

## **Offshoring, Import Competition, and the Jobless Recovery**

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There is a widespread perception, supported by a spate of anecdotes, that a sharp rise in the outsourcing of jobs overseas by domestic firms (“offshoring”), together with the growth of low wage imports generally, are major culprits in the surprising failure of employment to recover after the last recession. This Policy Brief gathers some of the evidence bearing on this issue, and tries to provide a sense of how important these phenomena are as a component of the shortfall in jobs during the economic recovery in 2002 and 2003.

### **BACKGROUND**

The one survey that collects data on the employment effects of overseas relocations and import competition (the BLS “mass layoff “ series) is partial in nature and almost surely understates the size of the phenomenon. But it is possible to infer broad conclusions about the relative importance of the various elements contributing to the “jobless” nature of the recovery from data on productivity growth, imports, and the operations abroad of U.S. multinational corporations (MNCs).

The Brief starts with some background information. It points out that offshoring is simply one way among many that imports can substitute for domestic production. It gives a brief sketch of how the various forms of offshoring affect the operations of the firms which undertake them, how they affect the flows into and out of employment, and how these activities show up in the economic data collected by the government. To provide some perspective within which to evaluate the relative importance of offshoring in influencing labor market conditions it summarizes the data on the massive amount of job creation and destruction, and the associated layoffs and new hiring, that goes on each year in the American economy. The main body of the Brief then

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presents and evaluates various sources of evidence on the relative importance of offshoring and import competition as explanations of why employment grew so little during the current recovery, up through the end of 2003.

### What is Offshoring?

There is no official definition of the term “offshoring”. But it has come to mean, in the media and in common parlance, the actions of American firms in relocating some part of their domestic operations to a foreign country -- automobile firms switching purchases of auto parts from domestic plants to Mexico; the transfer of call centers and software development to India; financial firms relocating major parts of their record-keeping activities to one of the Caribbean countries, and so on. In some cases the offshoring firms locate the overseas production in foreign affiliates which they own and control. Some fraction of the value of the firm’s domestic sales now consists of intermediate goods or services imported from foreign affiliates rather than produced in the United States.

While the additional imports arising from an increase in offshoring activities of this kind represent the internal transactions between U.S. parent companies and their foreign affiliates, the Bureau of Economic Analysis (BEA) includes them as imports in its compilation of the nation’s domestic and international economic accounts. It conducts a periodic survey of U.S. firms in order to capture the value of such intra-firm transactions, especially in order to pick up the value of intra-firm flows of services (MNC parent company imports of *goods* from their affiliates should show up in the customs data collected on all goods imports).

The accuracy of the resulting estimates of import values is reduced by the fact that the “transfer” prices at which the internal flows within firms are valued may not necessarily be a good representation of their market value. But the changes in those transfer prices from year to

year are not likely to be so erratic as to conceal any significant shifts caused by large changes in the volume of offshoring.

Overseas relocation need not, and very often does not, involve transactions between MNCs and their foreign subsidiaries. Firms can effectively relocate activities abroad by contracting for the purchase of goods and services from independent foreign firms. Nike, for example, has set up an extensive network of independent foreign producers under contract to produce goods for Nike's distribution channels in the United States. There are American and foreign firms who can act as intermediaries to arrange the production of goods and services abroad to meet the needs of smaller American firms which wish to outsource some part of their operations abroad.

While the advent of cheap, high quality, and virtually instantaneous information and communication facilities has substantially widened the range of services which can be outsourced abroad, the economic characteristics and consequences of these activities are very similar to the long-standing historical process through which falling transportation costs have sharply expanded the range of goods subject to import competition. More generally, the substitution of imports for domestic production and offshoring are simply different forms of the same phenomenon. Increases in this kind of activity large enough to have a significant effect on U.S. production and employment should generate corresponding increases in U.S. imports of the relevant types of goods or services.

The immediate, or *impact* effect of an increase in offshoring activities is a reduction in U.S. employment. That effect takes two forms. For some firms it leads to a cessation of operations and to permanent layoffs of currently employed U.S. workers. In other cases firms may not need to layoff existing employees, but do reduce new hiring they would have undertaken had they not decided to rely on foreign production to meet their needs. Employment

will fall relative to what it otherwise would have been. But the relocation will typically also lead to medium and long term consequences that will be mainly positive for the economy. Productivity, real wages, and potential GDP will increase while overall employment should gradually rise to and, because of higher real wages and supply-side effects, may possibly exceed what it would have been in the absence of the offshoring activities. It is only the short-run impact effect that is the subject of this paper.<sup>1</sup>

### Job Creation, Job Destruction, and Worker Layoffs

Given the current growth in the working age population, the economy has to add about 1.75 million jobs a year simply to keep unemployment from rising. But in the dynamic and ever-changing American business environment that job growth will be the net result of something between 14 and 15 million new jobs created and something like 13 million old jobs destroyed each year. At current labor force levels the normal gross flow of workers into, out of, and between business establishments, through quits, layoffs, retirements, and new hires is vastly larger than the job gains and losses. In 2003 there were more than 48 million new hires and some 47 million separations, including some 19 million layoffs and discharges.

Unfortunately for the purpose at hand, the number of *permanent* layoffs – involuntary separations from a firm where the affected workers are not subsequently recalled or rehired by the same firm – is very hard to pin down. One analysis of data for manufacturing establishments made a number of years ago suggests that, given the current labor force, somewhere between

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<sup>1</sup> For detailed analyses of the long term effects of offshoring on productivity and potential GDP see., Catherine Mann, “Globalization of Services and White Collar Jobs: The Next Wave of Productivity Growth”, Institute for International Economics, December 2003 and “The Impact of Offshore IT Software and Services Outsourcing on the U.S. Economy and the IT Industry”, by Global Insight, Lexington, Mass., March 2004.

60% and 80% of the laid off workers are recalled or re-hired by the same firm.<sup>2</sup> (And some layoffs represent the completion of seasonal jobs). But that still leaves a substantial number of layoffs – 3.5 to 7.5 million a year -- in which the workers are permanently separated from an ongoing job with their old firm. The BLS surveys a sample of workers every other year explicitly asking whether they have at any time during the prior three years been permanently laid off from a firm. In the most recent published survey, covering 1999 through 2001, an average of 3.3 million permanent layoffs per year were reported. There are reasons to believe that, on balance, this survey errs on the low side in measuring permanent layoffs. For example, workers who were laid off two or three years prior to the survey and found new jobs quickly – as many do – may not report having had a permanent layoff. We can take the 3.3 million as the minimum estimate of the annual magnitude of such permanent layoffs.

#### EVIDENCE ON THE RELATIVE EFFECT OF OFFSHORING

In the rest of the paper we examine three sources of evidence on the relative importance of offshoring as an explanation of the jobless recovery. (1) an estimate of the effect on overall employment growth from the unexpectedly large growth of productivity that took place over the last three years; (2) some direct evidence from the BLS “mass layoff” survey that asks employers to give the causes of major layoffs they have undertaken; and (3) a number of pieces of indirect evidence taken from U.S. import data and government surveys of the operations of American multinational corporations.

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<sup>2</sup> David Lilien, “The Cyclical pattern of Temporary Layoffs in United States Manufacturing” *Review of Economics and Statistics*, 92(1), pp24-31. Cited in Steven Davis and John Haltiwanger “Measuring Gross Job Flows”, NBER Working Paper No. 5133, 19995, p.25.

### The Role of Productivity Growth

By the end of 2003 gross domestic product in the non-farm business sector rose by more than 5% over the prior four quarters, and was almost 8% above what it had been three years ago at the peak of the boom. Aggregate hours worked, however, had fallen by 4.5% - 3% due to lower employment and 1.5% to shorter average hours of work. An (admittedly mechanical) simulation can give some sense of the effect of the surge in productivity on the employment numbers. GDP per hour worked in the non-farm business sector rose 2.5% a year between the fourth quarters of 1995 and 2000. In the next three years it rose at a surprisingly strong 4%. If productivity growth over those three years had continued at its earlier pace, the aggregate hours of work needed to produce the fourth quarter 2003 non-farm business GDP would have been 5% higher than actually occurred. On the assumption that about half of the increase in hours worked came from a recovery in the average length of the work week, *non-farm business employment would have been a little over 2.5 million persons higher than it actually was.* The current unemployment rate would probably have been somewhere around 5%.<sup>3</sup>

Obviously if the alternative scenario had occurred, with its lower productivity growth and higher employment and worker income, the time-path of GDP itself would have been affected, although it is not obvious exactly what the net outcome would have been. But the alternative possibilities are irrelevant to the question at issue here: given the substantial increase in GDP that

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<sup>3</sup> The employment calculation assumes that with stronger labor demand average hours of work in the non-farm business sector would have recovered a large part, but not all of their decline from the highs during the height of the boom. The BLS index of average weekly hours for the non-farm business sector declined by an unusually large amount from an average of 100.7 in the “normal” years of 1995-96 and 101.2 (1992=100) at the peak of the boom in 1998-99 to 98.3 at the trough of the recession in 2003:4Q. The simulation assumes that the index by 2003:4Q would have been at the 1995-96 level. The unemployment simulation assumes that the labor force participation rate would lie halfway between its 1998-99 peak and its low in 2003:4Q.

did actually occur, how much of the disappointing behavior of employment can be explained by acceleration of productivity as opposed to the growth of offshoring or other factors.<sup>4</sup>

The magnitude of the effect of the productivity acceleration on employment does not itself answer the question of what were the employment effects of the increases in offshoring that did occur. Had there been no increases in offshoring during the period, domestic production might have grown a bit faster than it did, and so would employment. Nevertheless, had the nation experienced the several million job gain, the rise in weekly hours, and the increase in wage and salary disbursements that would have occurred had productivity not accelerated, the media would now be paying far less attention to offshoring and low wage imports, and recent political rhetoric would not have so heavily featured the evils of NAFTA, Chinese competition, and offshoring.

Some of the media comments reflect a misconception that the acceleration of productivity growth was itself partly caused by an increase in offshoring, on grounds that offshoring reduces domestic employment without reducing GDP (see, for example, the article on the employment problem in the Washington Post Outlook section of March 7 of this year). However, to the extent that part of the production of goods or services destined for domestic markets is shifted abroad, the value of the out-sourced production comes back as imports and is not counted as part of GDP. The BEA regularly surveys firms and reports such intra-firm or “affiliated” imports. Thus, to the extent that the import data are accurate, the estimates of output and productivity (GDP per worker) are not mis-measured because of changes in outsourcing activities.

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<sup>4</sup> The relocation of relatively low productivity operations abroad can, in an indirect way, have a positive effect on overall U.S. productivity. If productivity in the relocated operations is lower than average for the American economy as a whole, their removal will raise the average level for the rest of the economy. However, even with a generous estimate of the magnitude of offshoring, this indirect effect would be much too small to have played a significant role in the recent acceleration of overall productivity.

Conceivably the Bureau's surveys could be missing some of the increase in imports attributable to offshoring , especially in the case of services. And, indeed, there are some puzzles in the service measures – for example the available data from India on its exports to the U.S. of computer software and related services show significantly larger numbers than the corresponding U.S. statistics on imports of those services from India. We return later to the issue of possible errors in the import data. But the absolute size of any such errors in the import data cannot conceivably be large enough to change the essential conclusion that the speedup in productivity growth was by far the dominant factor behind the disappointing job growth .

#### Survey Evidence of Layoffs Attributable to Offshoring and Other Import Substitution

In addition to its survey of displaced workers, BLS publishes (from the universe of business reports to the states under the federal-state unemployment insurance program) a quarterly tabulation of “extended mass layoffs” - layoffs of 50 or more employees expected to last at least a month. Data are available back to 1996. Establishments identified to have made such layoffs are asked to assign the reason for them. Extended mass layoffs (for causes other than the ending of “seasonal” jobs and vacation events) averaged 900,000 workers a year over the past two years. Among the relatively long list of reasons that respondents can assign for layoffs are “import competition” and “ relocation overseas”. The two together accounted for the grand total of 4% of non-seasonal extended layoffs during this period. The BLS recently released a revised version of this survey with a somewhat different method of estimating the layoffs attributable to overseas relocation. But in the first quarter of 2004 the new estimates of layoffs due to import competition and offshore reallocation were still a small fraction of total non-seasonal and vacation period layoffs.



These numbers, however, do not capture all of the layoffs and other effects on U.S. employment from changes in overseas outsourcing and imports. They exclude smaller scale layoffs (less than 50 at a time). In some cases import competition can indirectly result in a loss of sales in ways that may not be apparent to or identified by the losing firm. Moreover the estimates cannot pick up any effects on employment that might show up, not in layoffs but in a reduction of domestic hiring by offshoring firms who would otherwise have been adding to their workforce. Where outsourcing takes the form of contracting (directly or through intermediaries) with independent foreign suppliers, rather than transferring operations to majority-owned foreign affiliates, some respondents may not report this as a “relocation”. But after allowing for all of this, the data suggest, with respect to layoffs at least, that import competition and relocation play a much more modest role in explaining the jobless recovery than depicted in much of the media.

#### Indirect Evidence from Import Data

*The overall effect of import competition and offshoring.* If the disappointing employment growth of the past several years came about because America’s production needs were being met to an increasing degree by production from foreign rather than American workers, as Americans increased the share of consumer and capital goods they bought from abroad, or as domestic firms expanded the share of their operations located abroad, this should show up as a rise in the inflation-adjusted value of imports relative to GDP. The real value of imports as a ratio to GDP showed a large rise throughout the 1990s. But, in the years after 2000 the ratio essentially leveled off. There is nothing in this data to suggest that large increases in import substitution and offshoring could have played a major role in explaining America’s job performance in recent years.

*Offshoring.* As noted earlier, there are two forms of offshoring, depending on the ownership of the overseas establishment producing the outsourced good or service: a U.S. multi-national farms out operations to a foreign affiliate; or operations are contracted out directly or through an intermediary firm to an independent foreign firm. The data suggest that neither type of outsourcing accounted for a large part of the shortfall in jobs.

First, with respect to the operations of multi-national corporations, the share of the total *goods* imports received by U.S. MNC's that comes from their own (majority and minority-owned) foreign affiliates has slowly declined recent years. And MNC imports of goods from affiliated parties was roughly constant as a share of total U.S. goods imports from 1994 to 2001, and during the last two years of that period total goods imports in real terms were essentially flat.<sup>5</sup> (There is a rather long delay before some of the trade data for MNCs become available) :

**U.S. MNC goods imports from affiliates abroad**

| <u>Percent of MNC goods imports</u> |    | <u>Percent of total U.S. goods imports</u> |    |
|-------------------------------------|----|--|----|
| 1994                                | 44 | 1994                                       | 16 |
| 1999                                | 42 | 1999                                       | 15 |
| 2001                                | 41 | 2001                                       | 15 |

Second, the share of total U.S. “other private *service*” (imports excluding travel, transportation, and royalties) accounted for by imports of U.S. MNC's from their foreign affiliates did rise noticeably from 1997 to 2000, but grew somewhat more slowly in the next two years, and by an amount that could not in itself have had major employment effects.<sup>6</sup>

**U.S. MNC service imports from affiliates abroad**

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<sup>5</sup> Under a broader definition of intra firm transactions, Ralph Kozlow of the BEA reports that MNC imports from “related parties” as a share of their total imports rose from 47 to 48 percent between 1999 and 2002. (<http://www.bea.gov/about/background/KozlowGlobalizationPresentation6.pdf>)

| <u>Percent of total U.S. imports of “other private services”</u> |     |
|--|-----|
| 1997   | 6.0 |
| 2000   | 8.0 |
| 2002   | 8.5 |

Third, the share of U.S. MNC worldwide employment located in foreign affiliates did decline in recent years, but the annual increment as a percentage of total U.S.

**U.S. multinationals’ employment in their foreign affiliates**

|      | <u>As percent of total<br/>MNC employment</u> | <u>As percent of total U.S.<br/>private employment</u> |
|------|---|--|
| 1987 | 25.8  | 7.4  |
| 1995 | 28.4  | 7.5  |
| 1999 | 28.6  | 8.5  |
| 2001 | 29.4  | 8.8  |

employment was quite modest. Under the extreme assumption that none of the relative increase in the overseas employment of MNCs was devoted to serving expanding foreign markets, the transfer of U.S. jobs abroad to foreign affiliates from 1999 to 2001 amounted to about 195,000 jobs a year, or 0.18 percent of U.S. private employment. These numbers need to be viewed in the context of the 13 million annual job loss typically involved in the process of creative destruction in the American economy. Data are not yet available for later years, and conceivably the rise in the share of MNC overseas jobs may have accelerated. But in order have played a substantial role in explaining the jobless recovery the MNC overseas employment share attributable to outsourcing rather than to the expansion of overseas markets would have had to take a major upward leap.

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<sup>6</sup> There was a larger rise in the import share accounted for by imports by foreign MNCs to their U.S. affiliates, but most of that rise represented increases in royalty fees and overhead services

### Offshoring of Services

What can we say about the relative magnitude of the offshoring of services - software writers and computer technical support in India, clerical and record-keeping operations in the Caribbean, etc. Anecdotes abound, but is the growth of these operations sufficient to explain any significant part of the current jobs problem? Explicit data on offshoring are hard to come by, and, indeed, as pointed out earlier, there is no fixed line of demarcation between offshoring activities and simple purchases of imported goods and services abroad. But the data on imports of services can provide some clues about the magnitude of the relocation of service operations abroad.

For purposes of investigating the importance of offshoring activities in explaining changes in U.S. service imports, the major categories of imports are:

#### Total Imports of Services

Travel, transportation, passenger fares, royalties and fees, misc.

Other services

Education, Financial, Insurance, Telecommunications

Business, Professional, and Technical (BPT)

Computer, and information services

Other BPT, including accounting and bookkeeping, advertising  
and medical

The published National Income and Product Accounts (NIPA) contain quarterly estimates of service exports and imports adjusted for inflation, and divided into categories. For inferring information about offshoring activity the relevant data is included in an “other services” import category, which covers all service imports except travel, transportation royalties, and some miscellaneous items. The United States has been running a substantial and growing surplus of trade in such services according to BEA estimates. Both exports and imports rose sharply, although the rise slowed after 2001.

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provided by the parent companies.

**U.S. Exports and Imports of “Other Private Services”**

(billions of 2000 dollars)

|         | <u>1997:4Q</u> | <u>2000: 4Q</u> | <u>2003:4Q</u> |
|---------|----------------|-----------------|----------------|
| Exports | 87             | 113             | 135            |
| Imports | <u>45</u>      | <u>67</u>       | <u>84</u>      |
| Balance | 42             | 46              | 51             |

These “other service” imports include educational and financial services, and reimbursements for international telecommunications services. The remainder of the category consists principally of various kinds of BPT services, including those related to computers and information services, call centers, data processing, and other areas where offshoring is most likely to be occurring. Separate data are available for imports of BPT services including imports of MNCs from their affiliates only through 2002 and only in current dollars.<sup>7</sup> Imports of such services did rise sharply between 1997 and 2002. But in absolute terms exports rose by slightly greater amounts, providing an important offset to the job losses from offshoring.

**Trade in Business, Professional , and Technical Services**

(\$ billions)

|         | <u>1997</u> | <u>2000</u> | <u>2002</u> |
|---------|-------------|-------------|-------------|
| Exports | 44          | 55          | 65          |
| Imports | <u>21</u>   | <u>31</u>   | <u>38</u>   |
| Balance | 23          | 25          | 28          |

Between 1997 and 2002 imports of BPT services remained a relatively stable fraction of the larger category of “other service” imports. By assuming that this stability has continued, one can get a reasonably good fix on the growth in BPT imports through the end of 2003. In turn by deflating these BPT imports with the NIPA deflators for “other service” imports one can make a

stab at calculating a ballpark estimate of the potential impact job loss from the increased offshoring of BPT services .

To give the offshoring hypothesis the benefit of the doubt, ignore the employment gains associated with growing exports of services, assume that all of the rise in BPT service imports relative to GDP between 2000:4Q and 2003:4Q was associated with growth in the outsourcing of services involving a loss of U.S. jobs, and that productivity in the overseas locations were as high as they had been in the U.S. Assume further that:

- the relocated U.S. operations generally involved lower skilled jobs and less value produced per worker than the average in the U.S. “Business Services” industry  
*Range: 2/3rds to 4/5th of the industry average value*
- foreign compensation per job outsourced was substantially below that in the U.S.  
*Range: 1/4 to 1/6 of U.S.*
- the non-labor costs of producing services abroad were close to those in the U.S.  
*Range: 95 to 105% of U.S.*

Given this range of assumptions the increased imports imply an impact job loss from outsourcing of BPT services alone ranging from 155,000 to 215,000 workers over the three year period, or some 50,000 to 70,000 a year. These are, however, very rough estimates since they depend on a number of judgmental assumptions.

Some estimates based on Indian data, discussed at a later point in the paper, give the number of Indian employees associated with the relocation of U.S. computer and related operations to that country. Depending on what one assumes about worker productivity in the Indian operations, those numbers raise the possibility of larger numbers of job losses than is implied by the estimates given above. But even substantially larger numbers would still be small in relation to the size of the American labor market and the magnitude of annual job creation and destruction.

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<sup>7</sup> Separate data for BPT imports are available for 2003, but only for unaffiliated imports, and in

### **Computer and Information Services**

Particular attention has been paid to the relocation overseas of programming and other computer-related services. But, after a large percentage gain between 1997 and 2000 there was no further rise over the next two years.

#### **Computer and Information Services:**

|         | (\$billions) |      |      |
|---------|--------------|------|------|
|         | 1997         | 2000 | 2002 |
| Exports | 5.1          | 6.8  | 6.9  |
| Imports | 1.6          | 4.2  | 4.2  |
| Balance | 3.5          | 2.6  | 2.7  |

Given the sharp decline in the demand for information technology products after the hi-tech bubble burst in 2001, the stability of imports of computer and related services from 2000 to 2002 probably conceals a continued rise in the importance of offshoring. At the same time the continued high level of American sales abroad allowed the U.S. to continue running a substantial export surplus of these computer-related services.

Overall, what the trade data suggest is that the anecdotal evidence may indeed accurately reflect an increase in the employment losses from the relocation of U.S. service-type activities abroad over recent years. But the import data do not provide any evidence of an increase in offshoring large enough to have played a significant role in shaping overall trends in U.S. employment. Moreover in the broad area of BPT services the U.S. has a large and expanding export market, providing a growing number of jobs for American workers.

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2002 these were less than 30% of all BPT imports.

## Do the Official Estimates of Service Imports Fully Capture the Extent of Offshoring ?

The data on imports and exports of BPT services are principally assembled from several sources: A benchmark survey every five years and subsequent annual surveys of business firms whose transactions with foreign entities (apart from their own foreign affiliates) exceed \$500,000 and \$1 million respectively in any one of some 28 categories of services that provides detailed data by country on imports and exports for each type of BPT services. A quarterly survey of service transactions with unaffiliated foreign entities, using higher value cutoff points, is also conducted. A second source, covering exports and imports between MNCs and their foreign affiliates is based on benchmark, annual, and quarterly surveys of parent corporations and their foreign affiliates. Substantial improvements have been made in the collection system over the last decade and a half.

Nevertheless, an inspection of the data for India does raise some questions about the extent to which the data for particular categories of services are really capturing the rise in offshoring trade.

### **Trade with India**

#### *I. "Other Services"*

|              | (\$ millions) |             |             |             |
|--------------|---------------|-------------|-------------|-------------|
|              | <u>1997</u>   | <u>2000</u> | <u>2001</u> | <u>2002</u> |
| U.S. Exports | 666           | 1138        | 1506        | 1809        |
| U.S. Imports | <u>408</u>    | <u>847</u>  | <u>799</u>  | <u>661</u>  |
| Balance      | 258           | 291         | 707         | 1148        |



*II. Business, Professional, & Technical Services (non-affiliated transactions)*

|              | (\$ millions) |             |             |             |
|--------------|---------------|-------------|-------------|-------------|
|              | <u>1997</u>   | <u>2000</u> | <u>2001</u> | <u>2002</u> |
| U.S. Exports | 90            | 219         | 293         | 268         |
| U.S. Imports | <u>41</u>     | <u>206</u>  | <u>143</u>  | <u>209</u>  |
| Balance      | 37            | 13          | 150         | 59          |

The substantial decline in imports of “other services” and the stability in BPT service imports from 2000 and 2002 is hard to square with the abundance of anecdotes and media attention (and the rise in exports over those two years consists very heavily of "education" services). The BPT data cover only unaffiliated transactions (data at lower levels of classification are not available for affiliated trade), but the total affiliated imports from India of the broader “other services “ category were not large enough to have contained significant amounts of affiliated BPT services.

Inconsistencies between U.S. and Indian Data

The low level of non-affiliated BPT and computer related imports in the U.S. data, and the absence of growth between 2000 and 2002 is difficult to reconcile with the anecdotal evidence and other independent data. For example, according to a New York Times news report, 2003 exports to the U.S. by India’s largest software services firm alone amounted to approximately \$700 million. More importantly, data from Indian sources show a far higher level and a larger rate of increase in computer-related service exports than do the U.S. import statistics, even after correction for one likely source of difference.

According to Indian data, exports to the U.S. of computer software and other IT related services - a subcategory within business services - amounted to \$1.1 billion in 1997-98, \$3.7 billion in fiscal year 2000-01, and \$6.0 billion in 2002-03, far higher than shown in the U.S. import statistics. The definitions underlying the Indian data on IT-related service exports,

however, do not coincide with the concepts underlying the U.S. import data. Most importantly a significant, although declining, part of Indian exports of computer services consists of arrangements whereby Indian firms, using Indian personnel, perform services at the site of their U.S. client. These are counted in the Indian export data. Of the \$6 billion in Indian exports of computer-related services to the U.S. reported above for 2002/2003, something like \$2.6 billion represents payments made to Indian companies for operations involving the services of Indian workers at the domestic site of their U.S. clients. But since the large bulk of these workers remain in the U.S. for more than a year, revenues received for their services do not count as imports in the U.S. data. But this still leaves \$3.4 billion of the Indian firms' revenues that appear to be exports, up almost \$2 billion from its value two years earlier.<sup>8</sup>

**Indian Exports of Computer Software/ Services**

| <u>Exports (\$ billions)</u> | <u>2000/01</u> | <u>2002/03</u> |
|------------------------------|----------------|----------------|
| Total                        | 6.0            | 9.6            |
| U.S.                         | 3.7            | 6.0            |
| On-Site in U.S.              | 2.1            | 2.6            |
| In India                     | 1.6            | 3.4            |

The level and growth of Indian exports is much larger than what appears in the American import data. And, of course, the use of Indian workers at sites in the U.S. still has at least a short-run negative impact on the jobs available for American workers.

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<sup>8</sup> NASSCOM (the Indian trade association for the software and service industry) reports that in 2002/2003 some 43% of Indian worldwide exports of computer-related services were performed at the overseas clients' locations, down from 56 percent two years earlier. The application of those percentages to the reported Indian export figure of \$6 billion yields the estimates used in the text.

According to one Indian source, employment devoted to producing exports of computer related services to the U.S. grew by something like 250,000 over the past four years.<sup>9</sup> It is not stated whether the employment estimate, like the Indian “export” estimates, includes workers performing services under contract in the United States. But if so, and if the ratio of on-site to off-site employment is the same as the ratio of dollar values, the corrected four year increase could be something in the neighborhood of 185,000.

Even after correction is made to remove from the Indian export totals the value of the services of Indian workers in the U.S., it is not necessarily the case that it is the Indian data which are more nearly correct. There may be other definitional reasons for some of the differences. Moreover as shown in the presentation by Borga and Kozlow at this workshop, the sum of service imports from India reported by the EU, the United States, Canada, and Japan is only a small fraction of the amount of the worldwide total of service exports reported by India. But we do not know enough to form a good judgement. For a number of reasons, not least being the national attention paid to the offshoring phenomenon, we ought to have more information about this issue. Funds should be provided to the BEA for a targeted research effort, aimed at uncovering the reasons for the apparent discrepancy among different sources, and recommending any needed improvements in the U.S. data collection system.

Should it turn out that the official estimates are seriously understating the relevant service imports, the estimated employment effects of offshoring made earlier in this paper and elsewhere, based on evidence from U.S. import data, would have to be raised. But even a large increase in the estimate of the relevant service imports and their immediate employment effects would still be small relative to the overall U.S. labor market and the magnitude of the shortfall

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<sup>9</sup> Estimate reported by NASSCOM, cited in Jon Hilsenrath, Wall St. Journal, Apr. 12, 2004.

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in job growth that has to be explained. Thus, for example, a large correction in the estimate of imports of BPT services, which are themselves only 0.4 percent of GDP, would imply only a very minor change in the reported acceleration of productivity growth over the last few years and its contribution to the slow recovery in employment.

The essential conclusion remains that offshoring, and more broadly import competition, while clearly having an important effect on some industries, workers, and communities, are not substantial causes of the “jobless recovery”.