LOUISIANA TECH UNIVERSITY **COLLEGE OF BUSINESS**

CENTER FOR ECONOMIC RESEARCH

REAL

REGIONAL ECONOMIC ANALYSIS OF LOUISIANA

REPORT

COVID-19 Special Edition

SPRING 2020

Dean's Message

This issue of the Regional Economic Analysis of Louisiana (REAL) Report is the third installment of an ongoing series of publications designed to provide insight into recent economic developments in Louisiana.

It is produced by faculty and students within Louisiana Tech University's College of Business for the state of Louisiana and our region of the South. Economics students from the College of Business specifically provide strong analytical and critical thinking skills to a growing North Louisiana region. Undergraduate economics majors, as they progress through their degree program, not only learn economic intuition and modeling skills, but also data science and statistics which makes them some of the most highly sought after graduates from the University. This report is compiled by undergraduate economics majors in partial fulfillment of their Regional Economic Analysis class.

The global COVID-19 pandemic has impacted the world in ways that will be felt for generations to come. Our students felt it was only appropriate to dedicate this issue to the economic impact of the coronavirus on various sectors across our state. The detailed analysis on labor market movements, major state-wide industries, and income and output at the state level will be helpful for lawmakers, economists, community leaders, and business owners as the state and nation begin to move through phases of reopening.

This report and all subsequent issues can be found on the College of Business website at **business.latech.edu/realreport**. For more information on the report or the Regional Economic Analysis class (ECON 425), please contact Dr. Patrick Scott at **pscott@latech.edu**. Inquiries about specific sections of the report should be referred to the author of each section, while media inquiries should be directed to **waldroup@latech.edu**.

As always, I hope this report is beneficial to your efforts.

Sincerely,

CHRISTOPHER L. MARTIN, PH.D.
Dean and Chase Endowed Professor
College of Business
Louisiana Tech University

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Analysis for this edition of the REAL Report concluded on May 22, 2020. All data included in the report was collected prior to that date.

Meet the Team

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Dr. Patrick Scott is an assistant professor of economics and director of the Center For Economic Research. He teaches macroeconomics, monetary theory, and research methods at Louisiana Tech University. His research interests include optimal monetary policy models, dynamic general equilibrium models, time series forecasting, and Bayesian econometrics.

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The Economic Fallout from COVID-19 in Louisiana

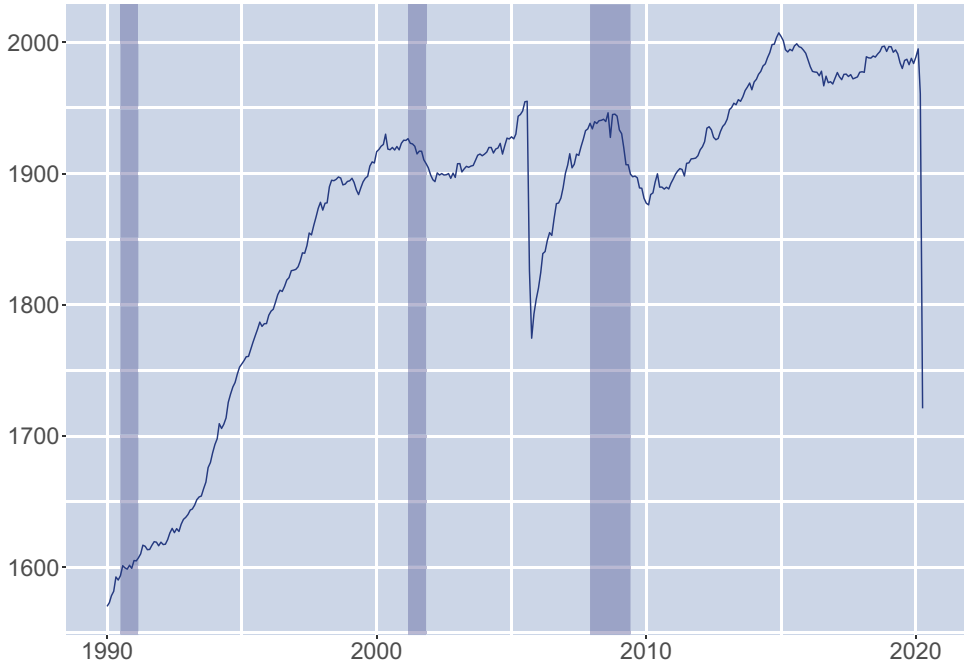
BY C. PATRICK SCOTT, PH.D.

During relatively normal economic times, this section of the REAL Report would be dedicated to forecasting major economic indicators. The nature of this economic fallout is so great that any attempt at modeling economic data is problematic. Unfortunately, most of our statistical models have such a large standard error that they yield forecasts that are at best unuseful for decision making. Below are some plots that help to show the magnitude of the economic crisis that Louisiana finds itself in.

Employment (Figure 1)

The Louisiana economy has shed over 274,000 jobs in two months. Job losses from the leisure and hospitality industry alone are 42% (115,000). These numbers only reflect employment through April. Since the stay-at-home order extended through May 15 for the state, these numbers will likely be worse for next month. Even with the economy starting to reopen for the last half of the month, employers are not expected to rehire all furloughed employees at once.

Figure 1: Non-Farm Employment (Thousands)



Economic Coincident Index (Figure 2)

The coincident index is a unit-less variable constructed from four other economic indicators and an economic model by the Bureau of Economic Analysis. It communicates standard of living and income/output growth over time (and a proxy for real GDP). The top panel shows that this crisis has wiped away real income gains since 2000 for the state. The bottom panel shows the growth rate of the index. Economic activity shrank by more than 13% in two months. We have not seen a decline of this magnitude in Louisiana post WWII.

Figure 2: Economic Coincident Index (Levels & Percent Growth)

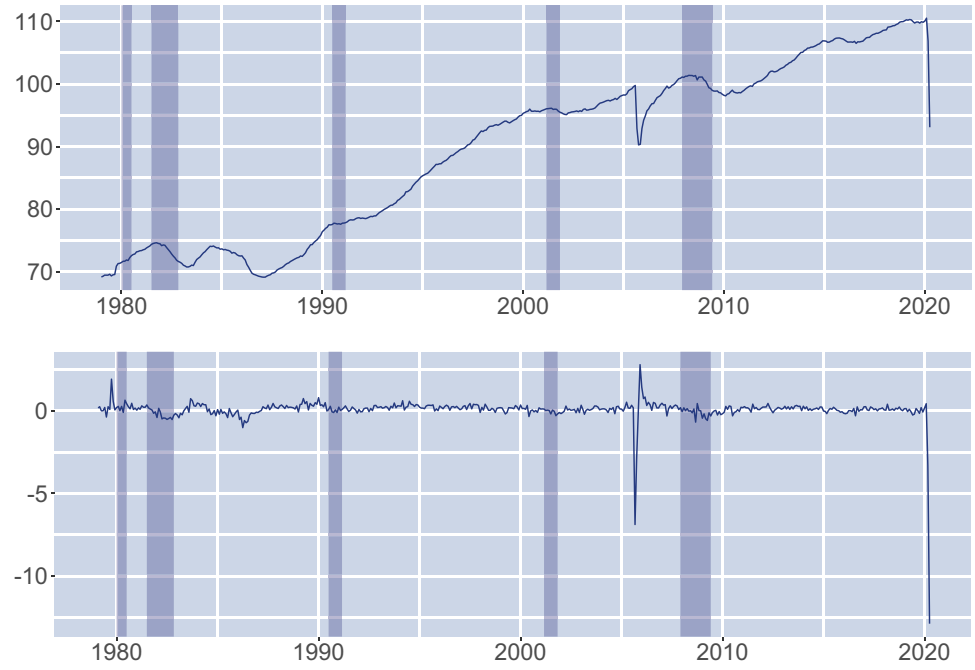
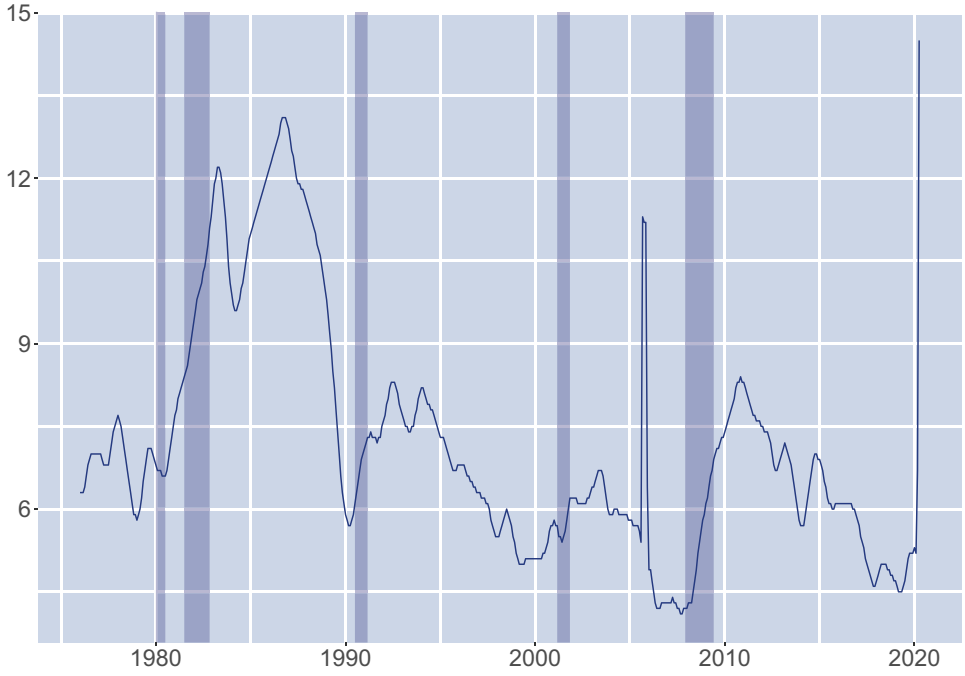


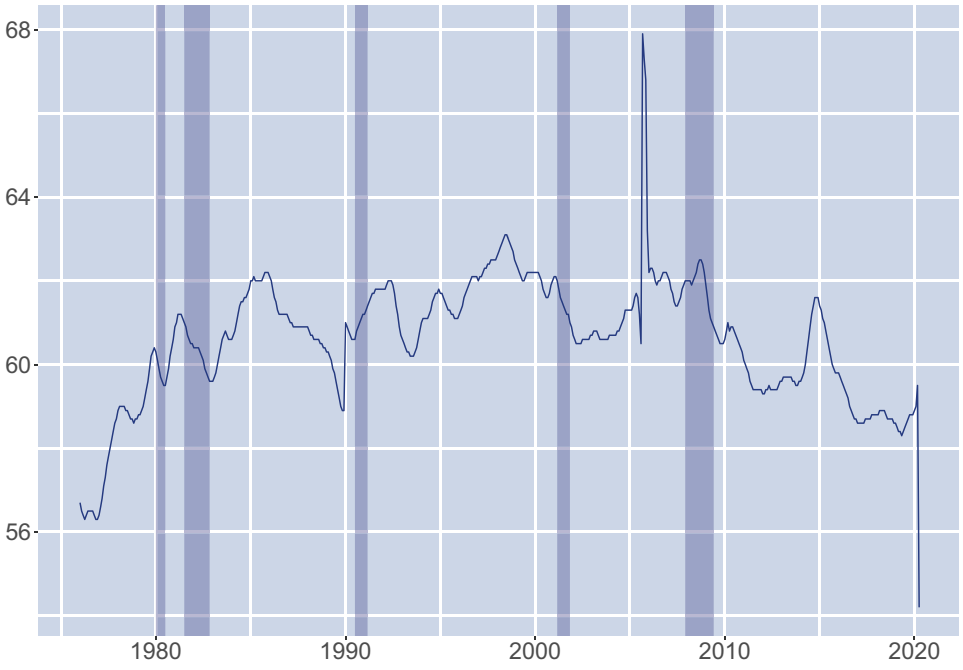
Figure 3: Unemployment Rate (Percent)



Unemployment Rate (Figure 3)

Over the past 13 years, Louisiana has experienced reduced volatility in the unemployment rate compared to the overall U.S. We don't experience the extreme highs or benefit from the extreme lows that the country as a whole experiences. This crisis may undo this since April's unemployment rate for the U.S. is 14.7% and 14.5% for Louisiana. Given the disruption in employment (Figure 1), relatively high unemployment is here to stay for the next few months.

Figure 4: Labor Force Participation Rate (Percent)



Labor Force Participation Rate (Figure 4)

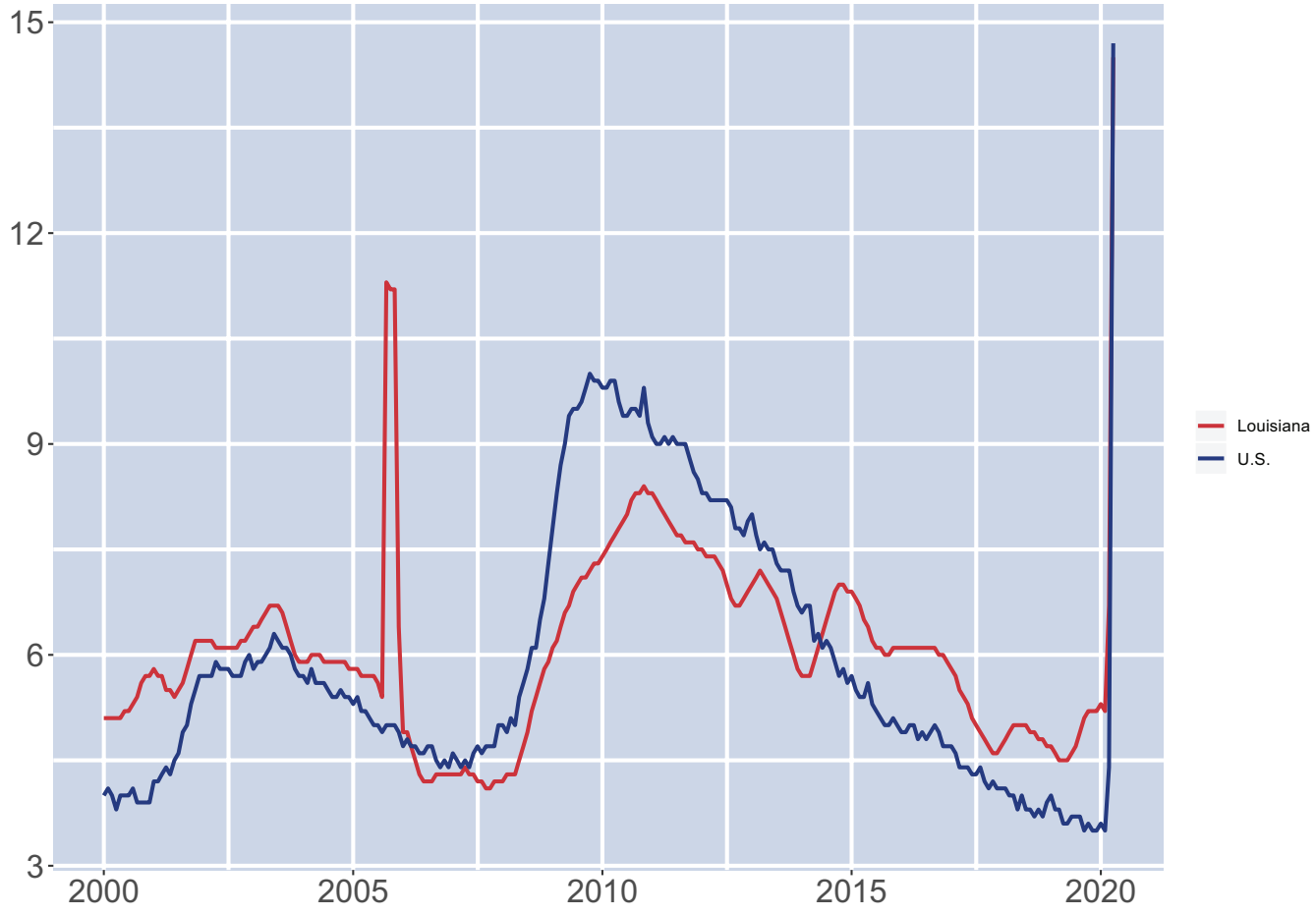
The percent of working age population that is actively engaged in the labor market is at its lowest level in at least 50 years. The labor force participation rate fell over 5% in one month. The last time we saw a movement of this magnitude in such a short period of time was during the recovery from Hurricane Katrina. Normally when we see an increase in the unemployment rate accompanied by a decrease in the labor force participation rate, it signals a substantial decline in economic activity. This is likely to recover relatively quickly as people come back to the labor market even if their old jobs are no longer there.

The State of Unemployment in Louisiana

BY DDON NGUYEN

State unemployment rates all around the United States are growing at the fastest rate we have seen since the Great Depression (Figure 5). With businesses remaining closed or at reduced capacity and residents still largely staying home, the unemployment rate has climbed to its highest level in the past 50 years. The hope is that most of these job losses are temporary. There will undoubtedly be some permanent job loss due to many businesses not being able to sustain the fiscal shock caused by this shutdown. Unemployment numbers will likely stay pretty high even after the economy resumes. The Coronavirus Aid, Relief, and Economic Security (CARES) Act and several other policies may not be enough to support people and businesses. Louisiana's unemployment rate was under 5.5% before the pandemic but has surged in recent weeks.

Figure 5: Louisiana and U.S. Monthly Unemployment Rate (Percent)

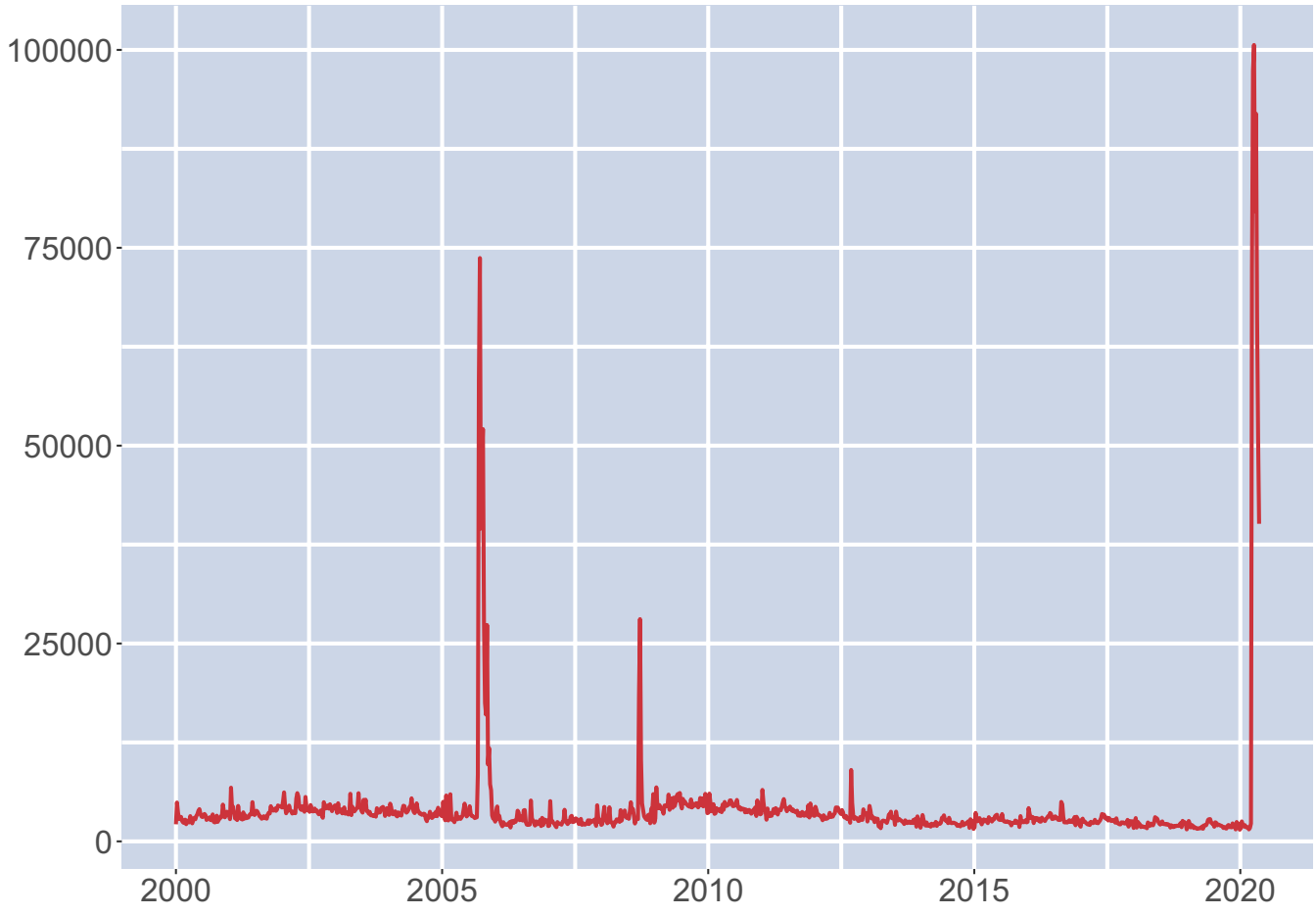


Initial unemployment claims in Louisiana (Figure 6) reached higher levels since the economy's collapse during Hurricane Katrina. The unemployment benefits an individual can receive when filing include a weekly check (if they renew their claim each week) that can range from $10 to $247 for a maximum of 26 weeks. Through the CARES Act, an additional $600 was added to the original amount by the state. The maximum number of weeks someone can file a claim was extended to 39 weeks. Unemployment is usually broken down into initial and continued claims. Initial unemployment claims are those who file

for unemployment for the first time, while continued unemployment (also called insured unemployment) claims are those who have to file each week that they remain unemployed to receive the benefits. To file for unemployment, there is a criterion you have to meet to qualify, and procedures you have to follow to keep claiming unemployment benefits. Due to COVID-19 affecting employment in the United States, many of those criteria were waived as the country waits to see when most shutdowns will end. The criteria will most likely remain loose even after most stay-at-home orders end as people try to get back on their feet. Before March of 2020, Louisiana's initial claims of unemployment averaged between 1,000-3,000 claims a week. Starting in the third week of March alone, the number surged to around 72,000 and reached 100,000 in the first week of April. While initial claims will decrease in the coming weeks, continued claims will peak after initial claims start to decline.

Many states are trying to reopen as the summer approaches. Even if states can reopen they will not be operating at full capacity. For most Americans who are on unemployment benefits, they can choose to stay on the benefits rather than risk going back to work. If people choose to stay on these benefits for the full 36 weeks then we could see a continued lag in the economy. While the CARES Act has been helpful for millions of Americans as they face uncertainty about what the economy will look like, it has created a moral hazard problem for some workers. With no real expectations for when lockdowns will end, people are faced with more questions than answers.

Figure 6: Louisiana Initial Jobless Claims



How Lower Interest Rates Have Affected Debt Refinancing in Louisiana

BY MATT FLYNN

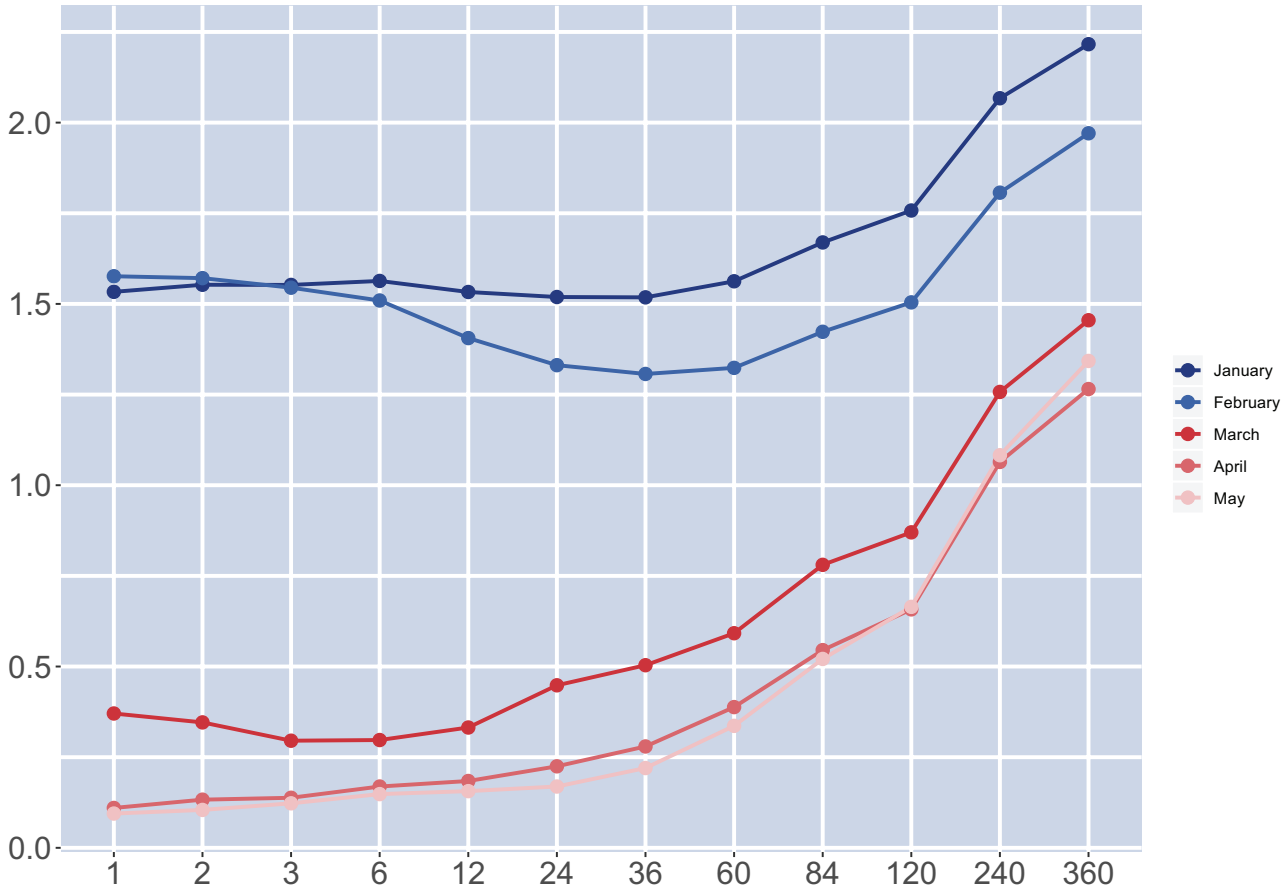
Interest rates have been on a general decline since mid-2019, as is shown in Figure 7. The most recent cut came on March 15, in which the target rate was slashed an entire percent down to a range of 0-25 basis points. This is a relatively shocking maneuver from the Fed and brings into play a real possibility of negative interest rates (when accounting for inflation expectations, real rates are already negative), as we have seen in other countries, such as Japan and Sweden.

Figure 7: Effective Federal Funds Rate (Percent)

Current interest rate policy has had a pronounced effect on the refinancing of municipal bonds, as municipalities now are offered with the opportunity to restructure their debt and save large sums of money. The State Bond Commission receives applications from parishes, municipalities, special taxing districts, and other political subdivisions of the State requesting authority to incur debt. During this calendar year, we have seen a 78% increase in the number of bond issuances, from 39 in 2019 to 69 in 2020. This equates to an increase in total debt of over 400%, with total bond issuance value moving from $1.8B in 2019 to $9.3B in 2020.

It is apparent from these numbers that a reduction in the Fed's target rate can have a dramatic effect on debt refinancing, but the actions taken by the Fed are moving far beyond what we would consider to be "traditional" money market maneuvers. In an effort to halt the sputtering economy, the Fed has committed to using its full arsenal of monetary and fiscal policy tools. In the beginning of the crisis investors saw increased volatility in equity markets and chose to park their investments in fixed income (debt). But as the economy has shut down and the crisis lengthened, people are without a steady source of income. We have seen investors choose the liquidity of cash over equities and debt alike. We can see this represented visually in Figure 8 as one-month Treasury yields fell from 1.61% in mid-February to near zero in April and May. In order to combat this, the Fed has restarted its program of buying hard-to-sell Treasury bonds. The Fed is also attempting to keep corporate debt markets afloat by purchasing securities known as commercial paper (short-term debt instruments designed to fund ongoing activities). Even with the Fed's strong commitment to keeping value in bond markets, Treasury yields have not substantially improved from their late March lows. The yield curve Treasury debt has dropped by more than a percent at all maturity horizons since the pandemic started. This raises questions on just how effective the Fed's policy can be during this crisis. With one- to 10-year spreads on Treasury yields remaining below 1%, investors don't believe that stability will arrive soon.

Figure 8: Monthly Treasury Yield Curves (Percent) along Bond Market Months to Maturity



Investment Targets for the Teacher's Retirement System of Louisiana

BY MARC ENOCH HEBANE GUEHI

The COVID-19 pandemic has affected the Louisiana economy and the United States significantly in many sectors. This report focuses on how the COVID-19 crisis has affected retirement accounts. The Teacher's Retirement System of Louisiana (TRSL) is Louisiana's largest public retirement system, providing services and benefits to more than 160,000 individuals. Founded in 1936, TRSL is a governmental defined benefit plan qualified under Section 401(a) of the Internal Revenue Code as a public trust fund to provide retirement benefits for its members. TRSL is funded by member and employer contributions and the cumulative earnings from investments. TRSL selects its investment portfolios that are managed by investment banks, asset management firms, etc. This research analyzes the top targeted portfolio investments TRSL made and how they have been affected through the first quarter of 2020. Below are the biggest investment targets by TRSL and how its portfolio performed for the first quarter of 2020. The four largest asset class targets account for about 50% of TRSL's total asset allocation target.

Large to Mid-Cap U.S. Equity (Figure 9)

Large and mid-cap U.S. equity was the largest targeted investment by TRSL with about 20% of its budget allocated towards it. These funds have been managed by some companies and are invested in portfolios represented below by their ticker symbols. On average, the portfolios made a loss of about -27.33% across the board in Year-To-Date (YTD) returns. The biggest loss came from Voya Investment Management's IPMIX at about 31.74% loss on YTD returns.

Figure 9: Large to Mid-Cap U.S. Equity Year-to-Date Returns (Percent)

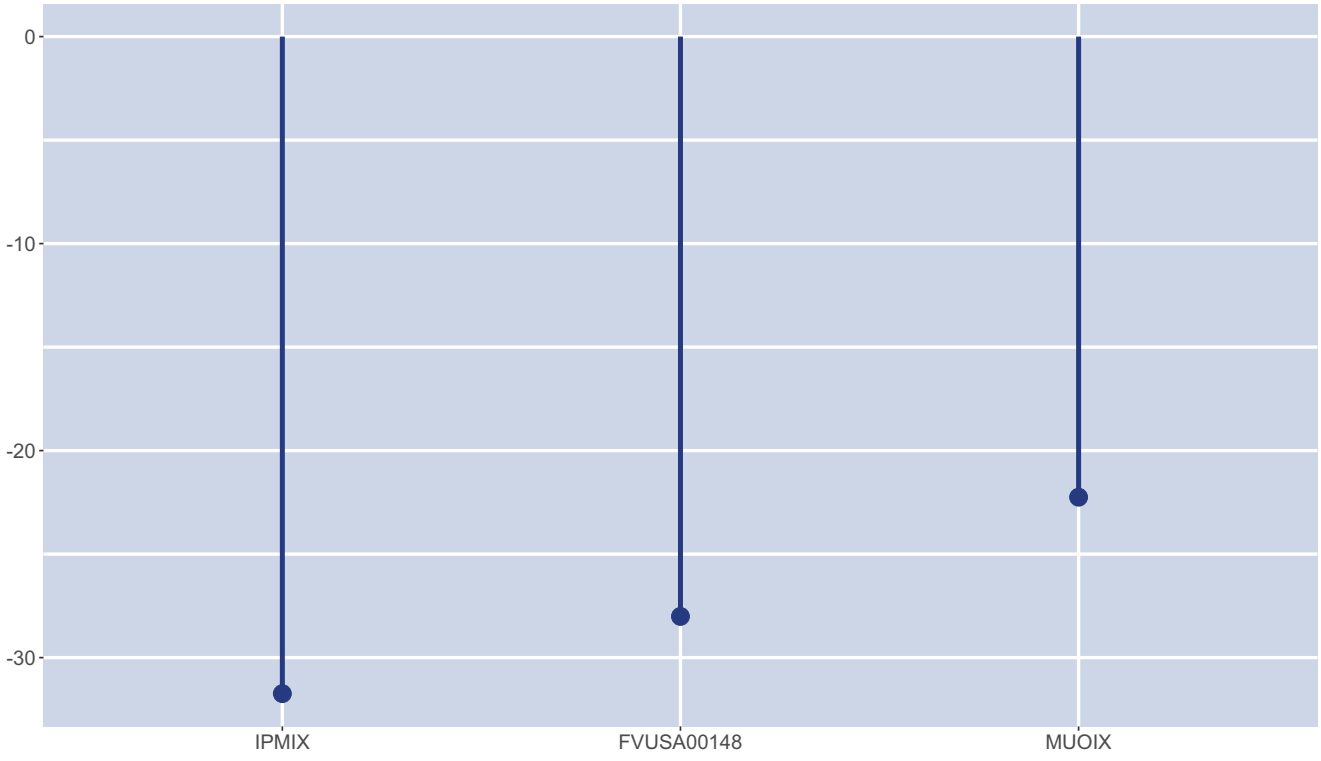


Figure 10: International Non-U.S. Equity Year-to-Date Returns (Percent)

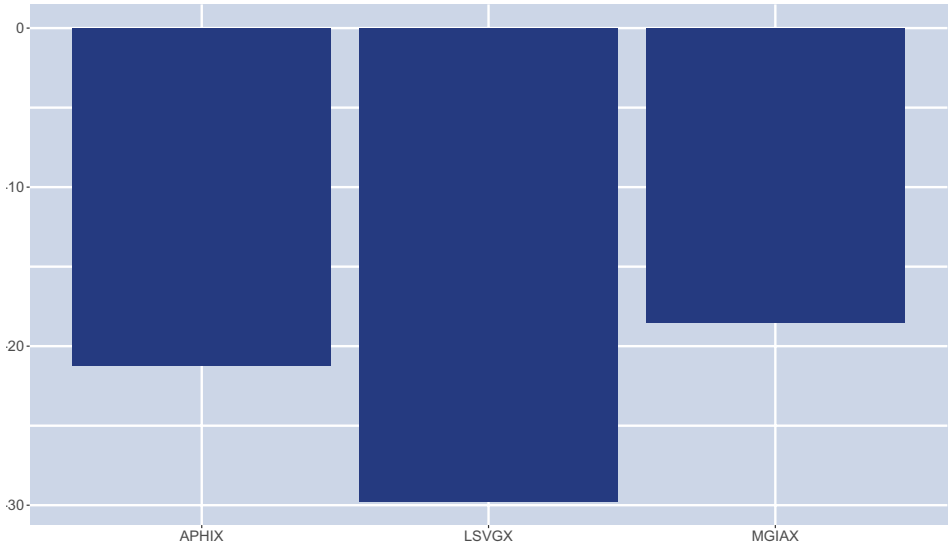


Figure 11: Core U.S. Fixed Income Year-to-Date Returns (Percent)

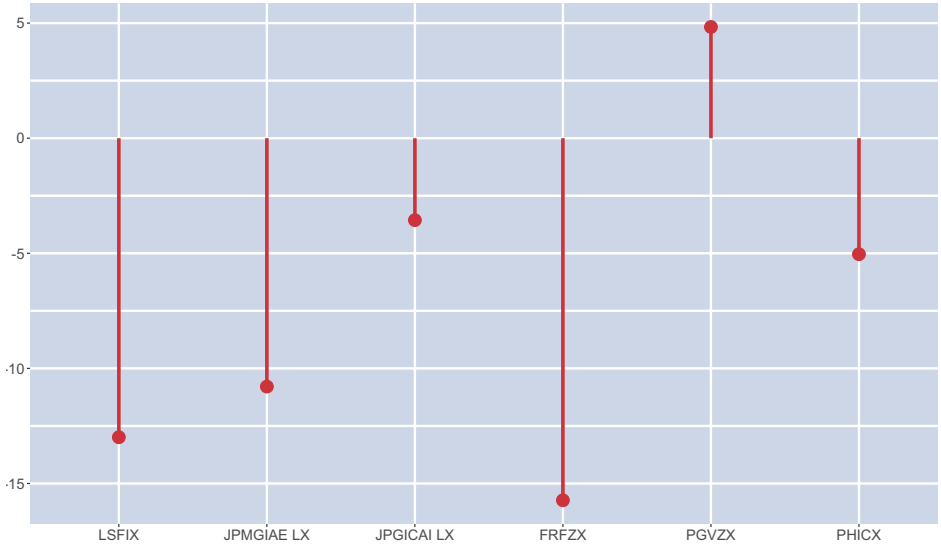
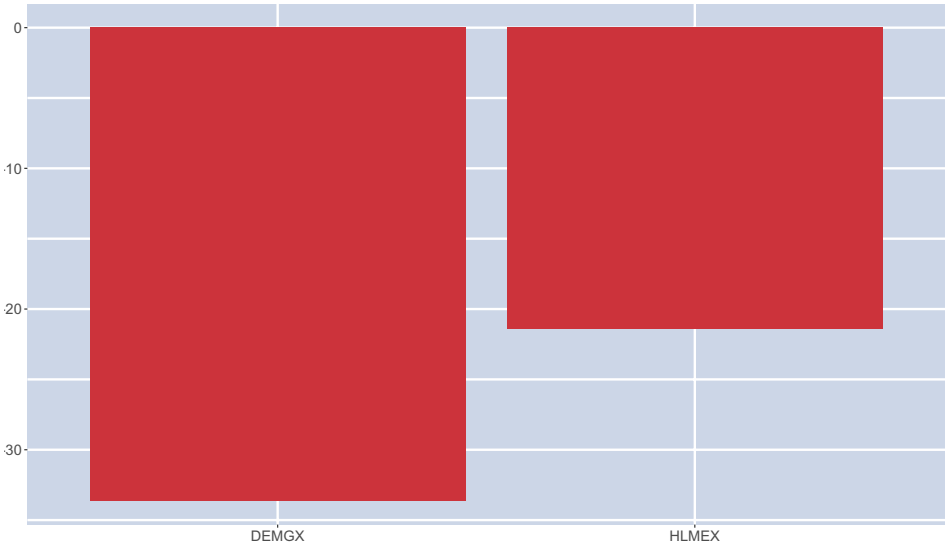


Figure 12: Emerging Markets Equity Year-to-Date Returns (Percent)



International Non-U.S. Equity (Figure 10)

International non-U.S. equity is the second largest targeted asset class with about 11% of TRSL's total allocation. These portfolios were managed by LSV Asset Management, Artisan Partners, MFS Institutional, and others. The average YTD return across all these funds was down about 23.16%. The smallest and largest losses came at -18.50% for MFS Institutional and -29.76% for LSV Asset Management respectively.

Core U.S. Fixed Income (Figure 11)

Core U.S. Fixed Income is the third largest targeted asset class with 9% of TRSL's total allocation. These portfolios were managed by Loomis Sayles, JP Morgan, PGIMI, among others. The average YTD return across all these funds was about -7.21%. The Core U.S. Fixed Income has the lowest loss in YTD return among the top asset class.

Emerging Markets Equity (Figure 12)

Emerging Market equity is the fourth largest targeted asset class with just under 9% of TRSL's total allocation. These portfolios were largely managed by Harding Loevner and Dimensional. The average YTD return across all these funds was a 27.54% loss. The Emerging Market equity has the highest average loss in YTD return among the top asset class.

Sporting in the City of New Orleans

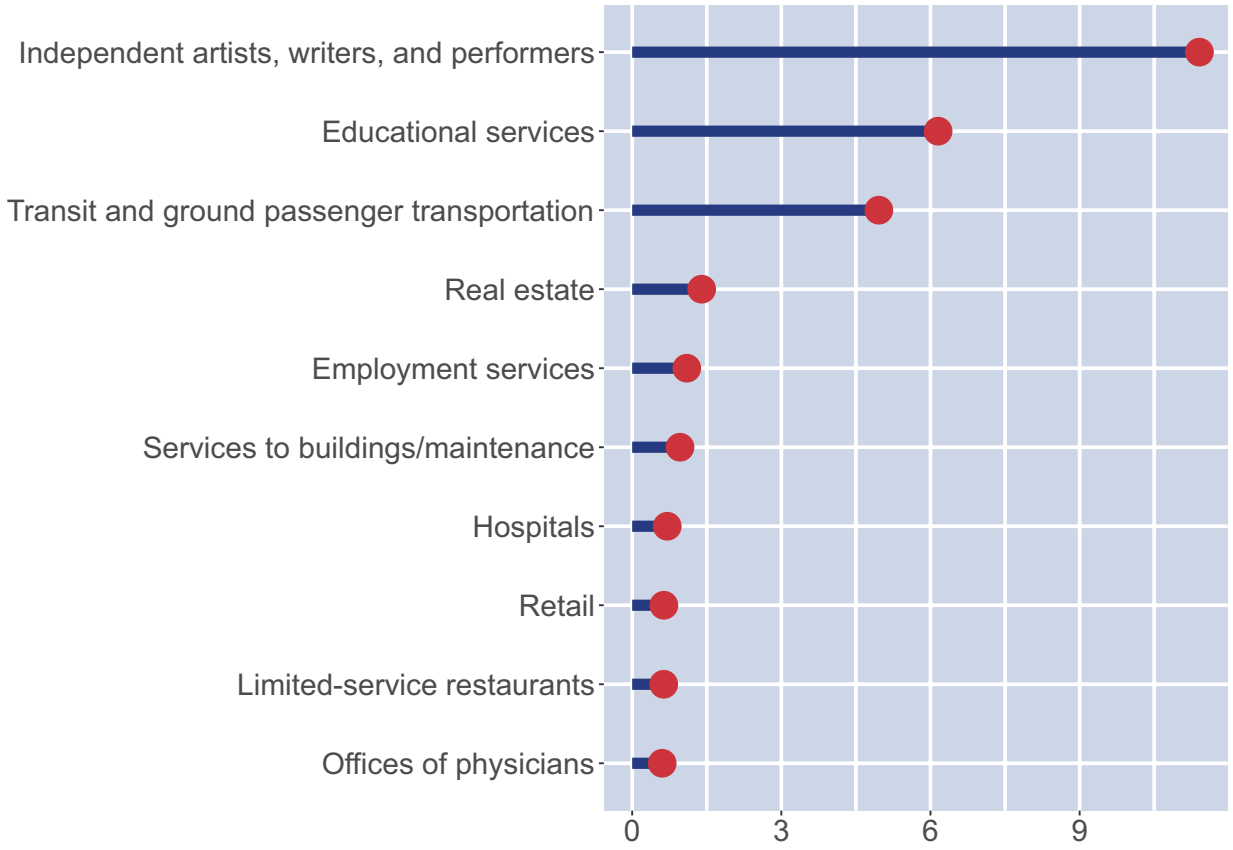
BY LEVI HOLDER

With New Orleans being the home of two professional sports franchises, the city is the epicenter for sporting events in the state of Louisiana. The sports industry is a $1.3 billion industry in the state with over 72% of industry output attributed to New Orleans. The goal of this report is to identify the broader impact of the absence of the sports industry in the state. At the time of this report, there is a relatively large amount of uncertainty regarding sporting events in 2020. The NBA season has been all but officially canceled, Major League Baseball has postponed games indefinitely, and there are rumors that the NFL is considering pushing back their season open.

Over the course of the stay-at-home order to Phase 1 reopening, the estimated loss from the greater New Orleans economy is approximately $270 million in output and $105 million in labor income.

Employment

Figure 13: Estimated Induced Employment Disruptions by Industry (Percent)

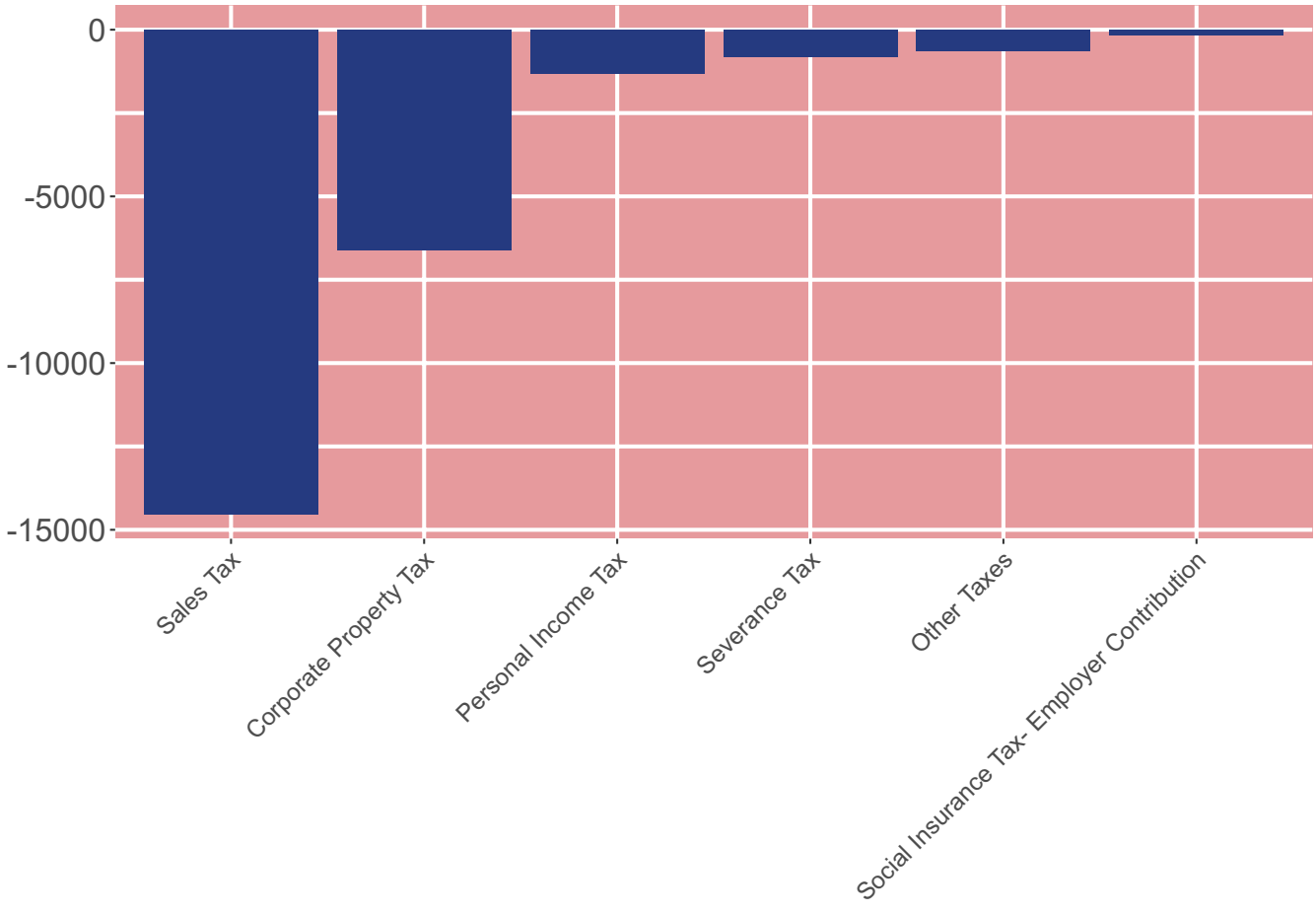


The sports industry in New Orleans supports an estimated total 7,562 jobs. Of that total, 4,590 are directly employed in the industry, while the remaining 2,972 jobs represent induced and indirect employment. Not all of these jobs are lost due to the COVID-19 crisis. Of the indirect employment, Figure 13 depicts the estimated percent of employment disrupted due to the closure of the sports industry in New Orleans relative to pre-crisis levels. Most of these supporting industries experience relatively small disruptions. These losses are only attributed to the sports industry however. Since there are other industries affected by the stay-at-home order and the subsequent economic fallout this induces, the actual decline in employment is likely much greater for these industries.

Tax Revenues

Figure 14 graphically shows the estimated loss in tax revenues due to the shuttering of the sports industry in the greater New Orleans area. These bars reflect thousands of dollars lost in both state and local tax revenues. Sales taxes account for the largest reduction in tax revenues among all of the groups and just over $14.5 million. The hyper-localized nature of demand surrounding “home teams” means the sports good is both produced and sold in the same region. On an annualized basis, this loss would translate to more than $94 million in lost tax revenue at the city and state level. Total lost revenue during the stay-at-home order is estimated to be over $24 milion in lost revenues ($158 million annualized).

Figure 14: Estimated Weekly Tax Revenue Loss by Tax Type (Thousands of Dollars)

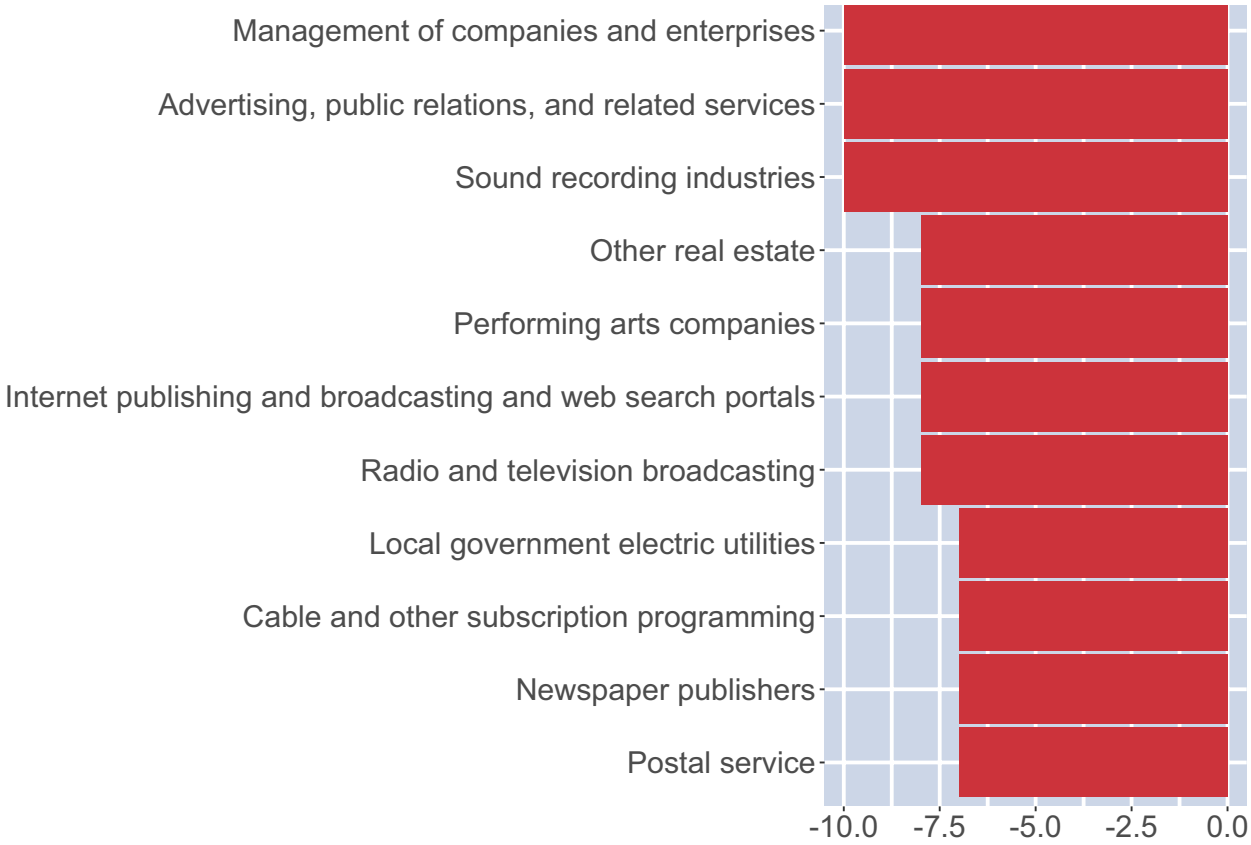


Measuring the Effect of Full and Limited Service Restaurant Closures

BY QUENTIN JONES

With the shutdown of non-essential businesses during the coronavirus response, restaurants have been hit particularly hard. Hospitality plays an important role in the economy of Louisiana. In order to model the loss that closing restaurants could represent, a contribution analysis is calculated using an input-output table with 479 reporting sectors. A multi-region adjustment is used to properly account for the economic linkages among geographic regions within the state. The analysis tracks the various ways that money from industries moves through the economy. For instance, money spent on physical capital flows back to producers of raw goods, and worker income is spent on rent and consumable goods.

Figure 15: Estimated Decline in Related Industries (Percent)



To approximate the impact of restaurant closures on the Louisiana economy, a contribution analysis was evaluated where the contribution of full and limited service restaurants was reduced by 100%. This represents a complete freeze of all financial activity: no sales, wages, or purchases. The contribution analysis then reports the effect this has on employment, output, labor income, value added, and taxation throughout the state economy. This, of course, is a worst-case scenario for the industry as some activity was maintained (although in some individual cases there was only nominal economic activity).

For the full duration of the stay-at-home order (March 22 to May 15), the estimated impact of full and limited service restaurant closures is more than $3 billion in direct, indirect and induced economic loss. On an annualized basis, this industry employs more than 156,000 jobs in Louisiana and provides more than $12 billion in annual income.

The loss percentages reported (Figure 15) show the change in output across those supporting industries (indirect and induced effects) as a percentage of total output in that industry. Common small business support industries are hit quite hard. Recording companies, advertisement, and management agencies see a loss of 10%. Entertainment and common expenses are hit as well, with real estate, performance art companies, and broadcasting companies losing 8%. Postal services, newspaper publishing, cable and subscription programming, and local government electric utilities draw down by 7%.

Restaurant closures during this period represent a loss of tax income at the local, state, and federal level as well. Local governments are expected to lose in excess of $95 million in tax revenue, state government is expected to lose more than $100 million in tax receipts, and federal government is missing out on more than $180 million in tax revenues.

Gambling and Casinos in the Era of COVID-19

BY JARED JOHNSON

The COVID-19 shutdown has impacted industries across Louisiana and will have far-reaching consequences not just for business owners and consumers, but local governments as well. Each additional week that shutdowns persist, local governments will miss out on hundreds of thousands of dollars in revenues, worsening projected budget shortfalls. These shortfalls will make it much more difficult for local governments to fund public schools, pay salaries for emergency service personnel and retiree benefits, provide public transportation, and maintain critical infrastructure like water/sewage and roads.

Some industries are able to continue operating in a limited capacity, but others have been shut down completely. This will disproportionately affect cities whose budgets rely upon tax revenues from shuttered industries like casino hotels and gambling. The purpose of this analysis is to determine which local governments get the largest shares of their revenues from these industries and how these shutdowns will affect revenues.

Using IMPLAN's economic software, a contribution analysis was calculated to determine which regions contribute the most tax revenue from gambling and casino hotels to the state economy (Figure 16). It is not surprising that New Orleans, the largest economic center in Louisiana, produces the most sales tax revenue (45% of all state activity) from casino hotels

Figure 16: Share of State Taxes from Gambling by MSA (Percent)

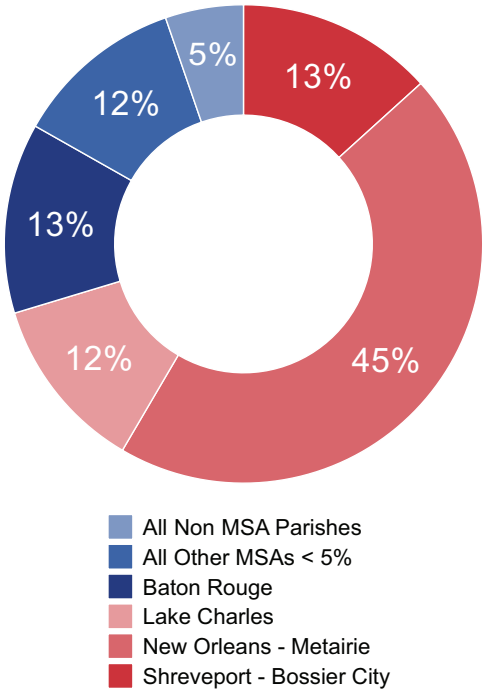


Figure 17: Gambling Tax Revenues in LA's Largest Cities (Percent)

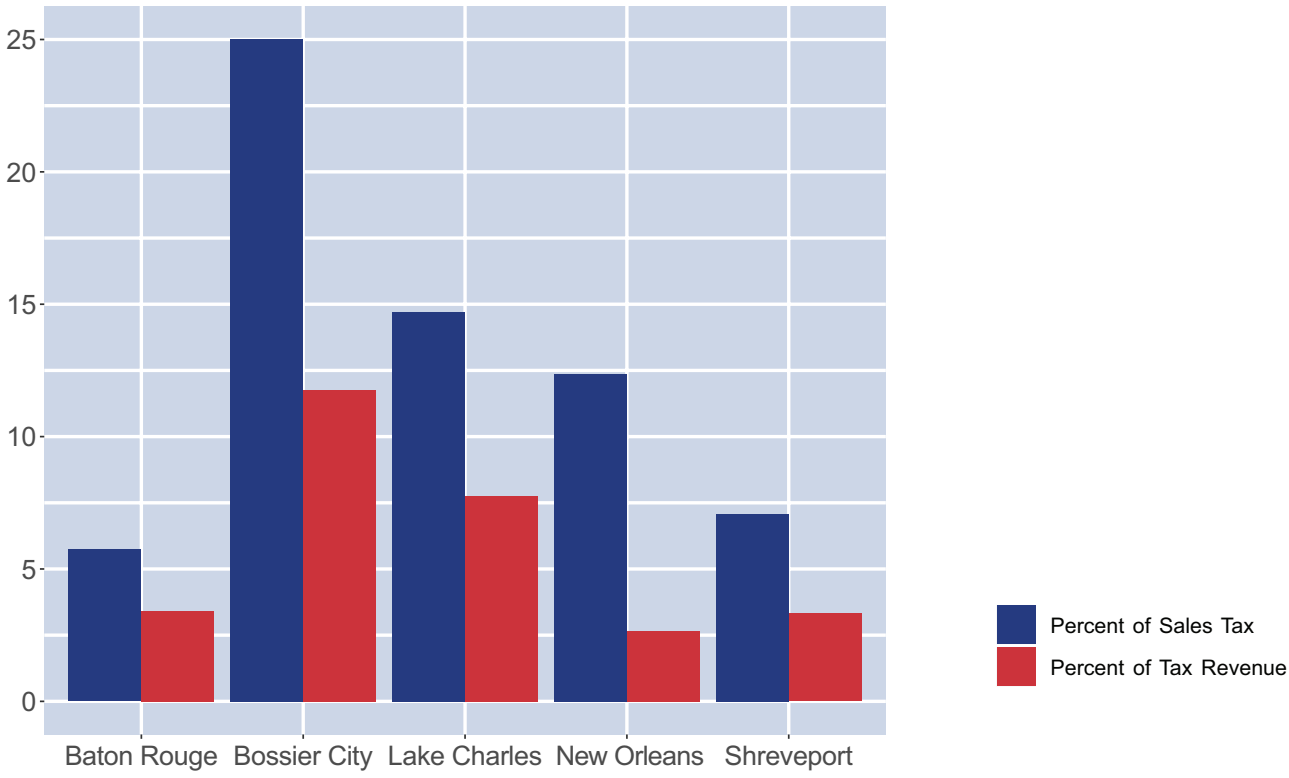
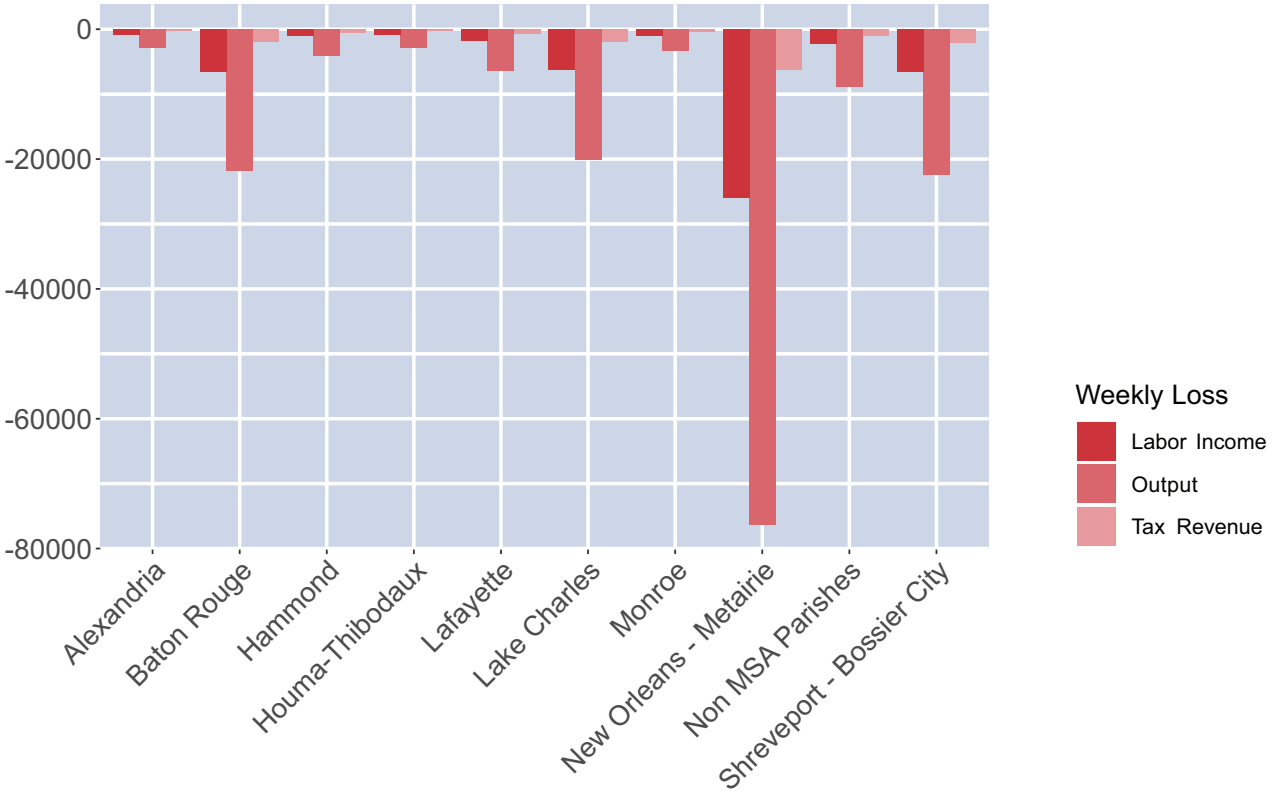


Figure 18: Weekly Revenue Losses by MSA (Thousands of Dollars)



and gambling. The next largest contributors are Baton Rouge, Shreveport, Bossier City and Lake Charles, with other cities contributing a much smaller share (<5%) by comparison.

By using the gaming revenues from IMPLAN and total tax revenues from the 2018 Comprehensive Annual Financial Reports of the five largest contributors, I was able to determine what percent of their tax revenues come from hotels and gambling. I compared these estimates to the financial reports to ensure the accuracy of the calculation.

Although larger cities like New Orleans, Baton Rouge and Shreveport contribute more to the overall industry, their economies are more diversified, so gambling revenues comprise smaller percentages of their overall budgets, as seen in Figure 17. These cities will consequently be more insulated from the economic loss of these industries than cities like Bossier City and Lake Charles, who are far more dependent upon gambling tax revenues. Even New Orleans, with its diversified economy, gets a sizeable portion of its sales tax revenue from gambling. With nearly 13% of its tax revenue coming from gambling, Bossier City will be especially hard-hit.

Local municipalities and parishes should expect to lose a combined $2.18 million in gambling-related tax revenue for every week shutdowns continue. By the end of mid-May, roughly $21 million had been lost. This pales in comparison to the magnitude of the loss of labor income and overall economic output, as seen in Figure 18. This significant loss of labor revenue means that consumers will have less money to spend in the aftermath of the shutdowns, and local economies will suffer as a result. Shreveport-Bossier City, Lake Charles, and Baton Rouge each lose approximately $2 million each week in total economic output, and New Orleans' weekly losses reach nearly $8 million.

When deciding how and when to reopen the economy, it is essential for policy makers to balance public health and economic well-being, but they must also consider how these shortfalls will impact the ability of local governments to serve the economically vulnerable.

Show Me The Money: CARES Act Stimulus Rebate Checks

BY QUENTIN JONES

The stimulus check tax rebate provided by the government as a part of the CARES Act represents a large infusion of personal income into the American economy. To model the real effects of this change in household income for Louisiana, an impact study is estimated using IMPLAN's economic software. The total infusion delivered to each income bracket is calculated by cross referencing the percentage estimates of households that are single, married without children, and married with children, by the number of households in each income bracket. Couples married with children are assumed to have the national average of 1.9 children. Household numbers are multiplied by the expected check they would receive based on the number of household members and income. This total is used in IMPLAN as a shock to the disposable income of the relevant income bracket.

These estimated income increases are expected to support an additional 26,000 jobs at the state level. Given the slowdown within the economy due to COVID-19 it is unlikely these employment increases will be realized in practice.

Figure 19: Industries that Benefit the Most (Millions of Dollars)

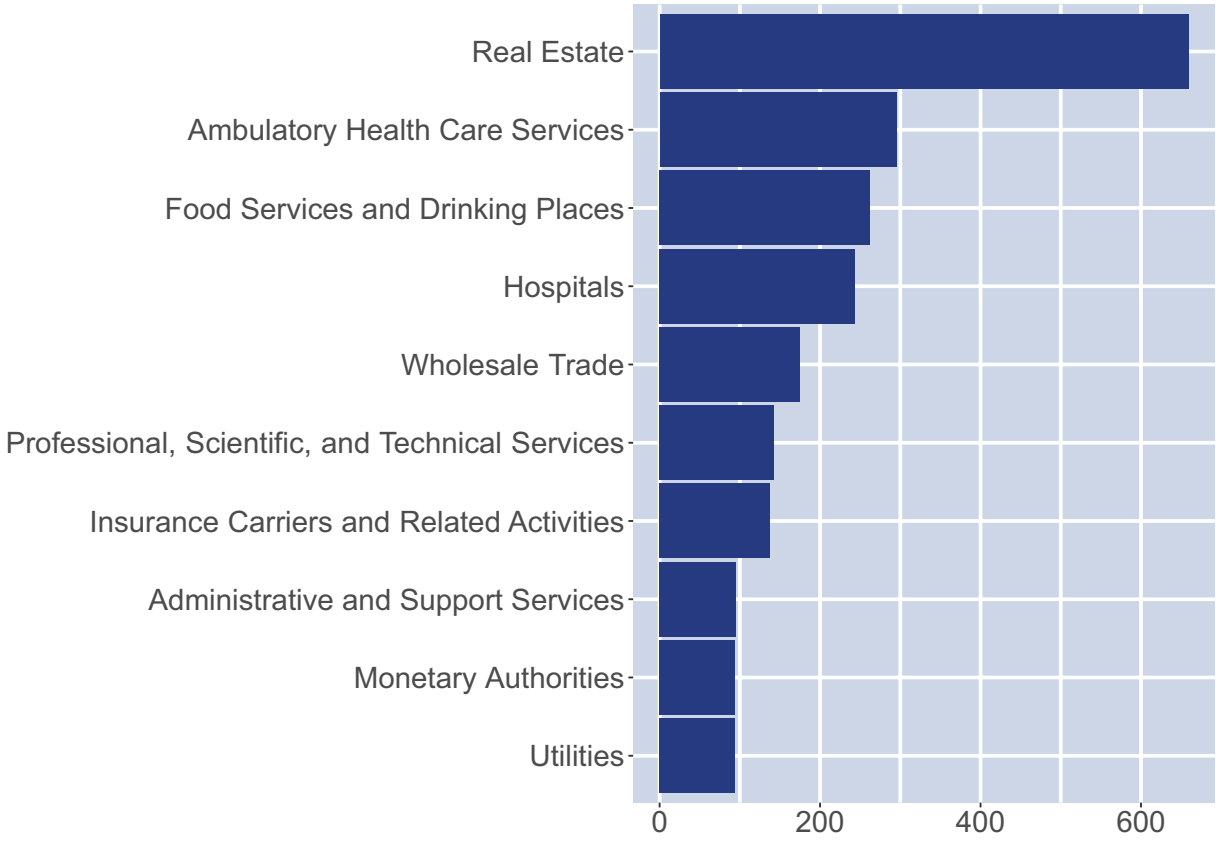
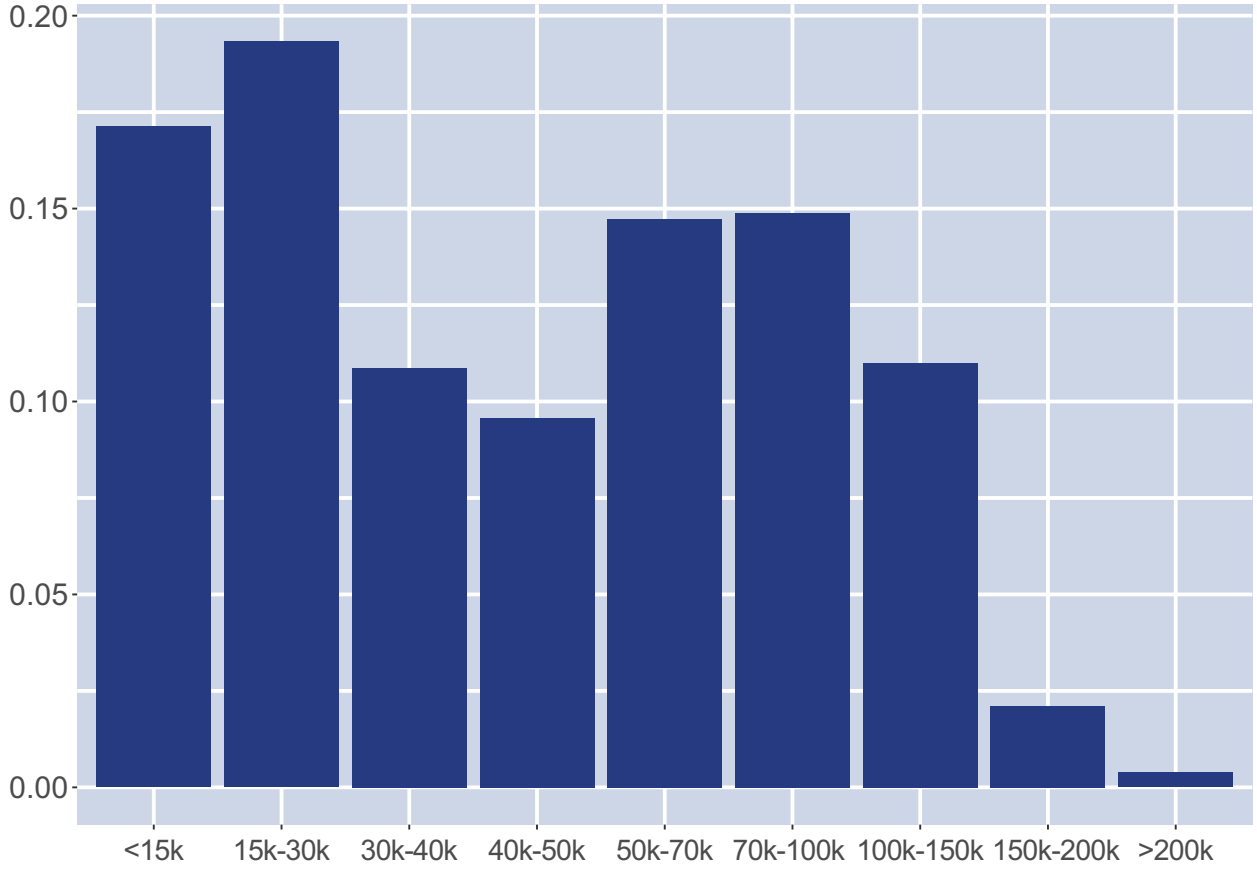


Figure 20: Percent of Economic Impact by Household Income Size



Tax revenues from the economic activity that this policy encourages are expected to offset some of the state-wide losses from the shelter-in-place order. The expected sales tax revenue from the stimulus checks alone are estimated to be over $133 million. State income tax revenues are projected to be nearly $17 million. Taxes on vehicles and property are estimated to increase by about $600,000. The greatest contributing income brackets are from those earning $100,000-150,000 a year, paying $4.7 million, and those earning more than $200,000 a year, paying $5 million. Over two-thirds of the total economic effect of the stimulus benefits households below the state median household income (Figure 20).

The influx of income moving through the economy is felt by all sectors, but industries are not affected equally (Figure 19). The greatest growth in output is experienced in real estate, with an output of $660 million from the stimulus income. Ambulatory health care services and hospitals experience an estimated output boost of $295 million and $244 million respectively. Food services and drinking places see an estimated $262 million increase in output. The closure of internal dining spaces, and that hospitality industry in general, may undercut this growth. Wholesale trade benefits from the income boost with an output increase of $174 million. Manufacturing enterprises gain comparatively little from this increase, making up 16 of the 20 lowest affected industries.

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