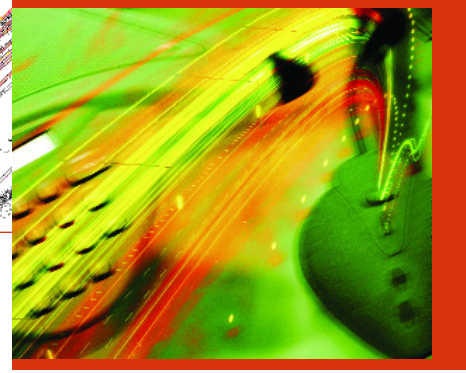


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## A Jobless Recovery? Off-Shoring of Jobs Versus Productivity Growth at Home

**THE NATION'S ECONOMIC GROWTH** since the recession of 2001 is often characterized as a *jobless recovery*. While many point to the off-shoring of jobs to explain low job growth in the United States, Barry Bosworth, senior fellow in the Economic Studies Program at the Brookings Institution, believes that the effect of off-shoring has been trivial. Instead, he explains that a fundamental, underlying change in the U.S. service-producing industries—that is, an acceleration in productivity growth—is responsible for the so-called jobless recovery. Bosworth notes, however, that measuring output and productivity in service industries is extremely difficult. This is particularly true in higher education, which has multiple outputs, including not only education but also, most notably, research and, some would say, entertainment through sports. Further, any measure of the output of the education sector encounters difficulties in accounting for the quality of those outputs as well as their quantity.

### The U.S. Labor Market

The U.S. labor market is extremely dynamic. About 140 million Americans work in the United States. Every year, 45 million of them change jobs—that is, roughly a third of the workforce quits, gets fired, or in some way changes jobs every year. Our labor market has more job turnover than that of any other country in the world by a huge margin. When hearing news reports of job losses, it's useful to keep in mind this regularly churning aspect of the American labor market. It's remarkable that, more than any other country in the world, the United States manages the process of job creation and job change as well as it does.

Figure 1 shows the growth in employment in the current cycle since the recession trough in November 2001 and compares that to recoveries from the recession of the early 1990s and prior recessions. While employment growth was slow during the recovery of the early 1990s, it is even lower in the current cycle.

One obvious explanation for low job growth is low output growth. However, this is not the case. Figure 2 shows the growth in output since the recession trough in late 2001 and once again compares that to output growth during the recovery of the early 1990s and prior recessions. Output growth in the current cycle is not as rapid as it has been at times in the past, but it is better than it was following the last recession.

How to account for this paradox of low job growth in the face of substantial increases in output? First, consider the distribution of the job changes. The biggest losses have been in manufacturing: In the last three years, the U.S. economy has lost manufacturing jobs at the rate of about a million a year, largely concentrated in the high-tech industry. This is no surprise given the collapse of the high-tech bubble in 2001 and the accompanying drop in demand for Figure 1.

such products. In addition to looking at absolute changes in the number of jobs, it's also useful to look at employment changes relative to past trends. Many U.S. industries that accounted for large increases in jobs in the 1990s are now declining. From that perspective, the largest turnaround in employment has been in the professional and business services sector. Some of this is related to the collapse of the Internet bubble and the slowing of demand for business consultants, but it also includes many industries that are identified with the off-shoring of business services.

As an economist, I'm puzzled by the recent use of the term "off-shoring." We had a perfectly good word for that already: "imports." Off-shoring refers to the substitution of foreign-produced services for activities that used to be performed domestically, but the process is the same when imports substitute for the domestic production of goods. In that sense, the focus on the employment costs of off-shoring involves a simple continuation of the public debate over the employment effects of importing manufactured products.

In any case, in recent years the Bureau of Labor Statistics has undertaken regular surveys of firms that have initi-

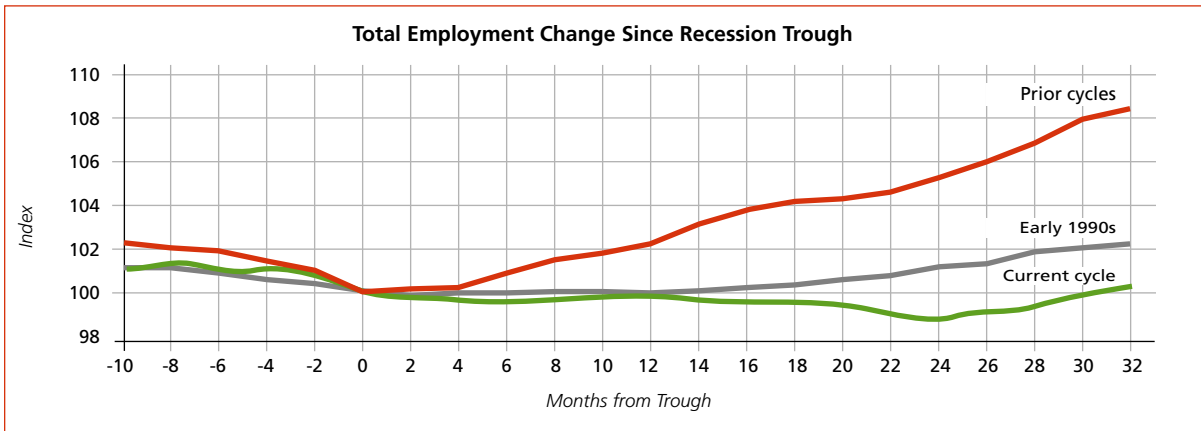
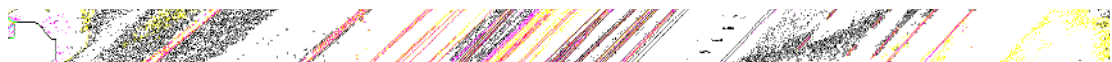
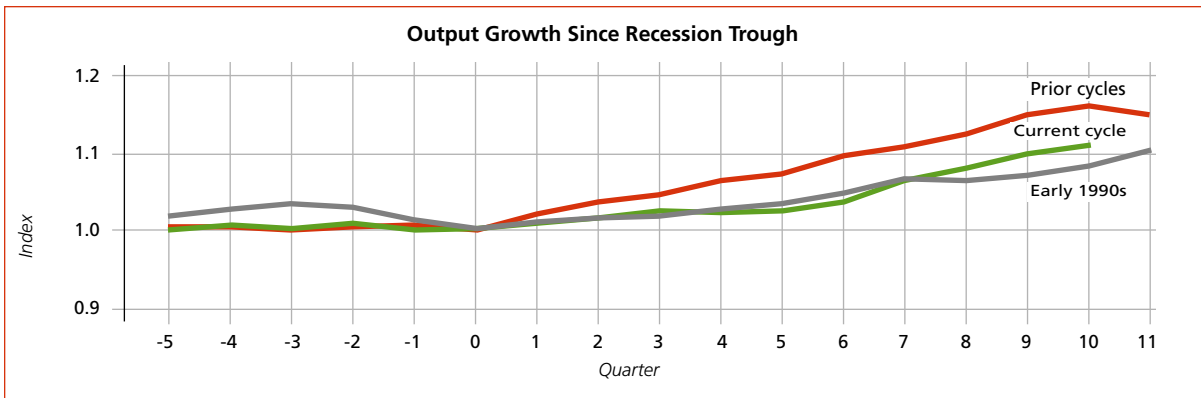


Figure 2.



ated mass layoffs (that is, layoffs of 50 or more employees) to ask the reasons for the cutbacks. Competition with overseas sources (imports) or outsourcing activities (relocation of jobs) accounted for only about 4 percent of the roughly one million mass layoffs each year. Furthermore, a focus on the importation of services ignores the fact that the United States is a large net exporter of business services. In fact, last year the United States had a \$50 billion surplus on trade in the service category that includes the business services that are at the center of the off-shoring discussion.

## Productivity Growth

Normally productivity growth is low during recessions. It's hard for businesses to lay off workers fast enough when output is contracting and so an inevitable deterioration in productivity follows. But for the last three years or so, productivity growth has accelerated in the United States—on top of the growth achieved between 1995 and 2000.

Historically, services have been viewed as a group of industries in which it is very difficult to improve productivity. Table 1 shows consistently strong improvements in the goods-producing industries, largely driven for many years by the increase in productivity in computer manufacturing. After 1995, however, we also began to see an acceleration of productivity growth in service-producing industries. They started from a rate far below that of goods-producing industries and then slowly began to rise and close the gap, until in the early 2000s productivity growth in services nearly equaled that of the goods-producing industries.

The statistical agencies now provide detailed information on output, employment, capital investments, and productivity growth down to the level of 55 industries. As a result, we can begin to learn much more about the sources of the aggregate improvements. Moreover, we can distinguish between high-tech capital and the more old-fashioned capital, making it possible to identify the industries that have benefited the most from the introduction of these new products.

Table 1.

<b>Labor Productivity Growth in Goods-Producing and Services-Producing Industries</b>				
<i>Labor Productivity</i>	<i>Annual percentage rates of change</i>			
	<i>1977-87</i>	<i>1987-95</i>	<i>1995-00</i>	<i>2000-03</i>
<b>Private goods-producing industries</b>	<b>2.4</b>	<b>2.1</b>	<b>2.9</b>	<b>3.5</b>
<b>Private services-producing industries</b>	<b>0.6</b>	<b>0.8</b>	<b>1.7</b>	<b>3.1</b>

Why is this important? First, we can find out whether productivity growth is occurring in the industries putting high-tech equipment to use. The data also help to separate the effect of outsourcing on labor productivity. If, for example, a firm has a stable level of sales but begins to outsource much of its work, it could appear that since its own labor force has dropped, its productivity has risen. And yet all the company has done is shift its expenses from labor to purchasing of materials.

The new data set allows us to capture all these factors—purchases of labor, materials, and capital—to create a multi-factor productivity scale that takes into account the efficiency with which a firm is using all its inputs, not just labor. Multi-factor productivity is a far better measure of efficiency than the prior focus on output per worker, labor productivity.

The good news is that the productivity resurgence in the United States is widespread. It is not focused on one or two industries, meaning that it is likely to persist in the future. Further, the service-producing industries account for the dominant proportion of the acceleration in multifactor productivity, and they are the big users of high-tech capital. For many years, the wisdom about computers was that no one knew how to use them well; their capabilities were wasted. Now the evidence is increasingly strong that computers are being used well and efficiently in the United States.

There is a tension in our perspectives on productivity growth. While economists are likely to emphasize the ability to produce more with the same number of workers, others fear that firms will choose to produce the same with fewer workers. In the long run, the economists' perspective has been more correct, and productivity growth has brought forth both higher incomes per worker and rising levels of employment. But in the short run, productivity growth, like other forms of change, can be quite disruptive.

Another interesting dimension in this discussion is a well-known theory put forth by the economist William Baumol, who argued that it is inherently difficult to improve productivity in the services sector. To illustrate his point, Baumol noted that in 1787 when Mozart composed his String Quintet in G Minor, it took five musicians to perform it. Today, more than 200 years later, it still takes five people and, unless they play really fast, it takes as long to perform the piece as it did centuries ago. Of course, the costs of musicians have risen considerably since Mozart's day. Further, Baumol predicted that as people's incomes rise they demand more and more services. As a result, more and more resources are shifted

out of the goods-producing industries with high productivity growth and into the service-producing industries with low productivity growth. Eventually, such an economy stagnates.

I would argue, however, that to an important extent Baumol's cost disease—as his theory has come to be known—has been cured in the United States. In the music industry, for example, while not everyone can afford tickets to hear a quintet live, for about 15 dollars they can buy a recording of that quintet (or, more likely, a better one) that is likely to be of higher quality than what they would hear in most of the seats in the music hall.

### Higher Education and Measurement Issues

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There is one industry in which it appears that Baumol's cost disease has not been defeated: education. Costs have been rising steadily, above the rate of wage increases, while labor productivity—in terms of students per teacher—has declined. One could argue that the decline in productivity is a result of an increase in quality, but research regarding the correlation between smaller class size and improved output is inconclusive.

Research into the productivity of the education sector remains extremely problematic, primarily because there is such a dearth of reliable data. The improvement in the statistics that is so evident for other service-producing industries simply has not occurred in the education sector. Most of the statistical information available about the U.S. economy comes from economic surveys, including the detailed economic census conducted in the United States once every five years. But the higher education community successfully lobbied to be exempted from these reporting requirements; thus the Census Bureau is blocked from gathering data and we lack even the most basic information about the education industry. For example, we don't know with any useful degree of breakdown who is employed in higher education, how much capital is being spent, or how many computers are being used.

Admittedly, even if good input data were available, assessing outputs is difficult as well. The embedding of research in the educational process makes measurement all the more complex, in that it is difficult to separate and individually account for outputs in education and research. Further, quality must be factored into the measurement of outputs. Yet here too, the basis for any extensive analysis is severely limited. About the only available

quality indicator is test scores. In that regard, GRE test score results over the last 30-plus years are decidedly mixed, with verbal scores falling more than quantitative scores have risen. Those results, and the fact that as far as the available data show, the technology of the education industry has changed very little in more than 100 years, bring us back to Baumol's cost disease: In the long run, the need to pay wage increases that match those of industries with positive gains in efficiency implies that education will absorb an ever-rising share of family incomes.

### Conclusion

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We do have reliable data showing that the premium in lifetime wages for college graduates compared to the wages of high school graduates has doubled over the last 25 years. There is a shrinking demand for unskilled labor in the United States and a rapidly growing demand for skilled labor. The inability on the part of the education industry to increase the supply of highly skilled labor fast enough is driving up the wage premium. And as technology advances, the number of jobs for unskilled workers declines and their wages are driven down. But as the cost of education rises and consumes a larger share of income, higher education is leaving behind all those who can't afford to learn the skills they need to be gainfully employed in a globalized world.

Without a doubt, technology will continue to advance, and globalization will too. In the global economy, no one is immune from competition—including white-collar as well as blue-collar workers. Going forward, the best resource the United States has is education: We must find a way to transform a large proportion of the American population into highly skilled workers. Higher education in particular will become absolutely critical to their success and the nation's in the global economy of the future. In that regard, the lagging productivity growth of the education industry is a source of serious concern.

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