



B.I. Moody III College of Business Administration

# Louisiana Economic Activity Forecast 2023:Q3

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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

Apart from housing markets, the national and statewide economic outlooks have improved for the first time in more than one year. Following an upward revision in previously released employment data, Louisiana experienced job gains exceeding 13,000 in each of the last two quarters. Job gains are now projected to exceed 27,000 over the next four quarters. Every metro region in the state, except for the Houma-Thibadoux area, is also expected to see faster job growth over the next year. In contrast, home price growth has slowed more than expected for the second consecutive quarter. The Baseline projections now indicate that (statewide) home prices will range between -0.2% and 1.6% over the next five quarters.

**27,000**

Statewide job gains projected over the next four quarters.

**3.6%**

Projected unemployment rate over the next four quarters.

**0.74%**

Projected average home price growth over the next four quarters.

**2023 Report Release Schedule:**  
Fourth Quarter: November 17, 2023



# Contents

- Introduction** **4**
- Alternative Economic Scenarios** **5**
- Louisiana Employment Projections** **8**
- Louisiana Unemployment Rate Projections** **9**
- Louisiana GDP Projections** **10**
- Louisiana Home Price Projections** **11**
- Metro Area Employment Projections** **12**
- Metro Area Employment Projections: Year-over-Year Growth** **13**
- Metro Area Employment: COVID Job Losses and Recovery Relative to 2019:Q4** **14**
- Technical Appendix** **26**
- Data Appendix: Endogenous Variables** **27**
- Data Appendix: Exogenous Variables** **28**
- About the Author** **29**

# List of Tables

- 1 Assumed Future Values of External Variables . . . . . 5
- 2 One-Quarter Ahead Projection Errors: 2023:Q1 Projections for 2023:Q2 . . . . . 25

# List of Figures

- 1 U.S. Economic Growth Scenarios . . . . . 7
- 2 Louisiana Employment Projections . . . . . 8
- 3 Louisiana Unemployment Rate Projections . . . . . 9
- 4 Louisiana GDP Projections . . . . . 10
- 5 Louisiana Home Price Projections . . . . . 11
- 6 Metro Employment Projections . . . . . 12
- 7 Metro Area Employment Projections: Year-over-Year Growth . . . . . 13

8 Metro Area Employment: COVID Job Losses and Recovery Relative to 2019:Q4 . . . . . 14

9 Recent Recession Probabilities . . . . . 15

10 Alexandria Metro Area: Additional Charts . . . . . 16

11 Baton Rouge Metro Area: Additional Charts . . . . . 17

12 Hammond Metro Area: Additional Charts . . . . . 18

13 Houma-Thibodaux Metro Area: Additional Charts . . . . . 19

14 Lafayette Metro Area: Additional Charts . . . . . 20

15 Lake Charles Metro Area: Additional Charts . . . . . 21

16 Monroe Metro Area: Additional Charts . . . . . 22

17 New Orleans Metro Area: Additional Charts . . . . . 23

18 Shreveport-Bossier Metro Area: Additional Charts . . . . . 24



## Introduction

The short-term economic outlook has improved for the national economy for the first time in over one year. Professional forecasters are now expecting inflation-adjusted U.S. Gross Domestic Product (GDP) to grow between 1 and 2% over the next two quarters, more than double the pace projected three months ago. Recession risks over the next year have also been revised down but remain elevated compared to historical norms. The employment outlook for Louisiana and most metro areas is notably stronger as well. Louisiana is now projected to gain roughly 27,000 jobs over the next four quarters. Year-over-year employment growth is projected to exceed 2% in the next two quarters in six of the state's nine metro areas. The state's unemployment rate is also expected to remain below 4% over the next year. 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:Q2 values for the Baseline, Optimistic, and Pessimistic scenarios are identical because this quarter has already occurred. This row is shaded gray. Values for 2023:Q3 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
2023:Q2	2.40	2.40	2.40	3.57	3.57	3.57	73.49	73.49	73.49
2023:Q3	1.90	2.20	1.54	3.60	3.52	3.69	79.07	69.55	88.55
2023:Q4	1.20	1.76	0.36	3.72	3.61	3.90	82.65	70.60	94.80
2024:Q1	1.07	1.83	0.10	3.90	3.73	4.06	83.00	65.51	102.43
2024:Q2	1.00	2.02	0.97	4.00	3.80	4.23	82.00	61.75	107.42

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 August 11, 2023. The Baseline expected path of oil prices is from the U.S. Energy Information Administration's Short-Term Economic Outlook released on August 8, 2023.

There appears to be growing evidence that inflation may be slowing. In the past four months, the one-month (PCE) annualized inflation rate has been below 2% three times, including the last two readings in May and June. Given that the Federal Reserve's target inflation rate is 2%, I am no longer expecting any additional interest rate hikes in 2023 unless labor markets deteriorate. As of the latest data, both national and statewide labor markets remain robust. The U.S. economy has averaged more than 258,000 net new jobs per month so far this year (through July). Louisiana has averaged more than 4,000 net new jobs per month through June, roughly four times higher than the state's pre-COVID norm.

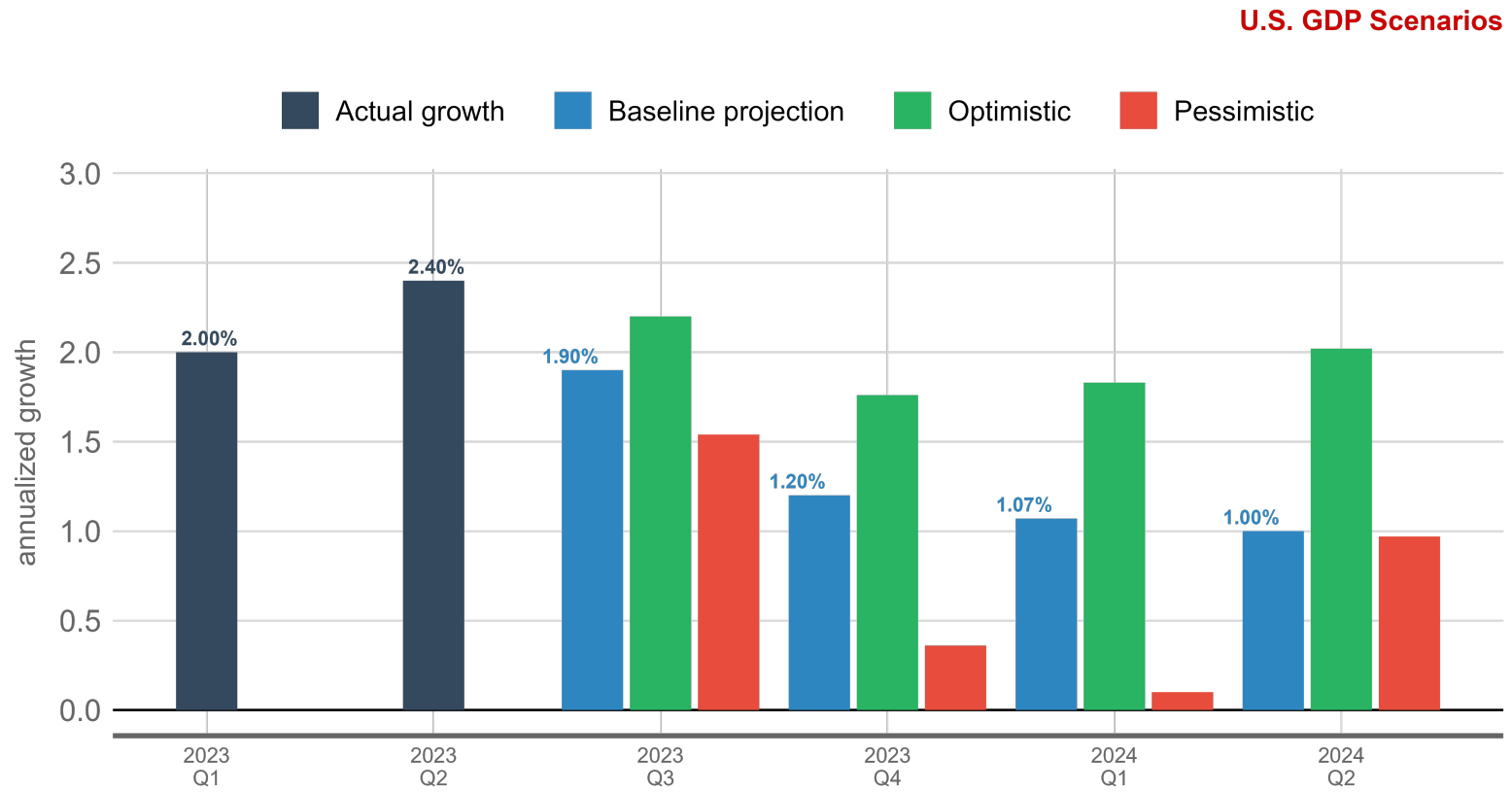
As previously noted, respondents to the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters (SPF) lowered their estimates of the probability of a national recession in the next year (see Figure 9). This is the third consecutive quarter that recession risks have been downgraded, and the first quarter that the risk was below 40% in more than one year (see Figure 9). At this point, it is safe to say that most professional forecasters are expecting a "soft landing" – meaning that inflation will return to target (2%) without a corresponding economic downturn. The on-going housing market correction and soft manufacturing markets are the largest downside risks in the near-term.

Consumer spending remains solid, being fueled by inflation-adjusted disposable (after-tax) income growth that has exceeded 4% in each of the past two months. Household purchases in the past quarter were particularly strong for durable goods, those expected to last an average of at least three years. Some components of business spending, such as non-residential structures and equipment, rebounded in Q2. Business spending in general, however, remains soft. Finally, although energy prices, on average, remain above pre-COVID levels, year-over-year price growth continues to slow.

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. I would assign a 60% probability to the Baseline forecast.

Over the next four quarters, the Baseline scenario projects U.S. GDP to grow at an annual pace of 1.3%, a significant increase from last quarter. As of August 15, the Federal Reserve Bank of Atlanta's real-time GDP forecast – GDPNow – is 5.0% for the third quarter. Figure 1 on the next page shows U.S. GDP under the three scenarios considered. For the second 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



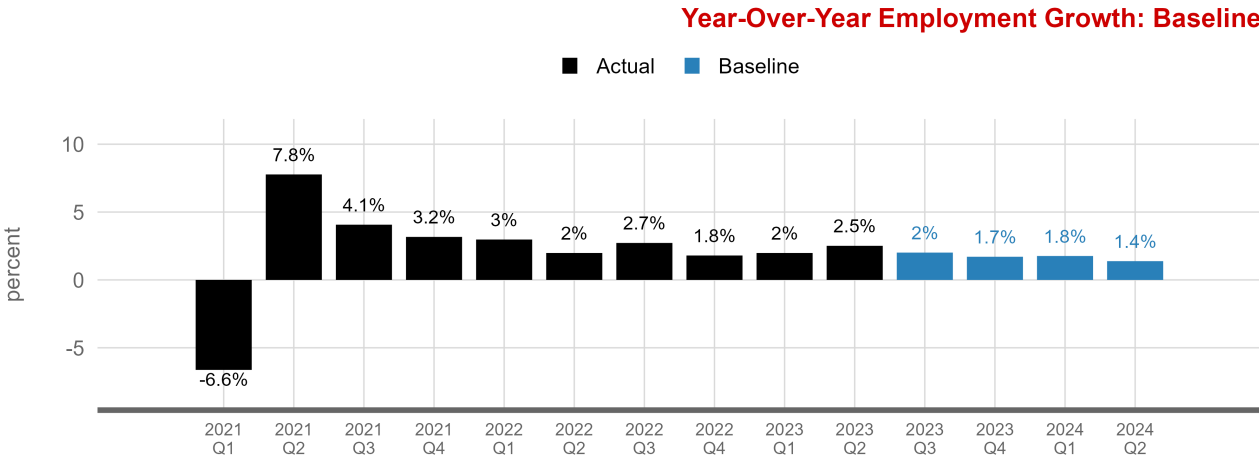
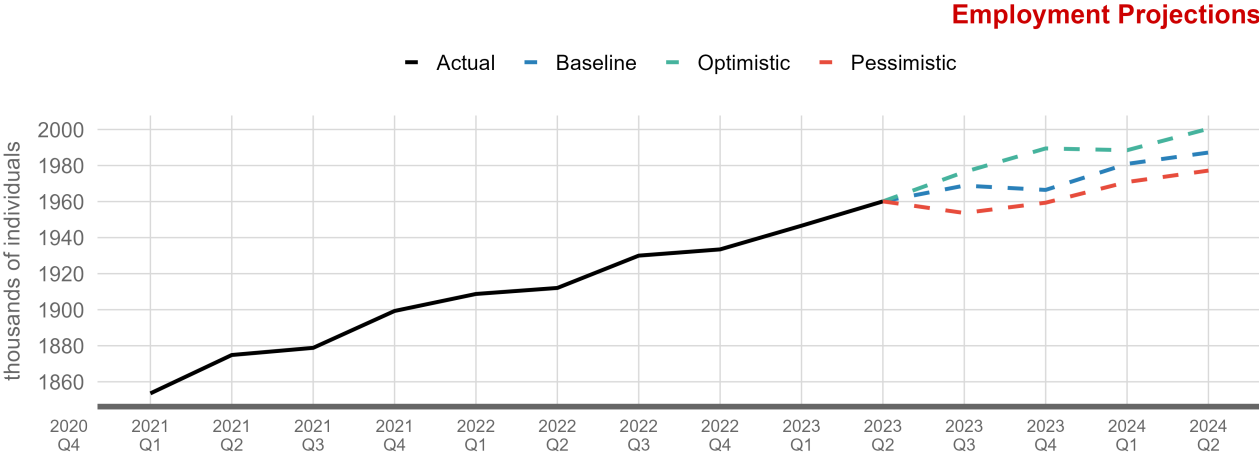
# Louisiana Employment Projections

Figure 2: Louisiana Employment Projections

The strong Q1 rebound in jobs continued into the second quarter. Following an upward revision to previously released data, the state has now experienced jobs gains exceeding 13,000 in each of the last two quarters. Over the next four quarters, the Baseline forecast is also being revised up, with statewide gains expected to exceed 27,000.

Job growth is also being revised up in every metro area except Houma. Over the next six months, annualized growth is expected to be at least 2% in six of the state's nine metro areas. Baton Rouge, New Orleans, and the Alexandria regions are expected to experience the strongest gains.

The employment forecast error from the previous report was 0.51%. See Table 2 for forecast errors from the previous report.

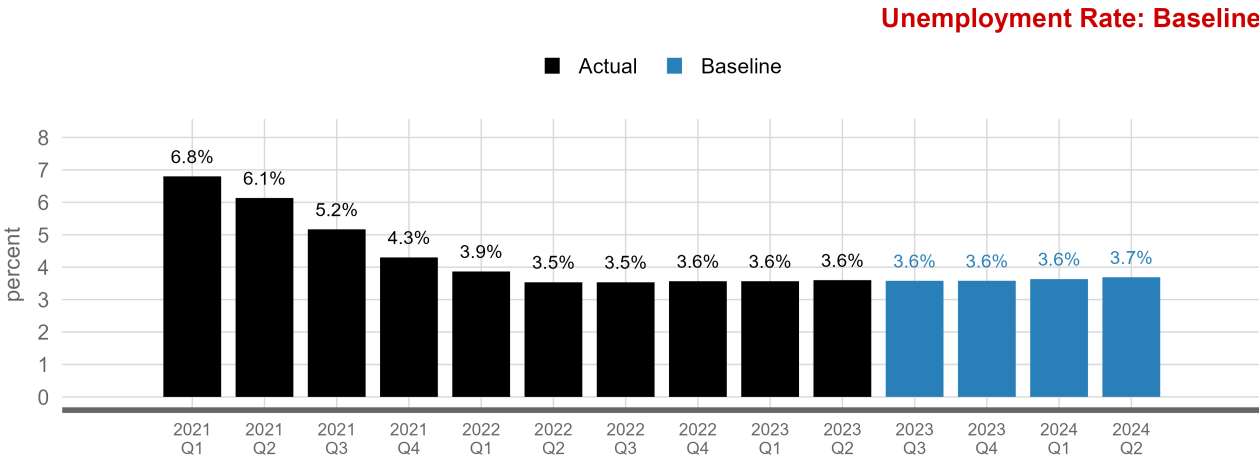
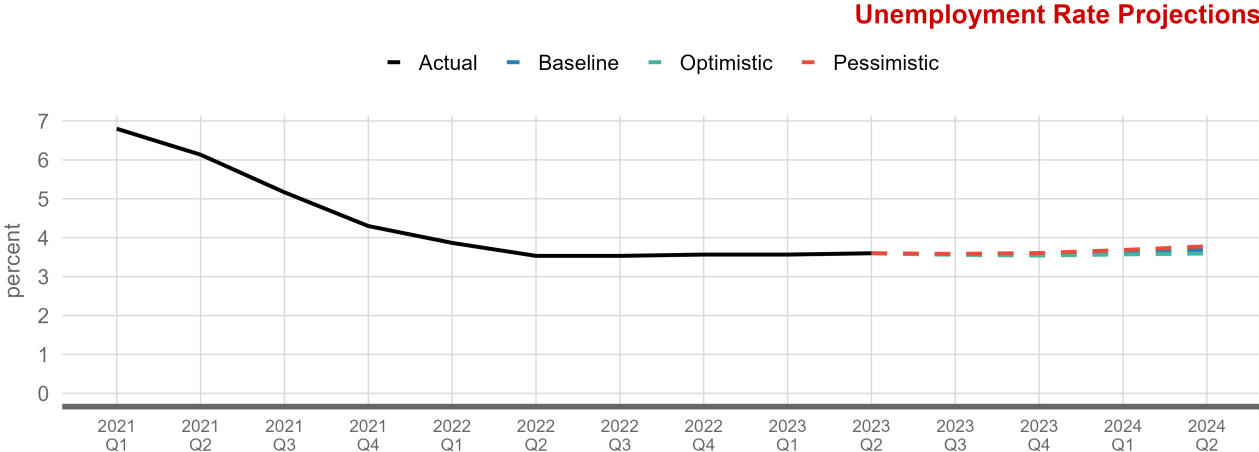


# Louisiana Unemployment Rate Projections

Figure 3: Louisiana Unemployment Rate Projections

Louisiana’s unemployment rate ticked up slightly from 3.5% in Q1 to an average of 3.6% in Q2. Consistent with last quarter’s report, the statewide unemployment rate is expected to remain largely unchanged over the next four quarters under all three forecast scenarios.

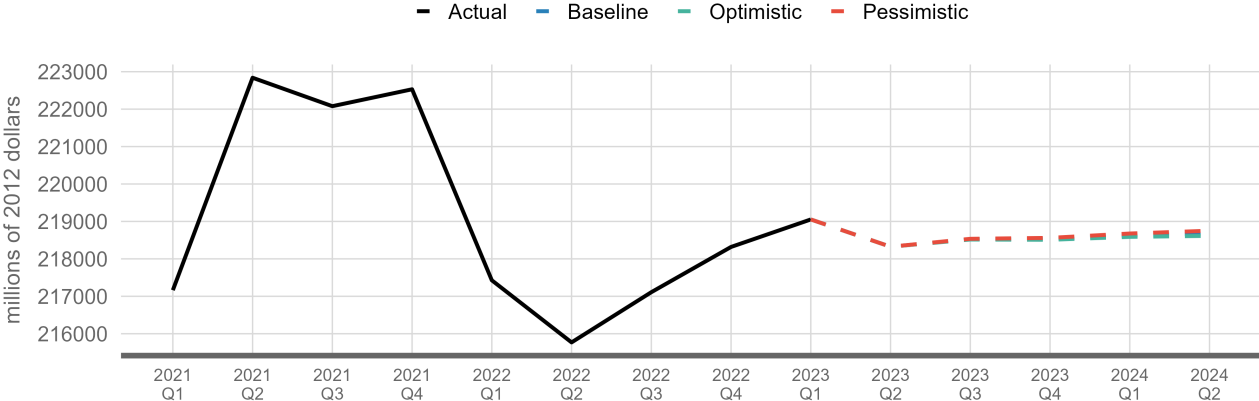
The unemployment rate forecast error from the previous report was 0.00%. See Table 2 for forecast errors from the previous report.



# Louisiana GDP Projections

Figure 4: Louisiana GDP Projections

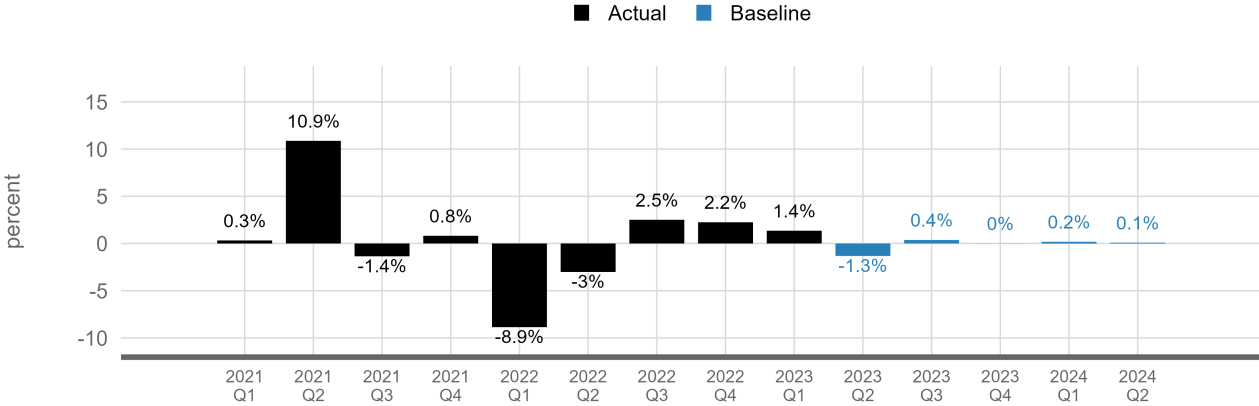
**GDP Projections**



Following three consecutive quarters of growth, statewide inflation adjusted-GDP is now projected to stall. Under the Baseline scenario, growth is expected to be near zero for the next five quarters.

The GDP forecast error from the previous report was 0.04%. See Table 2 for forecast errors from the previous report.

**Annualized GDP Growth: Baseline**





# Louisiana Home Price Projections

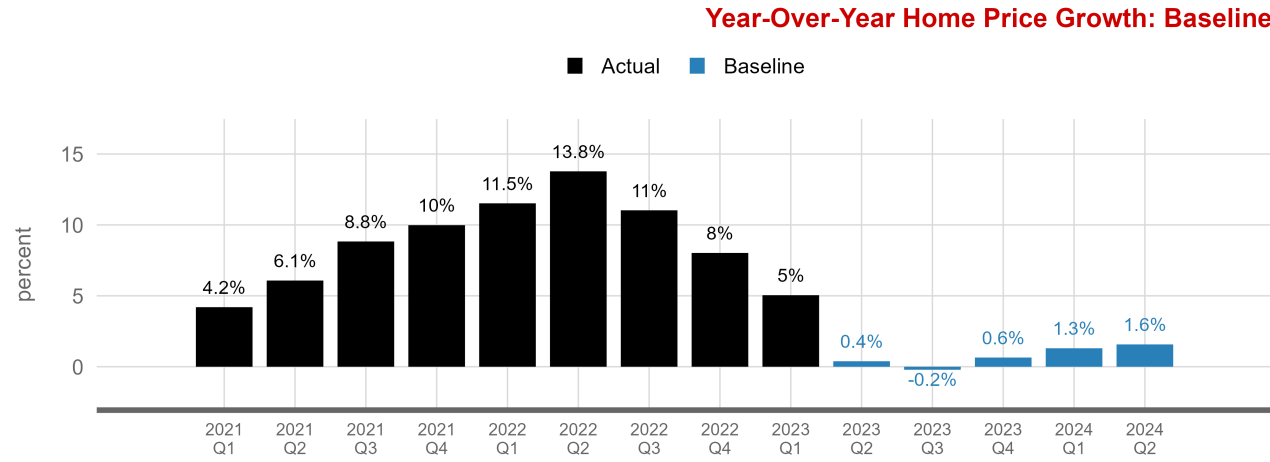
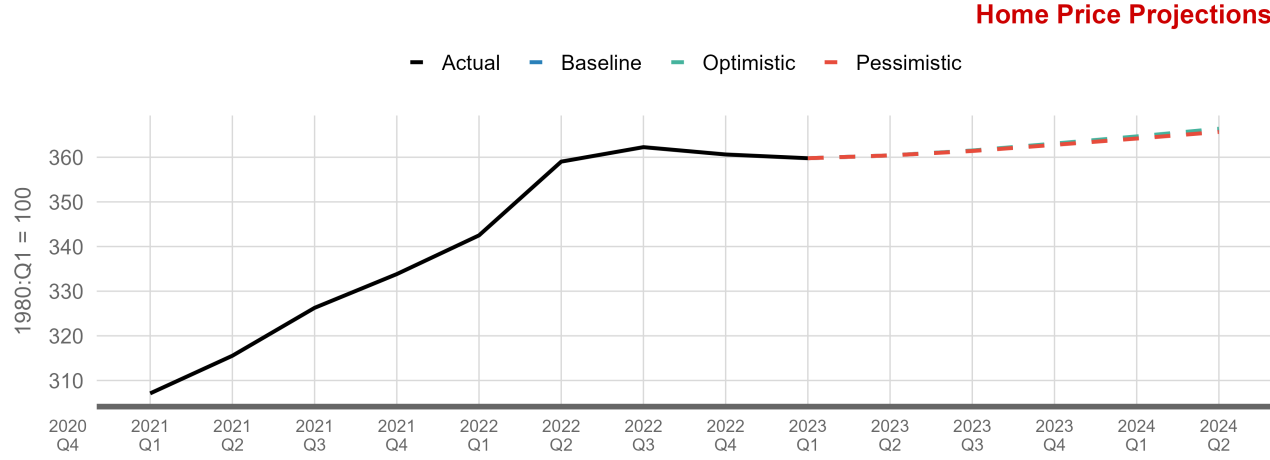
Figure 5: Louisiana Home Price Projections

Home price growth statewide has slowed more than projected in each of the last two quarters. Year-over-year growth was 5% in Q2, down from a recent high of more than 13% in the second quarter of 2022.

All three forecast scenarios are now projecting declining home prices in the fourth quarter of 2023. Over the next five quarters, the Baseline scenario indicates that home price growth will range between -0.2% and 1.6%.

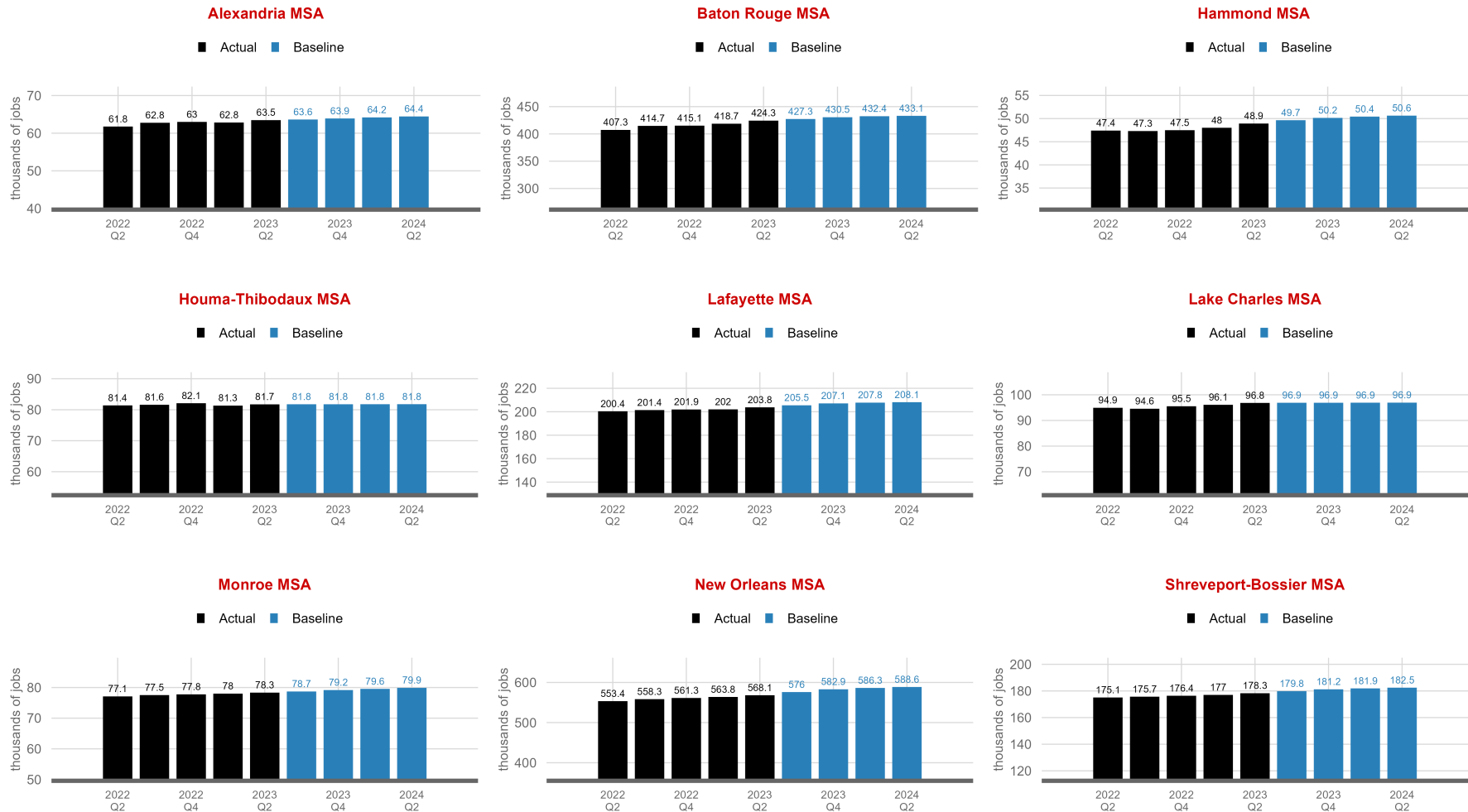
Additional housing charts are provided for each metro region to track individual market corrections.

The previous LEAF report's forecast error for home prices was 2.33%. See Table 2 for forecast errors from the previous report.



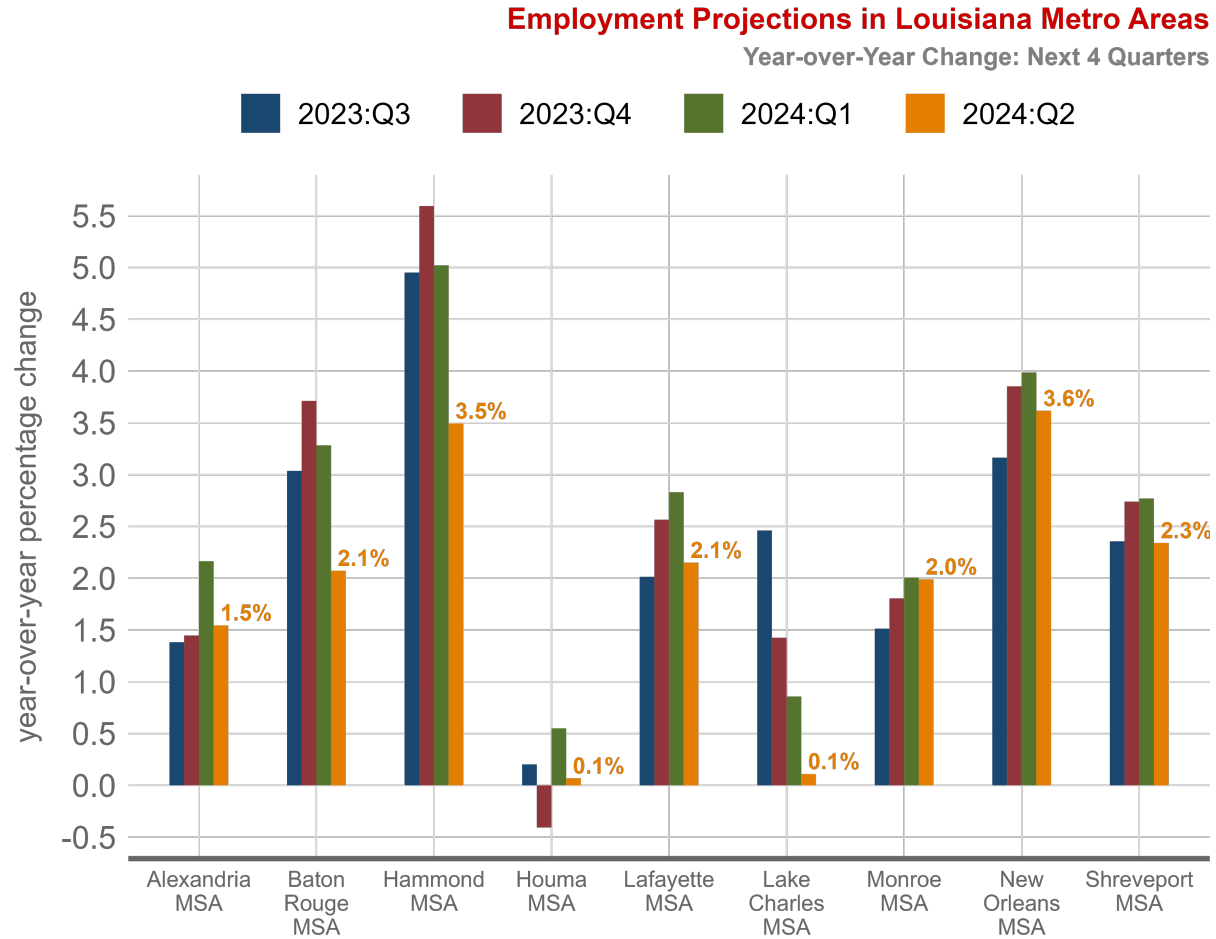
# Metro Area Employment Projections

Figure 6: Metro Employment Projections



## Metro Area Employment Projections: Year-over-Year Growth

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

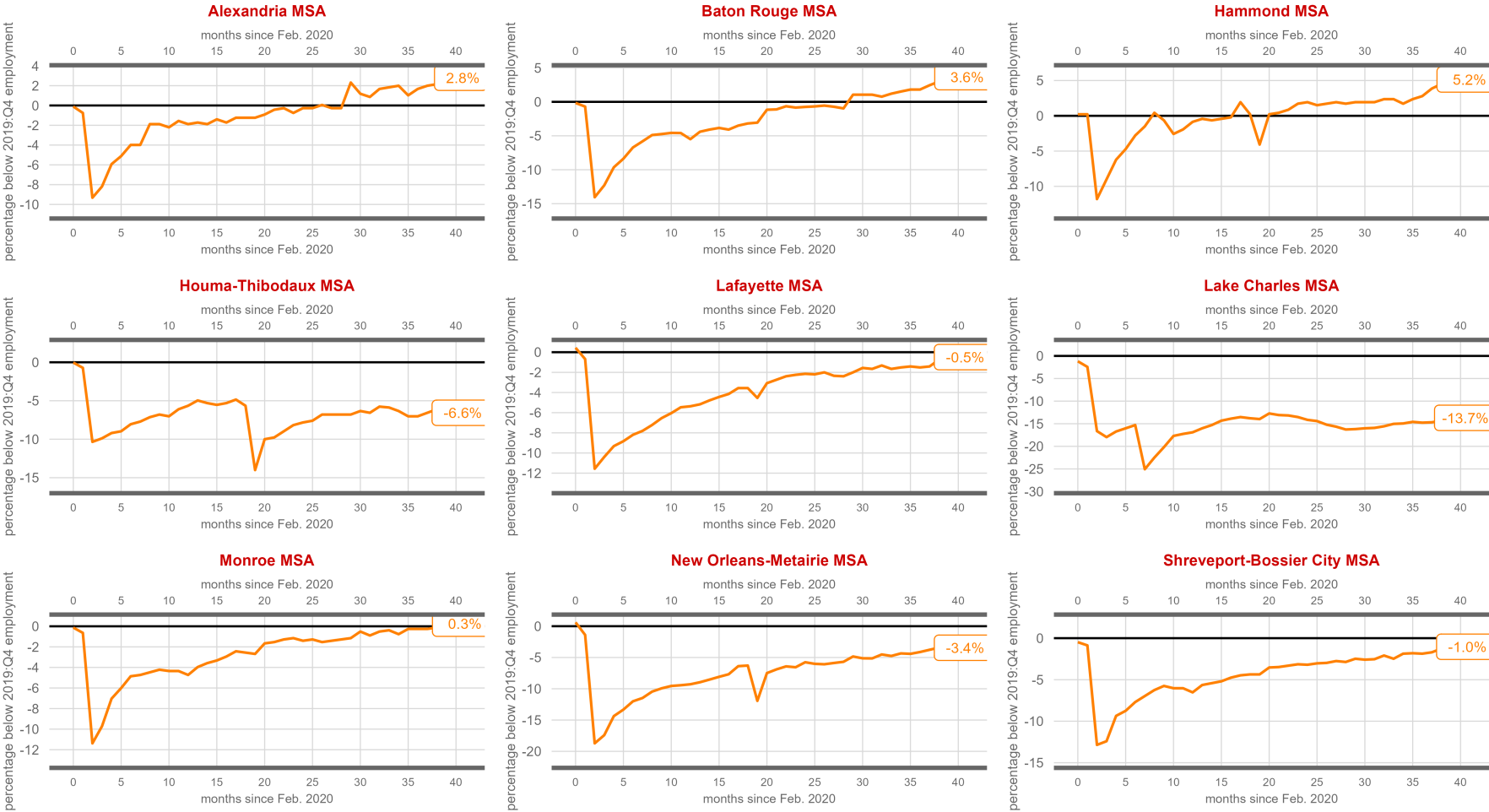


Source: Raw data from the Bureau of Labor Statistics. Projections by Gary A. Wagner, Ph.D.

# 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

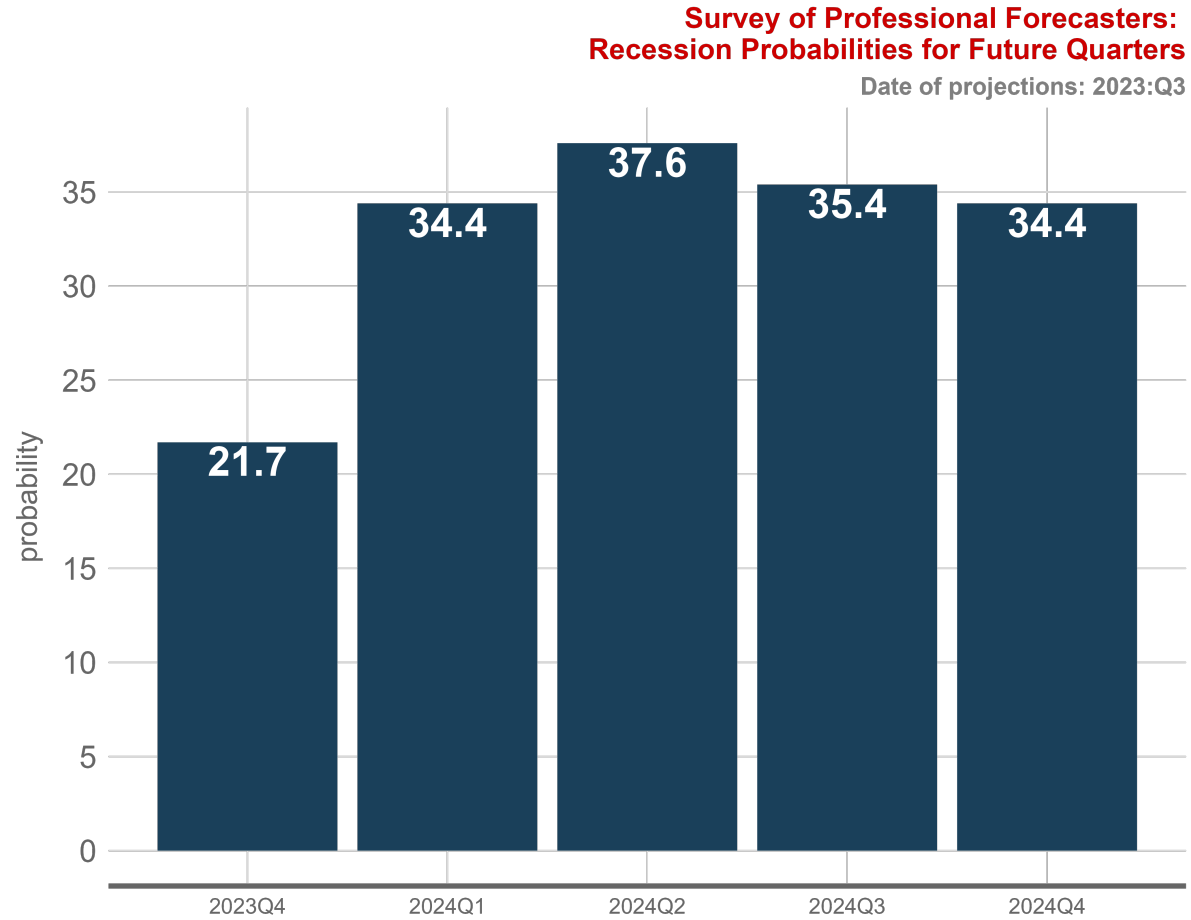
Employment data through Jun 2023



Source: Raw data from the Bureau of Labor Statistics.

## Recession Probabilities Over the Next Year

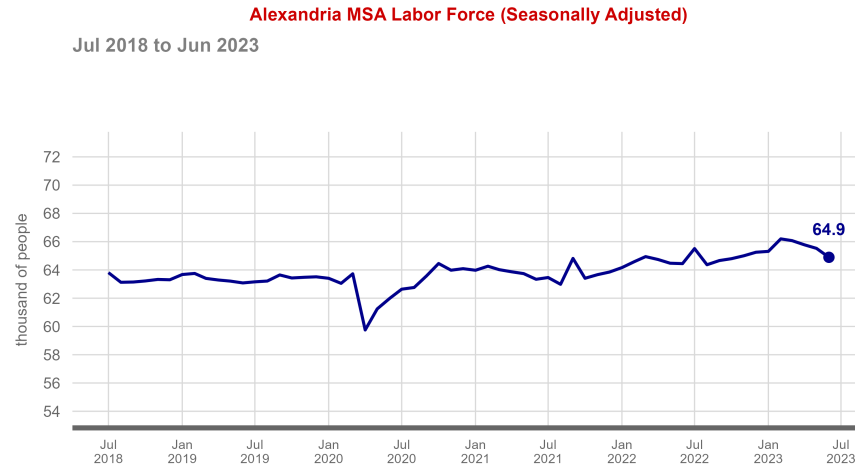
Figure 9: Recent Recession Probabilities



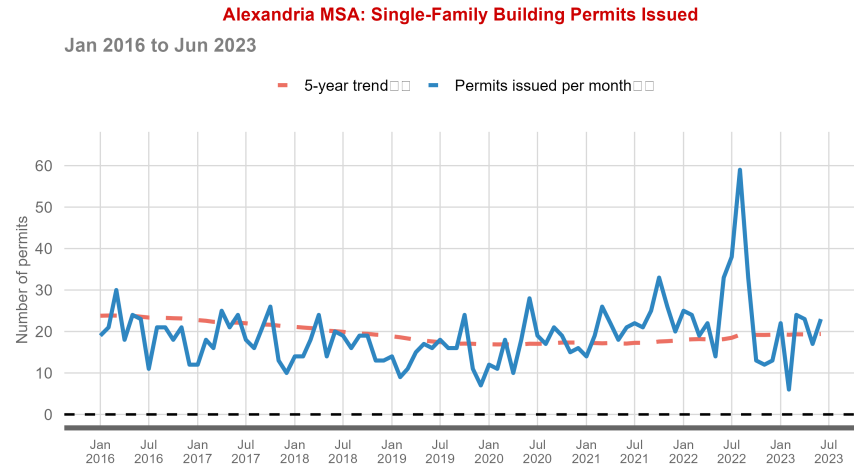
Source: Federal Reserve Bank of Philadelphia

# Alexandria MSA: Additional Charts

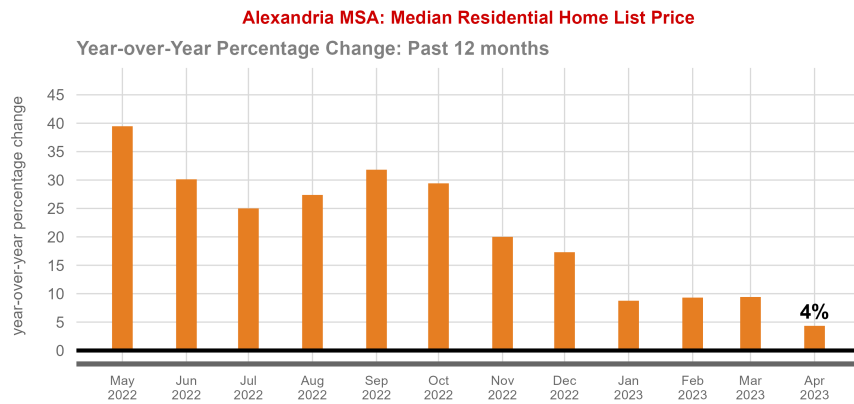
Figure 10: Alexandria Metro Area: Additional Charts



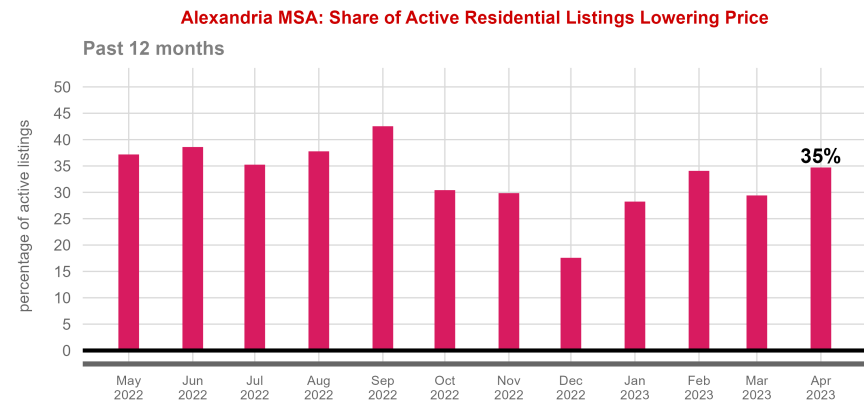
Source: Bureau of Labor Statistics.



Source: Census Bureau.



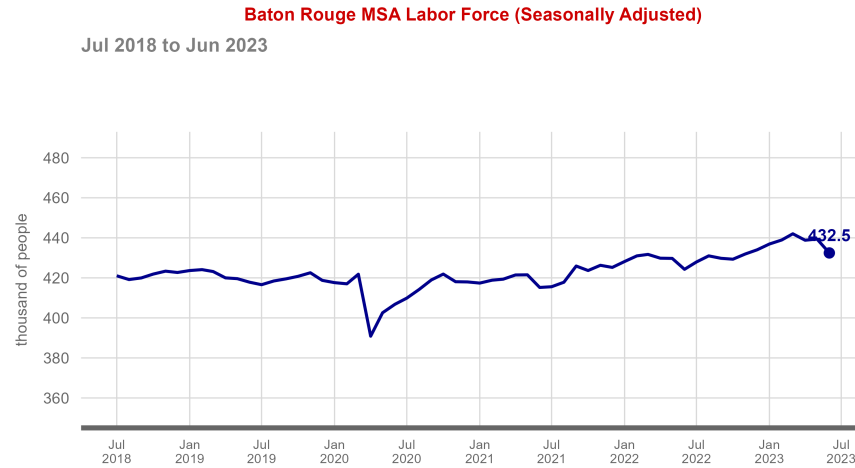
Source: Realtor.com.



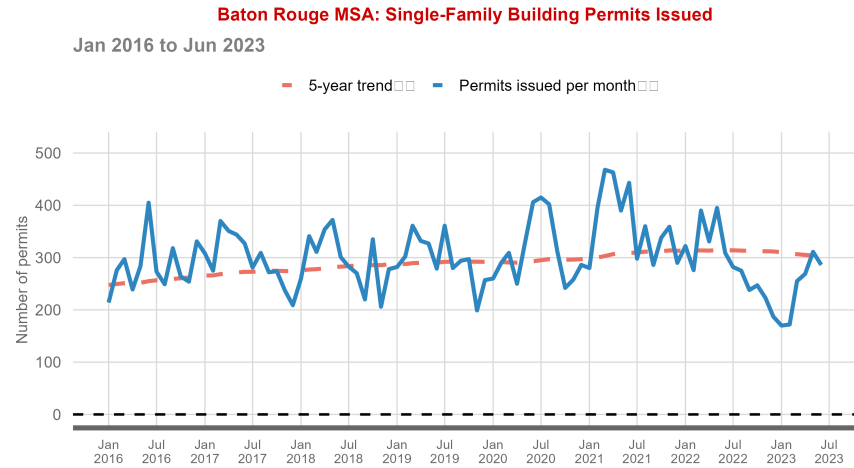
Source: Realtor.com.

# Baton Rouge MSA: Additional Charts

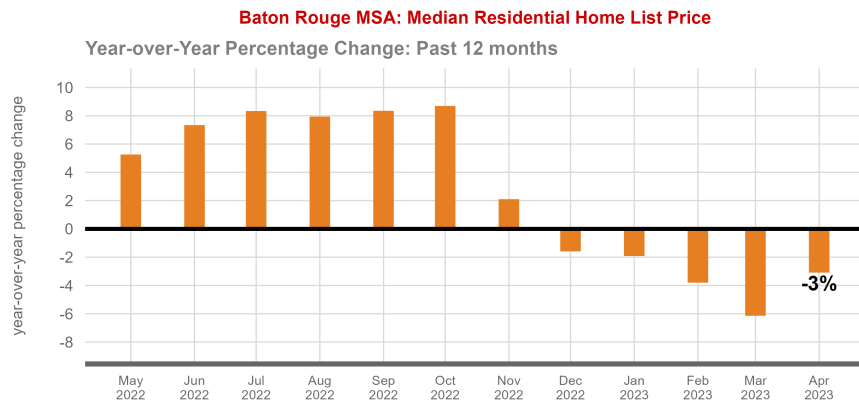
Figure 11: Baton Rouge Metro Area: Additional Charts



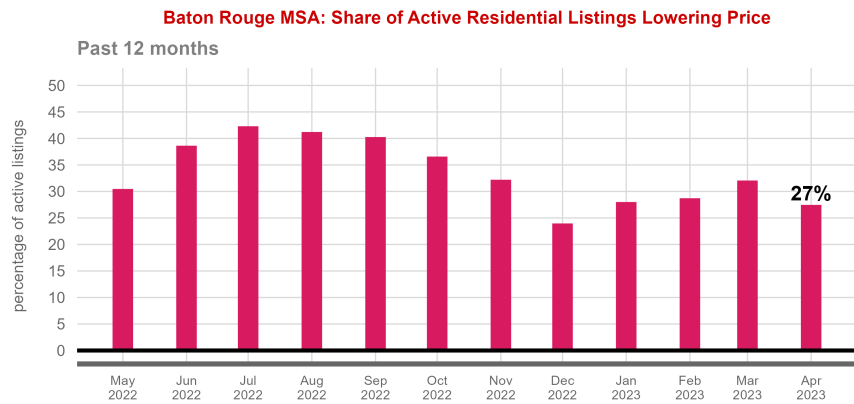
Source: Bureau of Labor Statistics.



Source: Census Bureau.



Source: Realtor.com.

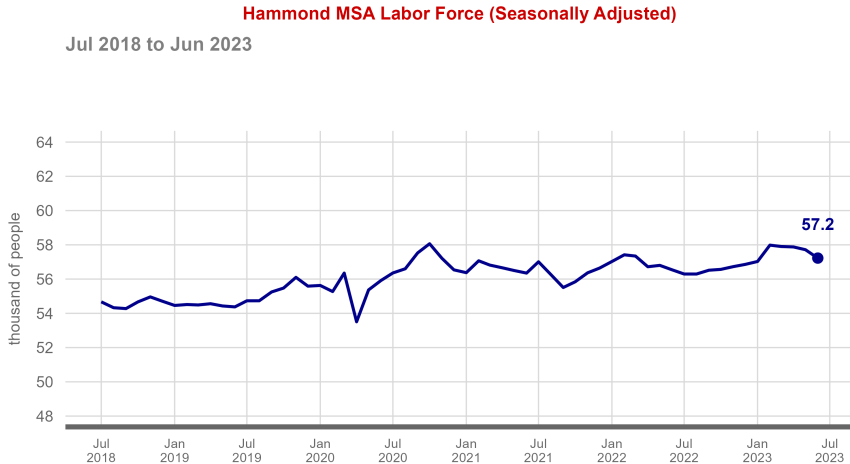


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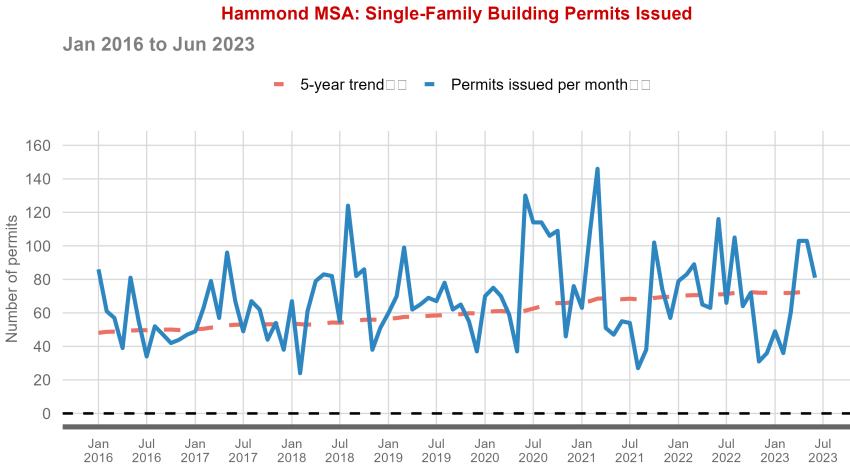


# Hammond MSA: Additional Charts

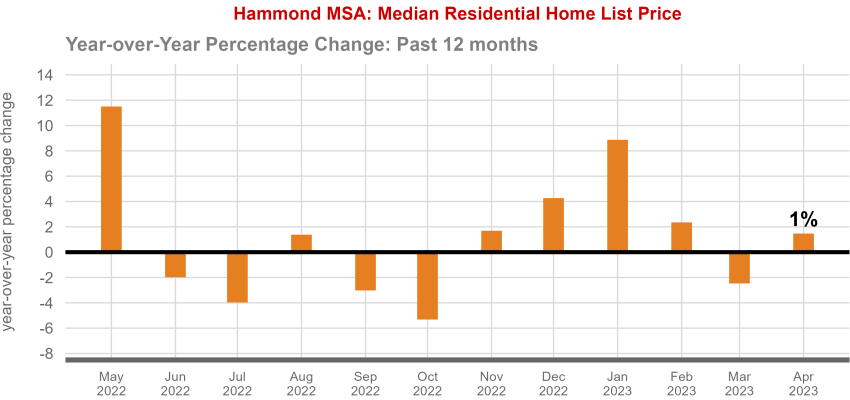
Figure 12: Hammond Metro Area: Additional Charts



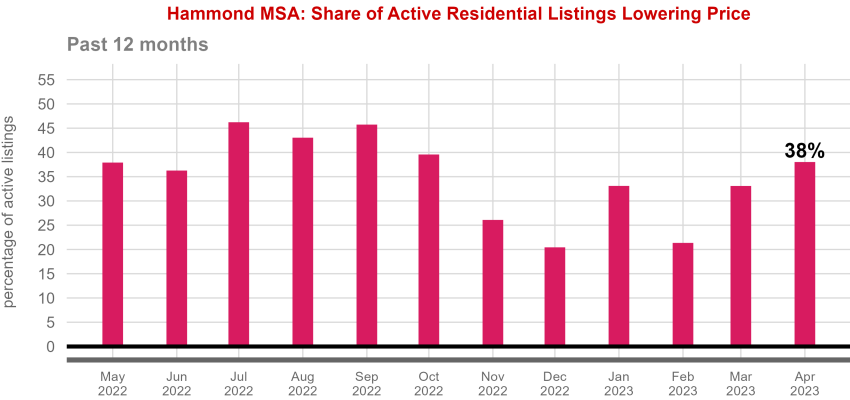
Source: Bureau of Labor Statistics.



Source: Census Bureau.



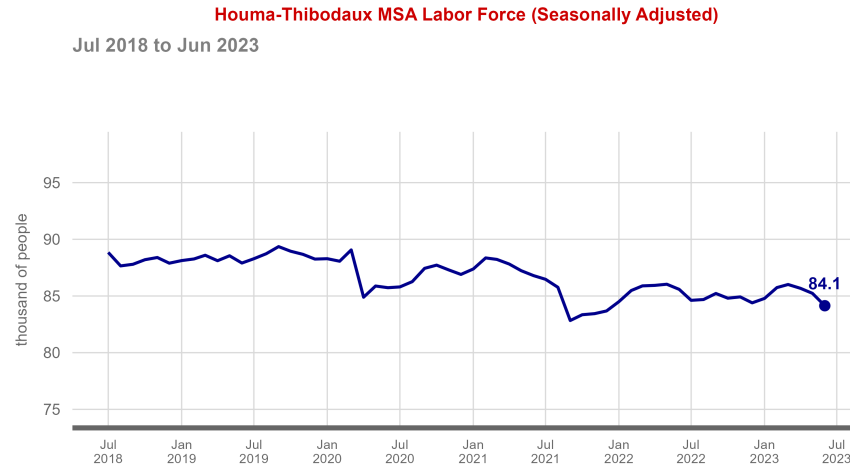
Source: Realtor.com.



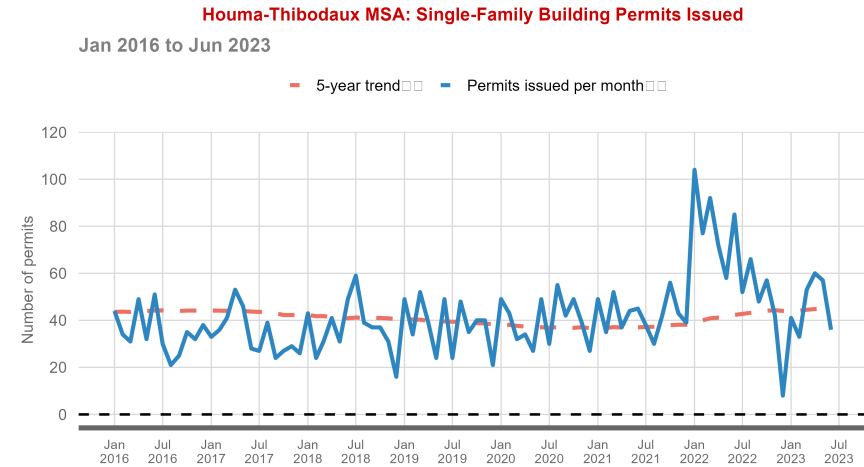
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# Houma-Thibodaux MSA: Additional Charts

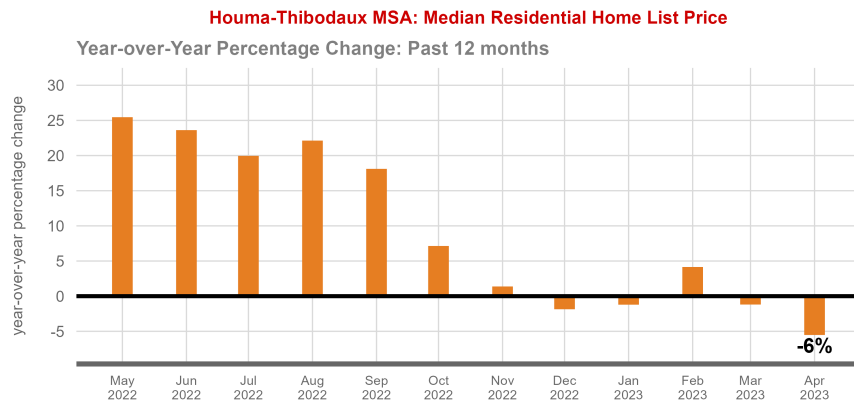
Figure 13: Houma-Thibodaux Metro Area: Additional Charts



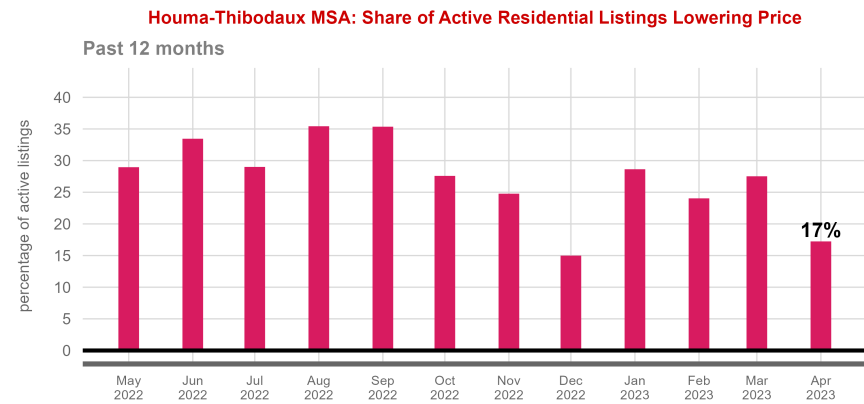
Source: Bureau of Labor Statistics.



Source: Census Bureau.



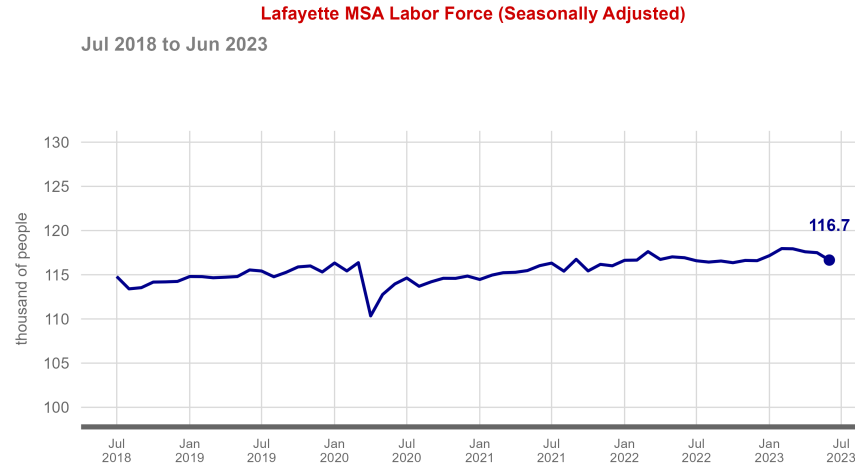
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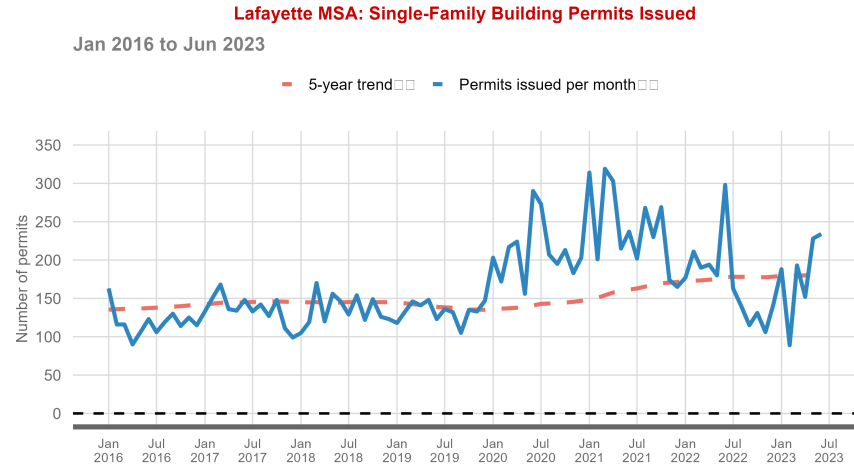
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# Lafayette MSA: Additional Charts

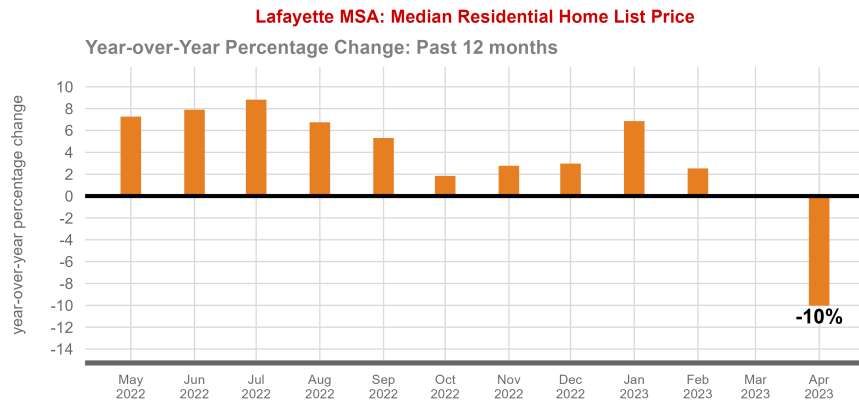
Figure 14: Lafayette Metro Area: Additional Charts



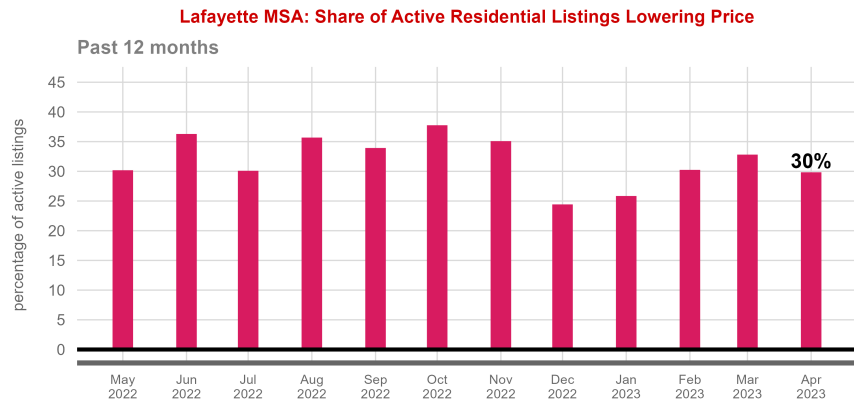
Source: Bureau of Labor Statistics.



Source: Census Bureau.



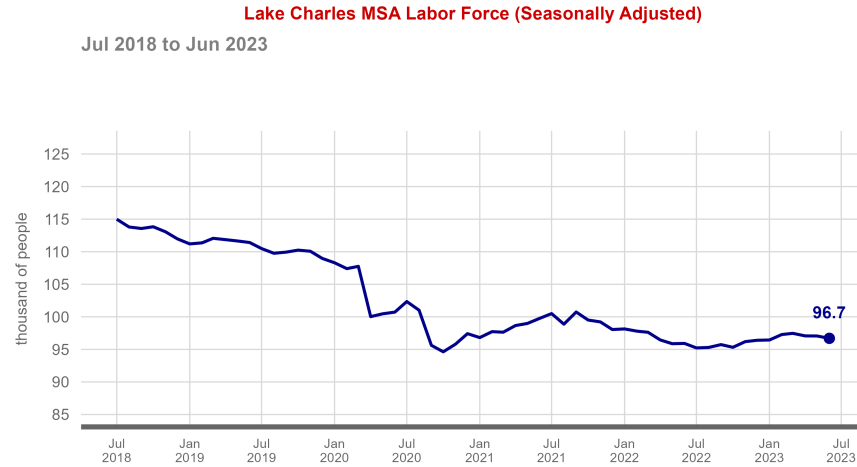
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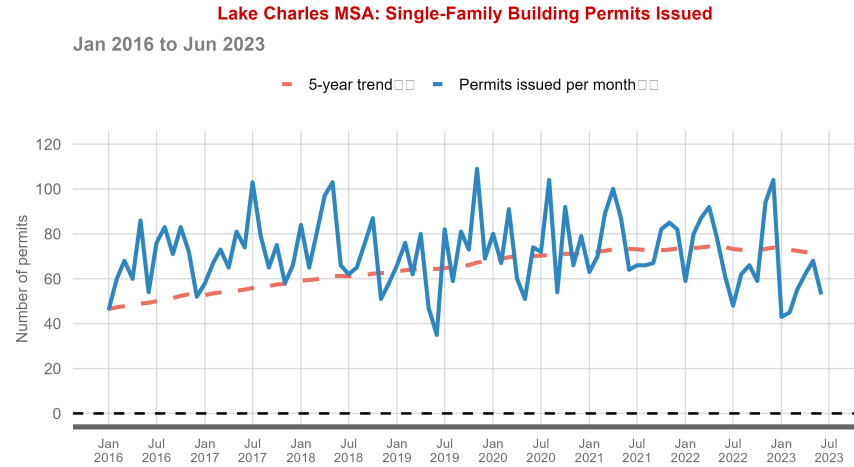
Source: Realtor.com.

# Lake Charles MSA: Additional Charts

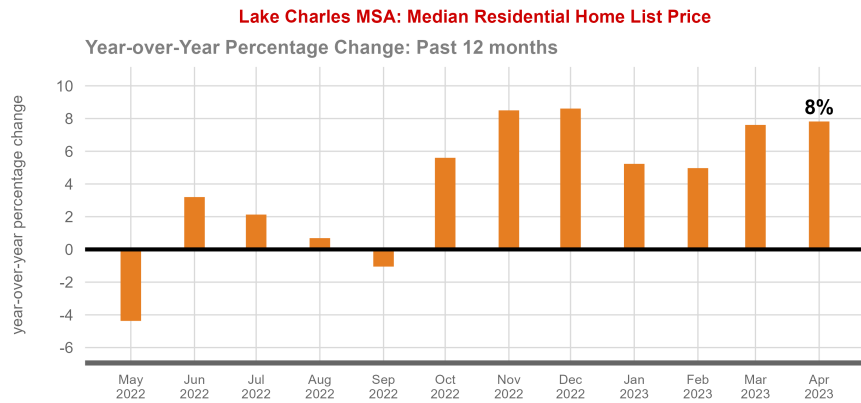
Figure 15: Lake Charles Metro Area: Additional Charts



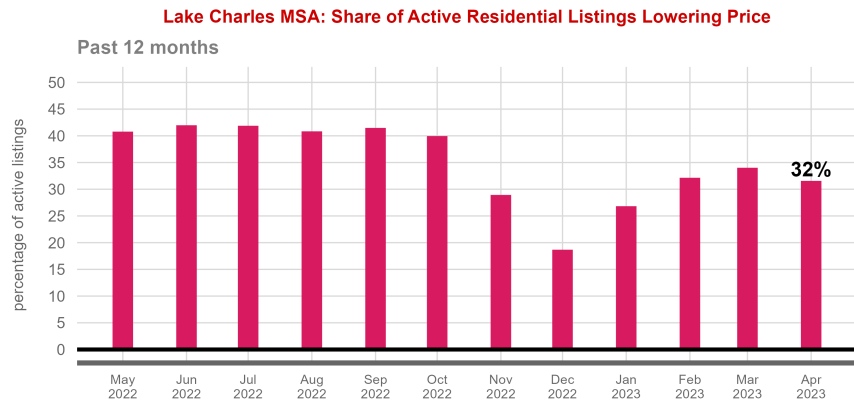
Source: Bureau of Labor Statistics.



Source: Census Bureau.



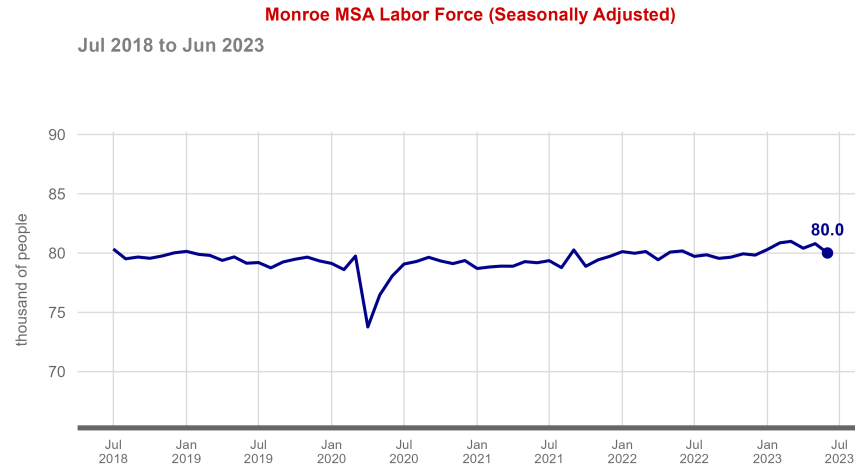
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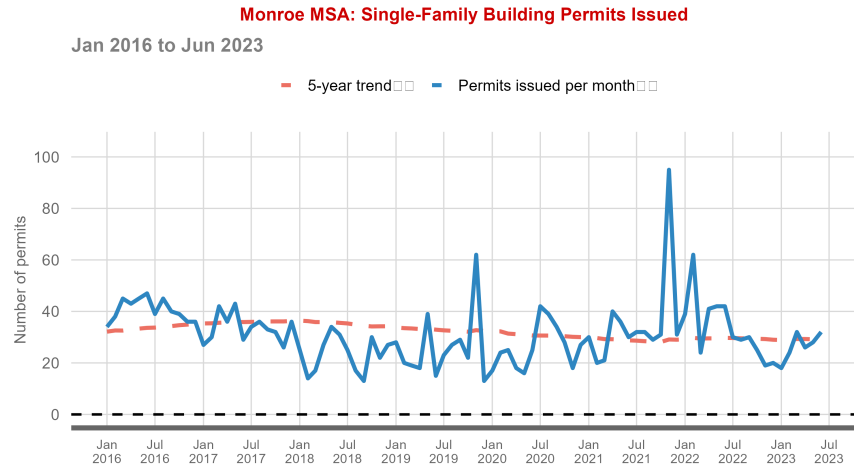
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# Monroe MSA: Additional Charts

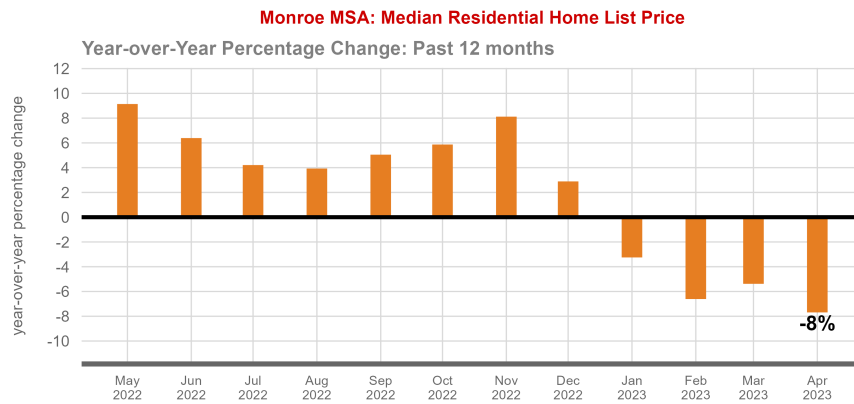
Figure 16: Monroe Metro Area: Additional Charts



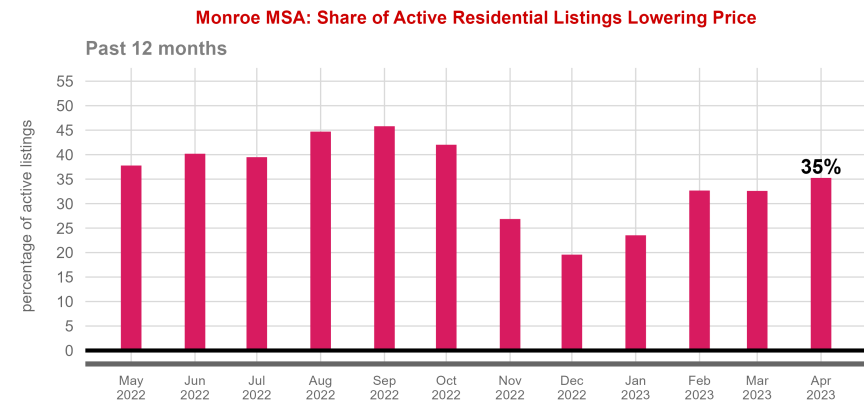
Source: Bureau of Labor Statistics.



Source: Census Bureau.



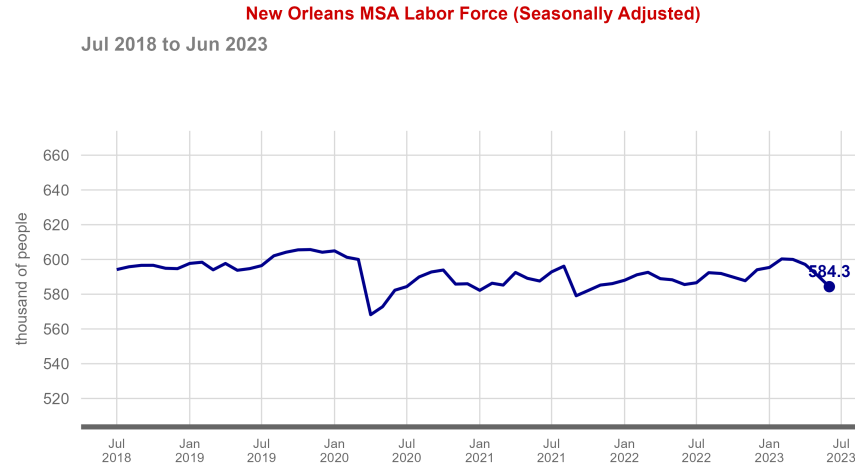
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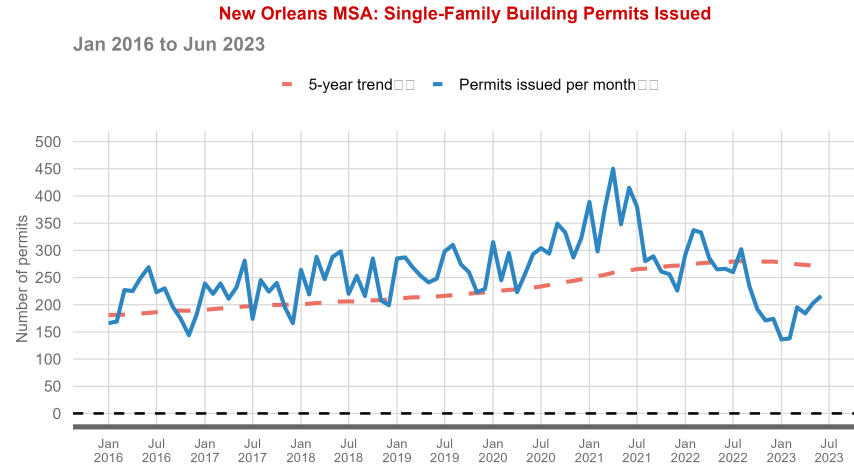
Source: Realtor.com.

# New Orleans MSA: Additional Charts

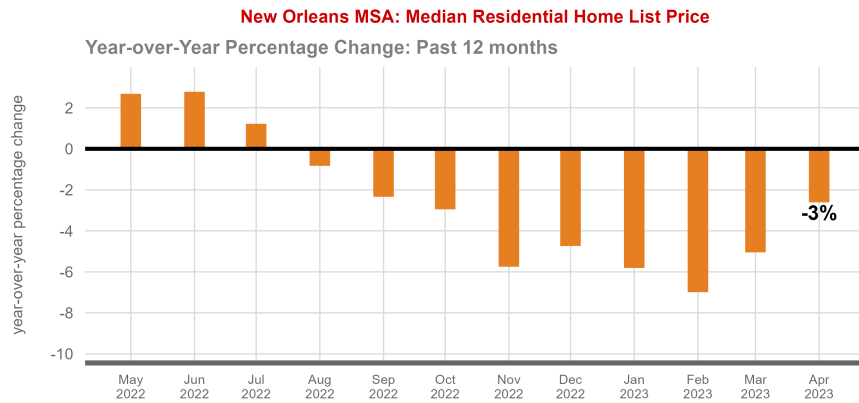
Figure 17: New Orleans Metro Area: Additional Charts



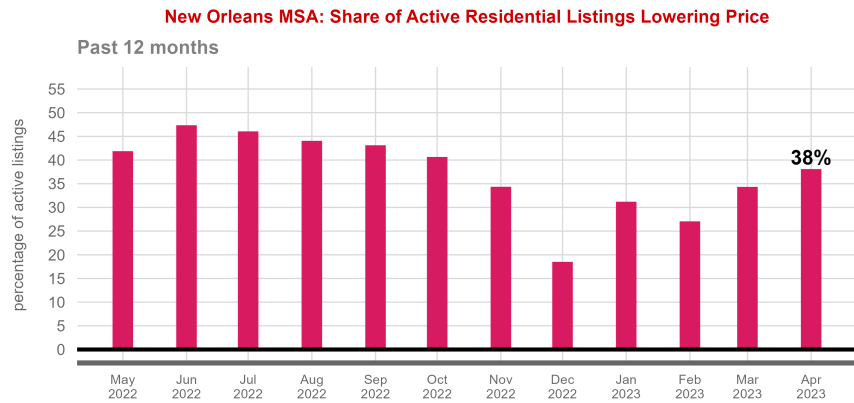
Source: Bureau of Labor Statistics.



Source: Census Bureau.



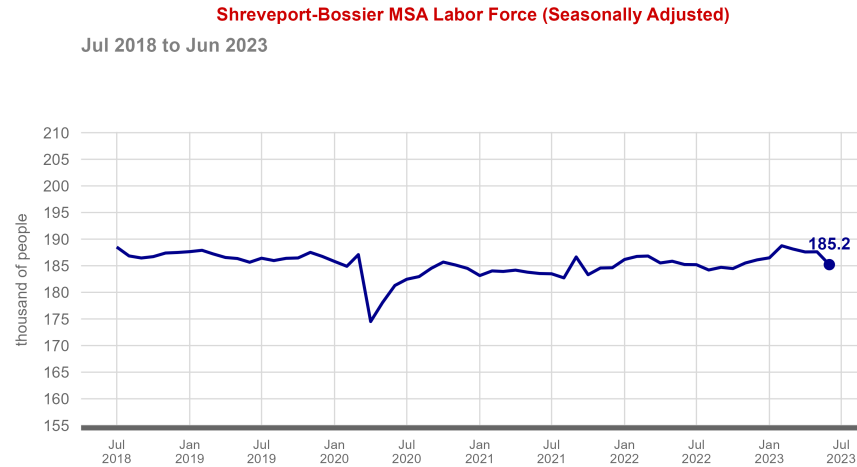
Source: Realtor.com.



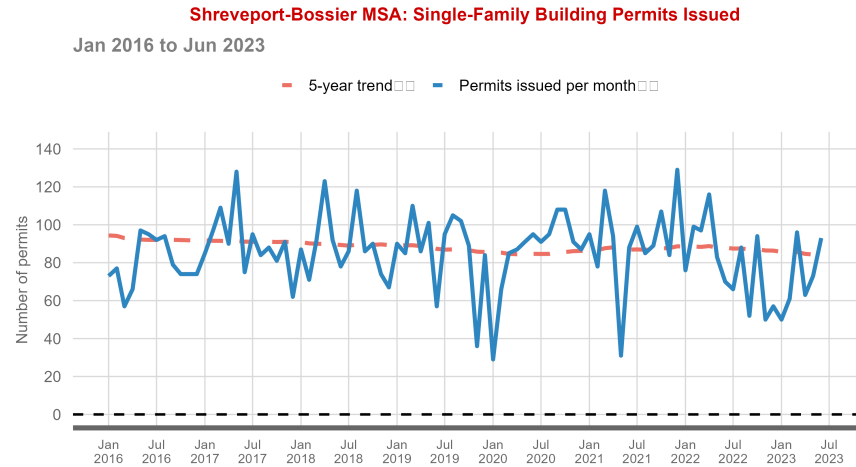
Source: Realtor.com.

# Shreveport-Bossier MSA: Additional Charts

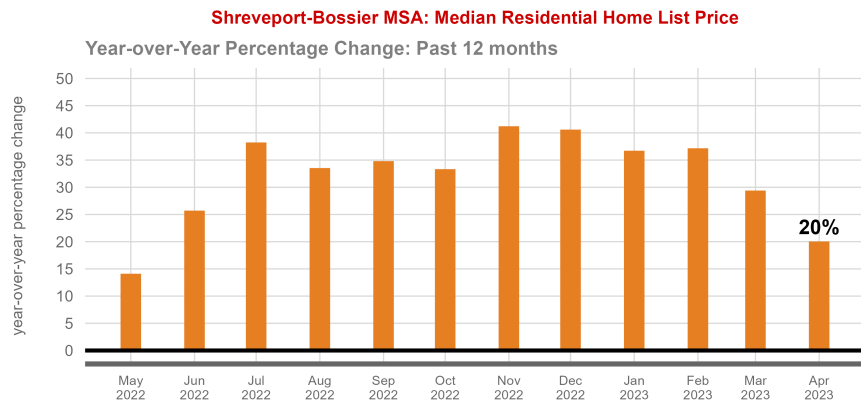
Figure 18: Shreveport-Bossier Metro Area: Additional Charts



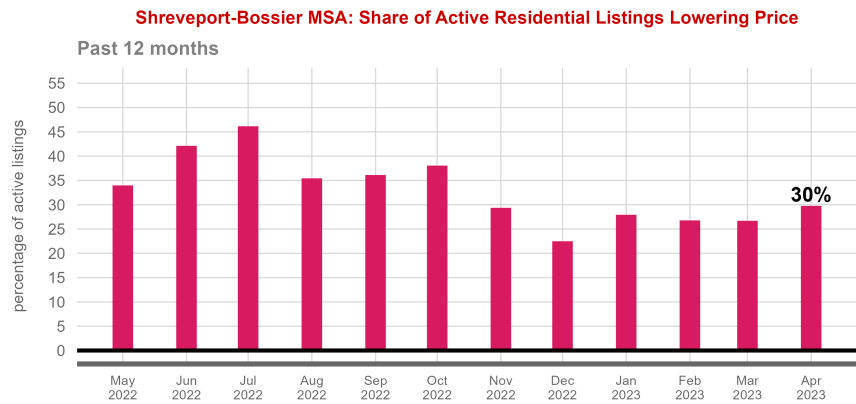
Source: Bureau of Labor Statistics.



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:Q1 Projections for 2023:Q2

<b>Variable</b>	<b>Baseline Projection</b>	<b>Actual Value</b>	<b>Absolute % Error</b>
employment (statewide)	1950.20	1960.10	0.51
unemployment rate	3.60	3.60	0.00
GDP	219139.50	219052.80	0.04
FHFA home price index	368.20	359.80	2.33
Alexandria MSA employment	62.10	63.50	2.20
Baton Rouge MSA employment	419.50	424.30	1.13
Hammond MSA employment	47.90	48.90	2.04
Houma-Thibodaux MSA employment	81.80	81.70	0.12
Lafayette MSA employment	201.80	203.80	0.98
Lake Charles MSA employment	96.10	96.80	0.72
Monroe MSA employment	78.20	78.30	0.13
New Orleans MSA employment	566.20	568.10	0.33
Shreveport-Bossier MSA employment	177.00	178.30	0.73

## 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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