



CRE8 Occasional Report No. 2007-01

**Post-Casting Employment in the Eighth Federal Reserve District:
Revised Data for Metro Areas**

Michael R. Pakko

and

Howard J. Wall

March 9, 2007



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A great deal of effort goes into forecasting future levels of economic activity, and most people appreciate the difficulties that are faced in making any such forecasts. There is significantly less appreciation, however, for the difficulties faced in determining economic performance in the recent past. In fact, all kinds of economic data undergo revisions over time, meaning that our view of the past is constantly changing. Sometimes, the revised data tell a story that differs greatly from what was told by original data. This is especially true of employment data for metro areas.

On March 8, 2007, the Bureau of Labor Statistics (BLS) released its latest annual benchmark revisions to the payroll employment data for every metro area in the United States. Monthly employment estimates going back to April 2005 were affected by these revisions. In addition, new population controls resulted in small revisions to the data that go further back in time.

The latest revisions meant significant changes in our perception of the health of metro areas. This paper briefly discusses the impact of these changes for Metropolitan Statistical Areas (MSAs) in the Eighth Federal Reserve District, with special focus on the four major metro areas in which The Federal Reserve Bank of St. Louis has offices: St. Louis MO-IL, Louisville-Jefferson County KY-IN, Memphis TN-AR-MS and Little Rock AR.

* Michael R. Pakko is a Research Officer and Howard J. Wall is an Assistant Vice President, both in the Research Division of the Federal Reserve Bank of St. Louis. Joshua Byrge and Kristie Engemann provided substantial research assistance. The views expressed in this paper are those of the authors, and do not necessarily represent positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

Overview

Table 1 indicates the impact of these revisions on annual employment growth for all 18 MSAs in the in the District. For some of the metro areas, the revisions are substantial—for others they represent relatively minor changes. The revisions were positive for 9 of the 18 MSAs in 2005, and for 10 of the MSAs in 2006. All four of the largest metro areas in the District saw upward revisions in the estimates of their employment growth.. The St. Louis and Louisville metro areas saw dramatic improvements in their employment estimates while the revisions in Memphis and Little Rock were more measured.

Before the revisions, the employment estimates suggested that St. Louis and Louisville both experienced relatively grim years in 2006. St. Louis was said to have seen a loss of 400 jobs (-0.03 percent) while Louisville was thought to have seen an increase of only 3,600 (0.6 percent). The new estimates, however, present completely different pictures. St. Louis and Louisville are now seen as having generated 13,600 jobs (1.0 percent) and 11,900 jobs (1.9 percent), respectively. The new story is that St. Louis saw positive but slow employment growth that was somewhat below the rate for the United States (1.7 percent), while employment in Louisville grew somewhat faster than it did for the country as a whole.

Before the revisions, employment in the Memphis metro area was thought have increased by 6,100 (1.0 percent) in 2006, while the corresponding employment growth in Little Rock was 5,900 (1.7 percent). The new estimates indicate that the Memphis metro area generated 9,300 (1.5 percent), which puts its performance much closer to the national rate. For Little Rock, the new estimate of the number of jobs created in 2006 is 6,800 (2.0 percent), which now puts the area as an above-average job producer for the year.

Table 1
Pre- and Post-Benchmark Employment Growth*
Thousands (Percent)

MSA	Pre-Benchmark		Post-Benchmark	
	2005	2006	2005	2006
Bowling Green, KY	2.5 (4.2)	0.9 (1.5)	2.0 (3.4)	1.7 (2.8)
Columbia, MO	3.0 (3.3)	2.0 (2.2)	2.6 (2.9)	1.8 (2.0)
Elizabethtown, KY	0.5 (1.1)	-0.3 (-0.6)	1.1 (2.4)	1.4 (3.0)
Evansville, IN-KY	-0.2 (-0.1)	1.4 (0.8)	2.4 (1.3)	-0.3 (-0.2)
Fayetteville-Springdale- Rogers, AR	9.4 (4.8)	5.5 (2.7)	10.2 (5.3)	4.0 (2.0)
Fort Smith, AR-OK	2.9 (2.5)	-0.4 (-0.3)	2.8 (2.4)	2.9 (2.4)
Hot Springs, AR	0.1 (0.3)	3.0 (8.1)	0.7 (1.9)	0.9 (2.4)
Jackson, TN	0.5 (0.8)	1.2 (1.9)	0.8 (1.3)	0.7 (1.1)
Jefferson City, MO	0.6 (0.8)	-0.6 (-0.8)	0.0 (0.0)	0.6 (0.8)
Jonesboro, AR	0.2 (0.4)	1.1 (2.3)	0.4 (0.8)	0.8 (1.6)
Little Rock-North Little Rock, AR	5.9 (1.8)	5.9 (1.7)	5.7 (1.7)	6.8 (2.0)
Louisville, Jefferson County, KY-IN	4.4 (0.7)	3.9 (0.6)	6.6 (1.1)	11.9 (1.9)
Memphis, TN-AR-MS	11.5 (1.8)	6.1 (1.0)	13.7 (2.2)	9.3 (1.5)
Owensboro, KY	0.6 (1.2)	0.7 (1.4)	0.3 (0.6)	0.9 (1.8)
Pine Bluff, AR	-0.3 (-0.7)	0.9 (2.2)	-0.6 (-1.5)	-0.6 (-1.5)
St. Louis, MO-IL	15.7 (1.2)	-0.4 (0.0)	12.1 (0.9)	13.6 (1.0)
Springfield, MO	6.8 (3.6)	3.5 (1.8)	7.5 (4.0)	3.8 (1.9)
Texarkana, TX-AR	2.2 (4.1)	0.5 (0.9)	1.3 (2.4)	0.5 (0.9)

* By way of comparison, the latest estimates for the United States show that payroll employment grew by 1.9 percent in 2005 and 1.7 percent in 2006.

Some very large revisions, both up and down, occurred for the employment growth estimates of the 14 small and medium metro areas in the Eighth District. The three largest upward revisions, each of which was of greater than 1 percentage point, occurred for Bowling Green, Elizabethtown and Fort Smith. Bowling Green saw its employment picture change from slightly below the national average to well above it, while Elizabethtown and Fort Smith saw their employment pictures completely reverse. Each had initially been thought to have experienced mild job losses in 2006, but now are estimated to have experienced job gains well above the national rate.

At the other end, Evansville, Hot Springs and Pine Bluff all saw significant downward revisions (one percentage point or more) in their 2006 employment growth rates. For Hot Springs, however, the downward revision meant that its 2006 performance was downgrading from startlingly good to only above average. Evansville and Pine Bluff, on the other hand, went from having positive to negative job growth for the year. The revision was especially dismal for Pine Bluff, which went from above average job growth to significant job losses.

Summing over the 18 metro areas, the benchmark revisions contributed to a large net increase: The estimate for 2005 changed from pre-benchmark employment growth of 66.3 thousand to post-benchmark growth of 69.6 thousand. For 2006, the change was even more dramatic: from 34.0 thousand pre-benchmark to 76.0 thousand post-benchmark.

Background: Jobs Data and Benchmarking

At any time, the most up-to-date estimates of payroll employment in a metro area—the number of jobs—is provided by the Current Employment Statistics (CES) program of the BLS. According to the BLS, each month it surveys “about 160,000 businesses and government agencies, representing approximately 400,000 individual worksites,” from around the United

States. Although the survey covers hundreds of thousands of employers, these employers make up only a small percentage of all businesses and worksites in the country (According to the BLS, there were more than 8.8 million such establishments in the United States in June 2006.)

To calculate a comprehensive measure of metro area employment, the BLS needs to estimate the number of establishments in the area. This is the primary reason for the sometimes-large revisions to the CES data: the difficulty in estimating the number of establishments. When the economy is in recovery, for example, new firms might be setting up and hiring workers very quickly. The BLS doesn't find out about the new firms or jobs until the unemployment insurance records are updated, which can take several months or more. This lag is compounded by the fact that small firms, which provide the bulk of jobs, might only need to provide unemployment insurance information once a year rather than monthly or quarterly, as is required of larger firms.

To estimate the number of establishments, the BLS relies on the Quarterly Census of Employment and Wages (QCEW). The QCEW is a tabulation of employment information for workers covered by state and federal unemployment insurance programs. Because of its comprehensive nature, data from the QCEW cannot be produced as quickly as data from the CES: Initial data are released 6 to 7 months after the end of a quarter and are subject to subsequent revision. To fill in the blanks, the BLS estimates the number of establishments using the QCEW as a benchmark. Each year, the BLS establishes new benchmarks using updated data from the QCEW. Because of the lags and revisions to the QCEW data, the yearly benchmarking affects employment data from the CES going back 21 months. This is why the estimates just released have affected the yearly employment changes for 2005 and 2006. Note also that the estimates for job growth in 2006 will change again in March 2008 because much of the data for 2006 will be affected by the benchmark revisions that will occur then.

Recent Historical Perspective

Table 2 displays a brief history of revisions for the four major metro areas in the District. The first column of data in each panel is based on the first estimates of December employment, which are released in the subsequent January. The second data column is the estimate after the first benchmark revision, which happens in the subsequent March, and the last column is the estimate after the second benchmark revision, which occurs in March of the following year.

As these numbers make clear, our view of the economy can change dramatically following benchmark revisions. For example, in 2001 the initial data showed employment declines for St. Louis, Little Rock and Memphis. By the second benchmark revision, the magnitude of the decline was nearly cut in half for St. Louis but had doubled in size for Memphis. Meanwhile, the initially-estimated employment decline for Little Rock had been reversed to show a gain, while Louisville—which had initially shown an increase—registered a net decline for the year after the second benchmark.

Compared to some of the changes in previous years, this year's benchmark revisions had relatively small net effects. The only change in direction was registered for St. Louis for 2006. Pre-benchmark data showed a small decline in employment, while the newly-revised data show a substantial increase.

Table 2: Recent Benchmark Revisions

December-to-December change (thousands)

St. Louis

	Initial Release	First Benchmark Revision	Second Benchmark Revision
year t	January year t+1	March year t+1	March year t+2
2001	-21.6	-14.7	-12.3
2002	-19.8	-17.6	-11.9
2003	-4.5	-11.3	13.8
2004	38.8	12.2	11.6
2005	6.2	15.7	12.1
2006	-0.4	13.6	

Louisville-Jefferson County

	Initial Release	First Benchmark Revision	Second Benchmark Revision
year t	January year t+1	March year t+1	March year t+2
2001	6.6	-10.6	-20.4
2002	-0.1	-1.9	-5.6
2003	3	-2.7	35.1
2004	0.7	2.7	5.8
2005	6.3	4.4	6.6
2006	3.9	11.9	

Little Rock-North Little Rock

	Initial Release	First Benchmark Revision	Second Benchmark Revision
year t	January year t+1	March year t+1	March year t+2
2001	-3.7	-3	1.4
2002	-2.9	-0.2	0.9
2003	-5	-1.9	8.4
2004	2.8	1.6	4.9
2005	1.7	5.9	5.7
2006	5.9	6.8	

Memphis

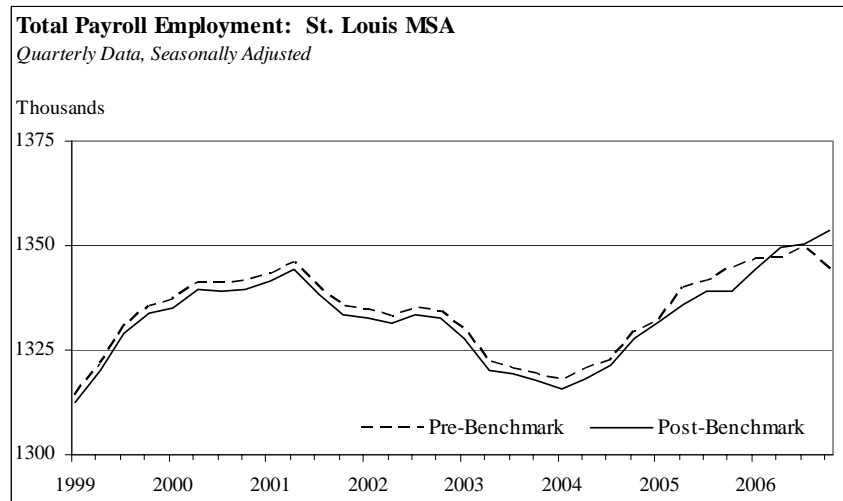
	Initial Release	First Benchmark Revision	Second Benchmark Revision
year t	January year t+1	March year t+1	March year t+2
2001	-6.1	-1.4	-13.1
2002	-11.9	-4.3	6.6
2003	-0.4	0.8	26.2
2004	0.9	4	5.1
2005	13.2	11.5	13.7
2006	6.1	9.3	

Four Major MSAs

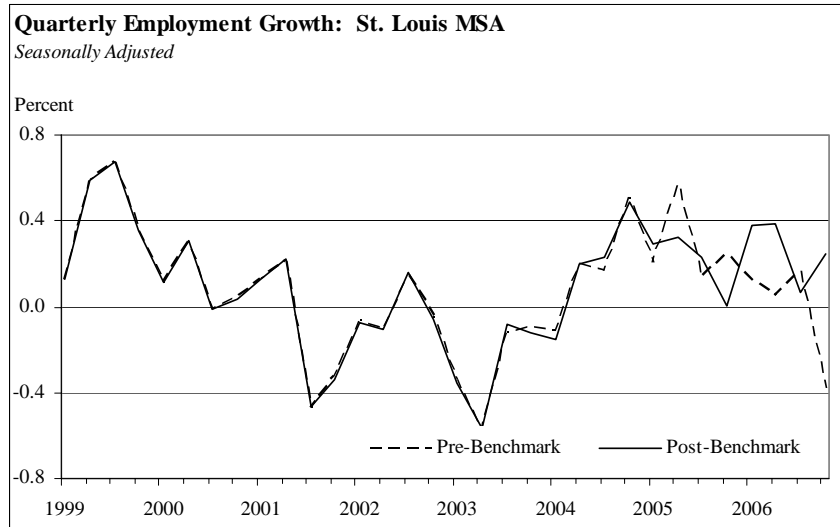
St. Louis

For the St. Louis metro area,¹ the pre-revision estimates of employment growth for 2005 and 2006 were 15.7 thousand (1.2 percent) and -0.4 thousand (-0.03 percent), respectively. The revised estimates indicate that employment growth in the St. Louis metro area was 12.1 thousand (0.9 percent) in 2005 and 13.6 thousand (1.0 percent) in 2006.

The charts below show total employment and its growth rate for the St. Louis metro area from 1999 through 2006. The first chart shows that the post-benchmark estimates of the levels of employment are lower for all of 2005 and higher for 2006 than the pre-benchmark estimates. Also, the sharp downward turn in employment at the end of 2006 has been replaced with a moderate increase. The second chart, which presents quarterly growth rates, shows that 2006 now looks better throughout the year and that growth at the end of the year was about average for the post-2003 period.



¹ The St. Louis MSA includes all or parts of the following counties: Bond, Calhoun, Clinton, Jersey, Macoupin, Madison, Monroe, and St. Clair counties in Illinois; St. Louis City and Crawford (part), Franklin, Jefferson, Lincoln, St. Charles, St. Louis, Warren, and Washington counties in Missouri.



The table below breaks down the pre- and post-revision employment estimates by major industry. For 2005, the bulk of the downward revision was due to decreased estimates of employment in manufacturing; trade, transportation, and utilities; and financial activities. The upward revisions for 2006 were more across the board, with especially large revisions for professional and business services and education and health services. These two industries were by far the largest contributors to the overall increase in employment in 2006, together accounting for about 70 percent of the total.

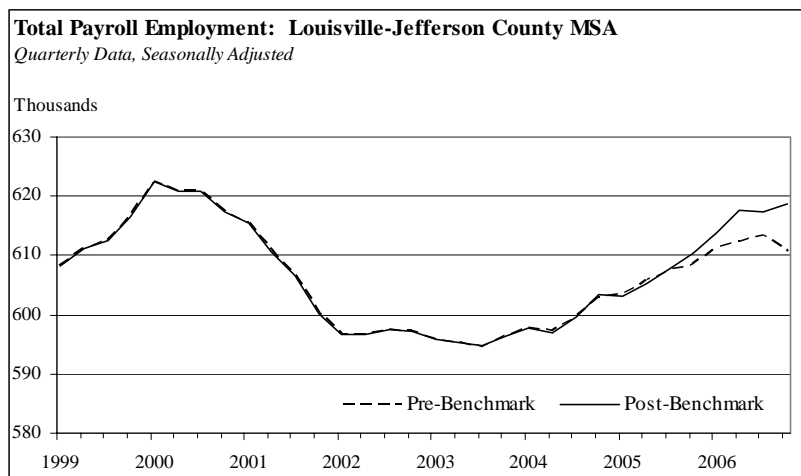
St. Louis MSA Employment Growth by Sector
December-to-December change (thousands)

Sector	Pre-Benchmark		Post-Benchmark	
	2005	2006	2005	2006
Total Nonfarm	15.7	-0.4	12.1	13.6
Natural Resources, Mining, & Construction	1.5	2.1	1.1	1.8
Manufacturing	-1.3	-5.7	-2.5	-3.2
Trade, Transportation, & Utilities	1.2	-0.4	-0.3	1.2
Information	-0.1	-0.4	1.0	-0.1
Financial Activities	1.5	0.1	0.0	0.9
Professional & Business Services	6.5	-0.4	6.9	6.3
Educational & Health Services	4.8	0.2	4.7	3.2
Leisure & Hospitality	1.2	1.8	1.8	1.3
Government	1.3	2.1	0.6	0.7

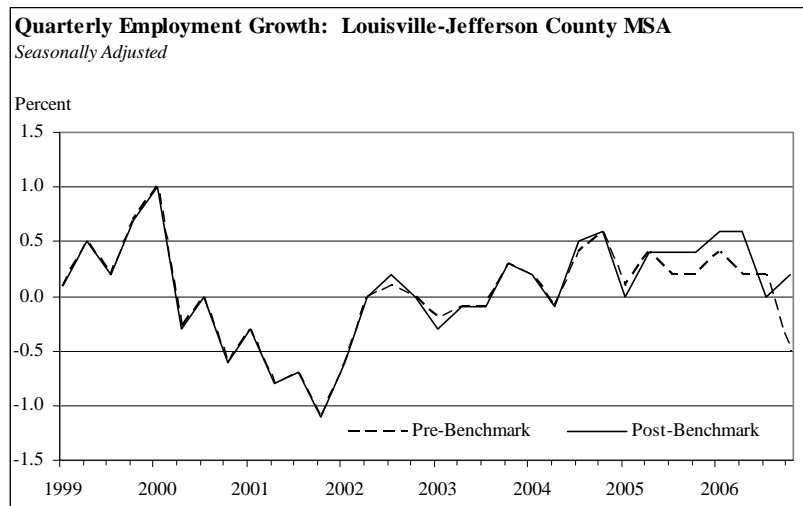
Louisville-Jefferson County

For the Louisville-Jefferson County metro area,² the pre-revision estimates of employment growth for 2005 and 2006 were 4.4 thousand (0.7 percent) and 3.9 thousand (0.6 percent), respectively. The revised estimates indicate that employment growth in the Louisville-Jefferson County metro area was 6.6 thousand (1.1 percent) in 2005 and 11.9 thousand (1.9 percent) in 2006.

The charts below show total employment and its growth rate for the Louisville-Jefferson County metro area from 1999 through 2006. The revised estimates reflect significantly higher levels of employment throughout 2006 than had been indicated by earlier estimates. The second chart shows that employment growth was higher than previously thought for all but one quarter in 2006. More specifically, the sharp decline at the end of 2006 has become a moderate increase. Overall, the revised employment numbers indicate that the Louisville-Jefferson County metro area experienced steady employment growth for the last three years. Also, although employment growth tapered off during the second half of the year, 2006 looks to have been somewhat better for the Louisville-Jefferson County metro area than for the country as a whole.



² The Louisville-Jefferson County MSA includes the following counties: Clark, Floyd, Harrison, and Washington counties in Indiana; Bullitt, Henry, Jefferson, Meade, Nelson, Oldham, Shelby, Spencer, and Trimble counties in Kentucky.



The table below breaks down the employment estimates by major sector. The most interesting thing in the table is that Louisville bucked the trend by seeing a significant increase in manufacturing employment in 2006. An upward revision of 6,700 jobs in manufacturing accounted for about 80 percent of the overall revision for 2006. Growth in 2006 was fairly spread out, with four industries—trade, transportation, and utilities; manufacturing; professional and business services; and government—each seeing increases of 2,000 or more jobs.

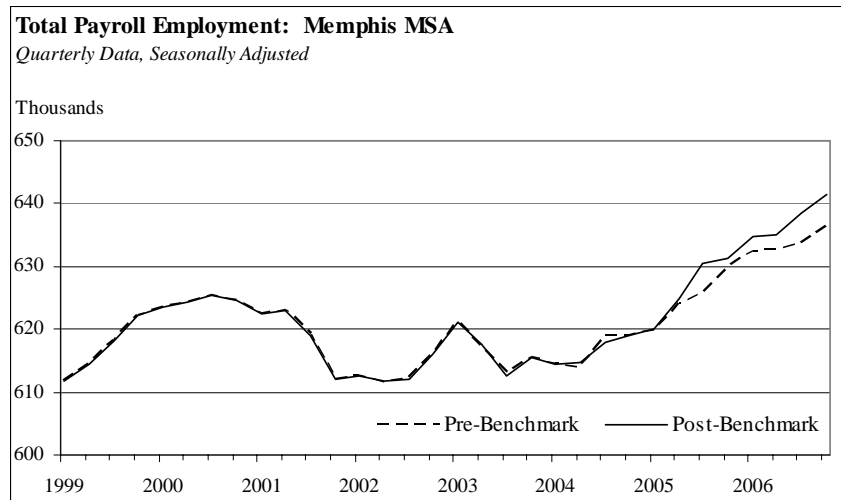
Louisville-Jefferson County MSA Employment Growth by Sector
December-to-December change (thousands)

Sector	Pre-Benchmark		Post-Benchmark	
	2005	2006	2005	2006
Total Nonfarm	4.4	3.9	6.6	11.9
Natural Resources, Mining, & Construction	0.4	2.2	0.4	-1.6
Manufacturing	-2.2	-4.4	-2.1	2.3
Trade, Transportation, & Utilities	2.1	2.4	4.0	3.2
Information	-0.5	-0.1	0.0	0.1
Financial Activities	0.8	0.2	1.2	1.3
Professional & Business Services	1.7	1.2	2.3	2.3
Educational & Health Services	-0.2	0.8	-0.4	1.0
Leisure & Hospitality	0.6	1.3	-0.3	1.2
Government	1.7	0.9	1.8	2.2

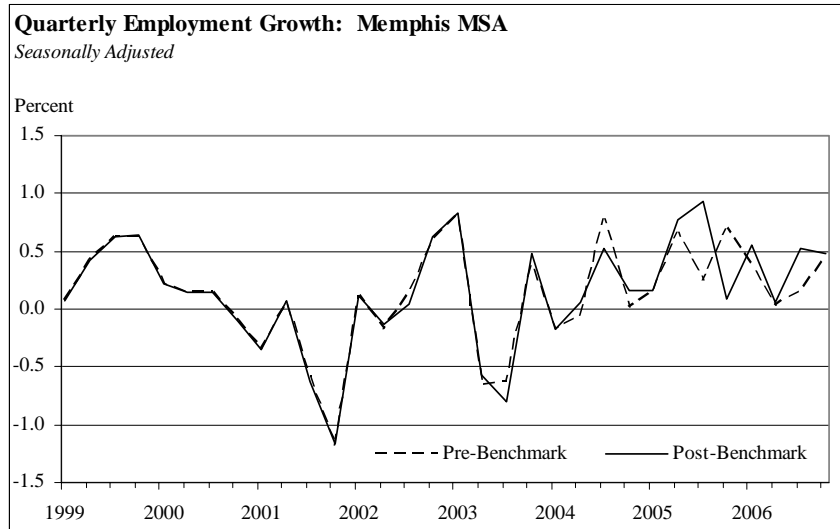
Memphis

For the Memphis metro area,³ the pre-revision estimates of employment growth for 2005 and 2006 were 11.5 thousand (1.8 percent) and 6.1 thousand (1.0 percent), respectively. The revised estimates indicate that employment growth in the Memphis metro area was 13.7 thousand (2.2 percent) in 2005 and 9.3 thousand (1.5 percent) in 2006.

The charts below show total employment and its growth rate for the Memphis metro area from 1999 through 2006. For the period covered by the benchmark revisions, the effects on the level of employment are uniformly positive: By the end of 2006 the revised data show 5.4 thousand more jobs than were previously estimated. Some fluctuations in quarter-to-quarter revisions result in a pattern where some quarters show higher growth and some show lower growth. Most of the net increase in job growth over the revision period is concentrated during mid-2005 and at the end of 2006.



³ The Memphis MSA includes the following counties: Crittenden county in Arkansas; DeSoto, Marshall, Tate, and Tunica counties in Mississippi; Fayette, Shelby, and Tipton counties in Tennessee.



The table below shows the breakdown of employment changes by major sector. In both 2005 and 2006, the upward revisions to the data are broad-based. In 2005, the only downward revisions were to Information Services, Financial Activities, and Government. Fairly large upward revisions were evident in nearly every other sector. In 2006, there were slight downward revisions to Trade, Transportation, and Utilities; Education and Health Services; and Government services. These were more than offset by higher estimates for several categories, including Professional and Business Services. Two of the weakest sectors for 2006—Manufacturing and Financial Activities—were revised from initial estimates of declining jobs to no net change.

Memphis MSA Employment Growth by Sector

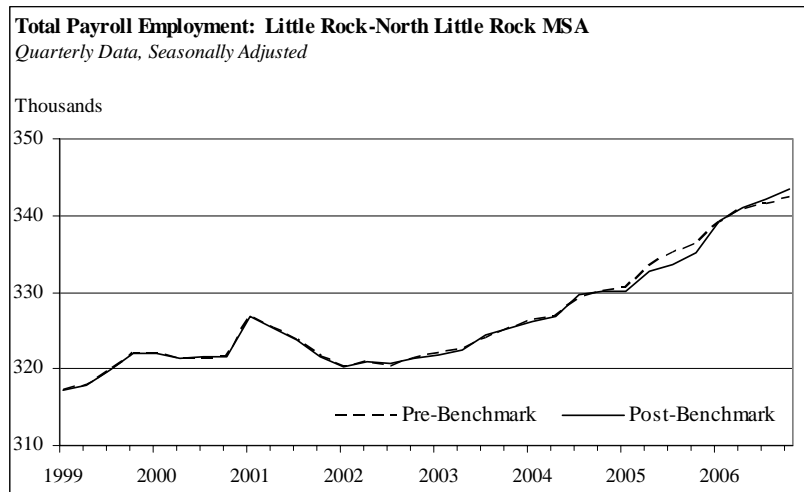
December-to-December change (thousands)

Sector	Pre-Benchmark		Post-Benchmark	
	2005	2006	2005	2006
Total Nonfarm	11.5	6.1	13.7	9.3
Natural Resources, Mining, & Construction	0.5	0.4	1.6	1.0
Manufacturing	-0.6	-1.1	0.2	0.0
Trade, Transportation, & Utilities	2.7	1.7	3.1	1.6
Information	-0.1	0.0	-1.0	0.1
Financial Activities	-0.6	-0.5	-0.7	0.1
Professional & Business Services	4.8	0.2	6.2	1.9
Educational & Health Services	1.3	2.1	2.0	1.8
Leisure & Hospitality	2.3	2.4	3.3	2.7
Government	1.1	0.5	-0.5	-0.2

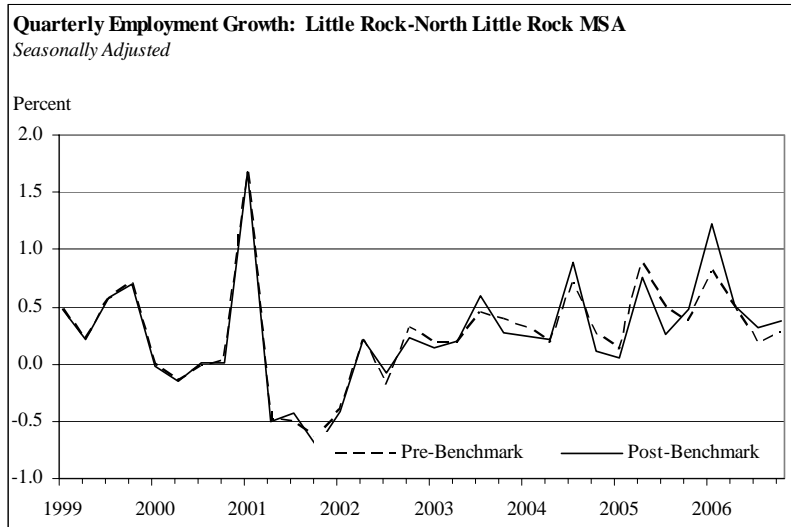
Little Rock-North Little Rock

For the Little Rock-North Little Rock metro area,⁴ the pre-revision estimates of employment growth for 2005 and 2006 were 5.9 thousand (1.8 percent) and 5.9 thousand (1.7 percent), respectively. The revised estimates indicate that employment growth in the Little Rock-North Little Rock metro area was 5.7 thousand (1.7 percent) in 2005 and 6.8 thousand (2.0 percent) in 2006. By comparison, according to the latest estimates for the United States over the same periods, payroll employment grew by 1.9 percent in 2005 and 1.7 percent in 2006.

The charts below show total employment and its growth rate for the Little Rock-North Little Rock metro area from 1999 through 2006. The benchmark revisions lowered estimated employment during 2005 and raised it slightly toward the end of 2006. The net effect was to increase the figure for total employment in the Little Rock-North Little Rock metro area by approximately 700 jobs at the end of 2006.



⁴ The Little Rock-North Little Rock MSA includes Faulkner, Grant, Lonoke, Perry, Pulaski, and Saline counties in Arkansas.



The table below shows the breakdown of employment changes by major sector. Nearly every category was affected for both years, but some of the larger changes were as follows: Two categories were subject to relatively large revisions. For both the Education and Health Services and Government sectors, there were large downward revisions in 2005 and upward revisions in 2006. Revisions to professional and Business Services, and Leisure and Hospitality, moved in the other direction—up in 2005 and down in 2006. Employment in the Trade, Transportation and Utilities sector was revised downward in both years.

Little Rock-North Little Rock MSA Employment Growth by Sector
December-to-December change (thousands)

Sector	Pre-Benchmark		Post-Benchmark	
	2005	2006	2005	2006
Total Nonfarm	5.9	5.9	5.7	6.8
Natural Resources, Mining, & Construction	0.5	0.8	0.7	0.9
Manufacturing	0.1	-0.5	-0.1	-0.3
Trade, Transportation, & Utilities	0.8	1.9	0.6	1.0
Information	0.1	0.1	-0.1	0.4
Financial Activities	1.0	0.0	0.9	0.2
Professional & Business Services	-0.4	1.3	0.5	-0.2
Educational & Health Services	1.9	0.7	1.4	1.9
Leisure & Hospitality	0.6	0.9	1.2	0.0
Government	1.1	0.3	0.3	2.4