Employment Recession and Recovery in the 50 States: A Further Update

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Employment Recession and Recovery in the 50 States: A Further Update

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Executive Summary

Private-sector Gross Domestic Product (GDP) growth ratios and employment recovery rates following the Great Recession are calculated for the 50 states, as well as Census regions and divisions. GDP growth rates measure the ratio of state private-sector GDP in 2012 to that in 2007. States with 2012 private-sector GDP levels above their 2007 levels have GDP growth ratios greater than one, while those with private-sector GDP lower than their 2007 levels have ratios below one. Employment recovery rates measure the percentage of each state’s private-sector job losses during the recession that have been recovered as of June 2013. The nation’s private-sector GDP growth ratio is 1.026, and its employment recovery rate is 81.7 percent.

There is a sharp distinction between the performance of state private-sector GDP and that of private-sector employment. By 2012, 45 of the 50 states had production levels that were equal to, or nearly the same as, their output levels of 2007.

In contrast, by June 2013, only 9 of the 50 states had regained all of the private-sector job losses they sustained during the recession. This divergence between the recovery in output and that of employment emphasizes the need to improve the rate of job growth and broaden its distribution across the country.

The top five states with the highest private-sector GDP growth ratios are North Dakota (1.527), Oregon (1.168), Texas (1.138), Utah (1.115), and Alaska (1.100).

The five states with the lowest private-sector GDP growth ratios are Nevada (.909), Florida (.938), Arizona (.945), Connecticut (.950), and Michigan (.951).

Private-sector employment in the United States remains 1.62 million jobs below the nation’s January 2008 peak. If employment growth is sustained at its current pace of approximately 196,000 jobs per month (June 2012–June 2013), this deficit will finally be eliminated early in 2014, over four and a half years after the Great Recession’s official end.

The top five states with the highest private-sector employment recovery rates are North Dakota (1,111.6 percent), Alaska (292.3 percent), Texas (205.5 percent), New York (141 percent), and South Dakota (137.3 percent).

The five states with the lowest private-sector employment recovery rates are Nevada (28.2 percent), Alabama (33.7 percent), Rhode Island (34.5 percent), New Mexico (38.7 percent), and Wyoming (41.1 percent).

Of the nine Census-defined geographic divisions in the country, the West South Central division, comprising Arkansas, Louisiana, Oklahoma, and Texas, had both the highest GDP growth ratio (1.117) and the highest employment recovery rate (169.8 percent).

Introduction

This is the third in a series of reports measuring how private-sector employment has changed in the 50 states during the Great Recession and the subsequent recovery. The fact that we still are writing about the recovery from the employment losses caused by a recession that ended over four years ago is indicative both of the severity of the recession and the slowness of the recovery in labor markets. In this update, private-sector employment recovery in the 50 states through


2. The National Bureau of Economic Research has dated the recession from December 2007 to June 2009. Private-sector employment losses from the employment peak of January 2008 to the employment trough of February 2010 totaled 8.82 million jobs, or a decline of 7.6 percent. The employment trough occurred eight months after the recession’s official end in June 2009.
Employment Recession and Recovery in the 50 States: A Further Update

June 2013 is examined, providing another year of data from the August 2012 report. The performance of output over the business cycle as measured by the change in state private-sector GDP for the 50 states for the period 2007 through 2012 is also examined. In contrast, ten states actually experienced gains in state GDP during the recession, led by a 13.2 percent increase in GDP in North Dakota as a result of robust gains in energy production. Most of the other states where real private-sector GDP increased were also energy and natural resources production states, although the small gain in Oregon was the result of increased computer and electronic equipment manufacturing. Private-sector GDP fell in the 40 remaining states, with 24 states experiencing losses less than the national decline (4.8 percent) and 16 states experiencing losses equal to or greater than that of the nation. Noteworthy are the sharp decreases in Ohio (-9 percent), Indiana (-9.5 percent), Arizona (-10.2 percent), Florida (-10.6 percent), Nevada (-12.5 percent), and Michigan (-16.3 percent). Manufacturing declines, especially in motor vehicle production, and the ground-zero locations of the housing bust underlie the large GDP decreases in these states.

Table 2 lists the percentage change in real private-sector GDP for the 50 states during the recovery period from 2009 to 2012 (the latest data available). During this time, real private-sector GDP for the national economy grew by 7.8 percent. Eighteen states equaled or exceeded the national rate of increase, led by North Dakota (34.9 percent), Oregon (15.6 percent), and Texas (14.7 percent). It is also noteworthy that Indiana and Michigan, which were among the hardest-hit states in terms of GDP decline during the recession, ranked 4th and 5th, respectively, in terms of rate of growth.

SECTION 1
State Private-Sector GDP Performance during the Recession and Recovery

Table 1 lists the change in real private-sector GDP (chained 2005 dollars) during the recession. The percentage change is measured from 2007 to 2009 for the 50 states and ordered from highest rate of growth to lowest. This report concentrates on private-sector output and employment because of the mixed behavior of the public sector during the recovery period. Federal fiscal policy has been contractionary during a good portion of the recovery after being expansionary during the recession. Many states and local governments remain constrained by tight budgets and a political and fiscal environment focused on cost reductions. Also, the timing of the impact of the recession on state and local governments was markedly different from its impact on the private sector (e.g., employment in state and local governments began to decline considerably later than the onset of the recession and continued well after the recovery began in private-sector economic activity).

For the United States as a whole, real private-sector GDP fell by 4.8 percent during the recession (i.e., from 2007 to 2009). In contrast, ten states actually experienced gains in state GDP during the recession, led by a 13.2 percent increase in GDP in North Dakota as a result of robust gains in energy production. Most of the other states where real private-sector GDP increased were also energy and natural resources production states, although the small gain in Oregon was the result of increased computer and electronic equipment manufacturing. Private-sector GDP fell in the 40 remaining states, with 24 states experiencing losses less than the national decline (4.8 percent) and 16 states experiencing losses equal to or greater than that of the nation. Noteworthy are the sharp decreases in Ohio (-9 percent), Indiana (-9.5 percent), Arizona (-10.2 percent), Florida (-10.6 percent), Nevada (-12.5 percent), and Michigan (-16.3 percent). Manufacturing declines, especially in motor vehicle production, and the ground-zero locations of the housing bust underlie the large GDP decreases in these states.

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3. State GDP data are available on an annual basis from the U.S. Bureau of Economic Analysis. The U.S. Bureau of Labor Statistics employment data used in the report are measured monthly.


5. Oregon’s increase was again driven by significant gains in the output of the computer and electronic manufacturing sector.
TABLE 1
Real Private-Sector GDP by State, Millions of Chained 2005 Dollars
(Percentage change, 2007–2009)

<table>
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<th>Rank</th>
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Source: U.S. Bureau of Economic Analysis.
### TABLE 2
Real Private-Sector GDP by State, Millions of Chained 2005 Dollars
(Percentage change, 2009–2012)

<table>
<thead>
<tr>
<th>Rank</th>
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*Source: U.S. Bureau of Economic Analysis.*
of GDP during the recovery, reflecting the extensive federal aid to major auto producers and the subsequent improvement in that industry. Relatively weak private-sector GDP growth (i.e., less than half the U.S. rate of increase) occurred in nine states, with Wyoming actually experiencing a decline during this time (-4.4 percent), while New Mexico (1.8 percent), Connecticut (1.7 percent), Delaware (1.5 percent), and Alaska (1.1 percent) all had private-sector GDP growth rates of less than 2 percent. Of note, three of these states—Alaska, New Mexico, and Wyoming—were among the top ten states in GDP growth during the recession. Energy industry changes are the likely reason for this countercyclical boom-and-bust pattern.

The performance of state private-sector GDP over the cycle to date is given in table 3. GDP in 2012 is compared with GDP in 2007, with the states ranked by the ratio of these levels (the final column of the table). For a benchmark comparison, national private-sector output in 2012 exceeded its 2007 pre-recession level by 2.6 percent. Note that the employment recovery rate used in the next section looks at recovery performance versus recession performance. The GDP growth ratio does not do this; it compares current (latest) GDP with pre-recession GDP, but does not do so as a function of what took place during the recession. That is, table 3 does not compare table 2 with table 1. This analysis uses the annual figures for 2007 and 2012 rather than seeking a peak and trough for each state.7

By 2012, 38 states had exceeded, or equaled, their 2007 output, led by North Dakota (52.7 percent above its 2007 GDP), Oregon (16.8 percent), and Texas (13.8 percent) (table 3).8 Another seven states were within less than two percentage points of their 2007 GDP levels. Thus, 45 states had recovered completely from the declines in GDP during the recession, or nearly so. Only five states remained substantially below their GDP levels of 2007. Nevada (9.1 percent below its 2007 level, or a ratio of 90.9) and Florida (6.2 percent below), both deeply impacted by the housing bust, had GDP levels noticeably less than in 2007, as did Connecticut (5 percent below). Arizona (5.5 percent below) and Michigan (4.9 percent below) also had not recovered to their 2007 production levels.

---

6. A regression of the rate of growth of real private-sector GDP during the recovery as a function of the rate of change in real private-sector GDP during the recession revealed no statistically significant relation. Thus, states with greater percentage declines during the recession were not more likely to have larger rates of increase in GDP during the recovery.

7. While the recovery rate for private-sector employment measures each state’s job gain from its employment trough to its current employment level as a percentage of the number of jobs lost from the pre-recession peak to the employment trough, it was not possible to measure state-level GDP change during the recovery in the same way. This was the result of two key factors. First, GDP actually increased for a number of states over the course of the recession, and then continued to increase (or in one case, declined) during the national recovery. In addition, state-level GDP is not available on a quarterly basis, and therefore the turning points (peak and trough) of employment are more diverse than those of GDP. As such, GDP gains during the national recovery could not be measured as percentages of recession losses for all 50 states. Instead, the ratio of real GDP for the most recent year (2012) to the pre-recession level (2007) is measured.

8. Fifteen of the 38 states had GDP levels 5.2 or more percent higher than their 2007 level (i.e., at least double the U.S. increase of 2.6 percent).
## TABLE 3
Real Private-Sector GDP by State, Millions of Chained 2005 Dollars
(Growth ratio, 2012/2007)

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Source: U.S. Bureau of Economic Analysis.
SECTION 2
Private-Sector Employment Recovery Update

This analysis measures the extent of the private-sector employment recovery in each state relative to the number of private-sector jobs lost during the recession. The job losses are measured individually for each state from that state’s peak employment level to its trough.9 Table 4 ranks the states by the percentage of job losses that have been regained (recovery rate) as of June 2013 (column 3). As a benchmark, the nation has recovered 81.7 percent of the total private-sector job losses of the recession.

Nine of the fifty states have recovered all of their job losses of the recession. North Dakota leads all states with a remarkable recovery rate of over 1,100 percent, driven by large energy-related employment gains on a relatively small total employment base. Several other energy-producing states are in the top ten (Alaska, Texas, Louisiana), but New York (141 percent) and Massachusetts (108.2 percent) also have more than fully recovered their private-sector job losses.10 An additional 10 states have recovery rates higher than that of the nation (81.7 percent). However, 31 states have recovery rates below that of the nation, and within these, 10 states have not yet recovered half of their private-sector job losses. Noteworthy are the weak recovery rates in a diverse group of states (e.g., Delaware, 43.8 percent; Florida, 45.1 percent; Maine, 48.8 percent; Rhode Island, 34.5 percent; and Nevada, 28.2 percent).

Thus, in terms of labor markets, the states, and the nation as a whole, continue a long and not yet fully successful climb out of the large employment chasm created by the Great Recession. As of June 2013, 41 states have private-sector employment levels below the levels they had at the start of the Great Recession five and a half years ago.

The remaining data in table 4 provide the rate of private-sector job growth during each state’s recovery (column 4), the number of private-sector jobs gained (column 5), and the number of months of private-sector job growth (column 6).

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9. Table A-1 in the appendix provides this data along with the rate of private-sector job decline and the number of months that employment fell. These data are updated from those that appeared in the August 2012 report.

10. Employment growth in Massachusetts has been led by gains in professional and business services, education and health services, and leisure and hospitality services. These same industries have driven job growth in New York, with additional gains occurring in retail trade.
<table>
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<th>Rank</th>
<th>State</th>
<th>Recovery Rate (%)</th>
<th>Percentage Change (%)</th>
<th>Absolute Change (thousands)</th>
<th>Duration of Recovery (months)</th>
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<td>28.2</td>
<td>5.4</td>
<td>52.0</td>
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</tbody>
</table>

Notes:

<sup>a</sup> Michigan’s private-sector employment level was in steady decline well before the onset of the recession, having peaked in April 2000. This analysis uses the state’s December 2007 private-sector employment level of 3,595,900 as the peak from which the subsequent recession and recovery are measured.

<sup>b</sup> Ohio’s private-sector employment level had experienced a steep decline well before the onset of the recession, having peaked in March 2000. This analysis uses the state’s December 2007 private-sector employment level of 4,024,900 as the peak from which the subsequent recession and recovery are measured.

SECTION 3
Diverging Private-Sector Performance: Employment versus Output

This very mixed record for private-sector employment recovery among the 50 states is in distinct contrast to the output growth ratios of table 3. In 2012, real private-sector GDP in 45 of the 50 states had exceeded, or had nearly exceeded, the level of GDP that existed before the start of the Great Recession. In contrast, 41 of the 50 states as of June 2013 had not regained all the private-sector jobs lost during the recession. Large gains in labor productivity occurred as a result of sustained cost-cutting and tepid hiring during the recovery period.

Table 5 lists the employment recovery rate and the GDP growth ratio for each state by region and division of the country. There are four regions and nine divisions in the nation as defined by the U.S. Census Bureau. For perspective, the national employment recovery rate was 81.7 percent and the national GDP growth ratio was 1.026.

[Note: This section continues, providing detailed analysis of employment recovery rates by region and division, comparing them to GDP growth ratios.]

11. Note that private-sector GDP levels are measured as of 2012, while the still tepid employment recovery is tracked through mid-year 2013. State private-sector GDP by the second quarter of 2013 (quarterly data not available) is likely to have increased the number of states that have fully recovered their private-sector output losses to more than 45. Thus, the comparison between the recovery in output and that in employment is even more contrasting than what is reported here.

12. The regional and divisional rates reported in table 5 are the aggregated totals for the states constituting each region and division (i.e., they are equivalent to weighted averages). Note that the employment recovery rates are measured for different time periods across the states (peak to trough and trough to June 2013). The GDP growth ratio is measured for the same time period for all states (2012/2007).
Employment Recession and Recovery in the 50 States: A Further Update

Regression Analysis

\[ \text{GDP Growth Ratio} = 0.991 + 0.000495 \times (\text{Employment Recovery Ratio}) \]

T-Statistics: (139.08) (12.57)

Adjusted R-squared: 0.762

Notes:
- All coefficients statistically significant at 0.01 level.
- \( N = 50 \)

South Central division (1.117), the five-state Pacific division (1.079), and the seven-state West North Central division (1.06). Only the East North Central division (.994) and the eight-state Mountain division (.995) had ratios below one.

Given the consistently better performance of output versus employment across all regions and divisions, the general pattern that emerges from table 5 is that states and regions with stronger employment recovery rates had higher output growth ratios.

A regression, shown above, confirms this statistical association. The dependent variable is the private-sector GDP growth ratio for the 50 states (column 3, table 5), and the independent variable is the private-sector employment recovery rate (column 2, table 5). The result indicates a strong correlation between the two variables (adjusted R-square = .76), and the statistically significant coefficient on the employment recovery rate (t = 12.6) indicates that a 10-percentage-point rise in the employment recovery rate increases the GDP growth ratio by .0049.\(^{13}\)

13. The addition of a dummy variable to account for the large divergence between Oregon’s employment recovery rate (51.7%) and its GDP growth ratio (1.168) did not substantively impact the size or significance of the coefficient on the employment recovery rate, but increased the equation's adjusted R-square to .82. In a regression including the Oregon dummy variable but excluding North Dakota from the sample, the employment recovery rate had a coefficient of .000685 (t = 6.0), and the equation had an adjusted R-square of .51, indicating the large contribution of North Dakota's high employment recovery rate and GDP growth ratio to the model fit of the 50-state regression.
<table>
<thead>
<tr>
<th>REGION/DIVISION/STATE</th>
<th>(1) Private-Sector Employment Recovery Rate (%)</th>
<th>(2) GDP Growth Ratio 2007–2012</th>
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</thead>
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<td>Virginia</td>
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### TABLE 5 (CONTINUED)
Private-Sector Employment Recovery Rate and GDP Growth Ratio, by Region 2007–2012

<table>
<thead>
<tr>
<th>REGION/DIVISION/STATE</th>
<th>(1) Private-Sector Employment Recovery Rate (%)</th>
<th>(2) GDP Growth Ratio 2007–2012</th>
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SECTION 4
Conclusion

Over the last year (June 2012 to June 2013), the nation added 2,357,000 jobs, or about 196,000 jobs per month. The private-sector employment deficit that existed as of June 2013 was 1.62 million (i.e., the number of jobs still needed to recover all of the 8.82 million private-sector jobs lost during the recession). If job growth is sustained at the current pace (196,000 per month), this deficit will finally be eliminated early in 2014, over four and a half years after the Great Recession’s official end. However, the wide diversity in employment recovery rates across the states as indicated in this report implies that many states will still not have recovered all their job losses by early 2014. Real GDP is expected to grow by approximately 2 to 2.5 percent in 2013. This modest, but steady, rate of increase should, in contrast, put all but a handful of states above their 2007 real GDP levels by the end of the year.  

Thus, the priority of national and state economic policies will need to remain focused on improving both the rate of job growth and achieving a broader distribution of this growth to states that still trail, and in some cases trail badly, in the recovery of their private-sector labor markets.

14. The recent revision of real GDP to include research and development (R&D) expenditures changes the level of GDP historically. New state-level GDP data, when released, will reveal how this change affects relative growth rates across the states (e.g., states with higher concentrations of R&D activities will have higher levels of past GDP and possibly higher growth rates).

The authors thank Arlene Pashman for editorial review and production.
### TABLE A-1
**Private-Sector Employment Losses, Peak to Trough**

<table>
<thead>
<tr>
<th>State</th>
<th>Date of Trough</th>
<th>Absolute Loss (Thousands)</th>
<th>Percentage Loss (%)</th>
<th>Duration of Recession (Months)</th>
</tr>
</thead>
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<tr>
<td>United States</td>
<td>February 2010</td>
<td>−8,818.0</td>
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<td>25</td>
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<td>February 2010</td>
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<td>−5.2</td>
<td>−2.2</td>
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<tr>
<td>Arizona</td>
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<td>−61.1</td>
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<tr>
<td>California</td>
<td>January 2010</td>
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<td>−9.4</td>
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<td>Florida</td>
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</tbody>
</table>

The Edward J. Bloustein School of Planning and Public Policy is one of the nation’s key centers for the theory and practice of planning and public policy scholarship and analysis. The school was established in 1992 by the Rutgers University Board of Governors to provide a focus for all of Rutgers’ initiatives and programs of instruction, research, and service in planning and public policy. The Bloustein School was ranked No. 3 in the United States in the latest survey of the nation’s top graduate programs in urban planning by Planetizen, a Los Angeles–based planning and development network.

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