



B.I. Moody III College of Business Administration

Louisiana Economic Activity Forecast 2023:Q4

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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

Following last quarter's improved outlook, economic activity in Louisiana is projected to be largely unchanged from last quarter's report. Statewide job gains are projected to exceed 30,000 over the next four quarters, an upward revision of 3,000. The New Orleans, Monroe, Lafayette, and Alexandria metro regions are projected to experience the fastest job gains in the state in the coming year. The Baton Rouge and Houma-Thibodaux regions are expected to see the slowest growth, particularly in the second half of 2024. Statewide home price growth increased by 1.06% in Q2, the slowest rate since 2018. Housing markets are expected to remain soft in most regions of the state, with statewide prices projected to grow between 0.6 and 1.3% over the next five quarters.

3,000

Upward revision in statewide job gains projected over the next four quarters.

0.4%

Projected increase in the unemployment rate over the next four quarters.

-0.13%

Projected average growth rate in GDP over the next five quarters.

2024 Report Release Schedule:

First Quarter: February 16, 2024

Second Quarter: May 17, 2024

Third Quarter: August 16, 2024

Fourth Quarter: November 22, 2024



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Introduction

Both the national and state economic outlook remain largely unchanged from three months ago. Professional forecasters expect inflation-adjusted U.S. Gross Domestic Product (GDP) to grow at an annualized average pace of 1.2% over the next four quarters. Growth is projected to be slower in the first half of 2024 before accelerating in the second half of the year. The risks of a national recession remain elevated, with professional forecasters assigning a 40% chance of a downturn in the second and third quarters next year. Despite the (slightly) elevated recession risks from last quarter, job growth remains solid in the U.S. and Louisiana. Over the next four quarters, Louisiana is projected to add 30,000 jobs, an upward revision of 3,000 from the last report. 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 2024.

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. 2023:Q3 values for the Baseline, Optimistic, and Pessimistic scenarios are identical because this quarter has already occurred. This row is shaded gray. Values for 2023:Q4 to 2024:Q3 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
2023:Q3	4.90	4.90	4.90	3.70	3.70	3.70	82.25	82.25	82.25
2023:Q4	1.31	1.54	0.72	3.89	3.80	3.90	86.65	71.94	95.80
2024:Q1	0.79	1.94	0.40	4.00	3.88	4.03	90.64	71.85	102.23
2024:Q2	1.34	1.90	0.60	4.02	3.93	4.20	92.00	67.14	110.16
2024:Q3	1.46	2.07	1.10	4.16	3.98	4.30	91.00	63.67	114.56

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 November 13, 2023. The Baseline expected path of oil prices is from the U.S. Energy Information Administration's Short-Term Economic Outlook released on November 13, 2023.

Many measures of consumer prices continue to point to slowing inflation. Following monthly increases of 0.6 and 0.4%, respectively in August and September, the (seasonally adjusted) Consumer Price Index was unchanged in October. Shelter inflation, which has been much slower to adjust, decreased from an annualized rate of 7.2% in September to 6.7% in October. This is down from a peak rate of 8.1% in February of this year, the highest rate since 1982. Based on the most recent inflation measures, I would assign a very low probability (less than 5%) that the Federal Reserve raises interest rates in their upcoming December meeting. National labor market conditions remain resilient. The U.S. economy

is currently averaging 238,000 net new jobs per month and there are 1.4 job openings available per unemployed worker based on the latest Job Openings and Labor Turnover Survey (JOLTS) report.

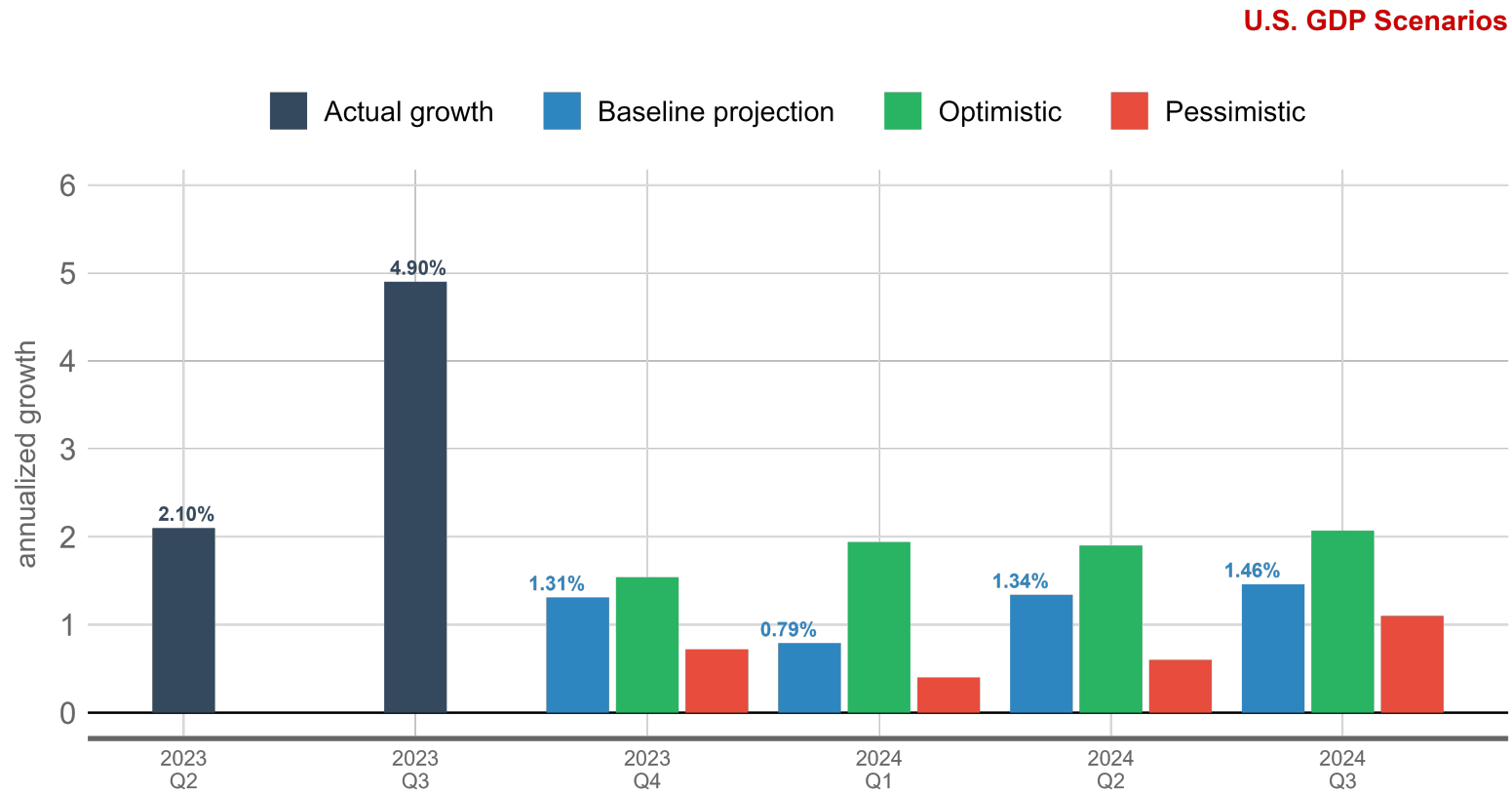
The probability of a national recession over the next four quarters increased slightly over the past three months, according to respondents to the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters (SPF). As illustrated in see Figure 9, respondents believe that the greatest risk of a downturn in the next four quarters is in the middle of 2024. Consistent with last quarter's report, there is evidence that manufacturing activity continues to slow and housing markets, particularly in the west and pacific northwest, are experiencing year-over-year (nominal) home price reductions.

U.S. GDP expanded at a 4.9% clip in Q3, well-above expectations. Consumer spending was particularly strong last quarter, with purchases of durable goods, those expected to last an average of at least three years, rising at an annualized rate of 7.6%. This is the second consecutive quarter of strong consumer spending, which is an important economic barometer because household spending accounts for roughly 70% of all economic activity. Spending on residential structures also increased at an annualized rate of 3.9% in Q3, the first quarter of positive growth since 2021:Q1.

The Optimistic and Pessimistic scenarios, which I would assign a 20% and 20% 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. Consistent with last quarter's report, I would assign a 60% probability to the Baseline forecast.

The Baseline scenario projects U.S. GDP to grow at an annual pace of 1.2% over the next four quarters, a slight reduction from the 1.3% projected three months ago. As of November 8, the Federal Reserve Bank of Atlanta's real-time GDP forecast – GDPNow – is 2.1% for the fourth quarter. Figure 1 on the next page shows U.S. GDP under the three scenarios considered. For the third quarter in a row, all three scenarios have the U.S. economy avoiding a recession any time in the next year.

Figure 1: U.S. Economic Growth Scenarios



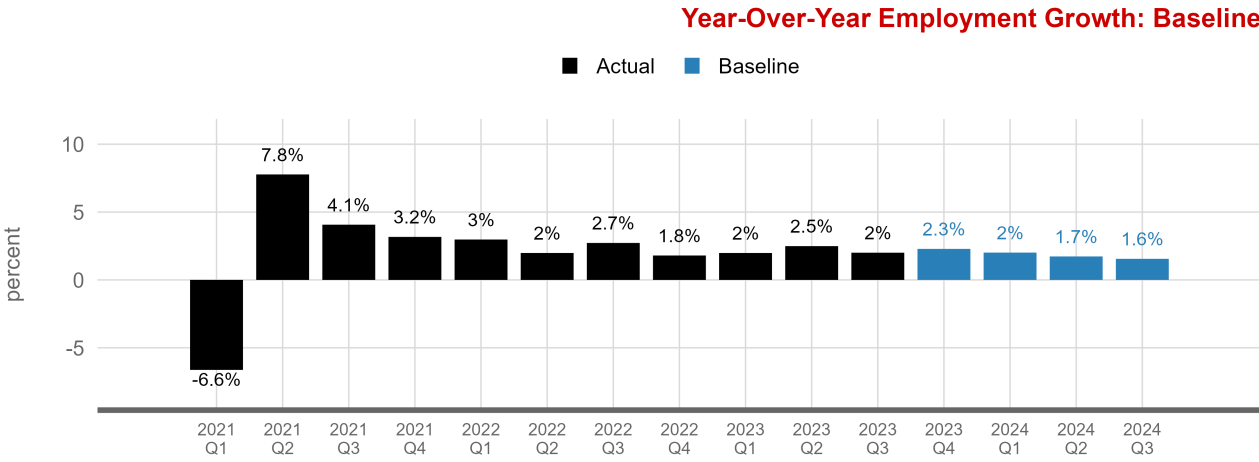
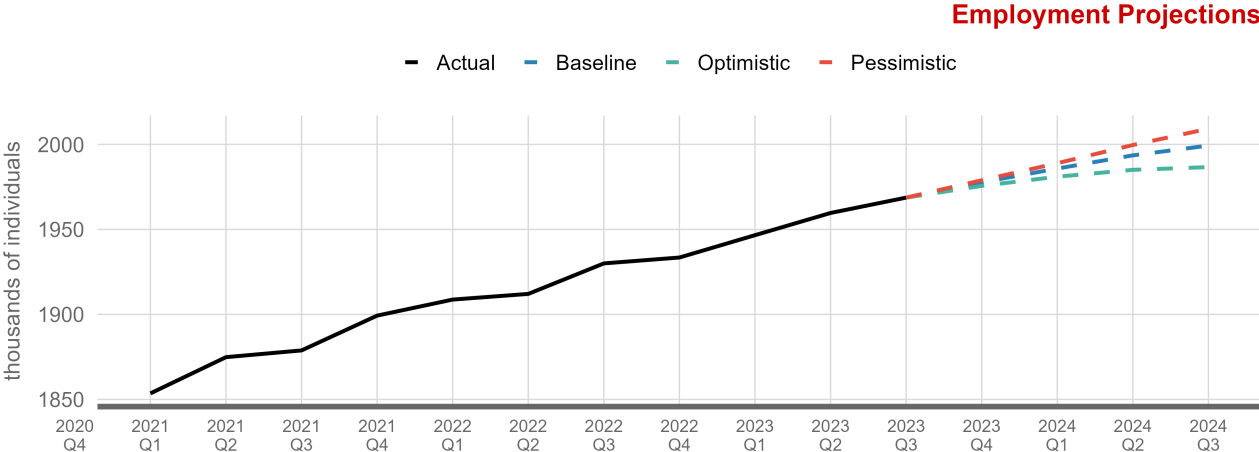
Louisiana Employment Projections

Figure 2: Louisiana Employment Projections

The recent strength in labor markets continued in Q3 as the state added more than 9,000 net new jobs. Over the past five quarters, Louisiana has gained more than 56,000 net new jobs, the highest pace since 2007. Over the next four quarters, the Baseline forecast is also being revised up, with statewide gains expected to exceed 30,000.

With the exception of the Baton Rouge and Houma-Thibodaux regions, job growth is expected to remain strong in the near-term. Annualized growth is projected to exceed 1.5% (on average) in six of the state's nine metro regions over the next four quarters.

The employment forecast error from the previous report was 0.01%. See Table 2 for forecast errors from the previous report.

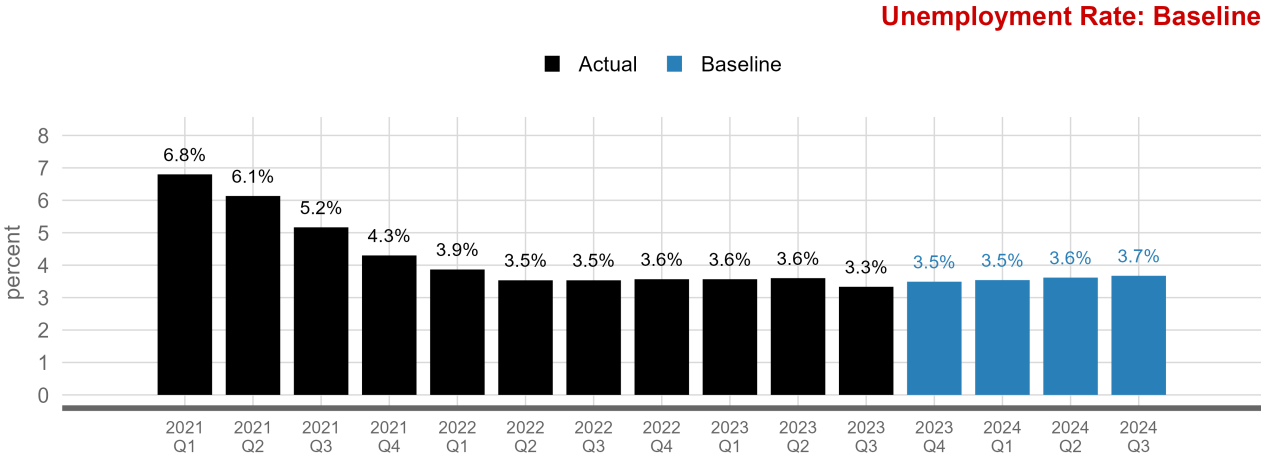
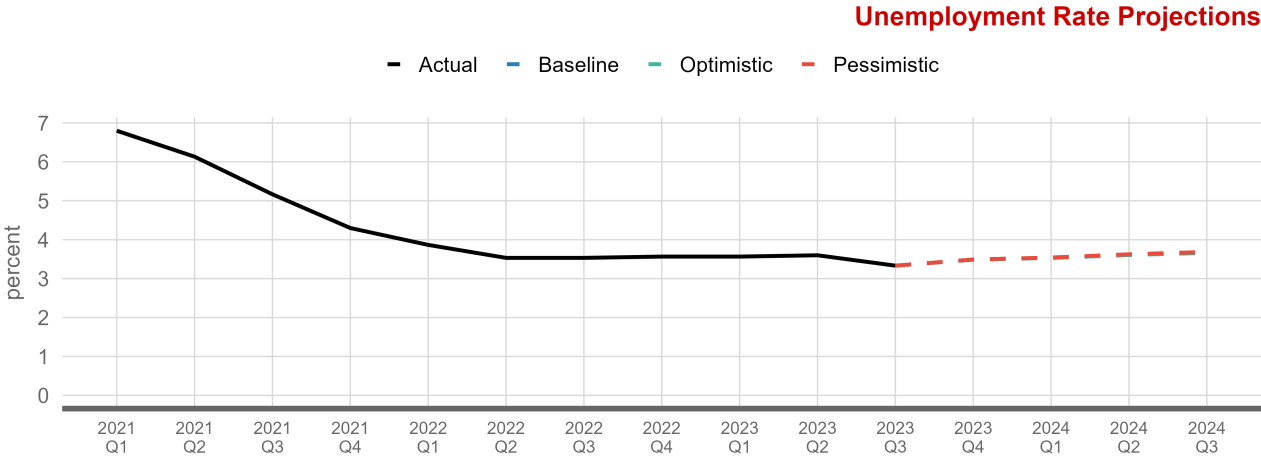


Louisiana Unemployment Rate Projections

Figure 3: Louisiana Unemployment Rate Projections

Louisiana’s unemployment rate decreased from an average of 3.6% in Q2 to an average of 3.3% in Q3. The unemployment rate was projected to increase slightly between Q2 and Q3. Given that national economic conditions are expected to slow, the state unemployment rate is projected to increase by 0.4% (to an average of 3.7%) by the third quarter of 2024.

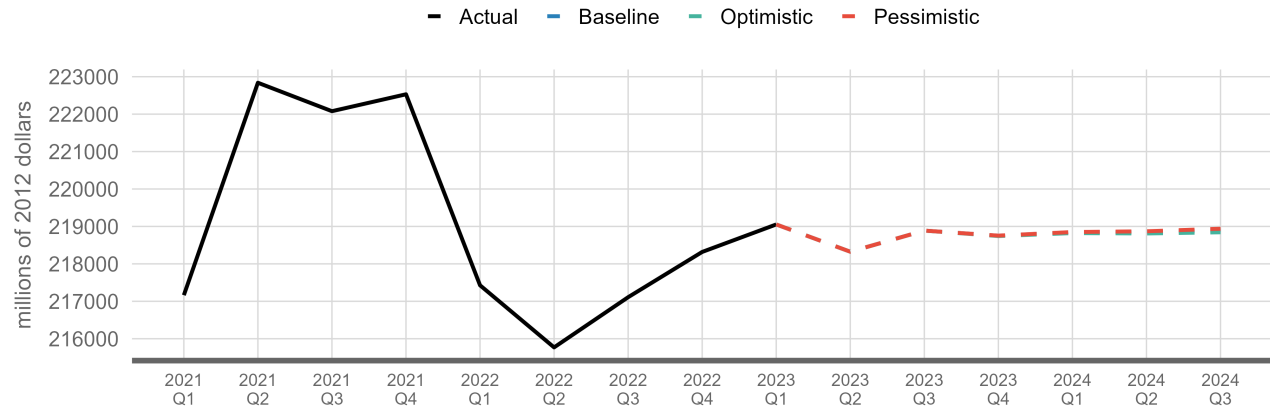
The unemployment rate forecast error from the previous report was 9.09%. See Table 2 for forecast errors from the previous report.



Louisiana GDP Projections

Figure 4: Louisiana GDP Projections

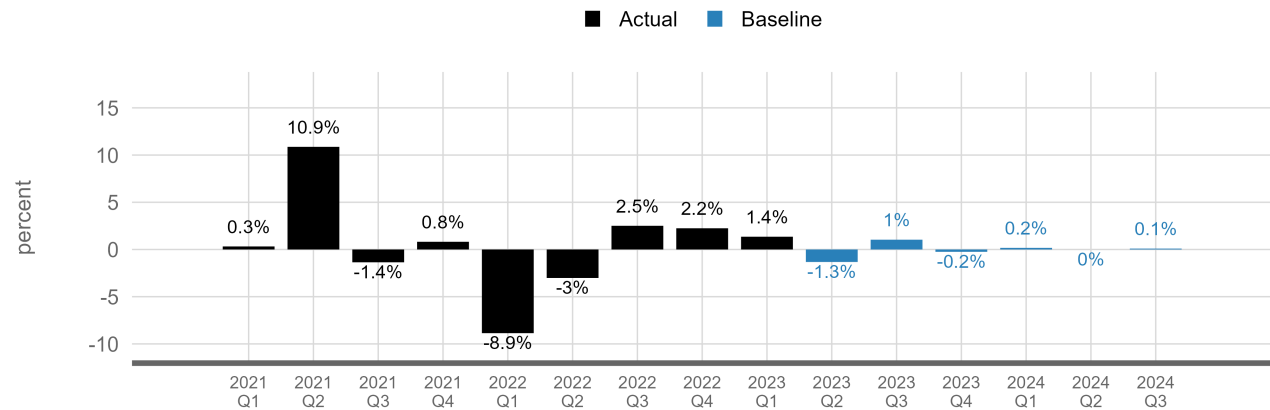
GDP Projections



Despite a very strong labor market, state inflation adjusted-GDP remains flat. Consistent with last quarter's report, the Baseline scenario projects GDP growth in the state to average -0.13% over the next five quarters.

The Bureau of Economic Analysis, the agency that produces GDP estimates, is revising state GDP estimates and 2023:Q2 figures have not yet been released. Forecast errors for this indicator will be reported once the BEA releases their updated estimates.

Annualized GDP Growth: Baseline



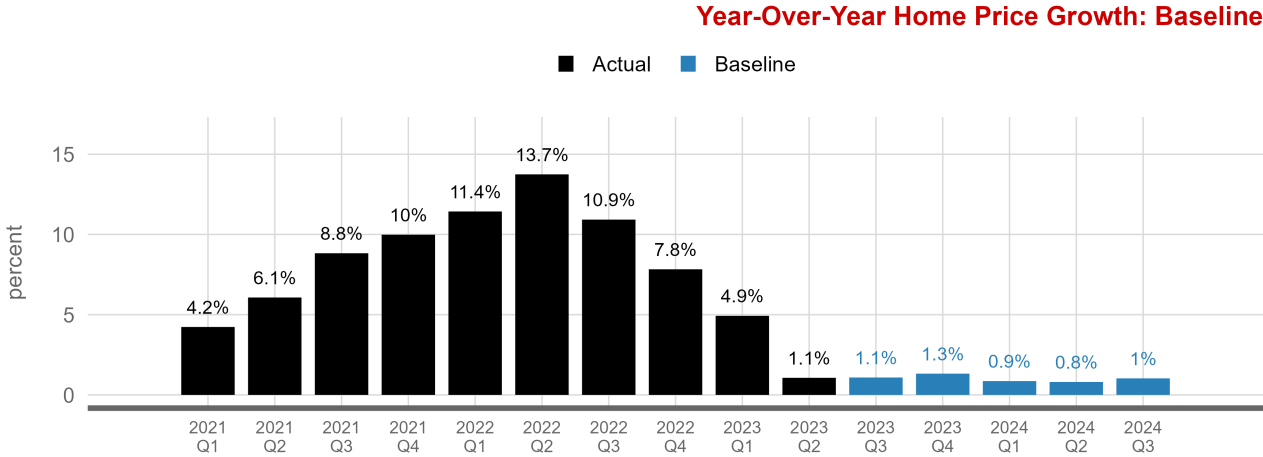
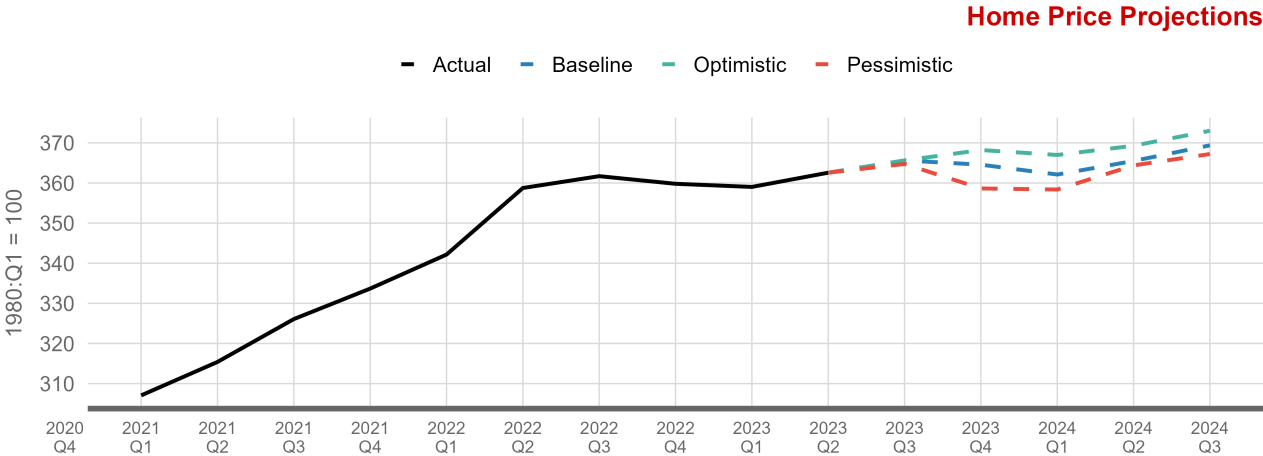
Louisiana Home Price Projections

Figure 5: Louisiana Home Price Projections

Following growth of nearly 5% in Q1, statewide home prices increased by 1.06% in Q2, the slowest pace since 2018. Over the next five quarters, the Baseline projection points to an average growth rate of 1.02%. Under the Pessimistic scenario, home prices are projected to decline in the second and third quarters of 2024.

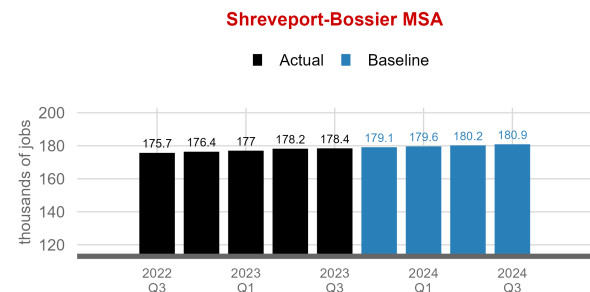
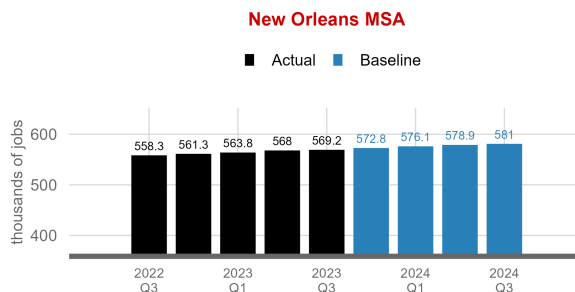
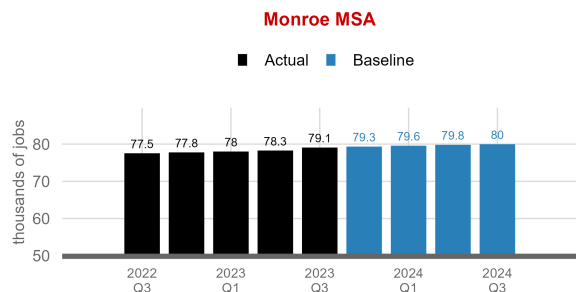
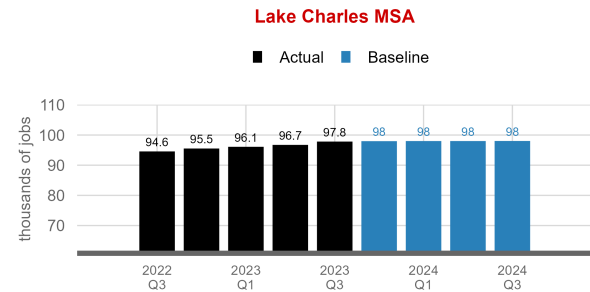
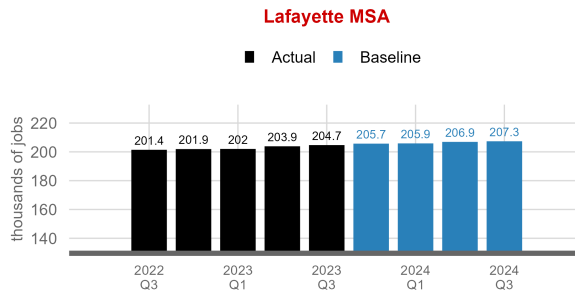
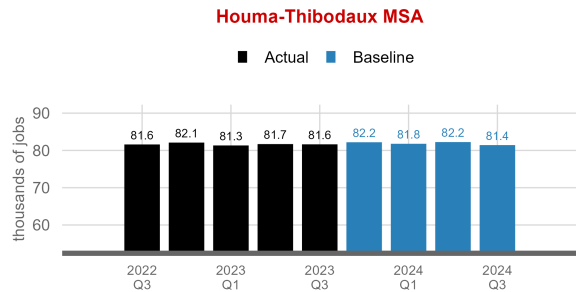
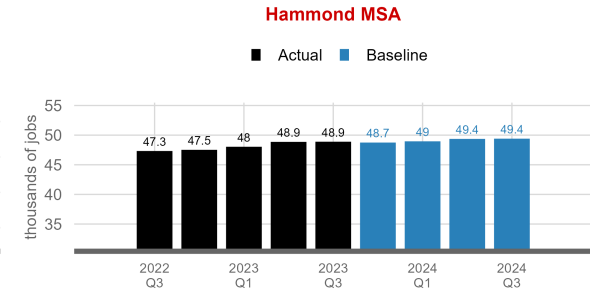
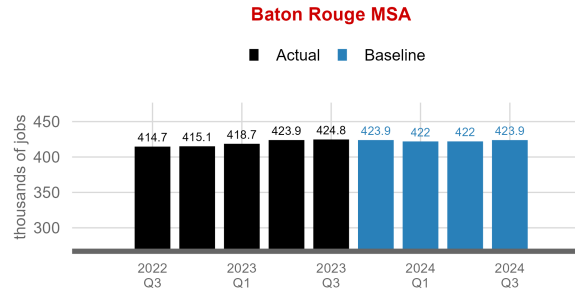
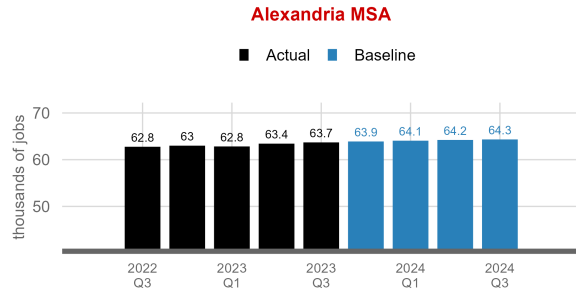
Additional housing charts are provided for each metro region to track individual market corrections.

The previous LEAF report's forecast error for home prices was 0.61%. See Table 2 for forecast errors from the previous report.



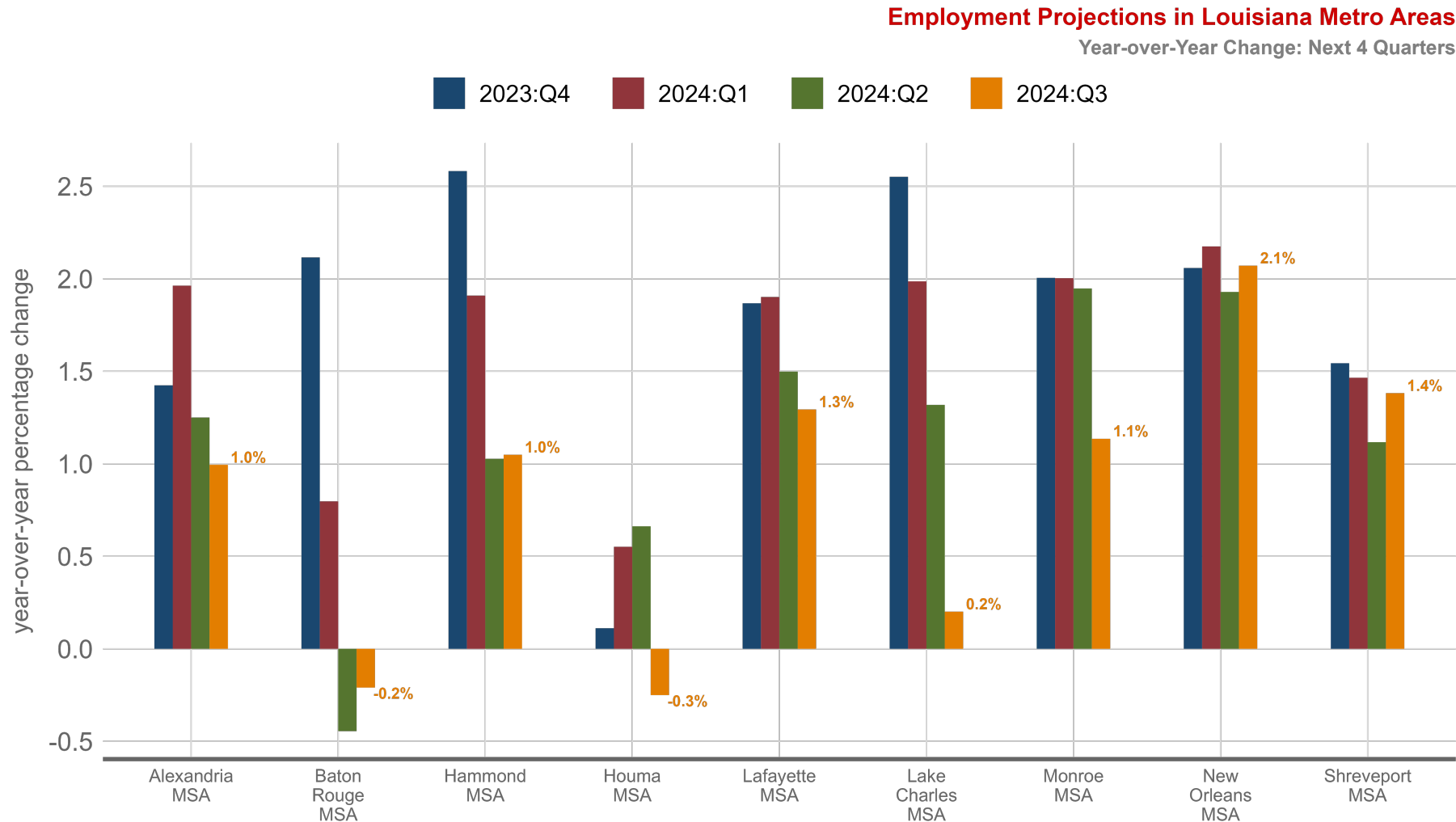
Metro Area Employment Projections

Figure 6: Metro Employment Projections



Metro Area Employment Projections: Year-over-Year Growth

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

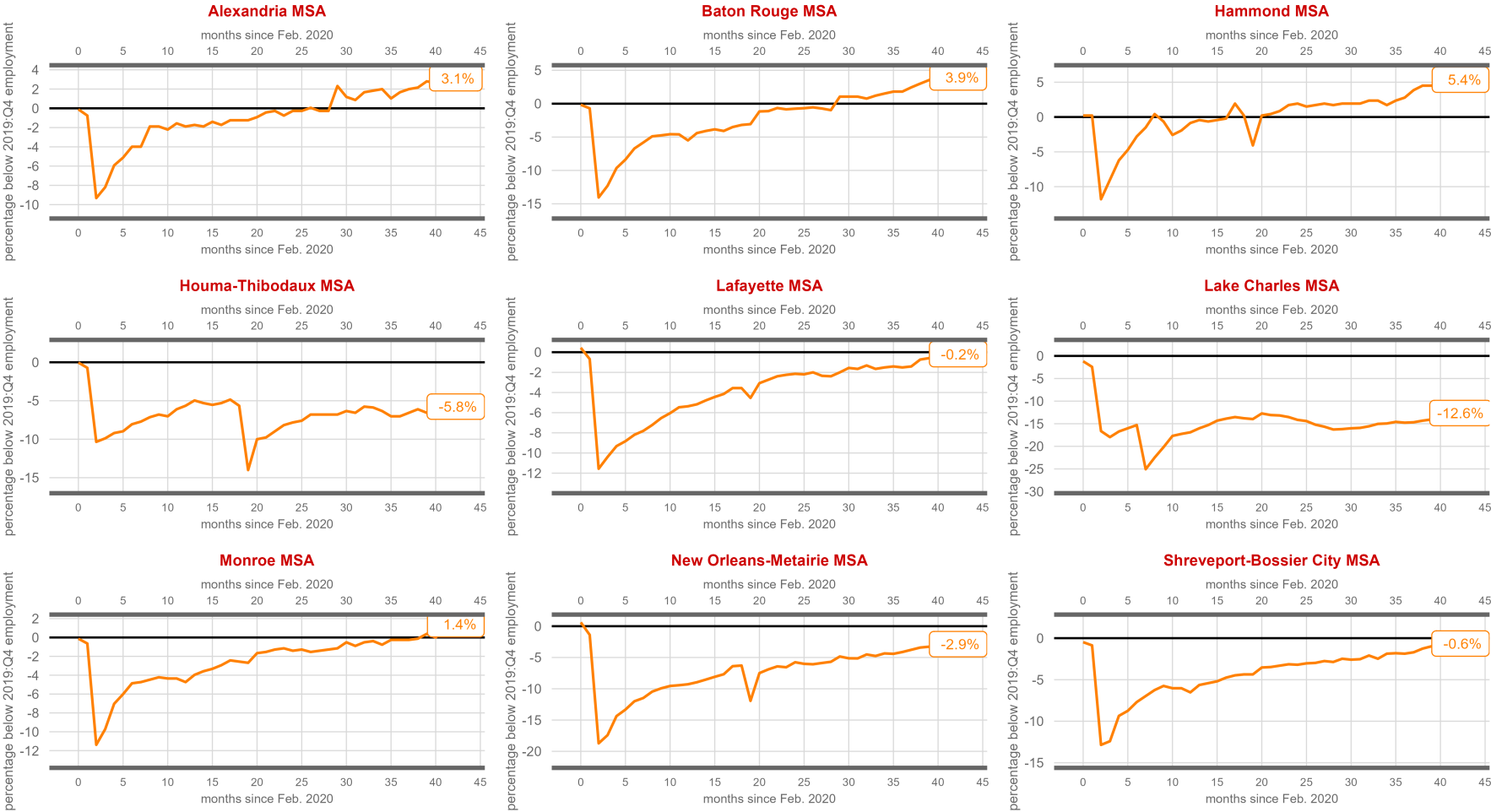


Source: Raw data from the Bureau of Labor Statistics. Projections by Gary A. Wagner, Ph.D.

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

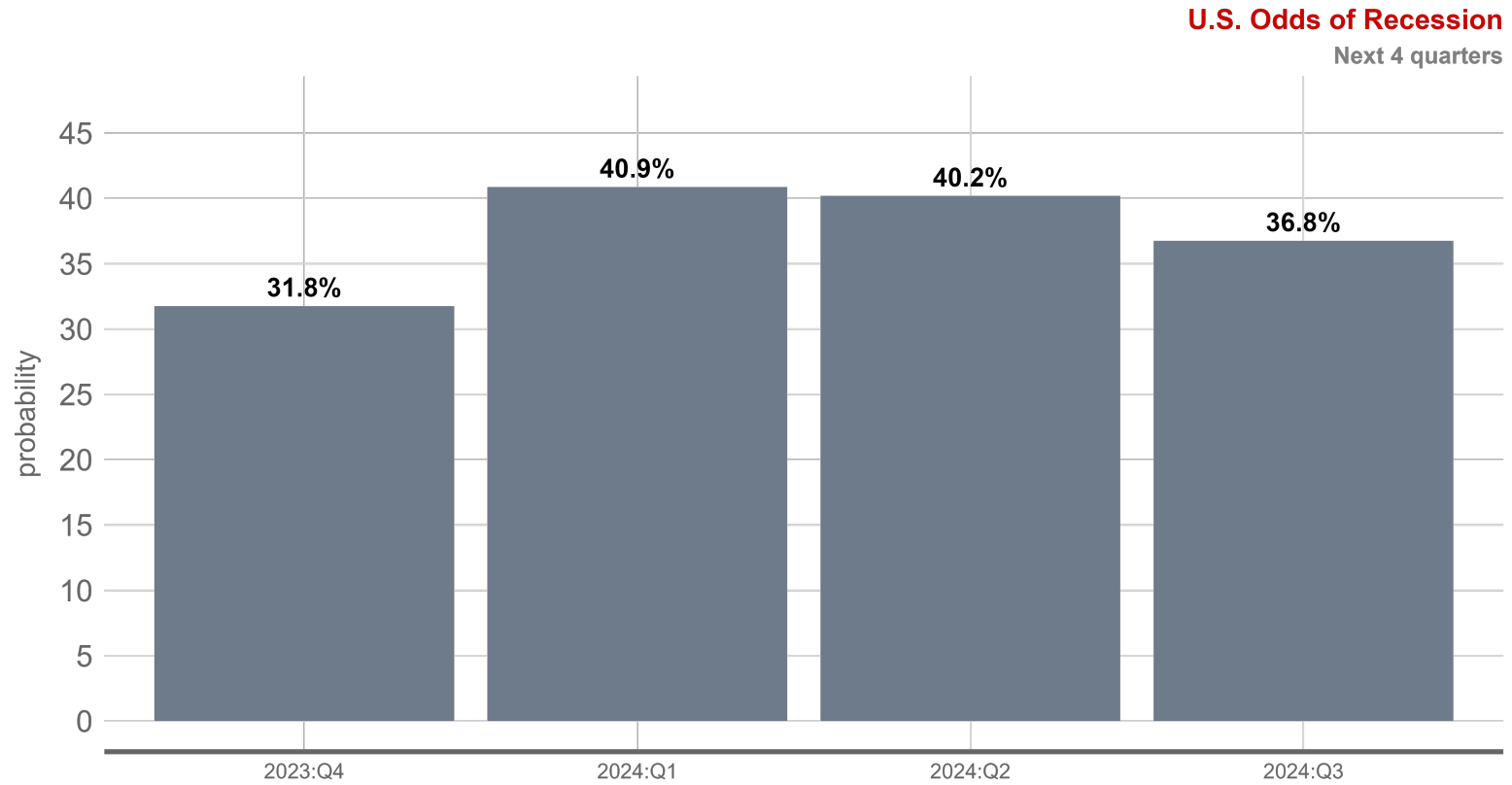
Employment data through Sep 2023



Source: Raw data from the Bureau of Labor Statistics.

Recession Probabilities Over the Next Year

Figure 9: Recent Recession Probabilities



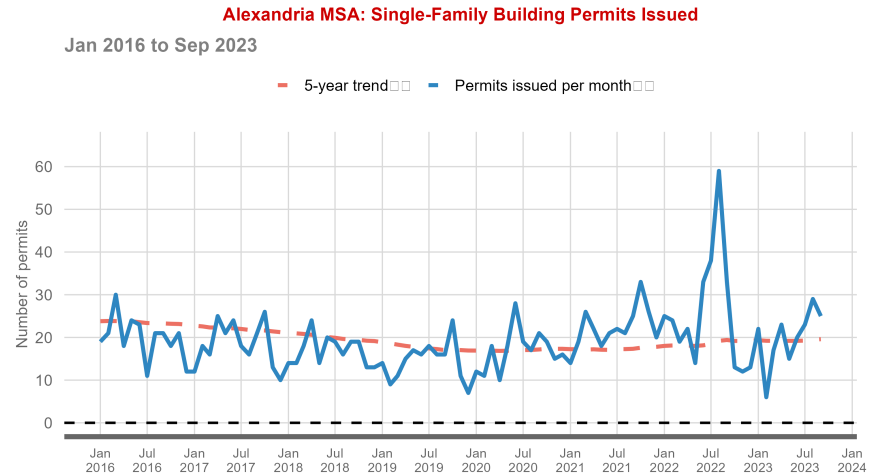
Source: Survey of Professional Forecasters, Federal Reserve Bank of Philadelphia.

Alexandria MSA: Additional Charts

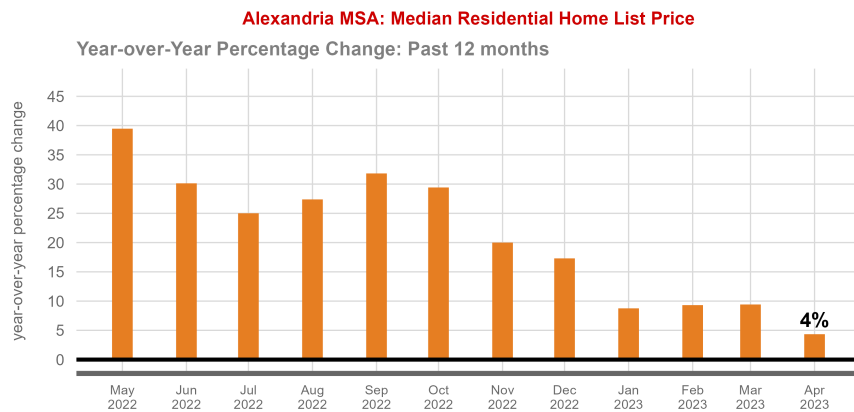
Figure 10: Alexandria Metro Area: Additional Charts



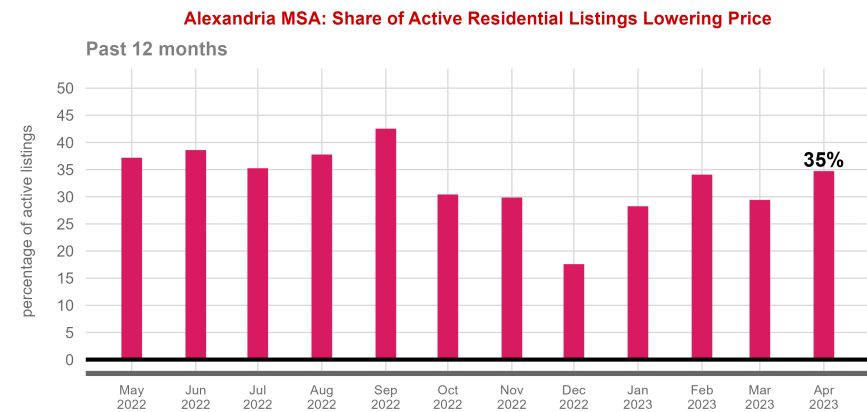
Source: Bureau of Labor Statistics.



Source: Census Bureau.



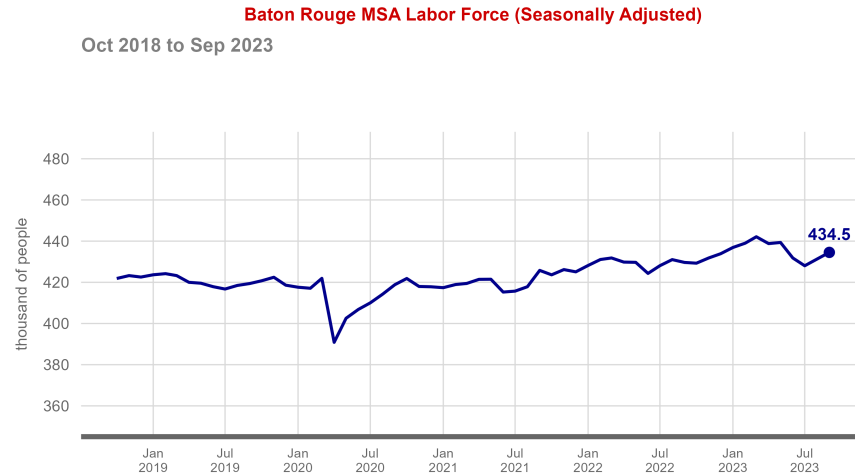
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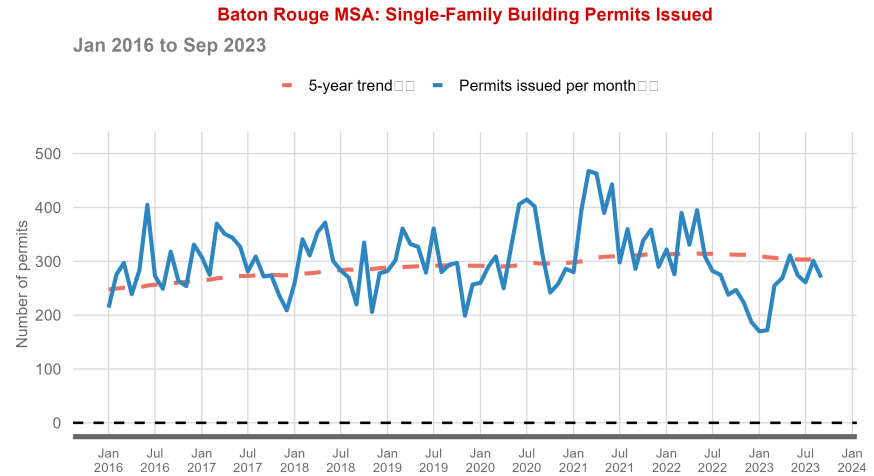
Source: Realtor.com.

Baton Rouge MSA: Additional Charts

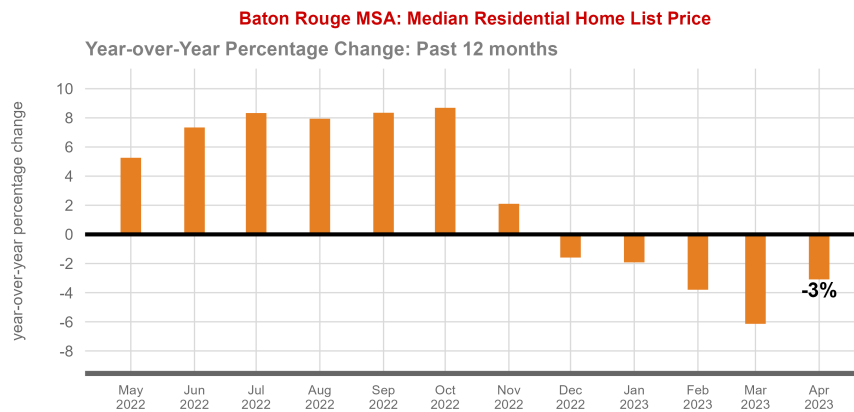
Figure 11: Baton Rouge Metro Area: Additional Charts



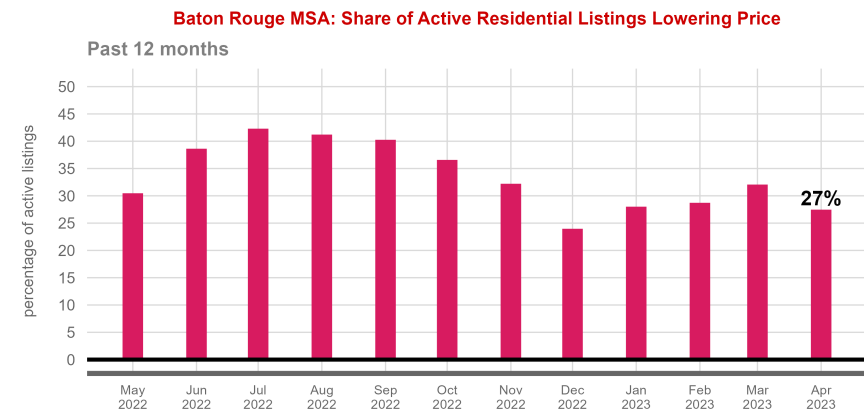
Source: Bureau of Labor Statistics.



Source: Census Bureau.



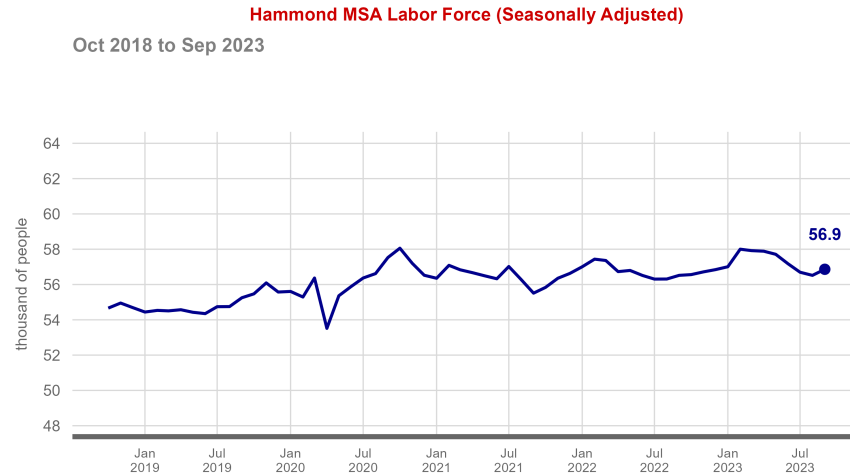
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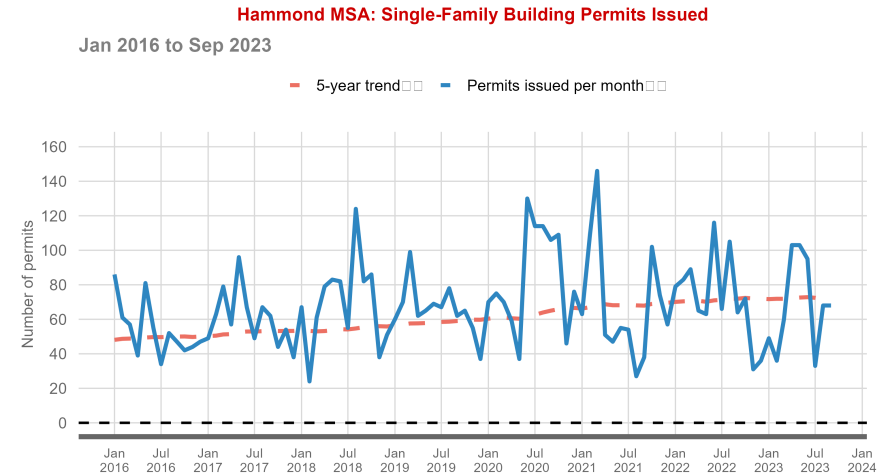
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Hammond MSA: Additional Charts

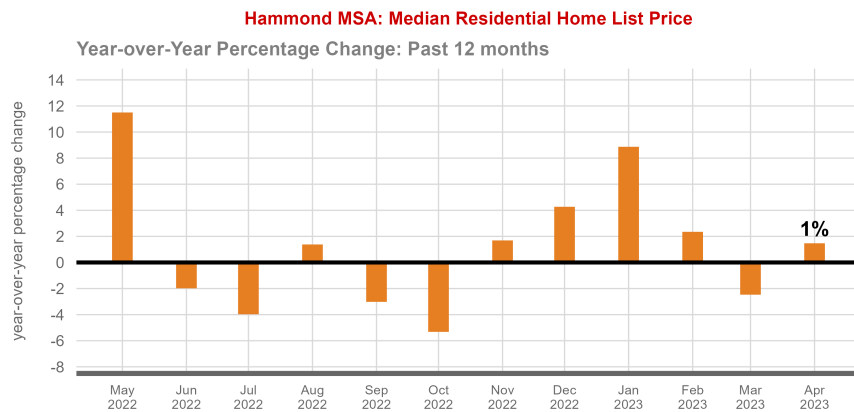
Figure 12: Hammond Metro Area: Additional Charts



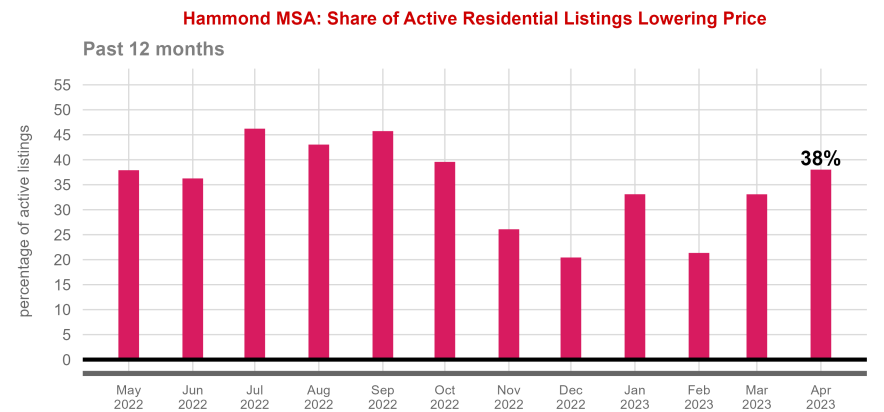
Source: Bureau of Labor Statistics.



Source: Census Bureau.



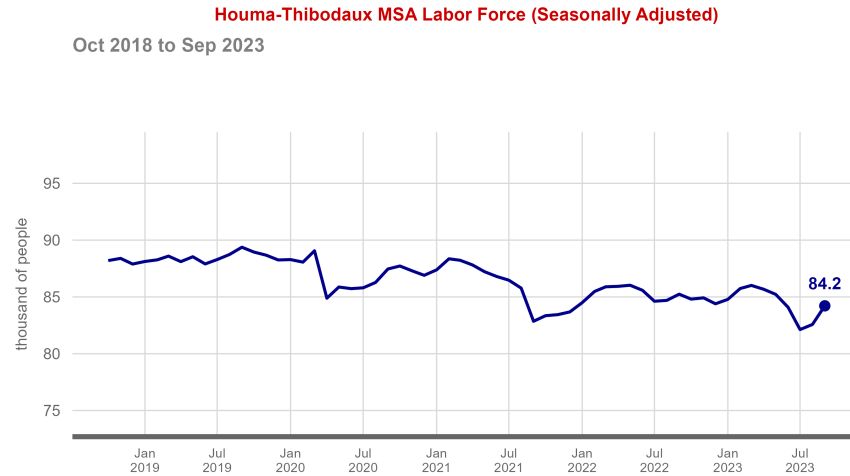
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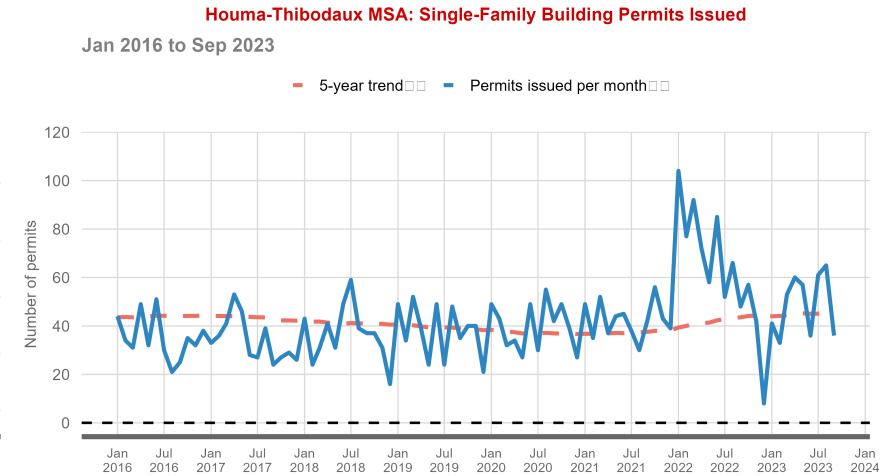
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Houma-Thibodaux MSA: Additional Charts

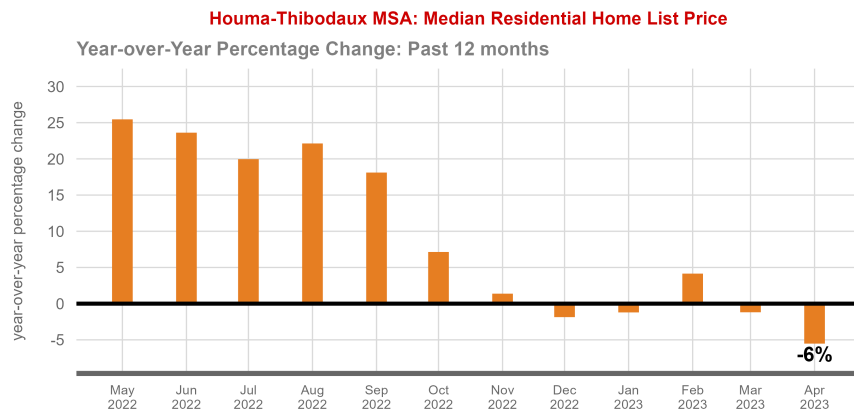
Figure 13: Houma-Thibodaux Metro Area: Additional Charts



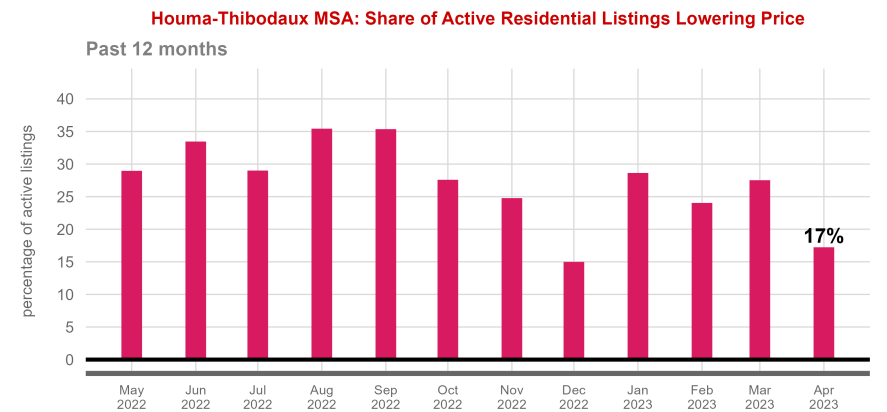
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Source: Census Bureau.



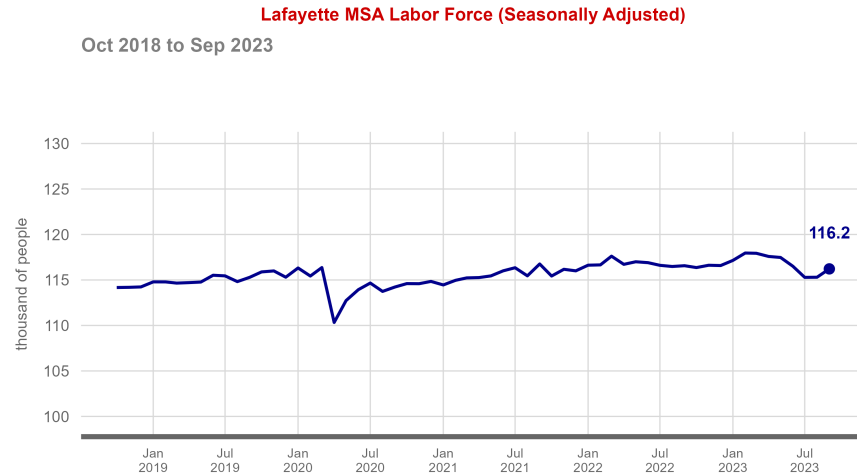
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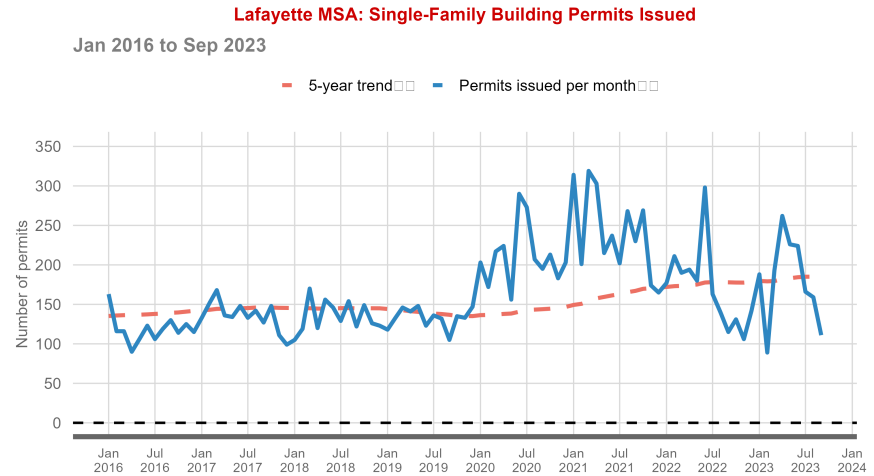
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Lafayette MSA: Additional Charts

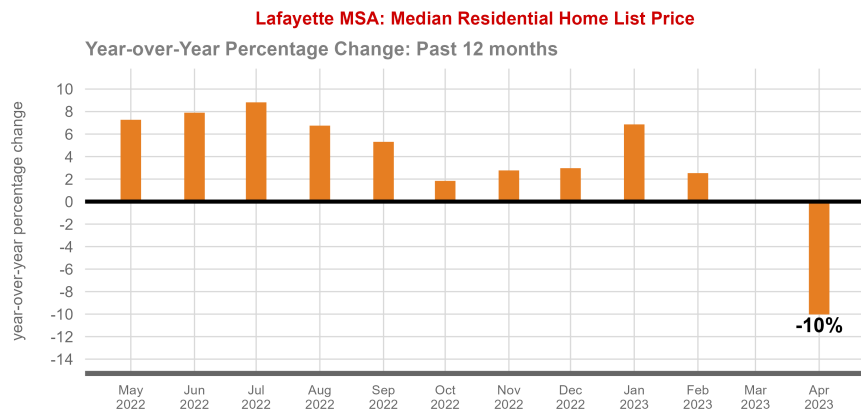
Figure 14: Lafayette Metro Area: Additional Charts



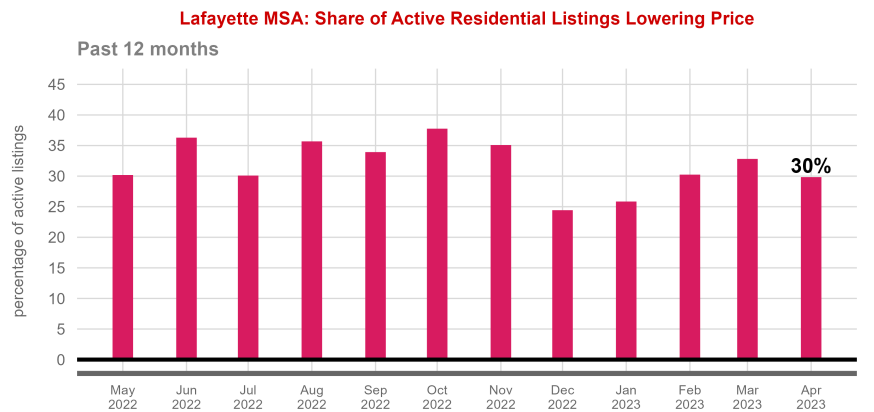
Source: Bureau of Labor Statistics.



Source: Census Bureau.



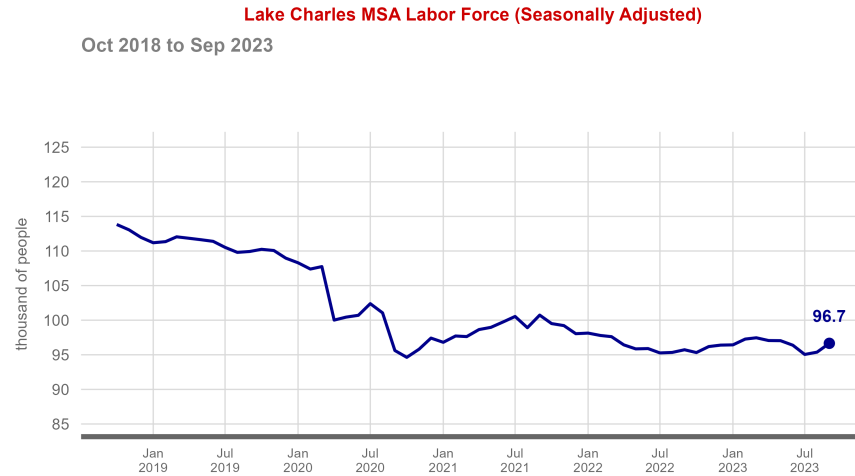
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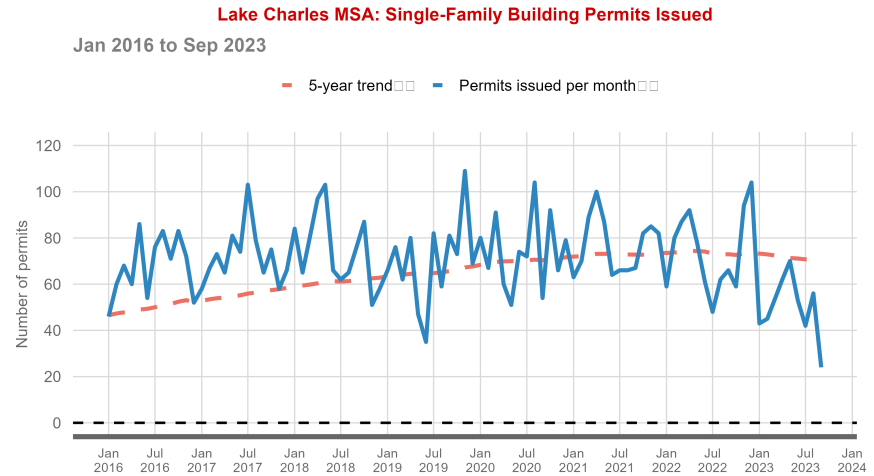
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Lake Charles MSA: Additional Charts

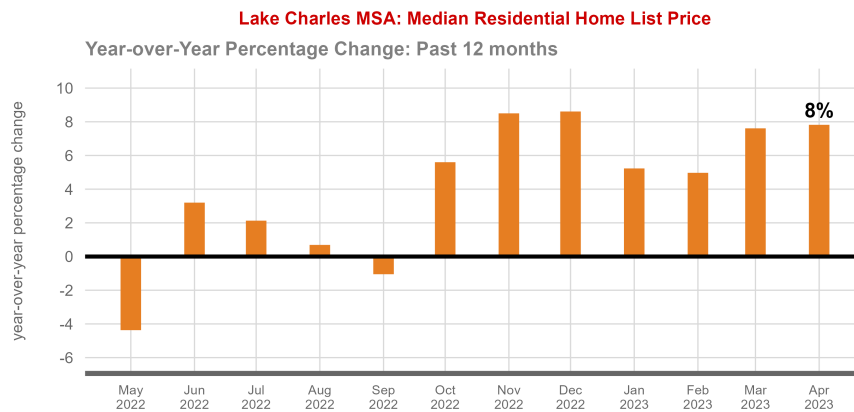
Figure 15: Lake Charles Metro Area: Additional Charts



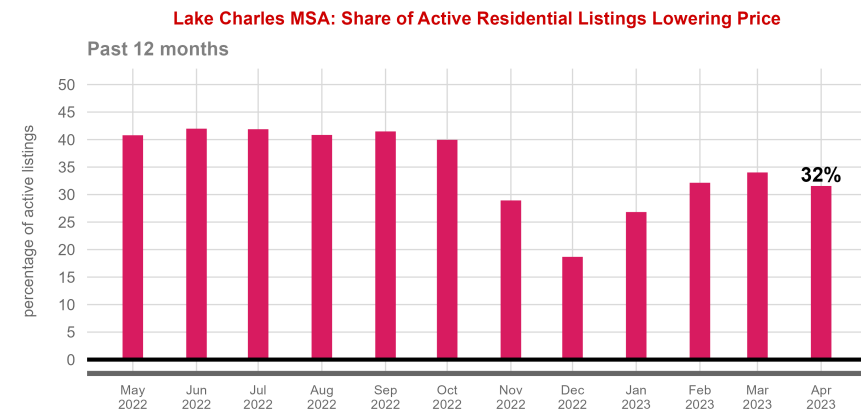
Source: Bureau of Labor Statistics.



Source: Census Bureau.



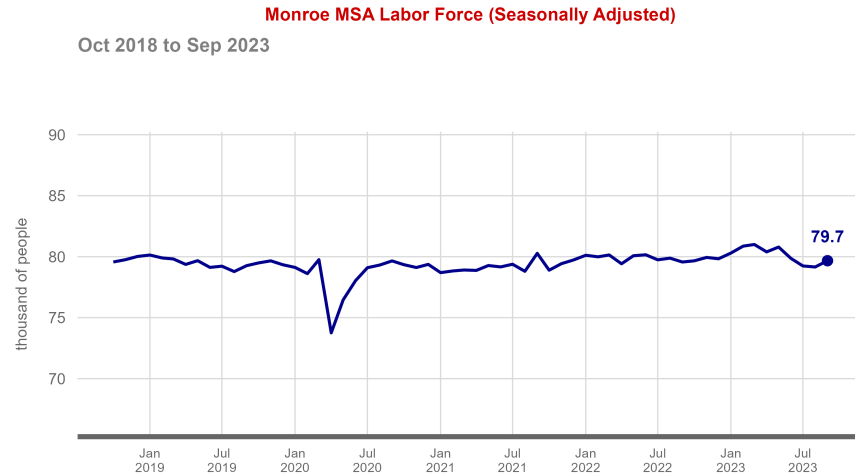
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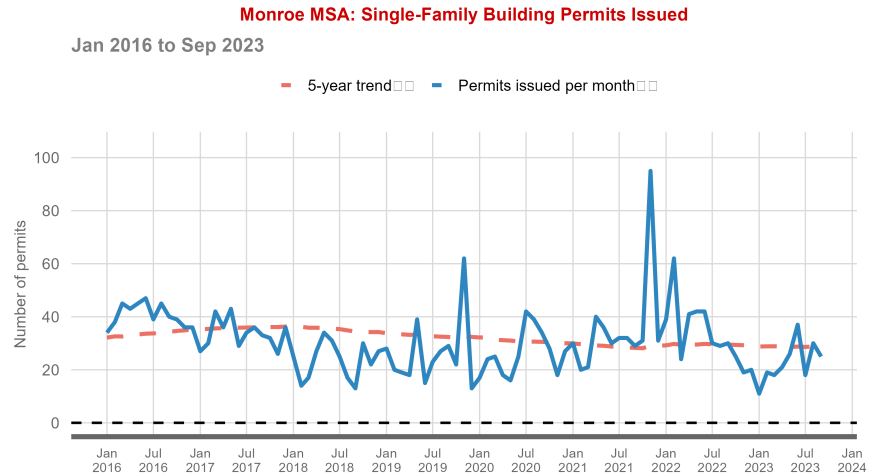
Source: Realtor.com.

Monroe MSA: Additional Charts

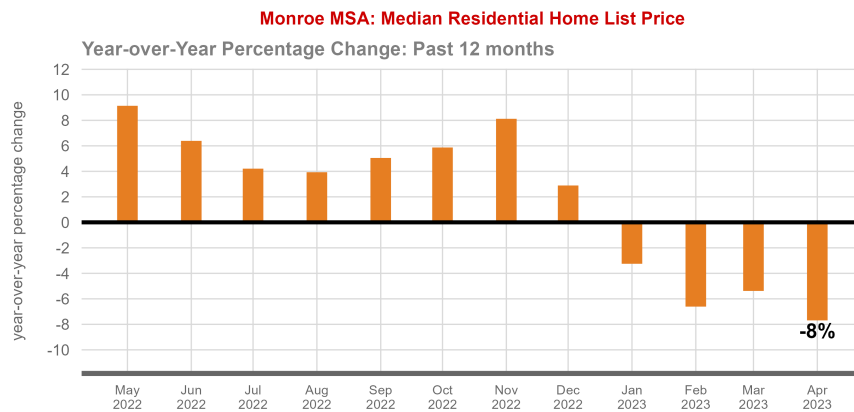
Figure 16: Monroe Metro Area: Additional Charts



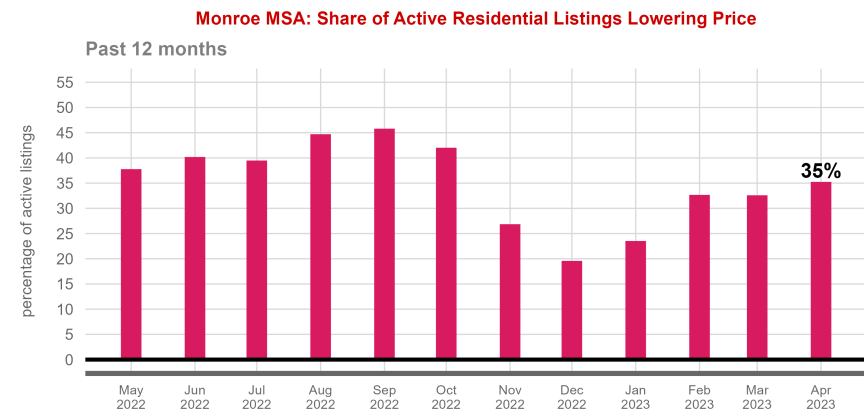
Source: Bureau of Labor Statistics.



Source: Census Bureau.



Source: Realtor.com.



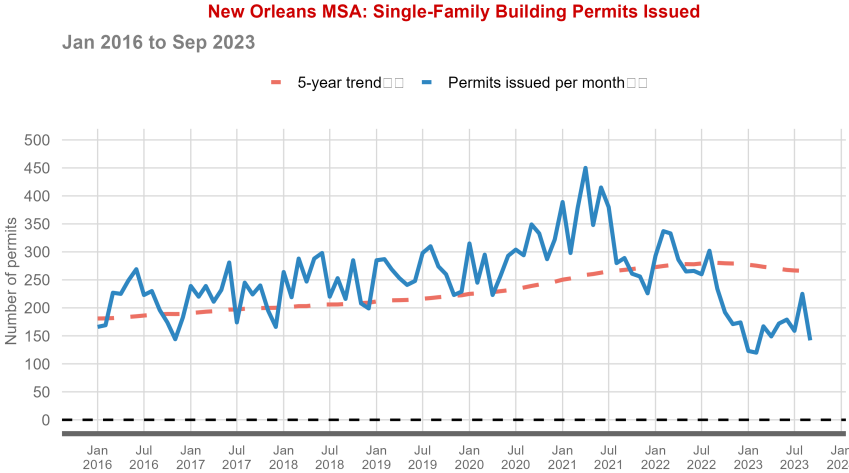
Source: Realtor.com.

New Orleans MSA: Additional Charts

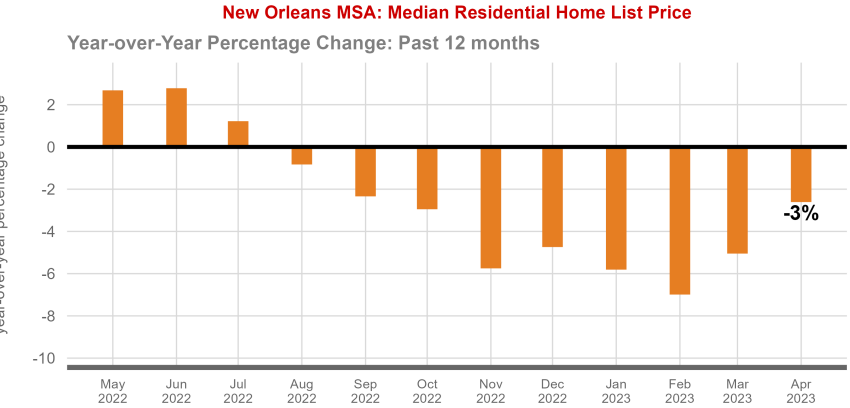
Figure 17: New Orleans Metro Area: Additional Charts



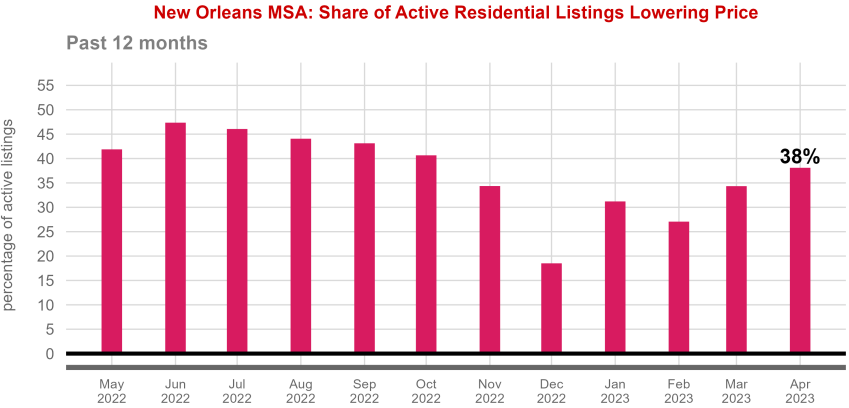
Source: Bureau of Labor Statistics.



Source: Census Bureau.



Source: Realtor.com.



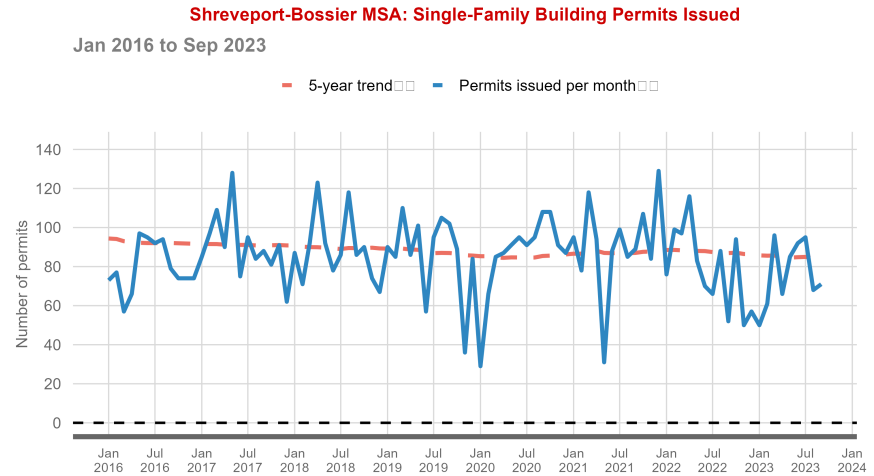
Source: Realtor.com.

Shreveport-Bossier MSA: Additional Charts

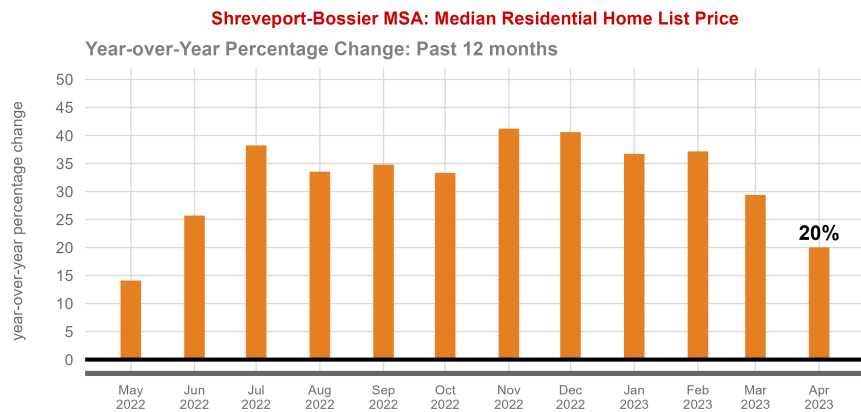
Figure 18: Shreveport-Bossier Metro Area: Additional Charts



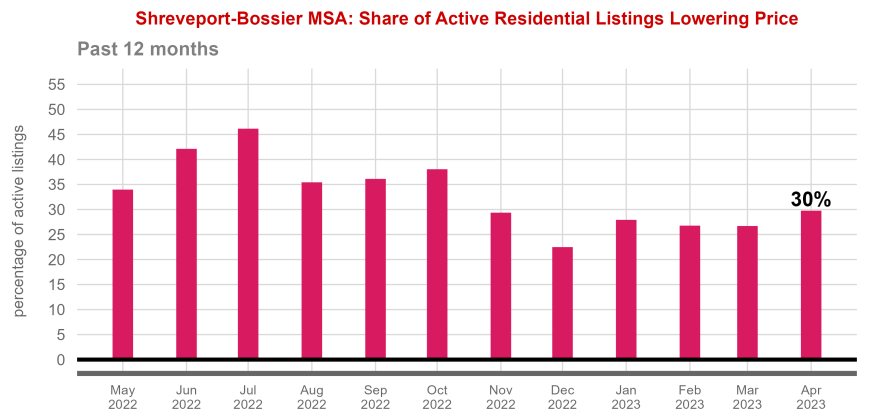
Source: Bureau of Labor Statistics.



Source: Census Bureau.



Source: Realtor.com.



Source: Realtor.com.

Projection Errors from Previous Louisiana Economic Activity Forecast

Table 2: One-Quarter Ahead Projection Errors: 2023:Q2 Projections for 2023:Q3

Variable	Baseline Projection	Actual Value	Absolute % Error
employment (statewide)	1968.80	1968.70	0.01
unemployment rate	3.60	3.30	9.09
FHFA home price index	360.40	362.60	0.61
Alexandria MSA employment	63.60	63.70	0.16
Baton Rouge MSA employment	427.30	424.80	0.59
Hammond MSA employment	49.70	48.90	1.64
Houma-Thibodaux MSA employment	81.80	81.60	0.25
Lafayette MSA employment	205.50	204.70	0.39
Lake Charles MSA employment	96.90	97.80	0.92
Monroe MSA employment	78.70	79.10	0.51
New Orleans MSA employment	576.00	569.20	1.19
Shreveport-Bossier MSA employment	179.80	178.40	0.78

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/BORSF Eminent Scholar Endowed Chair in Economics 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. 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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