

For release on delivery  
12:45 p.m. EST  
November 6, 2003

The Jobless Recovery

Remarks by

Ben S. Bernanke

Member

Board of Governors of the Federal Reserve System

at the

Global Economic and Investment Outlook Conference

Carnegie Mellon University

Pittsburgh, Pa.

November 6, 2003

In some ways, the economic slowdown that began in the United States in late 2000 has been relatively mild. The official period of recession, as dated by the National Bureau of Economic Research, lasted only eight months, from March to November of 2001. Real gross domestic product declined very modestly before resuming a moderate pace of growth, and some important sectors of the economy--residential construction being the leading example--remained exceptionally strong throughout the period.

Nevertheless, in one key aspect, namely, the performance of the labor market, the downturn was severe and the recovery has been exceptionally slow. You may recall that the labor market also recovered slowly following the 1990-91 recession, earning that period the sobriquet "the jobless recovery." However, since the trough of the current cycle in November 2001, the jobs situation by most measures has been even slower to improve than in the 1990-91 episode. The weak labor market has imposed hardship on millions of American workers, their families, and their communities; and, conceivably, continued failure of the labor market to improve could threaten the sustainability of the economic recovery itself. Thus, trying to understand what underlies the unusually delayed recovery of employment is critical.

In my talk today I will discuss some explanations for, and implications of, the current jobless recovery. I will begin by discussing the measurement of employment, which has been the source of recent controversy. I will then turn to explanations for the weakness of the labor market, noting that several factors have contributed to the problem. Finally I will turn to the outlook for employment and the implications for monetary policy. As always, the opinions I will express today are my own and do not necessarily

reflect the views of my colleagues at the Board of Governors or on the Federal Open Market Committee.<sup>1</sup>

### **The Payroll Survey and the Household Survey**

As noted by Conan Doyle's great fictional detective, Sherlock Holmes, it is a "capital mistake" to theorize in advance of the data. Before turning to economic explanations of the labor market's behavior, therefore, I will briefly discuss the problem of measuring job creation.

There are two leading sources of data on aggregate U.S. employment, known informally as the payroll survey and the household survey--and more formally, as the Current Employment Statistics survey and the Current Population Survey, respectively. The payroll survey is the responsibility of the Bureau of Labor Statistics (BLS), while the household survey is conducted jointly by the BLS and the Bureau of the Census.

The payroll survey is a survey of employers. The monthly data gathered in this survey come from the payroll records of about 400,000 business establishments, covering among them about a third of total nonfarm payroll employment (including civilian government workers). Also, with a lag of about a year, the payroll survey is benchmarked to an almost-complete count of U.S. payroll employment, based on unemployment insurance tax records and other administrative data.

The household survey, in contrast, is a survey of individuals; it is based on a random sample of about 60,000 households contacted each month by Census survey-takers. For each household in the sample, the survey-takers attempt to determine how

---

<sup>1</sup> I would like to thank the Board staff, notably Stephanie Aaronson, Bruce Fallick, Andrew Figura, Jonathan Pingle, and William Wascher, for outstanding assistance in the preparation of these remarks.

many people aged sixteen or older are currently employed, how many are looking but unable to find work (the unemployed), and how many are out of the labor force, meaning that they are neither employed nor actively looking for work. The ratio of the unemployed to those working or looking for work is the well-known statistic, the civilian unemployment rate, which currently stands at just above 6 percent of the labor force.

An important and puzzling fact is that, although neither survey suggests that the U.S. job market is currently strong, the two surveys provide quite different estimates of the extent of job loss in the past three years. According to the payroll survey (including the BLS's estimate of the upcoming benchmark revision), as of the end of September 2003 nonfarm payroll employment has fallen by some 2.8 million jobs since the beginning of the recession in March 2001 and by almost 1.2 million jobs since the recession's trough in November 2001. Also, according to this survey, manufacturing is by far the hardest hit sector. About 2.4 million of the 2.8 million jobs lost since March 2001 were in manufacturing, and manufacturing more than accounts for the net job loss since the recession trough. Indeed, from the trough through this September, nonmanufacturing payrolls have actually grown by some 125,000 jobs.<sup>2</sup>

The household survey shows a less severe decline in employment than the payroll survey does. To compare the data from the household and payroll surveys, we must first take account of the fact that their coverage is different. Notably, the payroll survey counts the number of *jobs*, whereas the household survey counts the number of *people employed*. Hence a person who holds two jobs would be counted twice in the payroll survey but only once in the household survey. The household survey also counts certain

---

<sup>2</sup> The weakness in manufacturing may also account for some of the job loss in closely related sectors, such as temporary help services and wholesale trade.

groups of workers excluded from the payroll survey, including unincorporated self-employed workers, unpaid family workers, and farm workers. One can correct for these differences and use the household survey to estimate nonfarm payroll employment, the concept measured by the payroll survey. When the necessary adjustments are made, the net reduction in payroll employment since March 2001, according to the household survey, is just over 600,000 jobs, significantly less than the 2.8 million job-loss estimate of the payroll survey. Also in contrast to the payroll survey, the household survey suggests that employment has recovered somewhat since the recession trough. According to the household survey, although some 1.3 million payroll jobs were lost between March 2001 and November 2001, more than 600,000 jobs have been created since the recession officially ended in November 2001.

Which, if either, of these two surveys are we to believe? The payroll survey has the important advantage of being based on a much larger sample; indeed, as already mentioned, with a lag of one year the payroll survey is adjusted to reflect virtually a complete count of nonfarm payroll employment. Moreover, one would generally presume that firms' payroll records are likely to be more accurate than the information obtained by interviewing household members, as individuals may misunderstand the survey-taker's questions or for one reason or another misreport their own labor market status or that of other members of the household. On the other hand, the household survey has potential advantages of its own: For example, it may capture "off-the-books" employment, which will generally be missed by the payroll survey. Some analysts have also suggested that the household survey may be more effective than the payroll survey at capturing jobs created by new businesses, particularly small businesses, during the early

expansion phase of the cycle. On this latter point, however, a recent redesign of the payroll survey, which among other improvements allows new samples of employers to be drawn more frequently, has likely improved the survey's coverage of startup businesses. Indeed, the latest two benchmark revisions, in March 2002 and March 2003, both revised payroll employment downward; if the main problem with the survey had been a failure to measure employment by new businesses, the revisions would have been upward.

A team of BLS and Census statisticians (Nardone and others, 2003) recently conducted a careful comparative study of the two surveys. Although the study does not come to firm conclusions, it does suggest one possibly important reason to believe that the household survey is currently overstating employment growth. Because the household survey is only a sampling of the population, much like a public opinion poll, aggregate employment figures can be obtained from this survey only by scaling up the household responses by factors that reflect the estimated size and composition of the U.S. population. Between decennial censuses, the Bureau of the Census estimates the U.S. population from birth and death records and from historical data on immigration rates.<sup>3</sup> However, according to the new study, the Census Bureau may have overestimated U.S. population growth since 2000, primarily by assuming too high a rate of legal and illegal immigration to this country. The authors of the study noted that fewer people are likely to enter the country when the economy is weak and fewer jobs are available, as has been the case for the past few years, a factor not accounted for in the Census estimate of immigration. In addition, tighter restrictions on immigration since the September 11, 2001, terrorist attacks have likely reduced the number of potential workers entering the

---

<sup>3</sup> Notably, household employment was revised upward substantially in January 2003, on the basis of new population estimates for 2000, 2001, and 2002.

country. To the extent that the Census Bureau has overestimated the U.S. population, the job estimates from the household survey will be overstated as well. This explanation for the household survey's relatively high job estimate is consistent with the fact that during the 1990s, a period during which (we now know) the Census Bureau significantly *underestimated* net immigration to the United States, employment estimates from the household survey were significantly *lower* than those based on the payroll survey.<sup>4</sup>

To summarize, we do not fully understand the differences in employment reported by the payroll and household surveys, and the truth probably lies in between the two series. However, because of the larger sample used in the payroll survey and because of possible problems with the population estimates used to scale the household survey, somewhat greater reliance should probably be placed on the payroll survey.

Whatever the verdict regarding the relative reliability of the two surveys, their differences should not obscure the fact that the U.S. labor market has been weak. Indicators of labor market underperformance include (1) the unemployment rate, which remains 1.9 percentage points above its level at the March 2001 peak of the business cycle; (2) a significant decline in labor force participation, particularly among younger workers; (3) the rising share of the unemployed who have been out of work six months or more; (4) the relatively slow decline in initial claims for unemployment insurance, as well as in continuing claims (though both of these have improved a bit lately); (5) the fact

---

<sup>4</sup> The use of contract workers or consultants is another possible explanation of the discrepancy between the two surveys. Such workers are technically self-employed, but in the household survey they might erroneously report themselves as employed by the company to which they are providing services. This misreporting would lead to an overstatement of wage and salary employment in the household survey and a corresponding understatement of self-employment. I am not aware of any data that could be used to measure the importance of this phenomenon.

that the Conference Board's index of help-wanted advertising remains below the level of the recession trough; and (6) the relatively pessimistic views about prospects for the labor market revealed in surveys of both employers and workers. (For example, the Conference Board's index of household perceptions of job availability has continued to fall this year and currently is close to the lowest levels since 1993.) In particular, although various data suggest that layoffs have tapered off significantly, it appears that job creation and hiring remain quite sluggish. For example, according to new BLS data on employment dynamics, as of the end of 2002, "job losses"--defined as decreases in payroll employment at shrinking establishments--had returned to pre-recession levels. By contrast, "job gains"--increases in payroll employment at expanding establishments--had not recovered at all.

### **The Slow Recovery of the Labor Market: Some Possible Explanations**

Why has the job market remained relatively weak despite strong recent gains in spending and output? A number of hypotheses have been advanced.

First, some have suggested that firms over-hired during the late 1990s boom, implying that the levels of employment seen before the recession peak in March 2001 were not sustainable. However, comparisons of the current employment situation with alternative benchmarks do not much change the impression that the recent decline in employment has been unusually severe. For example, if for the sake of argument we defined sustainable labor market conditions as an unemployment rate of 5 percent and a labor force participation rate equal to its approximate trend value of 67 percent, the level of aggregate employment would still be about 3-1/2 million jobs below the "sustainable" level.

Second, some observers have pointed to increases in benefit costs to employers as a factor retarding hiring. Benefit costs incurred by private employers have grown rapidly in recent years. For example, according to the Employment Cost Index (ECI), benefit costs rose more than 11 percent, compared to wage and salary increases of about 6 percent, between September 2001 and September 2003. The main sources of this increase are health insurance costs, which rose more than 20 percent over that period (despite some efforts of employers to shift those costs back to employees) and pension costs, particularly the costs of funding defined-benefit pension plans.

The increase in benefits costs is a negative factor for employment and may help to explain why firms have worked so assiduously to increase the productivity of existing workers rather than hire new ones. However, I suspect that benefits costs are not the major explanation of the hiring slowdown. Employers appear to have partly recouped health and pension costs by raising wages more slowly and by reducing other parts of the benefits package. In addition, employers who were deterred from permanent hiring by rising benefits costs would be expected to increase workweeks of existing workers and make greater use of temporary workers; but workweeks have not yet increased and the use of temporary workers has grown thus far only to a moderate extent.<sup>5</sup> Finally, although underfunded pension plans have been a headache for many employers, the share of private-sector workers in defined benefit plans is only about 20 percent and falling, and many newly hired workers would not be eligible for such plans. Thus, for the typical

---

<sup>5</sup> The temporary-work industry lost about 500,000 jobs between late 2000 and late 2001 and thus far has recovered only about 150,000 of them. However, in support of the benefit-cost hypothesis, I note that employment of part-time workers, who often receive fewer benefits than full-time workers, has increased during the recovery, as it did in the 1990-91 episode as well.

company, pension costs at least (as opposed to the costs of health insurance) are unlikely to have had a large effect on the marginal cost of hiring a new worker.

A third explanation for the slowness of firms to begin hiring is that an elevated level of political and economic uncertainty has made firm managers more hesitant to expand their businesses. Among the obvious sources of uncertainty are the September 11 attacks and their aftermath, including the wars in Afghanistan and Iraq; the accounting and corporate governance scandals that came to light in the summer of 2002; and lingering concerns about the durability of the economic recovery. The uncertainty hypothesis has a ring of truth, I believe, and it is consistent with the facts that business capital investment has only recently begun to pick up and that inventories are still being liquidated. However, the observations that workweeks have not risen and temporary employment have risen only modestly, already noted in connection with the cost-of-benefits explanation, is a bit of evidence against the uncertainty explanation as well. If firms needed more labor services but were reluctant to commit to new hiring, one would expect to see them lengthening workweeks and hiring temporary workers in large numbers, measures that increase labor input but are also easier to reverse.<sup>6</sup>

A fourth explanation for the slow recovery of employment is that much of the employment loss is the result of an increased pace of structural change in the U.S. economy. Structural change implies the permanent contraction of certain industries. Although one would expect jobs lost in declining industries to be replaced eventually

---

<sup>6</sup> Schreft and Singh (2003) argue that the U.S. labor market has become more flexible, allowing firms greater use of “just-in-time” employment practices. Though this development would tend to reduce permanent hiring during a period of uncertainty, it does not necessarily imply a reduction in total jobs, including temporary and part-time jobs.

with jobs in growing industries, this process is likely to be protracted, because it takes time for new jobs to be created and for workers to relocate and retrain.

There can be no doubt that the U.S. economy is undergoing structural change and that this change has important implications for the labor market. One might ask, however, whether the pace of structural change has been noticeably higher recently than in the past. In support of the structural change hypothesis, Groshen and Potter (2003) have pointed out that the great majority of layoffs in the past few years have been explicitly permanent, not temporary. They have also noted that many of the industries that lost jobs during the recent recession continue to lose jobs, whereas many industries that gained jobs during the recession continue to gain jobs. These facts are suggestive but not conclusive. Permanent layoffs were far greater than temporary layoffs in the 1990-91 recession as well, but job growth returned more quickly in that episode than in the present one. The fact that industries that lost jobs in the 2001 recession continue to lose jobs is consistent with structural change, but it is also consistent with a slow job-market recovery occurring for other reasons.<sup>7</sup>

To explore the structural change hypothesis further, I find it useful to think more specifically about what types of structural change may have begun to occur more quickly in recent years--particularly in the manufacturing sector, which has borne the brunt of the job loss since 2001. Factors that have certainly contributed to structural change in manufacturing is globalization and changing trade patterns. As you know, the U.S. trade balance has deteriorated significantly in recent years, and a disproportionate part of the

---

<sup>7</sup> Figura (2003) studied restructuring over a longer period. Although his methodology did not allow him to measure restructuring in the current downturn, he does find that restructuring plays an important role in recessions in general and appears to have increased in importance over the past two decades.

change in trade flows has taken place in manufactured goods. (Services, too, have been affected, particularly through the outsourcing of jobs abroad; but for concreteness, I focus here on the quantitatively more important case of manufacturing.) Currently, about 26 percent of the value of manufactured goods consumed in the United States is produced abroad, up about 5 percentage points since early 1999 and about twice the level of the early 1980s. The share of domestic manufacturing production that is exported is about 16 percent, roughly 2 percentage points below its peak in early 2001 but about the same level that prevailed in the late 1990s. Therefore, in the trade area, the major change since the late 1990s appears to be an increased propensity of Americans to buy foreign-made goods, particularly consumer goods, as opposed to a loss of foreign markets for domestic producers.<sup>8</sup> Compared with the hypothetical scenario in which domestic and foreign demands for manufactured goods are held constant but in which import and export shares are set to their 1999 levels, this shift in trade patterns can be argued to have cost the United States a significant number of manufacturing jobs--according to some private-sector estimates, perhaps a third of the total lost since the recession began.<sup>9</sup>

At this point in the debate, one usually hears two opposing views. On one side, economists generally point out the benefits of free trade to the economy as a whole,

---

<sup>8</sup> A case in point is the motor vehicles and parts industry, which has actually increased by a small amount its ability to export its output. The industry's increased export share has been offset, however, by a significant increase in the past year in the domestic market share of imported vehicles and parts.

<sup>9</sup> The Progressive Policy Institute estimates that 800,000 manufacturing jobs have been lost because of the rise in the manufacturing trade deficit. Economy.com estimated that if the total current account deficit had been unchanged since the first quarter of 2001, nearly one million additional jobs would have been created in the United States. Since about 84 percent of imports are manufactured goods, the Economy.com estimate is fairly similar to that of the PPI. Although these numbers are provocative, I have not evaluated the methodologies underlying these estimates and cannot say whether they are reasonable.

which in principle outweigh the short-run costs borne by workers and firms in industries hurt by trade competition. Certainly, those who stress the costs of trade to domestic manufacturers are prone to overlook its very substantial benefits to domestic consumers, exporters, importers of intermediate goods, and investors. On the other side, manufacturers and union leaders typically argue that free trade is all very well in theory, but the real world is messy and involves many deviations from economists' idealized views. Moreover, whatever the benefits of trade to the economy as a whole, no one can deny that the pain felt by workers displaced by changes in trade flows is real and serious.

In lieu of involving myself (unproductively) in this debate, I will make two broader points that put the current trade issue in some context. First, the recent shift in trade patterns cannot at bottom be explained by microeconomic factors such as trade barriers or changes in consumer preferences for imported versus domestic goods. Rather, the shifts in trade are fundamentally the result of a macroeconomic phenomenon-- namely, the U.S. current account deficit. The current account deficit, now close to 5 percent of U.S. GDP, reflects both U.S. economic weakness and U.S. economic strength. It reflects weakness in that one of its causes is the relatively low rate of U.S. national saving. Low national saving forces us to meet domestic funding needs by borrowing abroad, and the high rate of domestic spending implied by a low saving rate forces us to meet domestic demands by importing more than we export. But the current account deficit also reflects U.S. economic strength, shown both by the attractiveness of the U.S. economy to foreign investors (which has stimulated capital inflows and supported the value of the dollar) and by the fact that economic growth in the United States is

proceeding more rapidly than that of most of our trading partners (which has resulted in imports increasing more than exports).

As is widely recognized, the U.S. current account deficit cannot be sustained indefinitely at its current high level and will eventually have to be brought down to a more manageable size. However, eliminating the U.S. current account deficit too quickly is neither desirable nor feasible. Any attempt to do so would probably involve sharp reductions in domestic spending, which would have far worse effects on U.S. employment than the current account deficit does. Thus the hypothetical scenario to which I alluded earlier, in which domestic and foreign demands are unchanged but export and import shares are those of 1999, is simply not a feasible alternative right now. For now, our best strategy is to encourage pro-growth policies among our trading partners, in the expectation that more-rapid growth abroad will raise the demand for U.S. exports. At the same time, we should do what we can to help U.S. workers displaced by shifting trade patterns to retrain and relocate, if necessary.

The second point I will make may surprise you; it is that, despite the inroads made by imports, in real terms manufacturing production in the United States has risen rapidly over the past fifty years.<sup>10</sup> The recent recession has affected that trend only modestly. For example, although as of September 2003 U.S. manufacturing output was about 6 percent below its mid-2000 peak, it was also about equal to the level reached in 1999 and half again the level attained in 1990.<sup>11</sup>

---

<sup>10</sup> In nominal terms, the share of manufacturing in U.S. GDP has been falling. However, because of strong productivity gains, relative prices in the manufacturing sector have fallen sufficiently to permit manufacturing output to keep pace with overall GDP in real terms.

<sup>11</sup> This comparison is based on the manufacturing component of the Federal Reserve's index of industrial production.

If manufacturing output has not declined in the United States, then what explains the sharp reductions in U.S. manufacturing employment that have occurred not only in the past few years but over preceding decades as well? The answer is a stellar record of productivity growth. Over the years, new technologies, processes, and products have permitted manufacturing firms to produce ever-increasing output with ever fewer workers.<sup>12</sup> The long-run trend in manufacturing is similar to what occurred earlier in agriculture: At one time a majority of the U.S. population lived on farms; but agricultural productivity has improved so much that although farm workers are only 2-1/2 percent of the workforce, they are able both to feed the nation and export substantial quantities of food as well.

This observation brings me to my fifth and final possible explanation of the jobless recovery, which is the remarkable increase in labor productivity we have seen in recent years, not only in manufacturing but in the economy as a whole. Since the trough of the recession in the fourth quarter of 2001, productivity in the nonfarm business sector has risen at an annual average rate of 4-1/2 percent, compared with average annual increases of 2-1/2 percent in the late 1990s, itself a period of strong productivity growth. This surprising productivity performance probably reflects both some increase in the long-run rate of productivity growth as well as unmeasured increases in the work effort of employees. However, in my view, neither of these factors can fully account for the increase in productivity growth, particularly some of the recent quarterly numbers. I

---

<sup>12</sup> Perhaps it is worth noting that some part of the long-term decline in manufacturing employment may be a statistical artifact, arising from outsourcing by manufacturing firms of accounting, financial, legal, and other services. A lawyer employed directly by a manufacturing firm is counted as a manufacturing employee; a lawyer engaged by a manufacturing firm on a consulting basis is not.

suspect that some of the recent expansion in productivity is instead the delayed result of firms' heavy investment in high-technology equipment in the latter part of the 1990s. Only over time have managers learned how to reorganize their production and distribution so as to take full advantage of these new technologies and thus enhance the productivity of capital and workers.

Strong productivity growth provides major benefits to the economy in the longer term, including higher real incomes and more efficient and competitive industries. But in the past couple of years, given erratic growth in final demand, it has also enabled firms to meet the demand for their output without hiring new workers. Thus, in the short run, productivity gains, coupled with growth in aggregate demand that has been insufficient to match the expansion in aggregate supply, have contributed to the slowness of the recovery of the labor market. Although other explanations for the jobless recovery--overstaffing in the boom, benefits costs, uncertainty, and structural change--have played a role, in my view the productivity explanation is, quantitatively, probably the most important. As we will see, that conclusion (if correct) bodes well for the future.

### **Outlook and Policy Implications**

Because new workers are always entering the labor force, the U.S. economy needs to create something on the order of 150,000 net new jobs each month just to keep the unemployment rate stable. When can we expect to see this (or a higher) level of job creation?

A few encouraging signs have appeared in the labor market data of recent months, including a modest increase in payroll employment in September (after a long string of negative readings) and a slow decline in new claims for unemployment insurance.

However, so far these signals of recovery remain tentative; on the basis of the labor-market data alone, asserting that an employment recovery has begun would be premature.

Nevertheless, I find it reasonable to expect that job growth will begin to pick up in the next quarter or two. Real GDP has accelerated considerably since the spring, and most forecasters project that it will continue to grow strongly in 2004. Moreover, it appears inevitable that the recent outsized gains in labor productivity will soon begin to moderate, reflecting both the normal cyclical pattern of productivity growth and the likelihood that employers will soon begin to exhaust opportunities to squeeze out still further gains in productivity. Arithmetically, if output growth remains strong and productivity growth returns to more normal levels, employment must begin to rise. Some solid job growth, in turn, would help to ensure that the recovery is self-sustaining by increasing consumer confidence.

What role does monetary policy have in this scenario? As you know, the Federal Reserve has a dual mandate, which requires the central bank to try to achieve both maximum sustainable employment and price stability. An employment recovery will require continued strong growth in spending and output to induce firms to hire and invest more aggressively. The employment half of the dual mandate thus suggests a need to continue the Fed's current accommodative monetary policy.

Of course, the Fed's policies must also be consistent with ensuring price stability --the other half of the dual mandate. As I noted in earlier talks, I believe that the current low level of inflation, the expansion of aggregate supply by means of ongoing productivity growth, and the high degree of slack in resource utilization together leave

considerable scope for a continuation of the currently accommodative monetary policy without undue risk to price stability.

A possible concern is that, if (as some have argued) the jobless recovery is in part the result of an unusually high pace of structural change, then the degree of longer-term mismatch between workers' skills and the available jobs may have increased. If so, then the effective slack in the economy may be less than we now think, and inflationary pressures may emerge more quickly than we currently expect. This possibility must be taken seriously. However, as a counterweight to this concern, I note that a number of factors, such as the greater average age and experience of the labor force and an increasingly flexible and dynamic labor market (Schreft and Singh, 2003), have tended in recent years to reduce the sustainable rate of unemployment.

Another way to assess the current inflation risk is to compare the recent experience to the pattern of the last so-called jobless recovery, following the 1990-91 recession. Initially at least, that episode was similar to the current one. Both the 1990-91 and the 2001 recessions lasted eight months, according to the National Bureau of Economic Research. Employment kept falling after the trough in both recessions, while labor productivity rose sharply. In both recessions, also, core inflation was virtually flat during the recession itself.

The closely parallel evolutions of the two episodes ended, however, shortly after the recession troughs. In particular, the rebound in employment growth was much stronger in the 1990-91 episode. In that episode, employment growth stabilized about a year after the trough date and had reached 1 percent at an annual rate by six quarters after the trough. In contrast, in the current episode, employment was still falling six quarters

after the trough. By three years after the 1991 trough, in March 1994, employment growth was 3 percent at an annual rate.

So, in short, the 1990-91 and 2001 episodes looked similar initially, but the recovery of the labor market after the trough was considerably faster in 1990-91 than it has been recently. What happened to inflation subsequent to the troughs? This is the critical point: During the three years after the March 1991 trough, core inflation (as measured by either the consumer price index or the personal consumption expenditures deflator) fell more than 2 percentage points, with most of this decline occurring after employment growth had turned positive. For comparison, in the current episode, core CPI inflation has fallen about 1-1/2 percentage points since the November 2001 trough, and core PCE inflation has fallen about 3/4 percentage point. Because the post-trough recovery in the labor market has been so much slower this time around, the experience of the earlier episode suggests that the current risk of increased inflation is, for the time being at least, quite small.

My conclusions therefore are relatively optimistic. The combination of faster growth in demand and slowing productivity growth should lead, in the next few quarters, to increased hiring. At the same time, inflation appears subdued and likely to remain so. Thus it appears that monetary policy can remain accommodative, supporting the economic recovery and the recovery of the labor market, without endangering price stability.

## REFERENCES

- Figura, Andrew (2003). "The Effects of Restructuring on Unemployment," FEDS Working Paper (forthcoming), Board of Governors of the Federal Reserve System.
- Groshen, Erica, and Simon Potter (2003). "Has Structural Change Contributed to a Jobless Recovery?" Federal Reserve Bank of New York, *Current Issues in Economics and Finance*, vol. 9, no. 8, August.
- Nardone, Thomas, Mary Bowler, Jurgen Kropf, Katie Kirkland, and Signe Wetrogan (2003). "Examining the Discrepancy in Employment Growth between the CPS and CES," paper presented to the Federal Economic Statistics Advisory Committee, October 17.
- Schreft, Stacey, and Aarti Singh (2003). "A Closer Look at Jobless Recoveries," Federal Reserve Bank of Kansas City, *Economic Review*, Second Quarter, pp. 45-72.