated (sometimes English-speaking) individuals.[17] In some cases, the number of persons with IT and accounting skills reportedly exceeded the immediate needs of their local economies (e.g., China, Eastern Europe, India, and the Philippines).[18] With English the language of the computer industry worldwide, IT services can be provided from many non-English-speaking, comparatively low-wage nations (e.g., Argentina, Brazil, Bulgaria, China, the Czech Republic, Hungary, Jordan, Lithuania, Mexico, Slovenia, Russia, and Ukraine).

Current and Future Prospects for Offshoring Jobs

Reasons for Increased Job Insecurity

Concern about job security has grown due in part to increased global economic integration since the early 2000s, when offshoring started spreading from the jobs of blue-collar manufacturing workers to those of white-collar service sector workers.[19] White-collar workers comprise the majority of all U.S. workers and most white-collar workers are employed in the service sector, which accounts for the vast majority of total U.S. employment.[20] In other words, many more people today may believe their jobs are at risk of being transferred overseas.[21]

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[16] Jeffrey Marshall, "Outsourcing Overseas: Savings Road Leads to India," *Financial Executive*, September 2002.

[17] Richard B. Freeman, "The Challenge of the Growing Globalization of Labor Markets to Economic and Social Policy," in *Global Capitalism Unbound: Winners and Losers from Offshore Outsourcing*, ed. Eva Paus (New York: Palgrave Macmillan), pp. 23-39.

[18] Pete Engardio, Aaron Bernstein, and Manjeef Kripalani, "The New Global Job Shift," *Business Week*, February 3, 2003 (hereinafter cited as Engardio, et al., *The New Global Job Shift*.); Larry Greenemeier, "Offshore Outsourcing Grows to Global Proportions—U.S. Companies Extend Their Search Beyond India for IT Help Overseas," *InformationWeek*, February 11, 2002; and Drew Robb, "Offshore Outsourcing Nears Critical Mass—The IT Talent Shortage in the United States is Driving More Companies to Use Overseas Developers," *InformationWeek*, June 12, 2000.

[19]See for example Richard G. Anderson and Charles S. Gascon, *Offshoring, Economic Insecurity, and the Demand for Social Insurance*, Federal Reserve Bank of St. Louis, Working Paper 2008-003A, St. Louis, MO, January 2008; and William Milberg and Deborah Winkler, *Globalization, Offshoring, and Economic Insecurity in Industrialized Countries*, United Nations, Department of Economic and Social Affairs Working Paper 87, New York, NY, November 2009.

[20] According to data from the Current Population Survey, there were 86,006,000 persons employed in white-collar (continued...)

The loss of U.S. jobs to offshoring has led people to ask what field is going to be the next generator of jobs for U.S. workers, and more particularly, of "good" jobs. Because the question is not easily answered, it may exacerbate people's anxiety. The job-generating candidates that have been put forth, such as nanotechnology and biotechnology, may not provide as many new jobs as are thought to be moving abroad; further, life sciences jobs have themselves begun to be sent overseas.[22] Although U.S. workers have been encouraged to upgrade their skills so they can perform the jobs expected to be created by further U.S. technological innovation,[23] an oft-posed question in response to this advice is: in what occupations? The acquisition of IT skills had been strongly advocated for several years; however, these are among the jobs that appear newly at risk of being offshored. If both high-skilled and low-skilled work is vulnerable to offshoring, then one's field of study may be as (or perhaps more) important than the level of education attained.[24]

How Many Jobs Are We Talking About?

People have questioned whether we are seeing the initial leakage of service-providing jobs from the United States, with many more to follow in an expanding range of white-collar occupations. The query has elicited very different replies and produced a wide range of empirical estimates and anecdotal evidence.

Offshoring of white-collar jobs initially involved "simple service work, like processing credit-card receipts, and mind-numbing digital toil, like writing software code."[25] It reportedly has expanded to such functions as processing home loans of U.S. mortgage applicants, interpreting CT scans of U.S. hospital patients, and preparing corporate financial analyses for U.S. investors. According to one survey conducted for several years that covers a wide range of firms by size and industry, employers are increasingly willing to send overseas "highly skilled innovation activities," such as "product design, R&D, engineering services, and software development."[26]

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occupations in 2009. (White-collar occupations are management, professional, sales and office occupations.) These white-collar workers accounted for 61% of the 139,877,000 persons employed in that year.

[21] The possibility that offshoring may create jobs for U.S. workers (e.g., those who develop the contracts for outsourced activities and those who oversee their performance) does not appear to have allayed workers' concern about job security. If the overseas firms and workers who perform these contracted activities subsequently purchase goods and services from U.S. firms and make investments in the United States, their actions also may create jobs in the United States. While potentially leading to job losses in certain industries and occupations, offshoring on balance may not much affect the overall level of U.S. employment. For example, Amiti and Wei ("Does Service Offshoring Lead to Job Losses? Evidence from the United States," in Marshall Reinsdorf and Matthew J. Slaughter (eds) *International Trade in Services and Intangibles in the Era of Globalization*, (Cambridge, MA: National Bureau of Economic Research, 2009)), estimated that offshoring of services by U.S. firms between 1992 and 2000 had little (about 0.4%) or no effect on employment levels at U.S. manufacturers.

[22] Andrew Pollack, "Medical Companies Joining Offshore Trend," *New York Times*, February 24, 2005.

[23] Clare Ansberry, "Why U.S. Manufacturing Won't Die," *Wall Street Journal*, July 3, 2003; and Steve Lohr, "Many New Causes for Old Problem of Jobs Lost Abroad," *New York Times*, February 15, 2004.

[24] Alan S. Blinder, "Offshoring: Big Deal, or Business As Usual?," in *Offshoring of American Jobs: What Response From U.S. Economic Policy?* ed. Jagdish Bhagwati and Alan S. Blinder (Cambridge, MA: MIT Press, 2009), pp. 19-59.

[25] Engardio et al., *The New Global Job Shift*, p. 50.

[26] Duke University Offshoring Research Network and The Conference Board, *2007-2008 ORN Survey Report*, Research Report 1445-09-RR, 2009, pp. 10-11.

Forrester Research, Inc. was the source of perhaps the first and most commonly cited statistics on offshoring. According to its forecast that appears to have been based on discussions with experts, a total of 3.4 million service sector jobs might move abroad by 2015.[27] As shown in **Table 1**, Forrester projected in 2004 that a total of 1.2 million services jobs might be relocated offshore between 2003 and 2008. Of this five-year total, computer occupations might represent one of every five offshored positions. Beyond 2008, Forrester did not provide data in one-year intervals. It did forecast that by 2010 a total of 1.7 million jobs might have gone offshore, for a two-year increase of one-half million. Adding to that Forrester's projected transfer over the next five years of another 1.7 million jobs, a grand total of 3.4 million jobs might move offshore by 2015. However, Bhagwati et al point out that Forrester's forecasted loss of some 300,000 jobs per year on average represents a very small share of the jobs typically created and destroyed each year in the United States.[28]

Table 1. Cumulative Number of U.S. Service Sector Jobs Forecast to Shift Offshore, by Occupational Group

(numbers in thousands)

Occupational Group	2003	2004	2005	2006	2007	2008
Administrative support	146	256	410	475	541	616
Computer	102	143	181	203	228	247
Business and financial operations	30	55	91	105	120	136
Management	3.5	15	34	42	48	64
Sales	11	22	38	47	55	67
Architecture	14	27	46	54	61	70
Legal	6	12	20	23	26	29
Life sciences	0.3	2	4	5.5	6.5	9
Art, design and related	2.5	4.5	8	9	10	11
Total	**315**	**540**	**830**	**960**	**1,100**	**1,200**

Source: Adapted by CRS from John C. McCarthy, *Near-Term Growth of Offshoring Accelerating*, Forrester Research, Inc., May 14, 2004.

Bardhan and Kroll estimated that more than 14 million jobs, representing about 11% of U.S. employment in 2001, have attributes that could allow them to be sent overseas (e.g., no in-person customer servicing required; an IT-enabled work process that can be accomplished via telecommuting; jobs that can be routinized; a fairly wide gap between a job's pay in the United States compared to in a destination country; and a destination country having few language, institutional, and cultural barriers).[29] While these jobs are at risk of being offshored, the number

[27] John C. McCarthy, *Near-Term Growth of Offshoring Accelerating*, Forrester Research, Inc., May 14, 2004.

[28] Bhagwati, Panagariya, and Srinivasan, *The Muddles Over Outsourcing.*

[29] Ashok Deo Bardhan and Cynthia A. Kroll, "The New Wave of Outsourcing," *Fisher Center Research Report*, University of California-Berkeley, fall 2003 (hereinafter cited as Bardhan and Kroll, *The New Wave of Outsourcing*.); and Cynthia A. Kroll, "State and Metropolitan Area Impacts of the Offshore Outsourcing of Business Services, and IT," *Fisher Center Research Report*, University of California-Berkeley, 2005. See also, C. Alan Garner," Offshoring in the Service Sector: Economic Impact and Policy Issues," Federal Reserve Bank of Kansas City's *Economic Review*, third quarter 2004.

represents an outer limit according to the authors. The occupational groups identified as being susceptible to offshoring include office support (e.g., data entry and payroll clerks), auditors and tax preparers, computer programmers and software engineers, medical transcriptionists and paralegals, and technical writers. They are concentrated in such industries as information, finance and insurance, and professional and business services.

A study released by the Brookings Institution built upon the work of Bardhan and Kroll, Forrester Research, and others to develop projections of the share of jobs in 246 metropolitan areas that might be lost due to services offshoring over the 2004-2015 period. The researchers concluded that offshoring may not greatly affect employment in most metropolitan areas, with just 2.2% of the jobs in these 246 areas likely to be offshored between 2004 and 2015.[30] The analysis suggests that five metro areas might lose somewhat more jobs (between 3.1% and 4.3%) by 2015: Boulder, CO; Lowell, MA; San Francisco, CA; San Jose, CA; and Stamford, CT. Another 23 areas might have between 2.6% and 3.0% of their jobs offshored. Those metropolitan areas estimated to be most vulnerable to services offshoring tend to be very populous, having 1 million or more inhabitants (e.g., Dallas, TX; Minneapolis, MN; and Washington, DC). They also tend to be located in the Northeast (e.g., Bergen-Passaic, NJ; Boston, MA; and Hartford, CT) and West (e.g., Denver, CO and San Jose, CA). In addition, they generally have high concentrations of IT jobs (e.g., Boulder, CO; Huntsville, AL; and Lowell, MA) or IT-enabled back-office jobs such as data-entry keyers and telemarketers (e.g., Des Moines, IA; Omaha, NE; and Wilmington, DE).

Jensen and Kletzer developed a different geographically based approach to estimate the share of tradable (offshorable) and nontradable (nonoffshorable) jobs in manufacturing and nonmanufacturing (e.g., agriculture, mining, construction, services) industries. About 9.4% of total U.S. employment in 2000 was found to be in offshorable industries, according to one of their estimates.[31] More specifically, 13.7% of employment in professional services industries might be vulnerable to offshoring compared to 12.4% of employment in manufacturing industries.

Jensen and Kletzer examined the data by occupation as well. They estimated that at least 60% of workers in the following occupations may be susceptible to offshoring: computer and mathematical; legal; life, physical, and social sciences; business and financial operations; and architecture and engineering. Jensen and Kletzer suggested that because white-collar occupations often involve potentially offshorable activities and they may be shed by nontradable industries, the industry results in the preceding paragraph might understate the percentage of workers at risk of having their jobs offshored.[32]

BLS undertook an examination of the vulnerability to offshoring of service-providing occupations in particular. Out of 515 occupations, BLS estimated that 160 may be susceptible to transfer offshore. More than one-half of these offshorable occupations are in various professional and technical categories, with virtually all computer and mathematical science occupations being to some degree vulnerable to offshoring. In 2007, there were some 30 million jobs in these 160 offshorable service-providing occupations; they accounted for over one-fifth of total employment

[30] Robert Atkinson and Howard Wial, *The Implications of Service Offshoring for Metropolitan Economies*, The Brookings Institution Metropolitan Policy Program, February 2007.

[31] J. Bradford Jensen and Lori G. Kletzer, "Tradable Services: Understanding the Scope and Impact of Services Offshoring," in *Offshoring White-Collar Work—Issues and Implications*, ed. Lael Brainard and Susan M. Collins (Washington, DC: The Brookings Institution, 2005), pp. 75-116. (Hereinafter cited as Jensen and Kletzer, *Tradable Services: Understanding the Scope and Impact of Services Offshoring*.)

[32] Jensen and Kletzer, *Tradable Services: Understanding the Scope and Impact of Services Offshoring.*

in that year. Despite their vulnerability to being offshored, employment in these occupations grew slightly faster than overall service-providing employment in the 2001-2007 period. In addition, wage growth was comparatively greater in these offshorable occupations between 2001 and 2007. However, the 33 service-providing occupations found to be most susceptible to offshoring experienced below average employment and wage growth during the period. The skills and education of this most vulnerable group range widely:

> Fifteen are office and administrative support occupations [e.g., bookkeeping, accounting, and auditing clerks], with relatively low education or training requirements. Another 11 are professional and related occupations [e.g., computer operators, programmers, and support specialists], which generally possess higher educational requirements.[33]

Blinder also took an occupational approach and created an index of offshorability for hundreds of blue-collar, white-collar, and service occupations based on the degree to which the jobs required persons to be located physically close to a U.S. work location. He estimated that a majority of occupations (533) and employed persons (92.6 million in 2004) are *non*offshorable—that is, they are completely immune to offshoring (see category IV in **Table 2**). Conversely, Blinder estimated that a minority of U.S. occupations (about 200) and workers (almost 30 million) fall in the highly offshorable and offshorable categories. He considered the two categories, which included 22.2% of U.S. workers in 2004, too conservative an estimate of potentially offshorable jobs in light of technological and other advances expected to arise in the coming years. Blinder added to the conservative estimate those occupations in category III he ranked as most susceptible to being offshored to create a moderate estimate totaling 25.6% of all U.S. workers. His aggressive estimate includes all of category III and totals almost 40 million workers or 29.0% of all U.S. jobs. Blinder goes on to say that "Contrary to conventional wisdom, the more offshorable occupations are not low-end jobs, whether measured by wages or by education. The correlation between skill and offshorability is almost zero."[34] This conclusion is supported by the above-described research of BLS economists.

Blinder and Krueger used three alternative survey methods to try to determine how many of the jobs that workers held in 2008 were vulnerable to being moved overseas. All three methods found that about one in four U.S. jobs may be potentially offshorable.[35] Their analysis suggests that offshorability is especially prevalent in factory and administrative support jobs, and on an industry basis, in manufacturing, finance, information, and professional services.

[33] Roger J. Moncarz, Michael G. Wolf, and Benjamin Wright, "Service-providing Occupations, Offshoring, and the Labor Market," *Monthly Labor Review*, December 2008, pp. 76-77.

[34] Alan S. Blinder, "How Many US Jobs Might be Offshorable?," *World Economics*, vol. 10, no. 2 (April-June 2009), p. 69.

[35] Alan S. Blinder and Alan B. Krueger, *Alternative Measures of Offshorability: A Survey Approach*, National Bureau of Economic Research, Working Paper 15287, Cambridge, MA, August 2009.

Table 2. Occupational Categories by Degree of Offshorability

		Occupations		
Category	**Degree of Offshorability**	**Examples**	**Number of Occupations**	**2004 Employment (in millions)**
I	Highly offshorable	computer programmers and systems analysts; telemarketers; bookkeeping, accounting, and auditing clerks	59	8.2
II	Offshorable	computer software engineers; accountants; machine operators, team assemblers and production worker helpers; bill and account collectors	151	20.7
III	Hard to offshore	general and operations managers; stock clerks and order fillers; shipping, receiving, and traffic clerks	74	8.8
IV	Non-offshorable	business operations specialists; health and safety engineers; music directors; photographers; postal service mail sorters	533	92.6
Total			**817**	**130.0**

Source: Alan S. Blinder, "How Many US Jobs Might be Offshorable?," *World Economics*, vol. 10, no. 2 (April-June 2009).

There are others who believe fears about services offshoring have been overblown. One explanation for why perhaps only one-tenth of the potential market for offshoring global IT and business processes work was realized through 2006 is that "executives have a lot to learn about using offshore talent to boost productivity.... The management challenge will grow more urgent as rising global salaries dissipate the easy cost gains from offshore outsourcing."[36] Some, therefore, are cautious about the future pace of moving abroad potentially vulnerable U.S. jobs. For example, Deloitte Consulting concluded that

> outsourcing will lose "holy grail" status. In the future, companies will not outsource because it is the latest management fad.... Organizations will carefully define core, strategic, and "thought-leadership" functions and will keep those inhouse to retain knowledge, confidentiality, and control over key functions. Some organizations will decide to outsource only short-term.... Many organizations will also engage in large scale re-insourcing thereby further eroding the outsourcing market.[37]

Dell, for example, returned some help services to the United States due to customer dissatisfaction.[38] Other U.S. firms reportedly had to employ IT service providers located in the United States to fix software produced abroad.[39]

[36] Peter Engardio, "The Future of Outsourcing," *Business Week*, January 30, 2006, p. 58.

[37] Deloitte Consulting, *Calling A Change in the Outsourcing Market: The Realities for the World's Largest Organizations*, April 2005, p. 25.

[38] Khozem Merchant, "Tough Call for the US Cost-Cutters," *Financial Times*, December 22, 2003.

[39] Olga Kharif, "The Hidden Costs of IT Outsourcing," *BusinessWeek online*, October 27, 2003; and Ryan B. Patrick, "Signs of Offshore Backlash Growing," *Computerworld*, January 8, 2004.

Some employers may have overestimated the cost savings from outsourcing because a service's purchase price is affected by more than inter-country wage differentials, such as travel and managerial oversight costs. META Group noted that some firms estimate labor cost savings by making a "person-to-person comparison (e.g., a full-time equivalent in India will cost 40% less)" and ignoring "hidden costs and differences in operating models" that may reduce savings.[40]

At least two factors that could have put the brakes on offshoring have failed to do so, however. Offshore providers of IT services, for example, were able to allay U.S. firms' fears about security shortly after the terrorist attacks of September 11, 2001.[41] Despite 9/11, U.S. airline carriers have continued their "increased outsourcing of maintenance jobs overseas—to places like Singapore, Brazil, the Dominican Republic—not only for international aircraft but even for planes on purely domestic routes."[42] In addition, concern periodically has arisen among U.S. outsourcers over unrest in some regions (e.g., disputes between India and Pakistan as well as in the Middle East). Global providers of software services have responded by placing more of their clients' work in a variety of countries, including the "near-shore" markets of Canada and Mexico.[43] Some individual U.S. employers also reportedly believe that moving work to nearby Canada, which has fewer cultural differences with the United States than India or the Philippines for example, likely reduces their customers' potential antipathy to offshoring.[44]

In summary, empirical analyses have produced a wide range of estimates of how many U.S. workers might be displaced because their jobs have characteristics that make them susceptible to offshoring. Because these estimates are so different in magnitude, they provide little guidance to Congress about whether existing worker adjustment and retraining programs are sufficient or should be expanded in some way (e.g., increase appropriations for federal retraining programs and extend the social safety net to all displaced workers, not just those who lose their jobs to foreign competition),[45] and if the latter, by when the expansion should take place. The studies do agree, however, that potential job losses are likely to be concentrated in particular occupations and industries because offshoring appears to change the composition of goods produced and services provided in the United States. Such restructuring of the labor market further suggests that some of the workers displaced by offshoring will have to change fields to obtain new jobs, which could prolong their period of unemployment.[46]

Trends in Worker Displacement

As the United States transitioned during the 20th century from an agrarian to an industrial economy and then to a service economy, the evolving structure of the labor market has fueled workers' concern about job loss. The data presented below from the Displaced Worker Survey (DWS), which was begun by the BLS in the early 1980s, support the impression that the

[40] "Offshore Outsourcing Cost-Savings Perceptions Differ from Realities," *Business Wire*, January 13, 2004.

[41] Julie Gallagher, "Redefining the Business Case for Offshore Outsourcing," *Insurance & Technology*, April 2002.

[42] Al Kamen, "In the Loop," *Washington Post*, February 27, 2004, p. A21.

[43] "Gartner Dataquest Says IT Outsourcing Industry to Advance with Increased Demand in Offshore Outsourcing," *Business Wire*, January 30, 2003.

[44] Ian Austen, "Canada, the Closer Country for Outsourcing Work," *New York Times*, November 30, 2004.

[45] Alan S. Blinder, "Offshoring: Big Deal, or Business As Usual?," in *Offshoring of American Jobs: What Response From U.S. Economic Policy?* ed. Jagdish Bhagwati and Alan S. Blinder (Cambridge, MA: MIT Press, 2009), pp. 19-59.

[46] Organisation for Economic Co-operation and Development, *Globalisation, Jobs and Wages*, Policy Brief, June 2007.

composition of jobs in the U.S. labor market has changed. Generally speaking, the DWS data show that white-collar workers in some service-providing industries have become more vulnerable within the past few decades to permanently losing their jobs. But, the timing of white-collar workers' increased risk of displacement preceded the extension of offshoring from manufacturing to service-providing industries.[47] (See the box below for a description of the displaced worker population.)

In addition, prevailing macroeconomic conditions rather than offshoring have likely accounted for most of the recent runup in unemployment given the widespread increase in displacement. Although U.S. companies have conducted a dwindling number of mass layoffs since the recession's end in June 2009,[48] the national unemployment rate has been above 9% for more than a year into the slow-paced recovery from the 2007-2009 recession.[49]

Displaced workers are persons at least 20 years old who had worked for their employers at least three years before losing their jobs because of plant or company closings and moves, insufficient work for them to do, or abolishment of their positions and shifts. The definition is intended to identify workers who had some attachment to their employers, were terminated through no fault of their own, and who did not expect to be recalled to their former jobs.

Source: U.S. Bureau of Labor Statistics, *Worker Displacement: 2007-2009*, August 26, 2010.

1981-2000

The risk of job loss among manufacturing industry workers improved from 1981-1982 to 1991-1992, two comparable periods in that they included recessions. As the economy recovered from the severe 1981-1982 recession, the chance of losing a manufacturing job subsequently decreased. During the milder 1990-1991 recession, the displacement rate[50] among manufacturing workers rose to 7.1% but did not reach its 1981-1982 level of 8.2%. (See top panel of **Table 3**.)

In contrast, the job security of most other workers worsened or stayed about the same over the 10-year period. The incidence of permanent layoffs in finance, insurance, and real estate quadrupled to 5.5%. The displacement rate also climbed (but less steeply) in the construction, wholesale and retail trade, and services industries. But, none of the service sector industries was close to the risk of job loss in 1991-1992 of construction (8.4%) or manufacturing (7.1%).

[47] Little attention typically is paid to the displacement of workers in such service occupations as cooks and servers, cleaners and maintenance workers, hairdressers and child care workers, and police and firefighters. Workers in service occupations are generally less likely than blue-collar and white-collar workers to be affected by offshoring because many of their jobs require face-to-face interaction with customers.

[48] U.S. Bureau of Labor Statistics, *Extended Mass Layoffs—Third Quarter 2010*, November 12, 2010.

[49] For information on the comparative pace of recovery in the labor market see CRS Report R41434, *Job Growth During the Recovery*, by Linda Levine.

[50] The displacement rate is the number of displaced workers in a particular group divided by the tenure-adjusted, two-year average estimate of employment for that same group.

Table 3. Displacement Rates by Industry and Occupation of Lost Job, 1981-1982 and 1991-1992

Characteristic	1981-1982	1991-1992
All long-tenured workers age 20 and older	3.9	3.9
Industry		
Mining	13.6	7.4
Construction	7.6	8.4
Manufacturing	8.2	7.1
Transportation and public utilities	4.1	4.4
Wholesale and retail trade	3.7	4.7
Finance, insurance, and real estate	1.4	5.5
Services	2.3	2.9
Government	1.2	1.1
Agriculture	5.4	3.8
Occupation		
White-collar workers	2.6	3.7
Managerial and professional specialty	2.1	3.6
—Executive, administrative, and managerial	2.5	4.8
—Professional specialty	1.7	2.4
Technical, sales, and administrative support	3.0	3.7
—Technicians and related support	3.3	3.7
—Sales occupations	3.7	3.6
—Administrative support, including clerical	2.5	3.8
Blue-collar workers	7.3	5.3
Service workers	2.0	2.1
Farming, forestry, and fishing	0.9	1.4

Source: Ryan T. Helwig, "Worker Displacement in 1999-2000," *Monthly Labor Review*, June 2004.

The shift in the pattern of displacement toward service-providing industries translated into a change in displacement's occupational distribution in light of the predominance of blue-collar workers at manufacturers and white-collar workers at service providers. The risk of permanent job loss was lower among blue-collar workers in the 1991-1992 period (5.3%) compared to the 1981-1982 period. At the same time, it rose to 3.7% from 2.6% among white-collar workers. (See bottom panel of **Table 3**.)

White-collar workers whose risk of displacement increased to the greatest extent were employed in managerial occupations and in administrative support (including clerical) occupations. The chance of job loss among executives, administrators, and managers almost doubled to 4.8%. The increased displacement of those who themselves manage companies is reported to have had a widespread psychological impact at the time because "When people on higher rungs of the

corporate ladder lose their jobs, it throws fear into the hearts of thousands of workers" and represents "a corporate vote of no confidence in any worker's job security."[51] Among those in administrative support jobs, the displacement rate rose by half from 2.5% to 3.8%. The likelihood of permanent layoffs increased somewhat, to 2.4%, among professionals as well. These data lend support to the widespread belief of white-collar workers that their jobs have become less secure, but the change pre-dated any noticeable offshoring of service sector jobs.

Displacement rates fell virtually across the board during the economic expansion of the 1990s. When examined against a fairly comparable period 10 years earlier, the probability of job loss was lower at the end of the decade than at its beginning. (See **Table 4**.)

Table 4. Displacement Rates by Industry and Occupation of Lost Job, 1989-1990 and 1999-2000

Characteristic	1989-1990	1999-2000
All long-tenured workers age 20 and older	3.1	2.5
Industry		
Mining	10.0	7.5
Construction	5.9	3.3
Manufacturing	5.0	4.7
Transportation and public utilities	3.6	2.7
Wholesale and retail trade	3.9	3.1
Finance, insurance, and real estate	3.5	3.7
Services	2.1	2.5
Government	0.4	0.5
Agriculture	3.2	1.7
Occupation		
White-collar workers	2.7	2.4
Managerial and professional specialty	2.3	2.1
—Executive, administrative, and managerial	3.4	2.7
—Professional specialty	1.3	1.6
Technical, sales, and administrative support	3.1	2.7
—Technicians and related support	3.2	2.7
—Sales occupations	2.9	2.9
—Administration support, including clerical	3.2	2.6
Blue-collar workers	4.5	3.3
Service workers	1.6	1.4
Farming, forestry, and fishing	1.5	0.5

Source: Ryan T. Helwig, "Worker Displacement in 1999-2000," *Monthly Labor Review*, June 2004.

[51] Perri Capell, "Endangered Middle Managers," *American Demographics*, January 1992, p. 37.

For the first time since the DWS data were collected, the risk of job loss among employees of the services industry group (e.g., telecommunications firms and providers of computer services to other businesses) rose to the point that it equaled the average displacement rate in 1999-2000. Bardhan and Kroll suggest that any offshoring of services that occurred at that time "can be seen as spinoffs from the US because of tight labor markets, rather than job transfers out of the US in search of lower labor costs."[52] The services offshoring that continued to occur during the subsequent 2001 recession and sluggish recovery when unemployment in the United States was more pervasive than during much of the 1990s may have "involve[d] the transfer of US jobs and occupations to other countries," however.

2001-2008

The initial years of the 2000s saw an increase in the incidence of worker displacement from the prior decade shown in Table 4, which was characterized by a booming economy. In 2001-2002, which includes the 2001 recession, the displacement rate was 4.3% (see Table 5). The displacement rate clearly exhibits a strong countercyclical pattern.

The risk of permanent job loss lessened through mid-decade as the labor market belatedly responded to the economic recovery from the 2001 recession. As shown in Table 5, the risk of job loss had climbed to 4.1% by 2007-2008, which includes the first year of the 2007-2009 recession. This figure about equals the displacement rate recorded during the prior recession of the decade.

As shown in **Table 5**, the information industry[53] recorded the highest rate of permanent job loss, at 9.6%, in the 2001-2002 period.[54] Another service-providing industry with a well above-average displacement rate was professional and business services, at 7.1%; some IT-intensive industries (e.g., computer systems design and related services as well as architectural and engineering services) lie within this industry group. The elevated rates of the two industries coincided with the bursting of the IT-telecom bubble. The incidence of displacement in the cyclically sensitive manufacturing rose as well to 8.7%, putting it between the two services industries. Jensen and Kletzer estimated a somewhat higher job loss rate among workers in offshorable services compared to manufacturing industries during the early years of the decade, but they note that the difference may have been caused by the dot.com bust.[55]

As the economy recovered from the 2001 recession, the risk of job loss abated across nearly all industries through mid-decade. Kletzer and Jensen, in an update to their earlier study, estimated that non-offshorable manufacturing industries had a higher displacement rate than offshorable manufacturing industries from 2003 to mid-decade. The same pattern was estimated for non-offshorable compared to offshorable services industries (i.e., information, financial, and professional and business services). Within the services industries, the displacement rate was higher in offshorable professional and business services industries compared to nonoffshorable professional and business services industries. The authors note that professional and business

[52] Bardhan and Kroll, *The New Wave of Outsourcing*, p. 3.

[53] The information industry includes wired telecommunications carriers, radio and television broadcasting and cable, motion pictures and video, newspapers, and publishing.

[54] Because new industry and occupation classification systems were introduced, the DWS data since 2000 is not directly comparable with industry and occupation data for earlier years.

[55] Jensen and Kletzer, *Tradable Services: Understanding the Scope and Impact of Services Offshoring.*

services nonetheless had a much lower rate of displacement compared to offshorable manufacturing industries.[56]

During the first year of the 2007-2009 recession, the displacement rate climbed in almost every industry. Displacement among workers in the construction industry quadrupled from its level in 2005-2006. At 9.1%, employees of the construction industry had the highest likelihood of being laid off. The financial activities industry, which traditionally has not been especially sensitive to fluctuations in the business cycle, reported almost a doubling of its displacement rate to 6.4% between 2005-2006 and 2007-2008. The pattern in both these industries likely reflects a unique feature of the 2007-2009 recession, namely, it is the only recession of the postwar period precipitated by interwoven crises in the financial and housing markets. Although the risk of job loss in traditionally cyclically sensitive manufacturing did not increase as greatly, the industry recorded the second highest at 6.6%.

The likelihood of losing a job fell across most occupations between the two recessions of the 2000s. During the 2001 recession, however, factory workers (i.e., those in production jobs) had the highest incidence of permanent job loss at 8.7%. The displacement rate of this cyclically sensitive occupation was the second highest during the first year of the 2007-2009 recession at 6.6%.

While the risk of job loss was about average among workers in construction occupations (e.g., carpenters, masons, roofers, and electricians) in the first recession of the decade, it was the highest of any occupation in 2007-2008 at 8.1%. Workers in construction jobs experienced the most substantial increase in risk of job loss between 2005-2006 and 2007-2008, more than quadrupling from 1.9%. This pattern largely reflects the bursting of the housing bubble that characterized the first half of the 2000s.[57] Given the attributes of construction jobs, offshoring could not have been a contributing factor to the occupation's increased likelihood of displacement.

[56] J. Bradford Jensen and Lori G. Kletzer, *"Fear" and Offshoring: The Scope and Potential Impact of Imports and Exports of Services*, Peterson Institute for International Economics, Policy Brief 08-1, Washington, DC, January 2008.

[57] For an estimate of the number of residential construction and related jobs supported by bubble-related demand in 2005, and the number of jobs that might have existed in 2008 had the bubble not occurred, see Kathryn J. Byun, "The U.S. Housing Bubble and Bust: Impacts on Employment," *Monthly Labor Review*, December 2010, pp. 3-17.

Table 5. Displacement Rates by Industry and Occupation of Lost Job, 2001-2002 to 2007-2008

Characteristic	2001-2002	2003-2004	2005-2006	2007-2008
All long-tenured workers aged 20 and older	4.3	3.1	2.7	4.1
Industry				
Mining	2.3	5.5	1.6	3.2
Construction	4.1	4.6	2.5	9.1
Manufacturing	8.7	6.4	5.1	6.6
Transportation and public utilities	3.9	3.8	2.8	4.0
Wholesale and retail trade	4.8	3.2	2.7	4.7
Financial activities	3.4	4.0	3.7	6.4
Information	9.6	5.0	5.4	4.7
Professional and business services	7.1	4.1	3.0	5.2
Education and health services	2.0	1.4	1.4	2.3
Leisure and hospitality	2.6	2.4	3.4	3.3
Other services	2.8	1.9	3.6	3.0
Government	0.6	0.7	0.5	0.8
Agriculture	4.1	1.2	1.8	2.5
Occupation				
Management, professional, and related occupations	3.9	2.9	2.2	3.3
—Management, business, and financial operations occupations	5.2	4.0	2.8	4.9
—Professional and related occupations	3.1	2.2	1.9	2.3
Sales and office occupations	4.4	3.2	2.9	4.5
—Sales and related occupations	5.2	3.4	3.2	4.9
—Office and administrative support	3.9	3.0	2.7	4.3
Natural resources, construction, and maintenance occupations	5.0	3.8	2.5	6.3
—Farming, fishing, and forestry	4.2	4.0	3.3	2.4
—Construction and extraction occupations	4.4	4.0	1.9	8.1
—Installation, maintenance, and repair	5.8	4.1	3.2	4.4
Production, transportation, and material moving occupations	6.9	4.6	4.5	5.6
—Production occupations	8.7	5.3	5.9	6.6
—Transportation and material moving	4.4	3.5	2.8	4.4
Service occupations	2.2	1.6	1.6	2.7

Source: Unpublished data from the U.S. Bureau of Labor Statistics, Displaced Worker Survey.

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