Research Report

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The New Wave of Outsourcing

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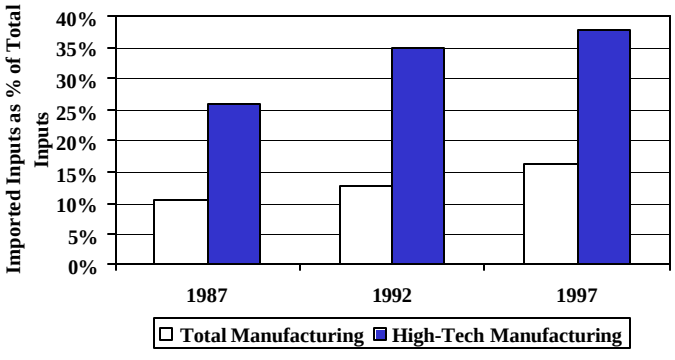
There is growing apprehension among business leaders, economists, and ordinary Americans that we are witnessing what may well be the largest out-migration of nonmanufacturing jobs in the history of the US economy. This concern has been fueled by newspaper reports and economic news highlighting the layoffs of thousands of people in high-tech, software and service sector companies in the US, and the practically simultaneous, seemingly coordinated establishment of offices and development centers, most often in India, resulting in hiring of thousands of new employees in that country. For example, tabulation by the authors of reports in Indian newspapers and business journals for the month of July 2003 alone gave an estimate of 25,000 to 30,000 new outsourcing related jobs announced by US firms. In the same month, there were 2,087 mass layoff actions carried out by US employers resulting in a loss of 226,435 jobs.[1] The jobs being created in India and elsewhere are in a wide range of services sectors such as geographic information systems services for insurance companies, stock market research for financial firms, medical transcription services, legal online database research, and data analysis for consulting firms, in addition to customer service call centers, payroll and other back-office related activities.

In this short overview we address the following questions: Have jobs been transplanted from the US? How significant is this phenomenon and how sustainable is it? What is the potential impact on future job creation and wage inequality in the US? How is it likely to impact the real estate sector?

The First Wave: Outsourcing of Manufacturing

Between 1987 and 1997, the share of imports in inputs used in US manufacturing increased from 10.5% to 16.2% and in high-tech manufacturing, such as computers and electronics, from 26 to 38% (See Figure 1). These data continue a long history of foreign outsourcing in US manufacturing and the associated loss of blue-collar jobs in many industrial sectors. Indeed, one of the attributes of the modern stage of globalization for advanced industrialized countries is the offshore production of intermediate inputs, usually in low-cost developing countries. The motivation, on the part of US firms, has been driven by the low costs of manufacturing abroad, primarily in the East Asian countries, such as Taiwan, China, South Korea, Malaysia and others, as well as the availability of skilled labor, the promotion of a business-friendly environment and the existence of production and supply

Figure 1
Imported Inputs as a Share of Total Inputs
Total Manufacturing and High-Tech Sectors



Source: Bardhan, Jaffee and Kroll, *Globalization and a High-Tech Economy*, forthcoming.

[1] Bureau of Labor Statistics.

networks in those countries. At the same time, the higher value-added, better paying jobs in management, finance, marketing, research and development have been retained in the home country.

Considerable research has been carried out on the phenomenon of outsourcing in manufacturing and many of the economic insights and conclusions are applicable to Business Process/Services Outsourcing (BPO/BSO) as well. As pointed out by Bardhan, Jaffee and Kroll in their forthcoming book, *Globalization and a High-Tech Economy*, the outsourcing of parts of the supply chain of manufacturing has resulted in a shift of demand, and hence jobs, from blue-collar to white-collar and from manufacturing to services, increased wage inequality between blue-collar and white-collar jobs, and increased profitability of US firms. They also note that recessionary downturns seem to prod firms into making major restructuring moves, and that a recession might be the mother of innovation and dynamism.[2]

The New Wave: Outsourcing of White Collar Jobs

The software sector was the first service sector to transfer significant activity to foreign locations, leading to the creation of a critical mass of expertise and resources in concentrated locales, such as the city of Bangalore in India. The rapid dissemination of the Internet, the transnational networks set up by immigrants in the US, and liberalization of emerging market economies created the conditions for a major burst of outsourcing in the 1990s, in hitherto primarily domestic segments of non-manufacturing sectors, such as telecommunications, retail trade, and finance (including banking and insurance). While the "push" factors for business process outsourcing (BPO) or business services outsourcing (BSO) are similar to those for manufacturing and are largely cost-driven, the "pull" factors and attributes of countries and economies providing outsourced services are somewhat different. In addition to cost advantages similar to those offered by the manufacturing centers of East Asia, the ongoing outsourcing of business services jobs to India, Malaysia, Philippines and South Africa among others is also due to the widespread acceptance of English as a medium of education, business and communication in these countries; a common accounting and legal system (at least in some of the countries), the latter based on the common law structure of UK and US; general institutional compatibility and adaptability; the time-differential determined by geographical location leading to a 24/7 capability and overnight turnaround time; simpler logistics than in manufacturing, and a steady and copious supply of technically savvy graduates.

India's information technology enabled services (ITES) sector, the primary destination of business services outsourcing from Western countries, now directly employs over 200,000 people with around $2.3 billion in exports, of which over 70% are to the US. While the sector is still small it is growing at a rate of 60% per annum. The software services sector overall has exports of approximately $9.5 billion, of which over $7 billion are to the US[3]. India's National Association of Software and Service Companies (NASSCOM), the primary trade organization of all IT related firms, forecasts that exports would hit the $50 billion mark in the next five years. By that time, the business process/ business services outsourcing segment would employ over 2 million people, and the total exports of the IT industry would support over 8 million jobs.

The growth of the IT sector in general and the BPO segment in particular is not confined to India. Firms involved with software services outsourcing and BPO are rapidly gaining ground in the Philippines and Malaysia (call centers and other back-office BPO), China (embedded software, financial firm back-office BPO, some application development), Russia and Israel (high-end customized software and expert systems), and Ireland (packaged software and product development). While it is difficult to estimate the exact number of jobs created in these countries in these sectors, let alone those transplanted and created by US firms, tentative evidence collected by the authors suggests that business process outsourcing and software outsourcing have together generated, at the very least, over a million jobs in the 1990s and hundreds of thousands more since the turn of the century.

BPO/BSO Impact on the US Economy

The second half of the 1990s was a time of high employment and robust growth for the software-related sectors, as well as the services sector at large. The job creation from outsourcing in countries around the world dur-

[2] Most economists believe, however, that outsourcing should not lead to job loss in the long run but to a reshuffling of jobs and a new composition of occupations in the economy. This recovery of jobs lost to outsourcing still requires major changes in the industrial and employment structure of the economy.

[3] National Association of Software and Service Companies, India, at www.nasscom.org .

ing this period can be seen as spin-offs from the US because of tight labor markets, rather than job transfers out of the US in search of lower labor costs. However, the recent downturn and the continuing jobless recovery have legitimately given rise to the question whether services outsourcing involves the transfer of US jobs and occupations to other countries. Table 1 shows employment data for those sectors of the economy that felt a disproportionate impact of outsourcing. These include the computers and electronic products manufacturing sector (including its sub-sector, semiconductors and electronic components); professional and business services sectors such as business support services, which include call centers, and computer systems design services; and information industries such as telecommunications, software publishing, and Internet services providers. Between first quarter 2001 and second quarter 2003, i.e. in the course of just over 2 years, the employment in these sectors has plummeted by 15.5% in the US as a whole, and 21% in the state of California, corresponding to a job loss of over 1 million and 200,000 respectively in these sectors alone.

Table 1
Employment Change in Industries At Risk to Outsourcing*

	US Employment (Thousands)			California Employment (Thousands)		
Industry Name	**Q1-2001**	**Q2-2003**	**% Change 2001-2003**	**Q1-2001**	**Q2-2003**	**% Change 2001-2003**
Nonmanufacturing Sectors						
Software Publishers (except Internet)	276.1	247.9	-10.2%	55.8	47.1	-15.6%
Internet Publishing and Broadcasting	50.6	33.7	-33.4%			
Telecommunications	1323.4	1138.9	-13.9%	150.5	123.5	-18.0%
ISPs, Search Portals, and Data Processing	516.0	433.2	-16.0%	60.2	48.0	-20.2
Data Processing and Rel. Services	320.9	292.2	-8.9%	24.4	18.9	-22.8%
Accounting, Bookkeeping & Payroll	976.3	875.7	-10.3%	108.8	103.1	-5.2%
Payroll Services	158.9	124.6	-21.6%			
Computer Systems Design and Rel.	1341.2	1148.1	-14.4%	218.2	163.2	-25.2%
Business Support Services	784.4	746.2	-4.9%	56.2	57.2	1.7%
Telephone Call Centers	406.2	363.2	-10.6%			
Telephone Answering Services	54.8	50.9	-7.1%			
Telemarketing Bureaus	351.4	312.3	-11.1%			
Manufacturing Sectors						
Computer and Electronic Products	1862.1	1415.9	-24.0%	443.1	336.8	-24.0%
Semiconductors and Electronic Components	308.7	237.9	-22.9%	162.1	115.2	-29.0%
Subtotal: At-Risk Industries	6853.9	5791.8	-15.5%	980.8	774.6	-21.0%
All Nonfarm	131,073.0	130,515.3	-0.4%	14,608.2	14,491.8	-0.8%
Manufacturing	16,932.3	14,757.7	-12.8%	1,849.0	1,587.2	-14.2%
Nonmanufacturing	114,141.3	115,757.7	1.4%	12,759.2	12,904.6	1.1%

* The authors have chosen those industries which, in our judgment, have been most often noted as outsourcing to India and East Asia. These industries have a substantial share of the occupations discussed in the next section.
Source: Authors from US Bureau of Labor Statistics data.

Figure 2
Attributes of Jobs Outsourced

- No Face-to-Face Customer Servicing Requirement
- High Information Content
- Work Process is Telecommutable and Internet Enabled
- High Wage Differential with Similar Occupation in Destination Country
- Low Setup Barriers
- Low Social Networking Requirement

Table 2
Average Salaries of Programmers

Country	Salary Range
Poland and Hungary	$4,800 to $8,000
India	$5,880 to $11,000
Philippines	$6,564
Malaysia	$7,200
Russian Federation	$5,000 to $7,500
China	$8,952
Canada	$28,174
Ireland	$23,000 to $34,000
Israel	$15,000 to $38,000
USA	$60,000 to $80,000

Source: *CIO* magazine, November 2002, Smart Access Survey, Merrill Lynch.

Indisputably, most of the job loss is due to the technology downturn, the dot-com bubble, and the cyclical downturn in the US economy. However, outsourcing that began as a response to very tight labor markets in the US in 1999-2000 has continued, becoming a factor in the "jobless" or "job-loss" recovery of 2003. As in the last downturn in the early nineties, recession-based cost-cutting by firms may end up as the permanent loss of jobs that remain abroad even during the subsequent recovery. The laid-off US workers must then be absorbed either in new sub-sectors, brought about by innovation, or in other lesser-paying, non-tradable services jobs.

Vulnerability to outsourcing extends well beyond the sectors shown in Table 1. The employment services sector, for example, lost over 300,000 jobs between June 2000 and January 2001 and over 150,000 between January 2001 and June 2003 (again a mix of recession-based losses and outsourcing). Links to outsourcing in this sector come through temporary employee agencies, which provided short-term employees to many of the industries listed in Table 1. Outsourcing also has the potential to affect diverse segments of retail and wholesale trade, utilities and healthcare, to the extent that record-keeping, accounting, sales, and information aspects of these sectors can be performed separately from other functions.

Outlook for Services Outsourcing

The occupational mix of a sector may determine its vulnerability. In BPO/BSO circles it is said half-seriously that any job that involves mostly "…sitting at a desk, talking on the phone and working on a computer…" is a job under potential threat. Figure 2 summarizes the essential attributes and features of jobs and occupations that might find themselves in jeopardy.

While institutional and cultural compatibility and proliferation of the English language are key components of comparative advantage for countries that are destinations for BPO investment and activity, it is the cost differential, along with the availability of well-educated graduates, that provides the critical competitive edge. As Table 2 shows, the salaries of computer programmers in the emerging market countries of Asia and Eastern Europe are a factor of ten less than corresponding salaries in the US. The cost-differential in BSO is more difficult to pin down, since the range of occupations is so wide. Table 3 shows hourly wages for some sample occupations from the July 2002 National Compensation Survey of the Bureau of Labor Statistics matched with comparable occupations in India. The wage differential varies widely by occupation, with differences particularly high for lower wage, nonprofessional occupations and less extreme, although still quite significant, at the upper end of the wage spectrum.

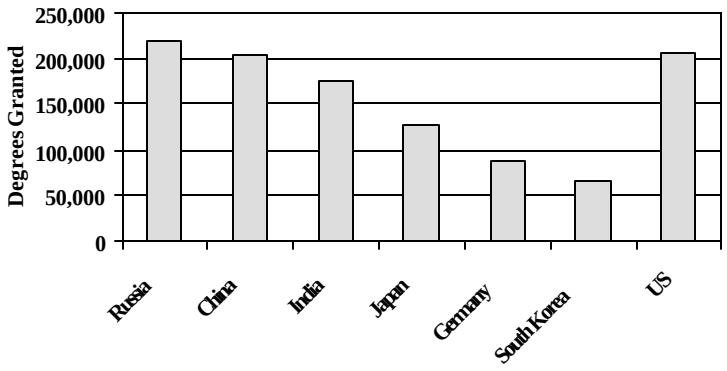
A lower wage scale is even more attractive if it comes with a well educated labor force. The three major emerging market economies—China, India, and Russia—have a sizeable higher education sector. While Russian expertise in many basic sciences and engineering subjects has been justly famous for decades, both the annual output and quality of science

Table 3
Hourly Wages for Selected Occupations
US and India, 2002/2003

Occupation	Hourly Wage, US	Hourly Wage, India
Telephone Operator	$12.57	Under $1.00
Health Record Technologists/ Medical Transcriptionists	$13.17	$1.50-$2.00
Payroll Clerk	$15.17	$1.50-$2.00
Legal Assistant/ Paralegal	$17.86	$6.00-$8.00
Accountant	$23.35	$6.00-$15.00
Financial Researcher/Analyst	$33.00-$35.00	$6.00-$15.00

Source: US wages are from US Bureau of Labor Statistics, National Compensation Survey, July 2002; India wages are from interviews, business literature search and review of employment Want Ads by the authors.

Figure 3
Yearly Graduates with Natural Science and Engineering Degrees 1998

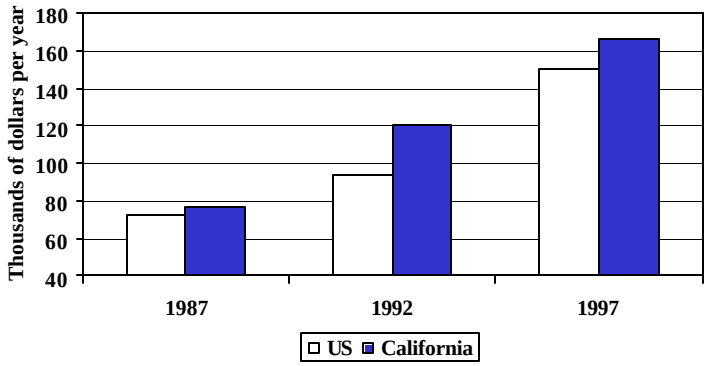


Source: National Science Foundation (Science and Engineering Indicators, 1998).
Note: Figures are by country where degree granted and may include foreign nationals.

and engineering graduates from India and China have been increasing rapidly and are now comparable to the advanced countries[4] (see Figure 3). These countries face some constraints in exploiting this ongoing opportunity. India's inability to provide education at the basic school level could stifle further growth in highly trained graduates. Russia faces growth constraints from a combination of institutional underdevelopment, erratic reforms and the gradual deterioration of the higher education system. The overpowering Chinese success in manufacturing may well be replicated later in the services sectors, but as yet business services outsourcing faces heavy language, institutional and cultural barriers. Rising wages and costs in these countries may spur secondary outsourcing to still less developed countries, but from the point of view of the US labor markets that is no consolation.

Despite these barriers, the phenomenon of services outsourcing is sustainable for the foreseeable future, unless there is a major disruption of the international economy or a severe backlash in the developed countries leading to establishment of regulatory

Figure 4
US and California High-Tech Manufacturing Sectors
Annual Value-Addition Per Employee



Source: Bardhan, Jaffee and Kroll, *Globalization and a High-Tech Economy*, forthcoming.

[4] The figure for the US includes graduates who are foreign citizens. However, the proportion of foreign citizens is considerable only at the PhD and MS level, not so much at the basic undergraduate level of higher education.

hurdles. The benefits to US firms are the increased value addition and profitability resulting from savings due to low-cost outsourcing. Figure 4 shows the constant increase in value-addition per employee in high-tech manufacturing from 1987 to 1997, a period of intense outsourcing activity in manufacturing overall. The impact of the present cycle of BPO/BSO is perhaps reflected as well in the latest productivity figures released by the US Bureau of Labor Statistics: Nonfarm business output per hour worked increased by 5.4% in 2002, and by a sizeable 6.8% in the second quarter of 2003.

Outlook for US Jobs and Occupations

If both the supply and the demand side suggest a sustainable outlook for business services outsourcing, it is imperative to get at least a heuristic sense of the potential size of the long term impact on jobs and occupations. The authors have tried to arrive at an estimate of the outer limit of jobs potentially at risk to outsourcing by adopting the following methodology:

a) We focus not on economic and industrial sectors, as in Table 1, but rather on the occupational make-up of the US economy, given by the detailed Occupational Employment Statistics, 2001, published by the US Bureau of Labor Statistics.
b) We are guided by the occupational "outsourceability attributes" listed in Figure 2.
c) We only take into account those occupations where at least some outsourcing has already taken place or is being planned, according to business literature.

There are 22 broad occupational classifications listed by the Bureau of Labor Statistics.[5] Within these 22 broad categories there are 770 detailed occupations. Table 4 shows the aggregate and detailed occupations which we judge to be consistent with the criteria a, b and c listed above. Of course not all jobs are under threat in any of these categories. Table 4 lists the *outer limit* of potential direct job loss in these occupations, without taking into account many of the dynamic adjustments that may take place or changes that may occur in qualifications, skill requirements and task descriptions.

Data on these occupations are available for 2001 and some earlier years. The data indicate that these jobs span a wide range of compensation levels, from salaries one-third below the average to almost twice the average salary. In some outsourceable occupations, job growth was strong at least through 2000, but the occupations most vulnerable to outsourcing began losing jobs. For example, data entry positions dropped by 115,000, or 22%, between 1999 and 2001, even though employment in computer occupations as a whole was increasing. As occurred earlier in manufacturing, it was the lower paying, more routine jobs that were being outsourced most rapidly. This is consistent with the particularly wide wage differentials found in the lower paying occupations.

Table 4
US Employment in Occupations at Risk to Outsourcing

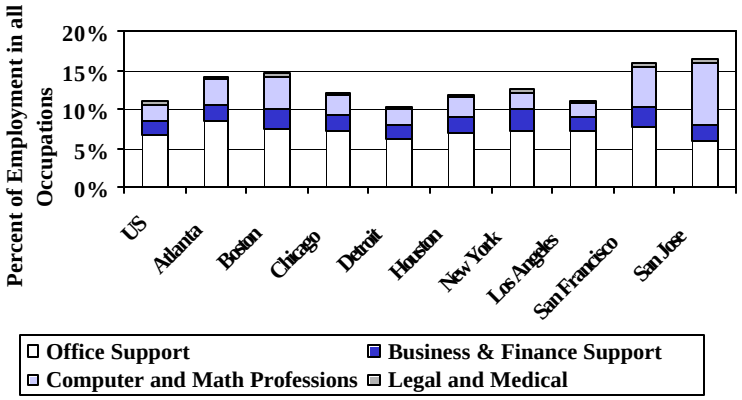
Sectors	Employment 2001	Average Annual Salary 2001
All Occupations (Total US Employment)	127,980,410	$ 34,020
Occupations at Risk of Outsourcing		
Office Support*	8,637,900	$ 29,791
Computer Operators	177,990	$ 30,780
Data Entry Keyers	405,000	$ 22,740
Business and Financial Support**	2,153,480	$ 52,559
Computer and Math Professionals	2,825,870	$ 60,350
Paralegals and Legal Assistants	183,550	$ 39,220
Diagnostic Support Services	168,240	$ 38,860
Medical Transcriptionists	94,090	$ 27,020
Total in Outsourcing Risk Occupations	14,063,130	$ 39,631
Percent of All Occupations	11.0%	

Source: Authors using data from Bureau of Labor Statistics web site. *Office support aggregates data from 22 detailed Office and Administrative Support categories. ** Business and financial support aggregates data from 10 detailed Business and Financial Occupations. Further details on sectors available from the authors.

[5] Many categories of these broad occupational classifications, such as "personal care and service" occupations, "food preparation and serving related" occupations, construction, repair and maintenance related occupations, community and social service occupations and others are obviously "non-outsourceable".

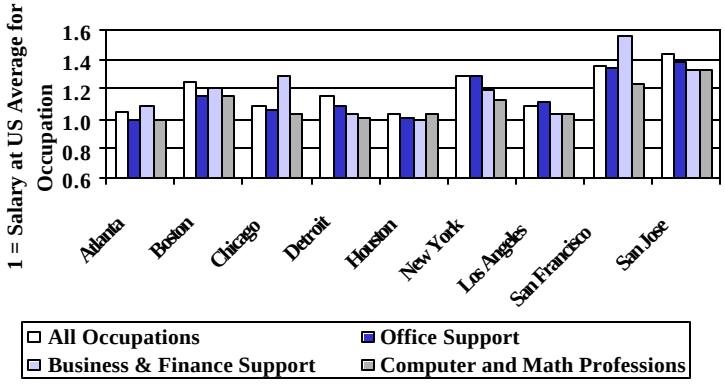
There have been many different estimates of potential job losses in the US from future business services outsourcing. A report by Forrester Research forecasts that by the year 2015, approximately 3.3 million jobs will have been irretrievably lost, almost one fourth of our estimate of total employment in outsourcing occupations at risk in 2001. This translates to a little over 250,000 per year, a number which seems conservative, based on the rate of outsourcing over the last few years, the experience of outsourcing in manufacturing, the increasing ability of an increasing number of countries to compete for these jobs, the higher tradability of services due to better communications, increasing use of English and US standards in business and commerce, and the obvious benefits to US firms and employers, the primary decision-makers in this process. This outsourcing of jobs could result either in net job loss in some occupations and sectors or in a slower pace of job expansion than would otherwise occur.

Figure 5
Occupations at Risk to Outsourcing as a Share of Employment in All Occupations
Selected US MSAs



Source: Authors from Bureau of Labor Statistics data.

Figure 6
Salaries in Occupations at Risk of Outsourcing Relative to Average US Salaries in At-Risk Occupations
2001, Selected MSAs



Source: Authors from Bureau of Labor Statistics data.

Outsourcing Has Regional Implications

As with manufacturing outsourcing, the process of services outsourcing is likely to vary geographically, among different regions of the US and within metropolitan areas. Figure 5 shows occupations at risk for some of the largest metropolitan areas in the US, while Figure 6 shows wage levels by occupation, relative to the US, for the same metropolitan areas. Most of the nation's large metropolitan areas have a higher proportion of jobs in occupations at risk than is found in the US as a whole, suggesting that many of these urban centers may share disproportionately in the wave of outsourcing. However, the occupational composition of the at-risk jobs varies widely among these MSAs, as do wage levels, and the type of job reshuffling is likely to reflect these differences. Detroit has lower than average shares of services jobs at risk to outsourcing and may share less in the impacts of this round of outsourcing (but has no doubt suffered from manufacturing outsourcing in earlier years). Atlanta has a high share of office support occupations, at average wage levels. Possibly an earlier recipient of jobs spun off from more costly metropolitan areas, places like Atlanta may be at risk of losing more of their lower-wage outsourceable jobs, although it could also continue to be the recipient of jobs outsourced

domestically from higher-wage areas. Within California, there is a wide variation among places. Los Angeles, with less than average shares of most services sectors at risk to outsourcing and close to average salaries within these sectors, may have less to lose from the next wave of outsourcing than high priced markets elsewhere in the state.

High-tech markets such as San Jose, San Francisco and Boston are particularly at risk of services outsourcing over the next decade. San Jose, the heart of Silicon Valley, has below average shares of outsourceable office support and business and financial support occupations, but almost four times the average share of computer and math jobs (relative to its total share of US employment). At salary levels well above the US average, the region has already lost many of the lower-wage occupations to other parts of the country or abroad. Its vulnerability now lies in the very high share of high-wage outsourceable professional occupations, many of which are similar to the types of positions growing in the lower cost foreign locations described earlier. Businesses that forged a relationship with an overseas supplier at the height of the dot-com boom may continue to take advantage of the cost savings, despite the dot-com collapse and easing of demand for these occupations in US locations.

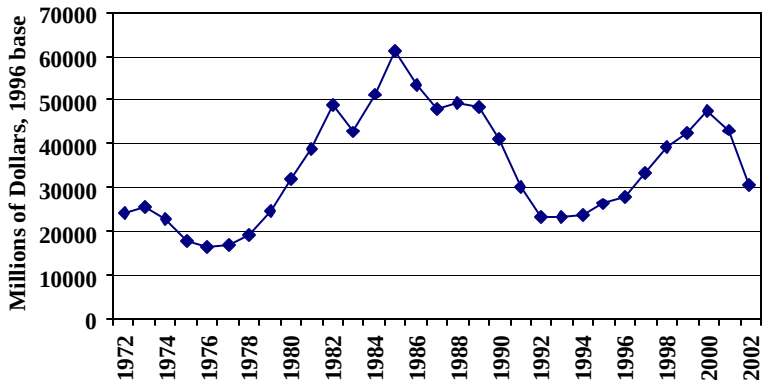
Outsourcing has intraregional implications as well, especially in the more moderately priced urban areas. Some of the largest overseas migrations of services jobs have been in occupational categories that were once the core of suburban job development, such as data processing and call centers. Suburban locations that built up an employment base of back office jobs could see these tenants shrink, or expansion opportunities evaporate, as these occupations shift overseas.

Present and Future Impact on Office Markets

The office building sector faces considerable uncertainty going forward. CB Richard Ellis reports that close to 17% of for-lease US office space is vacant. Rosen Consulting Group (RCG) figures show at least 700 million square feet are vacant in the office-leasing market of major US metropolitan areas. Building activity in the late 1990s, although more constrained than in the late 1980s, was still the highest in a decade, as shown in Figure 7.

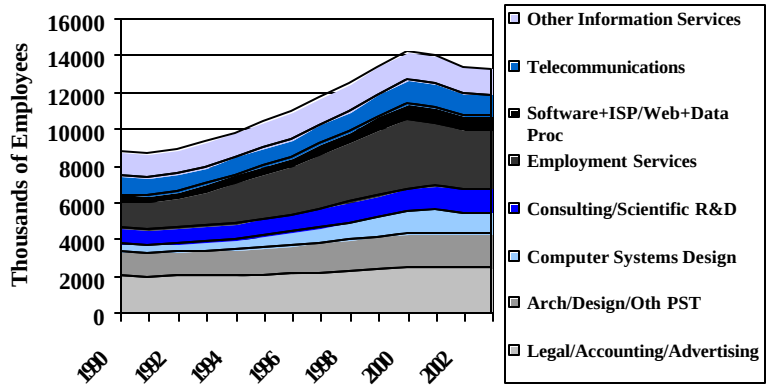
Because office construction tends to involve years of preparatory planning, much of the new space came on line just as the dot-com bubble collapsed and employment in office-related sectors began to shrink. Employment in key office sectors, on a national level, has dropped by 6.5% in the US and by almost 10% in California since its peak in 2000, in both cases returning to between 1998 and 1999 levels, as illustrated in Figure 8. The most vulnerable sectors have been computer-related industries, telecommunications, and employment services—the temporary employment services that helped fuel the technology expansion. Many of these are the same sectors now undergoing extensive outsourcing.

Figure 7
Annual Value of Office Construction in Place
Constant Dollars, 1972-2002



Source: US Bureau of the Census.

Figure 8
Employment Trends in Selected Information, Professional and Business Services Sectors, US

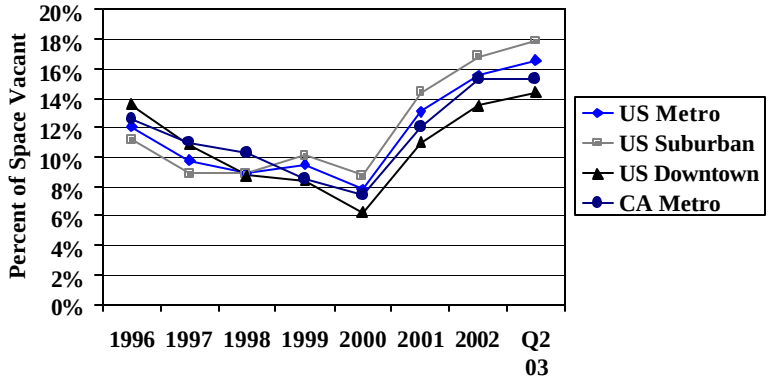


Source: Authors from Bureau of Labor Statistics data.

Office vacancy rates responded quickly to the combination of declining employment and new space coming on line. Nationwide, rates doubled, from below 8% in December 2000 to over 16% in June 2003, as shown in Figure 9. In California, vacancies rose to an estimated 15.3%, ranging from below 10% in Sacramento to above 20% in Silicon Valley markets.

Two factors are at work when vacancy rates rise—changes in the amount of space occupied and changes in the total amount of space available. Figure 10 shows occupied and vacant space nationwide since 1991, as distributed in downtown and suburban markets (the four segments of each bar add up to total square footage). Despite job losses due to a range of factors, the decrease in square footage under lease (i.e. occupied) in suburbs and downtown areas combined has been modest—about 4% since 2000. The rest of the rise in vacancy comes from a 6.6% increase in supply, which may come from new construction or from existing buildings entering the for-lease market (for example, owner occupied buildings made available for lease). This second element of supply increase may account for the difference between the percent change in office employment and the percent drop in space under lease. The new for-lease space added to the total stock from owner-occupied buildings becoming for-lease buildings is actually a further sign of declining demand.

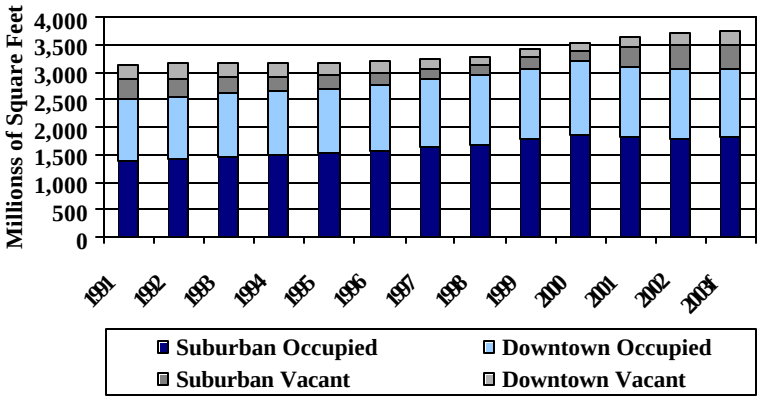
Figure 9
US and California Office Vacancy Rates, 1996-2003



Source: US data is from CB Richard Ellis. California data is from the authors, as compiled from data from CB Richard Ellis, Cushman and Wakefield, Grubb and Ellis, and Keegan and Coppin. Except for 2003, all years are for 4th quarter.

Figures 9 and 10 also highlight a shift that is occurring between suburban and downtown areas. During the 1990s, suburban markets led in net absorption, and suburban vacancy rates dropped below downtown rates for most of the decade. By 1997, the amount of space vacant had shrunk to under 350 million square feet in the 73 markets tracked by RCG, with the vacant space almost evenly split between suburban and downtown locations. During the economic expansion in the late 1990s, close to 85% of new construction occurred in suburban areas, and downtown vacancies dropped well below suburban rates. Suburban areas were hit much harder in the slowdown of 2001 and 2002. Several factors are likely at play. On the supply side, new suburban construction can proceed more readily than infill development in many markets. On the demand side, the types of office occupations that have been

Figure 10
Occupied and Vacant Office Space
US Major Office Markets, 1991-2003



Source: Authors from data supplied by various brokers to Rosen Consulting Group.

outsourcing most rapidly have been those that are historically located in suburban areas.

Figures 9 and 10 may actually understate the current vacancy situation in office space. Figure 10 includes both unleased space and space available for sublease in the vacant category, while some of the brokerage reports used for Figure 9 are less consistent and report only unleased space as vacant. Neither chart takes into account buildings that have been taken off the market in the most impacted areas because of the lack of leasing opportunities, or vacancies in owner occupied space that has not yet been offered for lease.

Growth in demand for office space in the US will be tempered by a number of factors of which services outsourcing is only one. Other factors include underutilized space currently under lease, the flexibility of square footage usage, and lessons in caution learned from the recent boom. These factors also are likely to interact with one another. In markets already glutted with space, some space is being held off the market, either in whole buildings "mothballed" for the short term, or as empty space being held in anticipation of future growth in demand. These spaces could accommodate a significant increase in demand without an apparent effect on vacancy rates. As demand grows, firms that have become more dependent on the bottom line may choose a more cautious route to space utilization than in the last expansion, making more efficient use of existing space before taking on obligations for additional square footage.

Outsourcing will further dampen the growth in demand for space, and could even lead to declining demand in some markets. The Forrester Research estimate of 3.3 million jobs is equivalent to between about 500 and 800 million square feet of office space (depending on the ratio of square feet per employee)[6]—at the higher end surpassing the amount of space currently vacant in for-lease buildings nationwide. Not all of these jobs are in sectors heavily present in for-lease office space. Nevertheless, many types of office markets could feel the effects of outsourcing. Those most at risk may be back office suburban markets in slow growth or declining metropolitan areas, but the high-tech markets that are just beginning to recover from the dot-com bust may also feel the effects of the occupational restructuring that comes with services outsourcing.

Concluding Remarks

The US economy underwent a major wave of outsourcing in manufacturing industries, a process that gathered momentum in the 1980s and 1990s and continues today. The experience of that phenomenon provides a useful benchmark for evaluating the current wave of outsourcing in the services sectors. Business process and business services outsourcing will have a significant impact on the economic landscape in the US. Several major differences distinguish services outsourcing from the previous wave of outsourcing of manufacturing jobs. Services outsourcing is structurally simpler than manufacturing outsourcing in terms of resources, space and equipment requirements and thus may proceed much more quickly. Services outsourcing affects overwhelmingly white-collar middle class jobs and occupations, unlike manufacturing outsourcing, which impacted primarily blue-collar workers. In addition, this time around it is a different set of countries that are in contention for these jobs. Figure 11 summarizes these differences and their implications for the economy.

[6] The ULI *Office Development Handbook* reports industry standards at 200 to 250 square feet per employee, but also notes that in some markets the ratio may be as low as 150 square feet per employee.

Figure 11
Impact of Outsourcing

Manufacturing	Services
• Impacts blue-collar jobs	• Impacts white-collar jobs
• Affected individual industrial sectors and some specialized occupations within them	• Affects individual occupations in many industrial sectors across the economy
• Job losses offset and even reversed by increases in services employment	• May lead to different composition of occupations in the economy; unclear how the labor market adjustment will work.
• Led to increased inequality between blue-collar and white-collar occupations	• Will lead to increased inequality within white collar occupations

While our report has focused primarily on the US economy as a whole, the economy of California is equally vulnerable. As seen in Table 1, the state's sectors at-risk to outsourcing have fared more poorly in the last two and a half years, than the US average. In terms of future impact, bear in mind that while the state does not have too many of the call center and data entry level type jobs anymore, it has a heavy presence of the computer related occupations, as well as office, legal and healthcare support jobs. Moreover, the cost differential with the rest of the world is higher, thus suggesting a higher incentive for job migration abroad. Finally, large numbers of temporary foreign employees, such as computer engineers from India in large California based firms, sensing the way the wind is blowing, have requested within-firm transfers to subsidiaries in their home countries.

While evidence from the recession of the early 1990s suggests that a major benefit of globalization has been the growth in high-tech services employment that accompanied the outsourcing of manufacturing production, it is not clear how the economy will adjust to the present burst of services outsourcing. At least four different outcomes are possible.

One possible scenario is that services job outsourcing proves more costly to the economy than the earlier round of manufacturing outsourcing. As centers of skilled high-tech professionals build up in other parts of the world, the US and California may no longer dominate the next wave of innovations, and we would observe slower growth of high-wage jobs within the US and California. In this extreme situation, economic adjustment, in the absence of continuing innovation originating in the US, first might take the form of prolonged unemployment. Then, workers losing their jobs to outsourcing would finally be absorbed in lesser-paying services jobs. Alternatively, there could be a downward adjustment of salaries and wages, making the outsourced occupations internationally competitive again. Under this worst-case scenario, the impact on the demand for office space would initially be reflected in lower rents and prices, and higher vacancy rates. In the long run, with increasing employment in other jobs and occupations, rents and prices would settle on a lower growth path trajectory with vacancy rates returning to their long-run equilibrium.

As an alternative to this troubling scenario, a backlash against globalization could occur, both worldwide and within the US, slowing down the process of business services outsourcing. Opponents of globalization are already discussing protectionist measures and regulatory roadblocks in the form of restricting the kind of jobs that can be outsourced. If successful, this kind of protectionism, although inefficient from the point of view of the economy, may result in the retention of some of the outsourceable jobs. In the short run, this would moderate the negative impact on the real estate sector.

A third possibility is that the industry shrinkage shown in Table 1 may come in part from domestic outsourcing, indicating a redistribution of jobs within the US rather than a net loss. This could involve vertical disintegration—the shifting of jobs from large employers to smaller firms in support sectors--as well as the ongoing process of domestic outsourcing from high-cost regions such as California to relatively low-cost regions elsewhere in the United States.[7] This process would mitigate the differences in prices and rents among different regions within the nation and would leave the nationwide vacancy and absorption rates relatively unaffected.

[7] To the extent that the outsourced work is done by start-up firms, employment numbers may currently be undercounting the current employment situation.

Rents in some of the higher priced markets could continue to remain depressed, even with expanding employment nationwide.

Finally, the most positive scenario is that the US and California economies continue to fashion their outsourcing activities in light of the new production paradigm, keeping the "cream" of the new development at home, while the more routine activities are outsourced. Under this scenario, innovation would lead to a continuing stream of new service and manufacturing activities, and hence new jobs and occupations, while competition and the need for lower-cost supply would force more mature services operations overseas. Depending on their education and skills, individual workers might still find it difficult to find replacement employment at similar wages, but overall, the jobs lost to outsourcing would be replaced by higher-wage jobs in the new subsectors brought about by innovation. Increasing wages, incomes and company profits would then impact the real estate sector positively through a recovery and eventual increases in prices, rents and occupancy rates.

Ashok Deo Bardhan is Senior Research Associate and Cynthia A. Kroll is Senior Regional Economist at the Fisher Center for Real Estate and Urban Economics. Further information on outsourcing trends in high-tech manufacturing and services sectors and more generally on globalization and the high-tech economy is available in their forthcoming book, **Globalization and a High-Tech Economy**, *coauthored with Professor Dwight M. Jaffee, Willis Booth Professor of Banking, Finance and Real Estate at the Haas School of Business and Co-Chair of the Fisher Center for Real Estate and Urban Economics.*