THE LOUISIANA ECONOMIC

OUTLOOK: 2020 AND 2021

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Observant readers of the **Louisiana Economic Outlook** will notice we are fortunate to add new member to our forecasting team---Dr. Greg Upton, Assistant Research Professor in LSU's Center for Energy Studies. As Greg began learning the ropes in producing this lengthy document, one of his first takeaways was how important <u>other people</u> are to our work. He developed a real appreciation for the time and effort you folks give to our data collection efforts.

The first step would never be taken without the financial support of our sponsors. Our Gold Sponsor and printer of the LEO---**Blue Cross Blue Shield of Louisiana**---has been a reliable partner for years, as have been Gold Sponsors **Cleco** and **HomeBank.** We are especially pleased to welcome this year a fourth Gold Sponsor---**Entergy**. **ExxonMobil**'s Silver Sponsorship remains vital to our work. Sponsorship monies not only support the LEO, but also help with travel monies, software purchases, and data acquisitions for the Economic Department at LSU. We cannot overstate the value of this financial support in LSU's tough fiscal environment.

We are so fortunate to have access to Louisiana's cadre of excellent, professional economic developers who are the "boots on the ground" and let us know what is going on in their regions. Support starts at the top with the state's chief economic developer---Secretary **Don Pierson**---who not only makes his staff available, but provides valuable input on his own. In the LDED office, **Larry Collins**---executive Director of International Commerce---spent hours reviewing industrial announcement lists to insure we captured all the good news in the state. Speaking of industrial announcement lists, an excellent relationship with **Connie Fabre** at the GBRIA helps us stay current. Crucial data came in from all regions from professionals like **Michael Hecht, Harrison Crabtree, Adam Knapp, David Broussard, Scott Gammel, Greg Gothreaux, George Swift, R. B. Smith, Kevin Melton, Bill Rase, Rick Ranson, Eric England, Zell Dudley, Linda Prudhomme**, **Bob Fudickar, Vic Lafont, Mike Tarantino, Chett Chassion, Tana Trichel, Henri Boule, Larry Deroussell, Dale Logan, Lynn Hohensee, Sue Nickels, Katy LeBlanc, Rocky Rockett, Murray Viser, Liz McCain, David Bennett, Craig Romero, Brandy Christian, Stacey Zawacki, and Kate McArthur.** The list is long because so many in the economic development community are eager to help. We owe a lot to you folks!

The only way to find out if something big is going to happen is to talk to the people who create the "big." There are about 200 **men and women in the business community**---from small firms to the heads of Fortune 500 companies---who will take time from their jammed schedules to talk to us about their companies, their industry, and the prospects for the future. They talk openly and candidly with someone most have never met personally. We appreciate that trust. There are too many of you to attempt to list---but please know how indebted we are to you for your valuable input.

Three state agencies provide information and data crucial to our forecasts. **Greg Albrecht** in the Legislative Fiscal Office is our man for little-known but very useful information on state finances. **Jay Carney** at DOTD is Johnny-on-the-spot with the meaty record of road lettings in the state. Several people in the Division of Research in the Louisiana Workforce Commission are

always available and helpful with tedious questions about employment data. At the federal level, **Eric Soraghan** is our main, ready source for Army Corps spending in the state.

Two key persons at LSU play vital roles for us. **Judy Collins** not only manages our subscription lists and printing schedule, but she also manages the authors and is perhaps one of only three people in the state that has read the LEO cover to cover looking for the numerous editorial errors made by, well whoever the other co-author is….. It costs money and time commitment to make the LEO happen, and **Dean Richard White** reliably ensures we are supported.

Finally, I doubt there is a venue in the country where a statewide forecast is released to 800 of the most influential business leaders in a community. My two favorite entrepreneurs---**Rolfe McCollister** and **Julio Melara**---let us use their Top 100 Luncheon for our release every year. In life, one is very lucky to have friends and supporters of this caliber.

Thanks to you all!

Lull: "A temporary interval of quiet or lack of activity." That word epitomizes the Louisiana economy in 2019. The state is in a lull between major construction projects and in a lull between a regression drilling in the Gulf of Mexico (GOM) and a revival. In the midst of the lull, employment in the state is on an unenviable 0.2% growth track. Our forecast for 2020-21 assume the lull is indeed "temporary", and that a new round of huge industrial projects will begin construction, and the GOM rig count will increase from 25 to the 33-35 range. It is also assumed that the tariff-impacted national economy will avoid a recession, but grow at a slower pace. Forecasts are also based on the assumptions that (1) interest rates will decline slightly, (2) oil prices will remain relatively stable at $59, and (3) natural gas prices will be declining slightly over the next two years.

There are nine Metropolitan Statistical Areas (MSAs) in Louisiana and 29 parishes designated "rural." Our outlook for each is as follows:

- The **New Orleans MSA** is projected to enjoy the fourth fastest growth in the state, adding 9,400 jobs (+1.6%) in 2020 and 10,100 jobs (+1.7%) in 2021. Huge industrial projects on the "edges" of this MSA---especially to the west in St. James Parish and to the east in Plaquemines Parish---will drive this growth. Very upbeat LNG export and methanol industries, along with a huge liquids terminal will be the key to this resurgence. Continued big hires at Michoud, DXC Technology, Ernst & Young, and at the old Avondale Shipyard site will lead to additional bumps.

- The lull in industrial projects in the **Baton Rouge MSA** should be in the rearview mirror going forward. Big projects by Methanex, Shell, Shintech, and ExxonMobil will provide a major kick to the industrial construction sector, while several significant public projects---including the Comite Diversion Canal and widening of I-10 will boost public construction. This MSA is expected to rank 5th in growth rate but second in absolute growth among the MSAs, adding 5,700 jobs in 2020 (+1.4%) and another 6,000 in 2021 (+1.4%).

- We have documented almost $111 billion in projects announced for this region since 2012---an unheard of number---and $57.6 million have yet to start construction. **Lake Charles MSA** has been between projects in 2019---its own lull---but the FID by Venture Global ($5.8 billion) and expected FIDs coming from Driftwood ($15.2 billion) and Lake Charles LNG ($11 billion) will revive the region's employment. Lake Charles is expected to resume its role as the fastest growing MSA in the state, adding 3,000 jobs (+2.5%) in 2020 and another 3,800 jobs (+3.1%) in 2021.

- With its huge casino market under attack from Native American casinos in Oklahoma and an absence of major new announcements, the state's fourth largest MSA---**Shreveport-Bossier**---has been losing jobs since its peak employment in 2008. We are forecasting this slide will end, with this MSA projected to add 300 jobs a year or an annual growth rate of 0.2%---tied for seventh among the state's nine MSAs. This mild recovery will be led by new activity at the Port of Shreveport-Bossier and the General Dynamics/Cyber Innovations Center in Bossier Parish. A slight boost should also come from a steadily expansion of activity in the Haynesville Shale---a major source of feedstock to chemical and LNG export facilities in south Louisiana.

- An improved rig count in the GOM is expected to give the **Lafayette MSA** a nice economic kick and that, combined with solid performance by the MSA's Big 7---Stuller, Acadian Ambulance, SPC Health, GCI, Waitr, LHC, and the new player Vimed---is expected to generate 3,200 new jobs (+1.6%) in 2020 and 4,000 jobs (+1.9%) in 2021. This would make Lafayette the third fastest growing MSA in the state.

- After much bloodletting, the corner should be turned in the **Houma MSA** over 2020-21. An expanding rig count in the GOM will generate new jobs at places like Grand Isle Shipyard, Danos and Chett Morrison. Ship builders in the region are hiring due to diversification and better news from the Gulf. We are projecting 1,500 new jobs (+1.8%) in 2020 and a robust, extraction-driven bump of 3,000 jobs (+3.5%) in 2021.

- We were delighted to learn that CenturyLink had committed to the **Monroe MSA** through 2025. Chase Mortgage Processing, IBM, and Graphics Packaging continue to provide stability to the area. While Vantage Health Plan is in a growth mode the word "stability" seems the most apt term for this economy. We project 200 new jobs (+0.3%) in 2020 and 200 more (+0.3%) in 2021.

- Stability is also the operative word for the **Alexandria MSA** economy. Its large, key players like P&G, Crest Industries, Union Tank Car, Cleco, and England Airpark remain solid but do not appear to be a in a significant growth mode. We are projecting this MSA's employment level---which has basically been declining since 2008---will bottom out and remain flat over 2020-21. Landing a new client at the old IP site could quickly lift this MSA's growth pattern.

- Medicaid reimbursement policies are preventing one of the Hammond MSA's largest employers---North Oaks Health System---from being the job generator it has been in the past. The same goes for SLU, where enrollments and employment have stabilized. We expect this college town and region to add 100 jobs a year over 2020-21, a tie for seventh among the 9 MSAs.

- A resurgence of exploration activity in the GOM will boost rural parishes like St. Mary and Vermillion, and expansions by Alon Refinery, the House of Raiford and Rail Logic will also add a thrust in Louisiana's **rural parishes**. We are projecting 1,300 new jobs a year over 2020-21 in rural Louisiana, an average annual growth rate of 0.6%.

Taking all these regions together, **Louisiana** is expected to add 24,700 jobs (+1.2%) in 2020 and 28,800 jobs (+1.4%) in 2021. If our projections are on the mark, the state should surpass 2,000,000 jobs on an annual basis for the first time in its history in 2020. State employment will also set a new record in 2020, exceeding its previous peak achieved back in 2015.

Executive Summary Table

Item	2019	2020	2021

NATIONAL BASIC ASSUMPTIONS:			
Real Gross Domestic Product: Growth	**2.3%**	**2.3%**	**2.7%**
Inflation Rate	**1.8%**	**2.3%**	**2.3%**
30-Year Fixed Mortgage Interest Rate	**3.8%**	**3.9%**	**3.9%**
Oil Price: barrel	**$59**	**$59***	**$59***
Natural Gas Price: mmbtu	**$2.50**	**$2.40****	**$2.50****
STATE PROJECTIONS:			
Non-Farm Employment (000s):	**1,986.0**	**2,010.7**	**2,039.5**
Absolute Growth Rate	**4.5**	**24.7**	**28.8**
Percent Growth Rate: Employment	**0.2%**	**1.2%**	**1.4%**
MSA PROJECTIONS: **EMPLOYMENT (000s)**			
Alexandria	**61.1**	**61.1**	**61.1**
Absolute Change	**-0.4**	**0**	**0**
Percent Growth Rate	**-0.7%**	**0**	**0**
Baton Rouge	**411.1**	**416.8**	**422.8**
Absolute Change	**1.0**	**5.7**	**6.0**
Percent Growth Rate	**0.2%**	**1.4%**	**1.4%**
Hammond	**45.9**	**46**	**46.1**
Absolute Change	**0.2**	**0.1**	**0.1**
Percent Growth Rate	**0.4%**	**0.2%**	**0.2%**
Houma	**84.1**	**85.6**	**88.6**
Absolute Change	**-2.4**	**1.5**	**3.0**
Percent Growth Rate	**-2.8%**	**1.8%**	**3.5%**
Lafayette	**205.6**	**208.8**	**212.8**
Absolute Change	**2.5**	**3.2**	**4.0**
Percent Growth Rate	**1.2%**	**1.6%**	**1.9%**
Lake Charles	**118.4**	**121.4**	**125.2**
Absolute Change	**0.5**	**3.0**	**3.8**
Percent Growth Rate	**0.4%**	**2.5%**	**3.1%**
Monroe	**78.5**	**78.7**	**78.9**
Absolute Change	**0.1**	**0.2**	**0.2**
Percent Growth Rate	**0.1%**	**0.3%**	**0.3%**
New Orleans	**586.2**	**595.6**	**605.7**
Absolute Change	**8.8**	**9.4**	**10.1**
Percent Growth Rate	**1.5%**	**1.6%**	**1.7%**
Shreveport-Bossier	**179.2**	**179.5**	**179.8**
Absolute Change	**-1.9**	**0.3**	**0.3**
Percent Growth Rate	**-1.0%**	**0.2%**	**0.2%**
RURAL EMPLOYMENT	**215.9**	**217.2**	**218.5**
Absolute Change	**-3.9**	**1.3**	**1.3**
Percent Growth Rate	**-2.0%**	**0.6%**	**0.6%**

Source: Scott & Upton. *Around a wide range of $30 to $90 a barrel. **Around a range of $2.10 to $2.70 per mmbtu.

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OUTLOOK FOR 2020-21:
UNDERLYING ASSUMPTIONS

For any economy to grow there must be a fuel source. Drive through a small, rural town in Louisiana and you may see a village little changed from what it was 50 years ago. There is no "driver" that ignites the economy.

In this section of the Louisiana Economic Outlook (LEO) we examine the key drivers for the state's economy, the factors that cause the economy to either flare, just sparkle a bit, or sit in ashes. For Louisiana the key drivers are the state of the national economy and energy prices---specifically the prices of oil and natural gas.

The National Economy: Have Tariffs Created an Inflection Point?

At this writing (August 2019) the national economy is in its **122nd month of economic growth**, the longest in the nation's history. The previous record was 120 months set from March 1991 through March 2001. An expansion this long in the tooth tends to make decision makers somewhat antsy. Can this keep on going? Is a recession imminent?

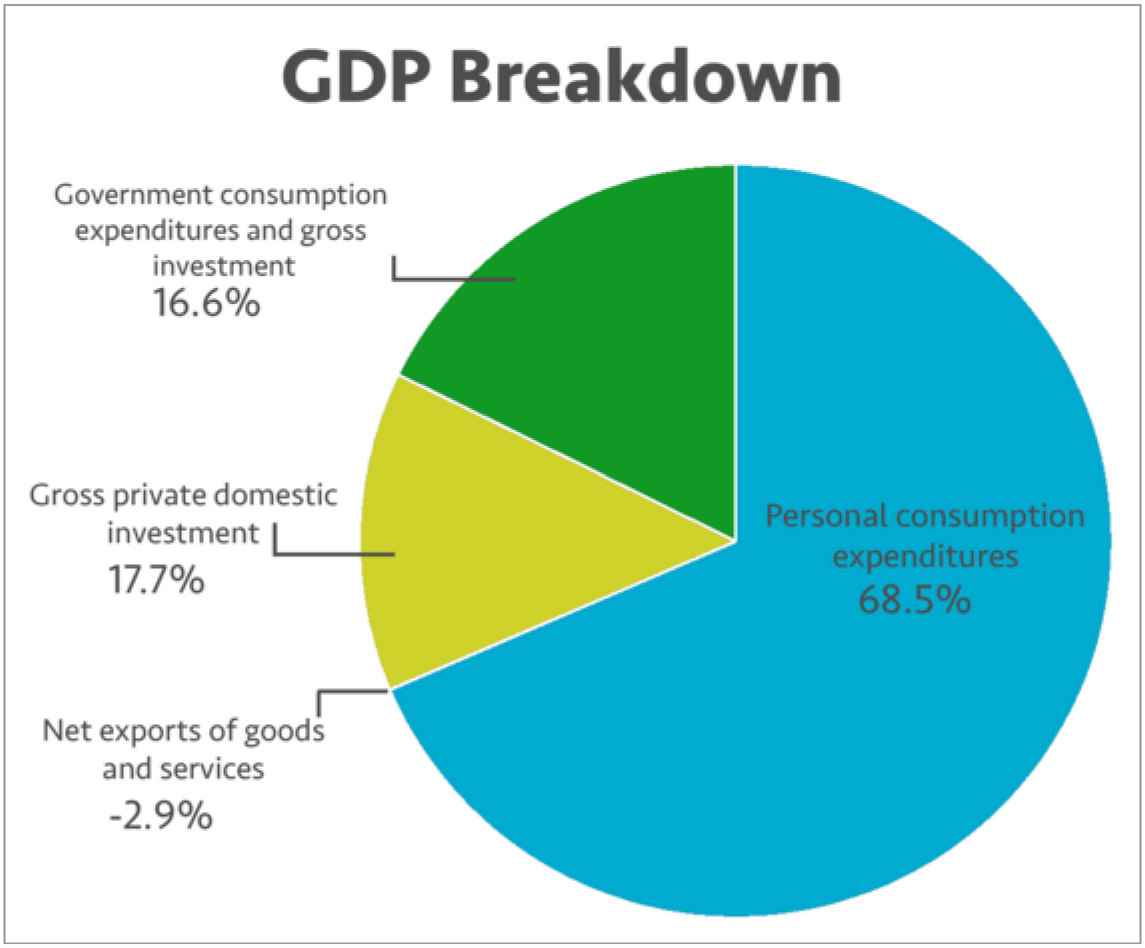
Compounding these worries is President Trump's use of tariffs. We are aware of at least **28 tariff-related announcements since May 2018**. It is apparent that in many cases the President is trying to (1) effect changes in what he considers unfair trade practices or (2) achieve changes in foreign policy. A classic case of #1 is his initial imposition of about half a trillion dollars in tariffs on Chinese producers goods to incentivize that country to end its theft of U.S. intellectual property and other unfair practices. An example of #2 was Trump's threat to impose 5% tariffs on Mexican goods starting June 1st---escalating by 5% additionally each month to a 25% total---unless the Mexican government took extra effort to close its southern border with Guatemala to arrest illegal immigration from Central America. The Mexican government moved to quickly stem that tide and the tariffs were never enacted.

The Tariff Recession Threat: The Components of RGDP

Unfortunately, there is growing concern that the President's latest round of 10% tariffs imposed on $300 billion in Chinese consumer products (to go into effect September 1st) is forging the inflection point that will drive the economy into a recession. To appreciate this new tariff threat, consider the breakdown of the components of real gross domestic product (RGDP) shown in Figure 1.

Recall that RGDP is made up of different types of spending. By far the largest component of spending (two thirds of the pie) is **personal consumption spending** (PCS). Strength in PCS is one of the primary factors that has kept the economy on its most recent growth streak. Trump's policies of deceasing regulations and lowering taxes have spurred the economy, led to rising employment, and---importantly---increasing, rather than stagnant, wages. More income has meant more spending in the biggest component of RGDP.

Figure 1: Components of RGDP



However, it is important to note that people spend based on their income <u>and their wealth</u>. Trump's imposition of the latest round of tariffs caused a significant drop in the stock market. When the stock market dropped 15% in December 2018, PCS fell dramatically, a monthly drop that has not been seen since the Great Recession years. Fortunately, the stock market recovered quickly back in January and February, and PCS returned to its role as a key driver of RGDP. **Question: Will the stock market recover as quickly from Trump's latest round of tariffs on China? Will China take steps in the trade arena to prevent these new tariffs from even being imposed on September 1st**? Answers to those two questions will markedly impact which way the national economy goes from here.

A second component of the pie chart noticeably impacted by the tariffs is **business investment spending**, at 17.7% of RGDP (gross private domestic investment in Figure 1). Strong growth in PCS has been necessary to offset very weak activity in this slice of the pie recently. Twenty-eight tariff announcements in the past year (plus) has produced chaos in supply chains for many firms and just general uncertainty about what will be announced next. Uncertainty is the bane of investment spending. Uncertainty around Trump's latest round of tariffs on China exacerbates this problem, causing businesses to postpone investments until the dust is settled. A reduction in spending in this slice puts further downward pressure on RGDP growth.

Finally note that the **net exports** (exports minus imports) component is already a negative to RGDP (-2.9%). That is obviously because we import more from other countries than we export to them. Trump's new tariffs on China could make this number even worse for two reasons. First, China---as all nations do---will **retaliate with tariffs on U.S. goods** coming into China. This will reduce our exports. Secondly, President Trump is accusing China of engaging in significant **currency manipulation** to protect its domestic industries. It is taking action to drive up the value of the dollar relative to the Chinese yuan. Thus, even though Trump has added a 10% tariff on Chinese goods, the Yuan could be devalued enough to basically offset the new tariffs. Under this scenario, we might still import the same amount from China, but we export less to China. The net export slice becomes even more negative, leading to downward pressure on RGDP.

Real Gross Domestic Product Forecasts

Obviously, this new round of tariffs represents a real threat to the record boom the U.S. is now enjoying. Seriously complicating matters for our forecasting team is that this report must be written in August, weeks before the tariffs are even enacted. Will the tariffs be enforced September 1st, followed by a prolonged trade war and the inevitable recession? Or will the President negotiate a better trade deal with China that will not only avoid the new tariffs (or limit their length) and generate even stronger growth in RGDP?

Note that the "Great Negotiator" has a very strong incentive to achieve the latter option. Next year is an election year, and he knows that people tend to vote their pocketbook. A recession in 2020 would be an enormous threat to his re-election. That is why the RGDP forecasts in Table 1 show **no recession on the horizon**. Only modest growth is projected for 2019 and 2020 (2.3%), mainly due to all the uncertainty around the tariffs and the simple fact of the unusual length of this boom cycle. Forecasts for 2021 (2.7%) therefore assume tariff issues will be resolved---arguably a big "if".

Table 1
Actual & Forecasted Real Gross Domestic Product (RGDP): 2016-21

Year	RGDP
2016	1.6%
2017	2.4%
2018	2.9%
2019	**2.3%**
2020	**2.3%**
2021	**2.7%**

Source: 2016-18 from Bureau of Economic Analysis; 2019-21 from Wells Fargo Economics and the authors.

It is important to note that if a recession does occur, this will be a difficult recession to forecast for Louisiana for two reasons. First, Louisiana is not as impacted by national recessions as say, Mississippi and Alabama. For example, during the Great Recession (2008-09), Louisiana lost 2.8% of its jobs. Mississippi's employment, on the other hand, fell 5.3% and Alabama's dropped 6.8%. The reason is these other two states have much larger durable goods manufacturing sectors, and the first thing people quit buying during a recession is durable goods.

Secondly, this recession's effects could be different because Louisiana is very much in the business of international trade with our abundance of ports and billions of dollars of current investments that are contingent upon having access to international markets. The Federal Reserve Bank of Dallas has ranked Louisiana as one of the three most vulnerable states to a potential trade war. While results of the Fed study suggest that tariffs would slow economic growth for the U.S. economy, an all-out trade war scenario could reduce Louisiana's GDP by an estimated 7 percent, or a reduction of more than $3,500 per person.

Inflation & Interest Rates

The really good news is that future RGDP growth should not be restricted by restrictive monetary policy. On the contrary, at its late July meeting the Federal Reserve Board (Fed) reduced interest rates for the first time since 2008 and also ended the Fed's moves to reduce its balance sheet by selling bonds in the open market. These accommodating moves mean the Fed is promoting growth rather than restricting it to reduce the threat of inflation.

Data in Table 2 show why the Fed was able to make these moves. Inflation is very much under control in the U.S., with the consumer price index expected to hit only 1.8% this year and staying in the 2% range into 2021.

Table 2
Actual and Projected Inflation Rates in the U.S.

Year	Inflation Rate
2016	1.3%
2017	2.1%
2018	**2.4%**
2019	**1.8%**
2020	**2.3%**
2021	**2.0%**

Source: 2016-20 – Wells Fargo Economics; 2021 – the authors

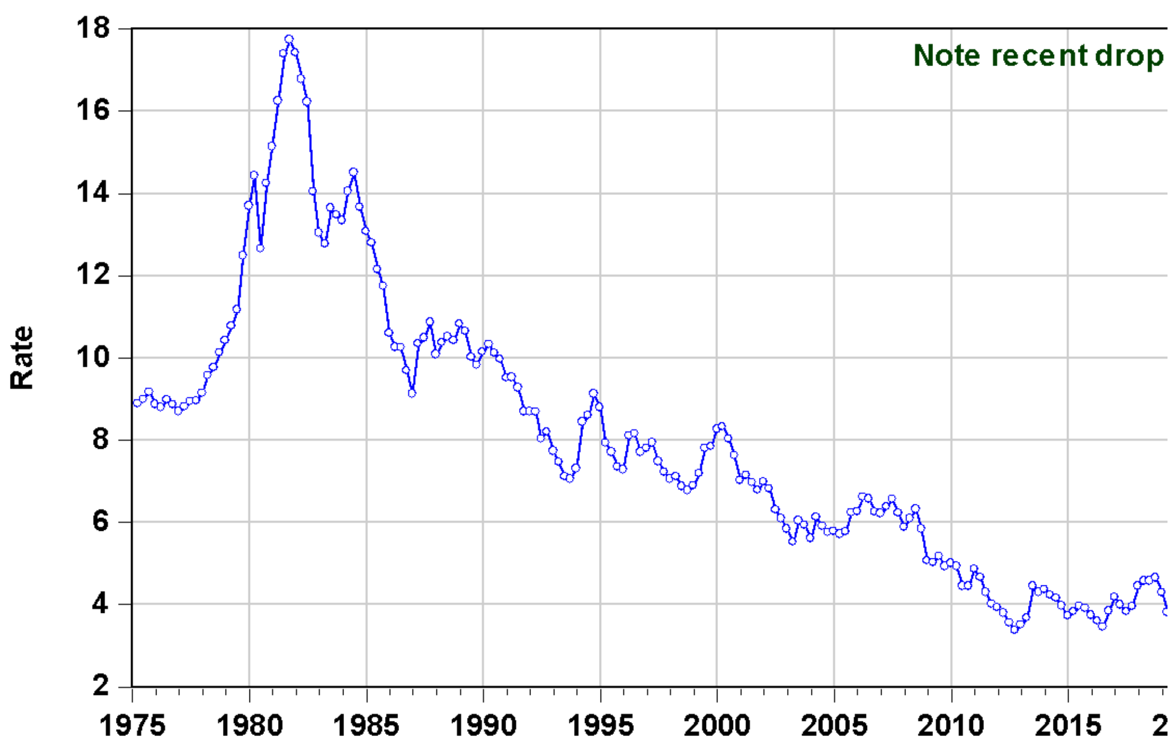
A reasonable question might be why inflation forecasts are not higher given expected price increases due to the **tariffs**. Wells Fargo economists argue that the impact of tariffs is light, because the tariffs are on less than 4% of consumer spending. Even that impact will be limited because China's currency manipulation will likely offset most if not all of the President's proposed new tariffs. If the tariffs are just a negotiating tactic and are temporary, and if a trade war can be avoided, the inflation impacts will be even smaller. Further, and as previously mentioned, for purposes of our forecasts we consider a scenario where these tariffs are resolved, thus contributing to our outlook for subdued inflation.

Subdued inflation is critical because of the close **relationship between inflation and interest rates**. The interest rate charged by a lender can be broken down into three parts. The first is the "basic rate." This is the rate the lender charges for giving up the use of his/her money for a year. Historically that has been about 3%. Secondly, there is a "risk premium" based on the lender's assessment of the likelihood the borrower will not be able to repay the loan. Finally, there is the "inflationary premium." The lender wants to make sure his/her money is returned in real purchasing power.

The power of this inflationary premium can be seen in Figure 2, which tracks the 30-year fixed mortgage rate over 1975Q1 through 2021Q4. The very high rates in the early 80s were due to runaway inflation during that period, driving the risk premium and the overall rate up dramatically. The decline in this rate since the early 80s is largely due to the Federal Reserve getting inflation under control, thereby reducing the inflationary premium and the overall rate.

Note in Figure 2 that the moribund inflation rate (see Table 2) is expected to keep the **conventional mortgage rate at about 4%** through our forecast period. This means rates should stay at a level that will promote, not hinder, growth.

Fig. 2: Conventional Mortgage Rate



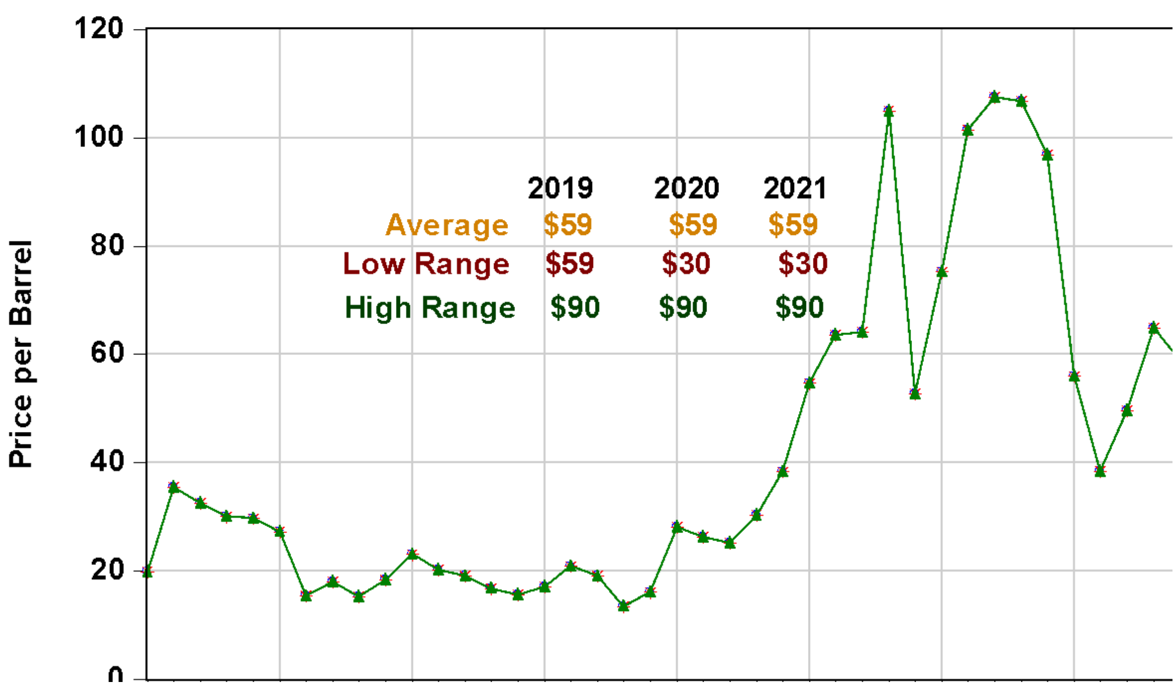
Oil and Natural Prices: Are We in a New Era of Lower Prices?

Because Louisiana is the country's second largest producer of crude oil and third largest producer of natural gas (if offshore production is counted in the number), movements in oil and natural gas prices can often dramatically impact the state, as Louisiana has learned with a vengeance since late 2014. The decline in oil prices from late 2014 through much of 2017 hammered Louisiana's oil patch so hard, that it sent the state into a 28-month recession and a loss of 23,300 jobs (-1.2%). Louisiana needs price relatively high, stable oil prices for an extended period for a drilling recovery in the Gulf of Mexico and a revival of the state's oil-centered metropolitan areas.

Oil Prices: Steady at $59

Unfortunately, commodity prices, generally, are some of the most difficult variables in the economy to predict. An intuitive sense of why that is true is apparent from just observing the track of oil prices since 1980 in Figure 3. Oil prices are unusually variable, and wide variability is the bane of forecasters.

Figure 3: Oil Price Forecasts



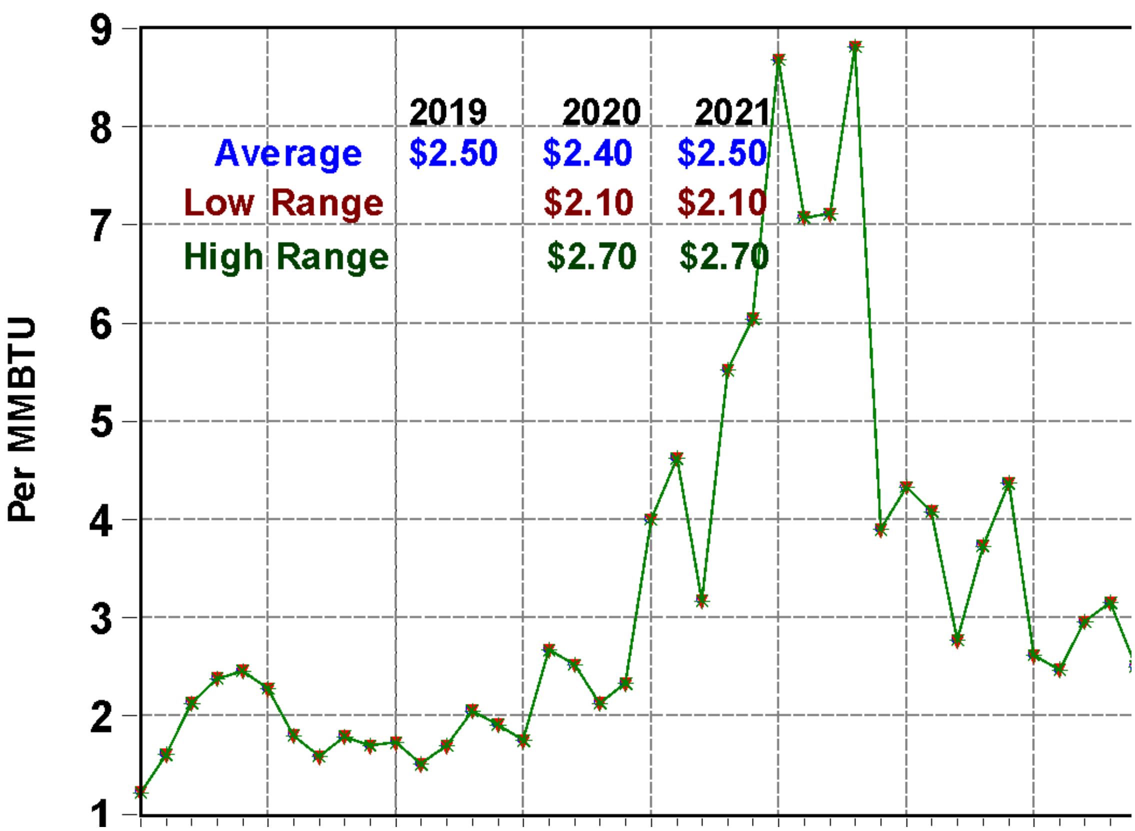
At the time of this writing, futures markets are trading around $52 per barrel for West Texas Intermediate (WTI). Louisiana Light Sweet oil is selling for about $59 per barrel. For purposes of the LEO, **we are keeping oil prices steady at $59 per barrel** over the next two years for two reasons. First, Louisiana Light Sweet (LLS) crude is trading at about a $4 premium to West Texas Intermediate. While we anticipate for this gap to close in the coming year, we still will give LLS a premium to WTI. Second, we believe that these futures markets are impacted by the fear of diminishing export opportunities for U.S. crude due to the ratcheting trade war. As indicated in our opening section on the economy, we are assuming this trade war does not escalate.

With these factors combined, note in Figure 3 that **we are projecting flat oil prices of $59 per barrel through 2021.** There is, however, a very wide range of reasonable price scenarios ranging from $30 to $90 a barrel around this point forecast, reflecting the numerous <u>uncertainties</u> associated with future oil prices.

Natura Gas Prices Stay Low

Figure 4 shows a history of natural gas prices along with our forecast. Similar to oil prices, natural gas prices have fallen significantly relative to the high price time period in the 2000s (that will be discussed further below). At the time of this writing, Henry Hub natural gas prices are about $2.40 per MMBTU. Futures markets are predicting natural gas prices to trade at $2.40 in 2020 and $2.50 in 2021. For purpose of LEO, we will use these as the forecasted numbers.

Fig. 4: Price of Natural Gas

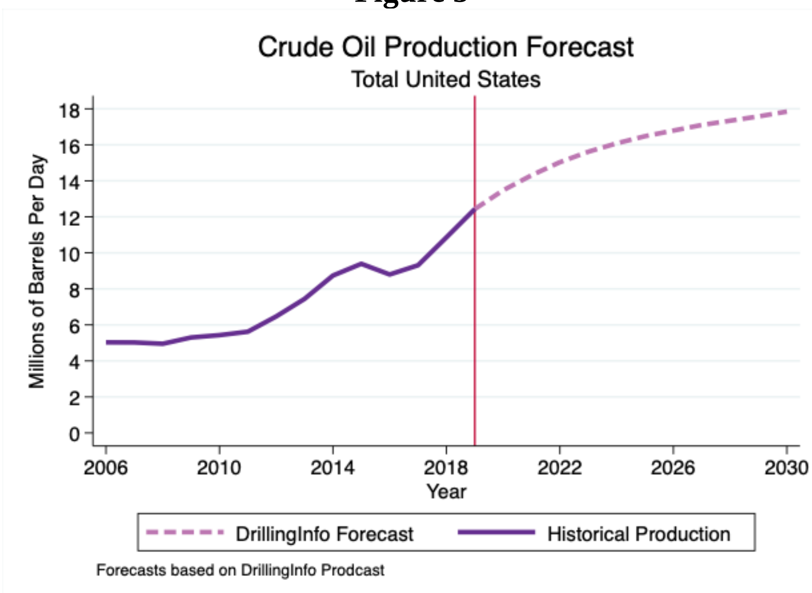


Will Supply Side Keep Prices Down?

While global demand for oil and natural gas continues upwards[1], and we anticipate this will continue for the time being, the big story over this past decade has been from the supply of oil and natural gas right here in the Gulf Coast region of the United States. Figures 5 and 6 show historical oil and natural gas production, respectively, in the United States---alongside forecasted production from the DrillingInfo ProdCast tool (hereafter DI ProdCast). DI ProdCast provides projections of oil and natural gas production from reservoir level geological and engineering data alongside current costs and estimated prices.

Two items are noticeable. First, the U.S. has seen significant increases in production of both commodities over the past decade. The hydraulic fracturing revolution dramatically changed production trends for both these energy sources. The trend is upward---almost dramatically so. Thus, relatively stable demand alongside increasing supply is a text-book case of lower prices.

Figure 5

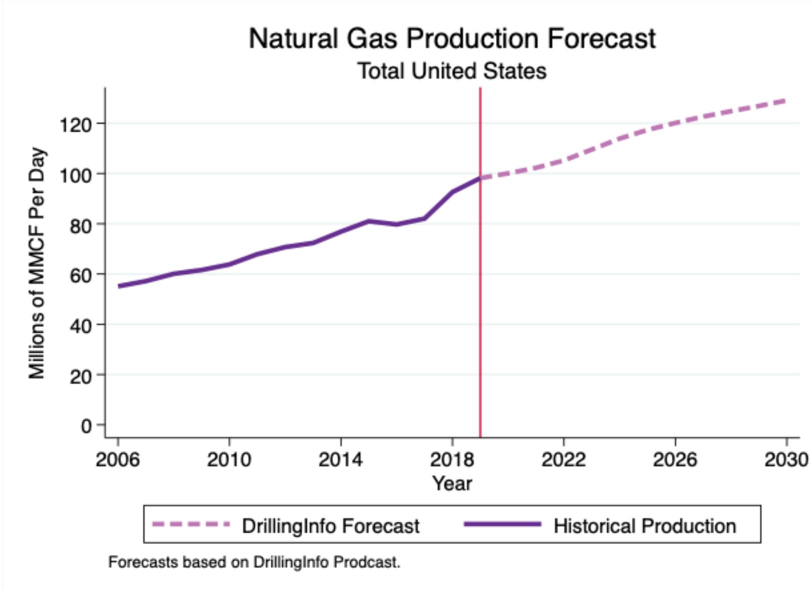


Source: DrillingInfo ProdCast.

Second, and equally as important for forecasting purposes, the production is anticipated to continue to increase over the next decade through 2030. With growing demand, but at a relatively slower clip, alongside steady supply increases, we anticipate relatively flat prices.

Figure 6

[1] World liquids fuel consumption increased by 1 million barrels per day. EIA Short Term Energy Outlook. August 2019. Growth is estimated to continue in 2019 and 2020, but at a slower rate.



Source: DrillingInfo ProdCast.

An obvious question is what about producers in the rest of the world? After all, U.S. production of 12 million barrels a day constitutes only about 12% for total world production which is about 100 million barrels per day. What about OPEC? Why doesn't this group of countries simply flood the market with oil, drive the price down, bankrupt producers in the U.S., and put a stop to U.S. production gains? The answer is, OPEC has tried that gimmick and while it worked for a short period (see the dip in 2015 in Figure 5) it did not last. U.S. producers just figured out ways to drive their production cost down to profitable levels and the production increase started all over again (see the reversal in trend post 2015 in Figure 5). All the OPEC nations gained was a reduction in their sovereign wealth funds, not an experience they want to enjoy again.

Is a New Era of Lower Prices, Lower Volatility Ahead for Oil?

Other factors are driving our expectations of stable-to-lower energy prices. Prices, in general, do tend to increase over time due to inflation. But as the prices of goods and services increase, so too does the output of the economy and the earnings of workers. So, should oil prices not follow the same rising trend?

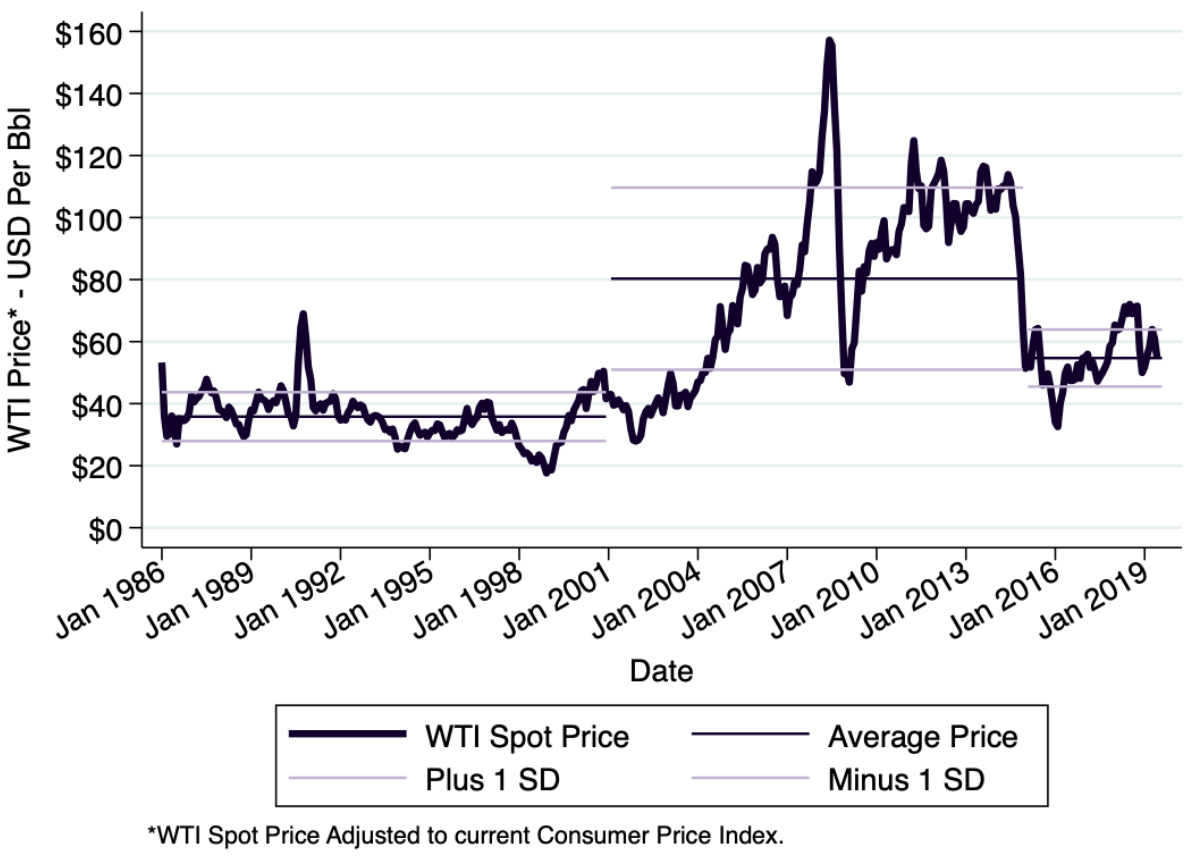
Figure 7 shows the price of West Texas Intermediate (WTI) crude since the mid-1980s adjusted for inflation using the U.S. Consumer Price Index (CPI). This will provide context for whether the price of oil has increased relative to other goods and services that consumers commonly purchase in the market place.

Throughout the late 1980s and 1990s oil prices were relatively stable. From about 1986 until 2000, oil prices averaged $36 per barrel, with a monthly standard deviation of about $8. Note that this is $36 per barrel in 2019 prices. So, the price was lower, even after adjusting for inflation, than it is today. During these years, economists could reasonably forecast that prices would oscillate around the long-run level over the time horizon of a few years (in real terms) and apply reasonable bounds to those projections.

But beginning in 2001, everything changed. Due to concerns of "peak oil" alongside geopolitical events (September 11th and war in the Middle East) both prices and volatility increased dramatically. Average prices from 2001 until 2014 averaged $80 per barrel and volatility increased to a standard deviation of monthly price of $29 per barrel.

Both the price and variability had significant economic implications that varied greatly across regions of the world and U.S. states. Areas with insignificant oil production, but that used oil-based products (such as gasoline) were significantly negatively impacted when prices rose, and relieved with price drops. Economies like Louisiana, though, with significant oil production experienced the opposite effect. In net, the oil price run-up in 2001 is often named as the culprit for the U.S. recession that lasted from July of 1990 to March of 2001.

Figure 7: Inflation-Adjusted Oil Prices



Source: U.S. Energy Information Administration

The third distinct time period has come from the development of oil and natural gas production from shale geological formations. As shown back in Figure 5, in 2008, U.S. oil production ended its almost 40-year period of decline to 5 million barrels per day. The trend reversed itself dramatically due to the fracking revolution, and in 2018, just ten years later, the U.S. more than doubled its output and is now producing at record levels.

This has led to the third distinct time period in Figure 7, namely a new era of lower prices and lower volatility. Since the oil price drop of 2014, the average oil price has hovered around $54 per barrel with monthly prices varying with a standard deviation of $9 per barrel. **Thus, while the price and variability are still higher than the 1990s, the years of high price and high variability seems to have been subdued by shale.**

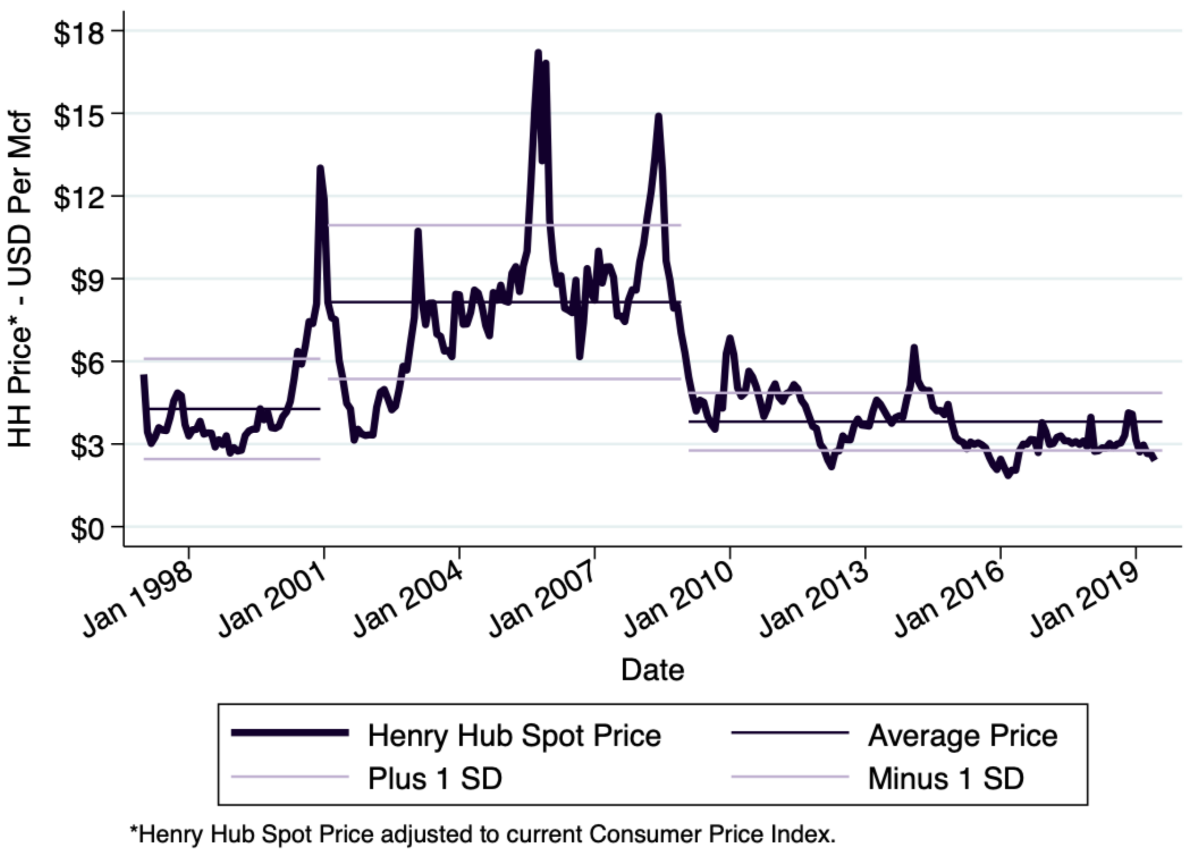
Is a New Era of Lower Prices Lower Volatility Ahead for Natural Gas?

As a corollary, Figure 8 shows a comparison of historical real prices, but for natural gas. We highlight a few similarities and differences relative to oil. First, the data begin in 1997 (this is when the U.S. Energy Information Administration began tracking the Henry Hub natural gas price). From 1997 through 2000, natural gas price traded at an average of $4.27 per MCF with a standard deviation of $1.82. Similar to oil, while price swings were unpredictable, there was a tendency to converge back to this average price.

Also similar to oil, a new era of higher prices and higher volatility began in 2001. From 2001 until 2008, the average price of natural gas increased to $8.15 per MCF with a monthly standard deviation in price of $2.79.

Where the story is very different is the timing of the price drop and beginning of a third period. For oil, the price drop and subsequent lower volatility began in 2014, while for natural gas, this time period began in 2009. The reason for this is fracking techniques were first employed to harvest natural gas. When shale geological formations began to be developed in the early 2000s, the technology was developed for natural gas formations before oil (which is more difficult to extract given that it is a “heavier” hydrocarbon).

Figure 8: Inflation-Adjusted Natural Gas Prices



Once the technique was mastered for natural gas, it was natural to start testing the use of the technique to harvest the much more profitable oil. Thus, when the price of natural gas dropped in 2008, producers began to substitute away from natural gas shale plays and adapt the technology for oil production. It is this technological lag that created the beginning of this third time period for oil relative to gas. Now we are in a period of lower natural gas prices and lower volatility.

So where does this leave us? While a structural shift in both price and volatility will almost certainly happen at some point in the future, **our base case scenario is that both oil and natural gas prices will be relatively flat in real terms over the forecast horizon.**

Two Caveats

There are two significant caveats that should be considered; trade tensions and geopolitics. The U.S. and Louisiana hydrocarbon economies are increasingly becoming **export-oriented markets**. At the time of this writing, the U.S. is exporting about 5 million barrels per day of petroleum products. With the escalating trade war with China---the world's most populous country and second largest economy---tariffs on natural gas and petroleum products could have significant implications for our ability to sell these products overseas.

On June 1st of 2019, China increased its tariff on liquefied natural gas (LNG) coming from the United States from 10% to 25% in retaliation to tariffs implemented by President Trump. We are told this is the culprit for at least one LNG project to be postponed and possibly cancelled altogether.

While we will not delve into the specifics of the complicated trade war here, suffice it to say that continued escalation could dry up demand for U.S. oil and natural gas products and provide downwards pressure on prices. This would have a negative effect on Louisiana's economy in two ways. First, it would impact the up-stream oil and gas producers. Also consequential, it could halt the significant investment in refining, chemicals, and export of natural gas in the form of LNG that has been the big economic story highlighted throughout the past few years' of LEOs.

The second caveat that could have upward pressure on prices is **geopolitical tensions** in the Middle East. Will OPEC restrict supply in order to prop up prices in the short run? While this is certainly possible, U.S. production has been resilient in this past decade, and it is uncertain whether OPEC could sustain this for a significant period of time. What happens if Venezuela returns to its pre-Chavez heyday and its output doubles? What happens if Iran sanctions are removed? Just as our baseline scenario assumes that trade tensions do not continue to heat up, so too will our baseline scenario assume that the "status quo" maintains in the Middle East and OPEC does not take any drastic action to increase prices.

Natural Gas Prices & Louisiana's Industrial Boom

The low---and expected to continue low---natural gas prices in the U.S. have created a remarkable industrial boom in Louisiana as seen in Table 3. As of this writing, there have been an astounding $188.4 billion in industrial projects in the state. Of that amount, $76.1 billion have been constructed or are underway. Happily for Louisiana, $112.3 billion in projects are still at the front-end engineering and design (FEED) stage. In each MSA below, we will discuss the individual projects and comment especially on the timing of startup of the FEED projects.

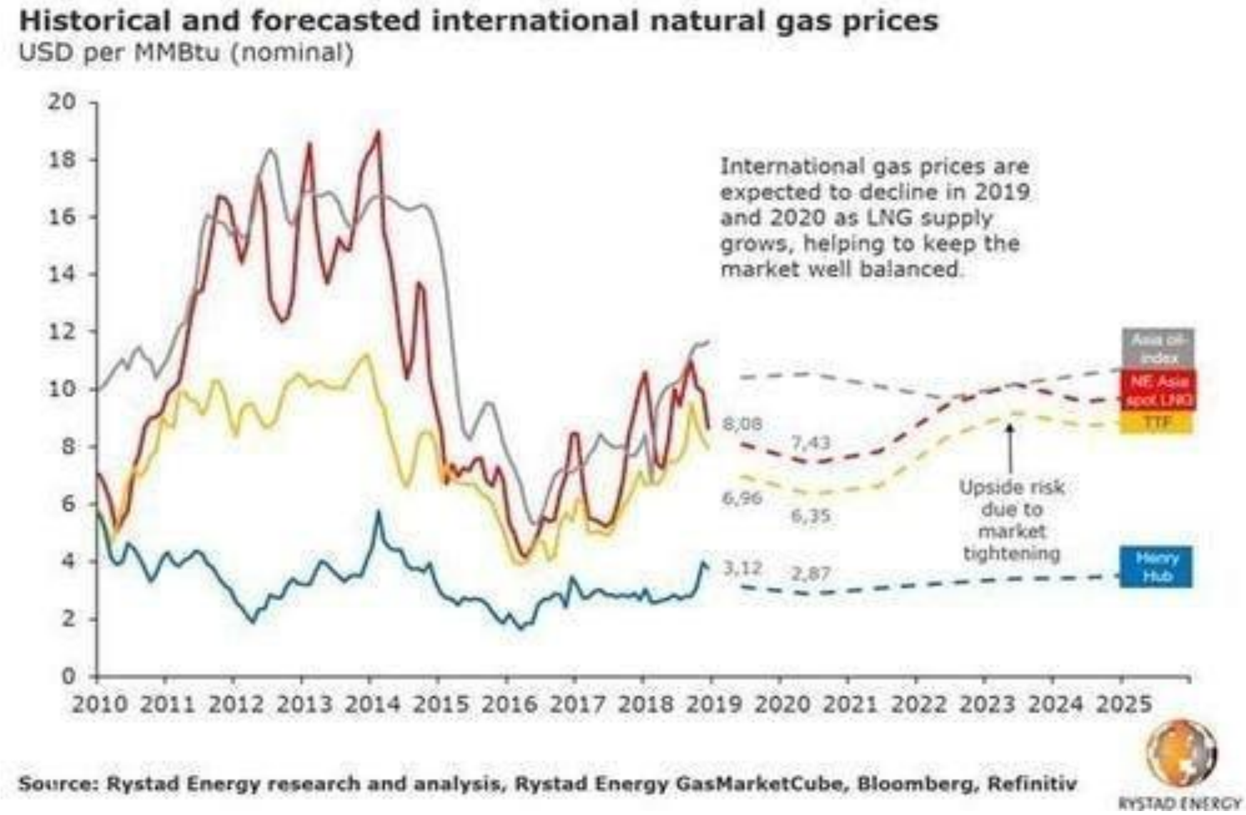
Table 3
Louisiana Industrial Announcements: 2012 – Present
(Billions of Dollars)

Total Announcements:	$188.4
Completed or Underway:	$76.1
Potential:	$112.3

Source: Loren C. Scott & Greater Baton Rouge Industrial Alliance

What is driving this striking period of growth? A clue lies in the makeup of these projects. They are heavily weighted with chemical and LNG export plants. Why the sudden resurgence in these particular industries? They are all heavy consumers of natural gas. Not only is natural gas cheap in the U.S., it is much cheaper than in some other chemical-rich parts of the world---especially Europe and Asia. This gap is vividly illustrated in Figure 9.

Figure 9: US/Asian/European Natural Gas Prices



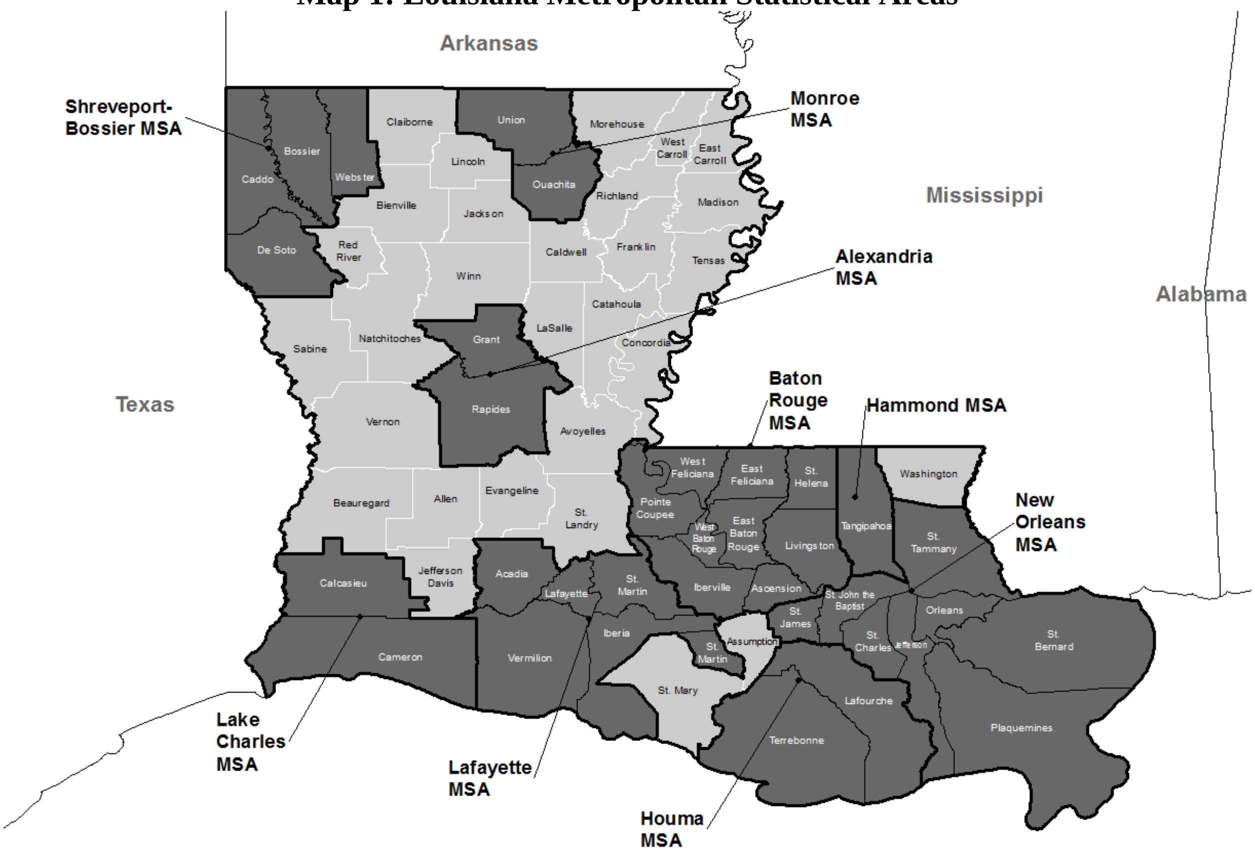
This gap exists principally because the Asian and European markets do not have access to their own natural gas. It must be imported, and most often it is priced off the price of crude oil. Note in Figure 9 that the gap was very wide when the price of oil was over $100 a barrel, then the gap narrowed when oil prices dropped to near $30, and now it has widened again as oil prices have risen to near $60. Chemical firms in Europe and Asia simply cannot compete when this gap exists in their main throughput.

The result is these firms are expanding in the U.S. In particular, they are expanding in regions where abundant natural gas pipelines are present to deliver the product and near bodies of water that provide easy access to the Gulf of Mexico so deep draft ships can deliver their bulky output to the world market. In Louisiana, that means along the Mississippi River from Baton Rouge to the mouth of the river and along the Calcasieu Ship Channel next to and below Lake Charles. As we generate forecasts for the New Orleans, Baton Rouge, and Lake Charles MSAs, these industrial announcements will figure prominently in their future.

THE OUTLOOK FOR THE METROPOLITAN STATISTICAL AREAS

There are 64 parishes in Louisiana, and the U.S. Bureau of Economic Analysis (BEA) has taken 35 and separated them into nine **metropolitan statistical areas** (MSAs). These parishes are all grouped around one or more major cities in the state. Map 1 shows the location of each and the parishes that are in each MSA. Important changes took place in 2015 when the definitions of three MSAs expanded: (1) Lafayette added Acadia, Vermillion and Iberia Parishes, (2) Shreveport-Bossier added Webster Parish, and (3) New Orleans added St. James Parish. For the first time in decades Louisiana added an entirely new MSA---Hammond---which is composed of Tangipahoa Parish.

Map 1: Louisiana Metropolitan Statistical Areas



The remaining 29 parishes are classified as "rural" and are heavily clustered in the central and middle parts of the state. Only Jeff Davis, St. Mary and Assumption Parishes are both rural and below or on I-10. With few exceptions, these parishes are dominated by agricultural businesses. St. Mary Parish---with a significant oil and gas extraction-oriented influence---and Vernon Parish---home of the huge Fort Polk Army Base---are exceptions to that rule.

Those even remotely familiar with the Louisiana economy are keenly aware that each of the nine MSAs is unique. Like the products in a bakery display case that are of a different size, color and taste, each of these MSAs has its own unique size, makeup and culture. No two of them are exactly alike.

The **New Orleans MSA**, with an estimated 586,200 non-farm workers, is the largest MSA in the state. Though there have been some great advances in this region since the mid-2000s, this MSA's employment still remains 42,300 jobs (or 6.7%) below its Pre-Katrine/Rita peak. Situated in the "toe of the boot" near the mouth of the Mississippi, the MSA's system of ports ranks among the largest in the world in terms of tonnage moved. It houses a huge medical complex for veterans and non-veterans, and it is the home to several universities---the largest being the University of New Orleans and Tulane University. New Orleans proper is a tourism magnet, in some cases attracting tourists to the unique French Quarter and to the MSA's substantial gaming industry---anchored by the state's only land-based casino, two other riverboat casinos, and the Fair Grounds Racetrack. A number of large refineries (including the third largest in the country) and chemical firms reside within this MSA's boundaries, along with some key energy exploration companies such as Chevron and Shell. Recently the region has begun attracting a burgeoning tech sector.

Second in size, the **Baton Rouge MSA** provides jobs for about 411,100 non-farm workers. The petro-chemical industry looms large in this MSA with the largest concentration of chemical employment in the state, the country's fourth largest refinery, and an unusually high concentration of industrial construction workers to support that base. Both LSU and Southern Universities are located in this MSA along with Baton Rouge Community College, which is now larger than Southern. This is also the location of the State Capitol, which means government employment plays a major role in this MSA. Its growing high tech sector is anchored by the IBM complex in downtown Baton Rouge. It is the home of three riverboat casinos and has a healthy digital gaming sector.

Louisiana's third largest MSA is **Lafayette** (205,600 jobs) and its sixth largest is **Houma** (84,100 jobs). We put these two together because both have an unusually high concentration of firms associated with the oil and gas extraction industry, so fluctuations in energy prices powerfully impact these two regions. They are, however, not identical. Lafayette is more diverse, hosting the nation's largest jewelry settings manufacturer, a large, successful ambulance firm, a firm that provides ER personnel to hospitals in several states, a significant tech firm, and the nation's second largest home health company. Because of its location closer to the Gulf, Houma supports major shipbuilding and fabrication firms and is home to Port Fourchon, a port that services over 90% of the structures in the Gulf.

The fourth largest MSA is **Shreveport-Bossier (**179,200 jobs in 2018). This MSA contains the State's largest gaming sector with six riverboat casinos and one racetrack. A very active port---the Port of Caddo Bossier---exists on the Red River in the Shreveport-Bossier area. The port hosts a number of large employers including two major steel companies. With just over 9,193 military and civilian personnel, Barksdale Air Force Base gives this community a major military presence. High tech is a growing presence in this region with the addition of General Dynamics IT as the 1,000-job anchor of the MSA's National Cyber Research Park. Shreveport-Bossier is in the heart of a huge deposit of natural gas called the Haynesville Shale.

The most closely watched MSA in the state over the next few years is likely to be **Lake Charles,** (118,400 non-farm jobs). Like Baton Rouge, Lake Charles has an unusually heavy chemical and refining base---the second largest concentration in Louisiana after Baton Rouge.

About two-thirds of the billions in announced industrial expansions since 2012 are within this MSA. The industrial construction sector was already a major player in this region; now it has expanded dramatically. Two LNG export terminals are under construction in this MSA and seven more are on the drawing board. With three casinos (two very large), a racetrack, and a large Indian casino nearby, Lake Charles is the state's second largest gaming market. Another unusual characteristic of this MSA's economy is the large aircraft maintenance and repair sector at Chennault Airpark.

Located in the northeastern area of the state, **Monroe** (78,500 non-farm workers) is the third smallest of the nine MSAs. This MSA can brag of housing one of only two Fortune 500 firms in Louisiana----CenturyLink---and CenturyLink has brought a notable IBM presence to the region. Chase has a large mortgage facility in Monroe. The large Graphics Packaging facility gives Monroe an out-sized presence in the paper and lumber sector. Vantage Health is a growing, new presence in the area with over 1,300 employees.

The second smallest MSA in the state would be **Alexandria**. Located in the central part of the state, this MSA has about 61,100 non-farm jobs in 2019. There is a diverse mixture of major players in this MSA including Cleco (a large utility company), Proctor & Gamble, Union Tank Car, Crest Industries, and Roy O. Martin Lumber. One of the MSA's jewels is England Airpark, which houses Union Tank Car and recently became the home of a 150-person Immigration and Customs Transfer Facility. Alexandria has a strong military influence due to nearby Fort Polk---the largest single employer in the state.

The smallest of Louisiana's nine MSAs is its newest member---**Hammond**. With employment at an estimated 45,900 in 2019, Hammond's economic base is Southeastern Louisiana University (enrollment about 14,500 students) and a significant healthcare sector anchored by the very large North Oaks Medical Center. Tangipahoa Parish is also a bedroom region for people who work in New Orleans, Baton Rouge, and in plants along the Mississippi River. Some 14% of income earned by Parish residents is earned outside of the Parish.

In the sections below we will give a brief employment history of each of the state's nine MSAs, along with the Louisiana Econometric Model (LEM) forecast for 2020-21. In each MSA, we will explain the key factors and companies driving the region's future.

The New Orleans MSA: VG, Formosa & Tallgrass on the "Edges"

The New Orleans MSA is the largest in the state and is composed of eight parishes---Orleans, Plaquemines, Jefferson, St. Charles, St. John the Baptist, St. Tammany, St. James, and St. Bernard. Employment in this MSA is now at about 586,200---still about 43% larger than the Baton Rouge MSA. These eight parishes are located in "the toe of the boot" (see Map 1).

It has been a wild ride for this MSA over the last 39 years. The good news is the MSA enjoyed a solid recovery from the Great Recession despite the drag of a 4,500-job loss at Huntington Avondale Shipyard. New hires in a major hospital sector, major industrial construction projects, and new high tech firms are a plus for the future of the New Orleans MSA. After being a serious drag on this MSA economy for the past four years---especially in 2016-17---the oil and gas exploration sector appears to have made a turn and should provide some bounce to this MSA going into 2020-21.

History Pre-Katrina & Rita

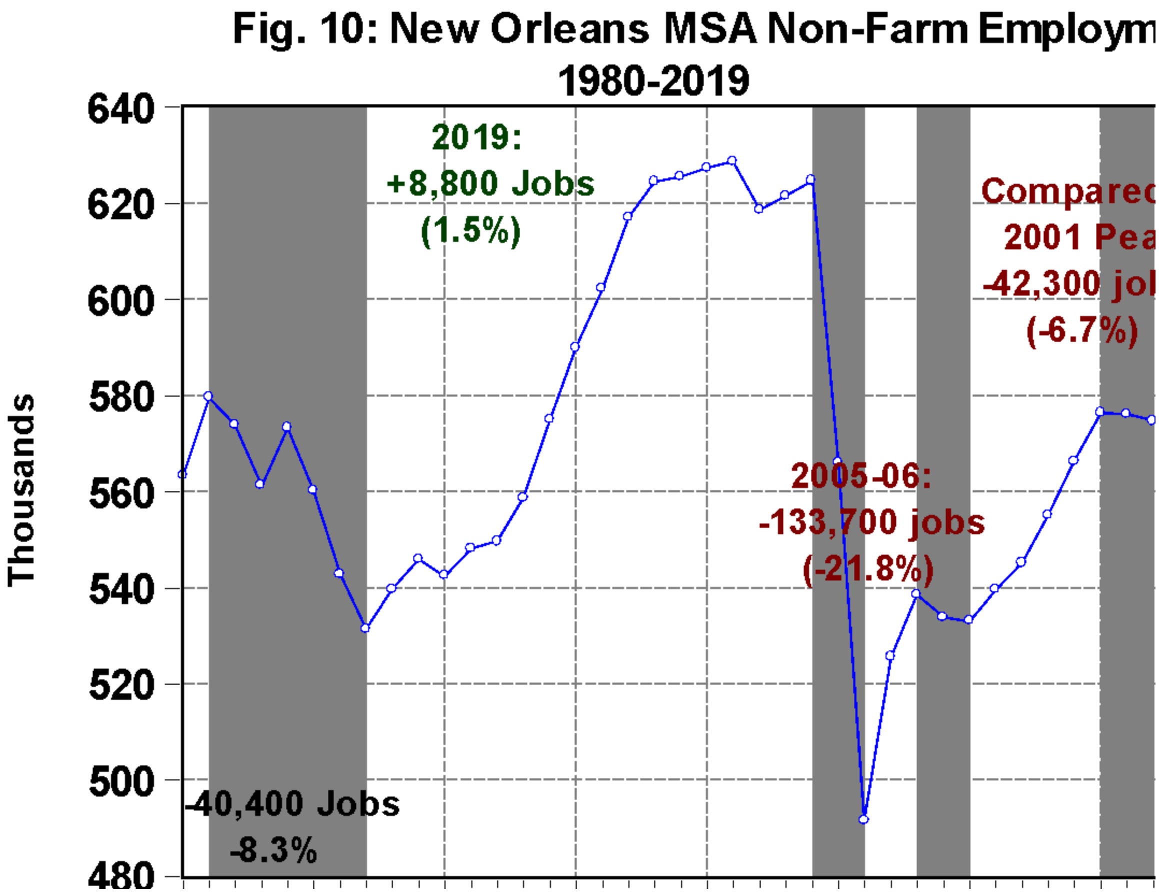
Figure 10 tracks the non-farm employment history in New Orleans from 1980 through 2019. New Orleans suffered mightily during the 1981-87 recession, losing 40,400 jobs or 8.3 percent of its workforce. This MSA had more **extraction sector** employees than any other area in the state in 1981---20,600. By 1987, problems in the oil patch had driven that figure down by nearly 30 percent to 14,600, as many firms relocated their headquarters operations to Houston and employment in the industry in general declined.

New Orleans' **manufacturing** sector also took a beating, falling from 61,300 workers in 1981 to 41,700 by 1987. Much of this decline occurred in the shipbuilding segment of manufacturing which alone lost 6,900 jobs. Shipbuilding at the time was very energy-focused with little diversity in its orders. Multiplier effects from these shipbuilding layoffs dealt the MSA's **real estate, retail, services, and financial markets** punches that would have them floored until well into the 1990s.

Like the other MSAs with strong energy ties---Houma and Lafayette---New Orleans began a slow recovery in the late 1980s. Then another round of layoffs at Avondale Shipyards and the soft natural gas prices of 1991-92 flattened growth in 1992. A further blow occurred when the Challenger accident caused a slowdown in flights of that spacecraft. This meant fewer flights and fewer external fuel tanks to be built by what was then Martin Marietta.

The big jump in 1994 and 1995 shown in Figure10 will look familiar to readers who carefully examine these same two years in the graphs of the other two major casino markets---Lake Charles and Shreveport/Bossier. **Four riverboat casinos** with about 3,300 workers opened during this time period. Secondly, the **land-based casino** opened at a temporary site, and construction began on the massive permanent location at the foot of Canal Street. This injection of new jobs was enough to generate healthy annualized growth rates of 2.6 percent per year during 1994-95.

New Orleans' employment trend from 1999 to 2001 was virtually flat. Then, in 2001, employment in the region responded to the national recession and other events with a **one-year loss of 10,300 jobs**, ranking it number five among the hardest hit MSAs in the state by the post-911 national recession. Note in Figure 10 that the two years after the recession---2003-04---were not particularly great recovery years. High natural gas prices led to the closing of some ammonia fertilizer plants in the area and to general sluggishness in the region's large chemical industry. Employment rose at a moribund 0.5 percent rate a year. An important fact from examining Figure 10 is that **for six straight years before Katrina and Rita hit, employment in this MSA was virtually flat**.



The Impact of Katrina & Rita

Of course, the most profound message from Figure 10 is the impact of Hurricanes Katrina and Rita on the MSA. On an annual average basis, **Katrina and Rita caused employment to fall by a remarkable 133,700 jobs or 21.8 percent**. These two storms effectively drove New Orleans MSA's employment back to levels it had not seen since 1977. Three decades of employment growth were wiped out overnight. According to Figure 10, the New Orleans economy had recovered 91,400 of those jobs by 2019, but the MSA employment is still lower than it was in 1995 and is still 42,3100 jobs (-6.7%) below its 2001 peak employment year.

Actually, the use of annual average data in Figure 10 does due justice to how badly these storms impacted the New Orleans economy. On a monthly basis the job-destruction was much greater than suggested by the annual average data. By the time Rita had re-flooded New Orleans, the region had lost 177,900 jobs, an astounding 29.5 percent decline.

Recovery rate very slow: A somewhat disheartening factor has been the slow recovery since the storms. More frequently one would see a "V" pattern in employment right after a disaster as massive federal recovery and private insurance monies flow into the area for the re-build effort.

We saw this "V" pattern, for example when observing the recovery in Lake Charles and Pascagoula, Mississippi.

In New Orleans, the recovery looks like an unbalanced V, with one side longer than the other. Why has the recovery rate been so slow? Few would dispute that **housing** has been a key factor. First, there is just the **sheer size of the destruction**. There were almost 182,000 homes in the New Orleans MSA that incurred either severe or major damage, i.e. damage bad enough to render the home uninhabitable. Some have estimated this is seven times more homes destroyed than in any other natural disaster in our country's history.

Secondly, these homes were rendered uninhabitable by **flood waters**. When flood waters enter a home, regular home owner's insurance no longer applies. The owner must have purchased national flood insurance. As it turns out, **74 percent of these homeowners had no flood insurance**. Those who did have flood insurance discovered that it covered only 80 percent of the pre-flood value of the home up to a maximum of $250,000. Virtually every home owner, even if they had flood insurance, was left with a gap in their coverage.

To cover this gap in coverage, the generous taxpayers in the other 48 states agreed to send a pot of money to Louisiana and Mississippi to help homeowners bridge this gap---what was referred to in Louisiana as the "**Road Home**" monies. These monies were critical in rebuilding many of the homes. Still, there remain large swaths of New Orleans East and St. Bernard Parish where people have simply chosen not to return.

Finally, consider four other issues. Recall from Figure 10 that in the six years before the storms hit **the economy in New Orleans was basically flat**. Families that had been dispersed by the storms to Dallas, Houston, San Antonio or even other parts of Louisiana, typically found themselves in much more robust economies with more, and higher-paying, jobs. Secondly, it is a fact that **public schools in the New Orleans** area were among the worst in the state (if not the nation). Dispersed families found themselves in cities with much better public school systems. The good news is that the advent of charter schools into the Orleans Parish system has apparently improved these schools significantly. Thirdly, dispersed families watched with alarm the deteriorating **crime situation** in New Orleans, and this no doubt retarded the return rate.

The Drag of the Great Recession

Finally, the **Great Recession** hindered this MSA's recovery. Bolstered by massive amounts of construction spending to rebuild houses, levees, locks, etc., and the boost from the availability of Go Zone funding, the New Orleans MSA actually enjoyed employment growth in 2008. However, the drag of the national economy finally had an impact in 2009 and 2010, when the MSA lost 6,700 jobs---a 1.3 percent decline. That was actually not a bad performance considering that the national economy fell by 6.1 percent. The performance of the New Orleans MSA economy during the Great Recession was actually the best performance relative to the state's other nine MSAs.

Solid Recovery from the Great Recession

Recovery from the negative impacts of the Great Recession (but not the hurricanes) has been impressive for the New Orleans MSA. Note back in Figure 10 that the region initially enjoyed five straight years of solid growth from 2011 to 2015. Indeed, the MSA recovered all the jobs lost during the recession by 2011.

This performance is particularly impressive given that it occurred against the backdrop of the 4,500+ layoffs at Huntington Avondale Shipyards, about two-thirds that loss again at the Michoud Assembly Facility, and at least a $1 billion decline in the Army Corps of Engineers spending on rebuilding the area's levee system.

2016-17: The Drag of Oil & Gas

It is unfortunate that the region could not stay on the steady growth path of 2011-15. The New Orleans MSA is the home of many firms in the oil and gas industry or in industries closely aligned with exploration and production activities. The initial large decline in oil prices after 2014 dinged the region enough to offset nice gains in other areas.

On the oil and gas side, **Shell** moved 95 people to Houston, **Freeport McMoran** dropped 32 jobs, **Hexion** closed at facility at Norco (-97 jobs), and **Chevron** had a <u>temporary</u> reduction in force at its Covington office (Chevron employment is now higher than pre-layoff conditions). A reduced demand for supply boat services in the Gulf led **Hornbeck** to stack 45 of its 62 boats and layoff 1,000 mariners and 150 onshore workers.

Adding to the employment issues, between 2015 and 2017 the **Army Corps of Engineers** reduced spending by $311 million on its Hurricane and Storm Damage Risk Reduction System. **Trinity Yachts** shut down its site in Madisonville at a cost of 60 jobs, and **Louis Dreyfus** closed its packaging facility in Gramercy (-49 jobs). **Chiquita** returned its operations from the Port of New Orleans to Gulfport (-100 longshoremen), and **Macy's** closed its store in Esplanade Mall (-116 jobs).

Offsetting these declines was the opening of the huge new **University Medical Center Hospital** to replace the old Charity Hospital, some $11 billion in industrial construction, and the final construction work on the new **VA Hospital**. During this period work was completed on the $66 million **Pin Oaks Terminal** in St. John the Baptist Parish, generating 70 new jobs at $70,000 a year. **Zen-Noh Grain** completed its $150 million dock extension and continuous barge unloading system (+15 jobs). **Millennium Galvanizing** (a Crest company) opened its new facility in Convent and is now up to 65 employees. **TCI Plastics** has completed its $36 million logistics facility at the Port of New Orleans and has about a 160-person workforce. Construction has begun on some other large-scale industrial projects that will be discussed below. Construction was completed on the $35 million addition to the A.B. Freeman School of Business at **Tulane**.

The result of all this is that the track of employment in this MSA resulted in a net loss of only 1,400 jobs over 2016-17---not bad for an MSA with such deep oil and gas roots. The really good news is that despite an oil and gas sector that remained basically moribund, **the New Orleans MSA economy began to grow again over 2018-19, adding 11,500 jobs (+2.0%)**.

Several factors powered this nice recovery. **DXC Technology** opened its shop in downtown New Orleans and is growing a 2,000 person workforce. **Yuhang Chemical** began construction of its $1.9 billion chemical plant in St. James Parish, and **Monsanto** started construction on a $975 million additional to its plant. Major additions at area refineries provided another much-needed boost. **Cornerstone Chemicals** has a $120 million expansion underway, and **Noranda Bauxite** should complete its $35 million expansion in 2020. **Shell** refineries began about $360 million in expansions, and **Valero** ---including its Diamond Green project---has about $1.8 billion in work underway. **PBF Refinery** in Chalmette just began work on $600 million in improvements. **Ergon** is nearing completion of a $200 million project to add 20 new tanks to its storage farm in St. James Parish. In addition, **Fuji Oil** should complete its new $77 million facility in early 2020, and **W.R. Grace** will finish its $41 million capital expansion about the same time.

Given all this activity, it is no surprise that this year (2019) New Orleans has the distinction of being the fastest growing MSA in the state.

Forecasts for 2020-21: Serious Industrial Construction Boom Ahead

There are many reasons to be optimistic about the immediate future of the New Orleans MSA. Developers have landed a very large, high-wage high-tech company. Looking to the northwest and southeast edges of the MSA reveals some ultra-large construction jobs ahead on the River, and if our oil price forecasts are near the mark, a meaningful recovery in exploration activity in the Gulf should be ahead by late 2019 or early 2020. As seen in Figure 11, **we project that the New Orleans MSA will add 6,500 jobs in 2019 (up +1.1% and more than double 2018's performance) and an even better 9,100 jobs (+1.6%) in 2020**.

Industrial Construction Boom Ahead

This MSA should experience a significant hike in industrial construction employment heading into this third decade of the 21st century. Underpinning this sector will be the continuing activity at large construction sites that were started within the last year. Construction will continue at least into late 2020 at Yuhang Chemicals, Monsanto, Cornerstone Chemicals, Noranda Bauxite, Shell Refinery, PBF Refinery, Valero Refinery, and Fuji Oil.

What will really buttress growth in this MSA are some large mega projects that should start up in the next two years. Table 4 documents the projects announced in this MSA since 2012, broken down by constructed/underway or still at the front-end engineering and design phase (i.e., have not begun construction). Note that since 2012 a remarkable **$57.9 billion in projects announced**. Of that number just over $14.2 billion are completed or are under construction, but almost $43.7 billion (75%) are still at the FEED stage.

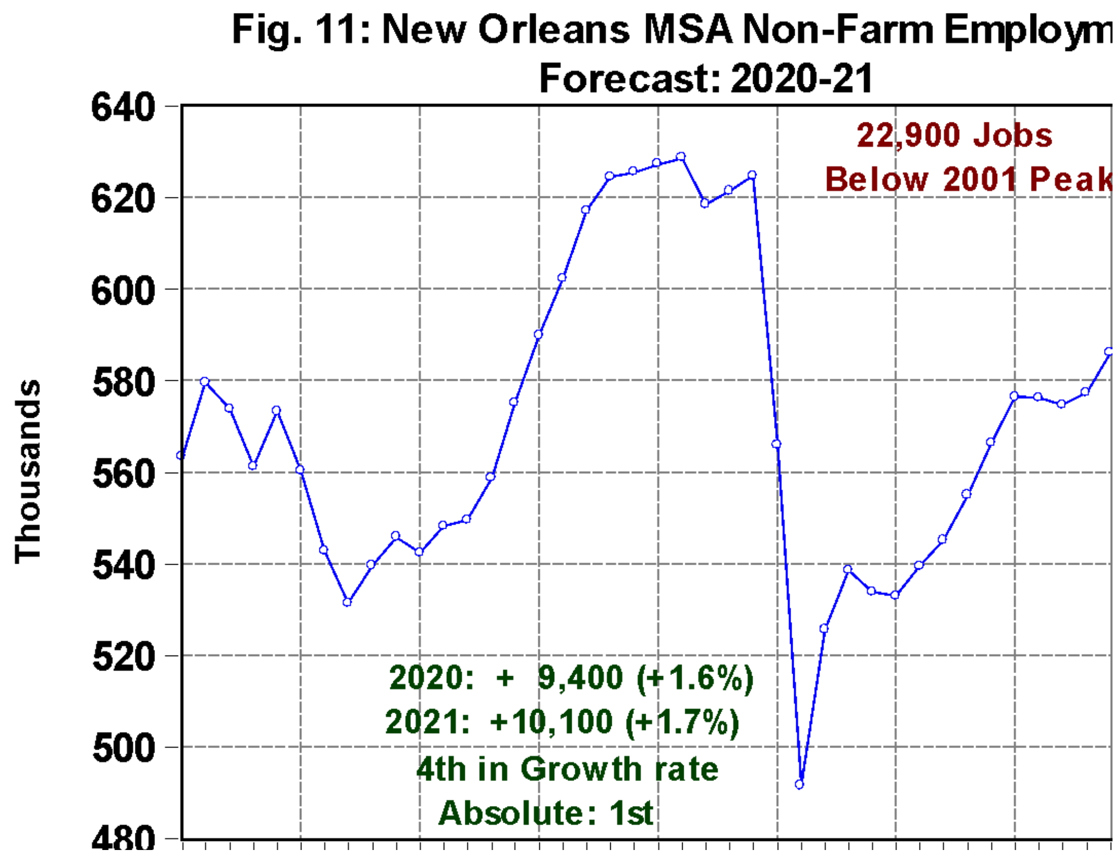


Table 4
New Orleans MSA Industrial Announcements: 2012 – Present
(Billions of Dollars)

Total Announcements:	$57.9
Completed or Underway:	$14.2
Potential:	$43.7

Source: Loren C. Scott & Greater Baton Rouge Industrial Alliance

Obviously, there is huge potential for an industrial boom ahead. Among those at the FEED stage:

- **Venture Global** is expected to announce in about mid-2020 a final investment decision (FID) on its $8.5 billion LNG export terminal at the Plaquemines Port on 632 acres of land south of Myrtle Grove. When completed, Venture Global will hire 250 permanent workers earning an average of $70,000 a year.

- An FID is expected in 2021 on the huge $9.4 billion **Formosa Petrochemical Complex**. This complex will house an ethane cracker and downstream manufacturing plants that will ultimately employ 1,200 at this St. James Parish site.

Note that these two projects alone are many times larger than the sum all the projects presently underway that we listed earlier in the New Orleans MSA.

In addition to those two mega-projects, this MSA has a number of other smaller, but still very meaningful projects ahead. The following are ones that have a very high probability of going forward.

- **Shell Motiva Refinery's** $380 million "Project Amite" that will create 100 new high-wage jobs is expected to get an FID in late 2019 or early 2020.

- **Entergy** has just begun construction of a $212 million, 128-megawatt gas-fired power plant at Michoud. This company is also spending $108 million on a reliability project in Jefferson Parish that should be completed in summer 2020 and a $94 million thirty-mile line from Waterford to its Churchill station.

- In St. Charles Parish, **IMTT** should begin construction in 2019-IV of $150 million in terminal infrastructure upgrades.

- **Dow/Union Carbide** has announced a $61.9 million project to expand its production and packaging capabilities. This project is scheduled to start in 2020-I and will add two new jobs.

- **Linde** is scheduled to start construction on a $250 million world-scale hydrogen plant (producing 10 million standard cubic feet daily of high-purity hydrogen) in St. James Parish in late 2019. Fifteen permanent jobs paying an average of $80,000 a year will be created.

- **Intralox** continues its growth pattern and now has $44.1 million in expansions planned for its Jefferson Parish location that will result in 25 new jobs.

There are several other projects announced for this MSA which have varying degrees of probability of achieving an FID.

- Three of these announced projects are <u>methanol</u> facilities. As mentioned above, one methanol plant---Yuhang Chemicals---is already under construction in St. James Parish. The interest in building new plants here is driven largely by two factors: (1) a plentiful supply of cheap natural gas and (2) burgeoning demand for methanol in China. China needs methanol to replace fuels that are creating a serious pollution problem. China wants the methanol to fuel some 475,000 medium to large-size boilers in the country that are presently fueled by coal. China also has permitted or is constructing at least 37 new methanol-to-olefins plants, with a single plant requiring 1.8 million tons of methanol. Of course, President Trump's trade fracas with China has muddied the future of this particular export market. Still, the following have announced plans to build facilities in the New Orleans area:

- **IGP Methanol** wants to build a $45-$48 billion methanol plant in Plaquemines Parish near Myrtle Grove. The firm is expecting its last permits from the Corps in late summer and then projects construction will start. The plant would employ 325 permanent workers.

- **South Louisiana Methanol** wants to construct a $2.2 billion plant in St. James Parish on 1,500 acres of land across from the Nucor Steel Mill. Now a joint venture with SABIC, officials plan a late 2019 start date.

- Also in St. James parish, **Syngas Energy Holding** wants to build a smaller $350 million methanol plant about 10 miles south of the Sunshine Bridge. The firm projects 100 new permanent jobs paying $78,600 annually.

Several; other sizeable projects have been announced for the New Orleans MSA:

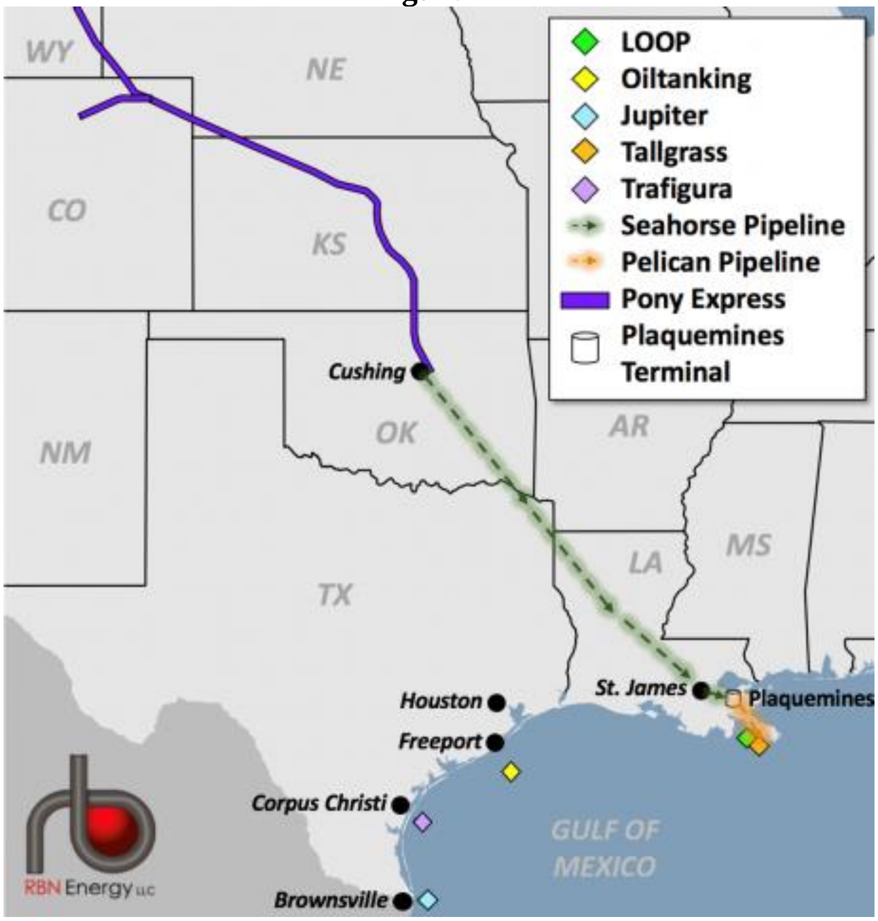
- **Wanhua Chemicals** announced plans to construct a $1.25 billion polyurethanes plant in St. James Parish that would ultimately hire 170 workers at $80,000. Plans were to start construction of this plant in late 2019, but this is a Chinese firm and Trump's trade war and issues over foreign trade zoning are creating delays.

- Two additional LNG export terminals have been announced for Plaquemines Parish. **Delta LNG** is an $8.5 billion plant that has filed for permitting with FERC. Associated with this plant would be a 280-mile pipeline (the Delta Express Pipeline) from the Perryville Hub in northeast Louisiana to the site. Delta LNG is under the Venture Global umbrella, and probably will not begin construction until beyond 2021. **Pointe LNG** has asked permission from FERC for pre-filing for a $3.2 billion export terminal on the east bank of the Mississippi River in Plaquemines Parish. That pre-filing is expected in December 2019, which means construction is unlikely to start before 2022.

- **Eurochem** is a proposed $1.5 billion ammonia/urea plant to be located in St. John Parish. There has been no movement on this project in some time, and economic developers place a very low probability on it materializing.

- **Tallgrass Energy** has announced plans for three projects. One is the **Plaquemines Liquid Terminal** (PLT), a $1.5 billion, 30-tank oil storage terminal to fully load post-Panamax vessels to 1 million barrels. Married to this project is **Blue Water Gulf**, a $1.5 billion platform in the Gulf attached to PLT by a 50-60 mile pipeline. Blue Water would then be able to load oil from PLT on Very Large Crude Carriers (VLCCs) that can presently only be accessed at the Louisiana Offshore Oil Port (LOOP). The third project is a 700-mile pipeline (**Seahorse**) from Cushing, Oklahoma to PLT. Seahorse would connect with the Pony Express Pipeline in Cushing, a pipeline bringing oil from the Bakken Play in North Dakota to Cushing. (See Figure 12.)

Figure 12



IT & Professional Services

New Orleans has enjoyed some recent very good news on the IT and professional services front. Last year downtown New Orleans landed **DXC Technology** a firm that is opening a new digital transformation center across from the Superdome. The company will hire 300 IT and business enterprise specialists in 2018 and will grow to a 2,000-person workforce within five years. A high-wage firm, DXC pays an average of $63,000 plus benefits. **Ernst & Young** is expanding its office for its National Executive Assistance Team, adding 175 employees and 25 risk services staff. At the UNO Research Park, **Technology Associates** is adding 70 jobs to its present workforce of 16 due to a new $90 million contract with the Coast Guard to design high-tech ice-breakers.

What Will Avondale Become?

A potentially big winner for this MSA is the development of the old Ingalls Avondale site. This 254-acre plot was purchased by **Avondale Marine** last October. The site offers approximately 8,000′ of deepwater riverfront access and connection to six Class I railroads. The firm is planning to turn it into a multi-modal manufacturing and logistics hub with about 2,000 employees. The first vessel docked at the site this past January.

North Shore: Exploration & Barge Recovery

Part of the nice performance of employment in this MSA in 2019 has been a recovery in activity on the Northshore. Finally reaching an inflection point in the Gulf of Mexico (GOM) has helped two key players in the Covington area. **Chevron**'s GOM operations are run out of the Covington office. The oil price collapse in late 2014 led to a reduction in force, but since then employment has recovered to about 500---above the pre-collapse level. We are carefully watching Chevron's decision on an FID on its Anchor Project in the deep waters of the Gulf. The company is close to breaking the code on drilling in deep waters with pressures of 20,000 pounds per square inch (20k psi). Up to this point drilling in reservoirs with 15k psi was feasible. Breaking the 20k psi will not only lead to more investments in Anchor, but will also lead to even more drilling in deep waters, now that this technological hurdle has been jumped.

Recovery is also underway at **Hornbeck**---an operator of supply boats for offshore operations. Last year, Hornbeck had 47 of its boats in dry dock due to the oil price collapse. Seven to ten of those boats are back in operation and each of those boats requires 9-10 mariners. The company's expectations are that the rig count will rise from about 20 to 33 in the GOM over the next two years. Each new drilling rig requires 3 to 4 supply boats, meaning another 39-52 supply boats might come out of dry dock. Hornbeck dropped from 300 employees at its Covington office pre-oil price collapse to as low as 150. Employment is now up to 200. If the offshore rig count goes as Hornbeck expects, more jobs will materialize for the whole MSA.

In April, **Arcosa Marine** reopened the old Trinity Barge facility in Madisonville. The company is spending $7.5 million to install new equipment and upgrade the facility. An expected 149 jobs will be created paying $51,400 annually. Also in Madisonville, **Diversified Foods** is spending $12 million to upgrade its food manufacturing plant and will add 44 jobs at $28,300 annually. Advanced Sinter Metals Technology will spend $5 million in St. Tammany Parish on a facility that metal powder at high temperatures to make metals (plus 15 jobs to the company's 43-person workforce).

Pool Corporation---which has operations in 14 countries on four different continents---now has 300 people employed on the Northshore, a number which should increase by 3-4% over 2020-21**.** **Globalstar** has moved into its new 60,000 square foot headquarters and is holding job fairs to add to its 220-person workforce in Covington. This company has the Globalstar Satellite Network that provides telecommunications to the most remote parts of the world. **Gilsbar** is presently at 471 employees and expects that number to be stable over the next two years.

A significant capital project underway on the Northshore is the $54 million expansion of the **St. Tammany Parish Hospital**. This involves a 4-story, 158,800 square foot addition which should be finished in 2020. Also, some $50 million will be spent on **LA3241** from I-12 to Bush Street. While shared with New Orleans proper, some $33.6 million is being spent on the south-bound span railings on the **Causeway Bridge**, a project that should be finished in the Spring of 2020.

Healthcare Capital Projects Wrapping Up

Two large capital expansion projects in the New Orleans area are moving towards completion. **Ochsner Health System** began a major $360 million program at its Jefferson Parish site a couple of years ago which should be completed by mid-2020. All but about $80 million in projects have been completed, including a $20 million Cancer Center that will be completed next year. Started in March 2017, LCMC's $300 million, 3-phase **Children's Hospital** is well underway and a March 2021 completion is anticipated. A new $100 million 9-10 story **apartment complex** to house 600 medical and nursing students has been approved by LSU's Board of Supervisors and is at the design stage. It is scheduled for completion in 2021. **Provision Healthcare** is still looking for a site for a $100 million proton therapy cancer treatment facility. We understand that project is now on hold. Readers should be aware that a group entitled 1532 Tulane Partners is proposing to renovate the old **Charity Hospital** site into a $245 million subsidized housing facility. This is another project that appears to be on hold.

Back in Space: A Resurgence at Michoud

In early August, 2018 NASA announced a new group of astronauts that will be going into space for the first time since 2011. This was great news for the **Michoud Assembly Facility** (MAF) in New Orleans East, where important component parts for the spacecraft are assembled. **Boeing** makes the core stage for the space launch system (SLS) and will be adding 225 jobs to its 677-job workforce. During that same period, **Lockheed** will add about 75 jobs to its workforce of 228 to construct the Orion Capsule.

Also at MAF is **LM Wind Power** (wholly-owned by GE and formerly Blade Dynamics). Now at 63 employees in its design center, this firm anticipates that number will grow slowly over 2020-21. The huge **USDA Finance Center** on the MAF campus is holding steady at 1,000 employees. This important unit deserves a careful watch, as it is within a "New Pay" initiative by the federal government to move its payroll and personnel services to a cloud-based system under the General Services Administration. The Louisiana Delegation is working to ensure this unit is not lost at Michoud under this transition.

Textron Marine and Land Systems has a facility at Michoud where it builds the Ship-to-Shore Connector amphibious landing craft for the Navy. Starting with an $84 million contract, an additional $180 million was added on and the Navy is working on a further $500 million for this project. Building trials are underway for the first of these vessels---Craft 100. The Navy wants 73 of these craft. In New Orleans the company also builds the first ever Common Unmanned Surface Vehicle for the Navy, a product which the Navy will use in its mine-sweep program. In Slidell, Textron builds its COMMANDO family of armored security vehicles, many of which are used in Iraq and Afghanistan. The manufacture of the Big Dog Wildland Firetruck has been moved to the Slidell site from a facility in Maine. Eight hundred people work for Textron on these three projects. No data are available on future trends in this number.

Public Construction: Good News/Bad News

When it comes to public construction projects in this region there are a number of pieces of good news, but one or two offsetting diminishments. The good news includes:

- **The St. Charles/St. John Levee**: This past fall the federal government approved $760 million to be spent to build a massive levee system from the Hope Canal near Garyville to the Bonnet Carre Spillway east of LaPlace. This project, that will take five years to complete, will involve pump stations, earthen levees, and flood walls. The state will repay its 35% share of the costs over a 30-year period.

- The state has approved $532.4 million (up from $379.8 million last year) in **road lettings** for this MSA over 2020-21. Among the larger projects are:

    - $100 million on the I-10/Loyola interchange;
    - $70 million to 4-lane LA3241 from the LA434 interchange to LA36;
    - $37 million to widen I-12 from LA21 to US190.

- The **New Orleans Regional Transit Authority** will spend $57.6 million on projects, the largest being $23 million for phase 1 of a ferry terminal.

- Three large **school projects** are scheduled over the early part of our forecast period:

    - Karr High School - $49.8 million (open April 2020);
    - Kenner Discovery Health Sciences Academy - $44.8 million charter school (open January 2020);
    - New Orleans Charter Science & Math School - $36.1 million (open December 2020).

- $46.2 million remains to be spent on the $400 million expansion of the **World War II Museum**. The Liberation Pavilion at this wonderful museum should be completed in 2021.

- The **Port of South Louisiana**---the nation's largest port in terms of tonnage moved--- will be spending $37.8 million over our forecast period on capital projects, including $6.1 million on its airport and a warehouse, $31.7 million on an administration building, two cranes, and deck strengthening at the Globalplex Terminal.

- Another large, important project that involves expenditures slightly outside of our forecasting range is the $878 million, 26-mile **Plaquemines back levee**. Design work will begin on this project to use mud from the bottom of the Mississippi River to rebuild disappearing wetlands. Actual construction is not expected until 2023.

This is an impressive array of public spending being injected into the regional economy. As it turns out, this new spending will be at least partially offset by two factors. One is the completion of the $1 billion new **Louis Armstrong Airport** terminal. A lot of construction jobs will come to an end when that project is completed this October. The second, bigger, blow is the reduction in **Hurricane and Storm Damage Risk Reduction Spending** (HSDRRS). Note in Table 5 that next year HSDRRS spending is scheduled to drop by $287 million over the next two years.

Table 5
Army Corps Hurricane & Storm Damage Risk Reduction Spending
(Millions of Dollars)

Year	HSDRRS
2014	$942
2015	$970
2016	$808
2017	$482
2018	$332
2019	$424
2020	$271
2021	$187

Source: Army Corps of Engineers, New Orleans Office

Large Private Projects Boost the Region

There are at least three very significant private capital projects that are injecting notable construction spending into New Orleans proper. Work is well underway on the $465 million renovation of the World Trade Center into a **Four Seasons Hotel** and Condo Units. Schedule to open in November 2020, this 2 Canal Street property will have 330 luxury hotel rooms on floors 7-19 and 80 hotel-serviced condominiums on floors 21-30. A total of 450 people will work at the site.

The South Market District continues to add units in its planned development. The $106 million **Odeon Apartment Tower**, at 29 stories the tallest built in New Orleans in 30 years, will open in fall 2020. A sixth unit should be started later in 2019. Finally, permits were issued in April for the $50 million, 223-room **Virgin Hotel** at 550 Baronne. Construction is scheduled for completion in 2021.

Casinos: Lots of Jobs – No Growth

Many folks do not appreciate the importance of the casino/racetrack industry in this MSA. Tables 6 and 7 provide some data on the firms along with trends since Fiscal Year 2013-14 (FY14). Note that these firms brought in $561.6 million in revenues in FY19, a figure that is down about 5.9% since FY14. As a reference point, only the Lake Charles gaming market grew over this period (+33.7%). The other two major markets---Baton Rouge (-13.7%) and Shreveport (-9.1%)---also experienced declines that were noticeably larger than in New Orleans.

Note in Table 7 that despite the stagnation in the market for the last 5 years, gaming is still an impressive employer, providing **3,783 jobs** in this region. This number is down only slightly (-129 jobs) over the past five years.

Table 6

Revenue Trends in New Orleans MSA Gaming Establishments

	FY14	FY19	Change
Boomtown	$ 113.2	$ 118.1	$ 4.90
Treasure Chest	$ 97.7	$ 108.3	$ 10.60
Harrah's	$ 340.1	$ 291.5	$ (48.60)
Fairgrounds	$ 45.9	$ 43.7	$ (2.20)
TOTAL	**$ 596.9**	**$ 561.6**	**$ (35.30)**

Source: Gaming Control Board

Table 7
Employment Trends in New Orleans MSA Gaming Establishments

	14Q1	19Q1	Change
Boomtown	593	626	33
Treasure Chest	686	584	(102)
Harrah's	2,400	2,400	-
Fairgrounds	233	173	(60)
TOTAL	**3,912**	**3,783**	**(129)**

Source: Gaming Control Board

Baton Rouge MSA: Escaping the Lull

The Baton Rouge MSA is the largest MSA in the state in terms of numbers of parishes---nine, including East Baton Rouge, West Baton Rouge, Livingston, Ascension, Iberville, St. Helena, Pointe Coupee, East Feliciana, and West Feliciana (see Map 1). In terms of population, East Baton Rouge Parish was the most populous in the state in 2016 at 447,037 according to the Bureau of Economic Analysis.[2] In 2015, for the first time in its history, this MSA's employment broke through the 400,000 level. There are now an estimated 411,100 jobs in this MSA, the second largest behind the New Orleans MSA.

The author has been monitoring the Baton Rouge economy for 40 years. Never has this MSA experienced an industrial expansion like the one presently underway. As seen in Table 8, there have been **$16.8 billion in announced industrial expansions** in this MSA since 2012. What

[2] www.bea.gov

differentiates this MSA from New Orleans and Lake Charles---sites of other major industrial announcements---is that in the Baton Rouge MSA the majority (69%) of the announced projects ($11.5 billion) are either completed or under construction. This has created a construction lull the past two years, as construction of many projects came to an end. **However, starting in mid-2019, and continuing through 2021, a resurgence in construction is expected as some large potential projects get a final investment decision (FID) and move into the "underway" category.**

Table 8
Baton Rouge MSA Industrial Announcements: 2012 – Present
(Billions of Dollars)

Total Announcements:	$16.8
Completed or Underway:	$11.5
Potential:	$5.2

Source: Loren C. Scott & Greater Baton Rouge Industrial Alliance

Petrochemicals, Construction, Universities & Government

The **petrochemical industry** is a huge factor in this MSA's economy. This MSA has the largest concentration of **chemical industry** activity in Louisiana. Between the three of them, East Baton Rouge, Ascension, and Iberville Parishes had 10,595 chemical workers in 2017 with an annual payroll of over $1.2 billion.[3] If one included the full time contract workers at these plants the total would increase at least 40%. Baton Rouge is home of the nation's fourth (and the world's twelfth) largest **refinery**---ExxonMobil---located just north of the state capitol building. This refinery alone employs 3,724 employees and contract workers. Placid Refinery is also located in this MSA.

Because the petrochemical industry is very capital-intensive, when it expands, so does the **industrial construction**. Industrial construction jobs are also closely tied to "turnarounds" at these plants, i.e., when the plants are shut down completely for scheduled maintenance. In June 2019, the Baton Rouge MSA had an unusually high 12.5% of its workforce (51,500 jobs) in the construction sector, the second highest percentage in the state. Only Lake Charles was higher at 21.8% (25,900 jobs). The comparable percentage for the whole state was 7.2%.[4] Turner Industries, Performance Contractors, CB&I, the Newtron Group, Brown & Root, MMR, EXCEL ISC Contractors, and Cajun Contractors are among the larger industrial construction companies in the area.

The Baton Rouge MSA is also the location of the **State Capitol** and the vast office complex associated with it. **Two major state universities**---LSU and Southern University---are located in Baton Rouge, along with one of Louisiana's largest community colleges. Baton Rouge Community College is actually larger than Southern University in terms of enrollment. This MSA

[3] "Impact of the Chemical Industry on the Louisiana Economy: An Update", prepared for The Louisiana Foundation for Excellence in Science, Technology and Education, Loren C. Scott & Associates, Inc., March 2018, p.22.

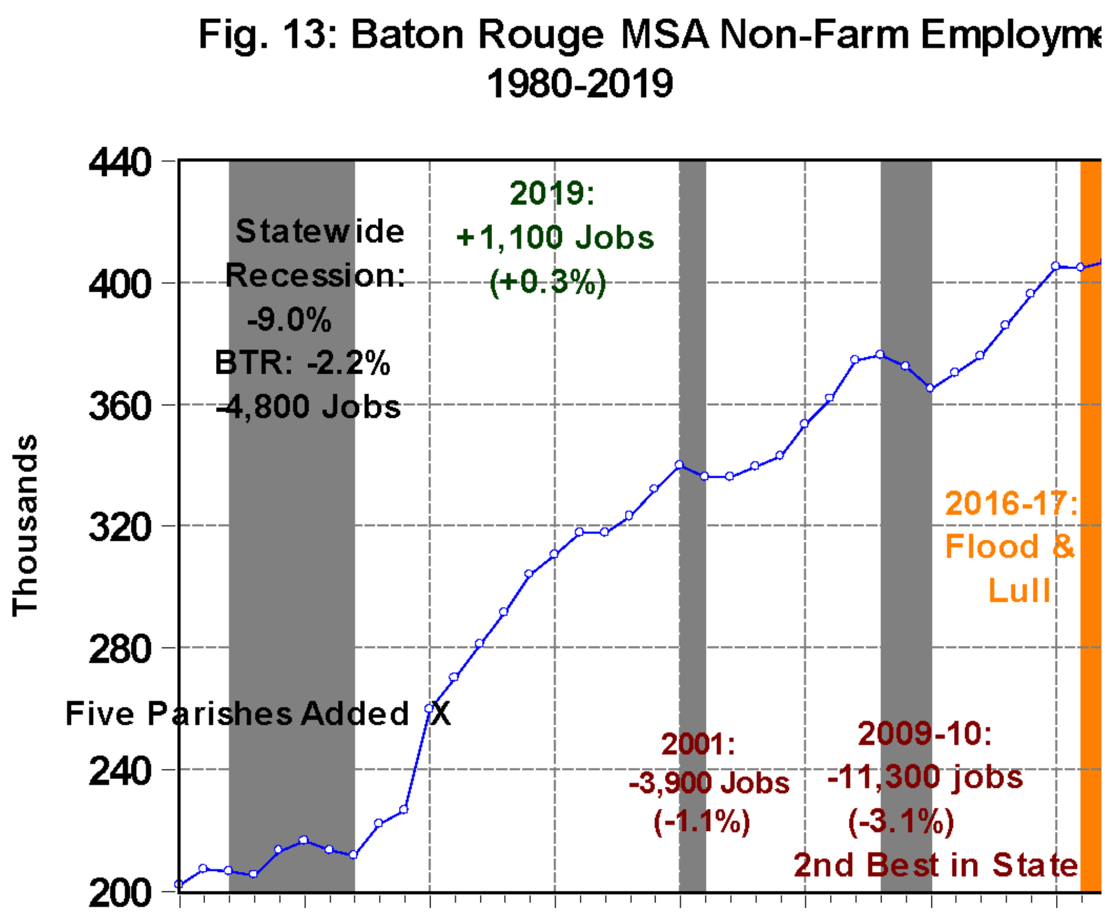
[4] Louisiana Workforce at a Glance, Louisiana Workforce Commission, July 26, 2019, pp. 10-15.

is also home to an emerging high tech sector, led by Electronic Arts game company and the large IBM facility. The **Port of Baton Rouge** handled 14 million short tons of material in 2018 and is the nation's 8th largest port.

Recent History of Baton Rouge

Figure 13 illustrates employment trends in the Baton Rouge MSA over 1980-19. This MSA was only mildly touched by the terrible recessionary years of 1982-87. Baton Rouge dropped 4,800 jobs or 2.2 percent of its workforce as compared to the 9 percent decline in the state as a whole over that same period. Note the distinct jump in the employment trend line in Figure 13 in 1990. This was due to the addition of five more parishes to this MSA by the Department of Labor.

The really good years: The years from 1988 to 2000 were heady ones in the Baton Rouge MSA. This region had the most enviable growth record in the state in terms of both size and consistency. The MSA immediately recovered the 1982-87 losses with a banner year in 1988 when it gained 10,300 new jobs. Then the region's employment went straight up for 13 straight years over 1988-00, adding a robust average of 7,500 jobs each time the calendar turned.



The really weak years: The tables decidedly turned against Baton Rouge over the next four years. This 9-parish MSA lost 3,900 jobs or 1.1 percent of its workforce in 2001 due to the national recession---an unusually short and mild dip compared to what happened nationally. Its recovery from that dip was nothing like that of 1988. It took three years to recover the jobs lost in 2001, and those three years were ones of very modest growth as seen in Figure 13.

The culprit behind this slow growth pattern was the **chemical industry**. We have already pointed out the dominant role played by this industry in the MSA's economy. The chemical sector was hurt by two factors. Initially, the **national recession** hit sales in this sector very hard and weakened considerably the price of chemical products. However, the second factor was in many ways the most problematic. **High natural gas prices** (see Figure 4) radically raised operating costs for these firms. Several chemical firms in the MSA announced layoffs or closed either temporarily, partially, or completely. The region's ammonia fertilizer plants especially suffered.

The Katrina Effect

Evacuees in: Baton Rouge is the closest <u>large</u> MSA to New Orleans, so it initially absorbed a huge number of evacuees as a result of Hurricane Katrina. From FEMA assistance applications, we estimate that the Baton Rouge MSA initially absorbed about 248,386 evacuees. **Overnight, this MSA's population exploded by over 34 percent.** Traffic came to a standstill across the area, supplies vanished from grocery stores and gasoline stations, and every rental unit in the area was absorbed. There was a wild real estate period of about one month when realtors were selling more houses in a week than in the previous year. The median price for a single family home leapt 27 percent, the largest jump among the 151 MSAs surveyed by the National Association of Realtors. Sales tax collections in East Baton Rouge Parish rose by 34 percent in September 2005.

Evacuees out: There was, of course, no way for the MSA to permanently absorb a quarter of a million people over such a short time span, if for no other reason than there were not enough jobs available to support that many people. For example, in November 2005, the traffic count on I-12 east of the I-12/I-10 split was up 22 percent over August 2005. By 2007 that count was up only 3.1 percent. On the I-10 bridge over the Mississippi, the count initially jumped by 26 percent, November over August. By 2007 that count was up only 2.9 percent.

More importantly, the Census Department made an estimate of the area's population as of July 2007. That estimate showed **the MSA's 2007 population of 770,037 was up 39,921 over July 2005**---a 5.5 percent increase. As seen in Table 9, the bulk of that population increase occurred in East Baton Rouge (18,121), Ascension (10,000) and Livingston (9,100) Parishes. The area clearly experienced an "evacuees in – evacuees out" phenomenon. A similar phenomenon was experienced in Hattiesburg, Mississippi and Mobile, Alabama.

Table 9
Population Change by Parish
July 2005 – July 2007

Parish	Absolute Change	Percent Change
East Baton Rouge	18,121	**4.4%**
Ascension	10,000	**11.2%**
Livingston	9,100	**8.5%**
West Baton Rouge	1,091	**5.1%**
Pointe Coupee	564	**2.6%**
St. Helena	437	**4.3%**
East Feliciana	276	**1.3%**
Iberville	272	**0.8%**
West Feliciana	**60**	**0.4%**

Source: U.S. Census Bureau

Katrina boosted employment. Not only do the population numbers show that this MSA benefited from the storms, the employment numbers shown in Figure 13 confirm that as well. The employment line in Figure 13 took a distinct upward turn in 2005 and 2006. The MSA's employment rose by 18,500 jobs or 5.4 percent over this period. Obviously such a rapid growth pattern could not be sustained long run.

2007: Construction Leads to a Strong Year

As seen back in Figure 13, the Baton Rouge MSA managed to continue the post-Katrina, torrid pace of adding 9,000-10,000 jobs a year. Incentivized by the Go Zone legislation, an impressive amount of new construction work began in 2007.

2009-10: Impacts of the Great Recession

It is clear from Figure 13 that the Great Recession had an impact on the Baton Rouge MSA, though the region performed better than most in the country and the state. To repeat, the national economy began losing jobs in January 2008 and U.S. employment fell by 6.1 percent. By contrast, the Baton Rouge MSA did not lose the first job until September 2008, and it lost only 3.1% of its jobs. This was the second lowest loss of any MSA in the state.

The MSA was not without some serious job losses during the recession. For example:

- **Dow Chemical** in Iberville Parish closed one facility (-160 jobs) and laid off 400 contract workers.
- **Trinity Marine** closed its barge manufacturing facility in Port Allen (-190 jobs).

- **Capital One Bank** closed its call center at a cost of 180 jobs.

- **Chase Bank** closed its operations center, dismissing 247 people.

- **Wells Fargo** closed a call center, terminating 70.

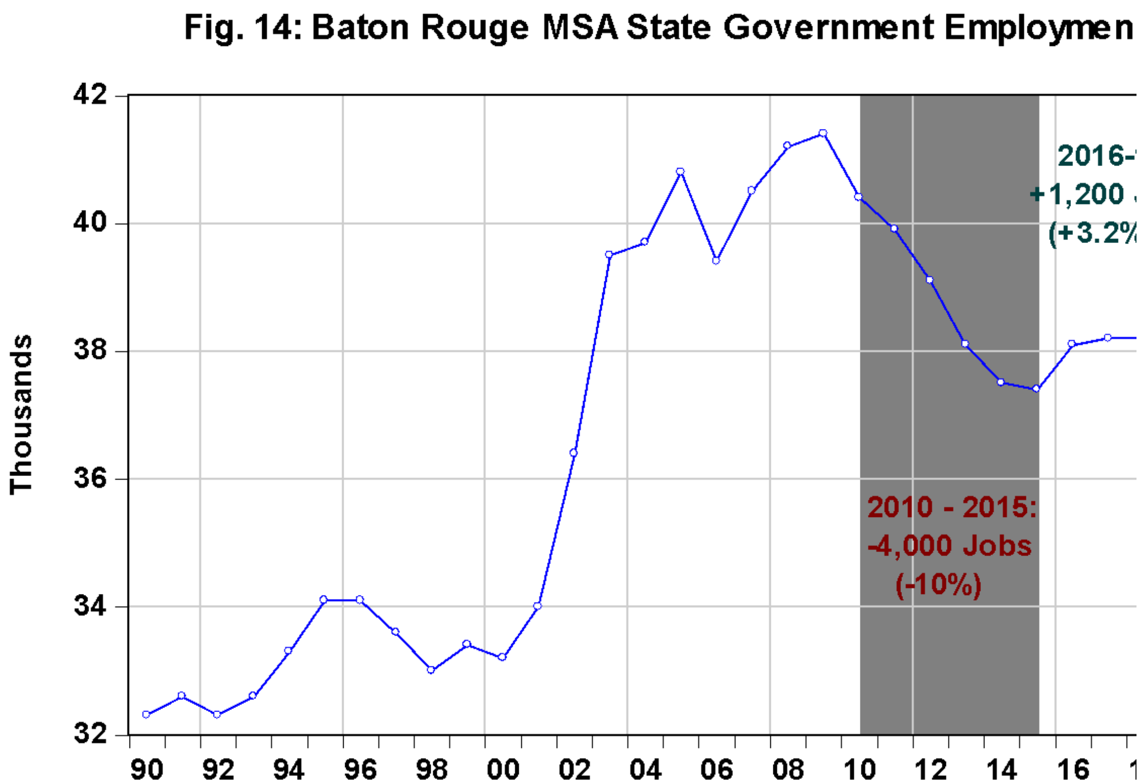
- **IEM** moved its headquarters to North Carolina, taking with it 50 very high-paying jobs.

- **Excide Batteries** temporarily closed its shop, terminating 132 people.

In addition to these announcements, budgetary shortfalls in **state government** led to layoffs in that sector of about 1,300 workers.

Recovery from Great Recession Strong Despite State Government

Recovery from the Great Recession in the Baton Rouge MSA got stronger each year from 2010 to 2015 as seen back in Figure 13. Employment growth in 2011, 2012, 2013, 2014, and 2015 were 1.4%, 1.5%, 2.7%, 2.6%, and 2.2%, respectively. **By October 2012, the MSA had recovered all the jobs lost during the Great Recession** and began setting new employment records. This boom was largely led by the **massive industrial construction activity** associated with $11.5 billion in new industrial projects under construction in the region (see Table 8). Indeed, construction employment in the region jumped from 37,500 in July, 2011 to 57,800 in June, 2018---a remarkable 54% increase in only seven years.



The MSA accomplished this growth despite a couple of significant setbacks. First, the region lost 925 **call center and distribution center** jobs, including the 400-person Home Depot call center. Secondly, **state government** faced some serious financial challenges as a result of the recession and other factors. During his two terms Governor Jindal steadfastly refused to solve these budgetary issues by raising taxes, which meant cuts in government spending were the order of the day. As the state capital, Baton Rouge tended to bear the brunt of those cutbacks as seen in Figure 14. **From 2010 to 2015, state government shed 4,000 workers** (-10%) in the Baton Rouge MSA. (Statewide, over that same period, state government employment fell by 29,000 or 25 %.)

The region lost two other significant employers and saw a major reduction in force by another. **Kellogg Distributors** laid off 208 people at its Gonzales site, and **Trinity Marine** closed it 288-person facility in Brusly. In August, **Albermarle** announced it was moving 200 jobs out of its service center---engineering, information technology, and logistics---in downtown Baton Rouge to Kings Mountain, North Carolina. For now the company is keeping its research development and manufacturing operations on Gulf States Road in the region.

Great Flood of 2016

There was another epic event that recently impacted this MSA's employment numbers. The impact was so great that despite the strong industrial boom in the area, employment in the Baton Rouge MSA was actually flat in 2016 and 2017. In August 2016 a relentless rain storm hit the area.

To put the rainfall numbers in perspective consider the data in Table 10. For a 100-year event, 14.2 inches would be expected over two days, and for a 1,000-year event 21.3 inches would be expected. The next four rows in Table 11 show the rainfall in communities in the Baton Rouge MSA. All four exceeded the 1,000-year event.

Table 10
2-Day Rainfall Totals: August 2016

Area	2-Day Rainfall Inches
1,000 Year Event	**21.3**
100-Year Event	**14.2**
Watson	**31.4**
Brownfields	**26.8**
Denham Springs	**26.5**
Monticello	**24.0**
New Iberia	**21.5**
Lafayette	**20.8**

Source: Advocate Newspaper, August 6, 2017, p.1.

FEMA data reveal that a remarkable 65,829 homes in just three of the MSA's nine parishes were damaged by flood waters. By-products of this tragedy included (1) many workers not being able to get to work because of the attention required on their homes and (2) many businesses were closed---some temporarily and some permanently---due to flooding. An Advocate newspaper report indicated 410 of 1,766 businesses in Livingston Parish (23%) had not renewed their occupational license.

Note the impact on employment in this MSA as shown back in Figure 13. The MSA lost jobs in every month from August through December in 2017. It was enough to render employment basically flat for 2016 and 2017.

Major Industrial Projects Completed in 2016-19: The Pickups Were Leaving

A second factor contributed to the MSA's weak performance over 2016-19 as seen in Figure 13. Construction of several major projects came to an end during two years. The largest was **CF Industries**' $2.1 billion fertilizer plant near Donaldsonville. **Dow** in Iberville Parish completed work on a massive $1.06 billion project, and **Methanex** completed the $1.1 billion move of two methanol plants from Chile to Ascension Parish. Also in Ascension Parish **BASF** finished four new facilities at a cost of $500 million. At the Port of Baton Rouge, **Genesis Energy** completed its $150 million storage terminal for oil, intermediates, and refined products, while in Livingston Parish **Epic Piping** completed its $43.3 million pipe fabrication facility. **Pepsi Cola** opened its new 200-person distribution center in Livingston, just north of the Epic Piping site, in January 2017.

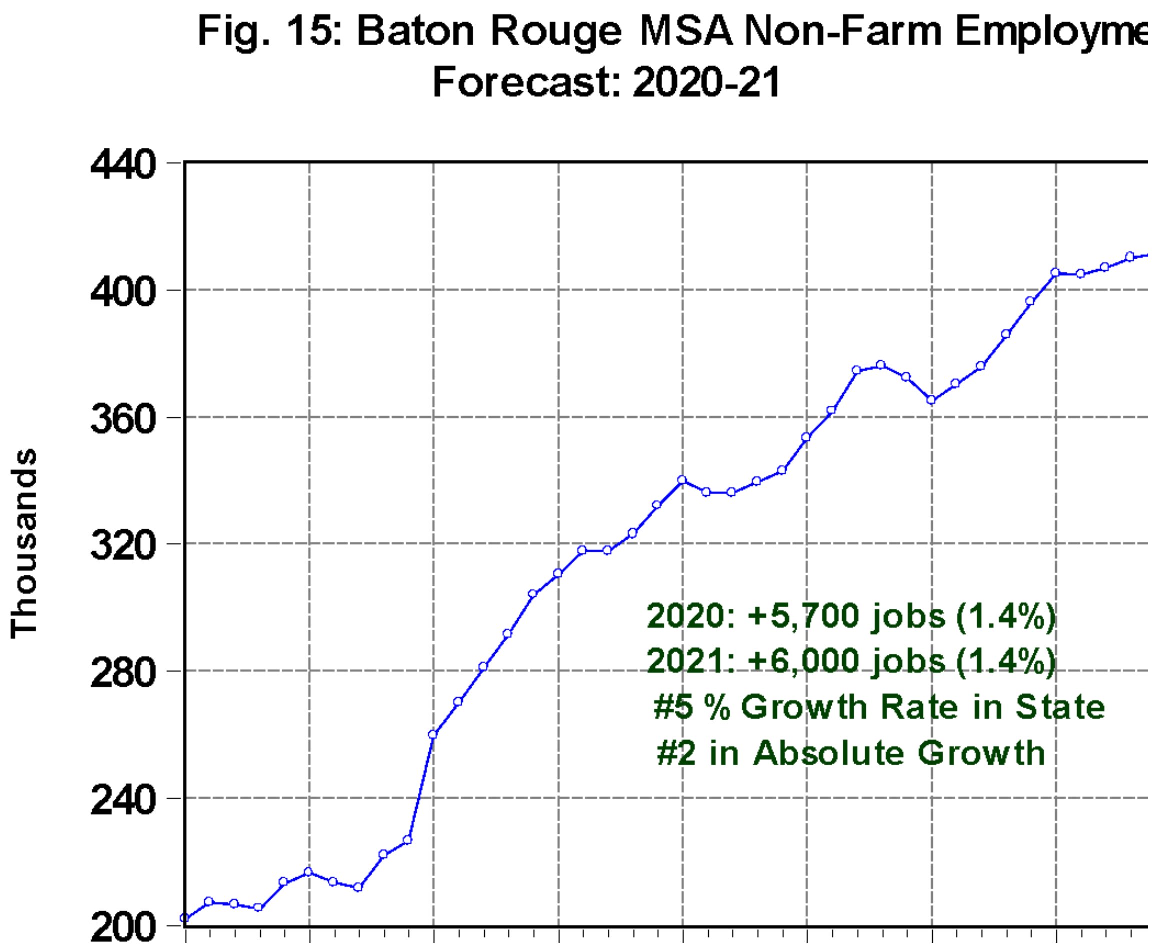
Each of these projects led to new high-paying, permanent jobs that the MSA did not have before. However, readers can envision hundreds of vehicles containing construction workers leaving these sites for the last time.

A second factor played into the weak performance by the Baton Rouge economy in 2019---there were some very significant **layoffs** in the region. The biggest occurred when **Georgia Pacific** shut down a paper division and terminated 700 people. **Thompson Pipe Group** in Zachary closed its facility and moved operations to Texas, laying off 120 people. **BASF** shuttered a facility it had acquired in north Baton Rouge from Novolyte Technologies, ending work for 54 people. **Direct Auto & Life** closed its 127-person call center in Baton Rouge, and **State Farm** terminated 47 workers at its operations center in the Bon Carre Business Center.

These two factors are the primary reasons the MSA's employment entered a lull, with employment averaging about 0.5% over 2017-19---much less than boom years of 2013-15 when growth exceeded 2% a year.

Forecasts for 2019-20: Lull in the Rearview Mirror

As can be seen in Figure 15, we are projecting that the lull is over and **are projecting 5,700 new jobs (+1.4%) in 2020 and 6,000 (+1.4%) jobs in 2021 for the Baton Rouge MSA**. This will put the MSA in fifth place in terms of percentage growth (behind Lake Charles, New Orleans, Houma and Lafayette) and in second place in absolute growth (behind New Orleans) among the state's nine MSAs. The lower growth rate ranking reflects unusually strong recoveries in New Orleans and Lake Charles that have more and bigger construction projects ahead and a nice recovery in the previously deep-recession oil patch MSAs.



From Inflection Point Upwards

The real driver for Baton Rouge's much improved growth rate is the resumption of activity in the industrial construction sector. The lull between projects both here and in Lake Charles caused statewide construction employment to decline by 6,000 jobs this year. We believe that towards the end of this year construction activity will have reached an inflection point and that projects moving from the "FEED" stage to construction will begin to pull up the employment numbers. There are several major projects in this MSA region that are still under construction. They include:

- **Shintech** has just completed a $1.4 billion ethane cracker and connections to PVC and VCM production lines, a project that has created 100 new permanent jobs that are high-paying as well ($68,500 annually). Almost simultaneously the company announced work will begin on a $1.49 billion expansion of its PVC facility that will generate 120 new permanent jobs at $81,800 annually. This company has a lot of land at its site (about 5,700 acres) and purchased the Carville property in 2018, which gives Shintech a lot of expanse to grow. Once this project is completed we expect another one to follow almost immediately.

- In Geismar, **Methanex** has announced it will build a third methanol unit at a cost of $1.4 billion. Construction will start in the second half of 2019 and when finished in 2022-H2 will result in 25 new jobs paying $80,000 a year. This will bring total employment at the company's complex to 280.

- In the first half of 2020, **Shell Chemical** is expected to pull the trigger on a $1.2 billion world-scale mono-ethylene glycol unit. There are already 653 people employed at Shell's chemical plant; this new project will add another 23 jobs paying $100,000 annually.

- We will be closely watching **ExxonMobil's** announcement of plans to construct a $469 million expansion of its polyolefin plant. This project is scheduled to start at the end of 2019 and create 65 new jobs when completed in 2021. This company took a political beating in East Baton Rouge Parish during discussions regarding its industrial tax exemption (ITEP) application. Will that experience make the company hesitate? We are holding our collective breaths.

- Geismar will also be the recipient of another plant expansion over our forecast period. **Westlake Chemicals** is planning a $450 million investment to increase the plant's chlorine volumes. To be completed in 2023, this project will add 15 new jobs to the 191 employees working at the site.

- **Flopam** has filed an application with the Commerce and Industry Board for an ITEP to build a $375 million facility on the Shintech property to support that company. This project is projected to create 110 jobs when completed.

- In early 2020, **Formosa Plastics** will begin a $332 million expansion of its PVC production plant in Baton Rouge. The expansion will create 15 new jobs paying an average of $77,667.

- There are 1,000 **BASF** workers and 500 contract workers at the company's site in Ascension Parish. BASF continues to grow its MDI value chain and will start a 2nd phase, an $87 million improvement of its MDI plant in 2020-H1. Phase 3---a much larger, unspecified project---is scheduled for construction in 2021.

- Praxair (now **Linde**) is building a $150 million carbon monoxide/hydrogen plant to service BASF. This plant should be finished in 2020.

- In Plaquemine, **Dow** announced plans for a $119 million project to expand its production of propylene---a project that will add eight new jobs to its 1,263-person workforce.

- In St. Gabriel, **Eastman/Taminco** continues in its expansion mode. The company plans to spend $70 million over three years to modernize its facility and to construct a new chemicals intermediates facility. Five new jobs will result.

- In Burnside, **Veolia** will spend $40 million to expand a plant that coverts spent sulfuric acid into commercial-quality sulfuric acid and sulfur-based products for refineries. No new permanent jobs will be added to the 29 employed at the facility.

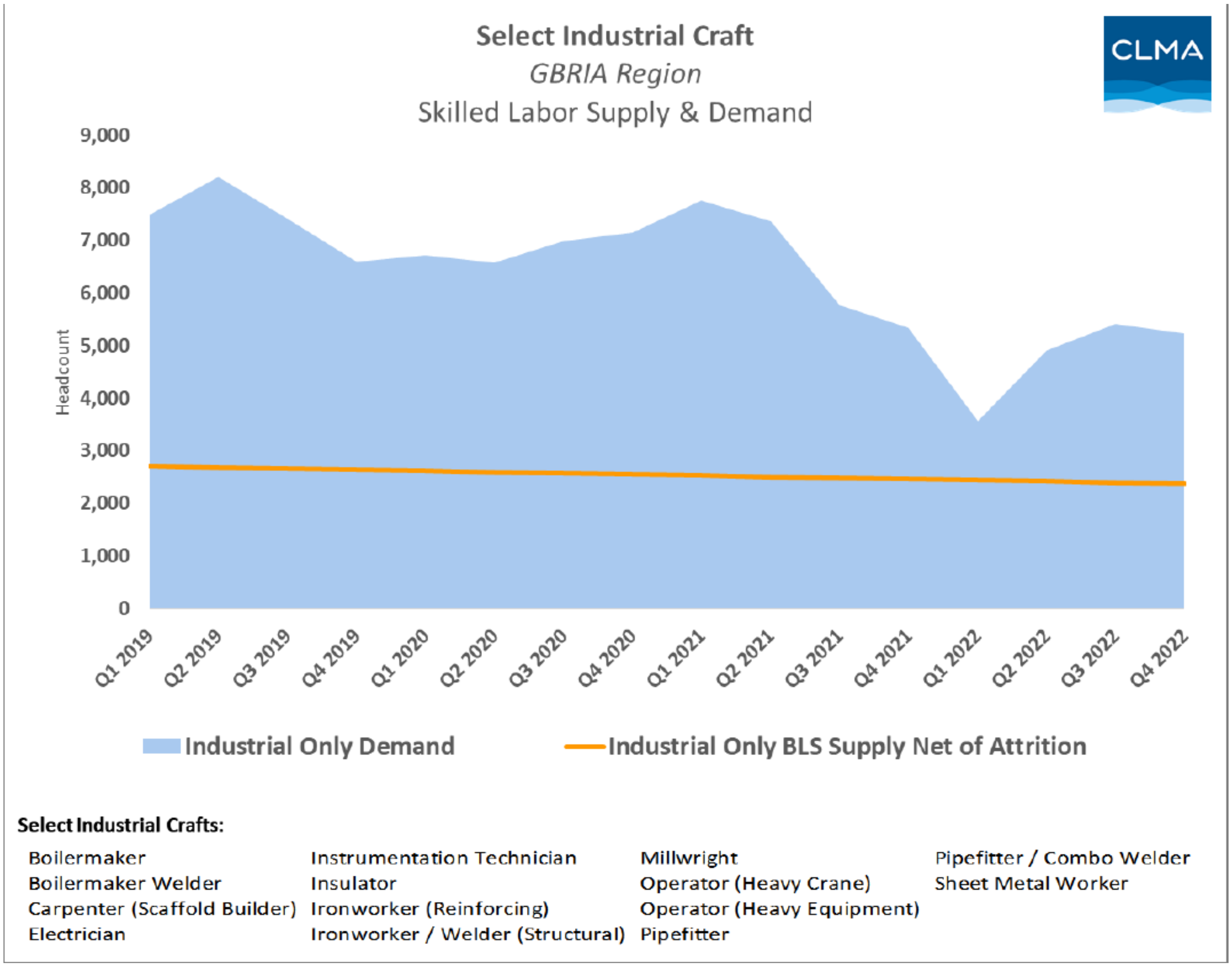
- **Epic Piping** will be spending $40 million on expansion of its manufacturing facilities and an administration building. The latter will be in Baton Rouge, but it is unclear where the manufacturing expansion will take place. Epic has manufacturing plants in Livingston, San Marcos, Texas, and the UAE.

- A $22.4 million investment in a 100,000 square foot building for measurement and equipment manufacturing is planned by **Vega Americas** in Ascension Parish. The result will be 120 new jobs and a payroll of $4 million. At a similar level, **Stupp Piping** in Baton Rouge will spend $22 million to expand its yard and add 217 jobs paying $60,567, and **Southland Steel** in Amite is making an $18 million investment in its plant and will add 70 jobs to its 176-person workforce.

- There are two smaller solar farms planned for the area. **Eagle Solar Group** has announced plans for a $10 million solar farm on 500 acres in West Baton Rouge Parish. Completion date is scheduled for mid-2020. **South Alexander Development** wants to build an $8.6 million solar farm on 65 acres in Springfield. These farms typically hire very few people and pay relatively low wage rates. For example, the Springfield farm would hire only one person at $25,000 per year.

The impact of this activity on industrial construction employment in the area is partially illustrated in Figure 16. This figure shows expected construction employment in the region from 2019-I through 2022-IV as compiled by the Greater Baton Rouge Industrial Alliance (GBRIA). First, note the decline being experienced at the present time due to the "lull" between projects. Then notice that employment starts to climb by over a thousand jobs between 2019-IV and 2021-II. It is important to understand that this figure only partially paints the picture for us. The GBRIA data did not include the Shintech, Methanex, Shell or Westlake projects---about $4.5 billion in spending---in the survey. Clearly, industrial construction employment will perform significantly better than suggested by Figure 16.

Figure 16



Source: Greater Baton Rouge Industrial Alliance

Huge Public Construction on Horizon

Private industrial construction will not be the only spark to this MSA's economy over the next two years. There are several unusually large public construction projects that will be generating jobs as well.

- Tax payers in the other 49 states are once again coming to the aid of Louisianans after the devastating impacts of the 2016 flood. $1.4 billion has been awarded to the area for two key projects. The first is $343 million to help complete the **Comite River Diversion Canal**. The total cost of this project is $450 million, with the balance to be covered by taxes assessed by the Amite River Basin Commission. Completion of the canal will take 3-4 years. Another $255 million has been provided for clearing, widening, and dredging **Parish waterways**, a project that will take about 5 years. Another $1.2 billion has been provided for **flood resiliency protection**. These dollars will be spread over 5 years. The Governor's office has started the process of developing the projects under this program. A total of $1.7 billion has been set aside in **HUD housing flood recovery** assistance. Much of these monies have been expended. The **Hazard Mitigation Grant Program** is providing $300 million in the Capitol Region to elevate homes, buy homes, and tear down some homes and to implement flood control measures. This program is underway.

- The Baton Rouge MSA has been awarded $583 million in **state road lettings** from the state (double the $276 million last year). Among the projects covered:

    - $256.2 million on a pedestrian/bike path along Ward's Creek;
    - $38.3 million for a College Drive flyover at the I-10/I-12 split; and
    - $12.4 million to widen LA30 from West Chimes to South Boulevard.

- Some $360 million has been set aside via GARVEE bonding to **widen I-10 from the Mississippi River Bridge to the I-10-I-12 split**.

- Voters have approved $400 million in **new school construction** in East Baton Rouge Parish.

- The state has set aside $125 million to work on the **LA415 bypass** to help with bridge congestion.

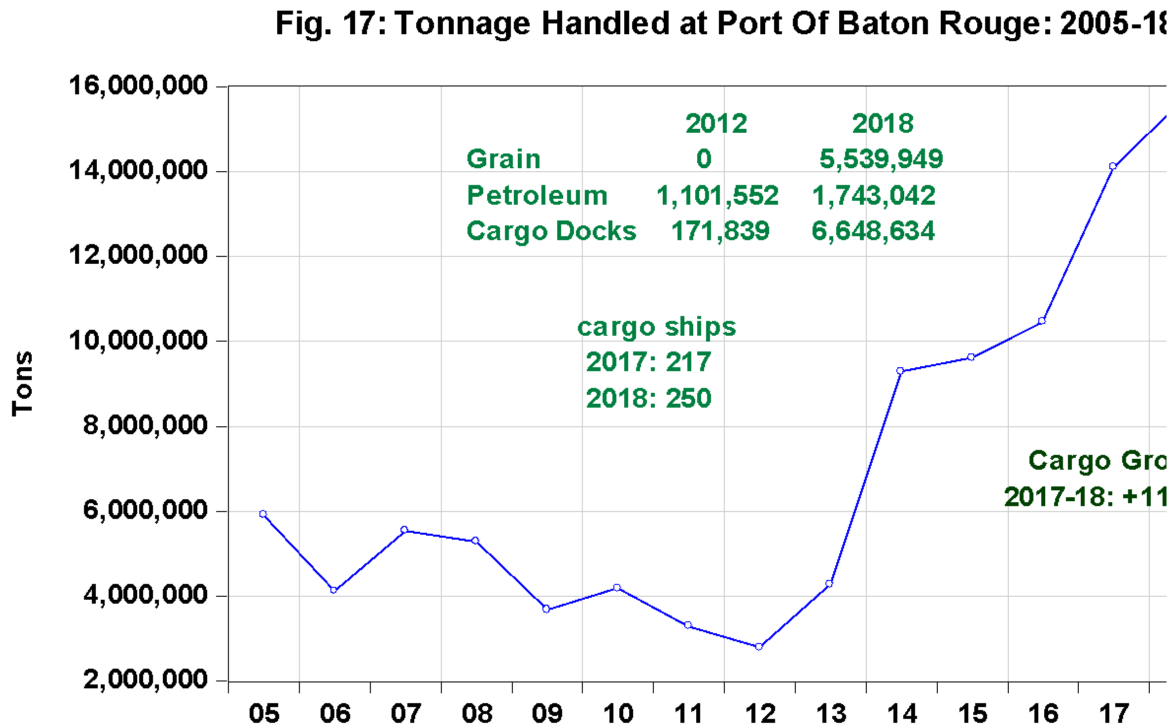
- The **MovEBR** program is a $1.1 billion program to improve roads, ditches, lights and landscaping in the Parish.

Port of Baton Rouge: The Boom Continues

One of the almost hidden success stories in this region is the **Port of Baton Rouge**, now the 8th largest port in the nation in terms of tonnage moved. That is an improvement from 9th last year. The reason for the improvement can be seen clearly in Figure 17. The Port has enjoyed dramatic growth in its grain and cargo exports since 2012, and this growth has risen especially fast over 2017-18.

This spectacular improvement was derived from the completion of the large **Louis Dreyfus** grain elevator complex and the **Drax Biomass'** dome storage facilities viewed on the north side of the I-10 Bridge. The Port's **Inland Marine Terminal** has been a particularly prosperous addition, handling 13,685 containers in 2018. The Port will be spending $4.5 million to expand its loading/unloading area (3.5 acres) which will enable it to handle 1,000 containers a week.

Union Pacific will be spending $20 million at the Port on improvements to its railyard which will enable Drax and Dreyfus to ship from 110-car trains instead of 45-car trains. Some 260 cargo ships (up from 217 the year before) were serviced through the Port in 2018.



Tech, Distribution, & Healthcare Will Be Helping

There is good news from the beautiful **IBM** Building in downtown Baton Rouge. After some bumps in the road, the corporation has significantly bumped up its workforce and has now met its 800-person workforce goal under its cooperative endeavor agreement with the state. In LSU's Innovation Park, **Twistlock** has been purchased by Palo Alto Networks and has expansions planned for its 20-person, highly paid ($90,000 per job) workforce.

Wins were secured in the distribution sector this year. **Ferguson Distribution** is constructing a $12.5million, 100,000 square foot distribution center in Ascension Parish that will hire 80 people. On the west side of the river, **Conns** is constructing a 250,000 square foot, $5.7 million warehouse and a $17 million building. Conns will create 70 new jobs at $41,300 annually.

Three large hospital investments---by Our Lady of the Lake, Baton Rouge General and Ochsner---were completed in the region this year. **Lane Memorial** has announced a 4-year, $50 million addition of a 4-story tower and the renovation of other areas at the hospital's site in Zachary. The project is to start in summer 2020. Still under consideration in the healthcare space is an $85 million proton radiation therapy center by **Provident Protoncare**. This project has been downsized (cut in half) since our reference to it last year---using one diagnostic room instead of two. While an FID on this project remains unclear, it is clearly still active.

Baton Rouge grabbed a nice job win when **YoungWilliams** chose the city for a 160-person call center for child support and public assistance programs. Jobs at the center will pay $27,000 a year. A potentially significant capital investment may be made by Robert Day at the old Cotton Holsum Bakery site near downtown Baton Rouge. **Ready Shield Solutions** would make structural panels for low-income homes that would be solidly flood water proof. About 100 people would be employed at the refurbished bakery. Day is presently working on financing for the project.

Gaming: Employment in a Slide

Note in Table 11 that employment in the area's three casinos has been slowly declining since FY14. The decline occurred across all three casinos and totaled **a loss of 606 jobs (-26.9%) over the last four years**. Still there are 1,650 people employed in this sector in the MSA, and that is not a number to sneeze at.

Table 11
Employment in Baton Rouge Area Casinos: 2014-I to 2019-I

	14Q1	19Q1	Change:
L'Auberge	1,170	920	**(250)**
Belle	627	378	**(249)**
Hollywood	459	352	**(107)**
TOTAL	**2,256**	**1,650**	**(606)**

Source: Louisiana Gaming Control Board

While employment has been declining, so have revenues at the casinos (-$37.3 million since FY14) as seen in Table 12. Only the newest of the three---the L'Auberge Casino---enjoyed revenue growth over this period. The Belle expressed an interest in moving its operations onshore under the new regulations passed by the Legislature in 2018. To make the move, the Belle would have to do more than just move landside. The company would also have to commit to more of a resort-style venue with a hotel and meeting rooms. Given recent revenue trends at the Belle it is questionable that the casino would invest in such a move.

Table 12
Revenues at Baton Rouge Area Casinos: FY14 to FY19

	FY14		FY19		Change
L'Auberge	$	140.0	$	148.0	**$**	**8.0**
Belle	$	61.1	$	32.6	**$**	**(-28.5)**
Hollywood	$	71.9	$	55.1	**$**	**(-16.8)**
TOTAL	**$**	**273.0**	**$**	**235.7**	**$**	**(-37.3)**

Source: Louisiana Gaming Control Board. Dollars in millions

A logical question for readers is: "You were describing the MSAs in Louisiana in order of size: New Orleans first, then Baton Rouge second. Why have you now skipped to the state's 5th largest MSA?" The answer is because this MSA's performance in the last five years has been nothing short of spectacular. Not only has it been the fastest growing MSA in Louisiana, but Lake Charles has often been one of the fastest growing in the entire country! In addition, Lake Charles has something in common with its two sister MSAs in the south of Louisiana---it is also participating in Louisiana's huge industrial boom.

Located in the far southwestern corner of Louisiana (see Map 1), the Lake Charles MSA is composed of two parishes---Calcasieu and Cameron. This MSA is dominated by three industries, one of which is what is broadly referred to as the **petrochemical industry**. This phrase handily combines two closely related industries---chemicals (which include LNG export terminals) and refining. The Lake Area Industry Alliance reports that Calcasieu Parish was the home to **16 different chemical plants, two refineries, one LNG export facility (and another under construction), and three industrial gas processing plants**. Total employment in these facilities was in excess of 7,500 direct employees and about 3,800 contractors. Like the Baton Rouge area, this huge capital-intensive petrochemical complex supports a very large **industrial construction** industry.

A second major industry in Lake Charles is **gambling**. Pre-Rita, Lake Charles was home to five riverboat casinos. Now there are three in operation, plus the Delta Downs Racetrack. The two largest operational casinos are **L'Auberge du Lac**, which opened in the summer of 2005, and the **Golden Nugget**, which opened in December 2014. Hurricane Rita badly damaged both of the casinos owned by Harrah's. Harrah's sold its two licenses to Pinnacle Entertainment, owner of L'Auberge du Lac. Pinnacle moved a license to Baton Rouge. **Isle of Capri** closed one of its smaller riverboats and moved that license to Shreveport.

It is interesting to note that while the gaming sector in the Shreveport-Bossier and Baton Rouge MSAs have declined and the New Orleans casinos have remained relatively stable over the past five years, in the Lake Charles MSA it has grown, as seen in Table 13. Total employment at the three casinos and the racetrack was at **5,391** as of 2019-I---a 29% increase over five years ago. Mainly this was due to the opening of the Golden Nugget in December 2014. While this new casino did cannibalize some from the other three gaming venues in the area, on the net the region's gaming market was way up. It is also important to note that total employment at these gaming establishments has been slipping slightly (-388 jobs) since 2017-I.

Table 13
Employment in Lake Charles Area Casinos: 2014-I to 2019-I

	14Q1	18Q1	Change:
L'Auberge	2,389	1,798	**(591)**
Golden Nugget	-	2,224	**2,224**
Isle of Capri	1,050	725	**(325)**
Delta Downs	755	644	**(111)**
TOTAL	**4,194**	**5,391**	**1,197**

Source: Louisiana Gaming Control Board

Gross revenues (as shown in Table 14) behaved similarly, growing some 34% between FY14 and FY19. The Golden Nugget picked up market share (as measured in revenues) from the other three gaming venues, but on the net, revenues grew.

Table 14
Revenues at Lake Charles Gaming Venues: FY14 to FY19

	FY14		FY19		Change	
Golden Nugget	$	-	$	319.6	$	319.60
L'Auberge	$	360.1	$	311.1	$	(49.0)
Isle of Capri	$	135.6	$	99.7	$	(35.9)
Delta Downs	$	188.2	$	184.2	$	(4.00)
TOTAL	**$**	**683.9**	**$**	**914.6**	**$**	**230.7**

Source: Louisiana Gaming Control Board. Dollars in millions.

With the closest gambling establishments to the Houston metroplex, Lake Charles' riverboat casinos were an instant success when they opened in the mid-1990s. When **Delta Downs** added slot machines and became a "racino," it added another 755 workers to the area's gambling industry, a number that has drifted down to 644 in 2019-I.

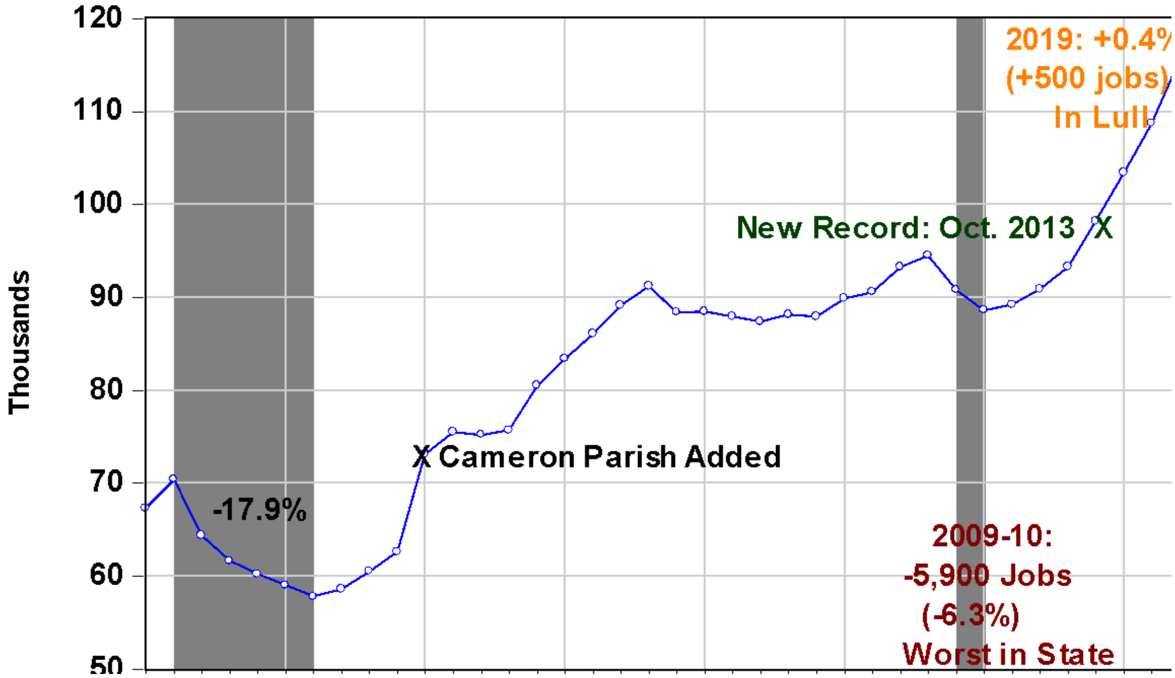
A third key sector is **aircraft repair**. There are now three significant employers located at Chennault Industrial Airpark---**Northrop Grumman, Landlock Aviation** and **Citadel Completions**. Changes in tenants at Chennault have had a major impact on the MSA's employment pattern over time. Closely allied with the aircraft industry, two significant employers at Lake Charles Regional Airport are **Era Helicopters** and **PHI**---another helicopter service firm. **CB&I Modular Solutions** (formerly Shaw) is estimated to employ about 300.

A History of Ups and Downs

A history of the Lake Charles economy is depicted in Figure 18. This MSA suffered mightily between 1981 and 1986 as the **chemical industry** reeled from a huge loss of sales in its foreign markets. The region lost a whopping 17.9 percent of its non-farm jobs. This loss was caused by a large run up in the exchange value of the dollar. Not only did the industry itself reduce employment by one-third, but capital expansion plans were also halted, hammering the industrial construction sector at the same time.

Coincidentally, the Reagan administration fully **deregulated the price of crude oil** in the early 1980s. One side effect of this action was that several marginal refineries found it increasingly difficult to remain competitive and shut down. The loss of jobs in the two highest-wage industries in Louisiana's manufacturing sector, combined with a shuddering halt to industrial construction and other negative multiplier effects, sent the Lake Charles economy into a serious 5-year dive.

Fig. 18: Lake Charles MSA Non-Farm Employment
1980-2019



Lake Charles was actually the first MSA in Louisiana to begin recovering from the terrible statewide recession of 1982-87. The key was the attraction of **Boeing Aircraft** to Chennault Field. Boeing created over 2,000 jobs to refurbish K-135 transport airplanes for the Air Force. That helped set Lake Charles off on a recovery mode. The recovery was further aided by a sudden drop in the exchange value of the dollar, which rejuvenated foreign markets for the chemical firms and set them off on a new round of hiring and capital expansions. (Note the magnitude of this recovery is distorted in Figure 18 by the addition of Cameron Parish employment data to this MSA's job statistics.)

In 1992, Boeing announced the closure of its facility, and the job loss there caused Lake Charles' employment to slide sideways for two years. The next three years were excellent growth years for Lake Charles. Three factors powered this expansion. First, there were some unusually large capital projects under construction in the petrochemical sector. **Citgo** and **Conoco/Pennzoil** combined for $1.6 billion in expansions during this period. (Note that in 1992, $1.6 billion in industrial announcements were considered "unusually large.")

Secondly, it was during this period that the **riverboat casinos** came to Lake Charles. Thirdly, Boeing was replaced at Chennault Airpark by **Northrop Grumman---** a facility that took 707s, stripped them down, and installed the Joint System Target Attack Radar System (JSTARS) in them. This was an addition of 1,900 good-paying jobs for the Lake Charles economy.

It is obvious from Figure 18 that the good times ended for Lake Charles in 1999. The MSA lost 2,800 jobs in that year and was essentially flat for the next six years. There were several contributors to this poor performance. The first involved hits at the aircraft repair facilities at Chennault Airpark. As Northrop Grumman came near the end of its JSTARS contract, the firm began handling fewer aircraft and consequently began terminating workers. NG reverted to doing maintenance, repair and overhaul (MRO) work on the JSTARS aircraft, and its workforce dropped all the way down to 350**.** The attraction of EADS to Chennault helped offset NG layoffs somewhat, but even that firm reduced its workforce from about 350 down to 160 before selling to **Aeroframe Services**.

Secondly, a combination of 9/11 and the national recession reduced trips to the area gambling establishments, prompting layoffs there. Thirdly, **Xspedius** moved its headquarters office in Lake Charles to St. Louis.

But by far the most important contributor to the downturn was the **funk in the chemical industry**. High natural gas prices forced this vitally important industry in Lake Charles to hunker down and look for ways to reduce costs. One way was to reduce the number of employees. Too, the industry placed capital expansion projects on hold and delayed maintenance/repair work as much as was safely feasible. The result was a significant reduction in **industrial construction** employment.

The Surprising "Rita Effect"

What may surprise readers the most about the data in Figure 18 is the growth in 2005 and 2006. Despite being hit by a vicious storm, this MSA's employment actually grew---adding 2,700 jobs over those two years. The larger portion of that growth occurred in 2005, the year of the hurricane.

Rita's impact on housing: There were 47,384 homes damaged by Rita in this MSA---but only 2,284 incurred severe damage and 6,673 major damage. Residents could and did return to the Lake Charles area fairly quickly. Normally one would be aghast at these figures, but against the backdrop of the housing destruction in New Orleans, they pale. It is very important to note that with the exception of lower Cameron Parish (the most sparsely populated parish in the state) **there was virtually no flood water damage** in Lake Charles. That means regular homeowner's insurance was applicable to the damage. As a result, all the impediments to rebuilding that existed in New Orleans due to standing flood waters did not exist in Lake Charles.

Rita's impact on Lake Charles manufacturing: It is the nature of the manufacturing industries in Lake Charles that they would seemingly be very vulnerable to a powerful storm like Rita. Chemical plants and refineries are very capital-intensive, and all their capital is outside and exposed to the elements. In fact, three refineries in the area were damaged and shut down: (1) Citgo (324,000 b/d); (2) ConocoPhillips (239,400 b/d), and (3) Calcasieu (30,000 b/d). All three were back up by December 2005.

Also, the aircraft industry, which operates in large hangers, seemed likely victims of high winds. Despite these vulnerabilities, these industries made it through the storm without losing much downtime. There was $40 million in damage to hangers at Chennault, but the two firms operating there continued to do so despite the inconvenience. Importantly, **staffing** was not as difficult a problem as in New Orleans because most housing remained intact in Lake Charles.

Rita's impact on the Lake Charles gaming sector: As a result of Rita the two Isle of Capri-owned casinos and the L'Auberge du Lac encountered minor damage and were reopened by November 2005. However, the two Harrah's riverboats were badly damaged by the hurricane. Pinnacle Entertainment, which owned L'Auberge du Lac, purchased both of Harrah's licenses in Lake Charles. Pinnacle returned one license to the Gaming Control Commission and moved the other license to Baton Rouge.

Rita's impact on other sectors: A look at other sectors in Lake Charles indicates a solid recovery in the aftermath of the storm. By January 2006, all **hospitals** in the MSA except one in Cameron Parish were fully operational. The **Lake Charles Regional Airport** began operating at an even higher level than pre-Rita. By contrast, it was 2014 before the New Orleans airport was operating pre-Katrina levels.

Within a month of Rita's landfall, all of the **public schools** in the MSA had reopened and virtually all hotel room space was back to normal by the end of 2006. The **Port of Lake Charles** escaped any flooding by Rita. However, it did experience about $40 million in wind damage and initially had no power. Within a few days power was restored and the port was open to receive shallow water vessels.

Careful reviewers may have noticed another important fact back in Figure 18. In 2007 Lake Charles MSA set a **new record in employment**---exceeding the previous peak by 2,100 jobs. Construction associated with the storm recovery was still robust in 2007, about 2,200 jobs higher than just after Rita. However, construction's growth peaked in 2007 and was slightly lower in 2008, constituting something of a temporary drag on the area economy.

The Great Recession Felt Hardest Here

Among Louisiana's eight MSAs, none suffered more than the Lake Charles MSA from the Great Recession. Although this MSA's employment began to slide later than the national economy---in February 2009 as compared to January 2008---2009 was particularly harsh on the region. In that year the MSA shed 3,900 jobs and then it lost another 2,200 in 2010---an employment drop over two years of 6.5%. This is a worse decline than that experienced at the national level (6.1%).

What was behind this poor performance over 2009-10? There were several factors, including:

- In 2008 **Citgo** announced it was closing its 192-person lube plant which added to the drag of reduced construction spending.

- **Aeroframe**, which does maintenance work for FedEx and US Airways aircraft had to reduce its workforce from 475 to 250 as both firms idled many of their jets due to the sagging global economy.

- The weak national economy hurt business at the area's important **casino industry**.

- The region was delivered a blow in the summer of 2010 when Pinnacle announced it was stopping construction on the **Sugarcane Bay Casino** and was turning in that license to the Gaming Control Board. It should be noted that the combination of the Great Recession and the unusually weak recovery negatively impacted the casino market.

- During this period the region's **petrochemical firms** really tightened their belts especially with regard to capital projects. This is illustrated below in Table 15 which contains data supplied by the Lake Area Industry Alliance which shows an almost **3,000-job decline in contractor jobs** at area plants over 2007-10. Fortunately, the data for 2011-15 show this downward trend was reversed, and in the case of contract workers increased over 50% from the 2010 trough.

Table 15
Employment in Lake Charles Area Petrochemical Plants

Year	Full Time Employees	Contract Employees
2005	6,401	3,003
2006	6,158	2,830
2007	6,221	5,412
2008	*6,070*	*3,572*
2009	*6,042*	*3,070*
2010	*5,961*	*2,456*
2011	6,683	3,265
2012	6,754	4,273
2013	6,083	3,611
2014	6,180	3,656
2015	**6,420**	**4,021**

Source: Lake Area Industry Alliance

Finally: A Growth Year in 2012

Referring back to Figure 18, readers will notice the beginnings of a recovery in 2011 (+600 jobs) and very good growth over 2012-13. In 2012 and 2013, the region’s employment rose by 2% and 2.6%, respectively. What is particularly impressive about this performance is it was accomplished despite the fact that a major employer---**Dynamic Industries**---basically shut down its 500-person operation in Lake Charles in 2013. The firm won phase I work on manufacturing components for the Marine Well Container project. However, the company was unsuccessful in landing phase II, so terminated its operations in this region.

On a far more positive note, during this period **Shaw Modular Solutions** opened its new facility and now---under the name **CB&I Industries**---has an estimated 300 employees. **Aeroframe** added employees as one of its key customers---FedEx---began to fly more planes. Importantly, **turnover work** at area petrochemical firms rose from $350 million in 2010 to over $800 million in 2012, and area **chemical firms** in general were enjoying an increase in business due to increased exports. Note in Table 15 that LAIA surveys indicate direct employment in petrochemical firms jumped by 793 employees over 2010-12 and contract employment rose a whopping 1,817 jobs over that same time period.

Ground-breaking took place on the $500 million **Golden Nugget Casino** in July of 2012. Work began on a $176 million expansion at **Sasol** and at the Lake Charles Port, **IFG** started construction on phase I of a new $59.5 million grain elevator. Even more importantly, <u>$5.6 billion</u> worth of work began on the first two "trains" at **Cheniere's** new LNG export terminal. We will have more to say about this project below.

2014-18: The Real Boom Begins

As Lake Charles entered 2014, we began to see the first evidence of a massive boom in this corner of the state unlike any ever seen before. Note how the employment line in Figure 18 moved up markedly over 2014-2018. Specifically:

- In 2014 employment in the Lake Charles MSA set a regional record for the first time since 2008.

- In 2015, employment passed the 100,000 mark for the first time in the MSA's history and it passed Houma to become the fourth largest MSA in the state.

- **Lake Charles was the fastest growing (in percentage terms) MSA in the state for five straight years, adding 26,800 jobs and expanding by a remarkable 5.4% a year.** In 40 years of monitoring the Louisiana economy we have never seen back-to-back job performances like that in any MSA in the state. In fact, few if any other MSA in the country matched this record.

What was the source of this remarkable performance? Consider the data in Table 16. **Lake Charles has garnered an astounding $111.3 billion in industrial announcements since 2012**. Remember our earlier reference to $1.6 billion in announcements in 1992 as "unusually large?" Today's figure is 69 times larger!

Table 16
Lake Charles MSA Industrial Announcements: 2012 – Present
(Billions of Dollars)

Total Announcements:	$111.3
Completed or Underway:	$53.7
Potential:	$57.6

Source: Loren C. Scott & Greater Baton Rouge Industrial Alliance

Of these $111.3 billion in announcements, $53.7 billion (48%) are already constructed or are underway. This massive injection of money into this economy has shot its employment straight up. Among these projects are:

- **Cheniere Energy** is nearing completion of a $20 billion, 6-train LNG export plant called Sabine Pass LNG. This is the largest single capital investment project in Louisiana's history. At this time, five of the trains are operational, and Cheniere made a FID on the sixth train this past May. The company will spend $3.0 billion on that train and a third LNG berth at the site. Once complete, 431 people will be employed at this facility earning an average of $100,000 a year. The company has purchased land next to this site for future expansions.

- Also coming in at a whopping $10 billion capex is **Sempra**'s Cameron LNG project. Construction was started in August 2014 on a 3-train facility. The first train became operational May 2019. Sempra received approval from FERC to add two more trains, which will jack up the company's capital budget even more. Expected employment is 190 jobs at $80,000 a year.

- Ground was broken in March 2015 on **Sasol**'s $12.9 billion ethane cracker and derivatives complex. The project should be basically completed by the end of 2019. Sasol will add 700 Sasol jobs (at $88,000 yearly) and 358 contractor jobs with this new complex. The firm's headquarters and R&D facilities are now in Lake Charles. The firm has a lot of land on which to expand.

- In Mid-2016, a joint venture between **Axiall and Lotte Chemical** began construction of a $3 billion suite of facilities that will be a world-scale ethane cracker and ethylene derivatives plants. Lotte also moved its headquarters from Houston to Lake Charles, a move which created 50 new jobs at $80,000. The project was completed in May, 2019 and added 215 workers at $76,000-$86,000 a year. Presently there are 1,250 people working at Lotte.

- Electric power company **Entergy** has two large projects for this area. One---a $187 million transmission project---was started in 2016 and was completed this year. In June 2017, the company received approval to spend $872 million on a new power plant and transmission interconnections in Westlake. Construction on this facility began January 2018 and it will become operational in 2020 with 30 new employees.

- **Westlake Chemicals** started construction in 2016-II on a $350 million ethylene expansion at its Petro 1 plant that has been completed.

- A state-of-the-art air separation unit to supply gas to Sasol has been completed by **Matheson Tri-Gas**. This $130 million project added 27 jobs to Matheson's 13-job workforce.

- **Indorama Ventures** finished a $175 million renovation of a dormant ethane cracker at the old OxyChem site. This facility created 125 jobs at $50,000 a year.

- **Advanced Refining Technologies**---a joint venture between WR Grace and Chevron---involves a $135 million residue hydro-processing catalyst production plant and additional aluminum capacity at the Grace plant. About 50% complete as of mid-2019, the new facility will add 30 jobs to the present workforce of 295.

- On a smaller scale than the others, **Dongsung Finetee** has spent $5 million at the Port of Lake Charles on a new cryogenic insulation manufacturing plant. The company employs 45 people at $40,000 a year.

Two other projects have been off and on contributors to construction activity during this period.

- **G2X Energy**---now **Proman**---broke ground on its Big Lake Fuels project in January 2016, which was the first phase of a two-phase project. Big Lake is designed to convert natural gas to methanol and from methanol into auto gasoline. Construction of this unit was put on hold as the company moved its focus to a similar plant in Beaumont. The Beaumont project was completed, and Proman re-started construction on Big Lake. Then the company halted construction on this $1.6 billion project. Forecasts are to restart construction in 2020-II or III when financing is in place.

- The **Juniper GTL** project to build a $100 million renovation of a dormant steam methane reformer in Westlake has been an up and down affair. Juniper started construction on the project, and then filed for bankruptcy. York Capital purchased the assets and restarted construction in 2016. Construction has been stopped again at this writing. The facility will make diesels, waxes, and naphtha.

For any economy---but especially for one the size of Lake Charles---this has been a massive injection of construction spending into the economy. That is why the employment line back in Figure 18 has shot straight up over 2013-18. In fact, a recent USA Today piece indicated that over 2013-18 Lake Charles was the fastest growing MSA in the nation![5]

The 2019 Lull

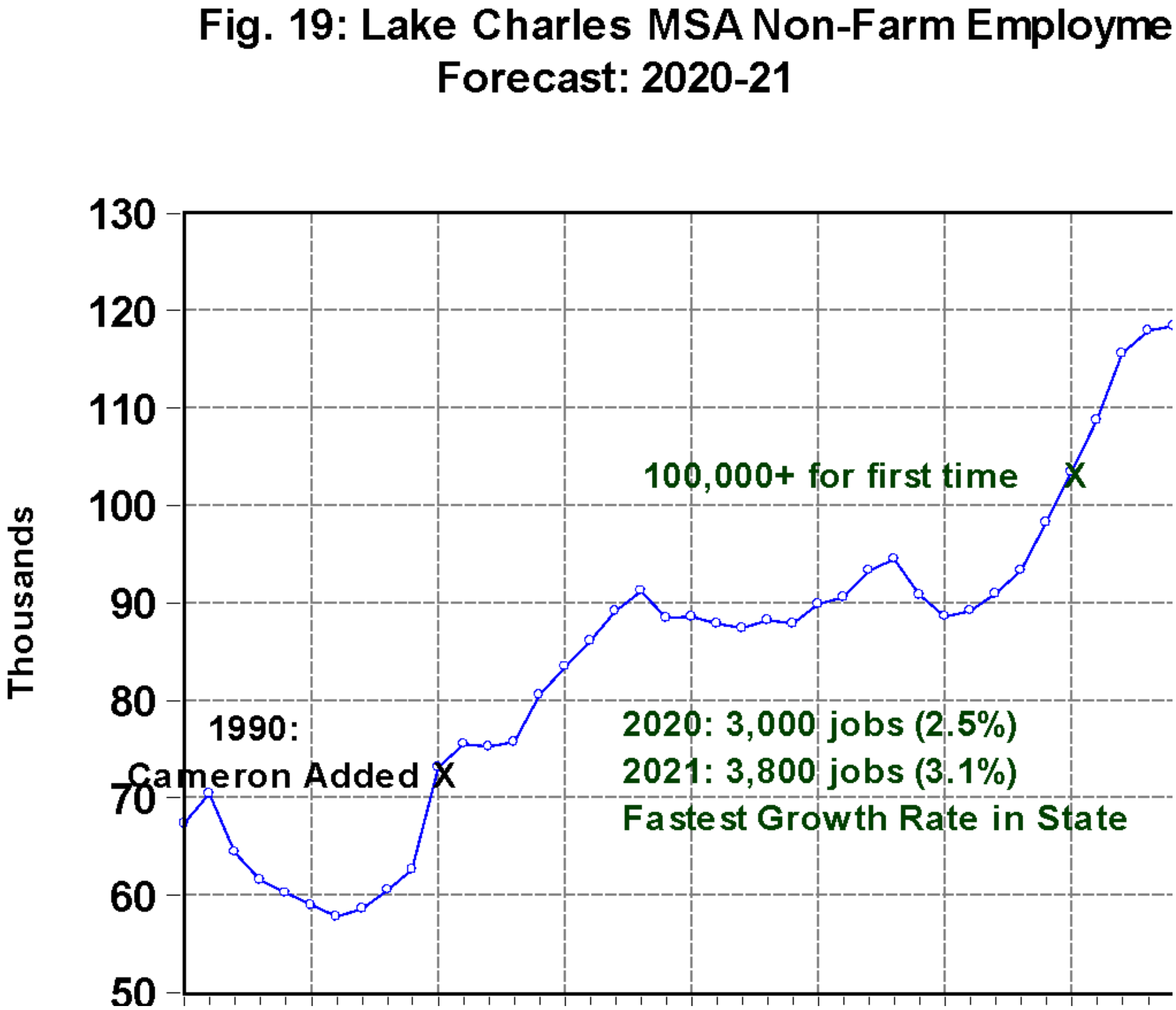
The news has not continued in a real rosy fashion as the MSA entered 2019, as seen back in Figure 18. Data for the first six months of 2019 indicate the MSA's employment has essentially gone flat, projected to increase by only 500 jobs or a mediocre 0.4%. What happened to turn the tide? If the careful reader reviews the bullet point listed on this page and the last, it will be noted that a number of very large projects were completed in 2018 and 2019. That means a large number of construction workers left those sites and did not return.

[5] https://www.usetoday.com/story/money/economy/2018/08/14/who-is-hiring-cities-adding-most-jobs-in-every-state/37367147/

Lake Charles is now in a lull between projects. For a shot of needed optimism, readers are directed back to Table 16. First, this MSA has a whopping **$57.6 billion in projects that have been announced for which a final investment decision (FID) has not been made**. Will there be enough FIDs to get the MSA back on a robust growth track over 2020-21? That question is almost moot now, because just before the LEO went to print, **Venture Global issued an FID on its $5.8 billion LNG export terminal**. Located on 203 acres at the mouth of the Calcasieu Ship Channel, this project may be expanded to at least a $9 billion effort. The firm would employ 100 employees at $75,000 a year once built. Issuance of this FID was a terrific win for this MSA.

Forecast for 2020-21: A Return to Robust Growth

Our forecast for the Lake Charles MSA is shown in Figure 19**. We are projecting 3,000 new jobs (+2.5%) in 2020, followed by 3,800 new jobs (+3.1%) in 2021**. This will make this the fastest growing MSA in the state over these two years. As a further reference point, U.S employment generally rises at about a 1.3% rate, so if we are near the mark on our forecasts, Lake Charles will grow 2 to 2 1/2 times faster than the national economy.



What else will drive this robust expansion? One factor will be the continuing work on existing projects. **Cheniere** will be working on construction of its 6th train and a new LNG berth---a $3 billion project---and **Cameron LNG** still has 4 trains to complete at its location, another multi-billion dollar effort. **Lake Charles Refining** has a $200 million expansion underway that will not be completed until mid-2020, and the $135 million hydro-processing catalyst plant being built by **Advanced Refining Technologies** is only about 50% done. Finally, **Entergy**'s $872 million power plant is not scheduled for completion until late in 2020.

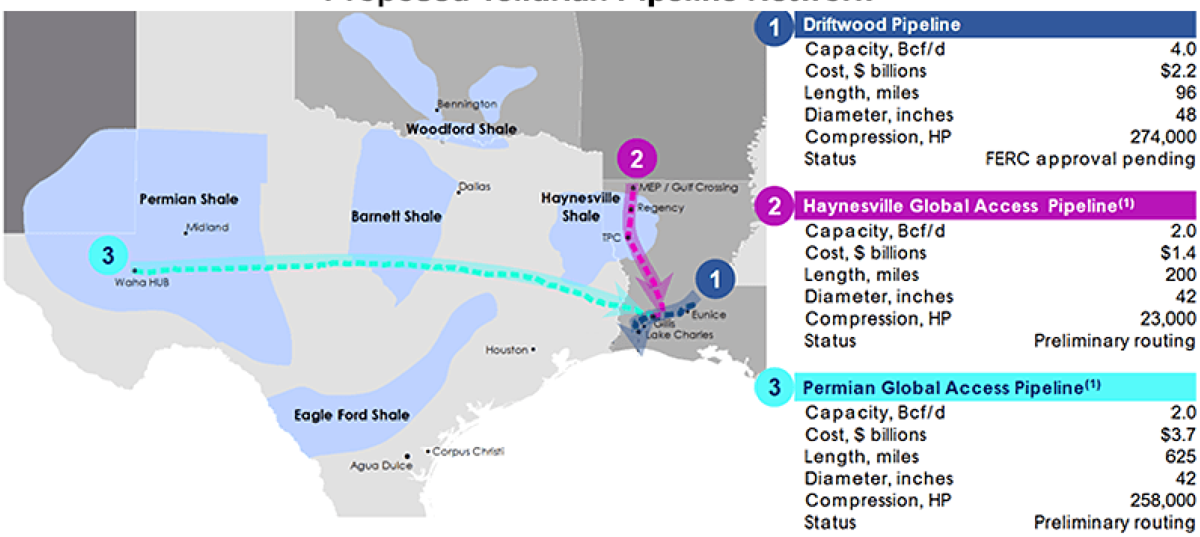
FIDs on LNG Projects Crucial

While these projects will provide an underlying foundation for Lake Charles' growth, essential to its expected ultra-boom will be FIDs being announced on two more huge LNG export projects. There are six of these projects that have been announced but not started. We expect two more to pull the trigger over the next two years. They are:

- **Driftwood LNG**, under the direction of the former CEO of Cheniere (Charif Sould), is planning a 20-train LNG export facility on 800 acres on the west side of the Calcasieu River. The first phase will be an 8-train unit costing $15.2 billion. There are 498 permanent jobs associated with this venture. Final approval from FERC was received early in 2019. Driftwood has used a unique way of financing its project---it is selling equity interest in the facility. Buyers of LNG invest in the project and only pay for gas throughput and the liquefaction cost of their LNG. This means Driftwood does not have to look for financing; the buyers have to come up with their own financing. Current partners include Total SA, General Electric and Bechtel, which has the contract to build the facility. Driftwood is also planning a $7 billion pipeline complex to bring natural gas from West Texas, East Texas and the Haynesville Play to its LNG facility. Routes of the proposed Permian Global Access Pipeline and the Haynesville Global Access Pipeline are shown in Figure 20. Given the quality and experience of this team, we assign a high probability to Driftwood making an FID in late 2019.

Figure 20

Proposed Tellurian Pipeline Network



Source: Tellurian Inc.

- The second project on which we expect an FID soon is the venture by **Lake Charles LNG** (formerly Trunkline). This will be a $10.96 billion, 5-train project at a site that was originally an LNG import terminal and will eventually employ 250 people. A joint venture between Shell and Energy Transfer Partners, The group has its FERC approval in hand, and we expect an FID to be issued in 2020-IV.

A "go" light on these two projects---plus VG's definite FID---would provide a major upward thrust to employment in the MSA. We are reasonably confident that these two additional FIDs will be issued. When it comes to the other LNG projects we are less optimistic.

- **Magnolia LNG** has planned a $4.35 billion export facility at the Port of Lake Charles. Seventy jobs at an annual salary of $75,000 are associated with this product. Initially, we were very high on this Australian company issuing an FID soon. There have been issues with securing sufficient commercial contracts with end users. Development efforts focused on China have been muddied by Trump's trade war with that country. The company also announced recently it wanted to increase the size of its facility by 10%. This requires a supplemental environmental impact statement to be filed with FERC (done last November) and approval of that submission is also delaying this project.

- **Commonwealth LNG** (formerly Waller LNG) is still working on approval from FERC for its $4 billion, 6-train facility in Cameron Parish. It is just filed its application with FERC in mid-August. The company has submitted all resource reports and answered FERC questions. It will take about 18 months to get FERC approvals and another six months to get through a typical re-hearing process. The company estimates an FID will occur in 2020-IV.

- **Monkey Island LNG** (formerly Southern California Telephone and Energy) has signed 99-year lease on 232 acres on Monkey Island to build a $6.5 billion, 6-train LNG export terminal. The firm has MOUs in place for both a supply of gas and a user (the JOVO Group from China). The firm is currently not in the FERC review process, so a construction start is 3-4 years out

- Not much movement has been apparent lately on the proposed **G2 LNG** facility on the Calcasieu Ship Channel. This $11 billion project would have 250 permanent jobs at $85,000 a year when operational. The firm is currently not even in the FERC approval process, so potential construction is several years out.

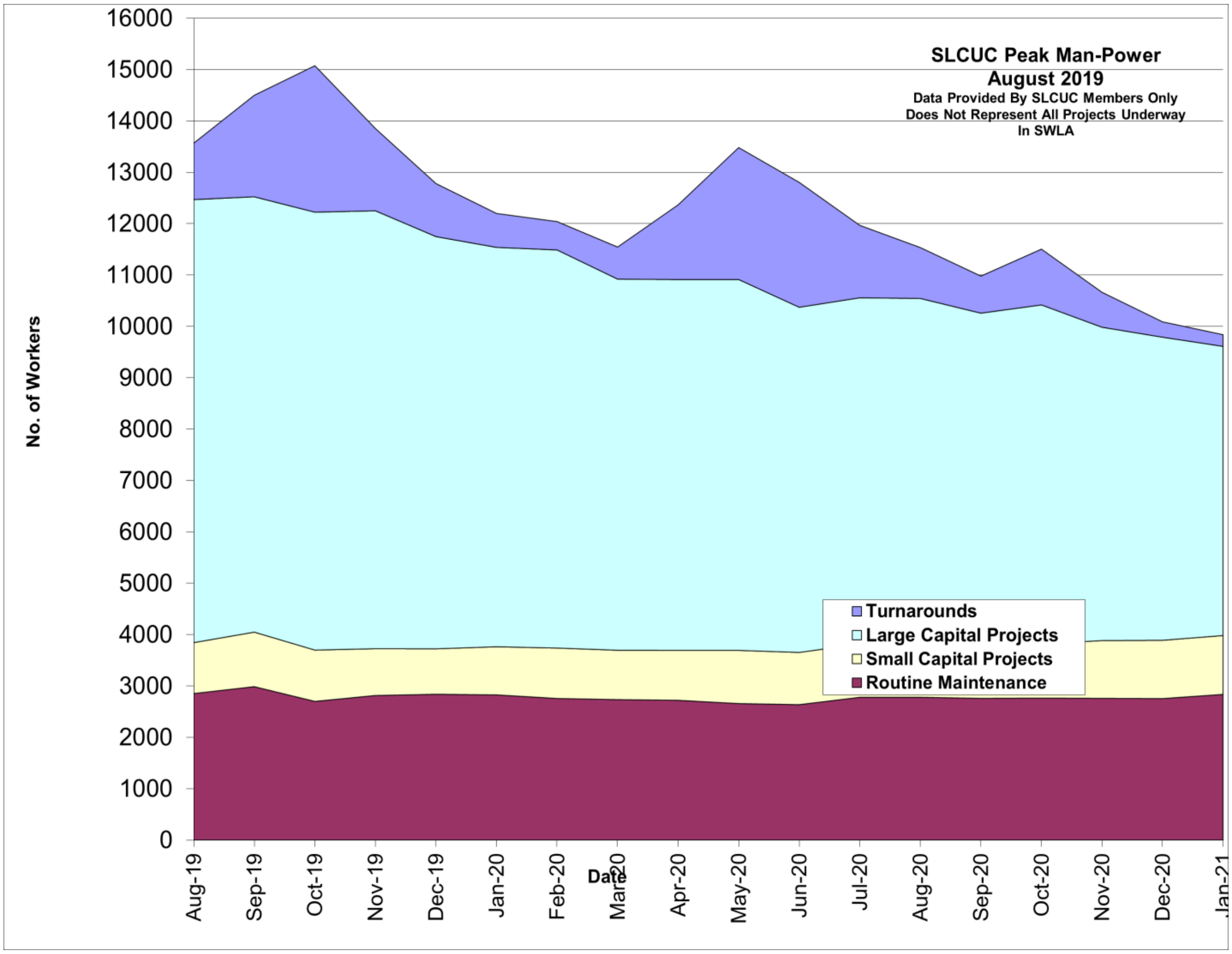
- **Delfin LNG** is an oddity among the proposed LNG export terminals. Delfin would have all operations on an FLNG---floating LNG facility---located 45 miles off the coastline of Cameron Parish. This $7 billion project would be built outside of Louisiana, but the state economy would gain from the operation of the plant. Delfin has purchased UTOS pipeline, the largest natural gas pipeline in the Gulf, and has received a positive record of decision from the Maritime Administration. Participants now report this project has been delayed for several years.

There is one other large project that has been proposed at the Port of Lake Charles on which we await an FID---**Lake Charles Methanol**. This proposed $4.6 billion facility would use carbon capture technology and would be the first plant in the U.S. to convert petcoke to methanol. In December 2016 the company received a $2 billion loan guarantee from the Department of Energy, and in early 2017 the company signed a 25-year service agreement with the Port of Lake Charles. The Port would spend $80 million to expand Bulk Terminal 1 at the site. An anticipated 200 jobs would be created at the plant. This project has been in the pipeline over 10 years. The company recently was awarded an extension on its lease at the Port and is expected to make a go-no go decision about the time this publication goes to press. We are not very optimistic about a positive decision.

What does all this mean for construction employment in the area? The Southwest Louisiana Construction Users Council (SLCUC) recently conducted a survey of its members, and Figure 21 shows the results. On the surface the outlook is disturbing to say the least. This survey of SLCUC members suggests a dramatic decline of about 5,000 construction jobs in the MSA over the next year! That would certainly be seriously at odds with our very optimistic forecast for the region.

It is important to note that Figure 21 is based on a survey of SLCUC members. Key companies the survey does not cover are Cheniere LNG, Advanced Refining and many of the proposed projects which we think will begin construction in 2020 and 2021. The latter include Driftwood LNG, Venture Global LNG and Lake Charles Methanol. The big downturn shown in the latter part of Figure 21 is exactly when at least some of these un-polled non-members will start hiring big time. A second caveat is that Figure 21 covers only contract workers. Surveys of SLCUC companies indicate the following expected new permanent hires: 2019 – 383; 2020 – 300; 2021 – 263.

Figure 21



There are two pipeline projects involving significant expenditures of capital money that are closely related to the projects mentioned above. **Kinder Morgan** will be constructing a $151 million Sabine Pass Expansion Pipeline to deliver feed gas to Cheniere LNG's 5th train. **Gulf South Pipeline** will spend $56.2 million to build and operate a pipeline, compressor station, and delivery/receipt stations for natural gas delivered to the new Lake Charles Power Plant.

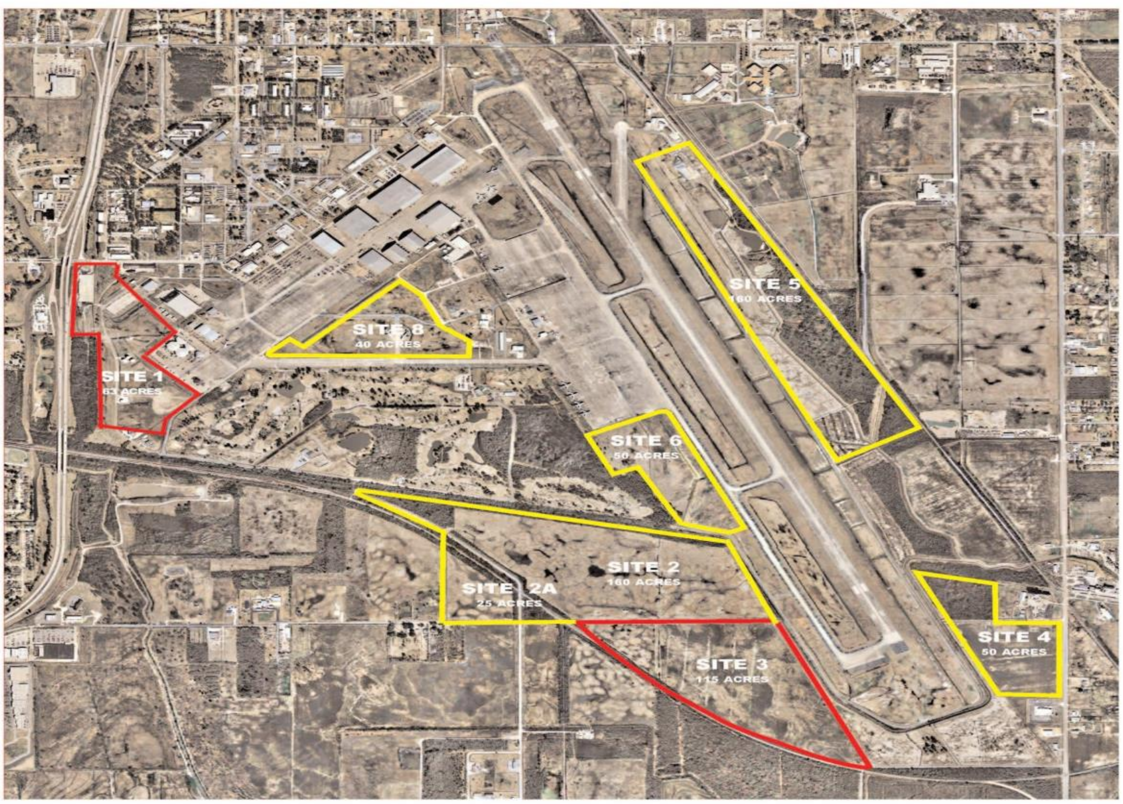
The Non-Petrochem Gem: Chennault

Not everything in this MSA is petro-chemical related. **Chennault International Airpark** is a real economic gem to this region, a source of many high-wage jobs. The largest tenant at the Airpark is **Northrop Grumman** (NG). This is the location of NG's Maintenance and Modification Center. Now at 700 employees, NG does MRO (maintenance, repair, and overhaul) work on Joint JSTARS, UK AWACS and other international 707 platform operators. NG enjoyed two significant wins recently. It won a position on the US Navy Contracted Maintenance, Modification, Aircrew and Related Services which gives the company a contract on all future USN aircraft maintenance. Secondly, NG won a contract to provide structural assembly in support of the Wedgetail program. Employment at NG should remain about the same over the next two years.

Citadel Completions moved into the Airpark in March 2018. Citadel is a private company that does MRO work on its own planes and luxury interiors for high-end customers and commercial aircraft. It has earned FAA, European, UAE, and Bermuda repair station certifications, and has already re-delivered four aircraft back to customers. Presently at 118 employees earning an average of $80,000 annually, Citadel plans to grow to 256 by 2020.

A third tenant at the Airpark is an aircraft painting company---**Landlock Aviation**---that can also do small-scale aircraft modifications. Presently at 120 employees, expectations are to grow this number to 150 by next year.

Figure 22
New Property to Develop at Chennault Airpark



An optimistic future at the Airpark is founded not only one these three tenants but also on the development of the **Mallard Grove Golf Course** area (see Figure 22 on previous page). This area has been purchased by the Airpark and will be available for development when the new golf course opens in June 2020. This is a large, 700 acre tract of land that will be ideal for development. Cushman/Wakefield and Latter & Blum have been hired to market the property and already have five interested tenants.

Pubic Construction Projects

Both the State and the Corps will have non-trivial construction jobs underway over 2020-21. There are $191.3 million (down slightly from $201.3 million last year) in **new state road lettings** scheduled for the Lake Charles MSA over 2020-21. The two largest projects in this budget are: (1) $30 million on a new Nelson Road extension and bridge, and (2) $12.3 million to widen I-10 to 6 lanes from the Texas state line to East Coone Gulley

The **Army Corps** will be spending significant sums on the Calcasieu Ship Channel over the next two years. In FY2020, $46.9 million will be spent on dredging and associated cost and another $9 million will be used to tear down disposal sites and get them ready to hold more. The same tasks will be funded in FY2021 with $43.6 million more.

Shreveport- Bossier: Will the Port & General Dynamics Turn the Tide?

This MSA is now the fourth largest MSA in Louisiana with an estimated 172,200 non-farm jobs in 2019. Located in the northwestern corner of the state, this MSA is now comprised of four parishes---Caddo, Bossier, Webster, and DeSoto. Webster Parish is a recent addition to this MSA. All our employment numbers reflect the addition of this parish.

Shreveport-Bossier has the highest concentration of durable goods manufacturing employment in the state, and that tends to make the area <u>much more susceptible to national recessions</u> than Louisiana's other eight MSAs. Among the large durable goods manufacturers in the area are **Sabre Industries** (formerly, CellXion and a manufacturer of cellular towers), **Frymaster** (manufacturer of deep fryers and similar products for McDonalds and KFC), **Ternium**---a steel components manufacturer, and **Benteler Steel**, the latter two housed at the Port of Caddo Bossier. **Fibrebond**, in Minden, manufactures modular electric buildings for data.

Shreveport-Bossier is also home of the state's largest and most successful casino market. This MSA now has **six large river boat casinos** plus the **Harrah's Racetrack**, which together employed 4,820 people in 2019-I. Bossier City is home for **Barksdale Air Force Base**, an employer of 8,930 military/civilian workers and an important economic driver for the area. Another big employer in the MSA is the **LSU Health Sciences Center** with 5,260 employees.

The **Caddo-Bossier Port** is home to several firms including the Ternium steel firm, the Pratt recycling company, Ronpak, Sports South, and Benteler Steel. Altogether, tenants at the Port employ about 1,700 people. **General Dynamics IT** (formerly, CSRA) is a major new, and growing player in the region with 1,100 employees at its three centers.

This region was a huge beneficiary of an economic jolt from 2007 to about 2009 in the form of the **Haynesville Shale**---a very large deposit of natural gas. New fracking technology made possible the harvesting of this field. In 2008, exploration companies pumped $4.5 billion in new dollars, about $3.2 billion of that in the form of mineral lease payments, into the northwest section of the state. In 2009, that figure rose to $7 billion, of which about $1 billion was in the form of mineral lease payments. This largess radically reduced the influence of the Great Recession on this MSA's economy, as we will show below. We will also note a considerable tailing off of activity in the shale since 2010.

Shreveport/Bossier Recent Employment History

Figure 23 tracks the employment history of this MSA over 1980-2019. The Shreveport/Bossier area suffered through a prolonged, and deep, recessionary period from 1985-89. While this decline was partially a result of a badly declining exploration industry, that was not the main culprit.

1985-89: The AT&T effect. Both the depth and length (this MSA was the last in the state to begin the recovery process) of the recession was due to one firm. **AT&T** had a large phone equipment manufacturing facility in Shreveport that employed 7,450 people at its peak in 1984. The firm then began a major downsizing effort that ultimately dropped its employment to near 1,100. Those layoffs, combined with their negative multiplier effects, caused the MSA's employment to decline by 8.2 percent.

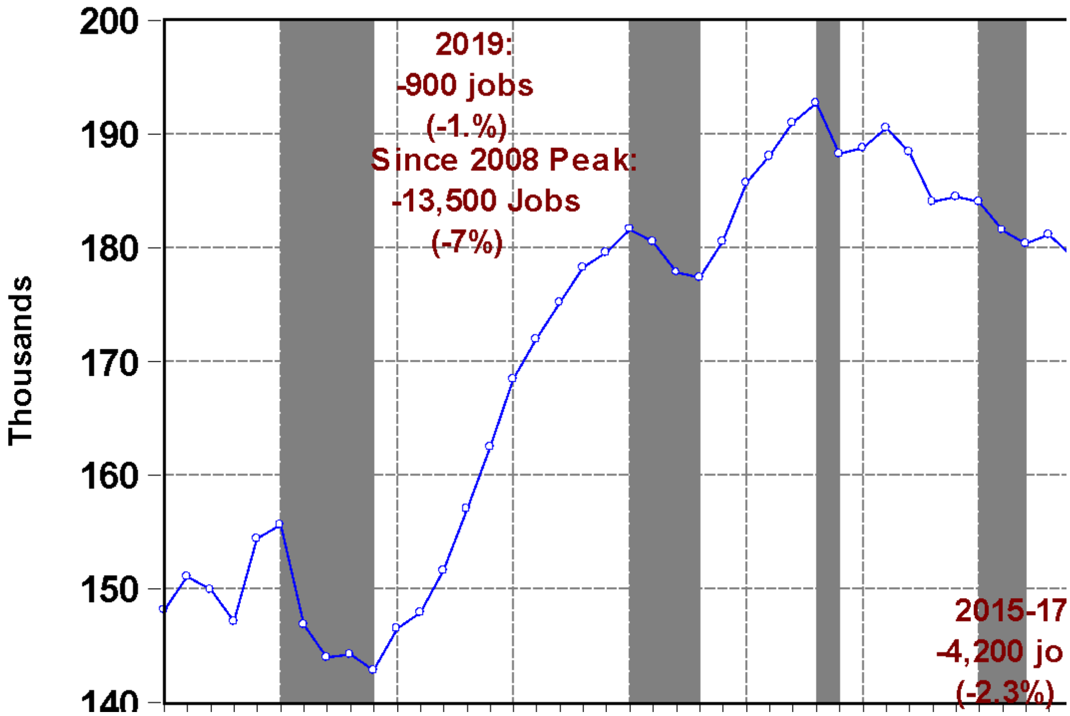
Casinos to the rescue: In 1990, the Shreveport/Bossier area began a slow assent from the depths of its recession. Initially, job growth was positive, but anemic. Then in 1994, its employment began to rise rapidly---by an average of 4,600 jobs a year. The source was **riverboat casinos**. These casinos have been among the most successful in the state, because they have drawn heavily from the huge Dallas-Ft. Worth metroplex for their customers.

Casinos added jobs to the region in another important way as well---the construction of large **hotels**. Horseshoe Casino had a 25-story, 606-suite hotel; Casino Magic operated a 94-room, 94-suite hotel; and Isle of Capri operated a 300-suite hotel. These, of course, are pretty labor-intensive operations, so the MSA picked up a significant employment boost here as well.

Durable goods dependence & national recessions: The years 2001-03 were particularly difficult ones for this MSA. The MSA lost 3,900 jobs over this three-year period or 2.3% of its workforce. In both percentage terms and in length, it was the worst decline in the state, not unexpected in a very durable goods-dependent region.

Several factors played a role in this rather poor record. First, there was the closure of some large manufacturing facilities in the area. In mid-2001, the **Avaya Communications** (formerly, Lucent Technologies) closed its Shreveport plant, costing the area 900 jobs. The **Pennzoil Refinery** was sold and dramatically cut back from 230 workers to only 85. **Boeing** closed its facility at the airport, terminating 162. **Precision Response** closed its 250-person call center in early 2001. **General Electric** began the process of transferring 400 positions at its industrial systems plant to another site in Monterrey, Mexico. These were all permanent layoffs.

Fig. 23: Shreveport-Bossier MSA Non-Farm Employm
1980-2019



Too, the state's most successful **casino** market took a hit as business declined with the recession. The area's newest casino at the time, **Hollywood**, reduced its workforce from 2,200 to 1,800. Three of the area's five casinos reduced employment due to the recession. Finally, a mixture of other firms, including **Frymasters**, **Beaird**, and **Exide Technologies** imposed significant layoffs in 2002. Beaird, in particular, went from a 700- to a 30-person workforce.

GM, Beaird, and Frymaster stop the fall: The Shreveport/Bossier MSA turned the corner in 2004 and grew for five years in a row, expanding at a very healthy rate of almost 2% a year over 2004-08. Initially, **General Motors** was a key player in this recovery. GM opened its new facility and hired 600 additional workers to begin test-building of the Hummer 3 at its old site. Its employment in the region jumped from about 2,400 to 3,600. However, a round of employee buyouts in 2007 dropped employment at this plant back down to 2,153.

After taking over Beaird Manufacturing, the **Eakin Company** initially put that firm back on an expansion path. Employment at the location jumped from 30 to about 570. **Frymaster** came back at an all-time high employment level of over 600 employees. The new firm **Steelscape** (now **Ternium**)---a steel components manufacturer---opened at the Port of Caddo-Bossier, creating 240 new jobs in 2007.

Haynesville & Barksdale Mitigate the Great Recession

As mentioned earlier, normally this MSA is the hardest hit when a national recession hits because of its high dependency on durable goods employment. When the Great Recession hit, the result was Shreveport was almost turned on its head compared to past history. The U.S. economy began losing jobs in January 2008. Shreveport-Bossier did not lose its first job until 10 months later. **The U.S. economy lost 6.1 % of its jobs; this MSA lost only 2.3 % and it only lost jobs in one year---the only MSA in Louisiana to pull that off.** Instead of ranking dead last in the state, Shreveport-Bossier ranked 2nd in least jobs lost during the Great Recession.

There were two key factors behind this unusual performance. First and foremost was the tremendous amount of money pumped into the economy by **Haynesville Shale** exploration over 2008-09. As we indicated earlier, these funds amounted to $3.5 billion in 2008 and $7 billion in 2009, an immense injection of economic activity into the region's economy.

One indicator of how important the Haynesville Shale activity was during the Great Recession is shown in **local government sales tax collections**, which are illustrated for four northwest Haynesville parishes in Table 17. First note that during the last post 9-11 recession three of the parishes experienced declines in collections (we were unable to get the earlier data for Bossier Parish), just as normally happens in the face of a national downturn. However, despite the length and depth of the Great Recession, **local sales tax collections rose in all four parishes over 2008-09**, with unusually large increases in 2009 in Red River Parish (+205.1%) and DeSoto Parish (+82.2%).

Table 17
Sales Tax Collections in Selected North Louisiana Parishes

Parish	Percent Change In Sales Taxes
Red River	
2001	**-3.1%**
2008	**71.1%**
2009	**205.1%**
DeSoto	
2001	**-0.8%**
2008	**3.6%**
2009	**82.2%**
Caddo	
2001	**-0.8%**
2008	**7.0%**
2009	**1.4%**
Bossier	
2002	**NA**
2008	**4.1%**
2009	**5.5%**

Source: Author survey of parish finance offices

Similar findings occurred in **property taxes** collected in five Haynesville-impacted parishes as seen in Table 18. Not only did property taxes increase dramatically in all five parishes during the country's worst recession since the Great Depression, but also it is clear from the last two columns that almost all of that growth was energy-related. In Desoto Parish, property taxes increased by 3 ½ times. In Red River Parish the increase was almost by a factor of seven. The Haynesville Shale was a huge factor in the treasuries of these local governments.

Table 18
Property Tax Collections in 5 Haynesville Shale-Impacted Parishes:
2005 Versus 2013

Parish	Property Taxes 2005	Property Taxes 2013	% Energy-Related 2005	% Energy-Related 2013
Desoto	$22,395,351	$78,432,531	**18.9%**	**62.4%**
Red River	$3,549,617	$21,927,425	**3.6%**	**47.8%**
Webster	$15,728,690	$25,342,948	**17.1%**	**26.0%**
Bossier	$52,449,881	$97,054,727	**8.5%**	**16.1%**
Caddo	$158,347,601	$230,350,740	**2.8%**	**10.5%**

Source: Louisiana Tax Commission

Of course, the awarding of the **Global Strike Command** to Barksdale Air Force Base also helped mitigate the impact of the Great Recession. By September 2009, 275 of the 900 jobs attached to the GSF had relocated to Barksdale. In addition to the Global Strike Force, Barksdale gained part of 700 positions it would ultimately secure via flight training jobs and the reopening of a weapons storage area that came to the MSA.

The gains from the Haynesville Shale activity and the additions at Barksdale did not mean the region escaped the recession unscathed. Consider the following:

- Problems at **General Motors** dropped its workforce from over 2,000 to about 800.
- **Capital One Bank** closed a 150-person call center.
- **Verizon** closed a 300-person call center.
- Market conditions turned against **Beaird Industries** in 2008, and it was closed at a cost of about 400 jobs.

- A weak U.S. housing market led to the closure of the **Georgia Pacific** plywood plant in DeSoto Parish (-280 jobs), and the firm laid off 400 at its plant in Springhill.

Recovering From the Great Recession: Not the Normal Pattern

Note back in Figure 23 that the Shreveport-Bossier MSA actually started enjoying job gains in 2010. The increase was only 400 jobs or about 0.2%, but this was the only MSA in the state to grow that year. The region also had a good year in 2011, adding 2,100 jobs, a very respectable growth rate of 1.2%.

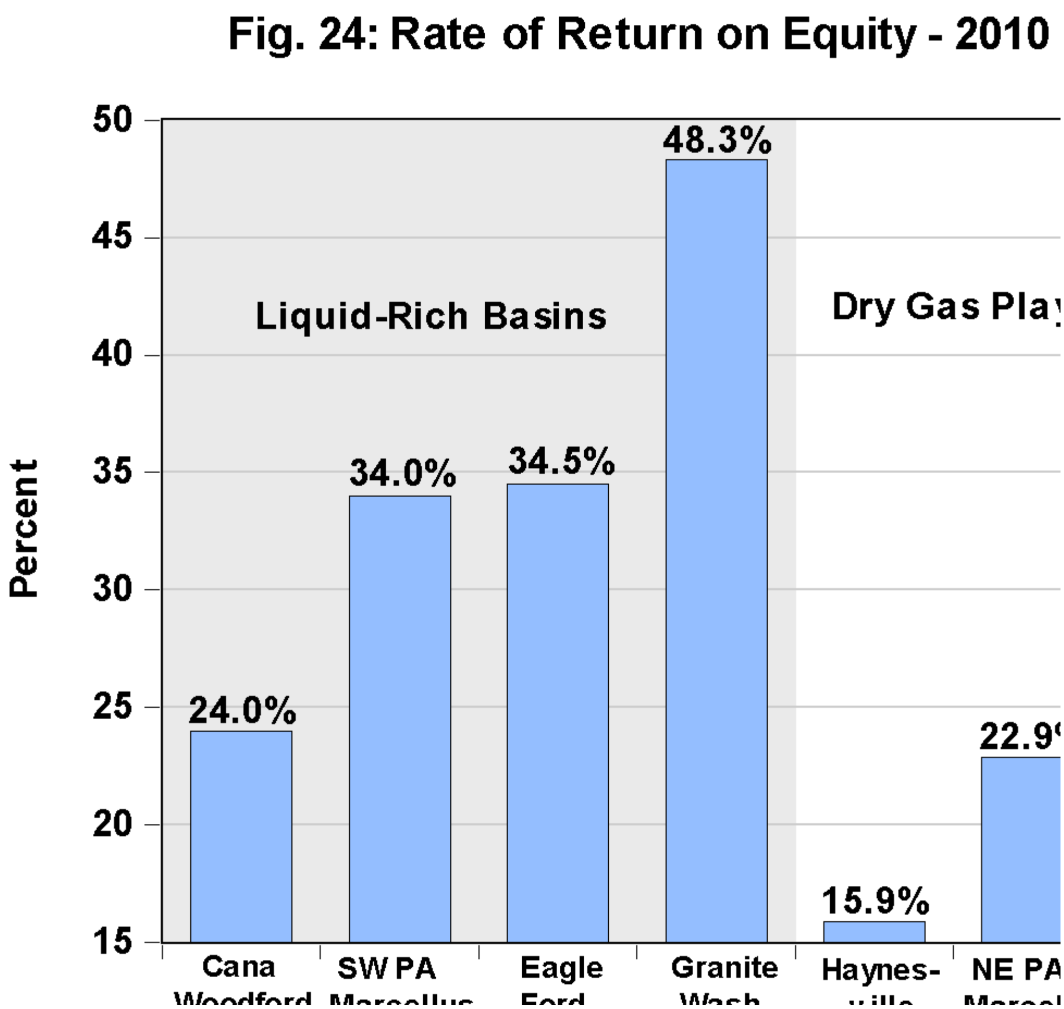
This is the pattern one would normally expect to continue in a durable-goods-dependent economy---good solid growth on the recovery side of a recession. That, however, was not the pattern that has continued. Except for slight growth in 2010-11, t**he Shreveport-Bossier MSA was in a decline from 2008 to 2017, losing 12,700 jobs (-6.6%)**.

Several factors contributed to this poor performance. First, the **GM plant** closed in August 2012, costing the region 800 high-paying jobs. Area and state economic developers have been hustling to find a replacement at the GM site, something we will discuss in the forecasting section.

The **Haynesville Shale** has played a significant role in the first two years of this employment decline. After being responsible for shielding the MSA from much of the effects of the Great Recession, activity in this shale dropped precipitously. After reaching a peak of 142 rigs in April 2010, the rig count in North Louisiana plummeted to only 23 in July 2013---an 84% decline. Rig activity fell as low as 16, but has shown signs of a modest recovery as will be discussed later.

What caused this rig movement out of the Haynesville play? The answer lies in the rate of return on equity (ROE) data in Figure 24. Note that the ROE in the Haynesville Shale in 2010 was far lower than in the other plays shown.[6] There are two reasons for this differential. First, the wells in the Haynesville Play are deeper than in these other plays, so it was costing more to drill a typical well---about $9.5 million per well in the Haynesville versus $6 million in the Eagle Ford or Marcellus Plays. Secondly, the Haynesville Shale is a "dry" play, i.e., when you drill you get only natural gas. In parts of the Eagle Ford, Marcellus, Woodford, Permian, and Granite Wash, exploration companies hit both natural gas and the more highly priced oil. The latter are "wet" plays. The Haynesville was simply at a serious disadvantage vis-à-vis other natural gas plays in the U.S.

[6] It is important to note that the ROI figures in Figure 22 are for 2010. Dramatic improvements in drilling efficiencies since 2010 have significantly changed these numbers, but the Haynesville Play is still at a disadvantage compared to wet plays.



A third factor holding back this region's economy has been a reduction in forces at **Barksdale AFB**. The troop count which was 8,655 in 2012 dropped to 6,609. A 24-plane A-10C Wing was removed from the base in 2013. There were 500 jobs directly tied to that wing, but luckily about 400 of those were absorbed into the 307th Bomber Wing. Associated with all these reductions is obviously a reduction in spending in the MSA that contributed to the region's poor job performance over 2012-17.

Another contributor to the recent decline was **Libbey Glass**. This firm reduced its workforce by 200 in early 2013, moving these jobs to Toledo and Monterrey, Mexico. Adding to the decline was the closure of the 250-person **Express Jet** maintenance facility at the Shreveport Airport in 2016.

Finally, competition with Indian casinos in Oklahoma has significantly eaten into Shreveport-Bossier's **gaming sector** over the past few years. Note in Table 19 that this sector has shed **1,378 jobs** between 2014-I and 2019-I according to data from the Louisiana Gaming Control

Board. There appears from the data in Table 19 to be no reason for hope that there will be an arresting of the downward employment trend in this industry.

Table 19
Shreveport-Bossier Gaming Employment: 2014-I to 2018-I

	14QI	19Q1	Change: 14Q1 to 19Q1
DiamondJack	653	393	(260)
Sam's	1,086	716	(370)
Horseshoe	1,212	1,089	(123)
Margaritaville	1,070	989	(81)
Boomtown	626	431	(195)
El Dorado	1,187	1,005	(182)
TOTAL CASINO	**5,834**	**4,623**	**(1,211)**
Harrah's	**364**	**197**	**(167)**

Source: Louisiana Gaming Control Board

Lest one think the casinos are just getting more efficient in handling a bigger revenue pot, the data in Table 20 will dispel that notion. Gross revenues at the six Shreveport-Bossier casinos and its racetrack have fallen by $67.2 million between FY14 and FY19, a decline of 9.1%. Indeed, the DiamondJack Casino made overtures to move its license to Tangipahoa Parish, but legislative authorization died in the senate.

Table 20
Shreveport-Bossier Casino Revenues: FY14 v FY19

	FY14	FY19	Change
Diamondback	$ 60.1	$ 35.2	$ (24.9)
Sam's	$ 92.5	$ 74.0	$ (18.5)
Horseshoe	$ 198.3	$ 185.2	$ (13.1)
Margaritaville	$ 123.4	$ 162.5	$ 39.1
Boomtown	$ 65.0	$ 54.2	$ (10.8)
El Dorado	$ 136.9	$ 115.3	$ (21.6)
Harrah's	$ 61.5	$ 44.1	$ (17.4)
TOTAL	**$ 737.7**	**$ 670.5**	**$ (67.2)**

Source: Louisiana Gaming Control Board

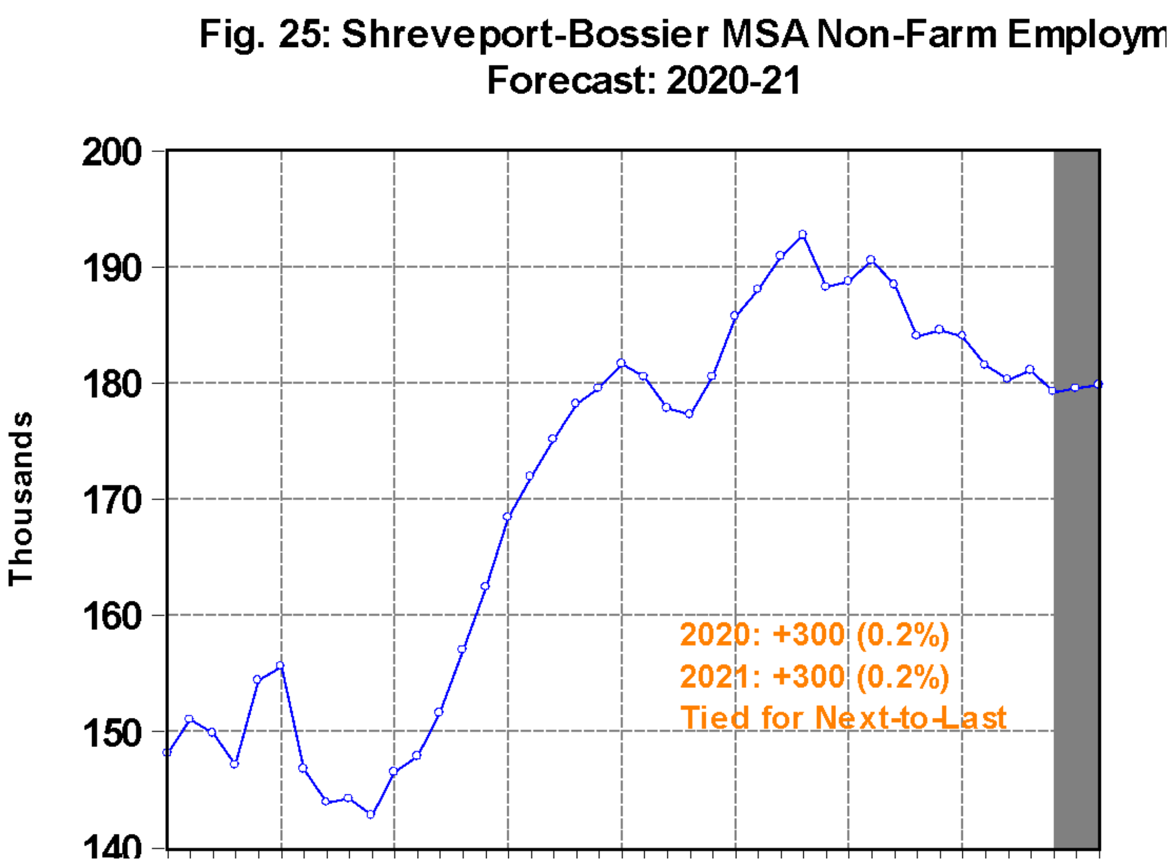
2019: The Slide Continues

Unfortunately, this MSA's employment slide has continued into 2019, as seen back in Figure 22. Shreveport-Bossier is on track to drop another 900 jobs this year (-1%) and will end up some 13,500 jobs below its previous peak back in 2008. A loss of 245 jobs in the MSA's gaming sector and a drop of 263 military/civilian slots at Barksdale did not help the situation.

Two key factors helped mitigate the decline. **General Dynamics IT** (formerly CSRA) has enjoyed a growth spurt. There are now 1,100 people employed at its three centers: (1) the customer engagement center, (2) the cyber innovation center, and (3) the integrated technology center. An additional bump was provided by the arrival of **Glovis America** (GA), a subsidiary of Hyundai, at the old GM plant. The company now has 156 employees earning $31,750 a year on average. GA does logistic staging, quality inspections, and accessorizing for some 75,000 Kia vehicles annually.

Forecast for 2020-21: The Port & General Dynamics Lead Modest Recovery

The good news is we see Shreveport-Bossier remaining on an expansion path over the next two years. The not so great news is we see this trend being modest at best. **We are projecting the Shreveport-Bossier MSA will add about 300 jobs a year over 2020-21, a growth rate of about 0.2%---tied with the Hammond and Monroe MSAs for next to last growth rate in the state**. Hence, the caution color around our forecasts in the insert in Figure 25.



On the negative side, given recent trends we expect to see further job leakages from the area originating in the gaming industry and at **Barksdale**. While some diminishment in troop/civilian strength at the airbase will be an issue, there are some sizeable capital projects at Barksdale that will give the area a boost. For example, work has begun on a $100+ million I-220 interchange into the base and a new gate at that spot. A $20 million 2nd Communications Squadron complex will be started later this year, and a long-planned $170-$225 million weapons storage facility will probably see a construction start in 2021.

No Huge Projects on Horizon

An examination of the capital investments announced in the state since 2012---which we documented back in Table 3---will reveal that virtually none are planned north of I-10. For sure none of the multi-billion dollar projects are sited in in the Shreveport-Bossier MSA. That will limit the expected growth in this region. However, it is important to point out that there are several bright spots in the region that should help move this MSA's employment into the positive growth column.

Biggest Action at the Port

Some of the more positive news for the region is coming from the **Port of Caddo-Bossier**. This has been a relatively tough year to be a port on the Red River. Several portable days were lost due to very high waters on the River, and then when the waters began to recede, so much silt had been left that extra dredging was necessary for barge traffic to return. The second half of 2019 will be even more tenuous, because the Corps is shutting down the River for two months to perform maintenance work on the locks (starting September 1st).

Despite these setbacks tenants at the Port are generally doing very well. **Benteler Steel** opened the doors of its new $665 million tube mill in late 2015 and was at 395 at the beginning of 2017. By the end of this year, employment will have swelled to 530 and expectations are to add 21 new slots by 2021. Benteler garners the award for the largest announced capital project in the MSA, a $35 million project spread over 2020-21.

Going forward, all eyes will be on the very successful steel fabricator **Ternium.** This company has a workforce of 170 and is near completion of a $14.7 million 24,000 square foot warehouse for finished goods. Coming next year is another $10.4 million capital investment to replace a melting pot, conduct a warehouse expansion, and other improvements. We do not believe this is the end of Ternium's expansion plans.

One of the larger employers at the Port is **Sports South** with 245 employees. That workforce is expected to stay the same over 2020-21. **Pratt** is a recycled paper mill whose employment is at 115 and probably will change little over 2020-21. The mill is effectively running at capacity and supplies internal and external customers in the U.S. and Central and South America. About $2.5 million will be spent at the plant over the next two years on maintenance and efficiency efforts.

Ronpak, which started at the Port in 2012 with 50 employees, now has tripled that number and is enjoying 10-15% growth year-over-year. Growth is driven by large targets in the region such as What-a-Burger, Canes, Popeye's, Five Guys and Church's. If business with these targets is secured, the firm will likely add another 25 workers. **Calumet Packaging** now employs 97 people at the Port and is holding at that level. The firm plans $1.2 million in spending for tank upgrades.

Two smaller firms at the Port expect job growth over our forecast period. **Blount Brothers Construction** plans to double its 15-person labor force and make a $15 million capital investment on Port property. A logistics company, **ADS**, receives, stores and ships products for Ternium, Nucor Steel and Integrico Composites. Now at 19 employees, the firm is planning to add another 25 jobs.

General Dynamics IT & Fibrebond Keep Chugging

One of the great success stories for the northwest corner of the state has been what is now called **General Dynamics IT**. Focusing on cyber-security, this firm now has three centers: (1) a customer engagement center on Benton Road, (2) the Cyber Innovation Center, and (3) the Integrated Technology Center. The latter two are located on the Cyber Campus across I-20 from Barksdale. There is now a large Louisiana Tech building on the campus to specifically train people to work on cyber security. Already at 1,100 employees General Dynamics is on track to add even more high-wage jobs over our forecast period.

A second big player in this region is **Fibrebond**, a manufacturer of modular electrical buildings made of galvanized steel. Fibrebond has 752 people working at its plant in Minden. Among its customers are the LNG export facilities being built in the Lake Charles area, which has created a tricky logistics problem for the firm. The cheapest, easiest way to transport buildings to the southern part of the state is to cross the Sabine River into Texas and move the products south. The problem is that the bridges over the Sabine are not rated high enough for the company's heavy products to cross. If Fibrebond can work out this bridge issue with the state, another 50-75 jobs will be created, and $2.5 million in capital expenditures will be made at the plant. In mid-August, officials at the company established an October 1st deadline for the move-to-Texas decision.

Healthcare, Call Centers, Manufacturers, Western & Roads

A number of other projects will boost employment in this corner of the state. In the healthcare sector, there are three significant projects in the pipeline. **Christus Health Systems** is beginning a $43 million, 2-year renovation of its medical center. **Ochsner** will spend $40 million on a former Christus Hospital that has been closed for 5 years. Work on this project actually began in late spring. A $14.2 million expansion of the **Center for Molecular Imaging & Therapy** will be underway until opening in 2020-IV. Twenty-five new jobs paying $60,000 annually will be created.

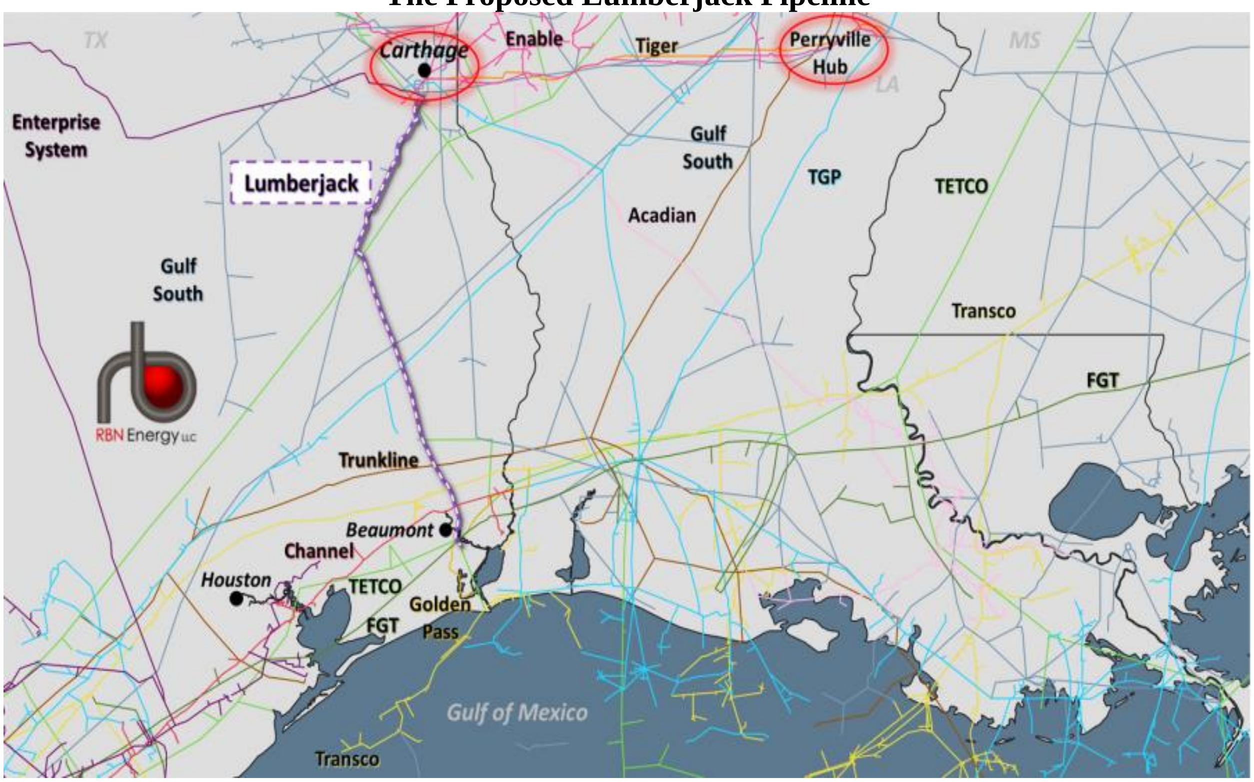
YoungWilliams is spending $1.5 million on a LAHelpU call center for child support and public assistance programs. The firm will pay about $27,000 a year annually to each of its 80 new employees. **Catamaran Solutions** purchased the old Reynolds Industrial Contractors site and will hire 120 people to work in the area of advanced industrial manufacturing. **Western Global Airlines** is now firmly entrenched in the old Express Jet facility at the airport. Western spent $3 million renovating Hangar 40 and hired 125 people to do aircraft maintenance work. The company plans to add another 45 employees over 2020-21. Another manufacturing firm---**Super ATV**---is spending $4.35 million on a manufacturing and distribution facility for a variety of all-terrain vehicles. The firm plans to hire 75 people at $40,000 per year.

Data on **state road lettings** for this MSA show the total over 2020-21 at $110.8 million, down from $245 million in last year's report. The top project in the list is $23.8 million to rehab I-20 from west of LA3 to Airline Drive. The lower general road lettings figure is offset almost totally by a special $100 million project for a north inter-city I-49 connector in Caddo Parish.

Hopeful about Haynesville

A key variable for folks in this area to watch is the Haynesville Shale rig count. After peaking at 142 rigs in April 2010, the count plummeted to only 15 rigs in June 2016. Since then the rig count has doubled to the 35 range. As the LNG and chemical projects in the southern part of the state---and in southeast Texas---come on line they have a strong appetite for the nearby gas in the Haynesville. This gas is 100s of miles closer that gas from the Permian Basin. As noted back in the Lake Charles write up, Driftwood LNG is proposing to build the **Haynesville Global Access Pipeline** down to its site in the Lake Charles area. We understand Driftwood has closed the offerings for this pipeline because interest already exceeded the pipeline's capacity. In addition Enterprise Pipeline is exploring the construction of the **Lumberjack Pipeline** shown in Figure 26 to get Haynesville gas to Texas LNG plants. This is very good news for the Haynesville Play.

Figure 26
The Proposed Lumberjack Pipeline



Lafayette: Are We or Are We Not at an Inflection Point

This MSA is located in south-central Louisiana (see Map 1) and is composed of five parishes---Lafayette, St. Martin, Vermillion, Acadia, and Iberia. With the addition of the latter three parishes, **Lafayette is now the third largest MSA in the state** with an estimated 205,600 people employed in 2019.

A key to understanding this region's economy is its geographic location. Located in an oil-rich area and not far from the coast, Lafayette became a prime spot to locate service firms, fabricators, and other companies that do business with **extraction firms** exploring South Louisiana and especially in the Gulf of Mexico. Consequently, like Houma, the Lafayette MSA is closely tied to all aspects of the oil and gas exploration industry.

The MSA derives **6.2% percent of its jobs directly from the exploration industry**, the second highest concentration among the state's nine MSAs. The comparable number for Houma is a close 7.2%, and the statewide average is around 1.8 %. Countless other jobs in the MSA are tied to the extraction industry through the multiplier effect.

There are six deviations from this pattern. **Stuller Inc.** is a 1,260-person facility that is the nation's largest jewelry settings manufacturer. **Acadian Ambulance** is another large employer in the area (1,315 employees) whose ties are not <u>all</u> directly related to the extraction industry, although the firm provides air-med helicopter services and offshore rig/pipeline safety training to the industry. This company also monitors over 200,000 alarms in 40 states and monitors businesses and houses via videos, eliminating the need for guards. A third, growing firm is the 540-person **SCP Health**, which provides ER and hospital medicine doctors to hospitals in 30 states. **LHC**---the nation's second largest home-health company---employs about 734 people in Lafayette and 31,160 across 26 states.

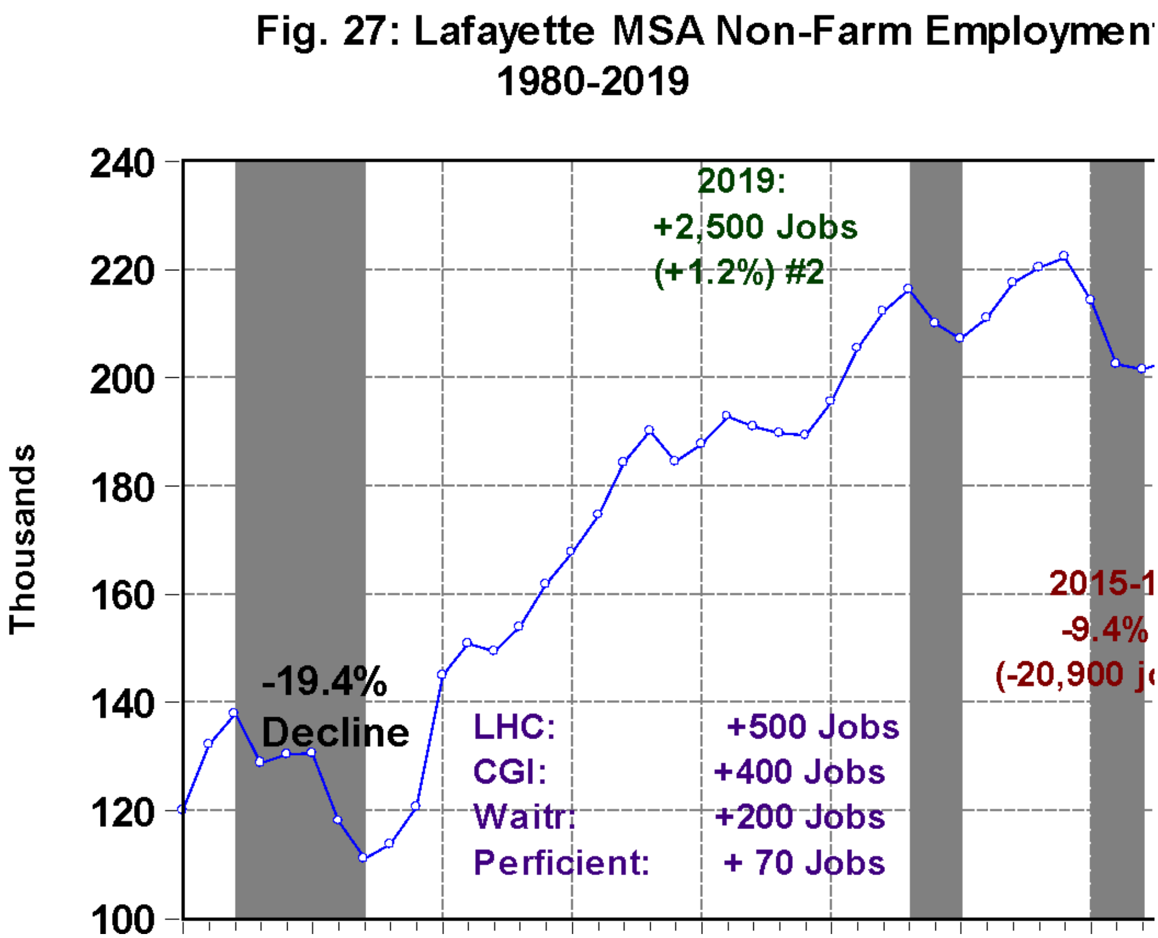
Fifth, Lafayette has a new and growing **high-tech sector**---in particular the 800-employee GI and 300+-job Waitr---which we describe in detail in the forecast sector below. Finally, Lafayette is the home of one of the state's larger public universities---the **University of Louisiana at Lafayette**. Until the mid-90s this area also hosted the largest manufacturing employer in the state---Fruit-of-the-Loom---which had a huge facility near St. Martinville. That facility has been shuttered.

Recent History of Lafayette

Figure 27 displays the recent employment history in Lafayette and demonstrates vividly the close ties this MSA has to the extraction industry. When oil prices plummeted in the early 80s, so did the Lafayette economy. Remarkably, a fifth of the MSA's jobs disappeared over 1982-87. It was the worst downturn in Lafayette's recorded history. However, unlike similarly extraction-dependent Houma---which took 10 years to recover its losses from that recession---Lafayette came out of its "V" much quicker.

The key was diversification. In the late 1980s, the previously mentioned **Fruit-of-the-Loom** constructed very large facilities in the area and in a short period of time became the state's largest manufacturing employer. By 1994, Lafayette had recovered all its lost jobs and began setting new employment records. This phenomenon does not show up clearly in Figure 27, because of the adjustment in the makeup of the MSA in 1990.

Soft gas prices in 1992 set Lafayette back a bit, but like Houma, the hit was nothing like the 1982-87 period. Surging employment at Fruit-of-the-Loom pushed employment up briskly for the next couple of years.



Then Lafayette entered a "bad news-good news" period. The bad news: As a result of the North American Free Trade Agreement, Fruit-of-the-Loom began a round of massive layoffs. The good news: Layoffs at Fruit-of-the-Loom coincided almost exactly with two important events. One was a jump in oil and gas prices that sent the exploration industry on a hiring binge. The other was a new entrant that both diversified the economy even more and was labor-intensive to boot---**Stuller Inc**. Stuller hired enough employees that it became the largest jewelry settings manufacturer in the U.S. Lafayette employment expanded right through the Fruit-of-the-Loom layoffs.

The year 1999 was a bad one for Lafayette. Oil prices fell to under $10 a barrel, and that sent the extraction industry into the layoff mode again. Forty-three hundred jobs disappeared from the MSA (see the decline for 1999 shown in Figure 27).

For the next two years, Lafayette was back in the growth mode, setting new employment records in 2001 when most other MSAs in the state were being depressed by the national recession. Help in this recovery came from two sectors. Several significant distribution centers, including the large **Wal-Mart** distribution center near Opelousas and **Magnolia Distribution Center** in Lafayette, opened during this period. Then in 2001, the MSA attracted the **Cingular Wireless** call center, which hired 1,200 employees.

Unfortunately, Lafayette experienced a big blow in November 2001 when Fruit-of-the-Loom's Martin Mills plant was shuttered, terminating 1,300. By this time, the post 9-11 national recession was also impacting Stuller Inc., which laid off about 175 employees. In 2003, **Devon Energy** transferred 60 employees out of Lafayette, and **Fleming Company**---a wholesaler supplying the troubled K-Mart---closed its distribution center there as well. The combination of these events, coupled with a lackluster response of the extraction industry to high energy prices, kept this MSA in a funk (-2,500 jobs) for three straight years.

The Impact of Katrina & Rita

It is obvious from examining the 2005 and 2006 data points in Figure 27 that something special happened in this MSA in those two years. Non-farm employment spiked upward by 10,800 jobs or 8.2 percent over those two years. What caused this nice rebound in employment in Lafayette?

One factor was **resurgence in the oil patch**. The rig count rose from about 165 to over 201, which meant (1) new exploration jobs, (2) new exploration servicing jobs, and (3) new oilfield-fabrication-associated jobs for the Lafayette area.

Indirect energy effects: But a larger factor by far was the impacts of Hurricanes Katrina and Rita. These two storms impacted the Lafayette area in two broad ways. First, there were the spillover effects of the destruction of the offshore energy infrastructure. Both Katrina and Rita were very destructive to the energy infrastructure in the Gulf of Mexico. A total of 115 offshore platforms were destroyed and another 52 were damaged by the two storms. Underwater pipeline systems were also damaged. Lafayette is the home to several fabricators and oilfield service firms that garnered some of the repair work on these facilities.

Evacuee effects: Secondly, Lafayette became a home to many evacuees after the storms---about 34,336 by one estimate. Evidence from the Census Bureau suggests that Lafayette experienced the same population adjustment as Baton Rouge except on a smaller scale. Census data indicate that between July 2005 and July 2007, the **Lafayette MSA population increased by 9,033**---a heady 3.7 percent increase in only two years.

2007 to Early 08: $140 Barrel Oil Pumps Up the Region

Data indicate that the employment growth rate slowed from about 5,400 jobs a year in the previous two years to a slower 4,000 jobs a year over 2007-08. Still, this represented a very healthy growth rate of 2.8 percent a year---second only to Houma among the state's nine MSAs.

This slowdown was partially due to the completion of much of the Gulf of Mexico rebuild effort, but also, **Morton Salt** closed its 197-person facility at Weeks Island in 2007, one of the few bits of negative news coming out of this region. That was somewhat offset by the **Nucomm** call center coming to Lafayette in 2007, adding 500 new jobs.

Growth in 2008 was initially spurred by a very robust oil patch as oil prices reached record levels in the fall of 2008, and natural gas prices were unusually high as well. Also, **Acadian Ambulance** built a $15 million expansion that led to 300 more jobs.

High Energy Prices and Job Declines in Lafayette

A problem arose near the end of 2008. After peaking at $132.61 a barrel in September 2008, the price of oil began a rapid, but temporary, slide down to a bottom of $39.06 in March 2009. Employment in the Lafayette MSA responded as it always does to declining oil prices. The state rig count fell from the 190 level to near 170. The MSA began recording job losses in the latter half of 2008.

But there was another factor in the MSA's employment decline. Beginning in April 2009 oil prices began to rise again and were at a very profitable $46.72 by May 2009. By August 2009 oil prices were over $70 a barrel, where they stayed well above that level through mid-2014. Despite these unusually high and very profitable energy prices, the rig count in south Louisiana continued to fall. For example in August 2008, when oil prices nudged $140 a barrel, the rig count in south Louisiana (land and water) was 56 rigs. It fell to only 30 rigs in August 2009 despite very high oil and natural gas prices. As seen in Figure 27, the Lafayette MSA lost jobs in 2009 and 2010---a total 2-year decline of 4,400 jobs (-3%). We are unaware of any other time in the history of the Lafayette economy when energy prices were this high and the economy actually lost jobs.

We believe there are two factors behind this poor behavior. First, our conversations with decision makers in this field and region indicate that **President Obama's proposed $36 billion tax** on the extraction industry sent a chill through this sector and pushed down the rig count despite the presence of higher and very profitable oil prices. We gave a detailed analysis of this tax proposal in the 2010 LEO. This tax was proposed in President Obama's FY10 budget, but Congress was so absorbed in the healthcare debate that this legislation did not come up for debate. However, the administration continued to promote it, so the threat to the industry still lingers. Of course, a second factor was the difficulties associated with the **BP oil spill**.

Recovery from the Great Recession: From Unbelievable to Believable Numbers

The Lafayette MSA has had a very healthy recovery from the recession, adding 14,200 jobs (+6.9%) over the four years from 2011-14. It is important to note the fact that **this MSA (1) was the first to set new employment records (in September 2011) after the losses incurred during the Great Recession and (2) had the best recovery record of all nine MSAs over 2010-14.**

2015-17: Ogre of Low Oil Prices Raises Its Ugly Head

Unfortunately, it has been Lafayette's lot to face another down cycle in oil prices. The decline from $105.71 a barrel in August 2014 to a low of $27.76 in January, 2016 had its usual effect on the very oil-dependent Lafayette MSA. Even with oil prices recovering into the $50 a barrel range, employment losses in the Lafayette MSA continued to mount.

Among the recent causalities was the closure of **Chevron's Shelf Office** (though the firm is maintaining an Emergency Response Center in Lafayette**). Baker Hughes** closed a cement and pumping division in Crowley that employed 200 people at one time. **Blue Sky Innovations**---a firm providing support to helicopters servicing offshore work---shed 58 jobs. At the Port of Iberia, **Dynamic Industries** completed the module for Shell's Appomattox Platform and dropped its workforce from 500 to 350. Then came the big blow in late 2017. **Stone Energy** was acquired by Talos Energy (a private equity firm) and the firm was moved to Houston. No Stone job loss count for the area has been published.

As seen back in Figure 27, **over the 3-year period from 2015 to 2017 the Lafayette MSA lost 20,900 jobs, a staggering decline of 9.4%.** By way of reference, during the period labeled the "Great Recession" in the U.S. over 2008-09 the nation's employment fell by <u>6.1%</u>. The hit to Lafayette was 54% worse than the Great Recession. Note back in Figure 27 that the decline in the early 80s was actually worse (-19.4%), but Lafayette still took one heck of a bad lick.

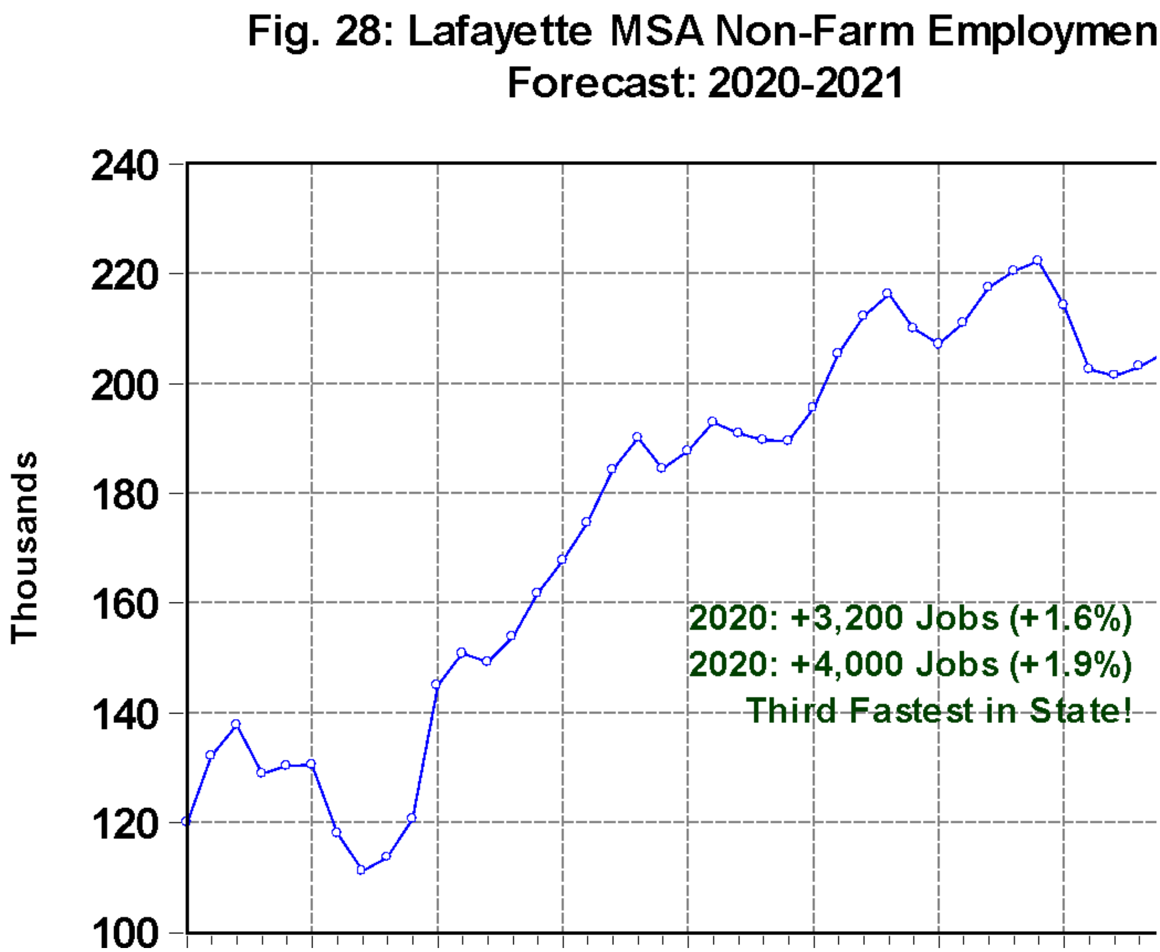
2018-19: A Recovery at Last

There is good news for Lafayette as seen back in Figure 27. The region bottomed out in 2018 and is enjoying an excellent 2019. Indeed, initial data suggest the Lafayette MSA is the second fastest growing MSA in Louisiana, a possibility most would have thought unheard of this time last year. In fact, in last year's LEO our team projected this MSA would add 1,400 jobs this year. It looks like the region will beat that forecast by a factor of nearly two (+2,500 jobs)!

This nice, unexpected 2019 performance was largely fueled by <u>non-energy related</u> sources. LHC has been on a wildly successful acquisition binge that has grown its workforce. Waitr's success led to an almost doubling of its workforce, and CGI added about 400 jobs at its site. Having a somewhat diversified workforce has really paid off for Lafayette.

Forecast for 2020-21: Will the Gulf Come Back?

Figure 28 shows the track of employment in the Lafayette MSA over 1980-2019 along with our forecasts for 2020-21. **We are projecting the Lafayette economy will enjoy a significant job spurt---adding 3,200 jobs (+1.6%) in 2020 and another 4,000 jobs (+1.9%) in 2021.** If these forecasts turn out near the mark the Lafayette MSA will be the third fastest growing MSA in the state.



Are We at an Inflection Point in the Gulf?

There are two very compelling questions facing our forecasting team this year. One is the future of the U.S. economy in the face of a possible trade war with China, a question we addressed in detail back on pages 1-3 in the LEO.

When it comes to Louisiana's southern oil patch---Lafayette and Houma---the compelling question is: Has drilling activity in the Gulf of Mexico (GOM) reached a bottom, an inflection point, and is poised to go noticeably higher over the next two years? The problem is vividly illustrated in Figure 29 which tracks the Baker-Hughes offshore rig count from January 2014 through the present.

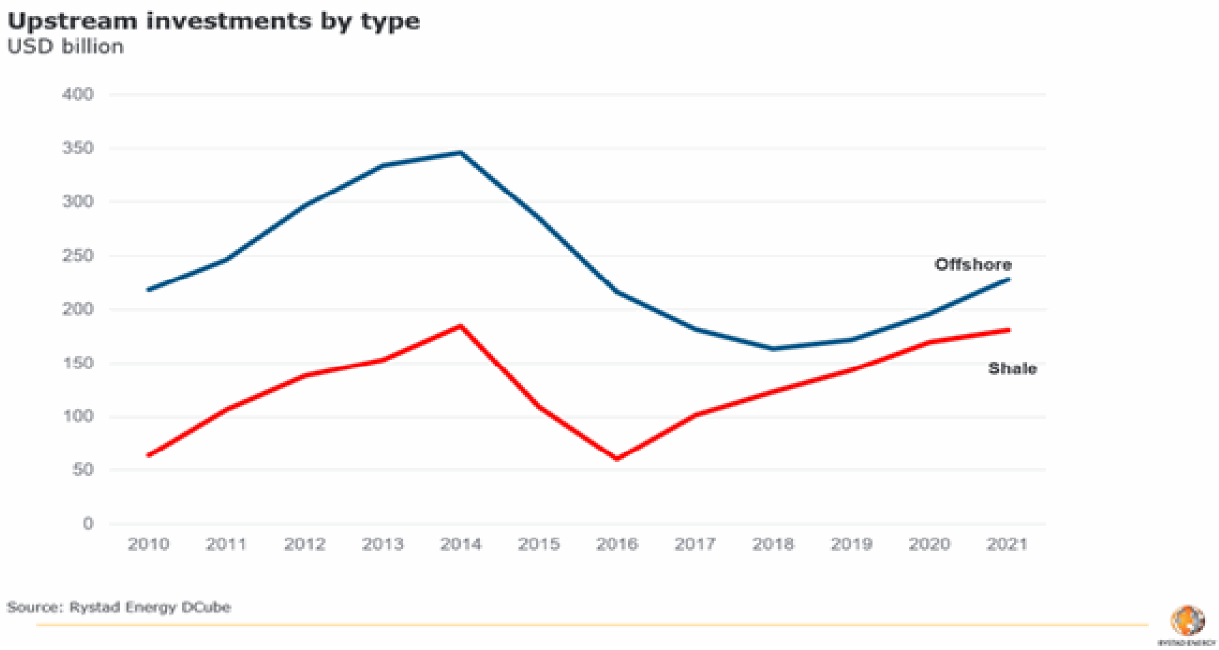
Figure 29

In 2014, the price of Louisiana Sweet Crude averaged a whopping $97 a barrel, and it exceeded $100 a barrel in several months. Such profitable prices drove the rig count in the GOM to over 60. When the oil price crash occurred in late 2014, it also led to a crash in the offshore rig count. It dropped to the 20-level where it has languished for over three years. Note the tiny tail at the end of the line. The rig count has crept up a bit, reaching 25 the week of August 9th. Is this the beginning of a recovery, even a mild one?

In our round of phone calls to executives in various firms in the Lafayette-Houma regions we have not received a lot of reassurance that a significant inflection point has been reached. Despite that feedback, **we are forecasting that the GOM is on the cusp of a recovery, and that the offshore rig count will rise to the 33-35 range over 2020-21**.

What possible grounds are there for such an optimistic view? First, we are not the only ones that take this position. After examining reserves all over the world, **Rystad Energy** put together Figure 30. Note the clear inflection point in the top line. After a slight recovery in 2019 (pair this with the recent slight upward bump in the rig count in Figure 29), Rystad has offshore expenditures enjoying a more pronounced bump in 2020-21. Expenditures do not reach the pre-price collapse level, but then neither does our rig count forecast. An important caveat is that the data in Figure 30 are for <u>worldwide</u> offshore. No specific data were provided for the GOM.

Figure 30



Rystad is not the only prestigious energy consulting firm projecting a rebound in offshore. In February, the Houston Chronicle reported on a **Woods Mackenzie** study projecting a 30% jump in drilling activity in the GOM this year.[7] As seen back in Figure 29, the GOM is actually on track to meet that goal.

Why would firms have such a positive outlook when oil prices are expected to remain in the $60 range over the next two years? Largely the answer lies in the industry's ability to **drive down breakeven prices** through cost efficiencies and pushing down supplier costs. The breakeven price in the GOM has fallen from the $70-$80 range in 2014 to a $30-$40 range in 2019. By standardizing projects---or making them "repeatable"---firms have reduced costs, limited over-runs, and accelerated "time to sanction" of a project. A classic case is the Mad Dog 2 project in the Green Canyon, which was originally estimated to cost $20 billion, was actually put in place for $9 billion. Drilling speeds and rates of penetration have increased, and rigs with fewer casing strings have been adopted. The result? Pre-2010, the average time from discovery to first oil was six years; it is now down to three years. Indeed, the deepest well ever drilled (34,500 feet) by Shell was in its Kaikias Field, which took only four years from discovery to production and has achieved a breakeven price of less than $30.[8]

There is now industry-wide non-competitive collaboration and standardization. That brings us to a discussion of Chevron's Anchor Field. To date, exploration firms have only had the ability to safely drill in depths involving pressures up to 15,000 pounds per square inch (15k psi). The Anchor Field involves 20k psi. Chevron is very close (probably late 2019) to cracking the code

[7] Jordan Blum, "As Energy World Focuses on Permian, Gulf Makes Its Own Comeback", Houston Chronicle, February 26, 2019.

[8] "Shell's Kaikias achieves Reduced Cycle Time, Lower Costs", Offshore Magazine, Decemeber 2018-January 2019, p. 24.

on safely drilling under these conditions. Once that nut is cracked, Woods Mackenzie estimates that will trigger another $10 billion in investments in the GOM.[9]

Our positive outlook is also reinforced by recent trends in lease sales in the GOM as shown in Table 21. Note that the number of tracts receiving bids (up 52%) and the value of the bids (up 33%) increased significantly in 2019.

Table 21
Western/Central/Eastern Gulf Lease Sales
(Bid Value in Millions)

Sale	Companies	Tracts	Bid value
2017	27	90	$121
2018-I	33	105	$128
2018-II	29	144	$178
2019-I	30	227	$244
2019-II	27	151	$159

All of these factors play into our projection of a rig count of 33-35 in the GOM by 2021. This prediction forms much of the foundation of our employment outlook for the Lafayette MSA. A recovering GOM will boost the MSA's exploration, oilfield service and fabricating firms. Already, the fabrication firm **Bagwell Energy** is building a $2.5 million, 15,000 square foot expansion at its plant in the Port of Delcambre that will enable the firm to retain 46 workers and hire 150 more over the next five years.

Port of Iberia

One sector that should especially benefit from a renewed offshore is the **Port of Iberia**. With employment at the Port in the 1,100-1,200 range, several tenants should be on the cusp of adding significantly to their workforces. **Dynamic Industries** employs 350-400 people. The company is presently building 92 modules for Shell's Franklin Project on the Ohio River in Pennsylvania, 43 modules for Lyondell in Lake Charles, and 20 modules for Marathon. **Bayou Coating** employs about 400 and is poised to expand. A pipe coating company, Bayou will be re-coating 1.6 million feet of Trans-Canadian Pipeline pipe that has to be recoated due to delays in that pipeline.

The proliferation of gas pipelines has created a solid line of business for **Louisiana Machinery**---a Caterpillar company at the Port. LM brings in new CAT engines and mount transmissions and connects generator sets to the pipeline. The company also rebuilds older CAT engines nearing the end of their life cycle. Already at 140 employees, LM is planning to add another 65 at $97,000 a year each. **Custom Compression** makes devices for the fracking business and employs 150 people at the Port. **Omega Fabricators** is owned by an Alaskan Indian Tribe and uses 100 workers to do manifold work in the GOM.

Set to add a significant number of new jobs soon at the Port is **Chart Industries**. Presently, Chart only employs about 30 people, but the company just won a contract to build cold boxes for

[9] Jordan Blum, "As Energy World Focuses on Permian, Gulf Makes Its Own Comeback", Houston Chronicle, February 26, 2019.

Driftwood LNG and Venture Global LNG. The firm plans to have a workforce of 352 by the end of this year, with the potential of going to 600 soon. **Red Guard** makes explosion-proof buildings for industrial plants and offshore facilities. Now at 30 employees the firm wants to add 20 more. Finally, **Crosby Energy Services** has leased a large building at the Port. This company is ASME certified as a pressure vessel fabricator and is conducting a lot of work for Marathon offshore. The firm presently has 60 employees.

Airports Taking off

This MSA is also benefitting from good news at its area airports. **Lafayette Regional Airport** is in the midst of a $90 million, 100,000 square foot terminal expansion which is scheduled for completion in 2022. Last year the region was shaken by the closure of the Bell Helicopter facility at the Airport. Happily, Bell was quickly replaced by **Kopter Group** which will assemble the new SH09 Helicopter in the old Bell space. Kopter will spend $4.52 million on upgrades at the site and will hire 100 workers by 2025, paying them an average of $55,000 each. Production is scheduled to start in 2021.

Acadiana Airport is a particularly busy spot. **Haliburton** recently completed a $68 million facility at the airport and employs 500-600 depending on contracts. Shell and Chevron have major contracts with Haliburton. If our GOM recovery forecasts are on the mark, expect more additions here. **Aggreko** now has 290 people working at its airport site. The company is expanding its portable generator business. Also at the airport is **Aviation Exteriors (AvEx)**, a firm that the exterior of all manner of commercial, military and private aircraft. Currently at 135 employees, AvEx is seeking 40 more employees to add to its workforce and believes that even more additions are likely over 2020-21.

Diversity Pays Off: Lafayette's Non-Energy Big Seven

Lafayette is very fortunate to have seven large firms that have diversified the economy away from just the energy sector, and all but one are doing quite well. The largest employment-wise is **Acadian Ambulance** with 1,315 employees in the Lafayette MSA.. Tennessee was added to its service area this year. The firm does have an oil and gas safety management section where revenues have grown from $40 million to $105 million, mainly in the pipeline area. This unit should pick up as the GOM comes back. **Stuller Inc**., the nation's top manufacturer of jewelry settings, is now at 1,260 employees and adding jobs at about 3%-4% per year. This nimble company has moved from catalogue to web-based ordering (now 62% of orders), which enables the company to instantaneously update designs and take into account variations in commodity prices.

LHC Group, now the nation's second largest provider of home health services, has been on an acquisition tear recently. Through mid-year alone, LHC has acquired 12 home health firms, five hospice companies, and one HCBS location in four states and the District of Columbia. More than 784 people work for the company in Lafayette, and another 500 slots should be added at the company's new headquarters. A $47 million, 204,000 square foot expansion of LHC's headquarters should be completed by the end of 2020. The company employs 31,160 people nationwide.

A fairly recent addition at ULL's Technology Park is **CGI**. This information technology company is running ahead of its hiring schedule with 400 jobs by the end of this year and another 400 by the end of 2020. Salaries are at $55,000 and the company is committed to Louisiana through 2027. **SCP Health** (formerly, Schumacher Clinical Partners)---a provider of ER and hospitalist services to hospitals---has just finished a significant merger that brought its Lafayette employment to 540. Absent another merger, this number is unlikely to change over 2020-21. SCP Health has 7,500 providers in 30 states and 400 hospitals.

A sixth significant player in Lafayette is **Vimed**. This company provides in-home equipment and therapy for respiratory care in 27 states and purchased the Stone Energy Building for its headquarters. Vimed is adding 220 jobs---70 headquarters professionals and 150 healthcare service jobs---that pay an average of $42,800 annually.

The seventh large player that has created a bit of nervousness recently is the innovative firm **Waitr**, which opened in May 2017. Waitr provides online and mobile software solutions and partners with local restaurants to provide home delivery. At last report, the company had 350 software/tech jobs in Lafayette and 100 drivers. A donnybrook was created recently with the move by Waitr to charge restaurants more to deliver their food. There was very vocal, public pushback by the restaurants to this policy change, which led to removal of the CEO, and an unknown number of layoffs. Exactly where employment is going over 2020-21 is muddy at this point.

We should also mention a relative newcomer to the MSA---**Proficient**---a digital technology consulting firm, has begun to expand. The firm recently announced plans to add 70 people to its workforce. **AT&T** recently had a job fair to add 100 people to its Lafayette call center. **Entergy** is spending $82 million on a North Acadiana Load Pocket Project that will be completed in the winter of 2021.

Road Lettings & Capital Outlay Projects

Lafayette's economy will benefit over the next two years from special construction monies coming to the region from the state. $150 million has been allocated for I-49 south, and there is an additional $24 million in other **capital outlay projects**. Of this latter amount, (1) $10.2 million will go towards the Lafayette Airport expansion mentioned above, (2) $5 million is dedicated to wastewater and infrastructure in Carencro damaged by flooding, and (3) $3 million is allocated to renovation of the Lafayette Parish Courthouse.

The DOTD has announced $240.3 million in new **road lettings** for the MSA (up slightly from $234 million last year). Among the projects listed are: (1) $74 million to widen I-10 from LA328 to LA347, (2) $5.5 million on I-10 cable barriers, (3) $3.5 million for concrete rehab work on LA3073 from US167 to LA3095, and (4) $3.3 million to overlay and widen LA182 from St. De Porres to Albertson's Parkway.

Houma: A Nice Push from the GOM

The Houma MSA is composed of two parishes---Lafourche and Terrebonne---and this is one of the MSAs whose composition did not change when the Census Bureau generated new MSA designations. Located in the south-central coastal area of the state (see Map 1), Houma is highly dependent on the oil and gas extraction industry in the Gulf and the spillover sectors---machinery, fabrication, shipbuilding, water-borne transportation---that feed off of GOM extraction activities.

In 2019, 7.2% of the MSA's employment was directly in oil and gas extraction---the highest dependency in the state and four times the statewide average of 1.8%. The key word in that last sentence was "directly". There are many fabricators and shipbuilders in the MSA that cater almost exclusively to the extraction industry. Chief among these is **Edison Chouest** a firm that owns some 250 supply boats servicing the offshore industry and large shipyards that manufacture and service these ships. **Bollinger Shipyards** is another huge shipbuilding player in the region, though the firm focuses its efforts in the Houma area on a significant Coast Guard contract. **Thomas-Sea** is a 350-person shipyard presently diversifying into non-oil and gas work. Many of these ships operate out of **Port Fourchon**, basically a small city on the Gulf, which services about 90 percent of the offshore platforms and drill ships in the Gulf of Mexico.

Numerous fabricators work out of this region, one of the larger being **Gulf Island Fabricators** (950 employees). All the fabricators are busy trying to diversify into non-oil and gas related work. A significant provider of workers for offshore rigs is **Danos**, with 100 workers at its headquarters in Houma but 3,000 company-wide. **Chett Morrison** (500 employees) conducts pipe laying and maintenance work and also has a significant commercial diving division.

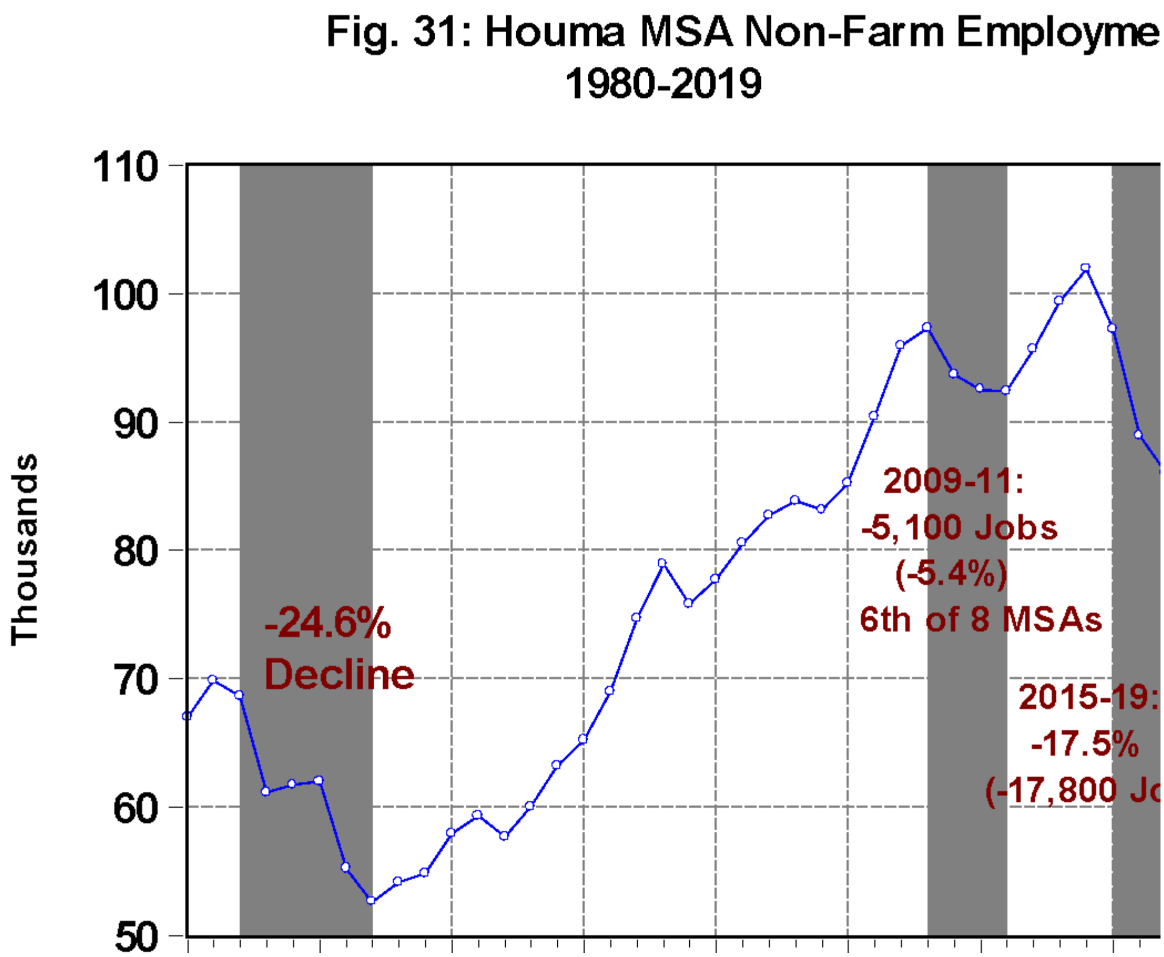
Houma's Recent History

Figure 31 tracks the non-farm employment history of this MSA over 1980-2019. What strikes an observer most in this graph is the unusually wild fluctuations in the region's employment over time. Because of its heavy dependency on the extraction industry (the heaviest of any MSA), wild fluctuations in energy prices over the past 40 years have dramatically impacted Houma. The influence of energy prices can be seen in the big "V" and the little "Vs" shown in this graph.

The BOOM years: The first, and biggest, "V" occurred after one of the greatest bull runs for any MSA in Louisiana history. From 1975-81, this MSA enjoyed a remarkable period of growth in response to oil prices that peaked at $37.50 a barrel for Louisiana crude in 1981. That would be about $113.86 a barrel in today's prices.

The BUST years: A big "V"---covering the period from 1981-91---followed this boom period. The marked decline in oil and gas prices between 1982 and 87 sent this region into a free-fall. Some 17,200 jobs or nearly a quarter of the workforce vanished. Car dealerships, restaurants, banks, and any retail establishment suffered through a terrible period as the MSA shed a quarter of its jobs. Houma was the worst hit MSA in the state by this recession. It took a decade for Houma to recover all the jobs lost during this dramatic downturn.

The long road back: When oil and gas prices recovered somewhat from 1987-91, this metro area rose up the other side of the "V." Exploration activity in Louisiana has been moving southward across the state since the 1950s, indeed, heading further and further offshore in the Gulf. Houma's geographic location on the coast made it the ideal site from which to launch offshore exploration.



The little "Vs": Still, every time energy prices got soft, Houma's employment declined. The MSA lost 1,500 jobs in 1992 when natural gas prices declined as a result of two straight unusually warm winters, and it lost 3,100 jobs in 1999 due to low oil prices. Interestingly, Houma went through the post-911 U.S. recession unscathed. In fact, the MSA picked up 5,000 new jobs over 2001-02 when most of the other regions of the state were in absolute decline.

Note in Figure 31 that the "Vs" have been getting more and more shallow. This is primarily because the extraction industry is running much leaner now and has learned not to respond too strongly to rising energy prices. The firms that lend money to extraction firms have learned the same lesson.

Still it is important to note in Figure 31 that **there has always been a left side to the "V."** That is, after energy prices have remained high for an extended period, the extraction industry has always responded by returning to the oil patch to take advantage of the higher prices. At least that was true until 2004. Response to the run up in oil and natural gas prices at that time was more tepid than expected in 2004, with little change in the rig count. In fact, Houma was the worst performing MSA in Louisiana in that year.

The Katrina & Rita Effects

Like Lafayette, Houma received a nice injection of activity as a result of the two hurricanes. **Over the three years of 2005-07, Houma gained a whopping 12,400 jobs, a remarkable increase of 14.9 percent or 5 percent per year**. It was the fastest growing area of the state. In fact, growth in Houma was so strong that in 2007, Houma moved past Lake Charles to the fifth largest MSA in the state. Effects of the recent oil price drop, coupled with an industrial boom in Lake Charles, has moved the latter MSA back above Houma again.

The source of this employment reversal is much the same as occurred in Lafayette. First, there was finally a **response in the oil patch to higher oil and natural gas prices**. As an MSA heavily laden with exploration companies, oil service firms, and shipbuilders for the offshore sector, Houma benefited from this resurgence. Too, this MSA is home to many fabricating and repair/maintenance firms that benefited from the **rebuild effort of offshore energy infrastructure** that was damaged by Katrina and Rita.

Finally, Houma also benefited somewhat from an **influx of evacuees**. Houma, at 58 miles, is the closest MSA to New Orleans (Baton Rouge is 79 miles from New Orleans). Based on FEMA assistance applications, we estimated that this MSA's population ballooned upward by 62,810 people in the first two weeks after Katrina---second only to Baton Rouge in attracting evacuees.

However, like Baton Rouge, Houma experienced the same population adjustment as did Baton Rouge and Lafayette. **Census Bureau data show that between July 2005 and July 2007, the Houma MSA population increased by 3,449 people or about 1.7 percent.** This is slightly more than the MSA tends to grow anyway. Thus, there was an exodus of evacuees from the MSA, but a number remained there as new residents, giving a bit of an extra boost to the retailers, real estate firms, and service providers in the area.

2008-09: High Energy Prices & Job Losses??

The experience in the Houma MSA over these two years pretty much mimics that of the Lafayette MSA. 2008 started out strongly as oil prices climbed to a high of $132.61 a barrel in September 2008. Then the price of oil began a rapid slide down to a bottom of $39.06 in March 2009.

Beginning in April 2009 oil prices began to rise again and were at a very profitable $46.72 by May 2009. Oil prices continued to rise through 2013 and the first half of 2014 as seen back in Figure 2.

However, despite these very profitable energy prices, the Houma MSA was the first MSA in the state to begin losing jobs during the Great Recession---recording its first job loss in August 2008. Over 2009-11 the MSA lost 5,100 jobs---a 5.4 percent decline---ranking its performance 6th among the eight MSAs in the state at the time. **It is historically unprecedented for this MSA to be losing jobs in the face of relatively high energy prices**. We believe the reason for this poor performance mirrors a similar weak performance in nearby Lafayette: the chilling effect of President Obama's proposed new taxes on the extraction industry. In addition to the extraction firms cutting back, Gulf Island Fabricators and nearby J. Ray McDermott laid off workers in 2009, and Offshore Specialty Fabricators released 90 workers that year.

2011: Oops - Forgot about BP

In our 38 years of producing the Louisiana Economic Outlook, few things have surprised us more than the performance of the Houma economy in 2011. In the LEO released in the fall of 2010---six months after the oil spill and in the middle of the moratorium on drilling---we projected significant job losses for the area. Eleven deepwater drill ships left the Gulf, and activity at Port Fourchon dropped 35-40% below pre-spill levels. Normally, that would translate into a major decline in employment in the MSA.

What we failed to take into account was the massive amount of money that BP would pump into the area's economy for the cleanup effort and to pay out on claims for losses due to the spill. While we do not have a good handle on the cleanup spending (which we know was quite large), we do have relatively good information on the amount BP paid to businesses and individuals who claimed losses due to the spill.

As of August 2011, **BP had paid out $132.1 million in claims in Terrebonne Parish and $81 million in claims in Lafourche Parish**. As a reference point, that is about 3.1% of Terrebonne Parish personal income and about 2.1% of personal income in Lafourche Parish. The combination of BP's cleanup expenditures and its payouts to claimants was sufficient enough to overcome slowdowns in exploration and cause a very modest 100-job loss in 2011 instead of the 1,500-job loss we predicted in the 2011-12 LEO.

2012-14: Strong Bounce Back

As seen back in Figure 31, the years 2012-2014 were very good years for the Houma MSA. The MSA added 8,700 jobs over those three years. That is an average growth rate of 3.1% a year, an enviable achievement compared to most MSA’s in the country. Its growth rate in 2014 was 2.1%---tying Lafayette as the third highest among Louisiana’s nine MSAs. Only the exceptionally booming Lake Charles and Baton Rouge MSAs performed better. Note in Figure 31 that (1) **in 2013, the Houma MSA blew past its previous employment peak of 2008 and (2) in 2014 the MSA crossed the 100,000 employment mark for the first time in its history.**

The comeback in the Gulf was largely responsible for this surge. Not only did exploration activity return and surpass its previous peak, but also Gulf Island added several hundred workers and Chouest's new shipyard---LaShip---opened and grew to 1,200 employees. The major port servicing the offshore industry, Port Fourchon, turned from retrenching to bustling. It was a very good three years indeed.

2015-19: Sliding Down another “V”

It is a tough situation when an economy is tied so closely to a commodity and that commodity’s price fluctuates in a most unpredictable way. Such is the lot of the Houma MSA.

The oil price decline after 2014 sent this economy into another slide down the "V" and this has been a bad one. In the last five years, Houma has lost 17,500 jobs, a remarkable 17.5% decline. **This is nearly three times worse than what U.S. employment declined during the Great Recession over 2008-09**.

The hammer fell on a number of companies in the region. **Edison Chouest** dropped employment at LaShip from over 1,000 down to 500. One hundred of the company's 300 ships are stacked and its mariners are working about half the time as before the collapse. At **Chett Morrison** employment declined from 515 to 320. **Baker Hughes** closed its 50-person wireline facility, and **Hercules Offshore** dismissed 50. **National Oilwell Varco** closed its facility in Houma at a cost of 80 jobs, **CCHI Aviation** in Galliano closed its facility laying off 74 pilots, mechanics and support staff, and **Offshore Specialty Fabricators** began layoffs in May 2016 that cost 67 jobs. The bloodbath was obviously not confined to the direct oil and exploration companies but also to tangentially connected companies as well.

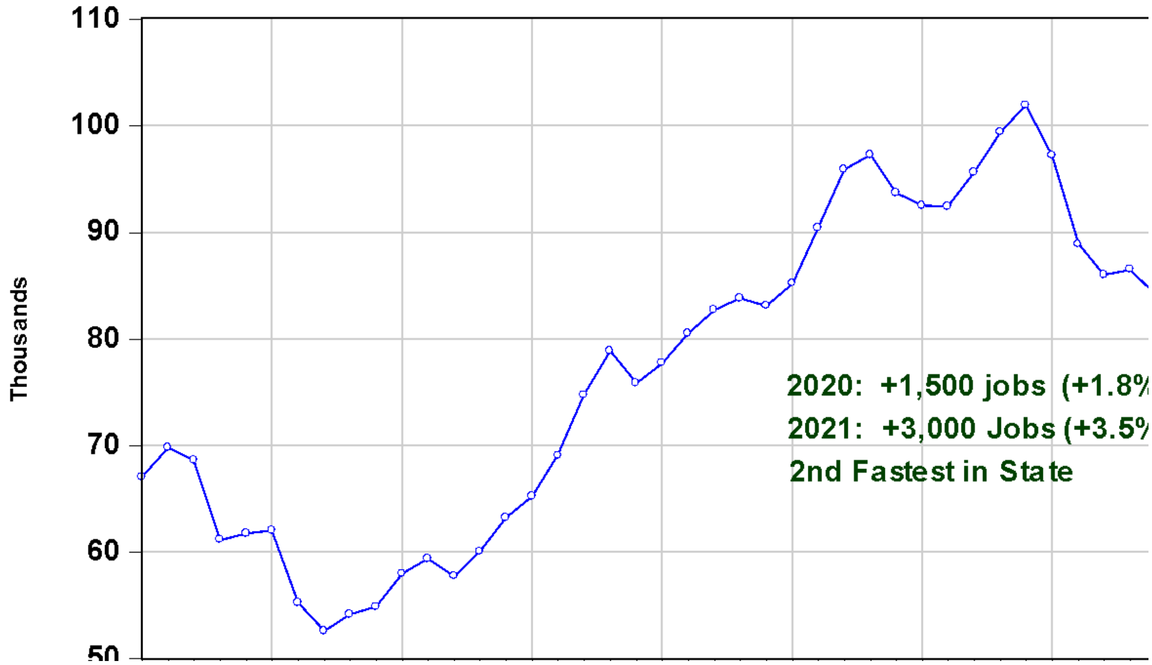
As econometricians and statisticians, we are struggling with the Houma MSA employment data coming out of the Louisiana Workforce Commission (LWC) for 2019. Note back in 2018 that Houma's employment bottomed out in that year, going flat compared to 2017. However, the first seven months of 2019 show non-farm employment starting to fall again---and not by just a little. LWC data for the first seven months suggest this MSA's employment will fall another 2,400 jobs this year, a hefty decline of 2.8%.

We have two problems with these numbers. First, our phone calls to major firms in the region indicate, if anything, slight additions to their workforce, not layoffs. To generate a 2,400-person decline requires at least one firm to engage in a large number of dismissals. We have found no evidence of that. Secondly, local sales tax collections in Terrebonne Parish for the first seven months of 2019 are up slightly, not down sharply as one would expect in the neighborhood of losing 2,400 jobs. We have to believe that the 2019 numbers will be revised upward in the next round of data revisions by the LWC, perhaps enough to show Houma still at the bottom of the trough.

Forecasts for 2020-21: a Lift from a Recovering GOM

Historically, Houma has always "moved up the other side of the V" after a tough downturn, and we do not expect this round to be any different. **We are forecasting Houma will experience a growth of 1,500 jobs (+1.8%) in 2020 followed by a more robust 3,000 jobs (+3.5%) in 2021 as a resurgent Gulf lights a fire under this economy**. See Figure 32.

Fig. 32: Houma MSA Employment Forecast 2020-21



More Robust GOM = More Robust Houma

Our robust turnaround for the Houma economy leans heavily on our presumption that there will be a notable **uptick in the rig count in the GOM** over 2020-21. Already up to 25 from about 20 over the past few years (see Figure 29), we are projecting the GOM rig count to reach 33-35 by 2021. Supporting details for this assumption can found back on pages 78 to 81. To summarize, forecasts by leading energy research firms, declining breakeven prices, and recent lease sales underpin our rig recovery projections.

Firms in the Houma area that provide services to exploration companies should experience a hike in business and hiring. A firm like **Grand Isle Shipyard** which provides a wide range of services (design, manufacturing, turnarounds, etc.) to operators in the GOM, should especially benefit. Grand Isle is predominately in the Houma MSA but has facilities all across South Louisiana. Already at about 1,600 employees, this firm is about 70% recovered from the post-2014 collapse and is in a hiring mode.

The headquarters for **Danos** is located in Houma. Danos has three basic areas of business: (1) platform operators, (2) maintenance work (welders, pipefitters, instrumentations, etc.), and (3) logistics-longshoreman work. The company employs 3,000 people company-wide, with about 30% now in the Permian Basin. The firm anticipates adding to that workforce as activity in the Gulf picks up.

Employment has also climbed from 320 to 500 at **Chett Morrison**. The firm's commercial diving division is very active, as is its pipe laying and maintenance work. Direct ties to the Gulf should boost employment at Chett Morrison over 2020-21. Several other firms in the Houma region focus on services for offshore exploration---including some described below---and should be adding jobs as we progress towards 2021.

The Shipbuilders and Fabricators: Diversify to Survive

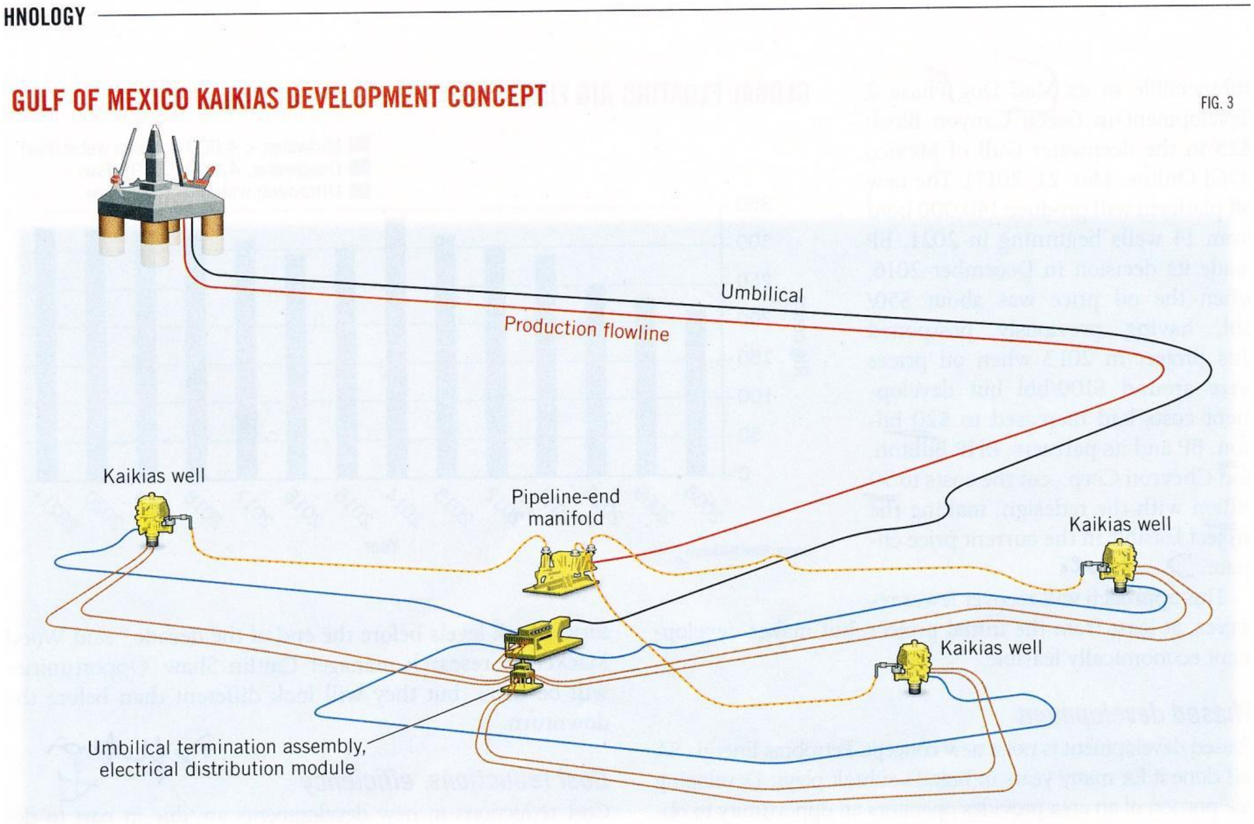
Shipbuilders and fabricators in this region have been a wonder to watch over the past few years. As business in the Gulf tanked, they did what agile capitalists always do: they diversified into other fields.

For fabricators, diversification is particularly necessary because this sector will not recover as fast this time around as in past recoveries. That is because deepwater exploration companies---also composed of clever capitalists---discovered a unique way of reducing production costs dramatically. In the past when a new field was discovered the exploration company spent multi-billions (Mad Dog 2 cost $9 billion) on a huge tension leg platform (TLP) to harvest the field. Today, the firm is more likely to put in place a **subsea tieback** to an existing platform. For example, when Shell was ready to develop its Kaikais Field the firm eschewed spending multi-billions to build a TLP over the field. Instead, as seen in Figure 32, Shell ran pipeline tiebacks to one of their existing TLPs---the Ursa TLP.

Interestingly, when the first combined western/central/eastern Gulf lease sale took place early in 2018, 85 of the 105 leases sold were immediately contiguous to existing leased acreage, and another 17 were within two miles of existing leases. This appears to be clear evidence that exploration companies want to keep the less expensive tieback option available as they develop their fields.

Specifically for fabricators, this means going from building uber-expensive TLPs to manufacturing much less expensive subsea pipeline end terminations (PLETs), pipeline end manifolds (**PLEMs**), and in-line tree (**ILT**) modules. Note the PLEM in Figure 32.

Figure 32
Illustration of a Subsea Tieback: Kaikais to Ursa



Source: Oil & Gas Journal

Gulf Island Fabricators is a classic case of adjusting to these changes. A decade ago, GI's was almost entirely focused on fabricating components for TLPs. Today, GI has three units: (1) a fabrication division (175 jobs), (2) a shipbuilding division (250 jobs), and (3) a services division (350 jobs). Note that GI's fabrication division is now its smallest component and it is now focused on <u>downstream</u> fabrication---building modules for the burgeoning chemical and LNG industries. Over the next two years this component should be a good growth area for the company. GI's shipbuilding unit has the largest backlog of work, enough to fill 2020 and 2021. The firm has two new contracts to build car ferries for Texas' and North Carolina's departments of transportation and is working on three Regional Research Class Vessels (RRCVs) for Oregon State University. GI has been awarded two contracts to build T-ATS (military sealift command ships) for the Navy, with options for five more. The division that will benefit the most from the recovery in the GOM is GI's services division, which is already the largest in the company.

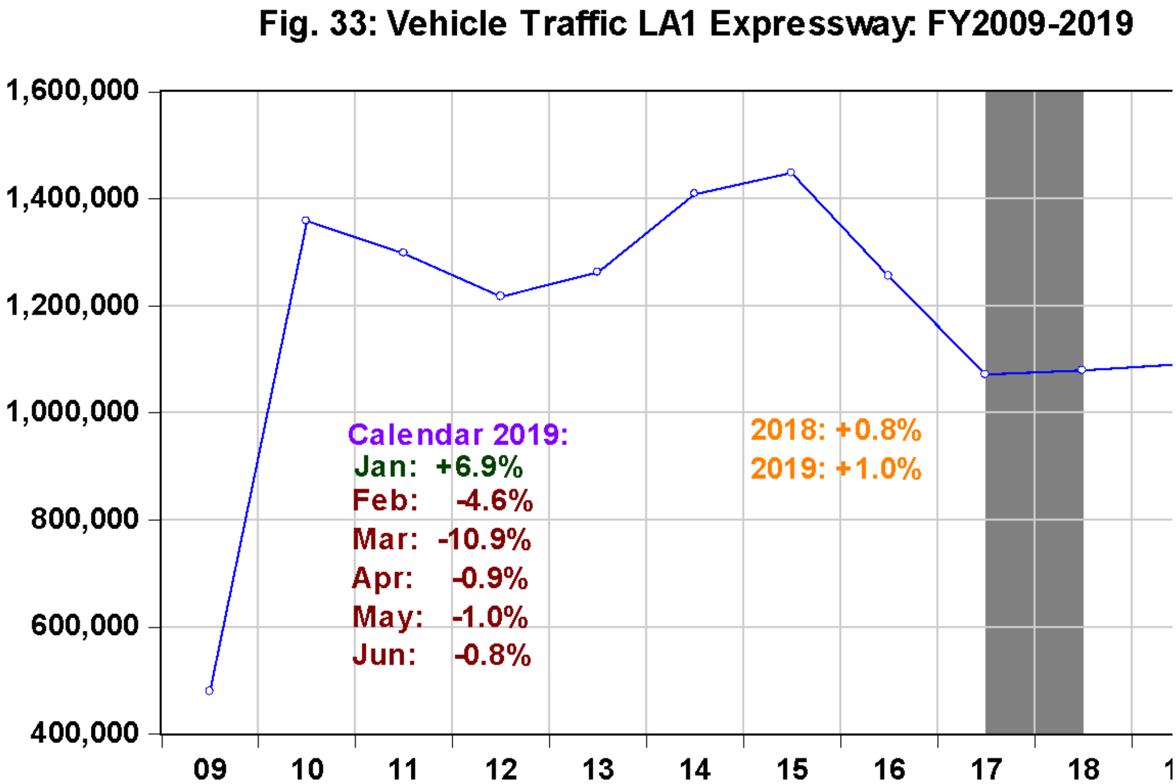
New jobs will almost certainly come from **Edison Chouest** over the next two years. Chouest not only builds offshore platform supply vessels (PSVs), it operates them as well. Generally speaking it takes about three PSVs to service an active rig in the GOM. If our forecast is correct that the rig count will rise from 25 to 35, then 30 more PSVs will be needed in the GOM. Chouest presently has about 100 of its 300 PSVs in dry dock, so some will be brought back into active service. Each PSV requires 9-10 active mariners, another source of new jobs for the region. On its shipbuilding side, Chouest has diversified into government work, building and operating all the docking boats in the U.S. for the Navy. The company also manufactures tugs for the government, for LNG export terminals and escort vessels. LaShip is Chouest's survivor yard and employs about 300, a number expected to rise 30-40%, and the company's North American Shipyard is projected to bump its 200-person workforce by the same percentage over our forecast period. The company's repair yard at Port Fourchon should remain relatively stable at 60 people.

The **Thoma-Sea Shipyard** is another classic case of diversification. After dropping as low as 175 employees, Thoma-Sea is back up to 350 and will add another 150 jobs over 2020-21 primarily by building up non-exploration work. The company is 30% into a job to manufacture a 328-foot fishing trawler (Artic Storm) for Rolls Royce, is doing brown water and blue water barge and tug repair work, and is doing repair work for the Coast Guard, Army Corps, Navy and other government jobs. **Bollinger Shipyard** is still in the midst of its 58-boat contract with the Coast Guard to build Fast Response Cutters. About 800 workers are at Bollinger's facility and will be kept busy on this contract through at least 2027.

Port Fourchon: Not There Yet, But Bump Coming

People familiar with this region of the state would look to Port Fourchon as a coincident indicator of renewed activity in the Gulf. That is because about 90% of the activity in the Gulf is serviced out of this port. A key technique for measuring activity at the Port is traffic on the **LA1 Expressway** leading into the Port. A bit of a mixed message is sent by these data as seen in Figure 33. After a sharp decline over FY16 and FY17, traffic count numbers rose very modestly in FY18 (+0.8%) and FY19 (1%). However, the data for the first six months of calendar year 2019 are less promising, to say the least. Traffic has been down every month for the last five months. If our offshore rigs count forecasts are near the mark, we should see a reversal in this negative trend and a nice upward boost as we get into 2020 and 2021.

The port continues to expand its footprint. Next year, $20 million will be spent to complete the Slip C expansion, and $8 million will be used on Slip D dredging and movement of dirt to build up the Slip D land. By the end of 2019, the Port should have a feasibility report approved by the Corps to dredge the Port to 50 feet from the entrance to the north end of Belle Pass, and then to 30 feet in the floatation canals and slips. The Port will need $250 million from the Water Bill to start this dredging in 2021.



A $35 million project is underway for road work connecting the Port with the **South Lafourche Leonard Miller Junior Airport**. Readers may be surprised to learn that this airport handles 140,000 passengers annually, 80,000 of which are Chevron employees. In previous issues of the LEO we have mentioned the **Energy World LNG** project, an $888 million LNG export facility. This plant would be sited on 150 acres on the west side of Belle Pass. The company is in the pre-filing stage with the FERC approval process, which means the start of construction is well outside of our forecast period.

Roads and Rouses

The Houma MSA's economy should get an extra lift from road construction projects ahead. **State road lettings** over 2020-21 total $116.3 million, up from $77.8 million in last year's LEO. The three top projects are (1) $25.6 million to replace the Company Canal Bridge, (2) $7.6 million for work on LA1 from the LA1 Bridge to St. Louis Street, and (3) 5.9 million on US190 from LA308 to 2.3 miles east of LA182.

A potentially huge win for the region---and especially users of Port Fourchon---is the $350 million project to **finish LA1 between Golden Meadow and Leesville**. Of this sum $150 million would come from BP Spill monies (Act 443), $25 million from private industry, $25 million from the Port Commission, and $150 million from the Federal Infrastructure for Rebuilding America (INFRA) funds. INFRA has $900 million in the next round of funding and 25% must go to rural-designated areas---for which LA1 qualifies. A big burden will be put on the Louisiana Delegation to get this funding allocated to LA1. It will be 2021 before construction can likely begin, and the project will take 4.5 years to complete.

Houma received an unexpected, non-energy related gift this year when **Rouses** announced it was constructing a new distribution center in Schriever that will create 200-300 jobs. The company is also relocating its headquarters---and 150 jobs---from Thibodaux to Schriever. This latter move will mean no net new jobs because both cities are in the MSA.

Monroe MSA: CenturyLink Continuing in Monroe until 2025

Located in the northeast corner of the state (see Map 1), the Monroe MSA comprises two parishes---Ouachita and Union. Monroe is the third smallest MSA in the state (ahead of Alexandria and Hammond), with an estimated 78,500 non-farm jobs in 2019.

Until the turn of the century, this MSA had the highest concentration of employment in the broad category called "finance/insurance/real estate" (FIRE) of any MSA in the state. That was due in part to the 1,000-person **JPMorgan Chase Mortgage** facility, the service part (400 employees) of which was spun off to **Wing Span Portfolio,** a company that subsequently folded. Another big contributor to this ranking was the 1,200-person **State Farm** claims center. The latter closed its doors in 2005, and Chase absorbed the **Bank One** documents depository, so FIRE's influence in this MSA's economy has been reduced somewhat.

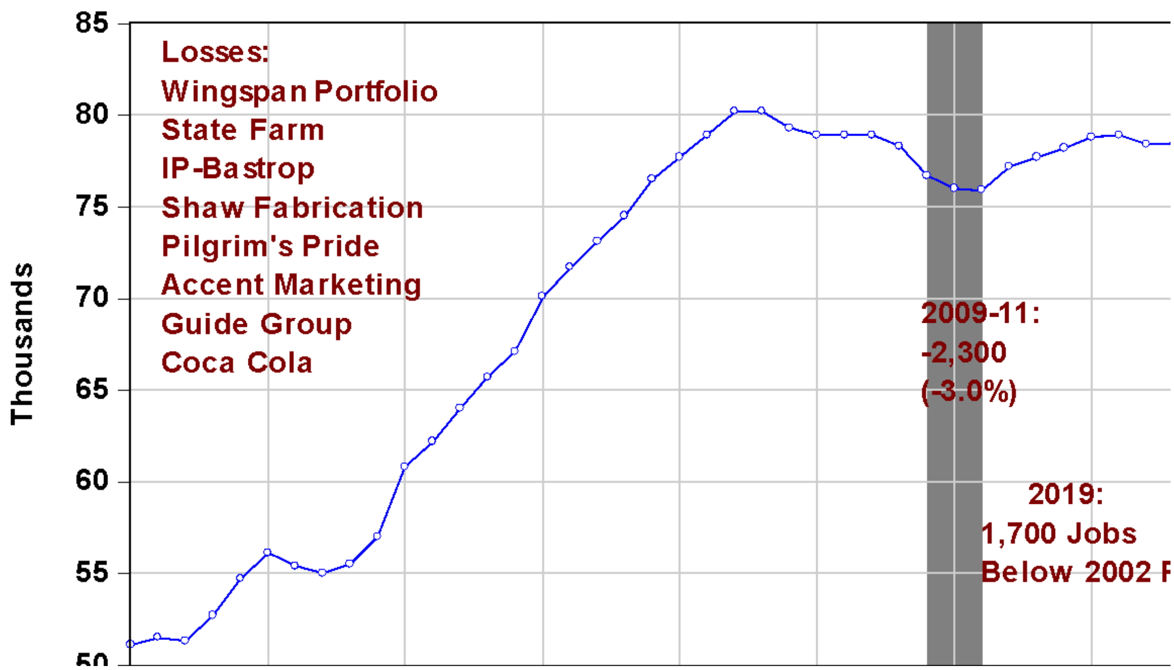
Other large employers in the region include **Foster Farms** that employs 1,200 people, and **Graphic Packaging**, a paper/carton plant that employs about 800 people at its three sites. **CenturyLink**---one of Louisiana's Fortune 500 Companies---also plays a key role in this MSA's economy with its workforce of more than 1,500. **IBM** has a 130-person operation near CenturyLink. **Delphi Lighting** was a major player until it closed its 800-person headlight manufacturing facility in June 2007. **Vantage Health Plan** is a newer addition to the region and has grown to employ 1,300 people. The **University of Louisiana Monroe** is also located in this MSA and has about 340 faculty members.

Monroe Employment History

Figure 34 traces Monroe's employment history from 1980 to 2019. Like Baton Rouge, this MSA was only lightly tapped by the deep recession of 1982-87. Monroe lost jobs for only two years---1986 and 1987---and even then the decline was only 2 percent as compared to the 9 percent statewide job loss. The reason for the light hit is that Monroe has almost no jobs in extraction or chemicals, which were the two industries that suffered the most during that recession.

By 1989, Monroe had retrieved all those lost jobs and was setting new employment records. Between 1987 and 2002, this region enjoyed a 14-year stretch of growth, with five of those years registering 2.5 percent plus annual growth rates. The increase in 1990 is distorted by the addition of Union Parish to the MSA's numbers.

Fig. 34: Monroe MSA Non Farm Employment 1980-2019



The years from 2003 through 2011 were not good ones for the Monroe MSA as is evident in Figure 34. Remarkably, **Monroe did not have a growth year during this entire nine-year period.** The decline was not horrendous, but it was steady. After going flat in 2003, the MSA lost 4,300 jobs over 2003-11, a 5.4 % decline. The three years from 2005-07 were also flat. During the "Great Recession" the region lost 2,300 jobs, a decline of 3.0 percent---tied with Lafayette as the third best performance in the state.

Consider the body blows this region took during those nine years (see insert to Figure 34):

- The biggest hits came with the initial layoffs at, and then total closure of, the **State Farm Insurance** claim office, costing the area 1,100+ jobs.

- **Guide Corporation** reduced the workforce at its headlight plant, and then totally shuttered the facility in 2007, at a cost of 650 jobs with an annual payroll of $53 million.

- **Graphic Packaging** also engaged in workforce reductions.

- **Holsum Bakery** closed its facility in Monroe, terminating 50 employees in the process.

- In 2008, **International Paper** closed its 550-person paper mill in nearby Bastrop.

- In 2009, **Shaw** closed a pipe fabrication plant that had 202 employees and an $11 million annual payroll.

- In 2008, **Pilgrim's Pride** closed a chicken processing plant in Union Parish that cost the region an estimated 1,500 jobs.

- In early 2010, **Accent Marketing** lost a major client and dismissed 340 workers at its call center.

- **Coca Cola** closed its bottling plant, dropping 85 people.

That is a remarkable list of nine significant closures during those nine years. It is a wonder that the Monroe job losses were not much greater.

2012: An End to the Bloodletting

As seen back in Figure 34, Monroe actually experienced net job growth in 2012 for the first time in nine years, and it was a healthy boost of 1,000 jobs. There were no more major layoff announcements in that year, and the region received a shot in the arm from a number of sources.

- **CenturyLink** continued to move like a freight train in its acquisition efforts. In 2014, the company made a commitment to keep its headquarters in Monroe through 2020 and added to its Monroe workforce.

- **Foster Farms** reopened the shuttered Pilgrim's Pride plant and is now back up to 1,200 employees in Union Parish.

- **Gardner Denver Thomas** relocated operations in Wisconsin to the Monroe area in 2010, generating 67 jobs initially and now employs 300.

- As a sign of a longer run commitment to the region, **Graphic Packaging** brought in new equipment from a mill in Colorado to increase the productivity of its workforce, which it plans to keep stable for now.

- **Angus Chemical** invested about $100 million in its plant in Sterlington, including a $10.8 million investment in 2011 in a new electrical substation and general electrical system, which helped the firm stabilize employment.

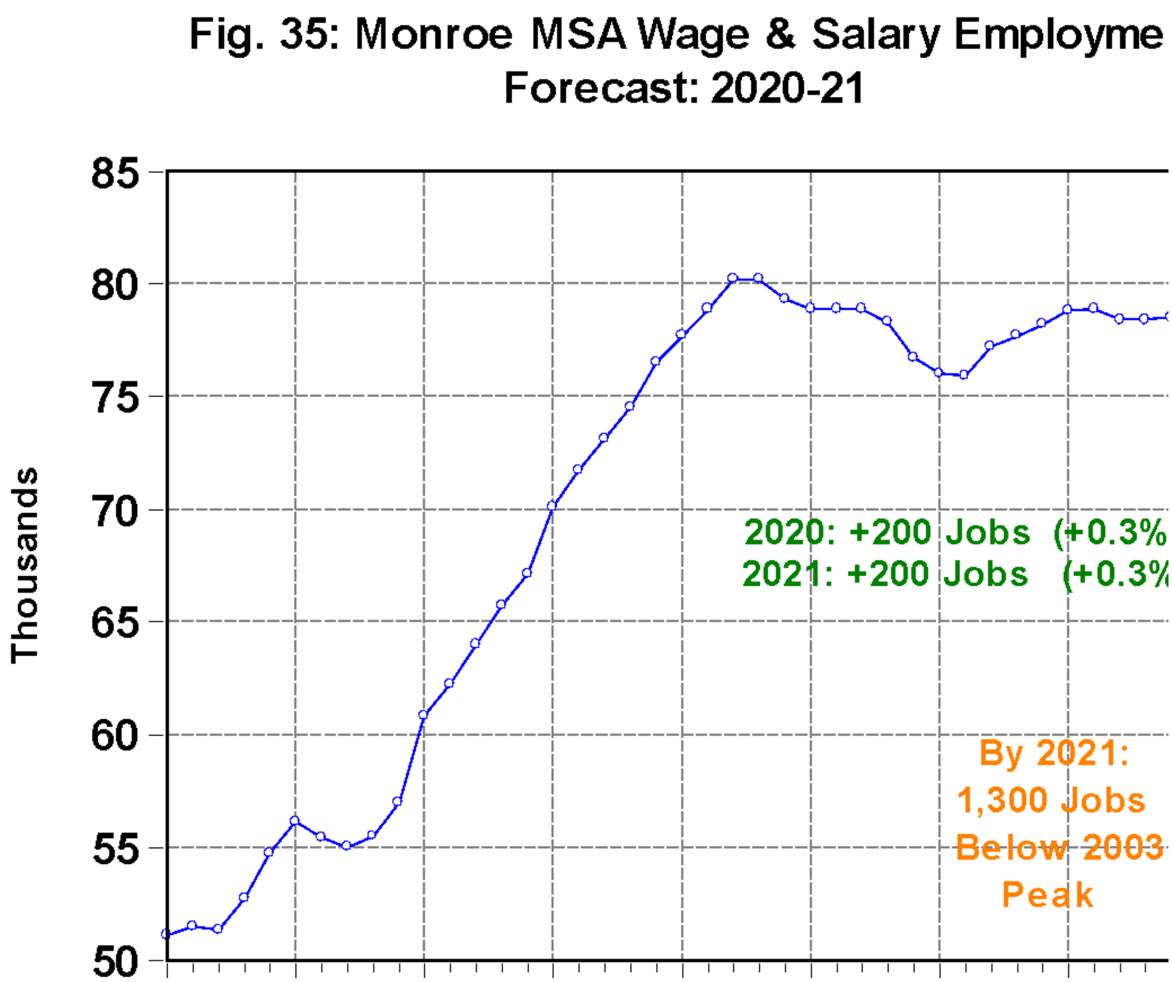
Fortunately, that growth pattern in 2012 continued through 2014. The MSA averaged 800 new jobs a year over 2012-14.

2015-19: A Period of Stagnation

As can be seen in Figure 34, the Monroe MSA has been essentially flat since 2015. The loss of 400 jobs at **Wingspan Portfolio Advisors** did not help matters, and that loss was followed by a shedding of about 500 jobs at **CenturyLink**. During this period, the region was virtually devoid of new entrants into its economy, an experience quite at variance with what was going on at its sister MSAs in the southern part of the state.

Forecasts for 2020-21: CenturyLink to Stay in Monroe through 2025

Early Workforce Commission data suggest that the MSA will have flat employment this year---about 100 new jobs in total (+0.1%). **We project this growth rate will continue to inch up over 2020-21, with the region adding another 200 jobs each year (see Figure 35).**



In last year's LEO, the nervousness around Monroe was about the future of **CenturyLink**. Acquisition of Level 3 by CenturyLink created some interesting dynamics. The headquarters of Level 3 was in Denver. Jeff Storey of Level 3 took over the helm of CenturyLink with the retirement of the mastermind who built this company, Glen Post. While Jeff Storey has not relocated to Monroe, CenturyLink had a commitment with the state to keep its headquarters in

Monroe through 2020. In March of 2019, Gov. Edwards and CenturyLink reached an agreement to extend the company's commitment to maintain its headquarters in Monroe through **2025** with $17.5 million in tax incentives and no penalties for failure to reach employment targets.[10] If employment targets are met, they will get a maximum of $2.5 million in additional annual incentives.

While the headquarters in Monroe shed more than 400 headquarter jobs post-merger, during the past year, 150 new jobs were added for an outbound sales center for small business. While last year LEO was fearful that more layoffs were on the horizon, we are now anticipating employment to remain steady over the forecast horizon, which is welcome news for Monroe especially given last year's scare.

Stable-to-Modest Growth from Other Big Players

Other major employers in the area are also seeing stability or even modest growth in the Monroe region. The large, 1,000-person **Chase Mortgage Processing Center** expects employment levels to remain stable and has a program with local community colleges to generate candidates for its open positions. **Vantage Health** and its Affinity Health Group (the physician practice portion of the company) is now at 1,300 employees and projects stable-to-modest growth over 2020-21 as it moves into the southern part of Louisiana and into other states. In January of 2020, they anticipate expanding into Arkansas and then into Mississippi by 2021. Also, this past year Blue Cross Blue Shield purchased 80% of Vantage and is planning to move administrative functions for Medicare back to Louisiana. On net, Vantage anticipates creating an additional 200 jobs in the Monroe area over the next year.

IBM is located across the street from CenturyLink in an 88-acre mixed use development. The company moved a number of jobs to Colorado and as a result it is now at 130 employees. IBM expects to add another 160 jobs by 2021. In a nice capital expansion of $274 million, **Graphic Packaging** upgraded its paper mill in the fall of 2018 and constructed a new folding carton plant that added 93 jobs. But in net, a few jobs will be lost due to other technical, efficiency improving advances. Employment is at approximately 800. **Wagner Logistics** came into Monroe in 2019 to assist with logistics for **Graphic Packaging**, adding 300 new jobs. **Gardner Denver** consolidated a California plant at its present location in early 2017 and now has stabilized its employment at about 300. **Foster Farms** anticipate stable employment of its 1,200-person workforce over the forecast horizon.

Steel Fabricators, which provides engineering and steel fabrication services to a wide range of clients, is now at 120 employees and expects to remain over 2020-21. The Monroe community was elated to learn recently that **Drax Biomass** (a maker of wood pellets to be used as fuel in electric power plants) has moved its headquarters from Atlanta to Monroe. Thirty new jobs were created, with only two from Atlanta, and the other 28 hired locally.

In last year's LEO, we reported that **Angus Chemical** was purchased by an investment group and that employment had declined substantially. They have now stabilized at about 100 to

[10] Governor John Bel Edwards: CenturyLink Headquarters to Stay in Louisiana. Monroe New Star. March 18, 2019.

120 jobs and are anticipating adding a warehouse this year, which would create an addition 20 jobs. **Coast Professional** is a client of the U.S. Department of Education and conducts loan collections for student loans. The company currently employs 125 workers in Monroe and is in the process of doubling its operations with a $750,000 capital expenditure that will add 146 new jobs making about $36,500 per year. According to a local news source, the expansion involves converting a Sears Hometown store and renovating the interior space and parking area.[11] Another exciting development is the planned opening of the **Edward Via College of Osteopathic Medicine** that will be located at the **University of Louisiana Monroe**. The new medical school is now accepting students to start in 2020. They anticipate 160 freshmen a year at a new 100,000 square foot building that is under construction. **Entergy** is spending $82 million on a reliability improvement plan in the area that will be completed in summer 2021.

State Road Letting Almost Double

Over 2020-21, the state has announced **$66.3 million in new state road lettings** for this MSA. This figure is up significantly from the $35 million reported in last year's LEO. Two of the bigger projects listed are (1) $29.2 million for a Kansas Lane and Garrett Road connector and (2) $5.3 million for an LA 3249 roundabout at I-120/Well Road.

Alexandria: Downtown Revitalization and the Austin Chalk

Alexandria is the second smallest of Louisiana's nine MSAs with about 61,100 non-farm employees in 2019. This MSA is comprised of two parishes---Rapides and Grant. Alexandria derives the lowest percentage of its employment from the "basic" sectors---mining and manufacturing---of all the MSAs in the state except Hammond. Located in the central part of Louisiana (see Map 1), it has typically served as the retail/services center for the north/central part of the state.

Alexandria also has the second highest percentage of employment in the **government sector** (22%) of all the MSAs as well---even larger than Baton Rouge (17.1%), which is the state capital and home to two large state universities. **Pinecrest Support and Services Center** provides care for the mentally disabled and employs about 1,300 people. **Central State Hospital** for the mentally ill has about 300 workers at the present time. Nearby **Fort Polk** is the largest military installation in the state. While not actually located in the Alexandria MSA, this huge base has a noticeable impact on this MSA's economy.

Procter & Gamble has a significant 1,200-person operation in this MSA, and **Union Tank Car** with just over 400 employees is located at England Airpark. The utility company **Cleco**, with about 700 employees in the Cenla area (and about 1,480 state-wide), is also a major force in this MSA's economy, and **Roy O. Martin** employs about 1,280 at its home office in Alexandria and two wood processing sites. **Crest Industries---**which is the umbrella firm for DIS-TRAN, CNR, Beta Engineering and Mid State Supply---makes steel poles and substations for electric power generation and employs about 700.

[11] https://www.wbrz.com/news/coast-professional-to-expand-add-146-jobs-in-west-monroe/

Alexandria's Recent Employment History

Alexandria's employment history is illustrated in Figure 36. Five key points will be noticed by the careful reader when viewing this figure. First, note that there was a slight bump upwards in 1990. The Department of Labor revised the employment statistics only back to that year to take into account the addition of Grant Parish to this MSA.

Secondly, note that this MSA enjoyed an **almost recession-free history** until 2001. Except for a mild decline in 1982, its employment track had basically been a line moving constantly upward for the last two decades of the 20th century.

Even the post-9/11 national recession in 2001 only mildly impacted the Alexandria MSA, causing a meager loss of only 200 jobs (-0.3 percent). This means the Alexandria MSA was the second-least impacted of all the state's nine MSAs---not a surprising finding given the lower manufacturing base and the government-orientation of the region. (Hammond was the least impacted.)

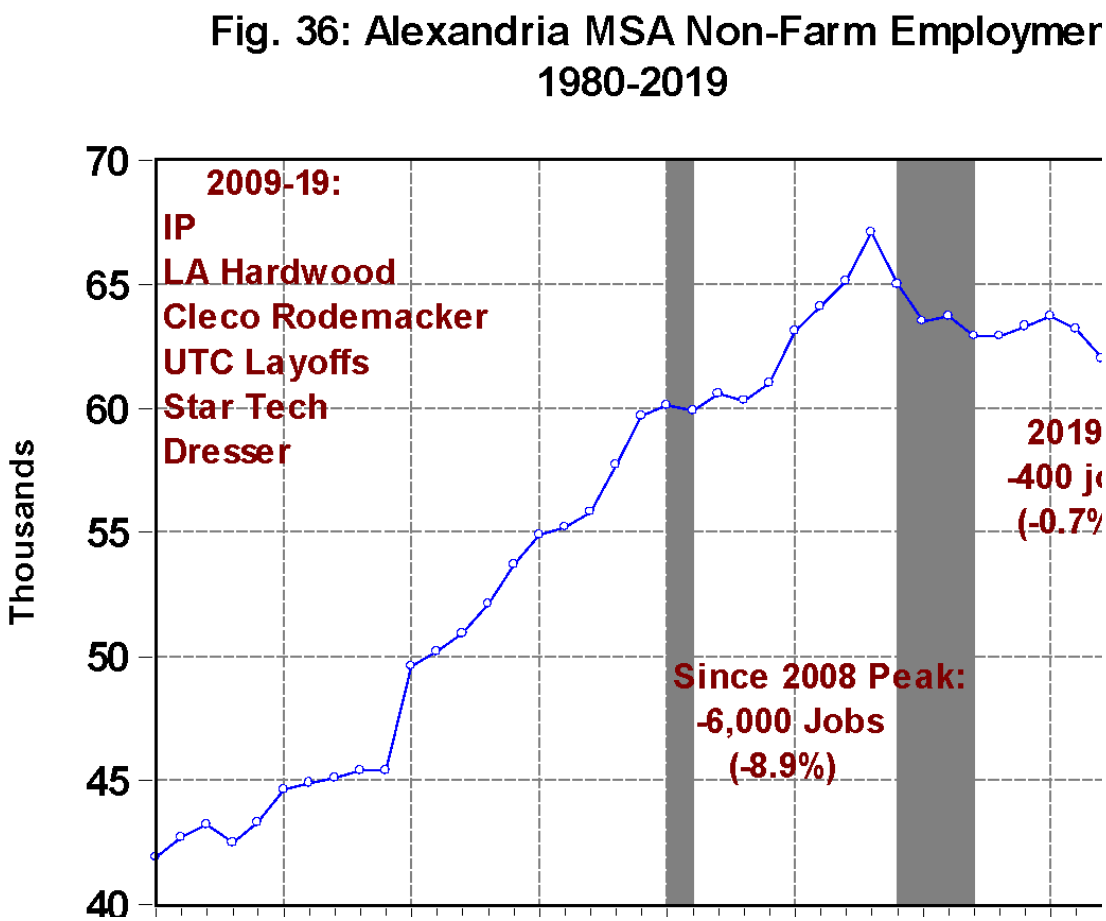
Note thirdly that there is a **slight kink upward in the graph starting in 1992.** Two factors contributed to this nice boost in Alexandria's growth rate. The first was a seemingly negative event---the closure of England Air Force Base. Civic and governmental leaders turned this economic lemon into lemonade by gaining control of the base assets and turning it into an industrial park/retirement village. **England Industrial Airpark** is now almost totally reoccupied. Several businesses have moved to the site, and the regional airport has been relocated there. A new, 150-person **Immigration and Customs Transfer** facility was opened at the Airpark in the summer of 2014 and serves as a domestic transportation hub for moving detainees.

Too, during this period **I-49 was being constructed** through the heart of the city, adding an unusual injection of construction jobs to the economy. There was a slight slowdown in 1996-97 when one of England's newest and largest tenants---J.B. Hunt Trucking---shut down their operation there.

2005-08: Great Growth Years

A fourth lesson in Figure 36 is that the recovery from the 2001 recession was initially lackluster at best. Employment was basically flat from 2002 through 2004. However, as seen in Figure 36 the next four years were very good ones for this MSA. Employment jumped by 6,100 or a strong 2.5 percent annually. This was one of the best performances in the state over that four-year time frame.

During this rapid expansion phase there was (1) a doubling of the size of the federal prison at Pollock, (2) significant capital expenditures at England Airpark, (3) $132 million on the construction phase of Union Tank Car (UTC), (4) UTC began a hiring process that resulted in 670 workers initially at its new plant, (5) the huge $1 billion+ **Cleco Rodemacher** plant was under construction at the time, creating about 1,700 construction jobs, and (6) a new $60 million **MARTCO** plant was constructed just outside the southern part of the MSA.



On the outer edges of the MSA, there was a $100 million addition to the **Paragon Casino** in nearby Avoyelles Parish, and a large amount of construction spending took place at **Fort Polk**. While these two projects are outside of the MSA's borders, they created extra earnings which were often spent in Alexandria's retail and service establishments. Offsetting all this good news was the closure of **Parta Systems**, a 110-person pharmaceutical parts manufacturing plant.

2009-13: A Pounding from the Great Recession & State Government

The fifth lesson from Figure 36 is the almost continuous drop in employment over the four years from 2009-13. During that period**, this MSA lost 4,200 jobs---a 6.3% decline**.

Great Recession Effects: The Great Recession was partly the culprit. Alexandria's employment took quite a hit over 2009-10, losing 3,600 jobs or a 5.4 percent decline. Only Lake Charles at -6.3% had a worse record during the Great Recession.

There were several factors behind this drop. The attraction of a large, high-paying, durable goods manufacturer like **Union Tank Car** is great for an area. However, when the national economy goes south, durable goods manufacturers get hit the hardest. After reaching a peak employment of 670 in early 2008, orders for UTC tank cars dropped so much that the firm reduced its employment to 270. Demand for new railcars was down as always happens when you have a recession as bad as the Great Recession. For example, in 2006 about 60,000 rail cars were sitting idle; by spring 2009 this number was up to 540,000.

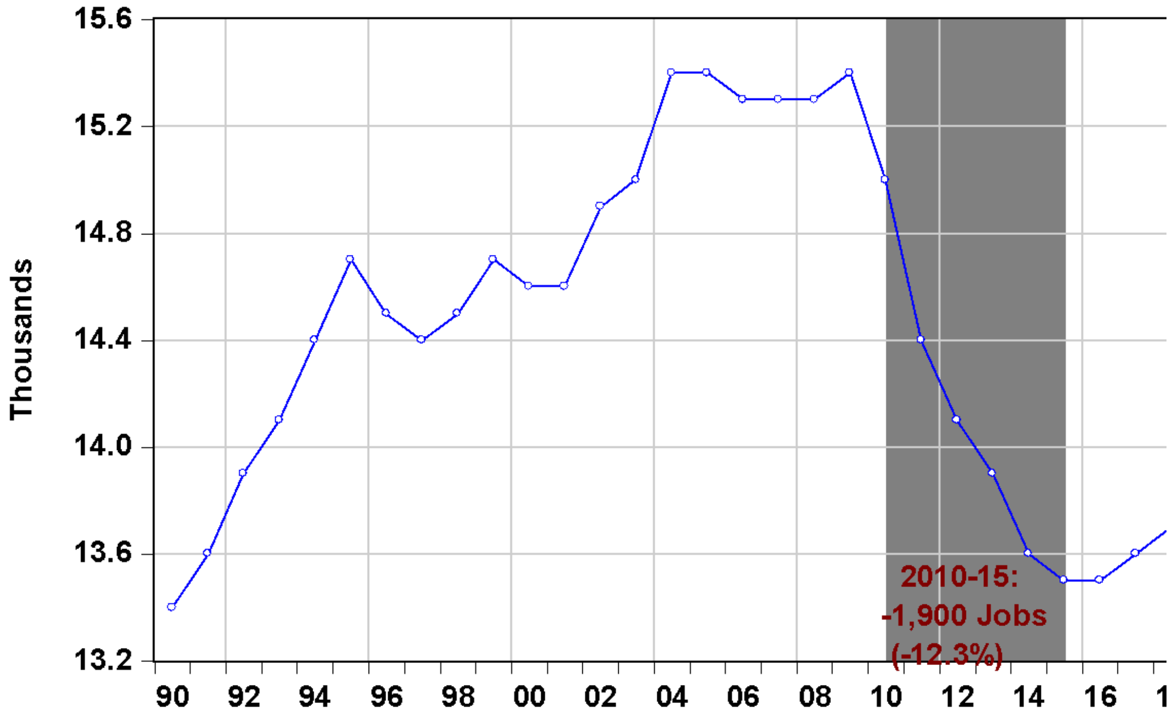
Secondly, the region's lumber industry came under attack due to the weak national housing market. Specifically, **Louisiana Hardwood** in Lemoyen halted its second shift in 2009, and **International Paper** closed its container board plant in late 2009, terminating 230 people. Thirdly, the huge $1 billion+ **Cleco Rodemacher** plant construction project was finished in 2009, resulting in the loss of those 1,700 construction jobs. On a lesser scale, **Dresser Industries** began moving from a manufacturing orientation towards assembly and reduced its workforce by 75 in early 2010. Finally, **Star-Tech** lost a major customer and dismissed 300 people.

2010-19: Languishing

Alexandria did not pop back from the Great Recession as is clear from an examination of Figure 36. Since 2010, the region's economy has been either flat or declining (2016-19). This occurred despite the fact that the **Jena Indian Tribe** opened a 46,000 square foot, class II casino in February 2014 that employs 300 people.

A key culprit in this languishing performance was <u>government</u>. We mentioned in the introduction to this MSA that this region has a higher percentage of employment in the government sector than any other MSA in the state. More often than not that lends an extra measure of stability to a region, but not when state and local governments are having budgetary problems. Note in Figure 37 that from 2010 to 2015, **federal, state and local government employment in the MSA has steadily declined by a total of 1,900 jobs---a drop of 12.3%.** Government employment bottomed out in 2015 and 2016, and since has regained a modest 200 jobs. That alone is large enough to put a serious drag on the MSA's economy.

Fig. 37: Alexandria Government Employment



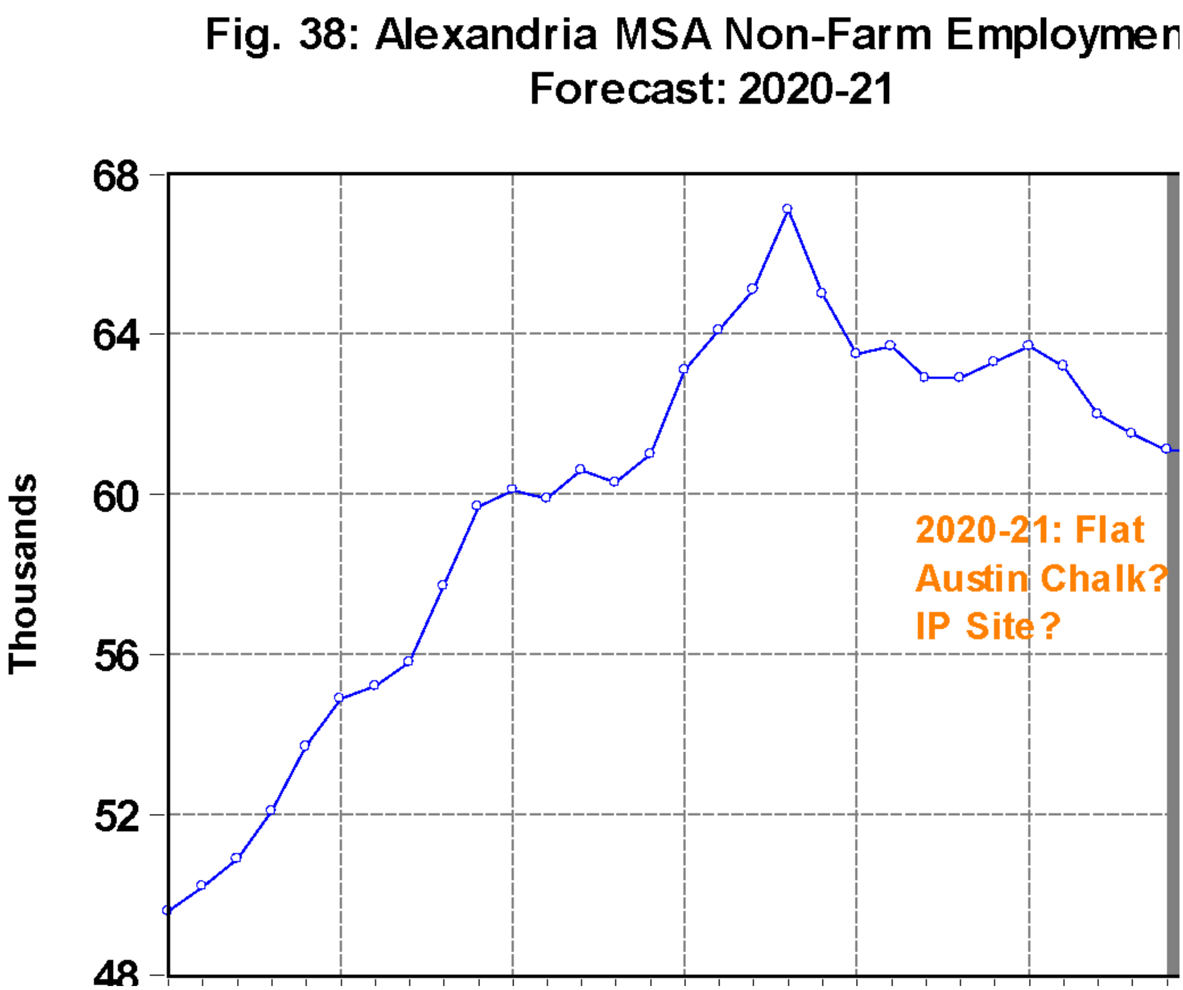
Government was not the only problem. The decline from 2016-20 17 back in Figure 36 was prodded along by private sector players as well. **Union Tank Car** announced a workforce reduction of 244 because a primary customer left its fleet, though now both business and employment at UTC are in an expansion mode. **GE-Dresser** finally closed its facility in the area, costing the MSA 289 jobs.

On a more positive note, **Cleco** helped arrest the bleeding with the instigation of its $130 million "Start" technology project, which brought in 100 new, high-wage IT workers to Alexandria. "Start" was far from enough to offset the negative hits listed above. Further help came in the fiscal year running July 2018 to June 2019, as **England Airpark** completed two projects totaling $6.8 million. Also over the past two years, an estimated **$22 million** was spent on a new building and renovation of a second existing building in downtown Alexandria for the **Central Louisiana Technical and Community College**. This construction has now been completed, and this fall there will be an estimated 600-800 students downtown every week. While these were all positive measures, they were not enough to reverse Alexandria's downward trend. By the end of 2019 **Alexandria's employment will likely still be 4,600 jobs below the peak last achieved in 2008**.

Forecasts for 2020-21: Absence of Negatives Stops the Bleeding: Will IP Site Give Boost?

This MSA has some large firms whose employment forms a solid base for the community. Our conversations with these companies suggest that the region will maintain its stable base, but not generate really significant growth over our forecast period. As seen in Figure 38, **we are forecasting zero job growth for 2020 and 2021.** While this might not sound like welcome news, this would be significant for the region to experience **a flattening of the downward trend in employment experienced since its 2008 peak.** This forecast is made primarily on two factors.

First, the years of declining **government employment** appear to have ended (see Figure 37. With the recent increases in Louisiana state revenues and increased federal spending, we anticipate that government employment will remain relatively stable over the forecast horizon. Second, **we are not anticipating any major lay-offs** throughout the forecast horizon based on our conversations with local businesses. While business is relatively good and stable, there are also no investments that we see throughout the horizon that would be large enough to create a significant employment increase. This forecast also assumes no significant activity in the Austin Chalk or at the old IP site, as will be discussed further below. An increase in drilling or a new tenant at the IP site could create a localized boom in the region.



The Base Remains Solid

The good news for this region is that its economic base appears to be in good shape and unlikely to face significant layoffs over 2020-21. A mainstay of the community—**Cleco**—now has about 1,478 employees, up from 1,225 last year. Approximately 700 of these employees are located in the Alexandria metro area.

There has been significant news surrounding Cleco these last two years. Cleco was purchased in early 2019 by international investors and has been undergoing significant investments. As mentioned, last year, they completed a "Start" program that includes about 100 or so IT people. Cleco also purchased five **NRG power plants** that serve nine power cooperatives throughout the state. The five power stations include Big Cajun in Jarreau, Big Cajun II in New Roads, Bayou Cove in Jennings, Sterlington in Sterlington, and Cottonwood in Deweyville, Texas. These purchases have not materially impacted employment at Cleco's headquarters in Pineville.

Procter & Gamble (P&G) continues to maintain its workforce of 500 P&G employees and 700 contractors. This is expected to remain steady over the next few years. Since last year's LEO, **Plastipak Packaging**, a firm that provides plastic containers to P&G, completed a $15 million expansion. **Crest Companies**---the umbrella organization for Dis-Tran, CNR, Beta Engineering, and Mid State Supply---is heavily into the manufacture of steel poles for the transmission market. Now at over 700 employees, business is good and is expected to remain steady over the forecast period.

The increased pace of the national economy, combined with a growing need for railcars to service Louisiana and Texas' booming chemical industry, has boosted business at **Union Tank Car** (UTC). Employment at this facility had declined into the mid-200s but is now up to 400. This figure is expected to be stable over 2020-21. Last year, the Alexandria economy was also positively impacted by **Roy O. Martin**. A plywood plant at Chopin, just over the border in Natchitoches Parish, was expanded. Roy O. Martin increased employment from 1,200 last year to currently 1,280 partially due to this expansion. Employment is expected to be stable over the forecasted period.

The **Central Louisiana Port** is also stable. While there are only 60 people employed directly at the port (including the port's tenants), this is an important economic development tool in the region. According to the port's own estimates, it supports over 2,000 direct and indirect jobs in the region. DIS-TRAN is the largest tenant with about 35 employees.

We have discussed in previous LEOs the development of the **Cool Planet** project at the Alexandria Port. Cool Planet's first commercial product, Cool Terra®, has been in development and testing for four years. More than 50 university and independent third-party researchers have tested the product in more than 125 trials across over 40 crops. Metadata for the trials shows an average 12.3% marketable yield increase. While Cool Planet only has three full-time employees in Alexandria today, the company expects approximately $20 million in capital expenditures in Alexandria over the next 18 months. Employment is expected to ramp up to 40 full-time employees over the next two to three years.

The Public Side: Road Lettings & England

The Louisiana DOTD expects $29.6 million in **new state road lettings** over the next two years. This figure is down from the $35 million we reported in last year's LEO. The two largest projects listed by DOTD were (1) a $4.3 million new bridge at Dartigo Creek, and (2) $3.1 million on Horseshoe Drive improvements.

Over $100 million of capital expenditures at the **England Airpark** continue to pump much-needed construction spending into this MSA. The top ongoing projects are (1) $13.6 million airfield electric rehabilitation, with approximately $2.1 million spent in the past year; (2) $6.6 million Emergency Access Road improvements, with approximately $2.3 million spent in the past year; (3) a $5.7 million North Airport Emergency Access with $2.75 million spent in the past year; (4) a $77 million Noise Study that re-locates individuals located within high noise zones near runways project with approximately $2.7 million spent in the past year; and (5) $1.4 million Runway Mill & Overlay that will be completed by the end of 2019. All of these projects will be completed by the end of 2019, with the exception of the larger Noise Study relocation program that will continue through June of 2022.

Also at England Airpark, over the past year J.M. Test Systems expanded its operation from about 21 to 30 workers. The airport also picked up a new tenant, McFarland Cascade. While only four McFarland Cascade people work physically at the airpark, they have about 60 total employees in Cenla located at two plants in Alexandria and Pineville. They are a subsidiary of Stella-Jones, a Canadian company with over $2 billion in revenues in 2018. Their new regional headquarters is now located at the Airpark.

Expansion: Central Louisiana Community and Technical College (CLCTC)

Perhaps the most noticeable change in downtown Alexandria is the opening of a brand-new campus for the **Central Louisiana Community and Technical College** (CLCTC). There has been an Alexandria CLCTC campus for decades, but this past year **$21.6 million** was spent on a **brand new downtown campus.** This investment includes the new **37,000 square foot** building plus a complete renovation of the old McCormick building with an additional **36,000 square feet**. The new building will be used primarily for classroom instruction and the renovation will be the new Manufacturing Training Center with labs for manufacturing, electrical work, HVAC, and welding. This old campus was located on South MacArthur Drive and will be put up for sale in the coming year. The Manufacturing Training Center will be opened on day one of the fall semester of 2019, and the new classroom facilities are anticipated to be open within the first half of the fall semester.

While there are no new direct jobs, per se, now that the project is complete as the faculty is moving into a new location, this is expected to positively impact the Alexandria economy in two ways. First, the business community has communicated the need for a state-of-the-art educational facility to feed the local manufacturing workforce for years. The Rapides Foundation commissioned a report entitled "Beyond High School" that was released in 2011. This study's goal was to identify the workforce needs of Alexandria in coming decades and identified the single most important threat to Cenla's economic vitality as the "lack of a comprehensive, integrated, and coordinated workforce development system." The recommendation was to establish a new entity that is a comprehensive community college. This re-vitalization of CLTCC is trying to achieve this vision and is hoping to make the region more competitive in attracting outside investment.

Second, the new campus will play an important role in re-vitalizing downtown Alexandria. Over the past few years, a number of coffee shops and restaurants have opened downtown. This new campus (see Figure 39) will place several dozen faculty and staff plus an estimated 600 to 800 students downtown on a daily basis. This will support existing businesses and hopefully provide the catalyst for new development.

Figure 39: Central Louisiana Community and Technical College New Downtown Campus

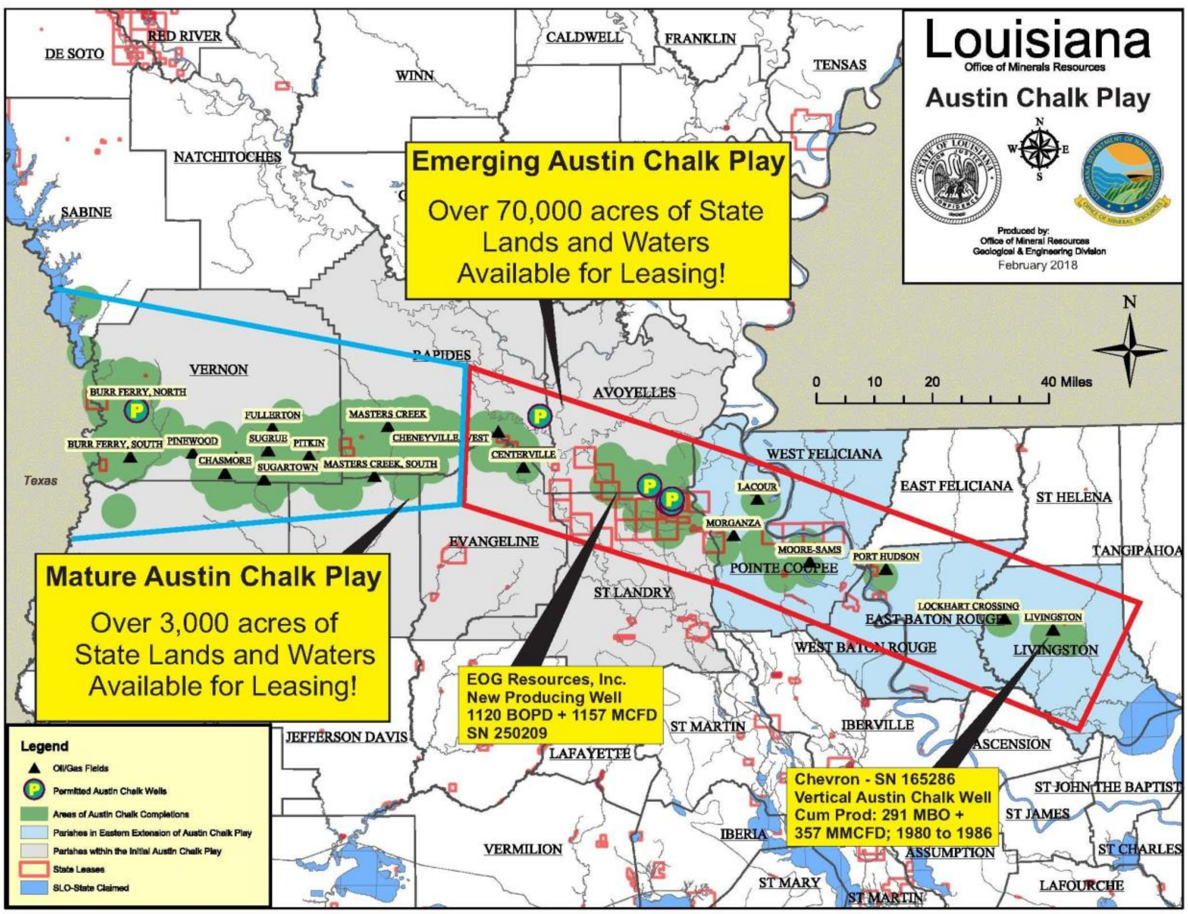
New Tenant at IP?

One of the truly excellent potential development locations in this region is the former International Paper site. With utilities and rail/road access in place and even accessibility to the Red River for moving bulk products it is no surprise the location has drawn interest. Lack of clear title to the property had been an issue until very recently. That barrier has now been resolved, and we are aware that there are tenants keenly interested in the spot. If Alexandria hits the jackpot on this one, our forecasts for the region will turn out to be far too pessimistic. This has the greatest potential for reviving growth in this MSA

The Austin Chalk: An Update

It has been interesting in the past year to watch the growing interest in the **Austin Chalk**, an oil play that runs right through the Alexandria MSA as seen in Figure 40. This is a carbonate reservoir running from Texas to the middle of Louisiana. In late 2017, PetroQuest Energy purchased 24,600 acres in the play, and EOG has reportedly leased more than 130,000 acres. In January of 2018, a Business Reports article indicated that 85,000 acres had been sold to an undisclosed buyer.[12] Marathon Oil has also accumulated 250,000 acres in the play, and ConocoPhillips recently announced it purchased a position in the Austin Chalk. This formation had little leasing activity for two decades until the past year or so. According to conversations with local land-men and attorneys, all acreage is now leased, and we estimate that over **$150 million** was paid out to land owners in Central Louisiana over the past year. While this does not create direct jobs (other than a few land-men) for the time being, these bonus payments will positively impact the Alexandria economy.

Figure 40
The Austin Chalk in Louisiana



Source: Louisiana Department of Natural Resources

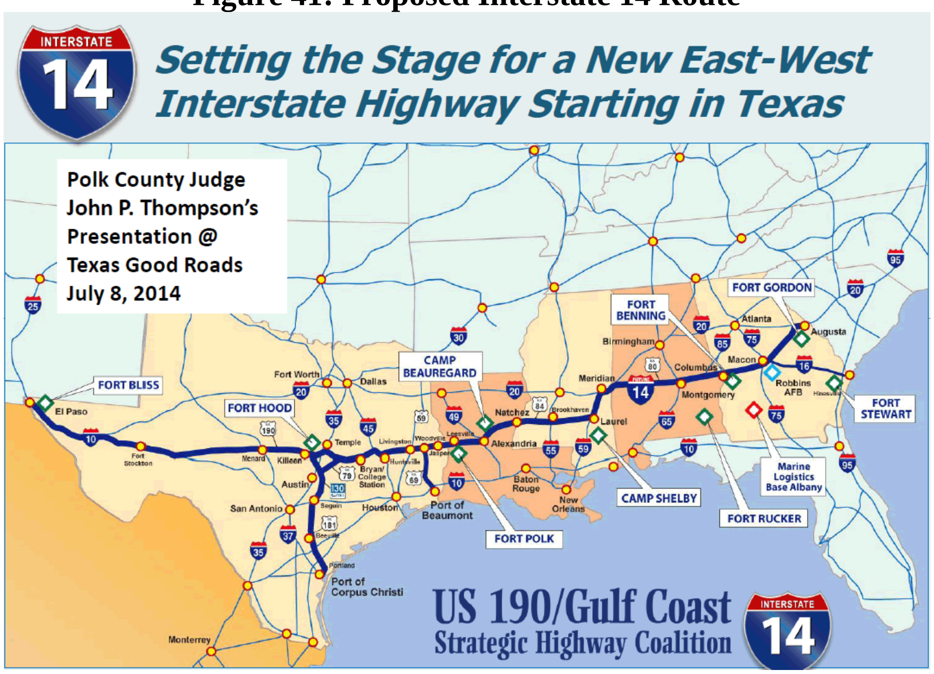
[12] "85 Acres in Louisiana Austin Chalk Play Sells for $87M", www.businessreport.com, January 4, 2018.

Since this flurry of leasing that spanned late 2018 and early 2019, though, there has been relatively little drilling activity. A few exploratory wells have been drilled, but the production from these wells so far has not garnered much excitement. We have also been told that a 3D seismic shoot is currently underway that will allow operators to better understand the geology before drilling. We remain cautiously optimistic about the potential for the Austin Chalk to pick up over the next three years, but for the purposes of our forecasts, we assume no significant activity. We hope we update this in next year's LEO.

Interstate 14 Could Be a Game Changer

While construction activity is likely beyond our forecast horizon that runs through 2021, the potential for an east-west interstate through Central Louisiana **would be a game changer for the region**. Discussions of Interstate 14 (see figure 41) have been in the works for years, and we are hearing that real momentum has picked up. **The congressional designation of the general route for I-14 through Louisiana is anticipated to be included as part of the FAST Act Reauthorization legislation that will go through Congress by September of 2020.** While construction activity is beyond the time horizon of the current forecast period, this is a development we will be watching closely in coming years.

Figure 41: Proposed Interstate 14 Route



Source: Strategic Highway coalition.

Hammond: SLU Only Boost?

The Hammond MSA is the newest member of the MSA club in Louisiana and is composed of one parish---Tangipahoa. This MSA is located from the northwestern edge of Lake Ponchartrain north to the Mississippi line and between Baton Rouge on the west and Slidell on the east (see Map 1). This parish is perhaps best known as the "Strawberry Capital of the World" and is host to a famous strawberry festival each year. In 2019, an estimated 45,900 people were employed in this MSA, making it the smallest of the nine in Louisiana.

The two largest employers in the parish (aside from the School Board) are **North Oaks Medical Center** (2,600 employees) and **Southeastern Louisiana University** (1,387 employees). The dominance of these two players means healthcare and educational services play a larger role in this economy than in the state as a whole. Healthcare and social services represent 20.6% of employment in this MSA versus 15.7% at the state level, and educational service is 11.8% versus 8.6% at the state level.[13] This MSA has the highest percentage of **government employment** (25.9%) of any MSA in the state.[14]

Manufacturing is not as large an element in this MSA (5.3% of employment) as is the case at the state level (7.0%), and manufacturing has a larger food processing component than the other MSAs, headed up by the 550-person **Sanderson Farms** poultry processing plant and the 317-person **Elmer's Candy** plant. **Smitty Supply** is a 400-person operation out of Roseland that is a motor oil blending, packaging and distribution firm.

There are two significant distribution centers in this region. A large 800-person **Walmart Distribution Center** is located in Tangipahoa Parish, as is the 375-person **C&S Wholesale Grocers** (formerly Winn-Dixie).

North Lake Division Evergreen Life Services (300 employees) provides services to over 200 residents with intellectual and developmental disabilities. Evergreen Presbyterian Ministries manages NLDELS for the Louisiana Department of Health and Hospitals.

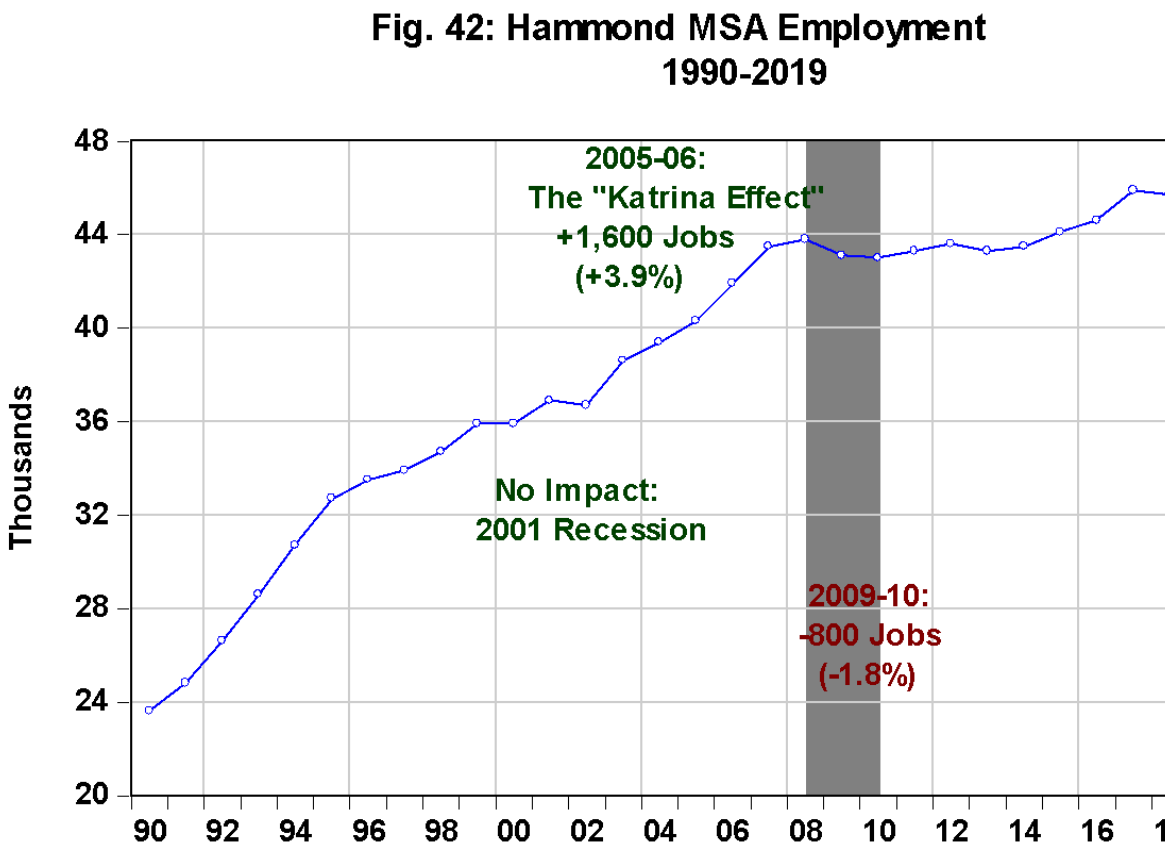
The city of Hammond enjoys a unique location only 40 miles from the state capitol to the west and about the same distance to the North Shore business region to the east. Residents in the southern part of the parish have a relatively easy commute to New Orleans via I-55 or to the plants along the Mississippi River. As a consequence, a relatively high percentage (22%) of this parish's residents earns their income <u>outside of the parish</u>.

History of Hammond MSA: Growth, Stagnation, Growth, Stagnation

The history of this MSA from 1990 through 2017 is illustrated in Figure 42. It is apparent from a casual glance at this chart that the Hammond MSA has been through four distinct periods---(1) a period of solid upward growth from 1990-2007 followed by (2) seven years of stagnation from 2008-14, (3) three straight years of job growth (2015-17), and (4) stagnation over the last two years.

[13] Data are for 2016 from www.laworks.net

[14] "Louisiana Workforce at a Glance", Louisiana Workforce Commission, July 26, 2019, p. 12.

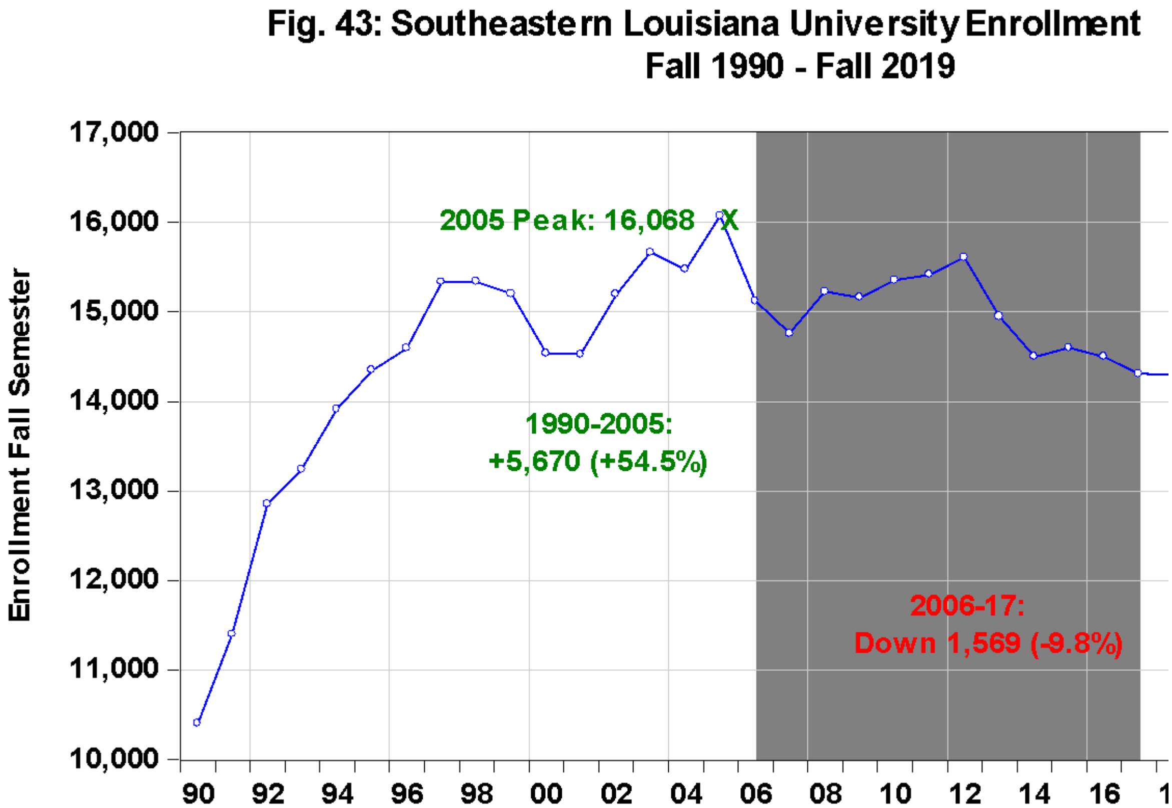


In a College Town Enrollment Matters

What is behind this peculiar pattern? It is important to note that the largest city in this MSA---Hammond---is very much a university town. **SLU** is one of its largest employers at 1,387. However, the university attracts over ten times that many students (14,700) to the region, students who bring a great deal of spending power to the community.

The powerful influence that SLU has on this MSA is seen when comparing the MSA employment data in Figure 42 with SLU's enrollment data in Figure 43 and the university's budget data in Figure 44. Hammond's growth phase from 1990-2007 was mirrored by a huge growth in fall enrollment and budget at SLU. Enrollment at the university jumped by 5,670 students over 1990-2005, an impressive rise of 54.5% and the budget rose a whopping 174.5%.

Hammond's seven years of employment stagnation from 2008-2016 were accompanied by an actual <u>decline</u> in enrollment and generally reduced funding at SLU. Enrollment declined from a peak of 16,068 students in the fall of 2005 to 14,308 in fall 2017---a 9.8% decline. Enrollment has basically been unchanged since then. The university's funding dropped by 13.3% over 2008-13, before recovering by 12.7% the next five years. In fall 2019, the budget had risen by 2.7% and finally surpassed the old 2008 peak by about $4 million.



Since it is employment we are forecasting for the MSA, the pattern of actual employment at SLU also helps us to understand the pattern of total employment in the MSA back in Figure 42. Figure 45 tracks total employment at SLU from 1993-2018. Year-to-year movements shown in Figure 45 are exaggerated a bit because the Y-axis does not start at zero. Between 1993 and 2008, employment at the university rose from 1,249 to 1,692, a gain of 443 jobs or +26.2%. This boost was one of the factors helping overall job growth to be very robust in the Hammond MSA over that period (see Figure 42). However, note that since 2008, employment at SLU has sunk to levels not seen since way back in 1995. This 324-job decline, along with enrollment drops and a lower budget contributed to the more lackadaisical nature of job growth in the region through 2016. There has been an addition of about 40 jobs recently, but that is hardly enough to move the overall employment needle for the MSA.

Fig. 44: Southeastern Louisiana University Budget
Fall 1992 - Fall 2019

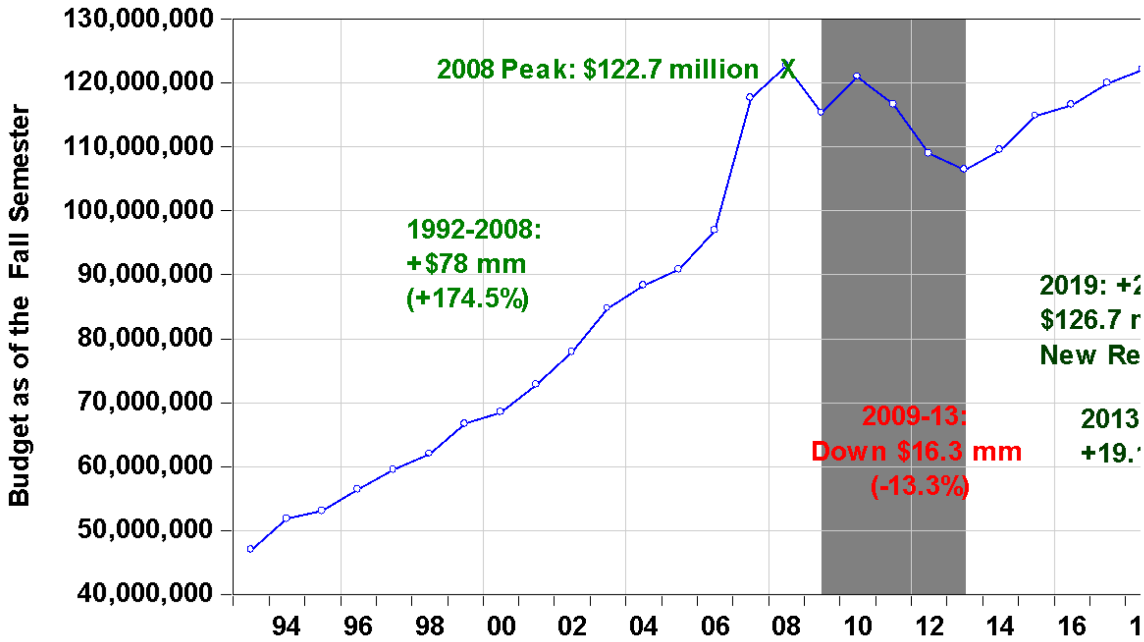
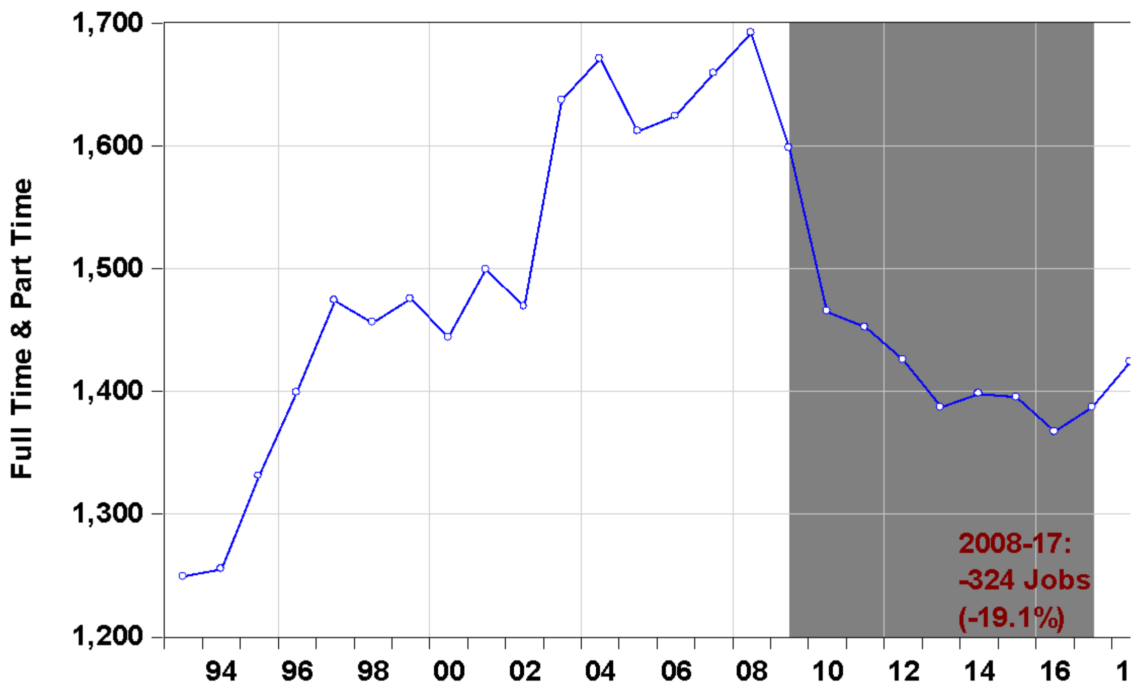


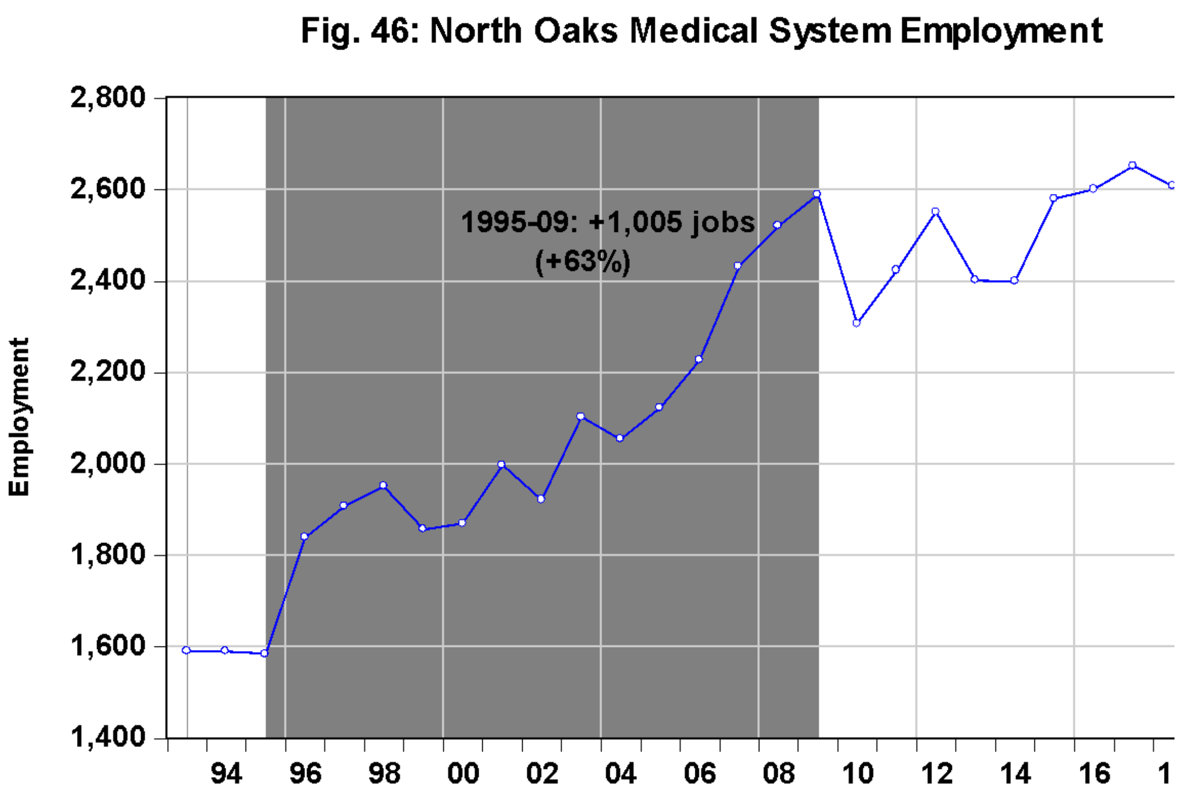
Fig. 45 : Total Employment Southeastern Louisiana Univers
Fall Semester



Healthcare Kept MSA's Head above Water, But No Longer

Economic conditions would have been much worse for this region had it not been for an energetic healthcare sector. Unfortunately, data on this small MSA's healthcare sector are sparse. The U.S. Bureau of Economic Analysis and Bureau of Labor Statistics and Louisiana's Workforce Commission only provide data back to 2005 and up to 2013 on the Hammond MSA healthcare sector.

What is available are data on employment at the largest healthcare system in this MSA---**North Oaks Medical System**. The history of employment at North Oaks is shown in Figure 46. Again, it is instructive just how closely employment at North Oaks mirrors the pattern of employment in the MSA in general. North Oak's employment grew rapidly (+63%) over 1995-09. This is the same period when employment in the MSA was rising as well (see Figure 42).



However from 2009-14, employment at North Oaks was basically flat to declining, just like employment in the MSA as a whole. In the past four years, employment---with the exception of a small, short-lived increase in 2017--- has been stagnant at North Oaks as has the job growth rate in the MSA. Governor Edwards' Medicaid expansion program has created a problem for North Oaks. The hospital's Medicaid component increased from 15% to 30%, and the hospital receives only 38 cents on the dollar of costs. The hospital receives the lowest per diem reimbursements in the state because it has a large service district with (1) no medical education component and (2) no "rural" designation. The system reported a $5 million loss in FY17, but had a 1.5% positive bottom line in FY18 due to supplemental funds provided by the state. Given this environment, it will be tough for North Oaks' employment to experience much growth going forward.

Almost Impervious to Recessions

Figure 42 reveals another unique characteristic of the Hammond MSA over 1990-2019: This MSA is almost impervious to the impact of national recessions. There was a short U.S. recession from July 1990 to March, 1991 during which this MSA's employment actually grew. Employment rose again during the 2001 recession, then during the Great Recession---when the U.S. lost 6.1% of its jobs---the Hammond MSA's employment only declined 1.8%, a loss of only 800 jobs.

This resilience can largely be traced to the makeup of the region's economy. Its huge healthcare and educational services sectors are typically touched only lightly, if at all, by national downturns. On the other hand, the durable goods manufacturing sector that typically gets hammered by a national recession, is largely absent from the Hammond region. Only 5.3% of its employment is in manufacturing (as compared to 7.0% at the state level), and even then employment is heavily concentrated in nondurable goods manufacturing such as food processing.

Forecasts for 2020-21: Healthcare Will Slow Things a Bit

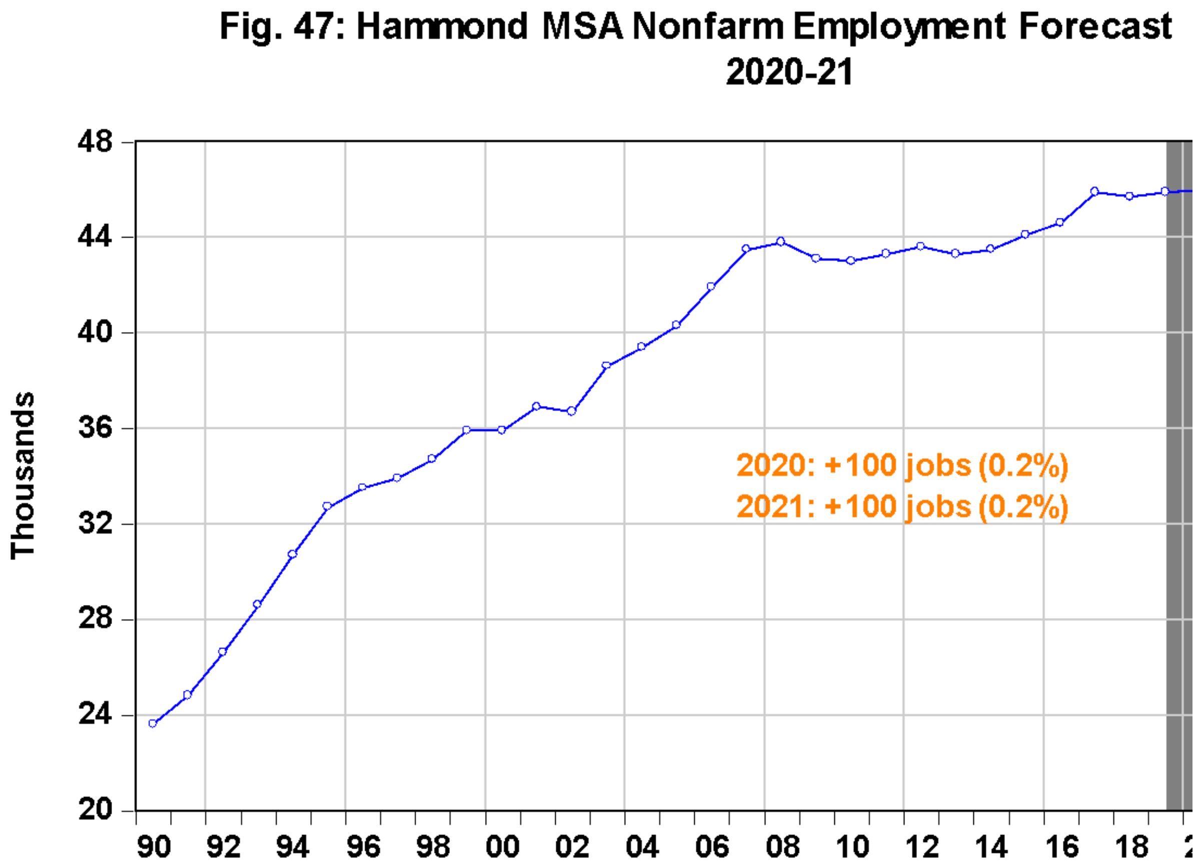
As seen in Figure 47, we are projecting that the employment growth rate in this MSA will be very slow over 2020-21, with the region **adding about 100 jobs a year or a 0.2% a year average growth rate**.

Little Hope from Healthcare

What little data are available from the Louisiana Workforce Commission on this MSA suggests that the healthcare sector is unlikely to produce an employment growth spurt. Data are available on healthcare employment for calendar year 2017---9,188---and 2019-I---9,588. This suggests about 200 new jobs per year. Given North Oaks' struggle with the Medicaid expansion fallout and the state's questionable ability to continue providing meaningful supplemental payments to the hospital, we doubt this sector will continue to be the driving force it has been in the past. Indeed, North Oaks has already put the construction of its $25 million Women and Children's unit on hold. That is the primary reason for our more arrested projected growth as compared to the past two years.

Help from SLU?

SLU administrators are breathing a sigh of relief after the last special session of the Legislature resolved the "fiscal cliff" that has dogged the state for the past few years. For now at least, the prospects of mid-year---or beginning of the year---cuts seem less threatening. Note back in Figure 44 that the University's budget grew slightly faster than inflation for FY20, which is good news. However for retailers in the MSA, enrollment (customers for the retailers) has been flat to declining and employment at the university is basically flat for the college year. These data do not suggest that SLU will be a big driver for the MSA going forward.



Faster Growth in Baton Rouge & New Orleans Will Help

In the introductory section it was mentioned that a lofty 22% of earnings in this parish are earned outside of the parish. In the case of Tangipahoa Parish residents, that means jobs in the Baton Rouge and New Orleans MSAs. Readers are referred back to the Executive Summary Table on page vi. Note that growth in both of these MSAs is expected to pick up markedly over 2020-21. That means more jobs for Tangipahoans in those cities, and that means more dollars flowing into the retail and restaurant sectors---two very labor-intensive sectors---in Tangipahoa Parish. This is arguably the most important piece of optimism for this region going into 2020-21.

Stability among Tangipahoa's Other Key Players

The operative word for the other main players in this MSA's economy is "stable." We are aware of no immediate plans for changes at the large 800-person **Walmart Distribution Center**, nor are any significant alterations expected at the 375-job **C&S Grocers** facility. Stability seems to be the order of the day as well at **Elmer's Candy's** plant in Ponchatoula that has a 195-person workforce.

Intralox---a division of Laitram, a conveyer belt manufacturer---is the outlier among these companies in that it continues in an expansion mode in Hammond. Automation of its huge warehouse and other improvements has bumped this company's employment from 70 to 130. In Ponchatoula, **Jani-King** is spending $4.5 million on a headquarters expansion and will add 10 jobs to its 74-person staff.

State Roads & Other Public Projects

Louisiana's DOTD has announced $8.2 million in **state road lettings** for this parish over 2020-21. This is a significant decline from $17.6 million mentioned in last year's LEO. The Parish was allocated $17.6 million in public infrastructure monies. The two largest projects are (1) $10.4 million to widen Club Deluxe Road and (2) $3.5 million for South Hoover Road improvements.

Rural Louisiana: Energy, Power Plants & Wood

Back in Map 1 we illustrated where the nine MSAs are located in Louisiana. With the recent expansions to three of our MSAs and the addition of the Hammond MSA, there are now 35 of the state's 64 parishes located in these nine MSAs. The remaining 29 parishes are designated as "**rural**."

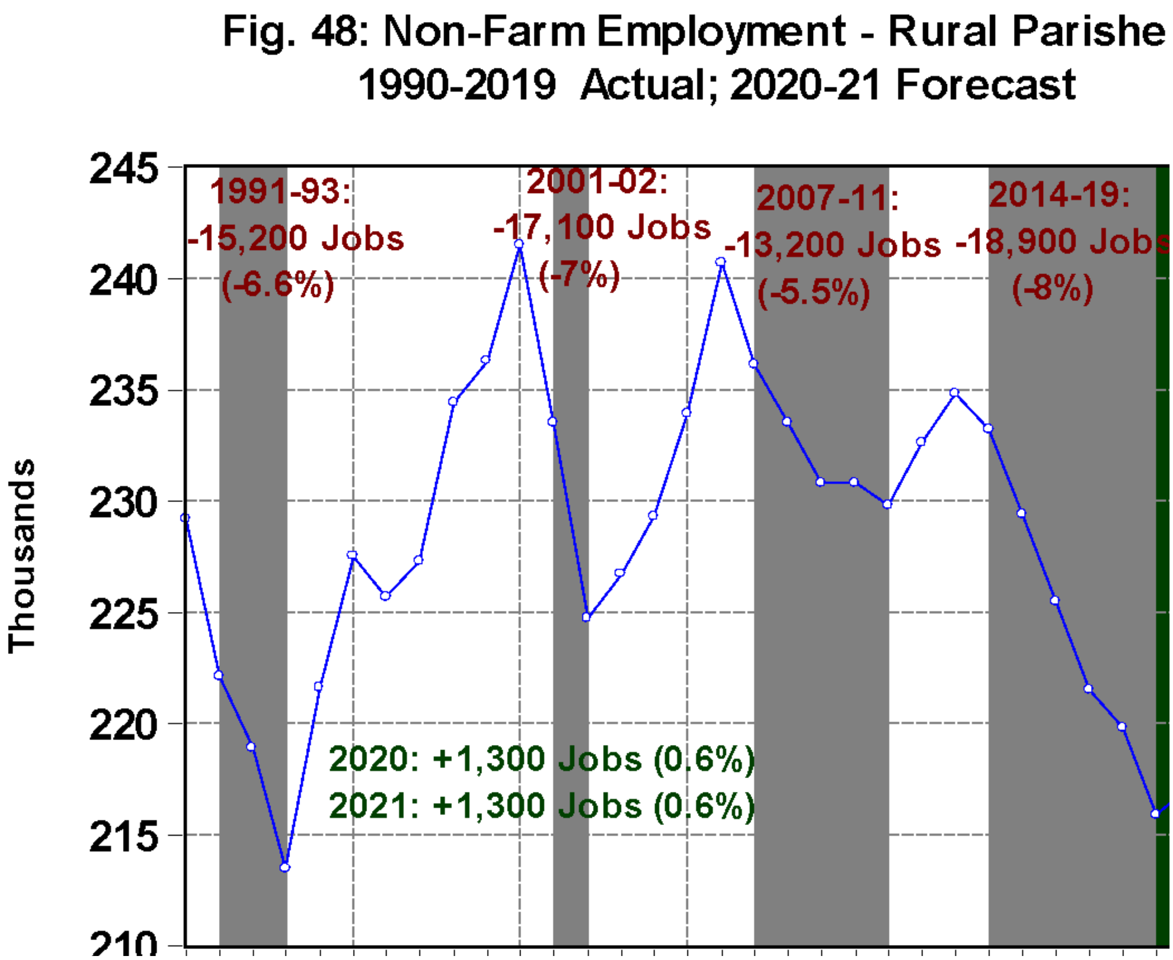
With few exceptions, most of these rural parishes have a distinctly <u>agricultural</u> economic base, producing crops and timber. Among the exceptions are Lincoln and Natchitoches Parishes---which are homes to relatively large universities---the coastal parish of St. Mary---which has a significant attachment to the oil and gas extraction industry---and Vernon Parish on the central Texas border which is the home parish for Fort Polk, a very large military base.

About 10.9% of the state's employment (225,500 jobs) exists in these 29 parishes. Figure 48 tracks employment trends since 1990 in these rural parishes and provides forecasts for 2020-21.

Recession Impact on Rural Parishes Hard

While employment in the rural parishes is quite variable, the reader is urged to <u>note the vertical axis in this graph</u>. Since 1990, employment in this region has only varied over a range from a low of 213,500 to a high of 241,500---not as wide a fluctuation as may appear initially. Having noted that, this region's employment is **very sensitive to national recessions**. In the early 1990s' recession, rural employment fell for three straight years. Rural parishes lost 15,200 jobs, a drop of 6.6 percent. Then in the post-9/11 recession, rural region employment fell hard for two years---a loss of 17,100 jobs or seven percent. During the Great Recession, rural employment fell for four straight years by a total of 5.5%. The sharp decline from 2014-19 (-18,900 jobs) is largely due to the oil price collapse.

Employment in rural areas actually started to decline a year before the initiation of the Great Recession. The <u>housing</u> bubble burst started in 2007, and this led to layoffs and closings in several of Louisiana's large **wood products firms**. These firms tend to be concentrated in rural parishes. For example:



- **Weyerhaeuser Corporation** laid off 185 at its facilities in Lincoln and Winn Parishes.
- **Weyerhaeuser Corporation** terminated 39 at its Bienville Parish site.
- **Hunt Forest Products** temporarily idled its Natalbany facility in Tangipahoa Parish.
- **Boise Cascade** indefinitely curtailed 130 workers at its plywood veneer plant in Allen Parish.

Bad news in the wood products area was partially offset by good news in those parishes with ties to the extraction industry. **Red River Parish** had an especially good 2009-10 due to flourishing drilling activity in the Haynesville Shale in the northwestern part of the state. In the **coastal parishes**, offshore drilling in the Gulf was strong until the BP spill, then large sums of money came flowing into these parishes for cleanup work or in claims payments made to businesses and individuals. This was enough to keep rural losses from their typical routine of experiencing losses greater than the nation.

Some Recovery: 2012-13

Note that the rural area of the state had two years (2012-13) of recovery from the Great Recession but remained well shy of its pre-recession employment mark. By 2013, the region was 8,500 jobs away from its previous 2006 peak.

Still, the area enjoyed some nice announcements post-Great Recession. Among the positives were:

- In Bogalusa **General Dynamics** opened a call center that handles government healthcare calls. GD opened its facility in the summer of 2013 and now employs over 600 people.

- In Urania, **German Pellets GmbH** began construction on the world's largest wood pellets manufacturing plant, capable of producing 1.1 million tons of pellets a year. About 150 employees were announced for this plant in LaSalle Parish.

- **Universal Plant Services** completed its $3.9 million plant in Jena in LaSalle Parish. The firm hired 95 employees who work on welding, fabrication, and equipment overhaul and repair.

- A real success story for Ruston in Lincoln Parish is **Mortgage Contracting Services**, a firm that protects and preserves vacant properties for mortgage companies. MCS doubled the size of their facility to 200,000 square feet and added 90 new jobs.

- **Conagra** built a 2-phase sweet potato processing plant in Richland Parish adding several hundred jobs.

- **Metal Shark Boats** in Jeanerette secured a $192 million contract with the Coast Guard to construct 500 patrol boats. The firm added 100 workers to its workforce.

The 2014-19 Decline

Sadly the recovery in rural Louisiana was short-lived. The region went into a free fall over the six years from 2014-19. No small part of this decline is associated with the deteriorating exploration market. The rig count plummeted in the rural parishes in the Haynesville Shale region in northwest Louisiana. St. Mary Parish on the southern coast is host to numerous firms that service the offshore exploration industry. Specifically, **Danos & Curole** terminated 80 people from their relatively new site.

Shipyards in these rural parishes in south Louisiana suffered as well. Three **Bollinger Shipyards** in the Amelia and Morgan City areas halved their employment from 700 to 350, but those shipyards have diversified into barges, flood gates and other civil work and do not anticipate further layoffs. Other shipyards and fabricators in St. Mary Parish have reduced employment and begun moves to diversify their client bases out of oil and gas and into other areas.

In Vidalia, **Fruit-of-the-Loom** closed its plant ending 167 jobs. Construction delays and cost over-runs drove the new **German Pellets** plant in LaSalle Parish into bankruptcy. **Life Care Specialty Hospital** in Ruston closed its doors at the cost of 167 jobs.

Rural parishes were not without any good news during this period. **Drax Biomass** took over construction of the wood pellets plant in Urania from German Pellets GmbH and opened the plant in fall 2017. A total of 125-150 permanent jobs came to the plant. **Monster Moto** completed its $4 million manufacturing facility for mini-bikes and go-carts in Ruston. At 25 jobs, the company's plans were to pump that employment number up to 287 over 10 years. While the facility initially created some jobs, our understanding is that it closed this year.

Foster Farms made a $30 million upgrade to its poultry processing plant in Farmerville and added 50 jobs to the 1,092 already employed there. **Cleco** completed an $80 million clean energy plant in St. Mary Parish that takes waste heat from Cabot's carbon black plant and generates electricity for 17,000 homes. This new site employs 20 people.

Forecasts for 2020-21: Oil & Gas, Rail & Chickens

Note back in Figure 48 that we are projecting the rural recovery to start in 2020 and will continue through 2021, **with 1,300 additional jobs (+0.6% each year) in 2020 and again in 2021.**

Oil & Gas Extraction Revives

One job-creating factor in rural areas over 2020-21 will be a recovering oil and gas extraction sector. Back on pages 78-81, we discussed the prospects of a significant recovery in the Gulf of Mexico rig count. This will be good news for extraction related companies in rural areas, especially in St. Mary Parish. Prices at these levels could spur drilling activity in the Austin Chalk, much of which resides in rural Louisiana. (See the write up on the Austin Chalk on pages 108-109.) The huge, natural-gas-oriented industrial boom in the southern part of the state will encourage exploration activity in rural parishes in the Haynesville Shale. Pipelines to deliver that gas to the south will cut across many rural parishes.

Development of Rail Logic

Lacassine in Jeff Davis Parish is the site of a new burgeoning enterprise. **Rail Logic** is in the process of spending $52 million on a tree-phase specialized railyard. In November 2018, the company completed Phase 1. Phase 1 includes 500 storage spots for railcars, 450 interchange spots (where transfers can occur between Class 1 railroads and customers), and a transloading isle to enable the transfer of products from railcar to truck and vice versa. Phase 1 can accommodate unit trains up to 127 cars in length. Construction on Phases 2A and 2B has just begun and will add 321 and 300 railcar spots, respectively.

In May 2019, the anchor tenant for the railyard was announced. **Equilibrium Catalyst** will build a $12.5 million catalyst blending plant that will employ 40 people at an average pay of $45,000 annually.

Power + Refinery Investments

There are two significant refinery projects scheduled for a rural parish. **Delek (Alon) Refinery** in Krotz Springs is completing this year a $103 million alkylation unit. Alon has recently announced a $150 million investment to further upgrade that refinery.

Calpine Corporation continues to work on its $261 million project to build a 361-megawatt, gas-fired power plant in Washington Parish. Once completed, the **Washington Parish Energy Center** will be turned over to Entergy to operate. It should be finished in 2021-II. Also in Washington Parish, Washington Solar has announced plans to build a $75 million solar facility on a 450-acre site. No job creation numbers were given.

Entergy has two significant power projects underway in the rural area of north Louisiana. The company will spend $45 million on a 15-mile transmission line from Oak Grove to Lake Providence and $41 million on a 25-mile long transmission line from Dunn to Winnsboro.

Chickens & Shipyards & Epic

Three other companies will bear watching over our forecast period. **House of Raiford** in Lincoln Parish will make two job-creating investments. The company is spending $41 million on a new chicken feed mill that will produce 12,500 tons of chicken feed per week. It will take two years to complete this project which will create 13 new jobs at $41,000 annually. Secondly, the company will spend $5.7 million to upgrade its hatchery and processing facility in Arcadia. This upgrade will result in 105 new jobs.

Gulf Island has a shipbuilding facility in Jennings. This site focuses on manufacturing ships for brown waters. The company has a contract to build 10 harbor tugs for Corpus Christi. The first seven will be delivered by the end of 2019, and numbers 8-10 will be delivered in 2020. There are 225 people employed at this location.

Metal Shark Boats---a manufacturer of large aluminum vessels---is a real success story at its two Louisiana sites in Franklin and Jeanerette. The former site is in St. Mary Parish, a rural-designated parish. The Franklin shipyard was selected by the Navy in 2017 to build 13 welded aluminum cutters---the Near Coastal Patrol Vessels (NCPVs). Exact employment numbers for this shipyard are not available but we are confident that good news is ahead for this yard.

East Carroll Parish was the recipient of nice economic news when **Epic Piping** announced plans in August to construct a 40,000 square foot pipe supports manufacturing facility in Lake Providence. Epic will hire 50 people to work at the new site, and will pay workers an average of $43,500 annually.

A Bump in Road Lettings

Data from Louisiana's DOTD indicate that **state road lettings** in rural areas will total \$359.5 million over 2020-21. This figure is up slightly from the \$332.8 million mentioned in last year's LEO. Among the larger projects planned are: (1) \$46.3 million to rehab the I-20 Bridge at Vicksburg, (2) \$30 million for a new I-10 overpass bridge at LA165, (3) \$15 million to rehab the Berwick Bay Bridge, and (4) \$12.8 million to overlay I-20 from the US80 overpass to the Crawford Street Overpass.

THE OUTLOOK FOR THE STATE: 2020-21

In the sections above we have reviewed the individual economies of each of Louisiana's nine MSAs and its rural region. Figure 49 reveals that in 2018 the state exited its 6th recession since 1980, a 28-month long decline that cost the economy 23,300 jobs (-1.2%). Certainly this energy-led recession would have been even worse had it not been for the leavening effect of the industrial boom in the southern part of the state.

If our forecasts for each individual MSA and the rural parishes are summed up the result is **24,700 new jobs in the state in 2020 (+1.2%) and another 28,800 jobs in 2021 (+1.4%)**. This turns out to be about the national average job growth rate. If these forecasts are near the mark, two important milestones will be achieved in 2020. First, the state will set a **new employment record**, exceeding its previous peak reached back in 2015. Second, for the first time in its history the state will have more than **two million people employed** on an annualized basis. (The state has reached two million plus jobs on a <u>monthly</u> basis seven times---three times each in 2014 and 2015 and one time in 2018.)

Three key assumptions underpin our forecast. One is that trade issues will not send the national economy into a recession. Secondly, we assume there will be enough new industrial announcements in the southern part of the state to lift construction employment out of the doldrums and into strong growth pace. Thirdly, an assumption that critically influences our outlook for the state's oil patch is that there will be a modest recovery in the Gulf, with the rig count going from 25 to 33-35. One might reasonably argue that at least the first and last of these assumptions are "heroic". If that turns out to be true, Louisiana's future is not nearly as rosy as portrayed in Figure 49.

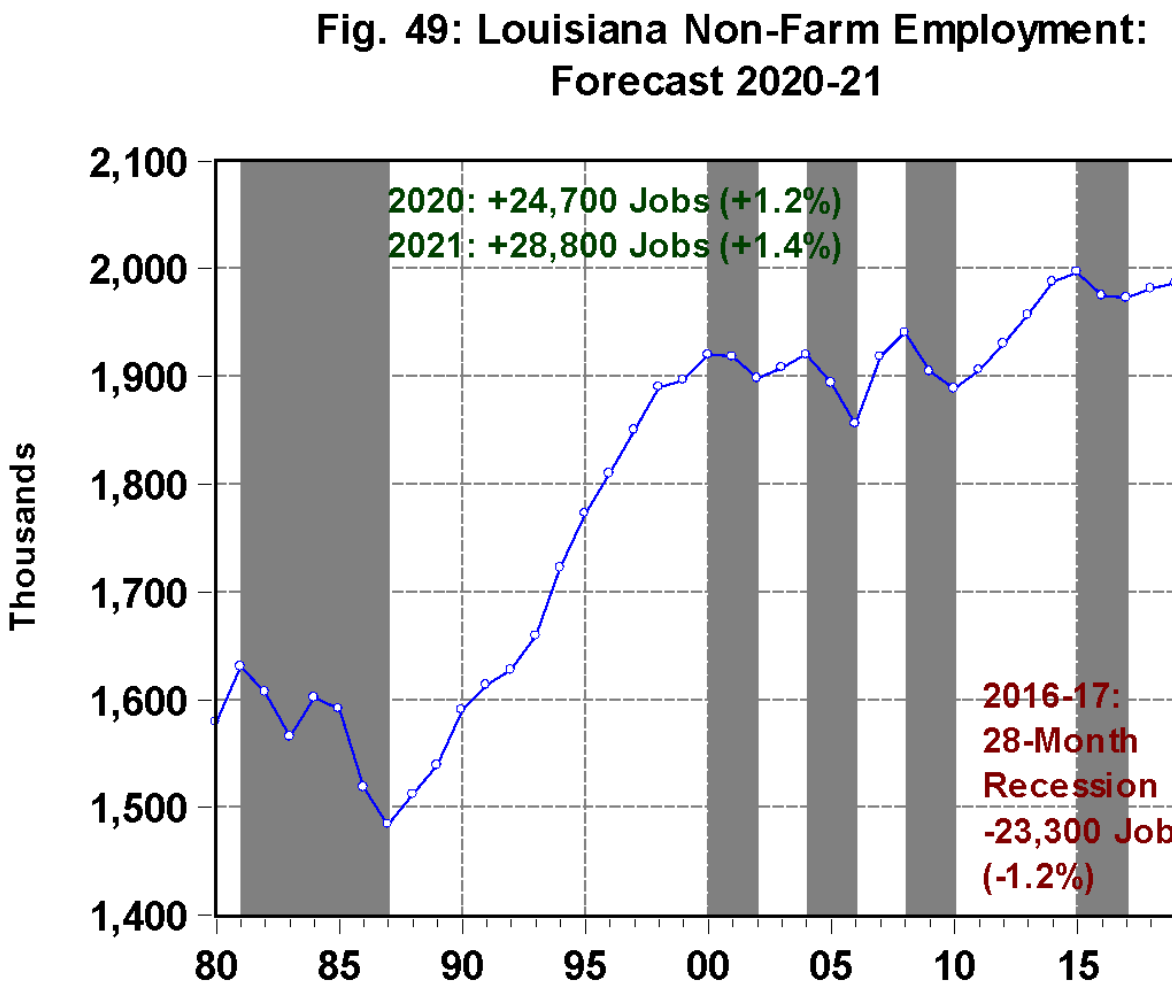


Fig. 49: Louisiana Non-Farm Employment:
Forecast 2020-21
2020: +24,700 Jobs (+1.2%)
2021: +28,800 Jobs (+1.4%)
2016-17:
28-Month
Recession
-23,300 Job
(-1.2%)
Thousands
2,100
2,000
1,900
1,800
1,700
1,600
1,500
1,400
80
85
90
95
00
05
10
15