



**B.I. Moody III College of
Business Administration**

Louisiana Economic Activity Forecast 2022:Q2

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The views expressed in this report are those of the author and do not necessarily represent the views of the University of Louisiana at Lafayette or the University of Louisiana System. Any errors are my own.

Executive Summary

Professional forecasters have weakened their outlook for the U.S. economy for the *fourth* consecutive quarter. Following a decline in real GDP in the first quarter of 2022, forecasters are anticipating growth around 2.0% for the coming year. This is a significant downgrade in the economic outlook from the previous quarter, due in part to the Federal Reserve's recent guidance that interest rates will likely increase much faster than previously expected in an effort to control inflation. Louisiana is now expected to gain roughly 21,000 jobs over the next four quarters, 40% less than projected last quarter. Home prices and GDP are also now expected to slow sharply beginning in late 2022 and continuing into next year. The Houma-Thibodaux, Lafayette, and New Orleans metro areas are expected to experience the fastest job growth in the state in the coming year. Statewide, the number of jobs remains about 5% below pre-COVID levels (roughly 81,000 jobs), with a full recovery not expected until 2024.

Every forecasting model contains uncertainty. The results in this report are intended to provide broad guidance and should not be a direct cause for decision-making. This is particularly true now in light of the evolving global pandemic surrounding COVID-19.

2022 Report Release Schedule:

Third Quarter: August 19, 2022
Fourth Quarter: November 18, 2022

9.9%

Year-over-year home price growth in Louisiana in 2021:Q4, fastest since 2006.

4.3%

Louisiana's unemployment rate in 2022:Q1; lowest since 2007.

20,750

Projected job growth (statewide) over the next four quarters; 40% lower than last quarter's projections.

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Introduction

Following an inflation-adjusted growth rate of -1.4% in the first quarter, the outlook for the U.S. economy was downgraded (by professional forecasters) for the fourth consecutive quarter. Growth is now expected to average roughly 2.0% over the next year. The Federal Reserve no longer views inflation as “transitory” given their latest guidance (released in March) that signals much higher interest rates in the coming year(s). This research brief uses the latest projections for U.S. economic activity to present Baseline, Optimistic, and Pessimistic scenarios for key Louisiana economic indicators through the second quarter of 2023. Based on the slowing projections for the national economy and inflation risks, the outlook for the state is being downgraded as well. Baseline projections point to gains of 20,750 jobs over the next four quarters, which is a 40% reduction from the outlook in last quarter’s report. The slowdown is expected to take hold more strongly in late 2022 and early 2023.

Forecasting models make projections on the most likely path of future variables based on historical data, past trends, and the expected future path of other critical variables. Because these relationships change over time, no model is able to perfectly incorporate unexpected changes in economic conditions, policy decisions at the federal or state level, or shifts in consumer or firm behavior. This means that every model is embedded with uncertainty. For this reason, the projection scenarios provided in this report should be interpreted as providing broad guidance on the most probable path for economic activity in Louisiana **if** the underlying assumptions of the model evolve as anticipated. For example, all of the scenarios in this report depend strongly on how the growth in U.S. gross domestic product (GDP) evolves over the next 3 to 18 months. If U.S. growth turns out to be much stronger *or* much weaker than is currently envisioned, then the expected accuracy of the Louisiana projections decrease. To simplify the presentation of multiple scenarios, the figures in this report do not show the confidence intervals around the scenario point estimates. One should always bear in mind that a point estimate of (say) 1.1% for employment growth in the next quarter is the mid-point of a range of potential values.

The Louisiana Forecast Model (LFM) projects employment, unemployment rate, home prices, and gross domestic product using a Vector Autoregression (VAR) framework (see the Technical Appendix for more details). The model also takes other variables into account and assumes that their future values are given with certainty. These external variables include real U.S. gross domestic product, U.S. unemployment rate, oil prices, the state’s real trade-weighted exchange rate, and the global prices of soybeans and rice.

Results from a regional employment model are also presented. The Louisiana Regional Employment Model (LREM) nests the Louisiana Forecast Model by adding statewide employment projections to the external variables in order to generate projections for each of the state’s metropolitan statistical areas (MSAs). Employment in these nine metro areas account for approximately 90% of non-agricultural jobs in the state.

Alternative Economic Scenarios

Three alternative scenarios are considered in this report: Baseline, Optimistic, and Pessimistic. The scenarios differ only in how they treat the future values of selected variables external to the Louisiana Forecast Model, namely U.S. gross domestic product, U.S. unemployment rate, and oil prices. The projected future values of other external variables to the model - Louisiana's trade-weighted exchange rate and the prices of soybeans and rice - are identical across scenarios so they are omitted from the table below.

Table 1 shows the future expected values for U.S. GDP, unemployment rate, and oil prices under each scenario. 2022:Q1 values for the Baseline, Optimistic, and Pessimistic scenarios are identical because this quarter has already occurred. This row is shaded gray. Values for 2022:Q2 to 2023:Q2 have yet to be realized.

Table 1: Assumed Future Values of External Variables

| Quarter | U.S. GDP (% SAAR) | | | U.S. Unemployment Rate (%) | | | Oil Prices (\$ per barrel) | | |
|---------|-------------------|------------|-------------|----------------------------|------------|-------------|----------------------------|------------|-------------|
| | Baseline | Optimistic | Pessimistic | Baseline | Optimistic | Pessimistic | Baseline | Optimistic | Pessimistic |
| 2022:Q1 | -1.41 | -1.41 | -1.41 | 3.80 | 3.80 | 3.80 | 95.18 | 95.18 | 95.18 |
| 2022:Q2 | 2.34 | 2.93 | 1.41 | 3.60 | 3.50 | 3.60 | 101.76 | 81.40 | 132.28 |
| 2022:Q3 | 2.48 | 3.09 | 1.49 | 3.50 | 3.40 | 3.60 | 98.83 | 79.06 | 128.48 |
| 2022:Q4 | 2.34 | 2.92 | 1.40 | 3.50 | 3.30 | 3.50 | 96.99 | 77.59 | 126.09 |
| 2023:Q1 | 2.10 | 2.63 | 1.26 | 3.50 | 3.40 | 3.60 | 95.30 | 76.24 | 123.89 |
| 2023:Q2 | 2.28 | 2.85 | 1.37 | 3.53 | 3.40 | 3.80 | 92.65 | 74.12 | 120.45 |

The Baseline scenario in Table 1 shows the most likely path for U.S. GDP, unemployment rate, and oil prices based on the most current information. The expected future path for U.S. GDP and the U.S. unemployment rate are the median projections from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters outlook released on May 13, 2022. The Baseline expected path of oil prices is from the U.S. Energy Information Administration's Short-Term Economic Outlook released on May 10, 2022.

Fundamentals in the U.S. economy remain strong despite the contraction in first quarter GDP. Consumer and business spending expanded at (inflation-adjusted) annualized rates of 2.7 and 2.3%, respectively. New orders and shipments of core capital goods, key leading economic indicators, expanded at annualized rates of 11.1 and 12.5%, respectively. Both figures are considerably above their average expansion growth rates of 3.8 and 3.2%. In short, the contraction in first quarter GDP, which was driven by reductions in inventory investments and growing net

exports, is expected to be transitory.

Within consumer (or household) spending, purchases of services remained strong. Spending on goods that have been experiencing the highest rates of inflation – motor vehicles, recreational goods, and gasoline – all fell in Q1. Relative to its longer-run trend however, consumer spending remains solid. If interest rates rise as expected, consumer spending is projected to slow in late 2022 and early 2023.

Inflation remains at, or near, forty-year highs with little sign of slowing. The producer price index, which reflects the price of raw materials and often predicts future changes in consumer prices, has increased by 42.7% between April 2020 and April 2022. This is the largest increase over a two-year period in the history of the series (which dates to 1913). On an annualized basis, the producer price index has risen 20% or more for three consecutive quarters.

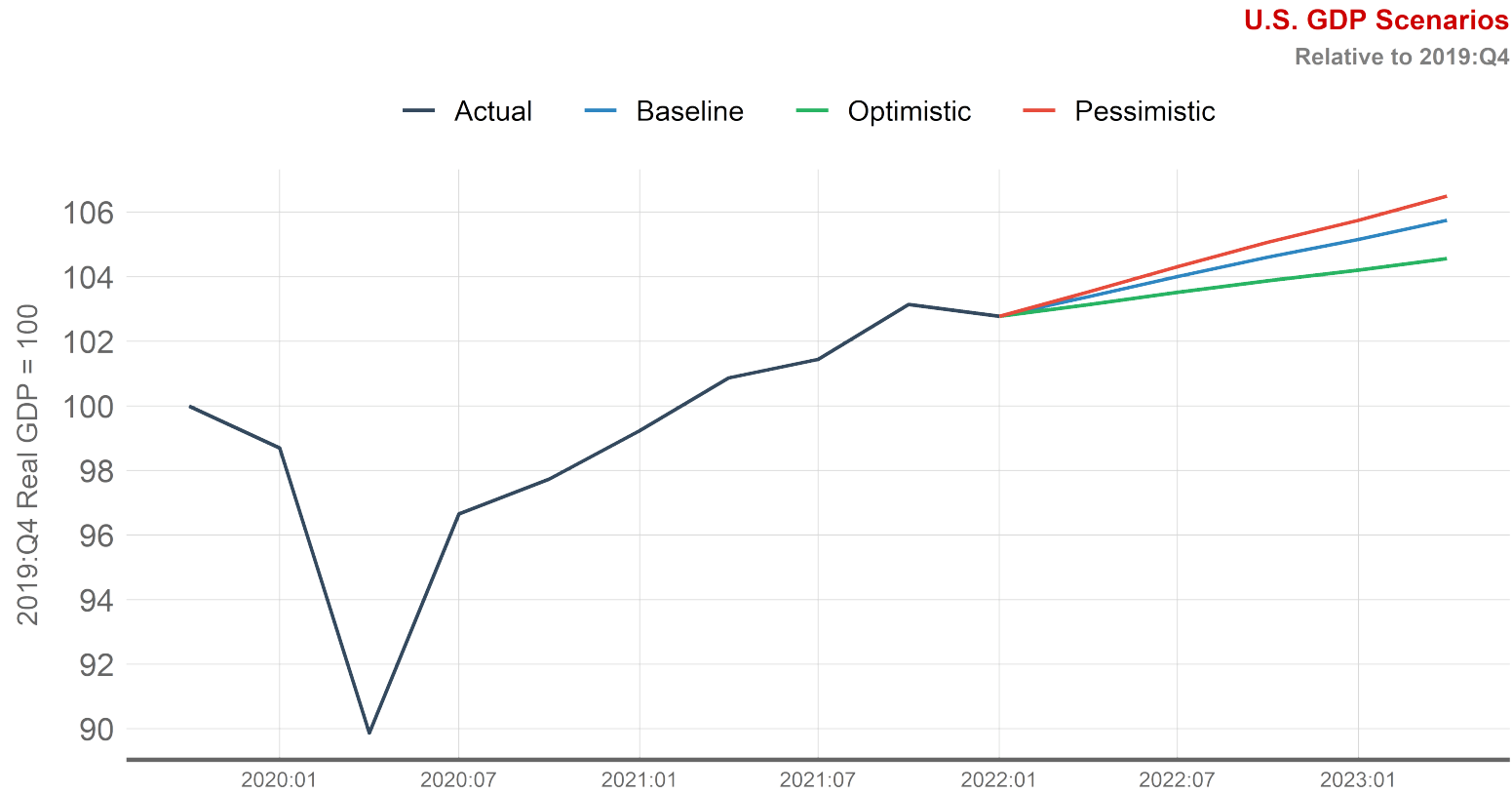
To combat this inflation, the Federal Reserve raised the federal funds rate target 0.25 basis points in March 2022 and 0.50 basis points in May 2022. The target federal funds rate is now between 0.75 and 1%, up from a range of 0 to 0.25% at the start of the year. More importantly, as Figure 10 shows, the expected path of interest rates shifted up sharply between December 2021 and March 2022. As the dotted line illustrates, the Federal Reserve now expects interest rates to increase an additional 1% in 2022, ending the year in the 1.75 to 2.00% range. These latest projections, released in March 2022, also indicate another 1% increase in 2023. The next projection from the Federal Reserve will be released in June 2022.

Rising interest rates will make borrowing less attractive for consumers and businesses, which will lead to slower overall growth. If the increase in interest rates is not sufficient to slow inflation, then the Federal Reserve may be forced to act more aggressively, which could ultimately result in a recession. The next six months to 12 months will be critical on the inflation front.

The Optimistic and Pessimistic scenarios, which I would assign a 20% and 30% probability respectively, vary the severity and recovery time for oil prices, unemployment, and U.S. GDP growth. The Optimistic scenario assumes that U.S. GDP growth will be higher than the Baseline projection, while the Pessimistic scenario assumes that GDP growth will be slower than projected. I would assign a 50% probability to the Baseline forecast.

Over the next four quarters, the Baseline scenario projects U.S. GDP to grow at an annual pace of 2.0%. This is the *third consecutive quarter* that the outlook for real GDP has been downgraded (by professional forecasters) by approximately one percentage point. Figure 1 on the next page shows U.S. GDP under the three scenarios considered. The chart is indexed so that each scenario begins relative to 2019:Q4 and is assigned a base value of 100. Despite the downward revisions, U.S. GDP is projected to end 2022 about 5% higher than the pre-COVID peak in 2019:Q4.

Figure 1: U.S. Economic Recovery Scenarios



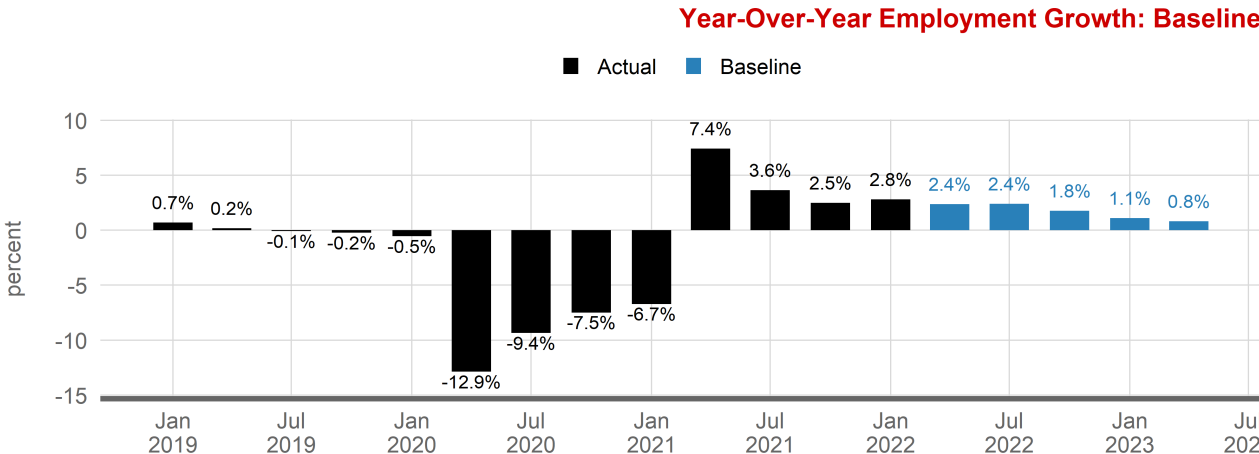
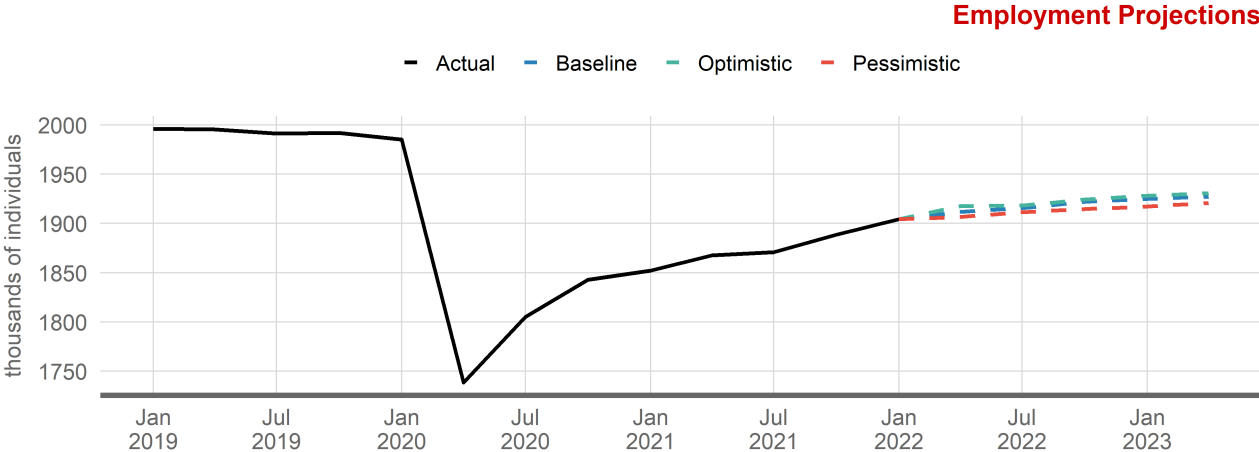
Louisiana Employment Projections

The first quarter of 2022 marked the third time in the past year the state added at least 15,000 jobs. The total number of (payroll) jobs in Louisiana now exceeds 1.9 million, a level not seen since 2020:Q1. Despite the recent gains, employment remains about 5% below pre-pandemic levels. Louisiana currently ranks 46th in terms of the current pace of recovery (see Figure 9).

Employment growth in Q1 exceeded 2% on an annualized basis in the Alexandria, Baton Rouge, Lafayette, Lake Charles, New Orleans, and Shreveport-Bossier metro areas. Over the next four quarters, the Lafayette, Lake Charles, and New Orleans metro areas are projected to experience the strongest job gains. The Monroe and Shreveport regions are expected to experience the weakest growth in the coming year.

Statewide job growth is expected to exceed 2% (year-over-year) in Q2 and Q3 before slowing sharply. The employment forecast error from the previous report was 1.63%. See Table 2 for forecast errors from the previous report.

Figure 2: Louisiana Employment Projections

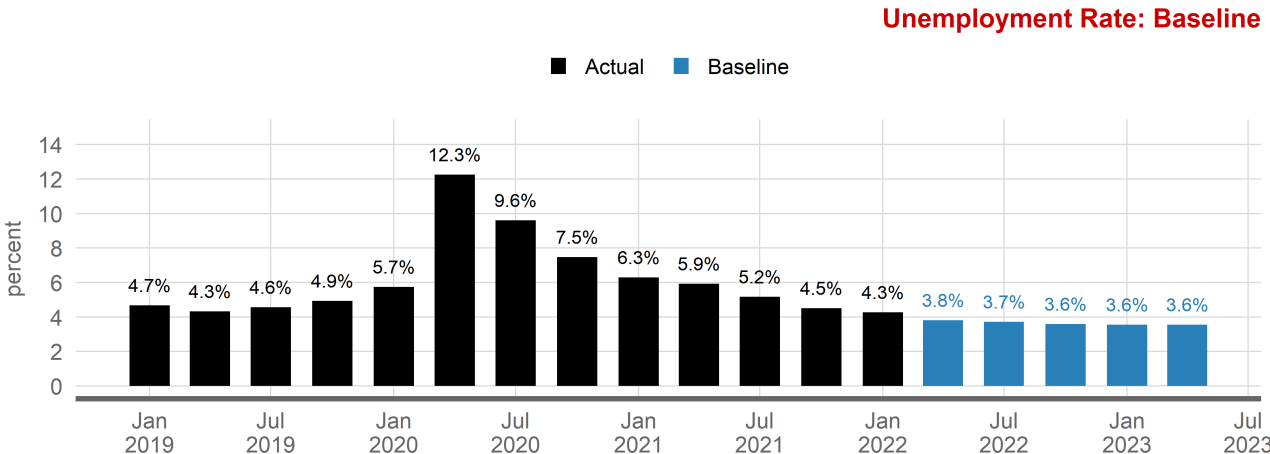
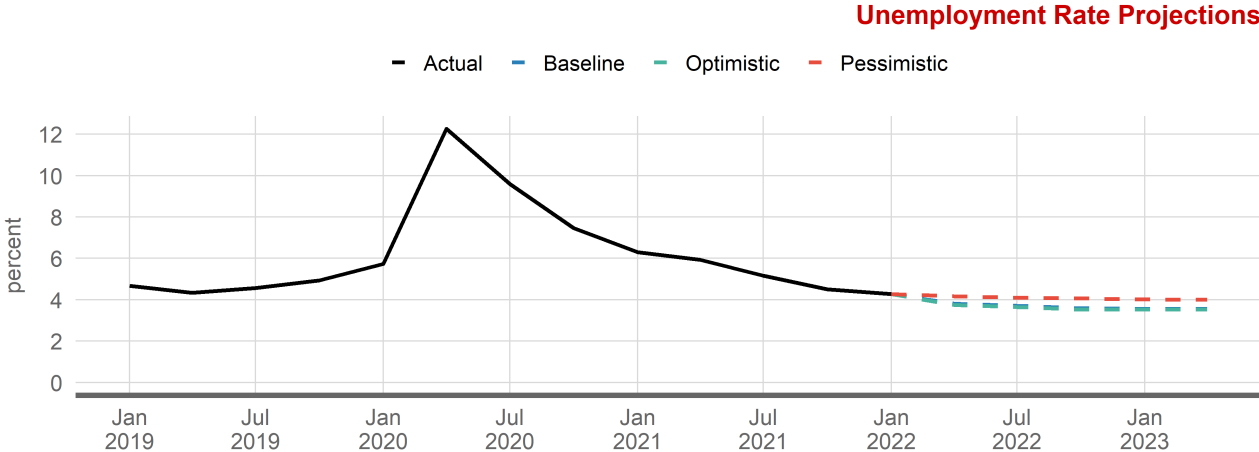


Louisiana Unemployment Rate Projections

Figure 3: Louisiana Unemployment Rate Projections

Louisiana's unemployment rate declined more than projected for the third consecutive report, falling to an average of 4.3% in Q1. The tide may finally be turning as the labor force participation rate has now risen for four consecutive months. As of March 2022, the most recent data available, the state's labor force participation rate stood at 58.6%, the highest reading since the pandemic began. Over the next four quarters, the Baseline projections point to a stabilizing unemployment rate around 3.7%.

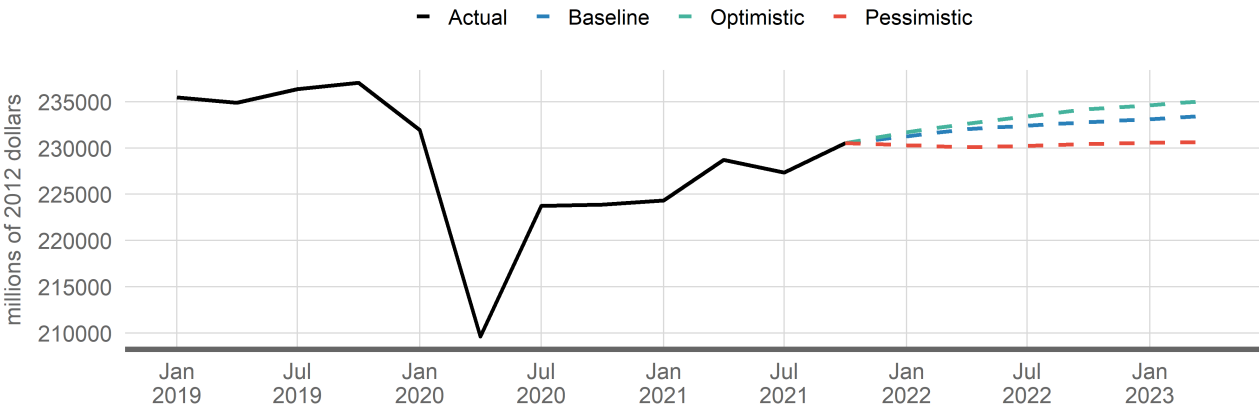
The unemployment rate forecast error from the previous report was 11.63%. See Table 2 for forecast errors from the previous report.



Louisiana GDP Projections

Figure 4: Louisiana GDP Projections

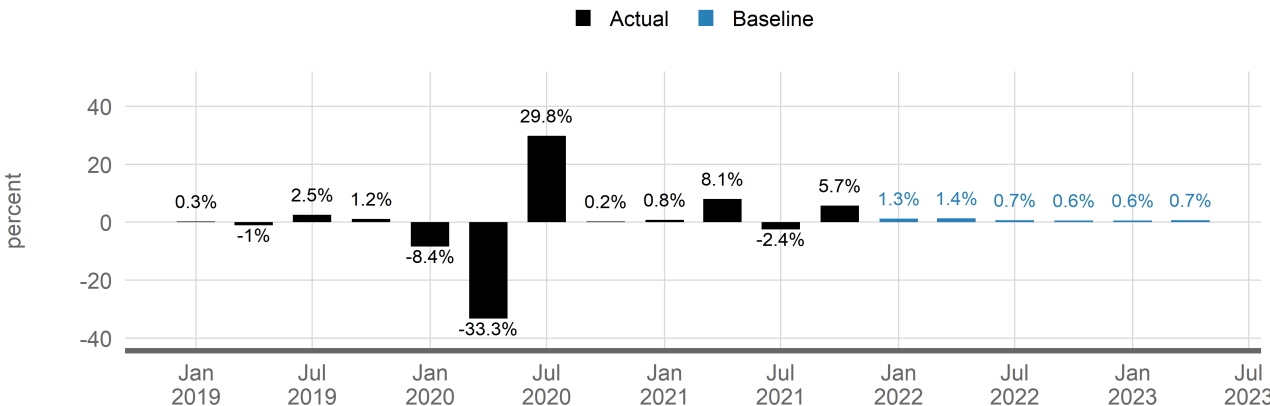
GDP Projections



Louisiana’s GDP expanded at an annualized rate of 5.7% in the fourth quarter of 2021, following the 2.4% contraction in Q3. Consistent with the downward revisions in the national outlook however, the Baseline forecast now points to year-over-year growth of less than 1% in four of the next six quarters.

The GDP forecast error from the previous report was 0.93%. See Table 2 for forecast errors from the previous report.

Annualized GDP Growth: Baseline



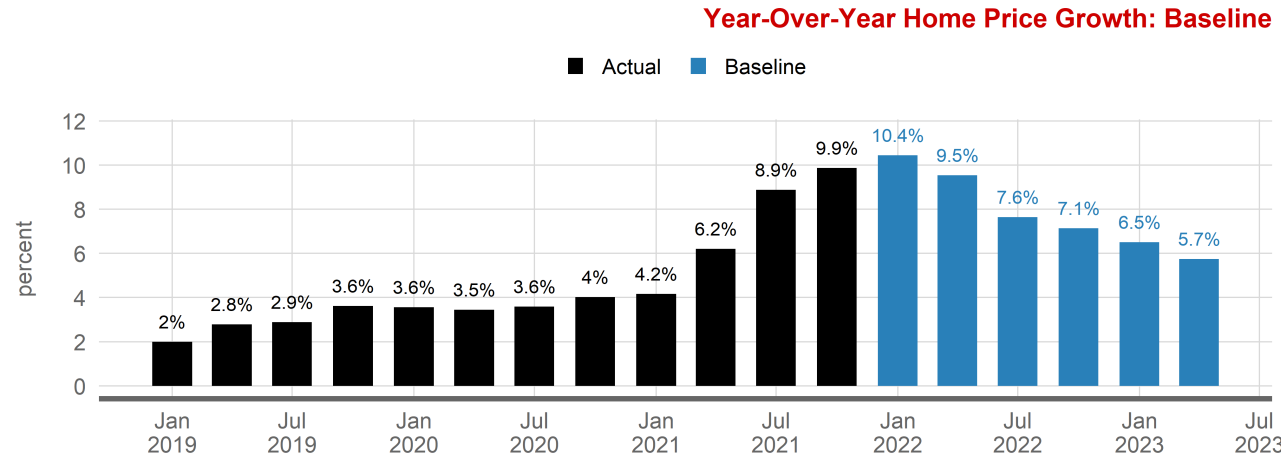
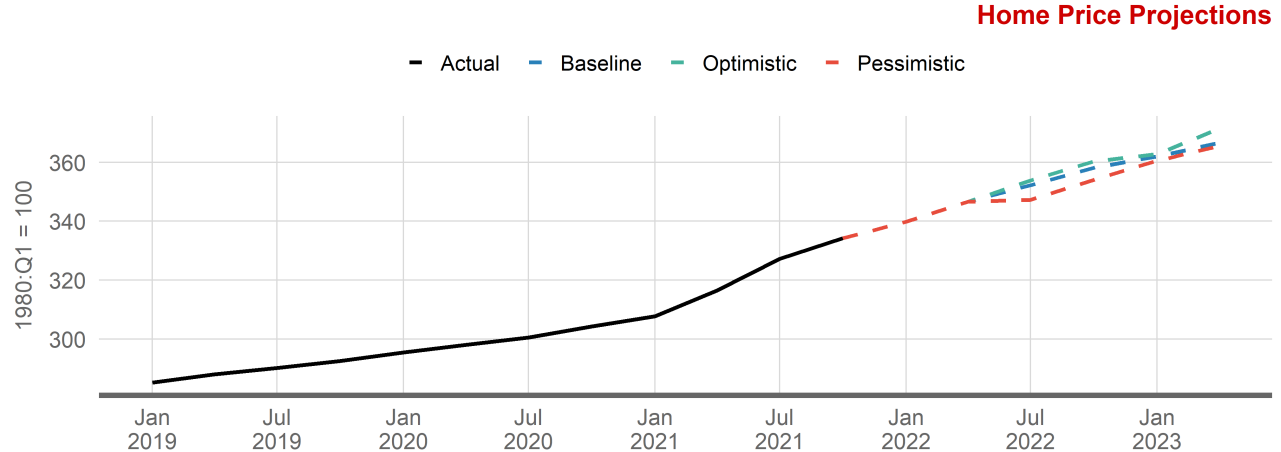
Louisiana Home Price Projections

Year-over-year home price growth in Louisiana was just shy of 10% in the fourth quarter of 2021. This was the highest rate of price appreciation since 2006. With inventory levels remaining stubbornly low (in Louisiana and across the nation), home prices are expected to remain well-above historical norms in Q1 and Q2 before slowing.

Although the expected path of interest rates (see Figure 10) is expected to slow home sales and price appreciation, inventory levels below historical norms will continue to keep upward pressure on prices that will offset some of the effects of rising mortgage rates. The Baseline projection now indicates that year-over-year prices will fall below 6% in 2023, a downward revision of more than 1% from the previous LEAF report. Inventory levels are normalizing more rapidly in the Lake Charles, New Orleans, and Shreveport metro regions. Inventory levels remain more sluggish (below average) in Baton Rouge and Lafayette.

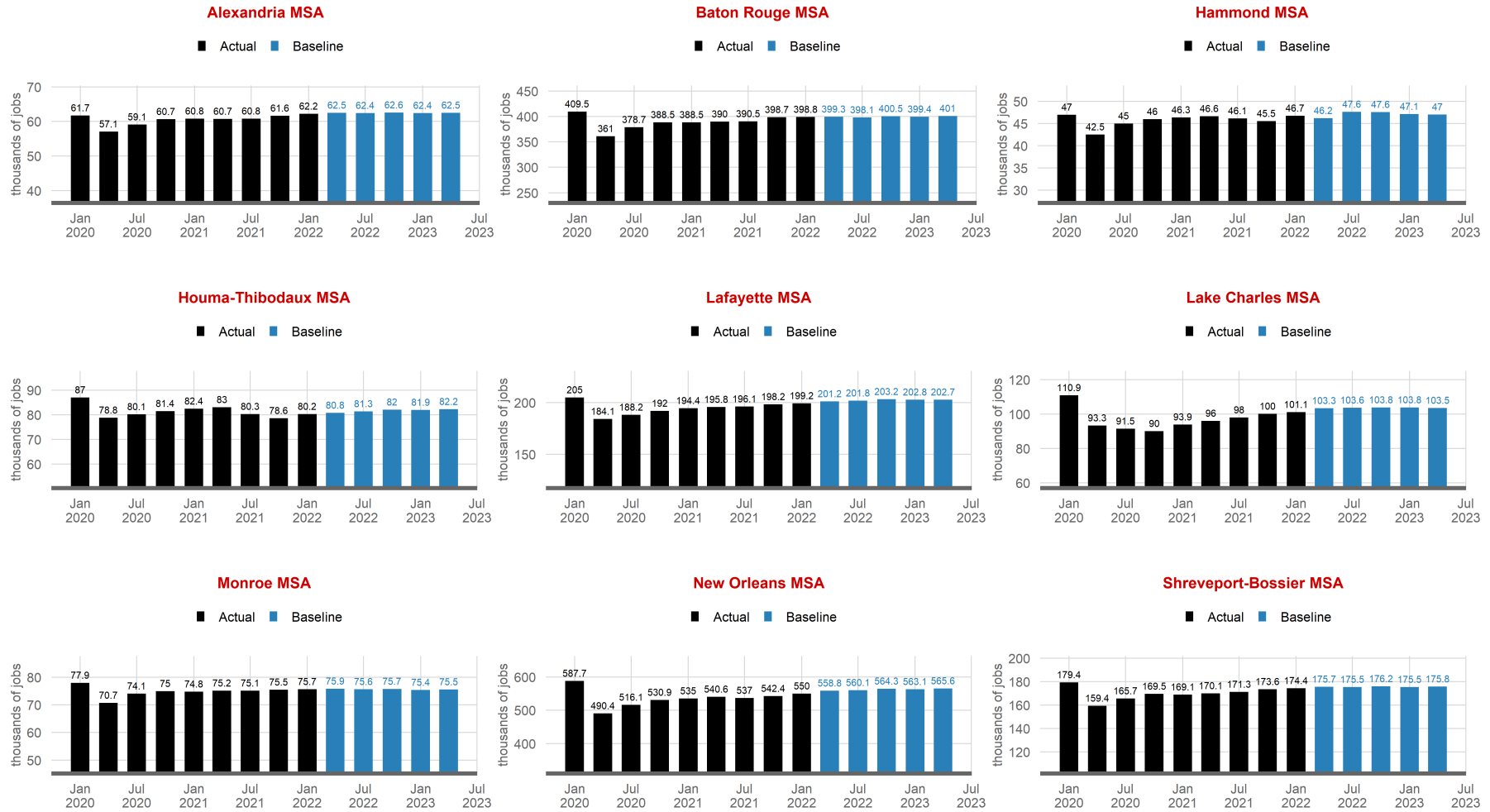
The previous LEAF report's forecast error for home prices was 0.54%. See Table 2 for forecast errors from the previous report.

Figure 5: Louisiana Home Price Projections



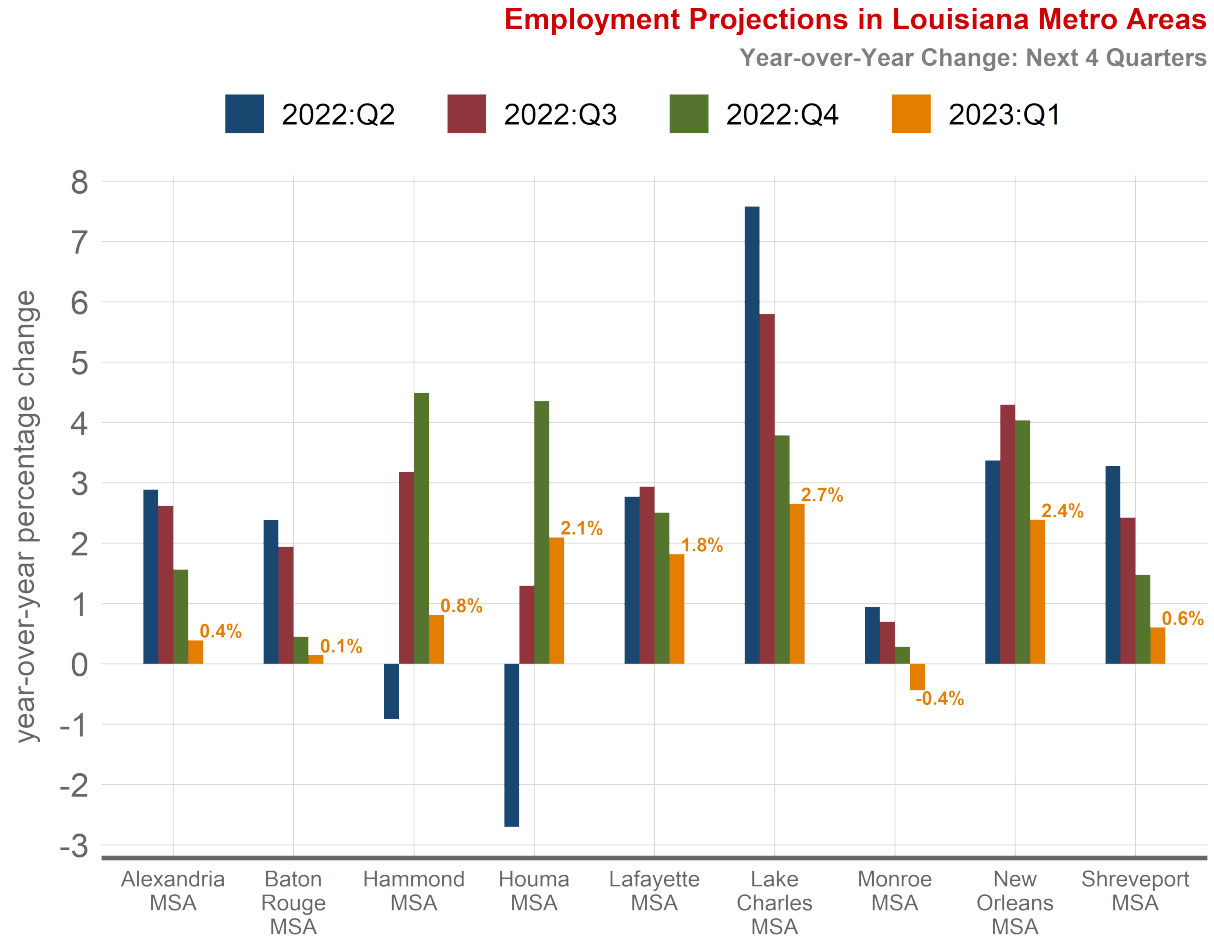
Metro Area Employment Projections

Figure 6: Metro Employment Projections



Metro Area Employment Projections: Year-over-Year Growth

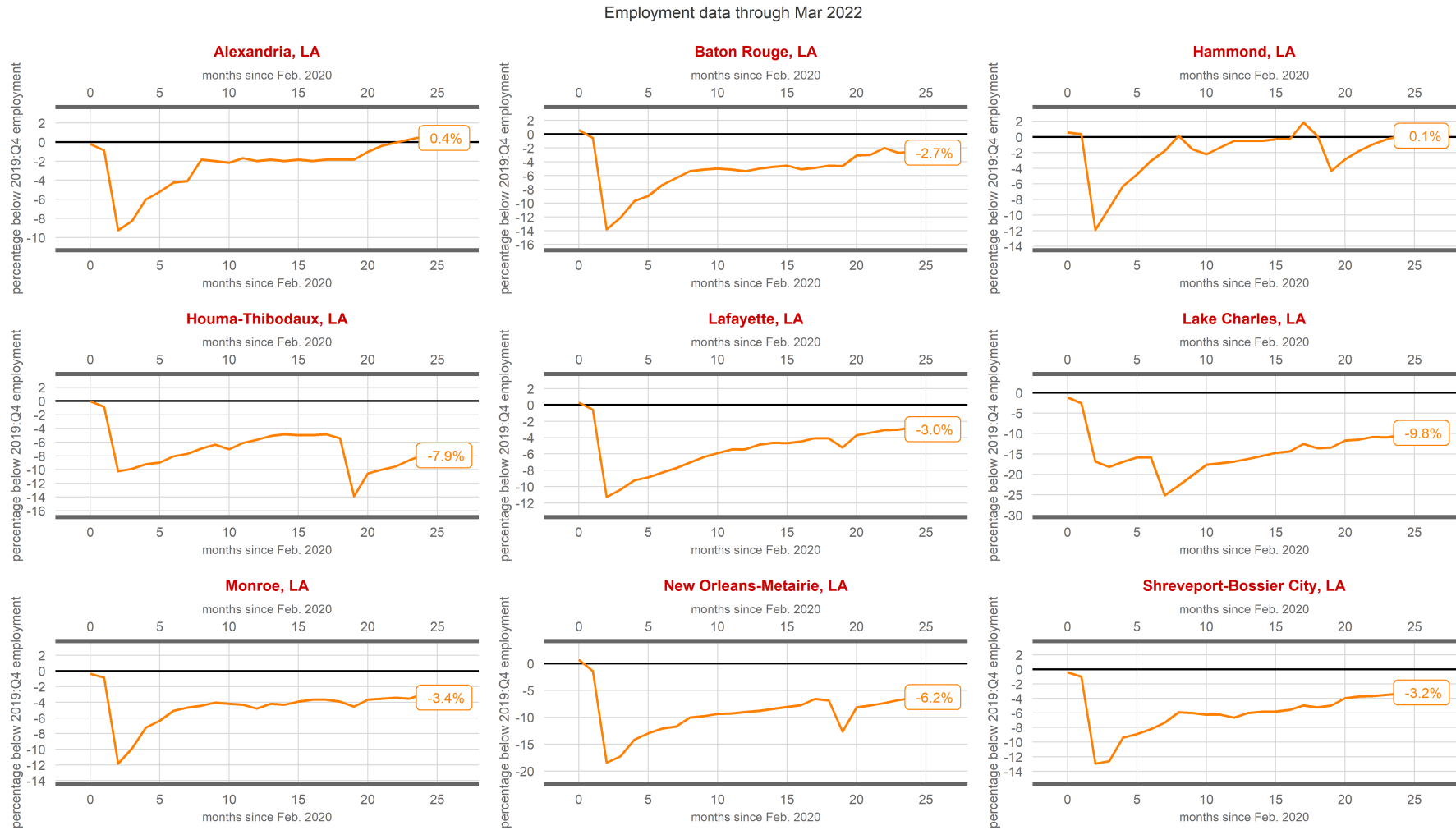
Figure 7: Metro Area Employment Projections: Year-over-Year Growth



Source: Raw data from the Bureau of Labor Statistics. Projections by Gary A. Wagner, Ph.D.

Metro Area Employment: COVID Job Losses and Recovery Relative to 2019:Q4

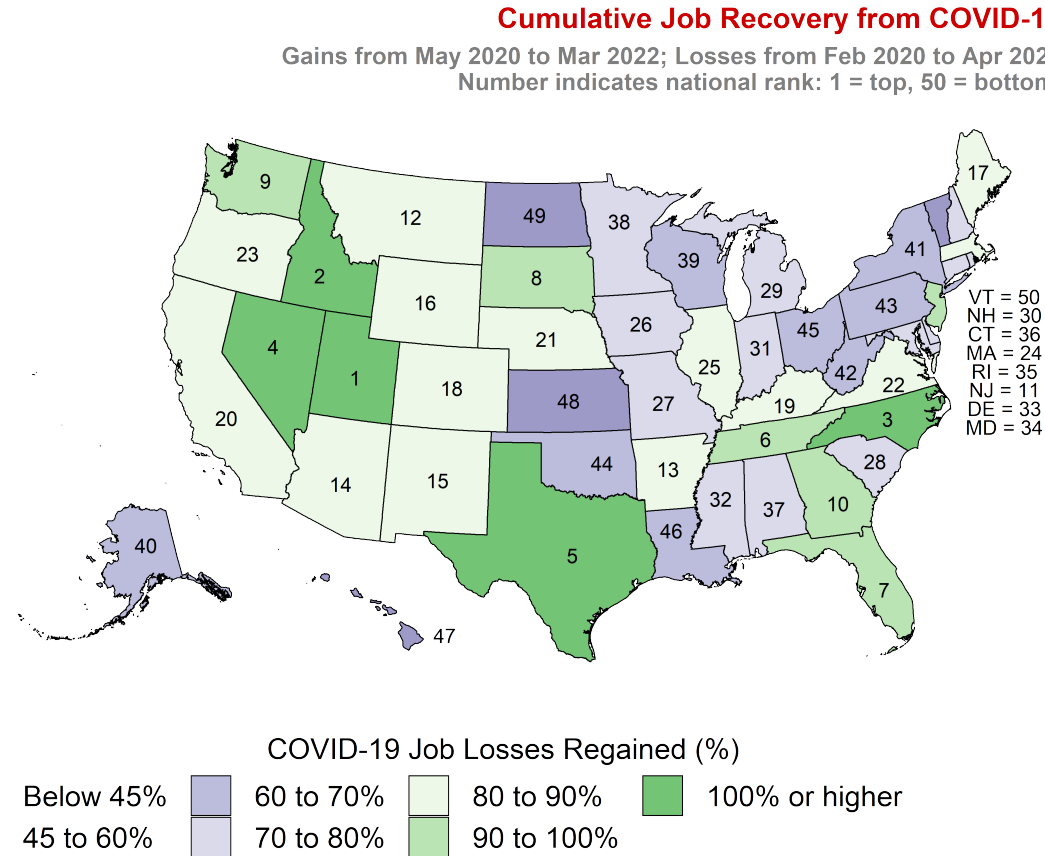
Figure 8: Metro Area Employment: COVID Job Losses and Recovery Relative to 2019:Q4



Source: Raw data from the Bureau of Labor Statistics.

COVID-19 Job Recovery, by State

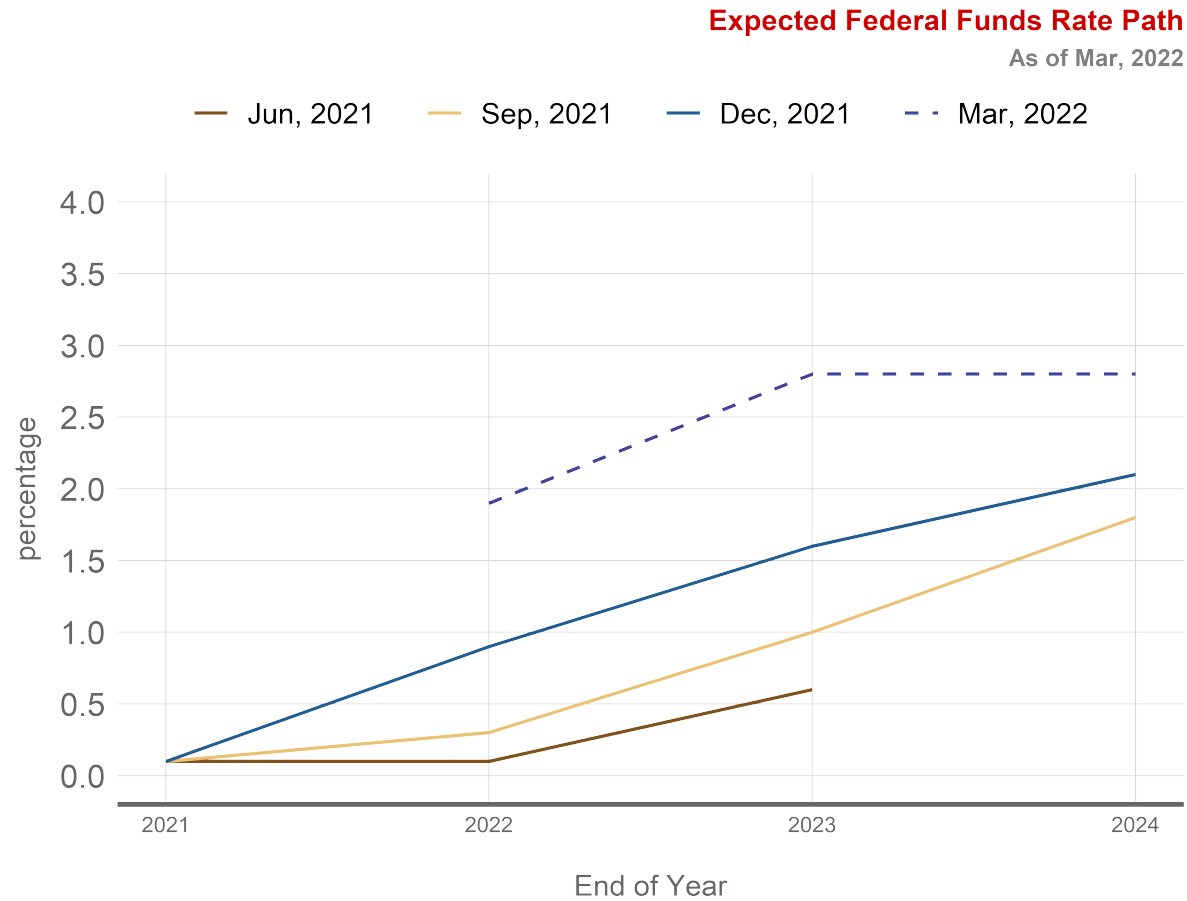
Figure 9: COVID-19 Job Recovery, by State



Source: Bureau of Labor Statistics
 Last month included Mar 2022.

Expected Path of Interest Rates

Figure 10: Expected Federal Funds Rate: Last 4 FOMC Projections



Source: Federal Open Market Committee

Projection Errors from Previous Louisiana Economic Activity Forecast

Table 2: One-Quarter Ahead Projection Errors: 2021:Q4 Projections for 2022:Q1

| Variable | Baseline Projection | Actual Value | Absolute % Error |
|-----------------------------------|----------------------------|---------------------|-------------------------|
| employment (statewide) | 1873.10 | 1904.20 | 1.63 |
| unemployment rate | 4.80 | 4.30 | 11.63 |
| GDP | 228389.80 | 230532.60 | 0.93 |
| FHFA home price index | 332.40 | 334.20 | 0.54 |
| Alexandria MSA employment | 60.00 | 62.20 | 3.54 |
| Baton Rouge MSA employment | 397.70 | 398.80 | 0.28 |
| Hammond MSA employment | 46.70 | 46.70 | 0.00 |
| Houma-Thibodaux MSA employment | 81.80 | 80.20 | 2.00 |
| Lafayette MSA employment | 193.50 | 199.20 | 2.86 |
| Lake Charles MSA employment | 98.00 | 101.10 | 3.07 |
| Monroe MSA employment | 75.10 | 75.70 | 0.79 |
| New Orleans MSA employment | 541.70 | 550.00 | 1.51 |
| Shreveport-Bossier MSA employment | 170.80 | 174.40 | 2.06 |

Technical Appendix

The Louisiana Forecast Model (LFM) is based on a Vector Autoregression (VAR) system of equations. VAR models can be used to generate forecasts of the future values of multiple variables simultaneously (called endogenous variables) based on the past behavior of these variables and on the behavior of other variables whose values are taken as given (called exogenous variables). Endogenous variables (or the variables ones wishes to forecast) in the LFM include gross domestic product (or total production), non-farm payroll employment, unemployment rate, home prices, and state tax collections. Exogenous variables in the current version of the LFM include U.S. gross domestic product, U.S. unemployment rate, oil prices, the state's real trade-weighted exchange rate, and the global prices of soybeans and rice. Hence, the forecast or projection of each endogenous variable is based on the historical relationship with its own past values, the past values of every other endogenous variable, and the values of every exogenous variable. The Louisiana Regional Employment Model (LREM) is a nested Vector Autoregression (VAR) of total payroll employment in the state's nine MSAs. In addition to the exogenous variables used in the LFM, the Louisiana Regional Employment Model incorporates statewide employment projections and statewide GDP projections as additional external variables.

The VAR methodology is a widely-accepted approach for generating economic and business forecasts. Academic studies have repeatedly shown that small-scale VAR models perform well in terms of prediction errors relative to alternative forecasting models. VAR systems also model the underlying dynamics of economic relationships in the system without imposing behavioral assumptions about the relationships between the variables or how they evolve over time.

The model is estimated using quarterly data beginning in 1994:Q1. Quarterly average values are used for data series that are available at a weekly or monthly frequency. All variables enter the model in log difference form. Real quarterly Louisiana gross domestic product, which the Bureau of Economic Analysis did not begin reporting until 2005, is backcasted using the estimated relationship between the observable data on state GDP and real U.S. quarterly gross domestic product and real quarterly state personal income.

Future values of the exogenous variables are required to make projections for the endogenous variables. The future growth rate in real U.S. GDP and the future level of the U.S. unemployment rate are the median median projections from the Survey of Professional Forecasters. Future projections for oil prices are from the U.S. Energy Information Administration. Future trade-weighted exchange rates and the prices of soybeans and rice were estimated using an Akaike Information Criterion (AIC) weighted average of univariate autoregressive moving-average (ARMA) models that range from (0,0) to (4,4). The data appendices provide complete documentation for all underlying source data used in the model.

Data Appendix: Endogenous Variables

- **Employment (statewide)**

Total seasonally adjusted non-farm payroll employment. Source: Bureau of Labor Statistics via the Federal Reserve Bank of St. Louis FRED database (mnemonic = LANA). Units: thousands of individuals.

- **Unemployment rate**

Seasonally adjusted unemployment rate. Source: Bureau of Labor Statistics via the Federal Reserve Bank of St. Louis FRED database (mnemonic = LAUR). Units: percent.

- **Home prices**

All-transactions home price index. Source: U.S. Federal Housing Finance Agency via the Federal Reserve Bank of St. Louis FRED database (mnemonic = LASTHPI). Units: 1980:Q1 = 100. Seasonally adjusted prior to estimation.

- **GDP**

Total Real Gross Domestic Product for Louisiana (seasonally adjusted annual rate). Source: U.S. Bureau of Economic Analysis via the Federal Reserve Bank of St. Louis FRED database (mnemonic = LARQGSP). Units: Millions of chained 2012 dollars. Pre-2005 figures were backcasted following the approach described in the Technical Appendix.

- **Employment (metro area)**

Total seasonally adjusted non-farm payroll employment. Source: Bureau of Labor Statistics via the Federal Reserve Bank of St. Louis FRED database. Units: thousands of individuals. Alexandria (ALEX722NA), Baton Rouge (BATO922NA), Hammond (SMU2225220000000001SA), Houma (HOUM322NA), Lafayette (Lafa122NA), Lake Charles (LAKE322NA), Monroe (MONR722NA), New Orleans (NEWO322NA), and Shreveport (SHRE322NA).

Data Appendix: Exogenous Variables

- **U.S. GDP**

Total Real Gross Domestic Product for the U.S. (seasonally adjusted annual rate). Source: U.S. Bureau of Economic Analysis via the Federal Reserve Bank of St. Louis FRED database (mnemonic = GDPC1). Units: Millions of chained 2012 dollars. Future values are from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters.

- **Oil prices**

West Texas intermediate crude oil price. Source: U.S. Energy Information Administration via the Federal Reserve Bank of St. Louis FRED database (mnemonic = DCOILWTICO). Units: dollars per barrel. Future values are from the U.S. Energy Information Administration Short-Term Energy Outlook. Seasonally adjusted prior to estimation.

- **Trade-weighted exchange rate**

Real trade-weighted exchange rate for Louisiana's major trading partners relative to the U.S. dollar. Source: Federal Reserve Bank of Dallas. Units: January 1988 = 100.

- **Price of rice**

Global price of rice. Source: International Monetary Fund via the Federal Reserve Bank of St. Louis FRED database (mnemonic = PRICENPQUSD). Units: U.S. dollars per metric ton. Seasonally adjusted prior to estimation.

- **Price of soybeans**

Global price of soybeans. Source: International Monetary Fund via the Federal Reserve Bank of St. Louis FRED database (mnemonic = PSOYBUSDM). Units: U.S. dollars per metric ton. Seasonally adjusted prior to estimation.

- **Unemployment rate**

U.S. unemployment rate (seasonally adjusted). Source: U.S. Bureau of Economic Analysis via the Federal Reserve Bank of St. Louis FRED database (mnemonic = UNRATE). Units: Percent. Future values are from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters.

About the Author

Dr. Gary A. Wagner currently holds the Acadiana Business Economist Endowed Chair at the University of Louisiana at Lafayette. In this role, he monitors the region's economic environment, conducts research and analysis, and engages with external stakeholders on behalf of the Moody College of Business and University.

His research interests range from regional economics to state and local public finance issues, with a particular focus on tax structures and economic development, borrowing costs, and pension systems. He has authored or coauthored more than 60 professional articles and reports, and has delivered more than 300 presentations to public audiences on national and regional economic conditions. Dr. Wagner served on the Governor's Council of Economic Advisors in Arkansas from 2008-2011, and he is a quarterly participant in the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters projecting national economic conditions.

Dr. Wagner holds a Ph.D. in Economics from West Virginia University. His professional research has appeared in many leading economics journals including *The Journal of Law and Economics*, *Journal of Economic Behavior and Organization*, *National Tax Journal*, *Economics and Politics*, *Regional Science and Urban Economics*, *Papers in Regional Science*, *Public Choice*, and *Public Finance Review*. Prior to joining the University of Louisiana at Lafayette, he was Vice-President & Senior Regional Officer for the Federal Reserve Bank of Cleveland.

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