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Oil and the Regional Economy

Oil and the Economy: Adapting to a New Reality
Federal Reserve Bank of Dallas

November 18, 2016

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Senior Director

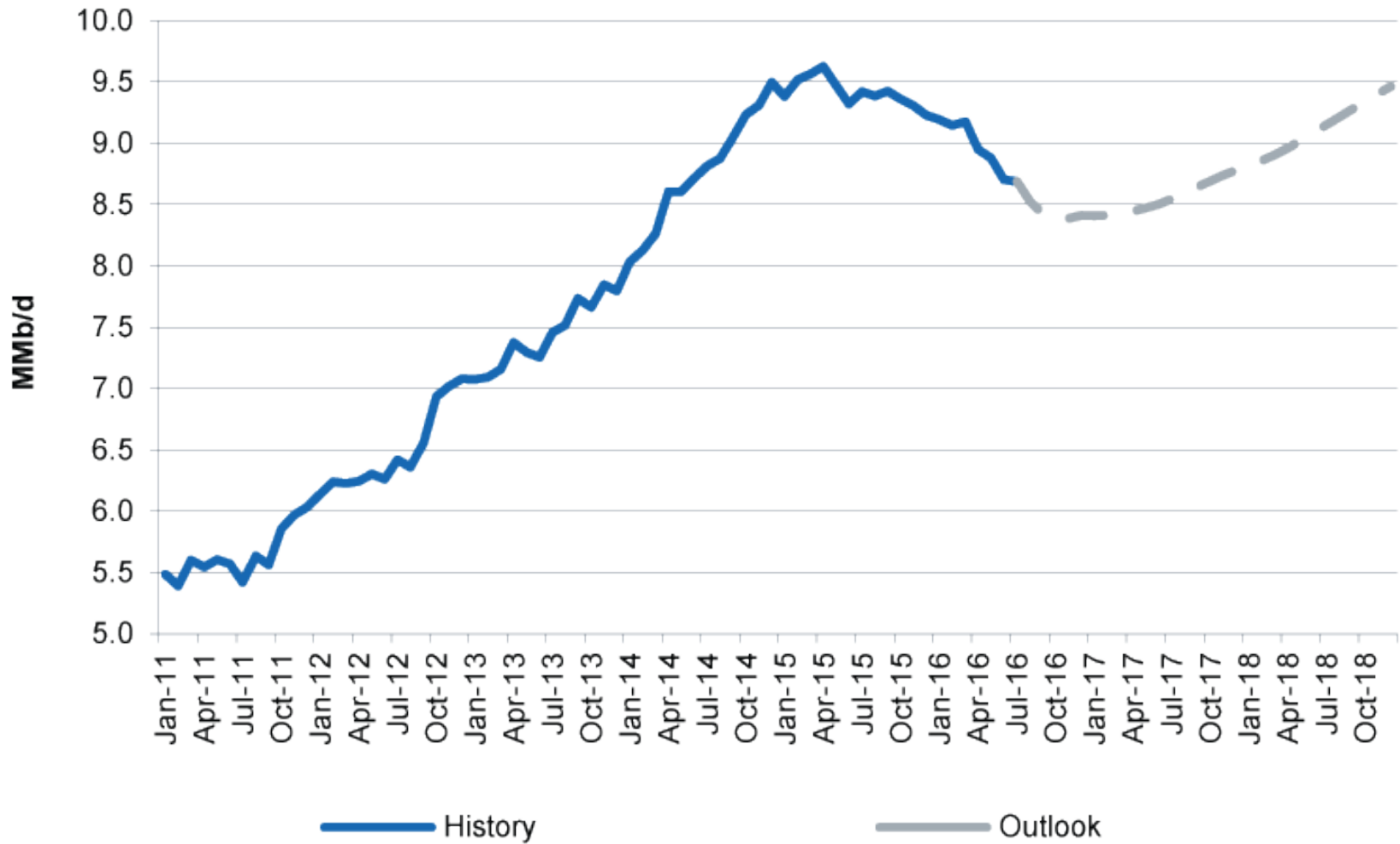
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The IHS US Oil Outlook

- The ability of US operators to produce “more for less” has moderated the severity of output declines.
- Lower service costs, a focus on the best acreage, and improvements in how wells are developed have pushed down US tight oil break-evens.
- For a group of five top unconventional plays, break-even prices have fallen from roughly \$60–80/bbl or higher in 2014 to \$40–60/bbl earlier this year.
- Capital availability and well economics are such that a WTI price of \$40–45/bbl will incentivize enough drilling to keep total US crude oil production roughly flat.
- Despite a better understanding of US tight oil dynamics, production still has the capacity to surprise.

Monthly US crude oil production

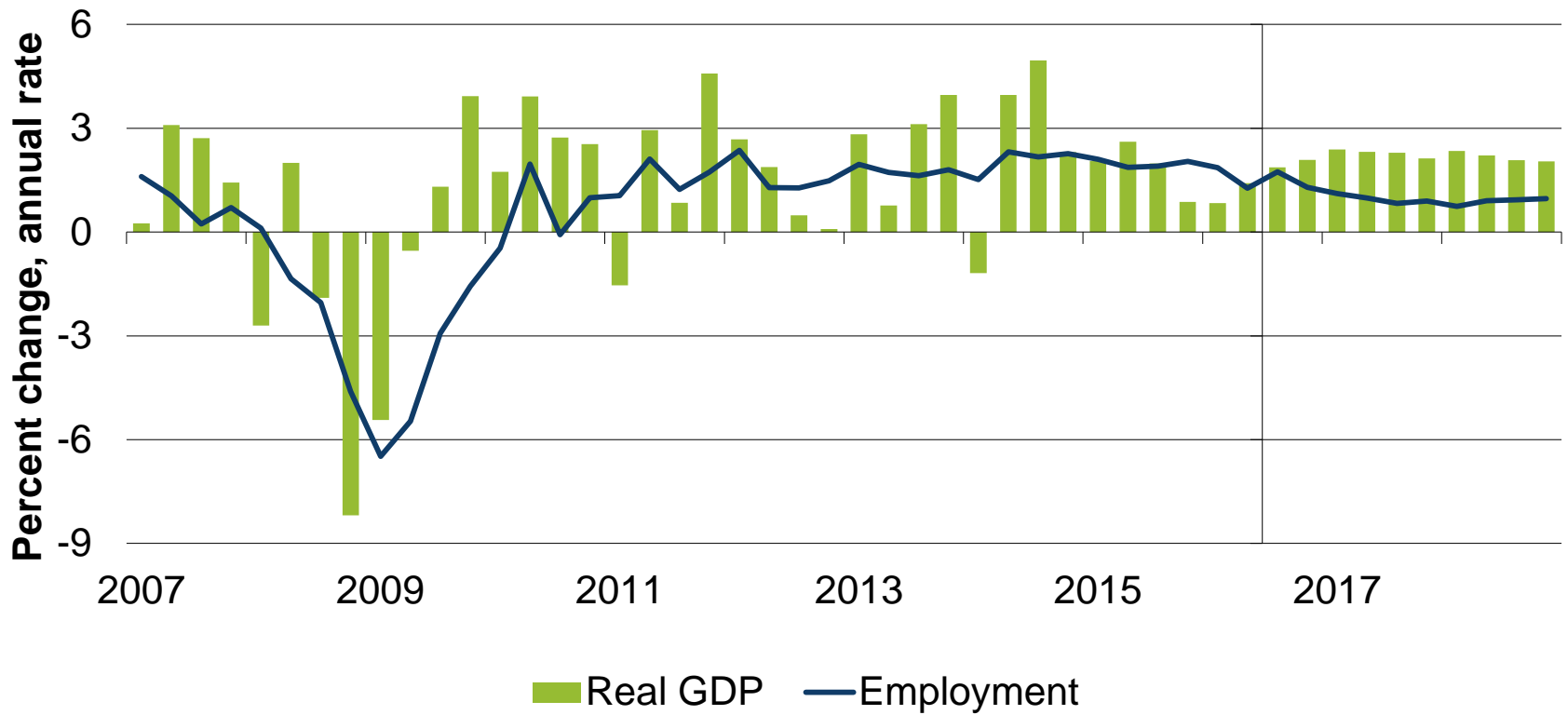


Source: IHS, EIA

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IHS US Economic Outlook:

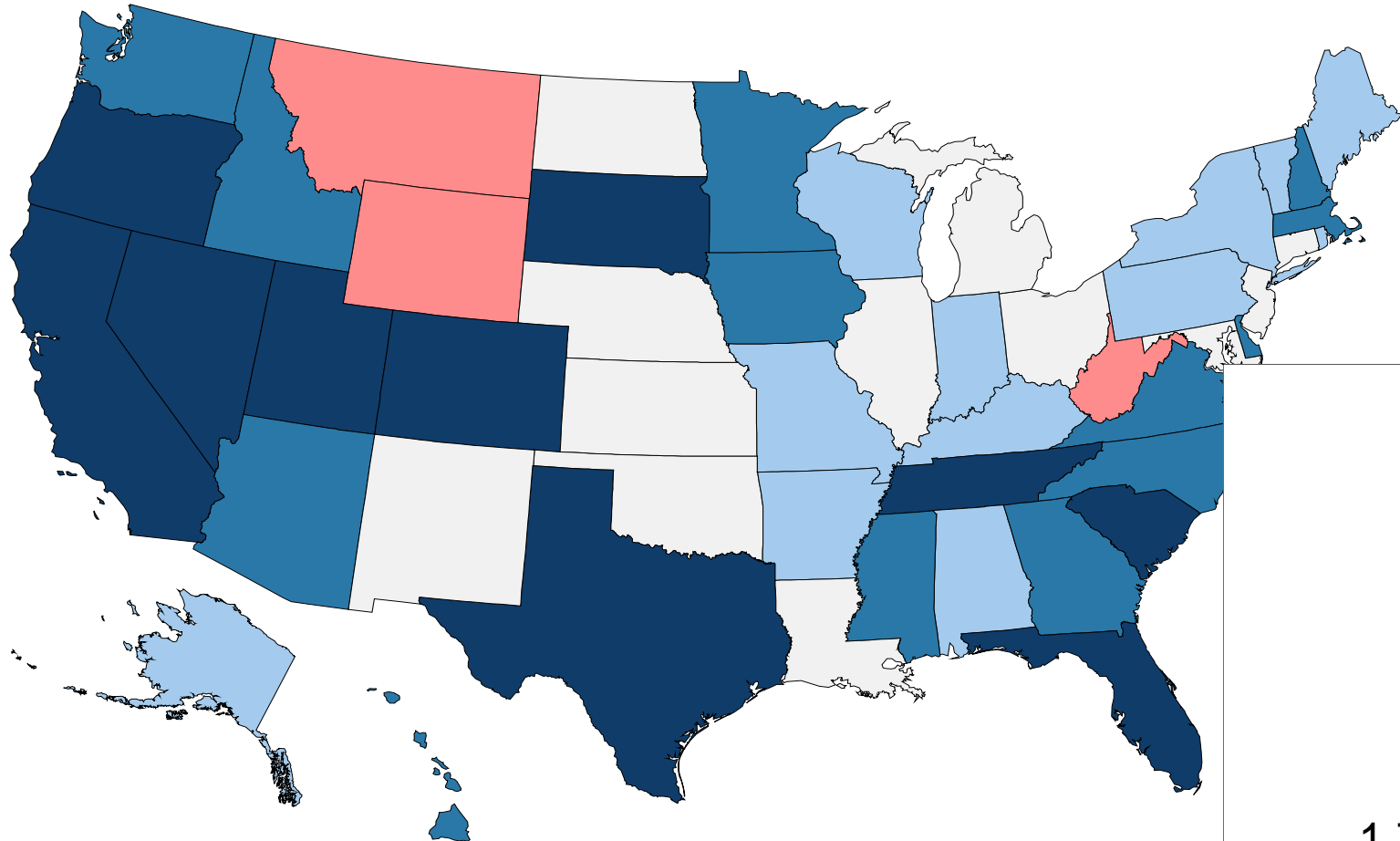
Real GDP growth will pick up, but job growth will slow



Source: IHS

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IHS Regional Economic Outlook: Job gains over next four quarters



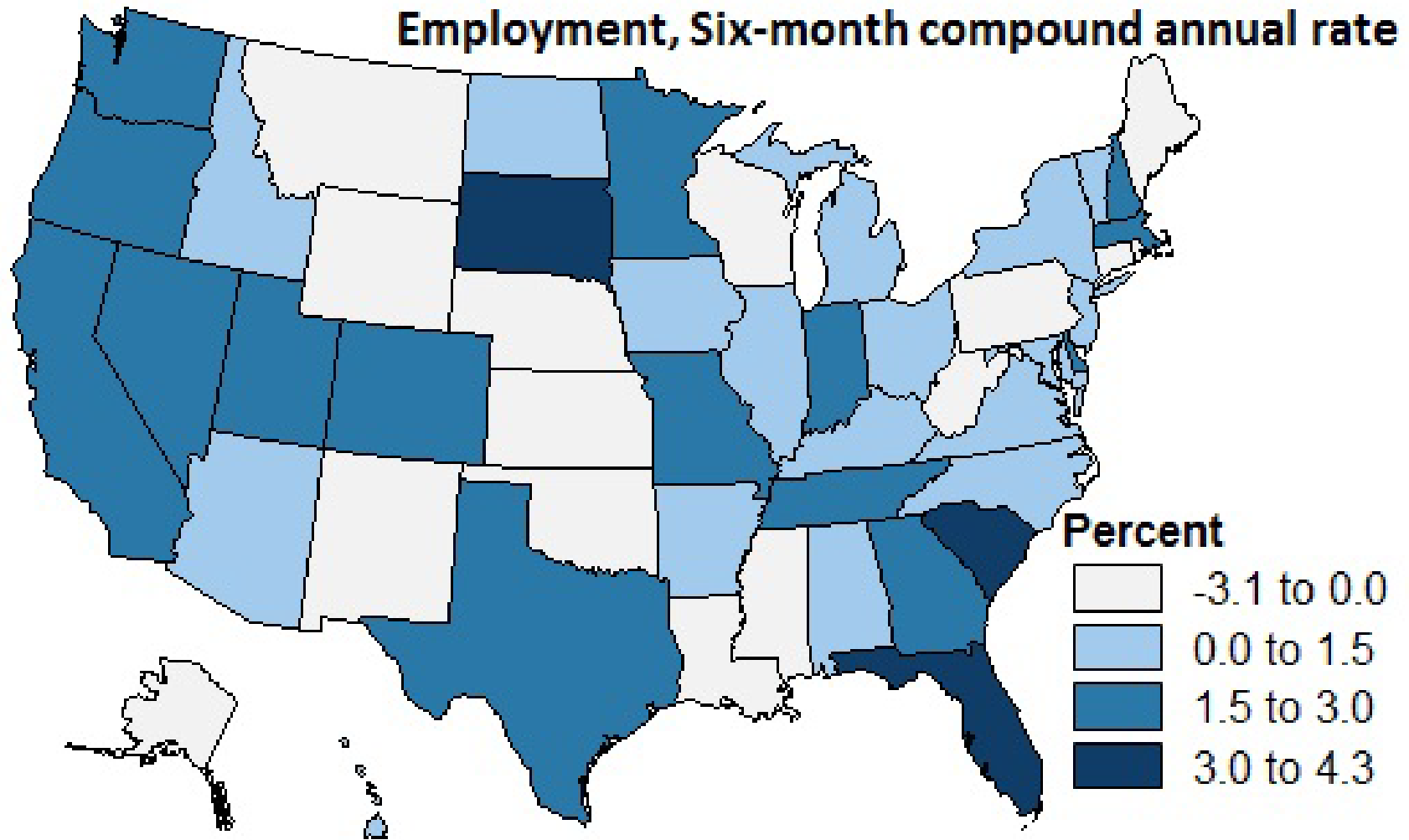
1.7 - 3.4

Impact of the Great Oil Deflation

Regional Overview

- The downturn in the US oil industry had a devastating impact on the nation's top oil producing states in 2015 and conditions remain difficult in 2016.
- Sectors closely tied to the upstream sector have been in freefall with mining employment down to 2011 levels or worse in Texas and the other oil-producing states. Manufacturing, construction, and transportation/warehousing have also been hit hard.
- Good news: employment conditions have been slowly improving (or less painful) in recent months as the US energy industry reaches the bottom.
- Nevertheless, it will be a long climb back for many of the top energy producing states.

State Job Growth September 2016



Producing states stuck in low gear

Employment Growth, year ago

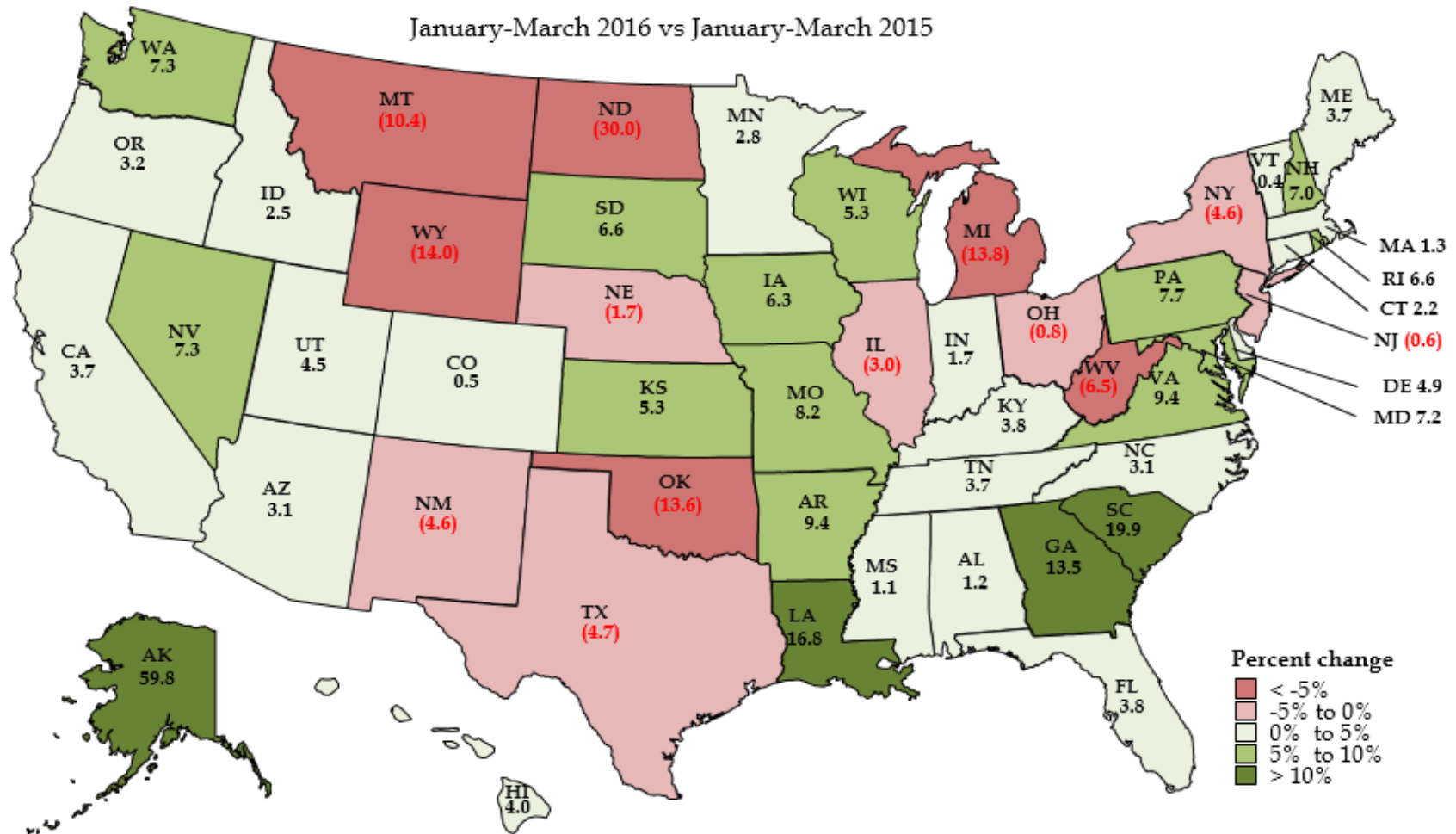
March 2016, QCEW

Sept. 2016, CES

Rank	State	%	Rank	State	%
50	North Dakota	-6.3	50	Wyoming	-3.4
49	Wyoming	-3.8	49	North Dakota	-2.2
48	Alaska	-1.4	48	Louisiana	-0.7
47	West Virginia	-1.2	47	Oklahoma	-0.6
46	Oklahoma	-1.0	46	Kansas	-0.3
45	Louisiana	-0.9	45	West Virginia	-0.3
44	New Mexico	0.0	44	Montana	0.2
43	Vermont	0.1	43	Alaska	0.2
42	Kansas	0.3	38	New Mexico	0.9
40	Texas	0.8	25	Texas	1.5

Source: Bureau of Labor Statistics

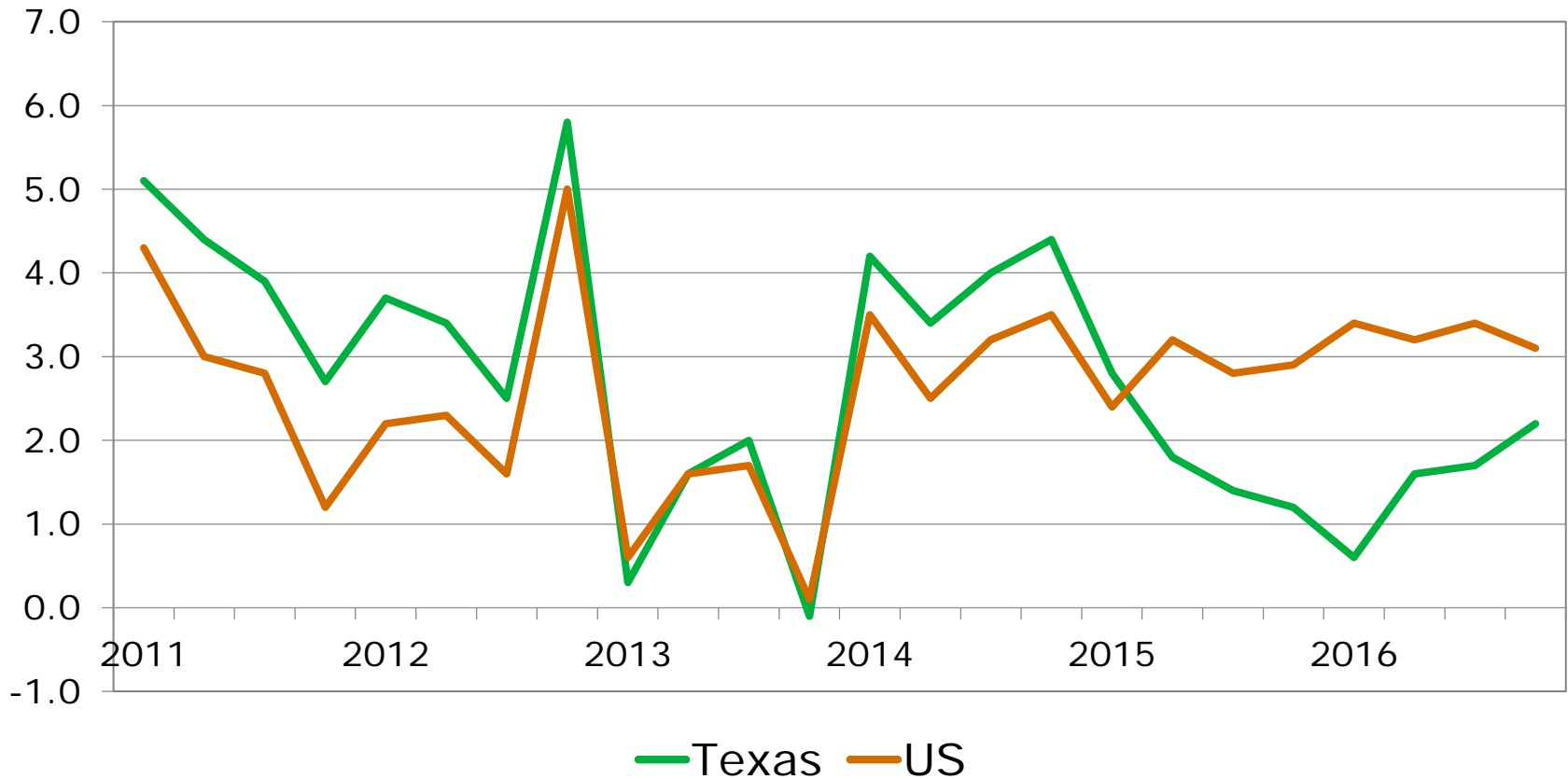
Tax Revenues 2016 (Rockefeller Institute)



Source: U.S. Census Bureau (tax revenue).

Energy sector losses weakens wage growth

Average wage growth, year over year % change



Damage concentrated in high-wage sectors

Employment growth May 2016, average weekly wages 2015Q4

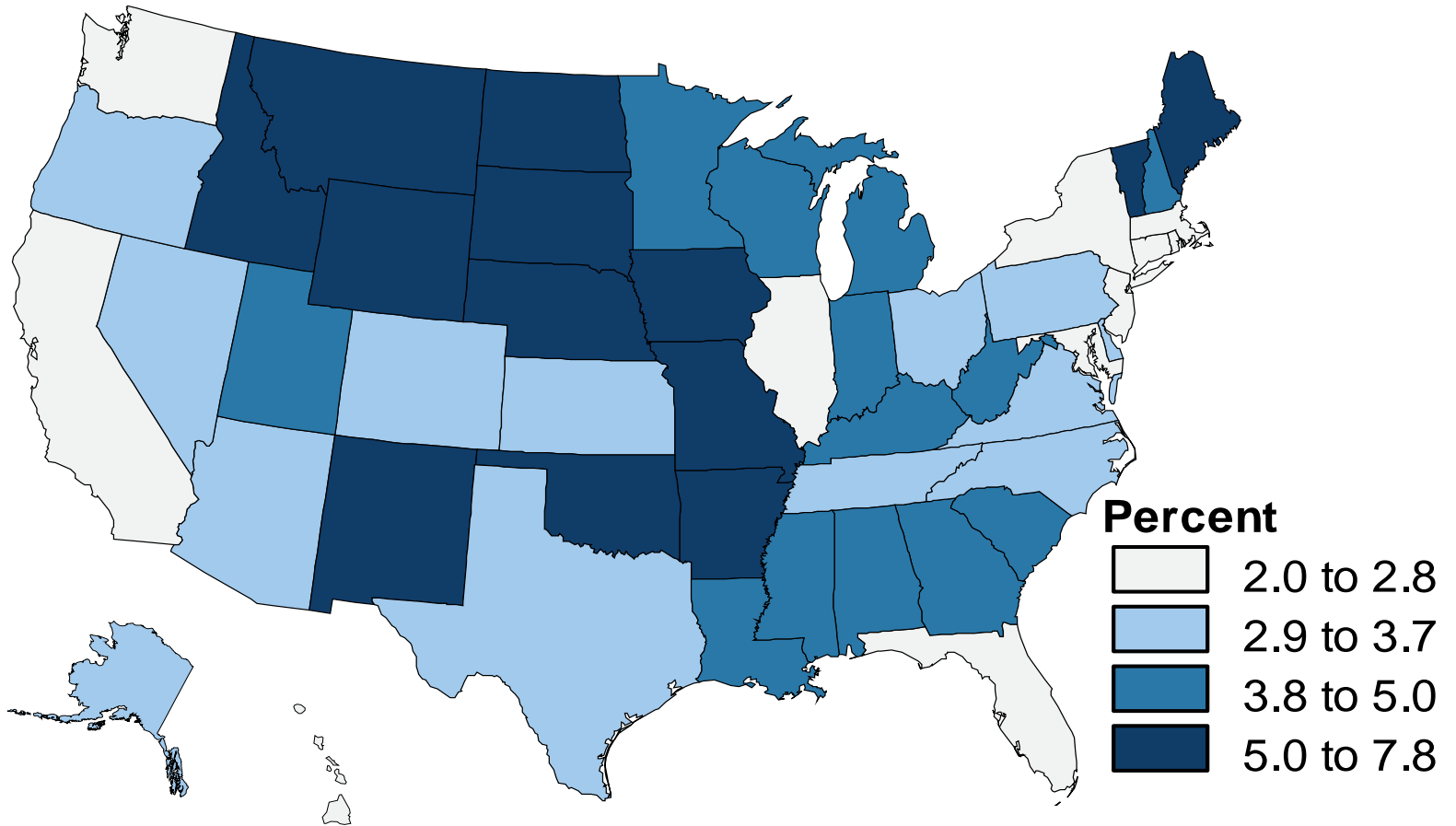
Texas			North Dakota		
Sector	Emp. y/y	Wkly Wage, \$	Sector	Emp. y/y	Wkly Wage, \$
Total	1.5%	1,123	Total	-3.4%	1,047
Manufacturing	-4.2%	1,462	Manufacturing	-5.5%	1,116
Mining	-16.7%	2,065	Mining	-30.0%	1,781
Construction	1.3%	1,304	Construction	-10.5%	1,382
Retail trade	2.4%	622	Retail trade	-1.8%	634
Wholesale trade	1.9%	1,584	Wholesale trade	-11.2%	1,369
Trans./warehousing	-0.3%	1,244	Trans./warehousing	-17.9%	1,243
Information	0.7%	1,555	Information	1.5%	1,130
Finance	2.5%	1,488	Finance	-2.9%	1,197
Business services	1.4%	1,437	Business services	-2.7%	1,224
Education/health	3.9%	953	Education/health	3.5%	1,000
Leisure/hospitality	4.4%	412	Leisure/hospitality	0.2%	348
Other services	2.6%	737	Other services	6.0%	681

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

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Which states benefit the most?

Share of total consumption dedicated to gasoline/energy goods



Oil Industry Supply Chain States also Suffered

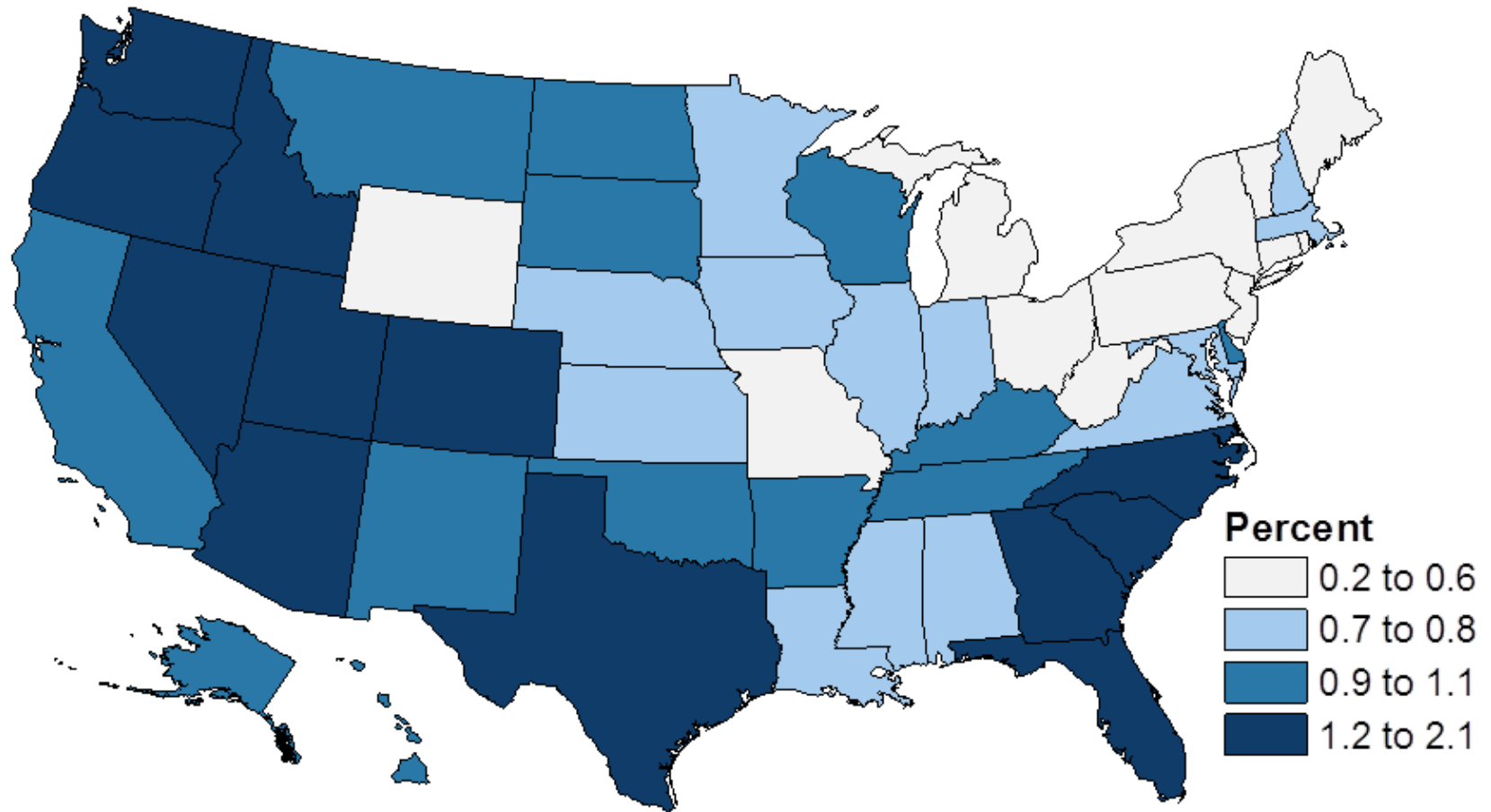
Real GSP	Oil Producing	Supply Chain	Rest of US
2014	4.43	2.87	1.78
2015	0.83	1.36	2.34
2016	0.32	1.69	1.68

Supply Chain : AR, CO, KS, OH, MI, MO, PA, UT

Outlook

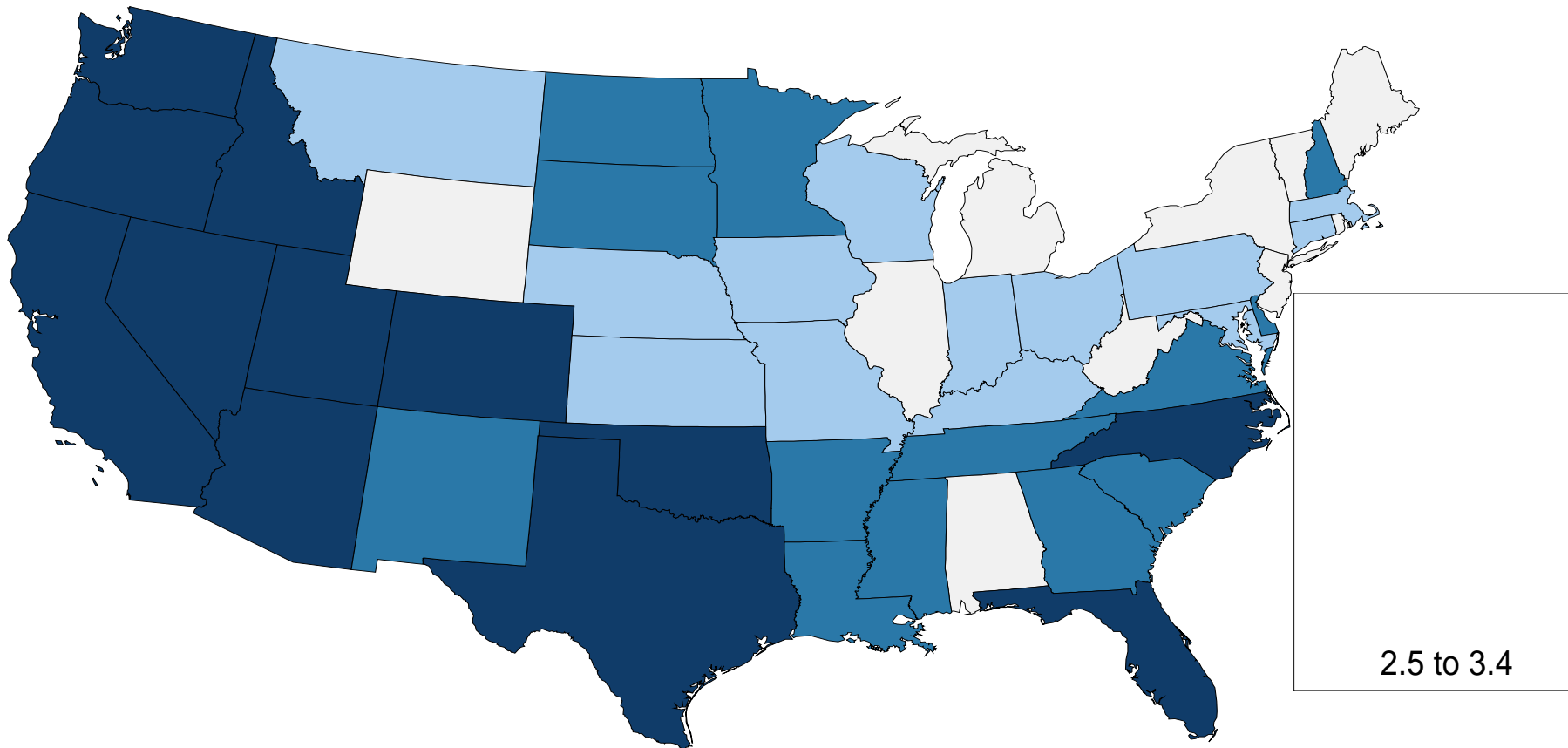
Producing states will regain status as top performers

Employment growth, 2016-21 (average annual growth rate)

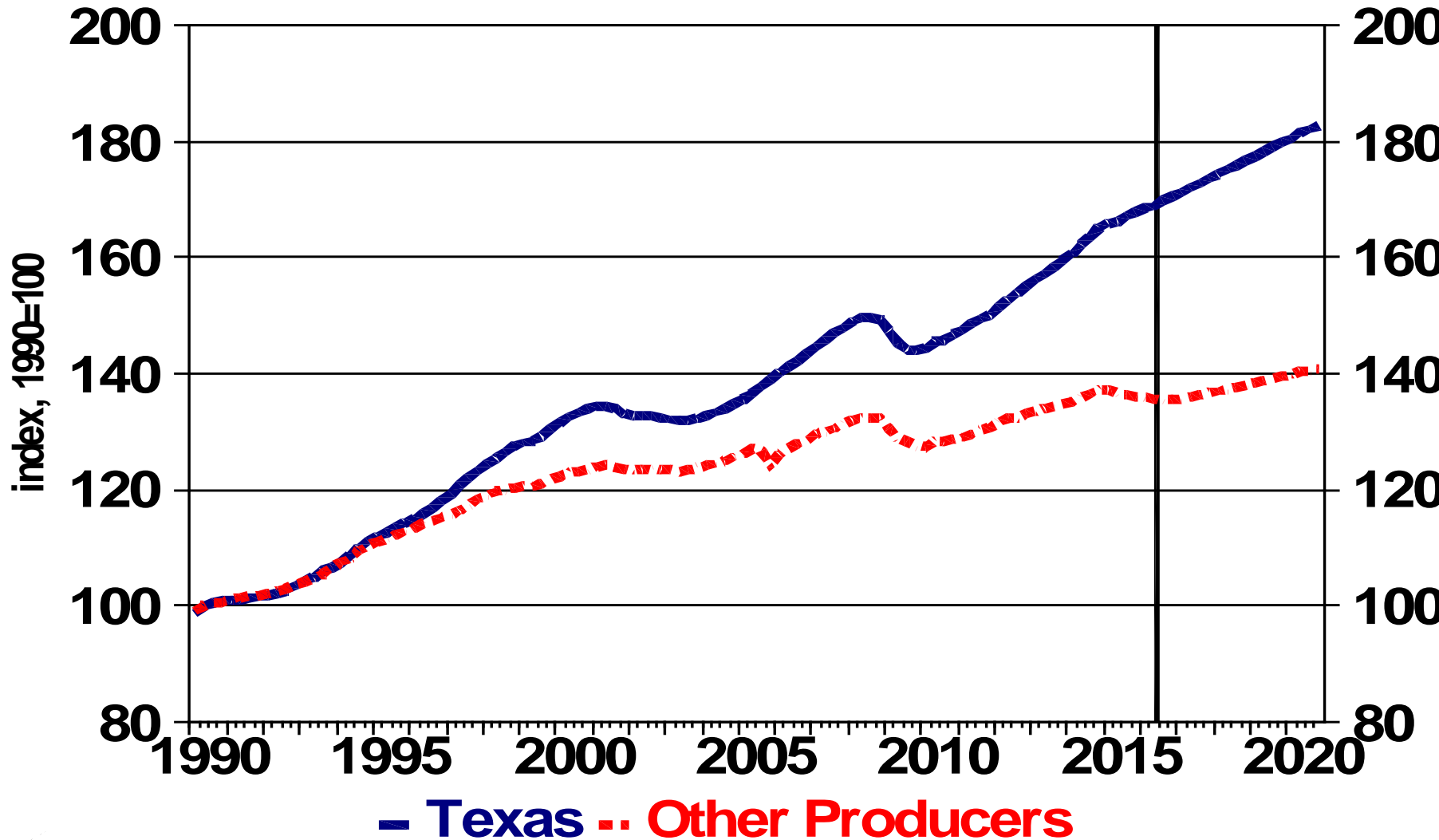


Producing states will regain status as top performers

Real GSP growth, 2016-21 (average annual growth rate)



Texas Returns to Strong Growth, the Others Lag (Employment vs 1990)



Texas dominates large metro growth

Employment growth, metros with over 1 million residents
2016-21 (avg. annual growth rate)

Rank	Metro	%
1	Austin, TX	2.7
2	Orlando, FL	2.6
3	Las Vegas, NV	2.4
4	Phoenix, AZ	2.2
5	Raleigh, NC	2.1
6	Nashville, TN	2.1
7	Dallas-Fort Worth, TX	2.1
8	Denver, CO	2.0
9	Salt Lake City, UT	2.0
10	Riverside-San Bernardino, CA	1.8
11	Charlotte, NC-SC	1.8
12	Tampa, FL	1.8
13	San Jose, CA	1.7
14	San Antonio, TX	1.7
17	Houston, TX	1.6

Q&A

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