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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.[1] 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.[2] In this update, private-sector employment recovery in the 50 states through

1. See, Joseph J. Seneca and Will Irving, *Employment Recession and Recovery in the 50 States, Rutgers Regional Report* No. 28, September 2011; and *Employment Recession and Recovery in the 50 States: An Update, Rutgers Regional Report* No. 30, August 2012. Both available at: http://policy.rutgers.edu/reports/rrr/.

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.

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.[3]

The report is organized as follows: Section 1 examines the change in state output (real private-sector GDP) during the recession and recovery for the 50 states. Section 2 provides the update on the private-sector employment recovery in each of the 50 states through June 2013. Section 3 compares the change in output with the recovery in employment in the 50 states.

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).[4] 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),[5] 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

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*.

4. This rate is calculated on the basis of U.S. private-sector GDP reported in the "GDP by State Statistics" maintained by the U.S. Bureau of Economic Analysis (BEA). These GDP estimates differ slightly from the national GDP estimates contained in the BEA's National Income and Product Accounts (NIPA). An explanation of these differences can be found on pages 4-5 of the BEA's June 2013 release of the advance estimates for 2012 GDP by state, available at http://www.bea.gov/newsreleases/regional/gdp_state/2013/pdf/gsp0613.pdf. A more complete description of the techniques used for calculating GDP by state can be found in *Gross Domestic Product by State Estimation Methodology*, U.S. BEA, 2006 (http://www.bea.gov/regional/pdf/gsp/GDPState.pdf).

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)

Rank	State	2007	2009	Percentage Change
	UNITED STATES	**$11,583,721**	**$11,026,902**	**–4.8**
1	North Dakota	22,614	25,607	13.2
2	Wyoming	25,818	28,158	9.1
3	Alaska	33,447	36,395	8.8
4	South Dakota	28,969	30,342	4.7
5	Utah	88,316	89,433	1.3
6	Oregon	145,161	146,655	1.0
7	Nebraska	67,285	67,806	0.8
8	Louisiana	167,207	168,202	0.6
9	Oklahoma	108,108	108,711	0.6
10	New Mexico	56,989	57,085	0.2
11	West Virginia	42,621	42,468	–0.4
12	Maryland	212,221	210,599	–0.8
13	Texas	960,276	952,776	–0.8
14	Virginia	303,482	298,314	–1.7
15	Colorado	202,350	198,391	–2.0
16	Massachusetts	304,863	298,145	–2.2
17	Arkansas	79,193	77,225	–2.5
18	Minnesota	214,869	209,515	–2.5
19	Delaware	51,770	50,447	–2.6
20	Washington	264,881	256,772	–3.1
21	New Hampshire	49,639	48,118	–3.1
22	North Carolina	330,203	320,031	–3.1
23	Idaho	44,737	43,192	–3.5
24	Kansas	97,735	94,319	–3.5
25	Pennsylvania	450,119	434,270	–3.5
26	Maine	39,951	38,505	–3.6
27	Montana	27,193	26,155	–3.8
28	New York	906,389	870,991	–3.9
29	Rhode Island	38,992	37,423	–4.0
30	Missouri	193,306	185,372	–4.1
31	Mississippi	71,400	68,461	–4.1
32	Vermont	19,821	19,005	–4.1
33	Alabama	130,817	124,776	–4.6
34	New Jersey	397,834	379,401	–4.6
35	Tennessee	205,181	195,156	–4.9
36	Iowa	113,451	107,810	–5.0
37	Hawaii	46,878	44,403	–5.3
38	Illinois	534,964	505,026	–5.6
39	Wisconsin	201,292	189,490	–5.9
40	Kentucky	120,309	113,205	–5.9
41	California	1,572,518	1,476,960	–6.1
42	Connecticut	189,752	177,289	–6.6
43	South Carolina	124,615	115,554	–7.3
44	Georgia	329,413	304,695	–7.5
45	Ohio	394,239	358,939	–9.0
46	Indiana	225,004	203,611	–9.5
47	Arizona	214,747	192,826	–10.2
48	Florida	634,160	567,191	–10.6
49	Nevada	112,202	98,220	–12.5
50	Michigan	328,056	274,496	–16.3

Source: U.S. Bureau of Economic Analysis.

TABLE 2
Real Private-Sector GDP by State, Millions of Chained 2005 Dollars
(Percentage change, 2009–2012)

Rank	State	2009	2012	Percentage Change
	UNITED STATES	$11,026,902	$11,887,200	7.8
1	North Dakota	25,607	34,532	34.9
2	Oregon	146,655	169,579	15.6
3	Texas	952,776	1,092,373	14.7
4	Indiana	203,611	232,242	14.1
5	Michigan	274,496	311,945	13.6
6	Utah	89,433	98,498	10.1
7	Tennessee	195,156	214,557	9.9
8	Washington	256,772	281,941	9.8
9	Minnesota	209,515	229,958	9.8
10	Vermont	19,005	20,838	9.6
11	Kentucky	113,205	123,963	9.5
12	South Carolina	115,554	126,434	9.4
13	West Virginia	42,468	46,444	9.4
14	Ohio	358,939	389,321	8.5
15	Massachusetts	298,145	322,812	8.3
16	Kansas	94,319	101,879	8.0
17	Montana	26,155	28,233	7.9
18	Maryland	210,599	227,063	7.8
19	Iowa	107,810	116,022	7.6
20	New York	870,991	936,746	7.5
21	Nebraska	67,806	72,874	7.5
22	Hawaii	44,403	47,656	7.3
23	Wisconsin	189,490	203,128	7.2
24	Oklahoma	108,711	116,516	7.2
25	Virginia	298,314	319,490	7.1
26	Pennsylvania	434,270	464,644	7.0
27	Georgia	304,695	325,756	6.9
28	Colorado	198,391	211,633	6.7
29	New Hampshire	48,118	51,322	6.7
30	Illinois	505,026	537,621	6.5
31	California	1,476,960	1,571,140	6.4
32	Alabama	124,776	132,726	6.4
33	North Carolina	320,031	339,905	6.2
34	Louisiana	168,202	177,750	5.7
35	Missouri	185,372	195,614	5.5
36	Arkansas	77,225	81,429	5.4
37	Arizona	192,826	203,007	5.3
38	Florida	567,191	594,808	4.9
39	South Dakota	30,342	31,749	4.6
40	Mississippi	68,461	71,529	4.5
41	Maine	38,505	39,992	3.9
42	Nevada	98,220	101,999	3.8
43	New Jersey	379,401	393,054	3.6
44	Idaho	43,192	44,521	3.1
45	Rhode Island	37,423	38,317	2.4
46	New Mexico	57,085	58,124	1.8
47	Connecticut	177,289	180,264	1.7
48	Delaware	50,447	51,200	1.5
49	Alaska	36,395	36,789	1.1
50	Wyoming	28,158	26,929	–4.4

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.[6] 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)

Rank	State	2007	2012	Ratio: 2012/2007
	UNITED STATES	$11,583,721	$11,887,200	1.026
1	North Dakota	22,614	34,532	1.527
2	Oregon	145,161	169,579	1.168
3	Texas	960,276	1,092,373	1.138
4	Utah	88,316	98,498	1.115
5	Alaska	33,447	36,789	1.100
6	South Dakota	28,969	31,749	1.096
7	West Virginia	42,621	46,444	1.090
8	Nebraska	67,285	72,874	1.083
9	Oklahoma	108,108	116,516	1.078
10	Minnesota	214,869	229,958	1.070
11	Maryland	212,221	227,063	1.070
12	Washington	264,881	281,941	1.064
13	Louisiana	167,207	177,750	1.063
14	Massachusetts	304,863	322,812	1.059
15	Virginia	303,482	319,490	1.053
16	Vermont	19,821	20,838	1.051
17	Colorado	202,350	211,633	1.046
18	Tennessee	205,181	214,557	1.046
19	Wyoming	25,818	26,929	1.043
20	Kansas	97,735	101,879	1.042
21	Montana	27,193	28,233	1.038
22	New Hampshire	49,639	51,322	1.034
23	New York	906,389	936,746	1.033
24	Pennsylvania	450,119	464,644	1.032
25	Indiana	225,004	232,242	1.032
26	Kentucky	120,309	123,963	1.030
27	North Carolina	330,203	339,905	1.029
28	Arkansas	79,193	81,429	1.028
29	Iowa	113,451	116,022	1.023
30	New Mexico	56,989	58,124	1.020
31	Hawaii	46,878	47,656	1.017
32	South Carolina	124,615	126,434	1.015
33	Alabama	130,817	132,726	1.015
34	Missouri	193,306	195,614	1.012
35	Wisconsin	201,292	203,128	1.009
36	Illinois	534,964	537,621	1.005
37	Mississippi	71,400	71,529	1.002
38	Maine	39,951	39,992	1.001
39	California	1,572,518	1,571,140	0.999
40	Idaho	44,737	44,521	0.995
41	Delaware	51,770	51,200	0.989
42	Georgia	329,413	325,756	0.989
43	New Jersey	397,834	393,054	0.988
44	Ohio	394,239	389,321	0.988
45	Rhode Island	38,992	38,317	0.983
46	Michigan	328,056	311,945	0.951
47	Connecticut	189,752	180,264	0.950
48	Arizona	214,747	203,007	0.945
49	Florida	634,160	594,808	0.938
50	Nevada	112,202	101,999	0.909

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).

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 4
Private-Sector Employment Recovery, Trough to Present (June 2013)
(Ranked by Recovery Rate)

(1) Rank	(2) State	(3) Recovery Rate (%)	(4) Percentage Change (%)	(5) Absolute Change (thousands)	(6) Duration of Recovery (months)
	United States	**81.7**	**6.7**	**7,201.0**	**40**
1	North Dakota	1,111.6	26.9	76.7	50
2	Alaska	292.3	6.5	15.2	42
3	Texas	205.5	11.7	979.0	42
4	New York	141.0	6.5	457.2	43
5	South Dakota	137.3	6.1	19.5	40
6	Louisiana	137.3	6.5	97.2	40
7	Massachusetts	108.2	5.7	156.2	44
8	Utah	104.2	10.9	103.9	40
9	Iowa	103.3	5.7	68.9	42
10	Montana	98.4	7.5	25.2	40
11	Minnesota	97.0	6.8	149.7	40
12	Colorado	91.4	8.1	147.0	41
13	Nebraska	90.7	4.6	35.0	39
14	Pennsylvania	88.8	4.9	234.6	40
15	West Virginia	87.0	4.4	26.1	40
16	Oklahoma	85.1	6.5	78.2	41
17	Maryland	83.8	6.7	131.4	40
18	New Hampshire	83.5	5.2	27.3	41
19	Indiana	82.4	8.4	196.0	47
20	Tennessee	79.7	8.2	178.0	40
21	Virginia	78.5	5.4	156.6	40
22	Washington	77.4	7.2	160.4	40
23	Vermont	76.9	4.7	11.3	47
24	Kansas	76.5	5.6	59.3	39
25	Idaho	68.8	8.3	39.9	41
26	Michigan[a]	68.6	8.9	282.5	47
27	California	65.4	7.5	860.4	41
28	Georgia	64.5	7.0	218.7	40
29	Kentucky	63.7	5.5	78.4	40
30	North Carolina	62.5	6.8	212.0	40
31	Wisconsin	61.1	4.6	106.6	41
32	New Jersey	59.8	4.7	148.6	40
33	Hawaii	59.5	5.9	26.9	42
34	Illinois	57.6	5.0	237.9	42
35	Ohio[b]	57.2	5.5	231.2	40
36	Connecticut	56.1	4.7	63.9	40
37	Arkansas	56.0	3.7	34.2	40
38	South Carolina	55.4	6.6	95.1	42
39	Mississippi	55.1	5.3	44.5	40
40	Oregon	51.7	6.1	78.3	40
41	Maine	48.8	2.9	14.0	39
42	Arizona	45.7	7.0	138.1	33
43	Missouri	45.6	3.5	76.6	41
44	Florida	45.1	6.8	410.6	41
45	Delaware	43.8	4.5	15.6	40
46	Wyoming	41.1	4.3	9.0	41
47	New Mexico	38.7	3.3	19.8	33
48	Rhode Island	34.5	3.2	12.6	45
49	Alabama	33.7	3.7	54.3	40
50	Nevada	28.2	5.4	52.0	33

Notes:

a. 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.

b. 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 4,624,900 as the peak from which the subsequent recession and recovery are measured.

Source: U.S. Bureau of Labor Statistics.

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.[11] 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.[12] 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.

The West South Central division (four states) had the highest employment recovery rate (169.8 percent), led by Texas (205.5) and Louisiana (137.3). The three-state Middle Atlantic division had the second highest employment recovery rate (100.4 percent), dominated by New York's rate of 141 percent. None of the other seven divisions had an employment recovery rate above 100 percent, although the seven-state West North Central division had a rate of 92.3 percent, led by North and South Dakota (1,111.6 percent and 137.3 percent, respectively) and Iowa (103.3 percent).

The lowest employment recovery rate (58 percent) occurred in the eight-state South Atlantic division, affected by particularly low rates in Delaware (43.8 percent), Florida (45.1 percent), and South Carolina (55.4 percent). The adjacent four-state East South Central division had the next lowest employment recovery rate (60.4 percent), with a very weak 33.7 percent rate in Alabama.

In contrast, seven of the nine divisions had GDP growth ratios greater than one, led by the West

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).

Regression Analysis

EQUATION:

GDP Growth Ratio	**=**	***0.991***	**+**	***.000495 (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 5
Private-Sector Employment Recovery Rate and GDP Growth Ratio, by Region 2007–2012

(1) REGION/DIVISION/STATE	(2) Private-Sector Employment Recovery Rate (%)	(3) GDP Growth Ratio 2007–2012
UNITED STATES	81.7	1.026
Northeast	**93.2**	**1.021**
New England	**76.9**	**1.016**
Connecticut	56.1	0.950
Maine	48.8	1.001
Massachusetts	108.2	1.059
New Hampshire	83.5	1.034
Rhode Island	34.5	0.983
Vermont	76.9	1.051
Middle Atlantic	**100.4**	**1.023**
New Jersey	59.8	0.988
New York	141.0	1.033
Pennsylvania	88.8	1.032
South	**80.9**	**1.044**
South Atlantic	**58.0**	**1.001**
Delaware	43.8	0.989
Florida	45.1	0.938
Georgia	64.5	0.989
Maryland	83.8	1.070
North Carolina	62.5	1.029
South Carolina	55.4	1.015
Virginia	78.5	1.053
West Virginia	87.0	1.090
East South Central	**60.4**	**1.029**
Alabama	33.7	1.015
Kentucky	63.7	1.030
Mississippi	55.1	1.002
Tennessee	79.7	1.046
West South Central	**169.8**	**1.117**
Arkansas	56.0	1.028
Louisiana	137.3	1.063
Oklahoma	85.1	1.078
Texas	205.5	1.138

TABLE 5 (CONTINUED)
Private-Sector Employment Recovery Rate and GDP Growth Ratio, by Region 2007–2012

(1) REGION/DIVISION/STATE	(2) Private-Sector Employment Recovery Rate (%)	(3) GDP Growth Ratio 2007–2012
UNITED STATES	**81.7**	**1.026**
Midwest	**71.1**	**1.014**
East North Central	**64.2**	**0.994**
Illinois	57.6	1.005
Indiana	82.4	1.032
Michigan	68.6	0.951
Ohio	57.2	0.988
Wisconsin	61.1	1.009
West North Central	**92.3**	**1.060**
Iowa	103.3	1.023
Kansas	76.5	1.042
Minnesota	97.0	1.070
Missouri	45.6	1.012
Nebraska	90.7	1.083
North Dakota	1,111.6	1.527
South Dakota	137.3	1.096
West	63.8	1.016
Mountain	**60.7**	**0.995**
Arizona	45.7	0.945
Colorado	91.4	1.046
Idaho	68.8	0.995
Montana	98.4	1.038
Nevada	28.2	0.909
New Mexico	38.7	1.020
Utah	104.2	1.115
Wyoming	41.1	1.043
Pacific	**75.1**	**1.079**
Alaska	292.3	1.100
California	65.4	0.999
Hawaii	59.5	1.017
Oregon	51.7	1.168
Washington	77.4	1.064

Sources: U.S. Bureau of Economic Analysis; U.S. Bureau of Labor Statistics.

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.[14]

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).

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Appendix

TABLE A-1
Private-Sector Employment Losses, Peak to Trough

State	Date of Trough	Absolute Loss (Thousands)	Percentage Loss (%)	Duration of Recession (Months)
United States	**February 2010**	**–8,818.0**	**–7.6**	**25**
Alabama	February 2010	–161.3	–9.9	26
Alaska	December 2009	–5.2	–2.2	12
Arizona	September 2010	–302.0	–13.3	42
Arkansas	February 2010	–61.1	–6.1	24
California	January 2010	–1,314.9	–10.3	30
Colorado	January 2010	–160.9	–8.1	20
Connecticut	February 2010	–114.0	–7.8	23
Delaware	February 2010	–35.6	–9.4	24
Florida	January 2010	–911.0	–13.1	34
Georgia	February 2010	–339.3	–9.8	35
Hawaii	December 2009	–45.2	–9.0	30
Idaho	January 2010	–58.0	–10.7	31
Illinois	December 2009	–412.7	–8.0	23
Indiana	July 2009	–237.9	–9.3	25
Iowa	December 2009	–66.7	–5.2	23
Kansas	March 2010	–77.5	–6.8	23
Kentucky	February 2010	–123.0	–8.0	33
Louisiana	February 2010	–70.8	–4.5	24
Maine	March 2010	–28.7	–5.6	25
Maryland	February 2010	–156.8	–7.4	35
Massachusetts	October 2009	–144.3	–5.0	18
Michigan	July 2009	–411.8	–11.5	19
Minnesota	February 2010	–154.3	–6.5	24
Mississippi	February 2010	–80.7	–8.8	24
Missouri	January 2010	–167.9	–7.1	34
Montana	February 2010	–25.6	–7.1	23
Nebraska	March 2010	–38.6	–4.8	24
Nevada	September 2010	–184.2	–16.1	42
New Hampshire	January 2010	–32.7	–5.9	24
New Jersey	February 2010	–248.6	–7.2	25
New Mexico	September 2010	–51.2	–7.8	31
New York	November 2009	–324.3	–4.4	19
North Carolina	February 2010	–339.1	–9.8	24
North Dakota	April 2009	–6.9	–2.4	5
Ohio	February 2010	–404.2	–8.7	26
Oklahoma	January 2010	–91.9	–7.1	22
Oregon	February 2010	–151.4	–10.5	35
Pennsylvania	February 2010	–264.3	–5.2	25
Rhode Island	September 2009	–36.5	–8.5	33
South Carolina	December 2009	–171.8	–10.6	30
South Dakota	February 2010	–14.2	–4.2	24
Tennessee	February 2010	–223.2	–9.4	24
Texas	December 2009	–476.3	–5.4	17
Utah	February 2010	–99.7	–9.4	26
Vermont	July 2009	–14.7	–5.8	25
Virginia	February 2010	–199.5	–6.4	22
Washington	February 2010	–207.3	–8.5	23
West Virginia	February 2010	–30.0	–4.9	24
Wisconsin	January 2010	–174.6	–7.1	31
Wyoming	January 2010	–21.9	–9.5	15

Source: U.S. Bureau of Labor Statistics.

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