ECONOMIC UPDATE

REGIONS

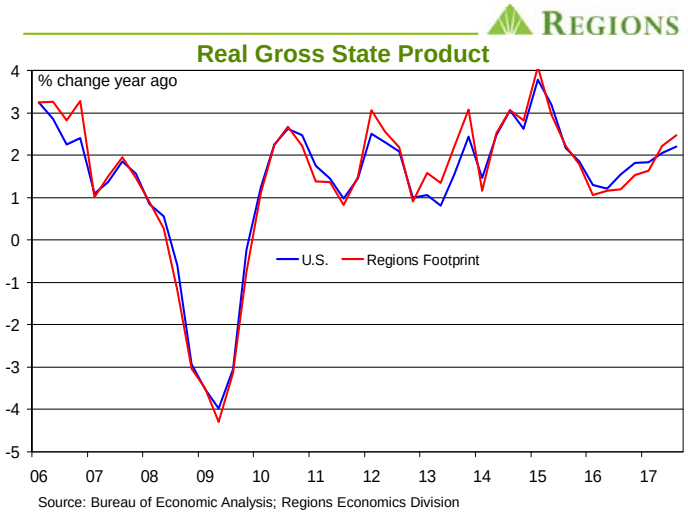
January 2018

Q3 2017 Gross State Product: Regions Footprint

As a counterpart to the national data on Gross Domestic Product, the Bureau of Economic Analysis (BEA) produces state level data to measure the market value of all goods and services produced by the labor and property located within each state. This measure is known as Gross State Product, or, GSP. As is the case with the GDP data, the GSP data are reported in both nominal and real terms, the former measuring gross output in current dollar terms and the latter measuring gross output in constant dollar (i.e., adjusted for price changes) terms. GSP is measured on an incomes basis, i.e., by aggregating the incomes earned by the various factors of production and the various costs of production. In other words, GSP is the sum of labor income (wages, salaries, and benefits) earned by workers, capital income (income earned by business owners ranging from sole proprietors to shareholders of large corporations as well as returns on capital), and business taxes. Unlike GDP, which can be measured on an incomes basis or an expenditures basis, there is no equivalent measure of GSP on an expenditures basis.

Given that GSP is measured on an incomes basis and that labor earnings comprise the bulk of income, the GSP data are basically a derivative of the state level data on employment and income (note there is also a metro area counterpart measured in the same manner). This, coupled with the fact that the GSP data come with a lengthy lag, is why we devote much more attention to the more timely state level data on employment and income. In other words, the trends apparent in the GSP data largely mirror those we identify and analyze in our regular reviews of the state level employment and income data, particularly the annual benchmark revisions to the data on nonfarm employment and the comprehensive annual data on state level personal income which include data on earnings by industry. That said, it can nonetheless be useful to go through the details of the GSP data, particularly as the GSP data offer an intuitive means of comparing industrial composition across individual states as well as the industry drivers of overall economic growth within a given state.

In what follows, we'll look at the GSP data for the states within the Regions footprint, which allows us to compare relative rates of growth across the individual states and see how growth for the footprint stacks up against growth for the U.S. economy as a whole. We'll also take a look at what industries are driving growth in each state, which can of course help shed light on growth differentials across states. Again, while these patterns are apparent in the state level employment and income data in a more timely manner, the GSP data are for some a more useful lens through which to look at these broader trends. Moreover, while the data on employment and income come with a much longer history than the GSP data – the quarterly GSP data go back to only 2005 – one advantage the GSP data have is that having the GSP data on both a real and nominal basis allows us to segregate the components of changes in the nominal GSP data, i.e., inflation versus growth in physical output, even if inflation has not been much of a factor over the past several years.



Source: Bureau of Economic Analysis; Regions Economics Division

As a side note, due to measurement issues the U.S. aggregate for Gross State Product does not exactly match Gross Domestic Product, but the two are very close. The chart to the side shows year-on-year growth in real GSP for both the U.S. and the Regions footprint as a whole, and as seen in the chart growth in the footprint has slightly outpaced growth for the U.S. as a whole over most of the current expansion. In Q3 2017, real GSP for the Regions footprint grew by 2.5 percent year-on-year, bettering the 2.2 percent growth for the U.S. as a whole. On a year-to-date basis through Q3, real GSP for the footprint was up by 2.1 percent compared to 2.0 percent for the U.S. as a whole. Since Q1 2010, when year-on-year growth in real GSP turned positive, average growth for both the U.S. as a whole and the Regions footprint has been 2.0 percent. As of Q3 2017, real GSP for both the U.S. as a whole and the Regions footprint stood just over 12.5 percent above the pre-recession peak.

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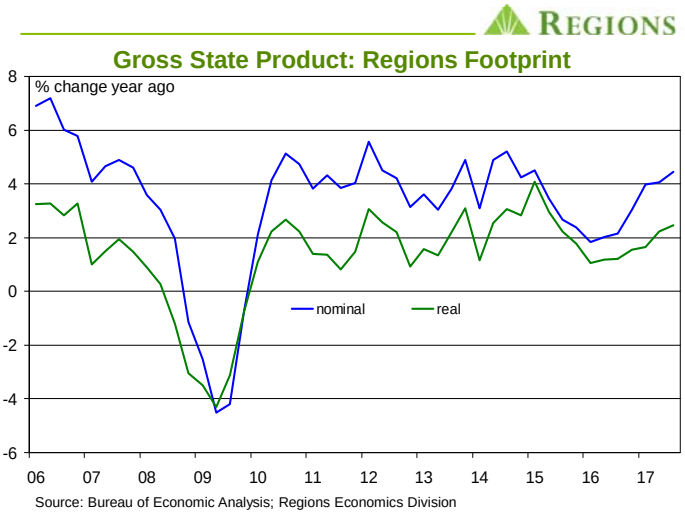
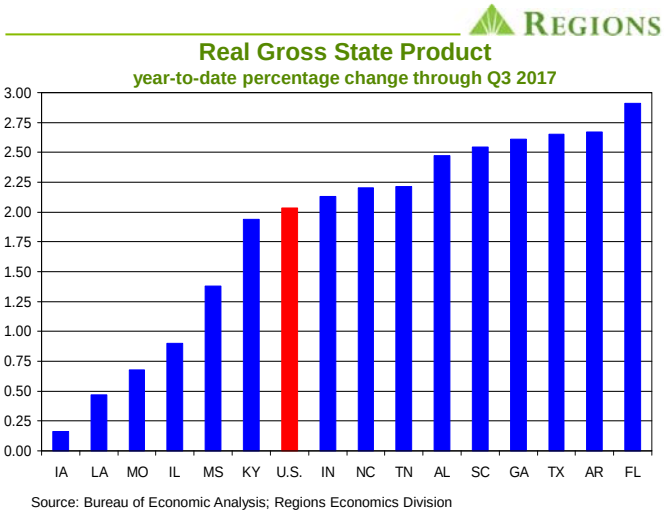
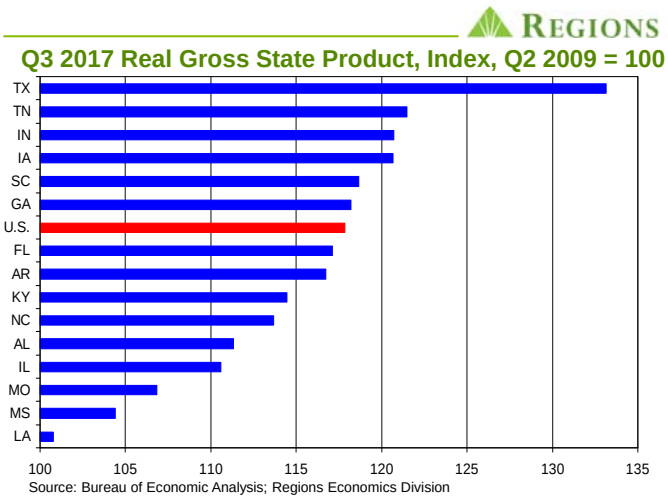
To our earlier point that inflation has been fairly tame over the course of the current expansion, the chart to the side compares growth in nominal and real GSP for the Regions footprint as a whole. While it can be argued that growth in real GSP is more relevant as a gauge of economic growth over time as it measures growth in actual output, or in this case income, there are reasons to focus on growth in nominal GSP. We often note that for the U.S. economy as a whole, growth in nominal GDP is a good proxy for growth in top-line corporate revenue. One can make a similar, though not perfect, argument for growth in nominal GSP. Moreover, to the extent one sees growth in GSP as a reasonable standard by which to assess metrics, such as loan growth, which are reported in nominal terms, the nominal GSP data are the proper basis for comparison. While nominal growth during the current expansion has been well below growth seen in past expansions, 2018 should see faster growth in both nominal and real GSP.



As we frequently note with a variety of economic and demographic data series, there are seldom large divergences in growth rates for the Regions footprint as a whole and the U.S., but when one looks at individual states (or metro areas) within the footprint, there are differences, often significant differences. The GSP data are no exception to this general rule, as can be seen in the following charts, the first of which shows year-to-date growth in real GSP through Q3 2017 and the second of which shows growth in real GSP over the course of the current expansion. At 2.9 percent, Florida posted the fastest year-to-date growth in real GSP followed by growth of 2.7 percent in Arkansas and Texas and Georgia's 2.6 percent growth. Conversely, Iowa saw real GDP increase by just 0.2 percent on a year-to-date basis through Q3, with Louisiana logging growth of 0.5 percent and Missouri seeing growth of 0.7 percent.





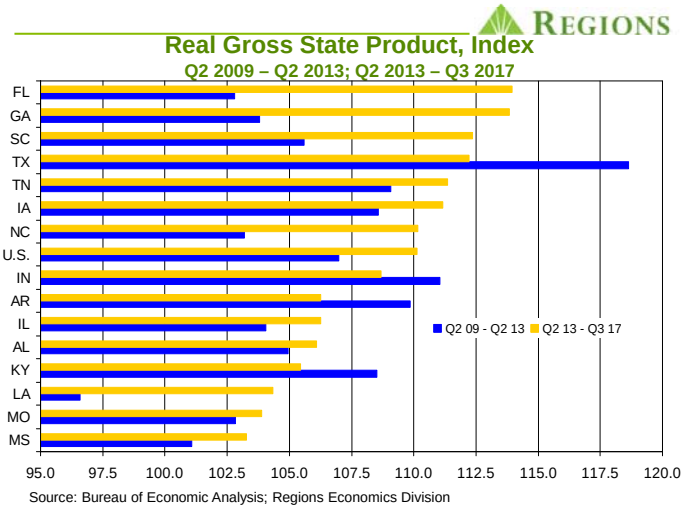
As seen in the second chart above, Texas has easily topped the Regions footprint, not to mention the U.S. as a whole, in terms of real GSP growth since the end of the 2007-09 recession, which ended in Q2 2009. Over the course of the expansion, real GSP in Texas has grown by 33.0 percent, compared to growth of 18.6 percent for the Regions footprint as a whole and growth of 17.8 percent for the U.S. as a whole. At the other end of the spectrum, Louisiana has seen real GSP growth of just 0.8 percent since the end of the 2007-09 recession and Mississippi has seen growth of just 4.4 percent.

For those who regularly follow our analysis of the employment and income data, it comes as no surprise to see Texas at the top of the GSP growth rankings, as amongst the states in the Regions footprint Texas has consistently ranked in the top three for job and income growth. What may be surprising, however, is that Florida and Georgia, the other two states that along with Texas typically comprise the top-three states in terms of job and income growth, do not fare better in GSP growth over the course of the current expansion. As seen in the second chart above, both Florida and Georgia have seen growth in real and nominal GSP right in line with U.S. averages since the end of the 2007-09 recession. In contrast, Iowa and Indiana typically rank in the middle of the Regions pack in terms of job and income

growth, yet are tied for the third fastest growth in GSP within the Regions footprint since the end of the 2007-09 recession, with real GSP having grown by 20.7 percent in both Iowa and during the current expansion.

We'd point to two key factors to help put the rankings in the above charts in perspective – timing and industry mix. While the end of the 2007-09 recession is a perfectly reasonable starting point to compare growth over the course of the current expansion, the reality is that not all states started on equal footing, i.e., some suffered more than others during the downturn, and even though the recession officially ended in Q2 2009, that was not necessarily the cyclical trough in each individual state. Florida is a prime example of our point. During the recession, Florida saw a peak-to-trough decline in real GSP of 11.12 percent, easily the most severe of any state in the footprint and far more severe than the 4.25 percent peak-to-trough decline seen nationally. Moreover, while Q3 2009 marked the first official quarter of recovery/expansion for the U.S. as a whole, Florida saw its GSP contract further during this quarter, i.e., the state's economy got a later start on the recovery than was the case for the U.S. as a whole. Florida's economy was hit extremely hard by the housing market meltdown, while its above-average exposure to consumer sensitive sectors such as retail trade and leisure & hospitality services acted as a drag in the early phases of the recovery during which energy, manufacturing, and trade were primary drivers of overall growth.

As the recovery endured and ultimately transitioned to expansion, however, Florida's economy gathered pace. This can be seen in the chart to the side, in which real GSP growth over the eight-plus years of the current expansion is split into segments. The blue bars show growth in real GSP over the Q2 2009 through Q2 2013 period, while the gold bars show real GSP growth over the Q2 2013 though Q3 2017 period. Over the former period, Florida's real GSP grew by just 2.79 percent, compared to growth of 6.99 percent for the U.S. as a whole. But, over the latter period, Florida saw the fastest real GSP growth – 13.95 percent – of any state in the Regions footprint, easily outpacing the 10.13 percent growth for the U.S. as a whole. As noted above, Florida's exposure to housing and consumer sensitive sectors acted as a drag on growth in the early phases of the current expansion but has since transitioned into a meaningful tailwind behind growth.

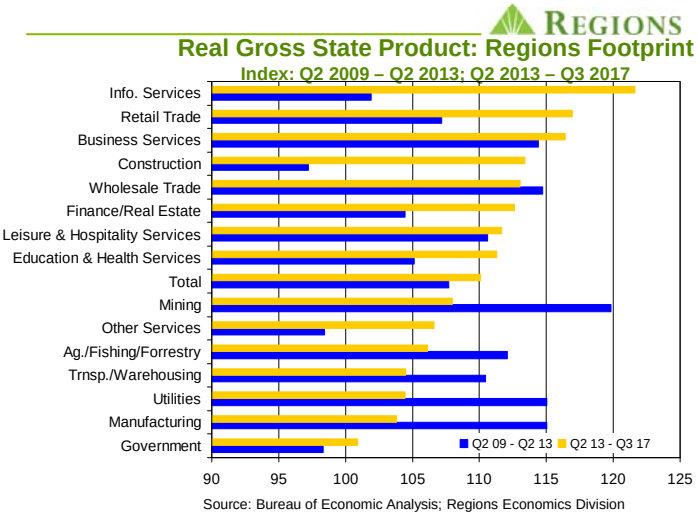


Source: Bureau of Economic Analysis; Regions Economics Division

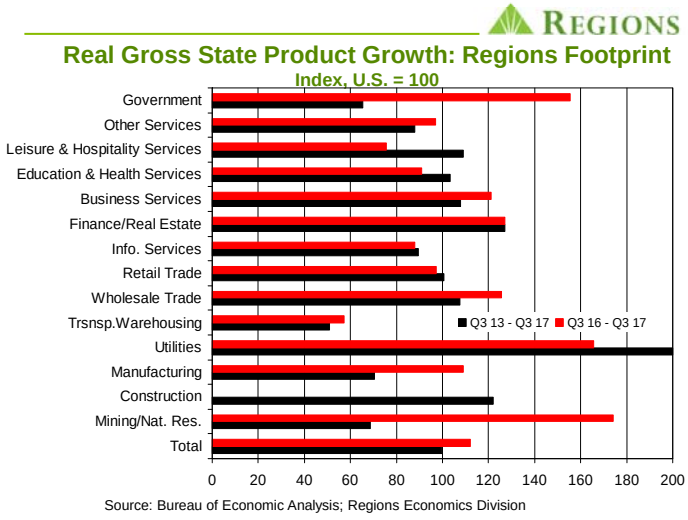
As is apparent in the above chart, other states have seen differentials, some quite pronounced, in GSP growth rates over the two halves of the current expansion. Georgia, for instance, saw real GSP growth of 3.80 percent over the first four years of the current expansion but over the most recent years real GSP in the state has grown by 13.85 percent. Indiana, as noted above, has seen the third strongest real GSP growth in the footprint since the end of the recession, but growth in the state was much more rapid over the first half of the current expansion than was the case over the second half, with the state's far above-average exposure to manufacturing acting as a boost to growth in the early phases. But, while that exposure has not been as significant a lift over the most recent four-year period, the stepped-up pace of growth in the manufacturing sector over the past several months, as seen in the ISM Manufacturing Index or the data on capital spending, suggests Indiana should see faster real GSP growth over coming quarters. To that point, we are a bit surprised that the Q3 2017 data show year-on-year real GSP growth of just 1.79 percent for Indiana. After all, manufacturing accounts for just under 30 percent of the state's GSP, far and away the highest concentration of any state in the footprint and almost triple the share for the U.S. as a whole, so it would seem plausible that rising manufacturing output should have made more of an impression on GSP growth in Indiana. That said, the data on employment and income – which at this point are still preliminary – show only modest increases in manufacturing employment and earnings in Indiana during Q3, so the recent GSP data are at least consistent with that. We will be interested to see how pending revisions to the income and employment data turn up in subsequent estimates of GSP.

We have routinely cited what up until recently has been the lack of a synchronized expansion across different sectors of the U.S. economy as one of the culprits behind the relative lack of vigor over the current expansion. While we have made the same point with the state level data on employment and income, the GSP data make that same point in a perhaps more tangible fashion. We've aggregated Gross State Product by industry group for the Regions footprint and done the same split across the two segments of the current expansion shown in the chart above. Over the first four years of the current expansion mining, manufacturing, natural resources (comprised of agriculture, fishing, forestry), and utilities were key drivers of growth within the Regions footprint. Over the past four years, however, growth in each of these industry groups slowed, in some cases sharply, while other drivers of growth have emerged, most notably construction, information services, and health care, while business services and wholesale trade have been consistently strong over the entire eight years of the current expansion. We'll also note that the data for the U.S. as a whole show similar patterns, i.e., the same

industry groups that were the main drivers in the first four years of the expansion made significantly smaller contributions over the second half. The heavier exposure to mining and manufacturing, among other industry groups, within the Regions footprint relative to the U.S. as a whole help explain why real GSP growth in the footprint was nominally faster in the earlier phases of the expansion than was the case for the U.S. as a whole as well as why that growth differential has at times flipped over the past few years.



Source: Bureau of Economic Analysis; Regions Economics Division

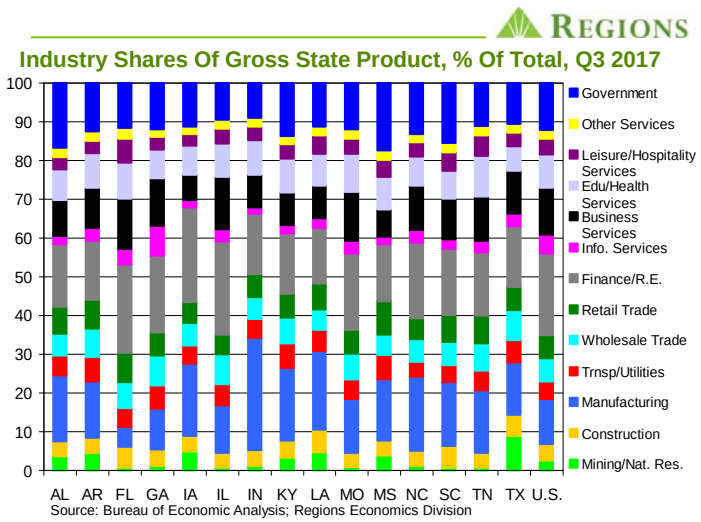


Source: Bureau of Economic Analysis; Regions Economics Division

The first chart above summarizes our industry splits of aggregated GSP for the Regions footprint across the two time periods. The second chart above is also an attempt to get at the concept of momentum, i.e., those industry groups either outperforming or underperforming a benchmark measure, which in this case is the U.S. as a whole. The black bars in the chart show the percentage change in real GSP on an industry by industry basis for the Regions footprint as a whole over the past four years, indexed against the performance of each industry for the U.S. as a whole over the same period. In other words, any value under 100 percent means that industry group within the Regions footprint has grown by less than the U.S. average, while any value over 100 percent means that industry group within the Regions footprint has grown by more than the U.S. average.

The red bars do the same, but in this case growth is measured only over the past four quarters. The point is to show which industries within the footprint have gained momentum relative to the U.S. as a whole over the most recent quarters, as is the case for business services, manufacturing, mining, and wholesale trade. As indicated in the chart, growth in each of these industries over the past four quarters is not only faster than is the case nationally, but growth is also faster over the past four quarters than for the entire four-year period as a whole. Note that we haven't included the construction sector in the comparison of growth over the past four quarters, as activity in this sector was distorted by Hurricanes Harvey and Irma, with Florida and Texas seeing the most impact. The sheer size of these two states means the data for the footprint as a whole will be similarly distorted, and this will also be the case with the Q4 data. Also, note that we show the data for the footprint as a whole but do have the data on a state-by-state basis; what we don't have is an economical way of showing such a high volume of data but we are always happy to share the data upon request.

At the least, the above discussion hopefully highlights the importance of understanding the industrial make-up of a given state (or metro area) and how that make-up plays into the economic fortunes of a given geography. This is a main reason we caution against drawing broad inferences on the basis of the footprint as a whole. Clearly, growth varies, often sharply, from state to state, and even within a given state some industry groups fare better than others. Along these lines, the chart to the side shows a more detailed look at the industrial make-up of each of the states in the Regions footprint relative to that of the U.S. as a whole. The chart shows the industry breakdown of GSP as of Q3 2017. Obviously this is a snapshot at a single point in time, but understanding how growth has evolved over time sheds light on how we arrived at this point.



Source: Bureau of Economic Analysis; Regions Economics Division

For instance, construction accounted for 5.40 percent of total GSP in Florida in Q3 2017 (the caveat about the impact of Hurricane Irma on the Q3 construction data applies here, but if we used the Q2 data our point would survive intact), but prior to the implosion of the housing market this share was much higher – over eight percent in 2006. This is consistent with the employment data showing that the state had, prior to Hurricane Irma's impact, almost 180,000 fewer construction jobs than at the pre-recession peak. Similarly, mining and natural resources accounted for 9.00 percent of Q3 2017 GSP in Texas and 4.71 percent in Louisiana, but both shares are far lower than was the case before energy prices cratered in late-2014. Though, as noted above, manufacturing has mounted somewhat of a charge over the past several months, manufacturing output nonetheless accounts for a smaller share of overall GSP across the footprint than would have been the case in earlier decades. That decline has been even more pronounced in those states in which nondurable goods manufacturing, such as textiles, played a larger role than durable goods manufacturing, such as motor vehicle production.

Another transition, though still in its early phases, to watch in the GSP data stems from the changing nature of consumer spending. The retail trade sector accounted for just over six percent of GSP for the Regions footprint as a whole in Q3 2017. This share has slowly drifted lower over recent years, which can be expected to continue going forward as the incidence of online shopping continues to expand. To some extent, the fading share of retail trade will be compensated for by a rising share of transportation, warehousing, and distribution, which accounted for just under four percent of GSP for the footprint as a whole in Q3 2017 (this share has been slowly rising). But, our view is that there will be a geographic mismatch between those areas shedding retail trade employment and income and those areas adding employment and income in transportation, warehousing, and distribution. As such, those states in which retail trade accounts for a higher share of GSP, such as Mississippi (8.5 percent), Florida (7.5 percent), and Arkansas (7.4 percent) could be more vulnerable, though it is reasonable to expect Florida to see faster growth in the logistics associated with online shopping.

Government accounted for 16.70 percent of GSP in Alabama as of Q3 2017, and for 17.33 percent of GSP in Mississippi, two of the states in the footprint with the slowest overall GSP growth in the post-recession period. This is by no means to imply a causal relationship, but it does point to how swings in government spending, including military spending, can impact the economy of a given state, particularly when growth in the private sector is lagging. Moreover, given what are less than sunny prospects for state government budgets in many states, as we've discussed in our quarterly updates of state government finances, it could be that over coming years the public sector becomes more of a drag on private sector activity.

Ideally, a given state or metro area will have an economy sufficiently diverse to absorb these types of structural, as opposed to cyclical, shifts that naturally occur over time in any economy. We know, however, this is not always the case. Using the industry delineations shown in the preceding chart, four states within the footprint have over half of their Gross State Product concentrated in the three largest industry clusters – Alabama (50.02 percent), Iowa (54.12 percent), Indiana (53.40 percent), and North Carolina (51.90 percent). As noted earlier, Indiana's high degree of concentration is largely a function of its exposure to manufacturing, which in the early phases of this expansion and again over the past few quarters has been to the state's benefit but which could easily flip to being a material drag for reasons such as shifts in consumer or business spending patterns or more restrictive global trade policies. In contrast, the three highest industry concentrations in Texas accounted for just 40.18 percent of total GSP as of Q3 2017, making it easily the most economically diverse state in the Regions footprint, By way of comparison, for the U.S. as a whole the "top-three" industry share of total GSP was 45.47 percent as of Q3 2017.

The Gross State Product data offer a useful lens through which to view shifting patterns, both across states and across industry groups within a given state, in economic activity. As we've noted throughout, many of these trends are apparent in the state level data on income and employment, data that are more timely than the GSP data. Still, there is value in analyzing the GSP data as they more readily lend themselves to helping identify those specific industry groups that offer opportunities and those that pose potential downside risks.

Real Gross State Product, Regions Footprint

STATE	Real GSP: year-to-date % change through Q3 2017	peak/trough % decline, 2007-09 recession	Q3 2017 % from prior peak
Alabama	2.47	(4.90)	5.96
Arkansas	2.67	(7.86)	7.55
Florida	2.91	(11.12)	4.37
Georgia	2.61	(7.77)	9.52
Iowa	0.16	(6.83)	13.59
Illinois	0.90	(6.19)	4.96
Indiana	2.13	(9.52)	9.20
Kentucky	1.94	(6.57)	6.93
Louisiana	0.47	(7.68)	(4.18)
Missouri	0.68	(4.70)	2.84
Mississippi	1.38	(7.10)	(1.10)
North Carolina	2.20	(5.95)	7.42
South Carolina	2.54	(6.43)	11.05
Tennessee	2.21	(5.52)	14.75
Texas	2.65	(4.12)	29.07
U.S.	2.03	(4.25)	12.82

Source: Bureau of Economic Analysis; Regions Economics Division