

WORKING PAPER SERIES

GREATER NEW ORLEANS ECONOMIC DATA CENTER

Prepared by Dr. Raymond J. Brady, Systems Solutions Consulting

Working Paper #3 (July 2024)

LOUISIANA'S ECONOMIC INDICATORS ON PRODUCTIVITY, UNIT LABOR COST, AND INFLATION ADJUSTED OUTPUT SHOWS DECREASED RELATIVE COMPETITIVENESS WITH OTHER SOUTHERN STATES

DEFINITIONS:

- **Labor productivity** - measures the hourly output of an economy. Specifically, it charts the amount of real gross domestic product (GDP) produced by an hour of labor. Growth in labor productivity depends on three main factors: saving and investment in physical capital, new technology, and human capital. In simpler terms, labor productivity = monetary value of good and services produced divided by total hours worked.
- **Output Per Worker**- A measure of productivity calculated by dividing the total output by the number of workers.
- **Real value-added output** - removing the effect of price level changes from the nominal value of a good, service, or time-series data, to obtain a truer picture of economic trends.
- **Value added output**- The current dollar value of output that has been adjusted for changes in inventory (gross output) and the removal of intermediate inputs (energy, material, and services).
- **Unit Labor Costs** – ratio of labor compensation per hour divided by product output per hour expressed in dollars.

OVERVIEW

The most current data for the period 2007 to 2023 from the Office of Productivity and Technology, Bureau of Labor Statistics (released May 30, 2024) paints a bleak picture of Louisiana's economic competitiveness. Because these statistics are summary data, they raise several research questions that focus on the "why" of the problem. As this paper will point out, Louisiana's competitive position has eroded across the board over the period of this data series. Data will be presented in two formats to minimize potential data bias. First, data will be presented as points- in- time, for example, 2007 to 2012 and 2012 to 2023. Data are presented over time to provide a context of change in the direction of the data (going up, down or stationary).

The first series of graphs focus on comparing economy statistics between Louisiana and ten other Southern states and summary of the South. Much of the data series uses a scalar (index) allowing Louisiana to be compared against other states. Consistent with other data series produced by the Bureau of Labor Statistics, the year 2017 is set at 100 which is a starting point to create a common scalar when comparing data at different levels by state and over time.

DATA PRESENTATION

Table 1 compares labor productivity in Louisiana against the other Southern states for the year 2023. Although Table 1 is a point in time measure, it provides a comparative measure of Louisiana’s productivity position relative to the sample states. Table 2 provides trend data between Louisiana and the South illustrating Louisiana’s deteriorating position with respect to the productivity measure over time from 2007 to 2023.

Table 1

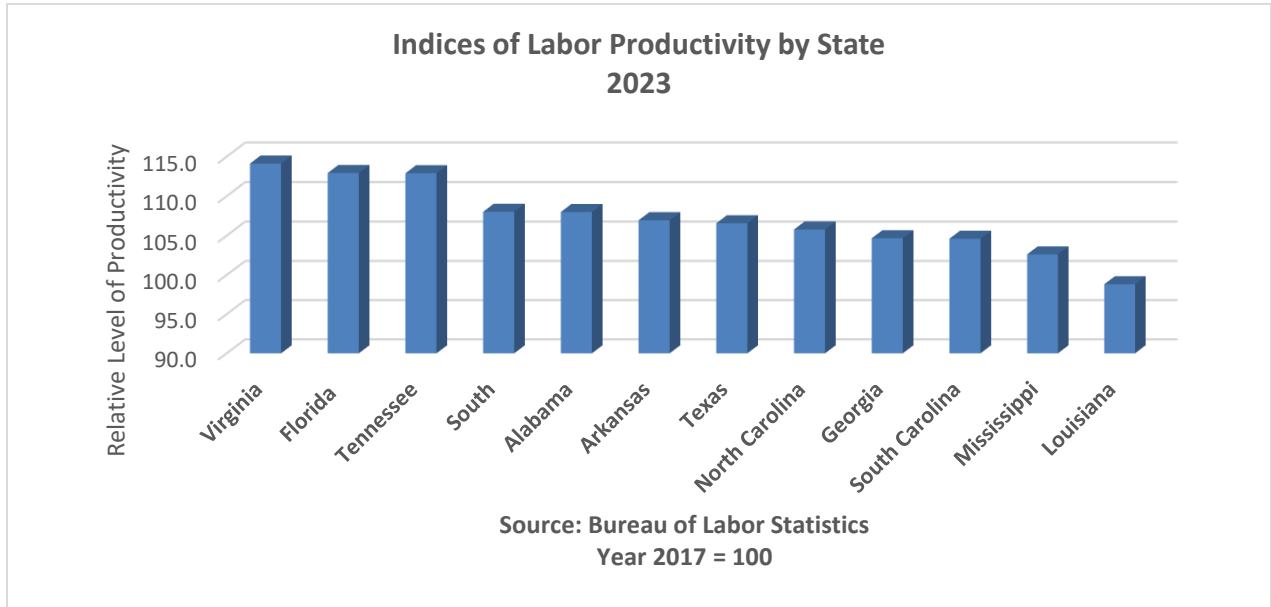
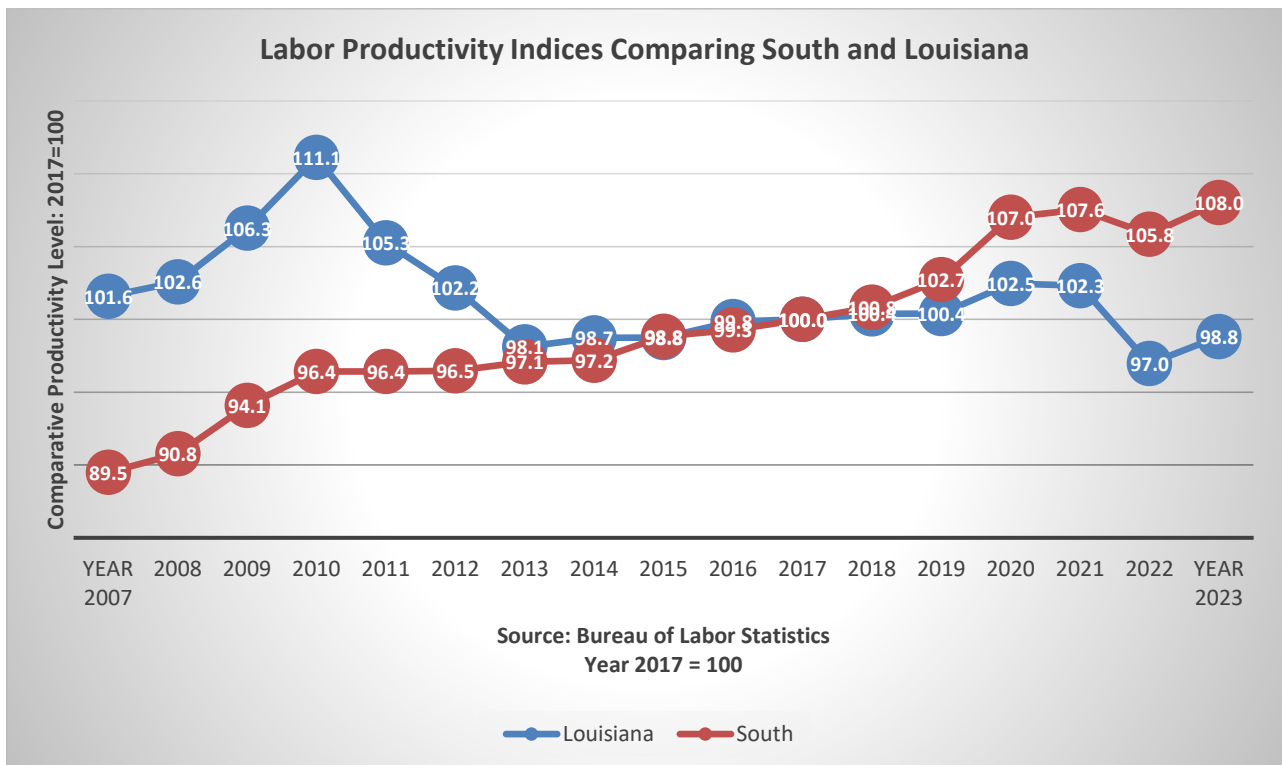


Table 2



As table 2 illustrates, Louisiana’s labor productivity performance between the base year and up to 2010 showed an economy dominated by industries that generated high labor productivity. Data shows that 2010 was an inflection point. What might have caused this labor productivity weakness relative to other states in the sample? Clearly, **structural changes** in Louisiana’s economy, as illustrated in Table 2, begin to occur around the year 2010. One indicator of structural changes in an economy is real output per worker.

Table 3 breaks the time frame of these changes into three sets: 2007 to 2023; 2007 to 2012 and 2012 to 2023. This gives the reader a context of narrowing the time frame of changes occurring in Louisiana’s economic structure. Again, the data set is far too aggregated to provide any understanding of the depth of changes affecting the productivity measure for Louisiana. However, the table presents a comparison of the percentage change in real output per worker over time and shows the relative (to its southern neighbors) lack of growth in real output per worker in Louisiana. One might hypothesize that structural change in Louisiana’s economy would be picked by the productivity statistics reported by the Bureau of Labor Statistics (labor productivity, output per worker) and **reflect growth** in either high or low value-added industries in the time period. **For example, between 2012 and 2022 (a relatively short period in economic time) combined inflation adjusted support activities in mining and manufacturing GDP in Louisiana fell by 32%.**

Table 3
PERCENTAGE CHANGE IN REAL OUTPUT PER WORKERS

	2007- 2023	2007-2012	2012-2023
Alabama	97.0%	18.9%	65.7%
Arkansas	106.1%	17.6%	75.3%
Florida	142.9%	3.0%	135.9%
Georgia	120.3%	11.2%	98.2%
Louisiana	47.1%	16.7%	26.1%
Mississippi	68.7%	21.7%	38.7%
North Carolina	120.3%	15.4%	90.8%
South Carolina	121.4%	14.1%	94.1%
Tennessee	164.2%	27.0%	108.0%
Texas	150.6%	26.0%	98.9%
Virginia	124.7%	21.2%	85.4%
South	129.1%	19.4%	91.8%

Source: Productivity Statistics, Bureau of Labor Statistics

Table 4 presents inflation adjusted GDP data comparing Louisiana to a similar state over the study period.

Table 4

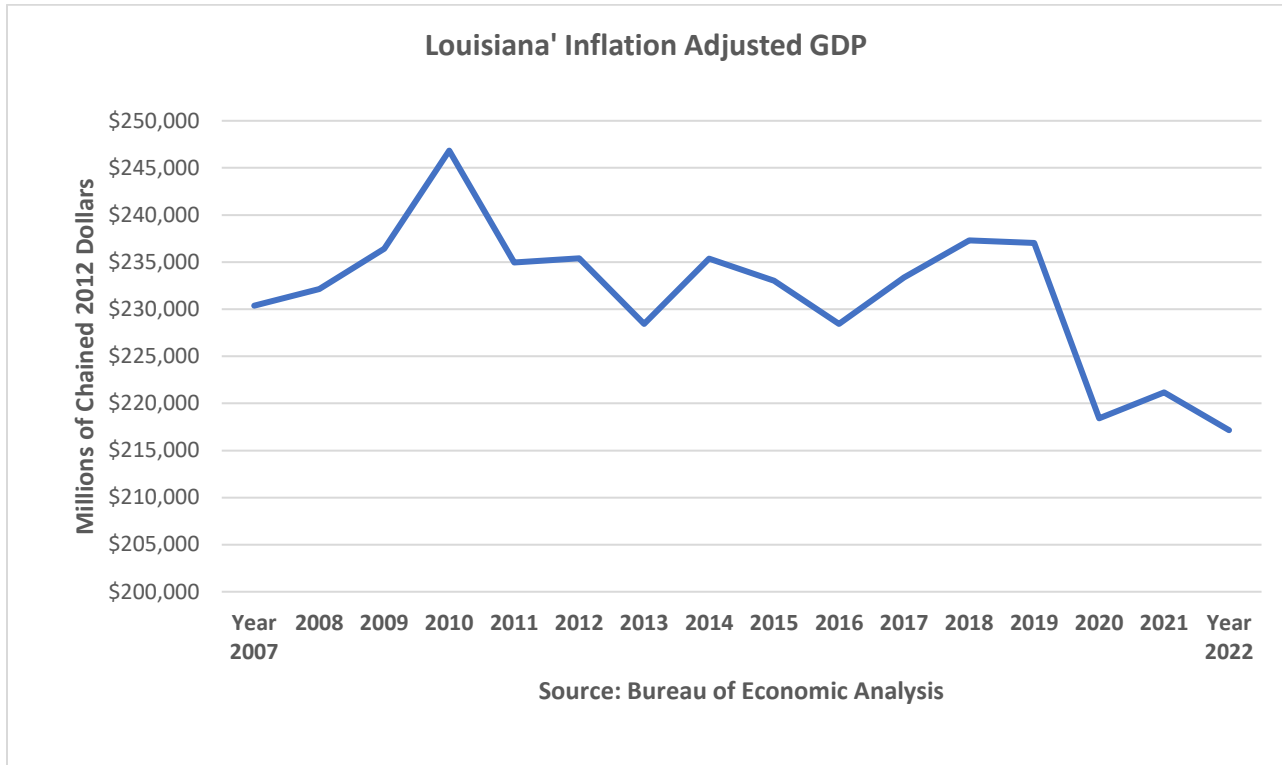
State GDP Growth in Inflation Adjusted \$				
Industry	% Change		Real GDP (in Billions) Change	
	2012-2022		2012-2022	
	Louisiana	South Carolina	Louisiana	South Carolina
Mining	-37.0%	296%	(\$6.8)	\$5.9
Manufacturing	-24.6%	50%	(\$12.9)	\$14.6
Wholesale Trade	7.0%	97%	\$0.8	\$9.9
Retail Trade	3.5%	72.8%	\$0.5	\$8.9
Information	38.7%	118.6%	\$1.7	\$5.2
Professional and Business Services	13.6%	74.0%	\$2.5	\$13.6
Healthcare and Social Assistance	19.8%	57.8%	\$3.0	\$6.7
Leisure and Hospitality	-8.3%	80.7%	(\$0.7)	\$6.3

Source: Bureau of Economic Analysis (BEA)

Table 4 simply confirms why Louisiana performed so poorly in real output per worker (Table 3). In one phrase: *the collapse of real GDP growth between 2012 and 2022*. In industry sectors, such as Information and Professional and Business Services, the difference in GDP growth between South Carolina and Louisiana is striking. In the sector “Information,” real GDP increased by five times greater in South Carolina than in Louisiana. In Professional and Business Services, the increase difference is over five times greater in South Carolina than Louisiana. Even in Leisure and Hospitality, the difference is stark! The huge decline in Manufacturing in Louisiana is most attributable to the decline in value of petroleum and coal products (NAICS 31) and Chemical Manufacturing (NAICS 32). One might ask the question, “how”? Louisiana’s Manufacturing is heavily concentrated in input products, rather than output. And looking critically at the broad spectrum of manufacturing, one sees poor performance across the board.

Table 5 presents the most recent Louisiana’s Gross Domestic Product (GDP) over the period 2007 to 2022. Louisiana’s inflation adjusted GDP peaked in 2010 at \$246.8 billion in inflation adjusted \$ (2012 value =100). The 2022 was \$217 billion. The 2019 level (pre-Covid Pandemic level) was \$237 billion. The dip between 2021 and 2022 is primarily attributable to a \$2 billion drop (inflation adjusted \$) in construction activity. The real growth in other sectors simply was not sufficient to affect a positive over GRP growth in real \$.

Table 5



Another factor that feeds into the poor productivity indicator for Louisiana is the value-added per worker in current \$. Table 6 ranks growth both in terms of percentage change and value-added per worker level change in current \$ over the period 2007 to 2022. Why would both the percentage change and value-added growth for Louisiana again be at the bottom of the rank order? The GDP data found in Table 4 gives a hint. The GDP of high valued-added industries, such as mining and mining services, collapsed between 2012 and 2022, going from \$18.5 billion to \$11.6 billion in 2022 in real 2012\$. Real GDP output in Manufacturing output stagnated during this period, going from \$52 billion in 2012 to \$39 billion in 2022. Industries where real GDP increased had increases that were insignificant to overcome the contraction in high-valued industries. For example, Professional and Business Service real GDP increase by 6.3% between 2021 and 2022 from \$19.8 billion to \$21 billion. Health Care and Social Assistance increased by 0.9 % or by a mere \$155 million over this period. Leisure and Hospitality showed real GPD weakness between 2021 and 2022 and remains \$1.3 billion below the 2019 yearly average.

Industry losses in high value-added output far outweigh the gains in other industries. As Table 6 illustrates, **Louisiana's percentage growth** in value-added per worker was dismal relative to other Southern states. **The level of growth was not quite as poor**. Part of the reason for the better showing has to do with the fact that Louisiana's value-added base level was second only to Texas in 2007. By 2023, it had slipped to fifth, but still relatively high. In practical terms and because of the number of capital-intensive manufacturing industries in Louisiana, the **level increase rank** position **overstates the issue of level change** in value-added per worker.

Table 6
Rank Order Growth in Value-Added per Worker in Current \$ in Each State GDP

2007-2023			
	% change		Level increase
Tennessee	83.2%	Tennessee	\$63,497
Virginia	69.3%	Texas	\$60,491
Florida	68.9%	Virginia	\$59,177
Alabama	65.7%	South	\$56,575
South	64.9%	Florida	\$55,723
North Carolina	64.4%	Georgia	\$55,444
Arkansas	64.3%	North Carolina	\$53,178
South Carolina	64.1%	Alabama	\$48,064
Georgia	61.9%	South Carolina	\$45,765
Mississippi	59.1%	Louisiana	\$45,606
Texas	57.4%	Arkansas	\$45,188
Louisiana	46.9%	Mississippi	\$40,117

Source: Bureau of Labor Statistics; *Systems Solutions Consulting*

Table 7 illustrates the advantage that Louisiana had in 2007 relative to the value-added per worker in current dollars, and the relative position in 2023. In 2007, Louisiana’s rank position, as noted earlier, was 2nd to that of Texas, and had slipped to 5th in the ranking by 2023. Although some might suggest that the slide from 2nd to 5th place over time “is not so bad,” a closer look suggests the situation might not be so favorable. For example, the ratio of value-added per worker in Louisiana to that of Alabama was 1.3 in 2007. That ratio had fallen to 1.1 in 2023. What might this gross number tell you? First, as Table 7 illustrates and in Alabama, value added per worker increased (percentage wise) by 65.7%. In Louisiana, that value increase was 46.9%. This suggests that (potentially) the diversity of capital-intensive industries in Alabama grew 1.4 times faster than in Louisiana. In Louisiana, capital- intensive industries continue to be focused on petrochemicals. Industries such as ship building and mining have shrunk and not being replaced by such industries as auto and high-tech manufacturing. Again, the competitive advantage of Louisiana’s economy relative to other states in the South has shrunk.

Table 7
**Rank Order Value-Added per Worker Across All Industries
in Current \$**

	2007		2023
Texas	\$105,455	Texas	\$165,946
Louisiana	\$97,193	Georgia	\$145,035
Georgia	\$89,591	Virginia	\$144,520
South	\$87,141	South	\$143,716
Virginia	\$85,343	Louisiana	\$142,799
North Carolina	\$82,598	Tennessee	\$139,823
Florida	\$80,890	Florida	\$136,613
Tennessee	\$76,326	North Carolina	\$135,776
Alabama	\$73,209	Alabama	\$121,273
South Carolina	\$71,402	South Carolina	\$117,167
Arkansas	\$70,265	Arkansas	\$115,453
Mississippi	\$67,905	Mississippi	\$108,023

Source: Bureau of Labor Statistics; Systems Solutions Consulting

Finally, Table 8 presents the rank order of unit labor costs growth (*recall the definition Unit Labor Costs – ratio of labor compensation per hour divided by product output per hour expressed in dollars.*) over the period 2007 and 2023. Again, labor cost increase in Louisiana was highest among the sample states. This would be less of a problem had Louisiana ranked higher in productivity, real output per worker and real GDP growth. However, given the dismissal results identified in the above tables, the final table screams out for an analysis to ask the simple questions: “Why?” or the “How?”

Table 7
Unit Labor Costs Growth 2007-2023

Louisiana	47.6%
Mississippi	40.3%
Alabama	37.7%
Florida	36.3%
North Carolina	36.2%
South Carolina	35.1%
South	32.0%
Texas	31.8%
Georgia	28.3%
Arkansas	27.5%
Tennessee	27.1%
Virginia	25.2%

Source: Bureau of Labor Statistics

CONCLUSION

Why are the data presented in the above tables essential to Louisiana's economic future? Obviously directly and indirectly, the data reflects the potential for income growth of the resident population and future economic opportunities.

The results, from the above tables, are quite distressful. All the *identified* principal Louisiana economic indicators over the study period 2007 to 2023, *but especially the 2012 to 2023 period*, suggest deficiency in either (a) labor force development, (b) policy failures in attracting high value-added industries or new technology industries or (c) negative structural changes in current industries or developing industries (d) a combination of all the above. The data, as noted in the introduction, is an initial step for further analysis to better understand the "why" or "how" this poor showing in Louisiana's key economic indicators relative to other states in the sample. In short, the paper can best be defined as the "canary in the coal mine problem" that should not be ignored.

APPENDIX

