LOUISIANA TECH UNIVERSITY **COLLEGE OF BUSINESS**

CENTER FOR ECONOMIC RESEARCH

REAL

REGIONAL ECONOMIC ANALYSIS OF LOUISIANA

REPORT

WINTER 2020

Dean's Message

This issue of the Regional Economic Analysis of Louisiana (REAL) Report is the second 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 REAL Report includes detailed analysis on labor market movements, major state-wide industries, and income and output at the state level. It also provides forecasting of major state-wide economic indicators, and includes summary regional economic impact analyses. It highlights the state of the Louisiana economy as it is today in context with the past. Additionally, it indicates areas of opportunity in the state. This issue, in particular, has a special focus on the economic impact of Tech Pointe II, the second building in Louisiana Tech's Enterprise Campus.

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.

I hope you find this report relevant and 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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Meet the Team

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Jared Johnson, a senior from Benton, LA, is majoring in business economics and minoring in political science. Jared is a member of Pi Kappa Phi, Union Board, and served as Commissioner of Elections and Treasurer for SGA. Jared plans to start graduate school in Fall 2020.

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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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Louisiana Economic Indicator Forecasts

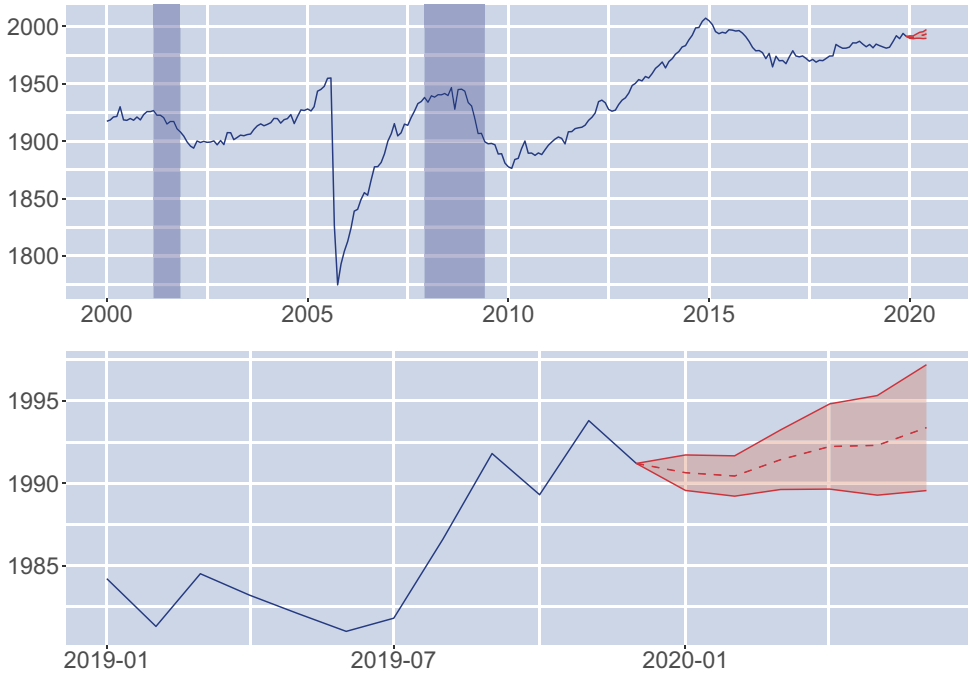
Forecasts are provided using a Bayesian model averaging approach from many statistical models. This method is utilized to capture the relative uncertainty that any individual model is not properly specified and thus accounting for that uncertainty in our analysis. For more information on this process, the specific data used here, and other forecasts for the Louisiana economy, please visit LADAT.net.

Employment (Figure 1)

Total non-farm employment is showing signs of slowing from last quarter. Firms are still adding jobs to their payrolls but at an average growth rate of 13.2% lower. Firms are not expected to grow payrolls substantively, but they are not expected to shed jobs either. The bottom of the forecast uncertainty range (lower solid red line) is effective flat while the upper-bound of the uncertainty range (upper solid red line) reflects even slower job growth expectations. On average, LA is expected to add less than 2,000 jobs in the next half year.

Punchline: Job growth has slowed, but it is not expected to fall.

Figure 1: Forecasted Employment



Economic Coincident Index (Figure 2)

The economic coincident index is a metric that represents economic activity for the state. The average long-run growth is approximately 0.08%. Over the Fall months, the growth rate dropped by a full 0.3% and oscillated around the long-run average. Over the next three months, the growth rate is expected to return to its long-run rate. This growth is expected to slow down in the summer. 95% of model forecasts project growth rates in between 0.05% to 0.11% at the three-month interval and 0.05% to 0.13% at the six-month horizon.

Punchline: Economic activity fell sharply last quarter, but it is expected to rebound next quarter.

Figure 2: Forecasted Economic Coincident Index (Percent Growth)

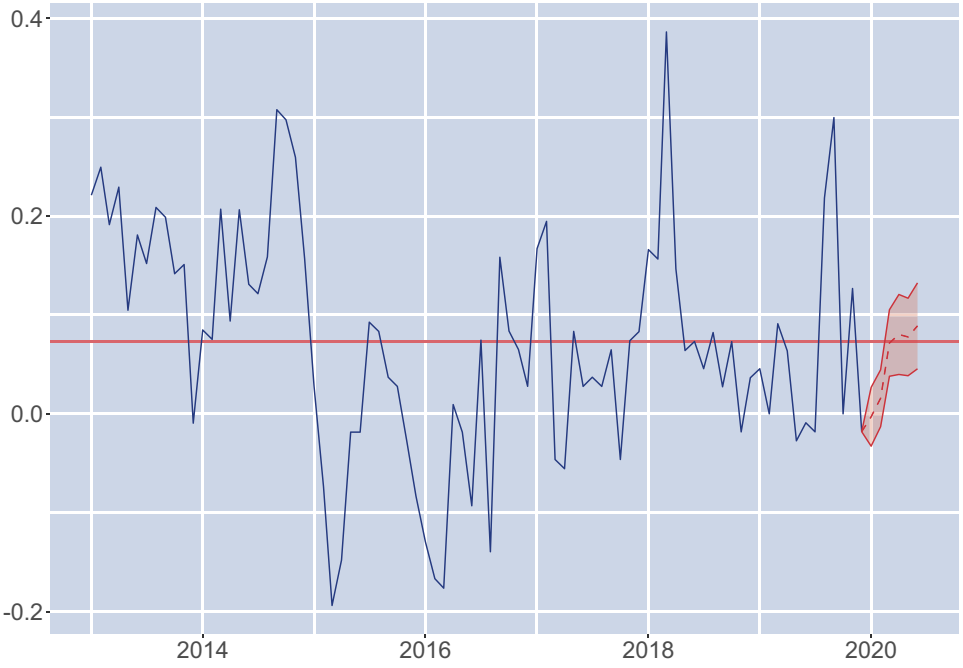
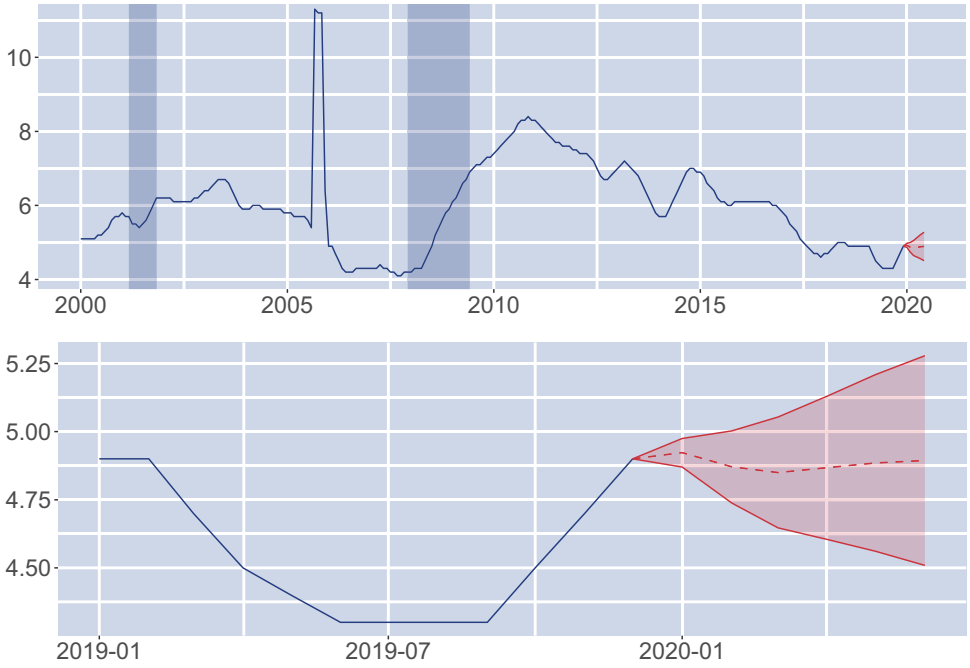


Figure 3: Forecasted Unemployment Rate (Percent)

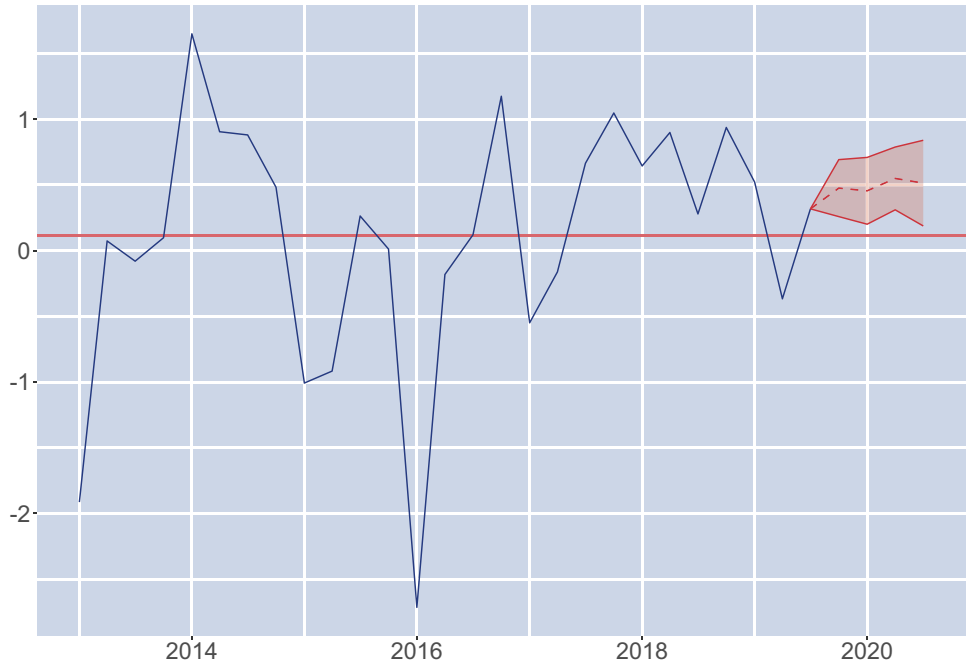


Unemployment Rate (Figure 3)

The unemployment rate for Louisiana increased from 4.3% to 4.9% over the last three months. Though not shown here, the labor force participation rate during this same time period is increasing as well. This implies that this increase upward in the unemployment rate is likely due to increased workers entering the labor force and will be relatively short lived. The average of all forecasted models is relatively flat for the next six months, since it does not account for the additional labor force information.

Punchline: The unemployment rate is expected to remain steady (and possibly drop slightly).

Figure 4: Forecasted Real Personal Income (Percent Growth)



Personal Income (Figure 4)

Real (inflation adjusted) personal income growth dropped below its long-run average last quarter, but quickly recovered. It currently remains above the long-run average indicating that real incomes are growing faster than normal. Our forecast for real income growth is moderately lower than last quarter's report. The average of all models projects an annual growth rate of 0.49%. At the six-month horizon, we expected real personal incomes to grow in the range of 0.19% and 0.84%.

Punchline: Real personal income is expected to grow at a rate above the long-run average for the first half of 2020.

Louisiana Wage Inflation

BY JARED JOHNSON

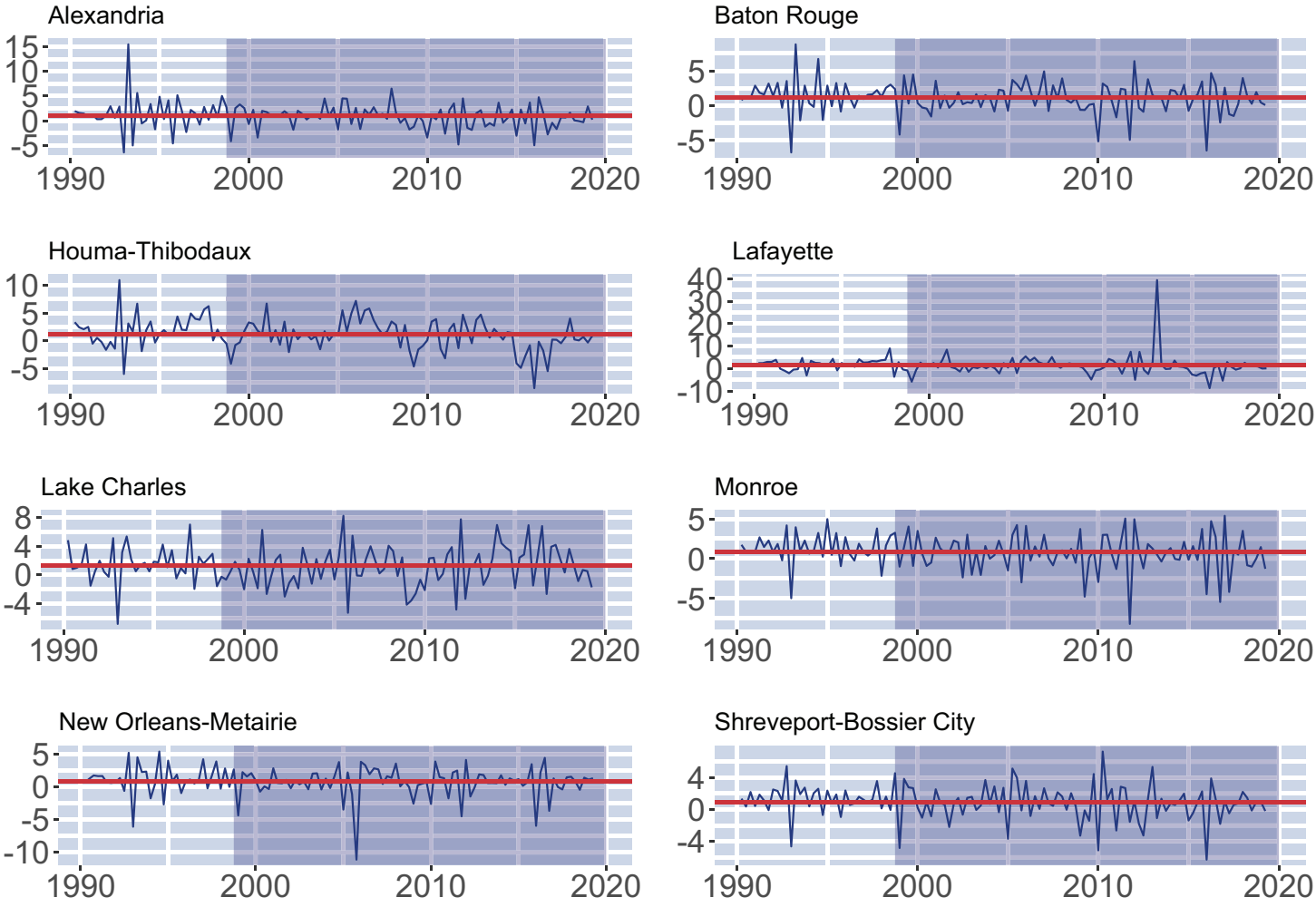
The Taylor Opportunity Program for Students (TOPS) Scholarship provides up to four years of state-funded tuition assistance for Louisiana students as long as they meet specific requirements. In order to qualify for the program, high school students must take a specific core curriculum, make the required standardized test score and meet grade point average requirements. These requirements are intended to prepare more students for success in college, improving graduation rates and educational attainment rates. In the 2018-2019 academic year, the TOPS program paid out $302,421,993 to 54,139 students, yielding an average award of $5,586 per student at an average cost of $157 per employed Louisianan. Louisiana makes such an investment in higher education because this investment is expected to pay dividends in the future, particularly through wage growth. The underlying theory is that with a program like TOPS in place, more students will attend and graduate from college; when more students graduate from college, they will obtain higher-paying jobs. This article tests the implicit assumption of TOPS: is there a significant increase in wages that correlates with the implementation of TOPS?

To test this question, I examine real wage growth across eight of Louisiana's Metropolitan Statistical Areas (MSAs) to determine if there is a significant increase in wages that correlates to the implementation of TOPS. According to the Board of Regents' 2019 TOPS report, the average time to complete a four-year degree for TOPS recipients is 4.5 years. TOPS first became available to all Louisiana students in 1998. Allowing enough time for students to graduate and find a job that matches their new qualifications, TOPS's impact on wages may begin to be evident by approximately Q3 of 2003 (indicated by the dark blue shaded region).

The results, however, are not as clear and require some context. For six of the eight MSAs, there were no significant increases in wages that correspond to the aforementioned implementation of TOPS. For the Monroe and Alexandria MSAs, there were significant decreases in wages over the same period. This could be the case because in smaller MSAs, a decrease in total wages could be observed when a relatively large employer shuts down operations. However, it is important to consider that real wages across the US have remained relatively flat for the past 30 years, and with the highest poverty rate in the country, Louisiana is no exception. Enrollment in the TOPS program has gradually increased over time, so it may be possible that more time is needed to see a boost in wages. While the results may not be ideal for TOPS advocates, it is worthwhile to point out that TOPS has great value in preparing more students for college, ensuring more students complete their degrees, and providing equitable access to higher education.

Overall, students that receive TOPS have 27% higher graduation rates and a 2.8-year shorter time to degree completion than non-TOPS Louisiana students.

Figure 5: Wage Inflation (Percent) by Metropolitan Statistical Areas

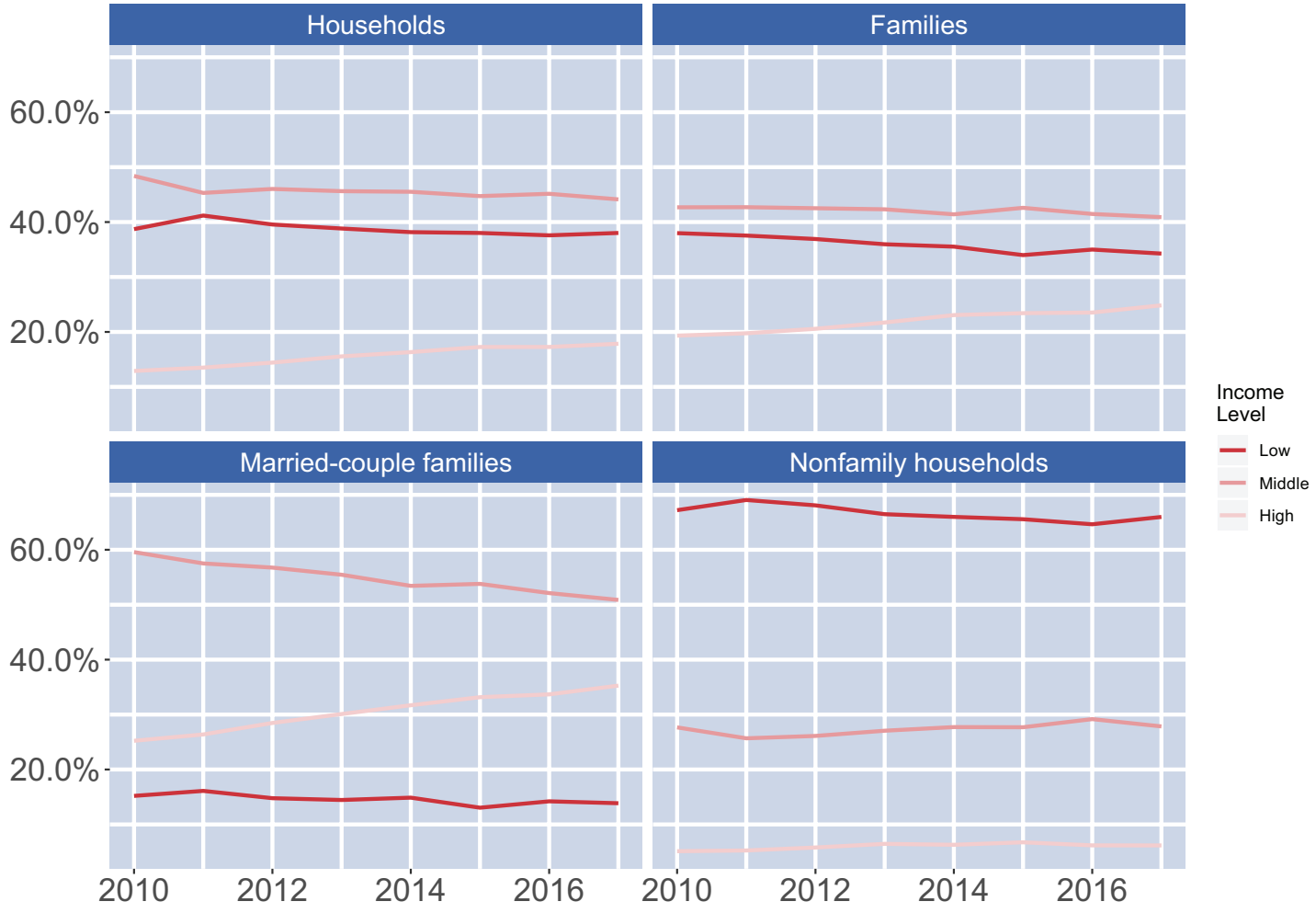


Louisiana Household Income

BY MARC ENOCH HEBANE GUEHI

Household income is the combined gross income of all members of a household, defined as a group of people living together in a housing unit, who are 15 years or older. It is often used to determine the economic health of an area or to compare living conditions between regions. There are other types of households: families, a household that includes the related family members; married-couple families, households with married couples (with or without children); and nonfamily households, which consist of a householder living alone or where the householder shares the home exclusively with people to whom he/she is not related. Each of these subgroups of households is not necessarily mutually exclusive. The figure below shows the percentage of the total Louisiana population in each income level from 2010 to 2017 by household type. The income levels are divided in low, middle, and high-income levels.

Figure 6: Income Levels (Percentage of Population)



Low Income Level

In Louisiana, households in the low-income level make from $10,000 to $34,999. The low-income level households account for the second largest population at about 38% of the total population in 2017. It has been decreasing steadily and slowly since 2011. In family households, it also accounts for the second largest population with about 34% of the total population in 2017 while also decreasing at an average rate of 0.6%. In married-couple families and nonfamily households, the low-income level accounts for the lowest portion of the population at about 14% and the biggest with 66% of the total population in each household type respectively in 2017.

Middle Income Level

In Louisiana, households in the middle-income level make from $35,000 to $149,999. The middle-class accounts for the biggest population across all types of households except for nonfamily households, where it is second to the low-income class. In general households, the middle-class population is slowly decreasing. In families, the middle class has been decreasing since 2010 at an average rate of 0.13%. It then fell by 0.9% in 2014 and went up again by 1.2% in 2015. In married couple families, it has been decreasing at an average rate of 1.2% which is faster compared to families and households. For nonfamily households, the middle class is increasing at an average rate of 0.6% after falling by 2% at the start of the decade.

High Income Level

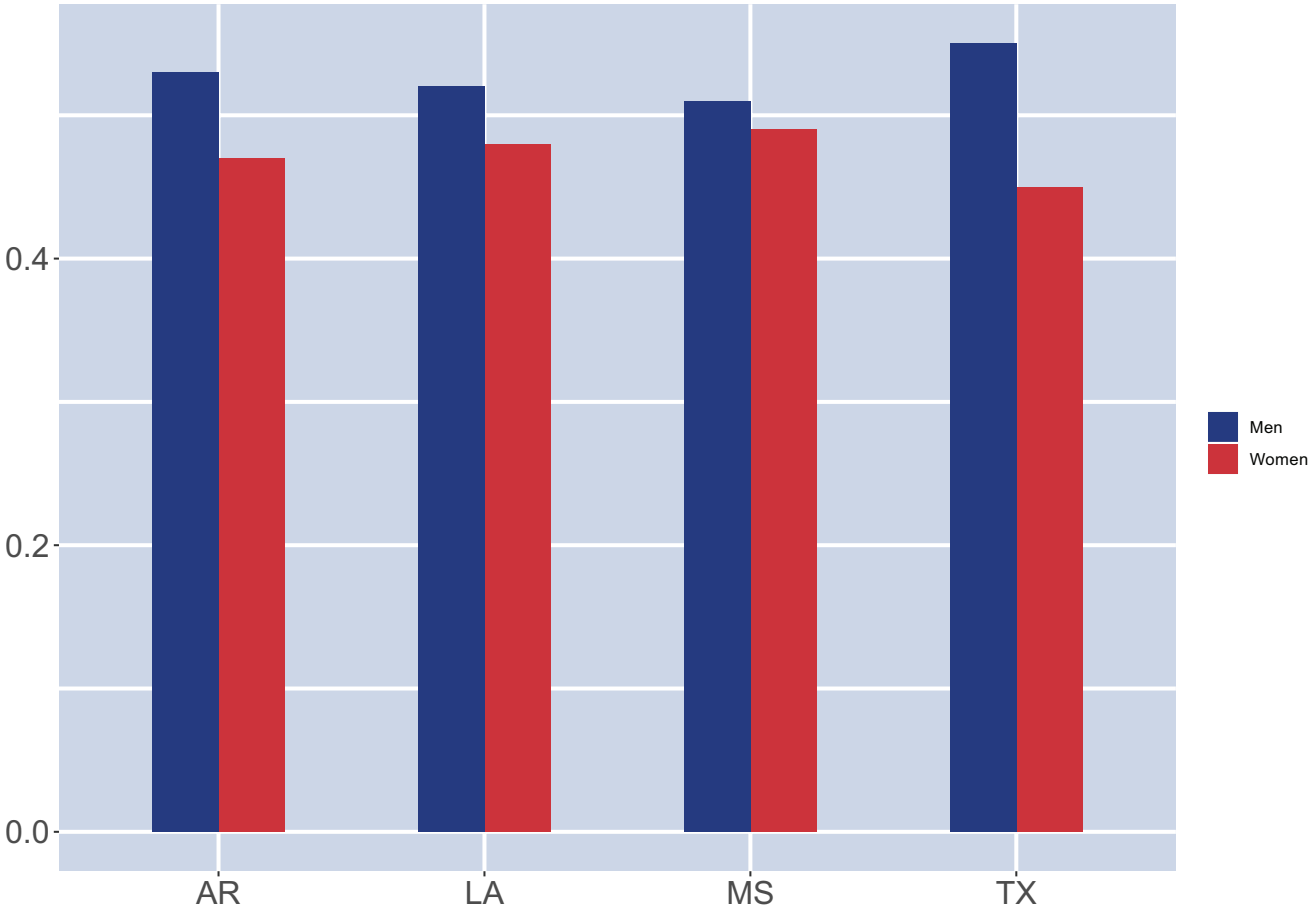
In Louisiana, households in the high-income level make from $150,000 and above. While the high-income class has the smallest number of households, it is increasing, and in some households, it is increasing at a relatively fast rate. Among all households and families, the high class is growing at an average rate of 0.7% and 0.9% respectively, while the low and middle class are decreasing. In married-couple families, the high class is increasing faster compared to households and families at about 1.4%. In nonfamily households, the high-income class remains the group with the lowest population at about 6% of the population and the lowest growth 0.14% since the start of the decade.

Louisiana Unemployment Rates by Demographics

BY QUENTIN JONES

Louisiana and its neighboring states share trends in the employment statistics of various social demographics. In Louisiana, Arkansas, Mississippi, and Texas, men constitute a larger percent of the workforce than women. Mississippi has the lowest difference with a 49% female workforce. Louisiana is close behind at 48%. Texas has the greatest disparity with 55% of its workforce being male.

Figure 7: Ratio of Labor Force by Binary Gender



Louisiana leads the region in unemployment at 4.9%, followed by Mississippi at 4.8%. Arkansas and Texas are similarly tied for third at 3.8% unemployment. There is a lower unemployment for men and higher unemployment for women in three states. In Arkansas, this trend is reversed. In all four states, the unemployment rate is lower among white individuals and notably higher among African Americans. This is consistent with the national trend for these demographics. There was not a sufficient population of Hispanic or Asian individuals to be reported in all four states. Mississippi omitted Latino workers and both Mississippi and Arkansas omitted Asian workers. Unemployment among Latino individuals was slightly below average in Louisiana and Arkansas and notably above average in Texas at 4.4%. Asian individuals in Louisiana and Texas experience an even lower unemployment rate than white individuals, 3.1% and 2.7% respectively.

Figure 8: Unemployment Rate (Percent)

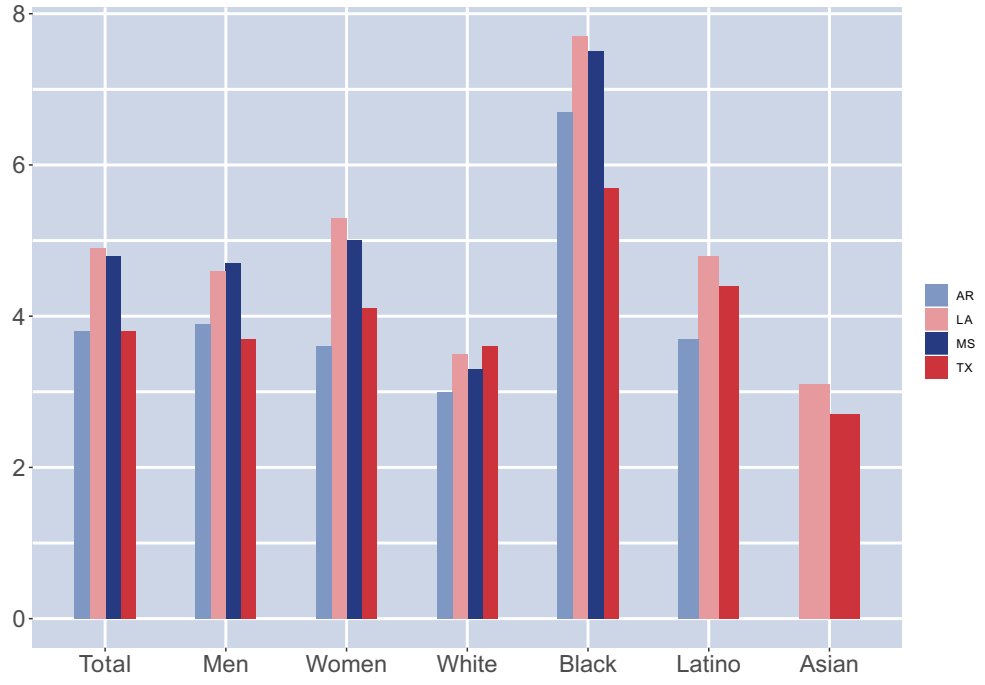
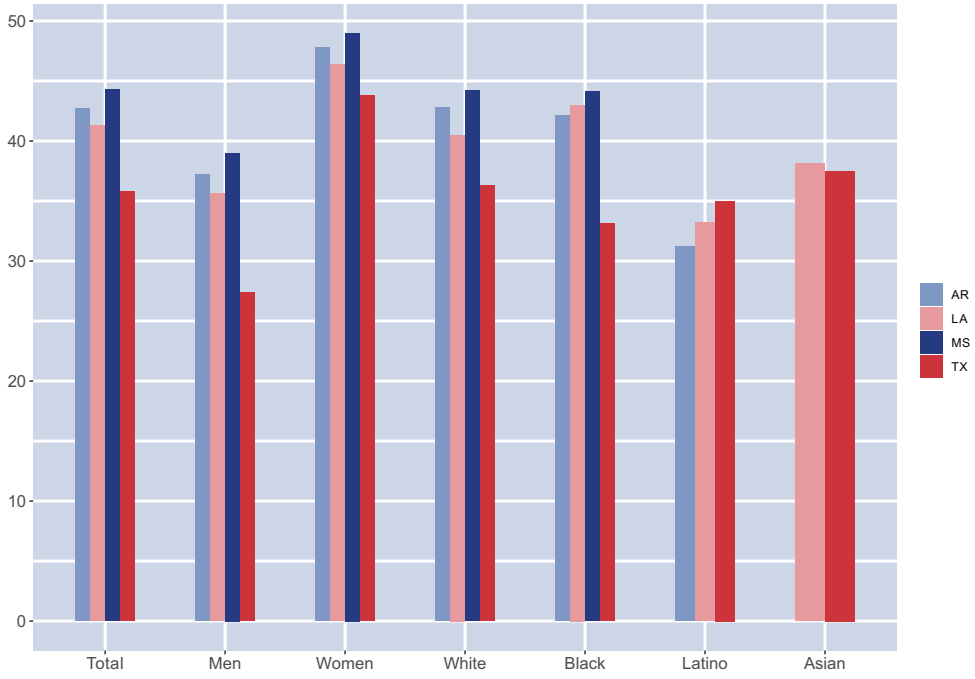


Figure 9: Labor Non-Participation (Percent)



Contrasting unemployment with the percent of the population not participating in the labor force at all, we see Mississippi lead by a sizable margin at 44.3%. Louisiana is third in the region with 41.3%, and Texas enjoys the lowest rate of non-participation at 35.8%. All states experience a higher rate of non-participation among women and a lower one among men. Labor participation for white individuals falls within 1% of the average for all states, with the largest gap being a 0.8% lower non-participation rate for white individuals in Louisiana. Labor non-participation is similarly within 1% of the average among African Americans in Arkansas and Mississippi. In Louisiana, the non-participation rate for African Americans is 43%, moving Louisiana to second place in labor non-participation for this particular demographic. In Texas, the non-participation rate for African Americans is 33.1%. This is 2.7% less than the state average and the lowest of any ethnic demographic in Texas. The same racial omissions present in unemployment data are present here. All states have a lower non-participation rate among Latinos, but the effect was most drastic for Louisiana and Arkansas with a decrease of 8.1% and 11.5% respectively. In Texas, the change was minor, only 0.8%. In Louisiana, non-participation among Asians was 38.1%, 3.2% below the state average. In Texas, it was 10.1% higher, at 37.5%.

Tech Pointe II

BY MATT FLYNN, LEVI HOLDER, AND DDON NGUYEN

Introduction

In 2019, Louisiana Tech announced an ambitious expansion to its Tech Pointe facility. The 42,000-square-foot Tech Pointe I has helped generate over 200 private-sector jobs and 150 student jobs since opening in 2012. Both Tech Pointe buildings are part of a master plan by Louisiana Tech to leverage its Enterprise Campus into a major research park, one that combines academic research, technology transfer and private-sector tenants to drive economic development along the I-20 Cyber Corridor. Tech Pointe II, the new 60,000-square-foot commercial office building is estimated to employ 500 direct jobs and supplement the existing Tech Pointe park as well as the Louisiana Tech Research Institute. Construction for this facility is expected to start in mid-2020 with an estimated completion date at the end of 2021. The results below summarize the economic impact to North Louisiana and the state of Louisiana. The full results are both the tables and the figures.

Table 1: Economic Impacts

		Labor Income		Value Added		Output	
		Impact	% of State	Impact	% of State	Impact	% of State
North Louisiana	Direct Effect	$29,064,546	0.1306%	$41,039,545	0.1043%	$83,599,341	0.1021%
	Indirect Effect	$7,954,175	0.0357%	$13,206,713	0.0336%	$27,086,413	0.0331%
	Induced Effect	$7,285,186	0.0327%	$14,295,096	0.0363%	$25,786,144	0.0315%
	Total Effect	**$44,303,907**	**0.1990%**	**$68,541,354**	**0.1743%**	**$136,471,898**	**0.1667%**
Louisiana	Direct Effect	$29,064,546	0.0205%	$41,039,545	0.0156%	$83,599,341	0.0151%
	Indirect Effect	$10,243,235	0.0072%	$16,949,184	0.0065%	$34,377,642	0.0062%
	Induced Effect	$7,429,947	0.0052%	$14,572,250	0.0056%	$26,267,883	0.0048%
	Total Effect	**$46,737,728**	**0.0329%**	**$72,560,980**	**0.0276%**	**$144,244,866**	**0.0261%**

Table 2: Multipliers

		Employment	Labor Income	Value Added	Output
North Louisiana	Type 1 Multiplier	1.304	1.274	1.322	1.324
	Type SAM Multiplier	1.618	1.524	1.670	1.632
Louisiana	Type 1 Multiplier	1.378	1.352	1.413	1.411
	Type SAM Multiplier	1.698	1.608	1.768	1.725

[1]There are other assumptions and limitations, as well. For a complete description, please contact Dr. Patrick Scott at pscott@latech.edu.

Methodology

The economic impact is estimated using an input-output table comprised of 489 reporting sectors of economic activity for the state of Louisiana. A multi-region adjustment is used in order to properly account for supply chain linkages and induced economic effects of activity that leak from the impact region (North Louisiana in this case) and return back to the region via additional consumer spending. This method by necessity has a few limitations, one of which being that the economic event does not create any large-scale supply disturbances[1]. Results are presented for both North Louisana as well as the state as a whole.

Output/Income

The addition of Tech Pointe II projects to bring massive growth to North Louisiana, with an overall impact of 865 jobs, generating over $72 million in value added and having a complete output impact of $144 million. As expected, the majority of these effects come from the direct employment and construction estimated at $41 million value added and $83 million overall output. The largest contributing industry to the direct impact is the custom computer programming services industry. This falls in line with the trend set by Tech Pointe I. Overall, the custom computer programming services industry is projected to generate 221 jobs, create $15 million value added, and have a $26 million overall output. To put that into perspective, this one industry will account for 22% of all jobs supported, 20% of value added and 18% of output. This compliments research presented in the Fall 2019 Real Report that supported the computer services industry being one of the most rapidly growing industries in the state (business.latech.edu/realreport). The issue with this industry is that it has very little impact outside of its direct impact. The indirect and induced outputs combine for roughly $130,000 in terms of output, a mere 0.5% of the direct impact. In connection with the custom computer programming services industry is the computer related services industry. It is expected that this industry will produce $11 million in output which will be a 2.12% growth for this industry, one of the largest expected. In terms of indirect impact, the employment services industry is expected to support 40 jobs and create over $2.5 million in value added. This can most likely be attributed to the expected growth of the custom computer programming services industry. It is also expected that there will be a $2 million indirect and induced impact to the real estate industry. Like the employment services industry, this can potentially be attributed to the fact that jobs may be filled from out-of-area labor supply. Other industries expecting to see large induced impacts are the hospital industry and the owner-occupied dwellings industries, largely due to employee compensation and property income respectively.

Employment

Perhaps the largest economic impact comes as a result of the employment gained in the region. Tech Pointe II is expected to house 500 new jobs in a variety of different sectors that support an additional 365 jobs in the larger economy (excluding construction employment). Figure 10 shows the top ten industries by expected job growth. The largest impact comes in the computer programming industry, with 221 jobs expected to be added. This will correspond to a $26,861,737 total effect on industry output at the state level. Two of the top three industries by growth are custom computer programming and computer related services which are expected to grow 1.68% and 2.12% of their respective total sizes. These represent significant growth for our region and show the potential of Tech Pointe's impact beyond just our region. Louisiana Tech has the opportunity to become a talent pipeline for businesses in the software industry, paving the road toward making significant economic gains with stable high-paying jobs. Table 2 shows the project-specific multipliers for the two regions. The more conservative Type 1 (which excludes induced consumer spending) and the Type SAM multipliers are shown for each region. Both multipliers are relatively low for both the region as well as the state. This indicates a great deal of "leakage" out of the state. Louisiana relinquishes the lion's share of economic impacts to the rest of the continental US. Half of the economic effect beyond the direct effect portion comes from induced consumer economic activity. This is relatively large compared to surrounding states in the area.

Tax Implications

The construction of Tech Pointe II as well as the employment it is expected to support is estimated to generate $5,333,364 in state wide and local government taxes. Of this figure, 94% is generated in the North Louisiana region. 55% of this figure is produced sales tax revenue, 22% from corporate property taxes, and 14% from personal income tax revenues. Consumer and personal taxation accounts for over 70% of state and local taxes. North Louisiana contributes 94% of the state total taxes. As one moves away from the epicenter of the economic shock, the impact is almost negligible. This exemplifies the insular nature of the Louisiana economy. Federal tax receipts total $9,213,161. Social security taxes (both employer and employee contributions) account for just over 50% of federal revenues. Personal income tax receipts account for 41% of taxes.

Figure 10: Estimated Employment Growth by Sector (Number of Jobs)

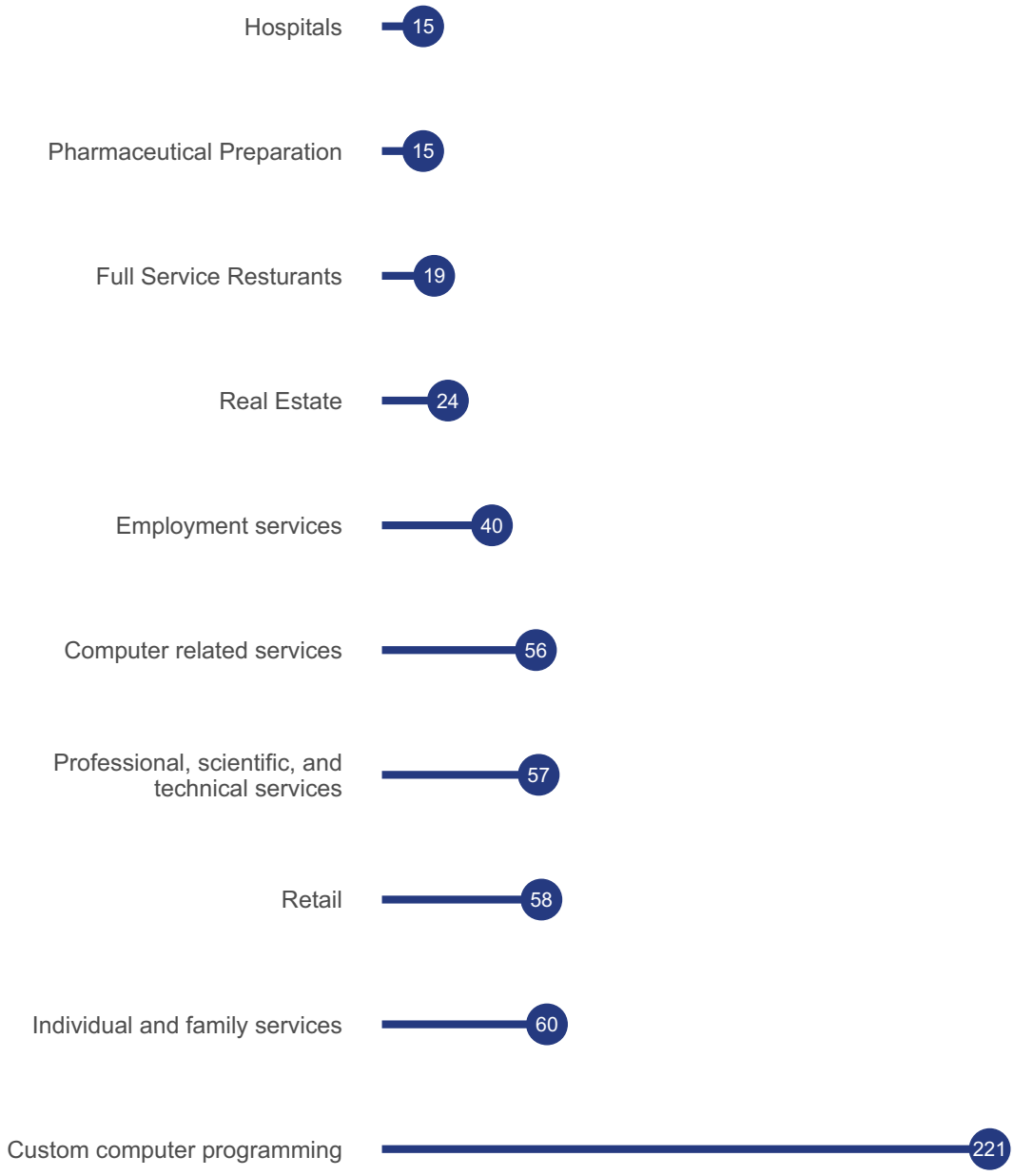


Figure 11: Federal Tax Revenues by Receipt Types

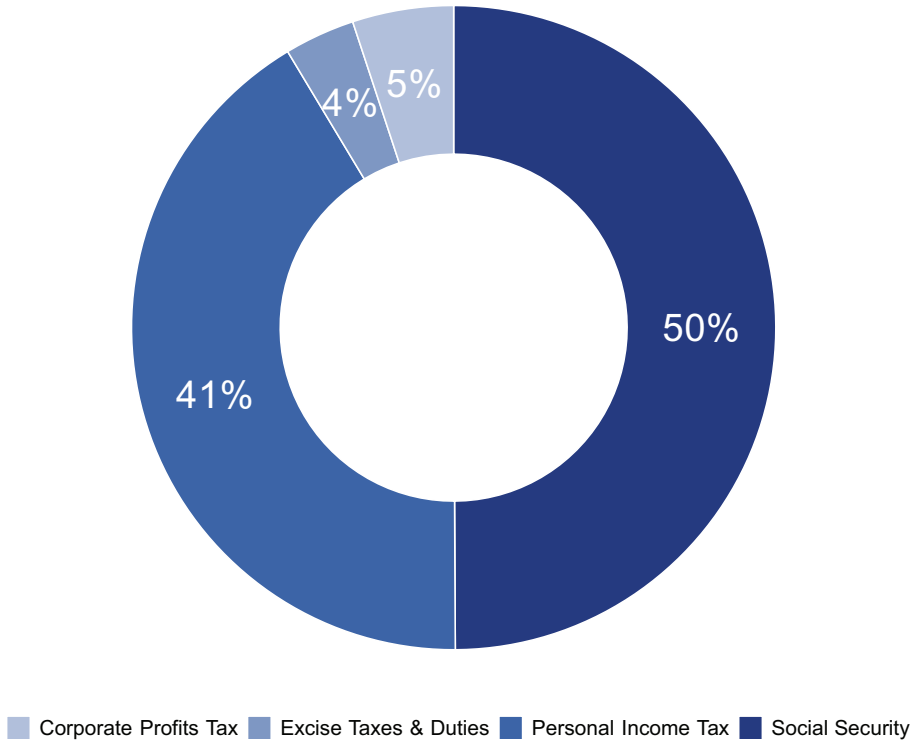
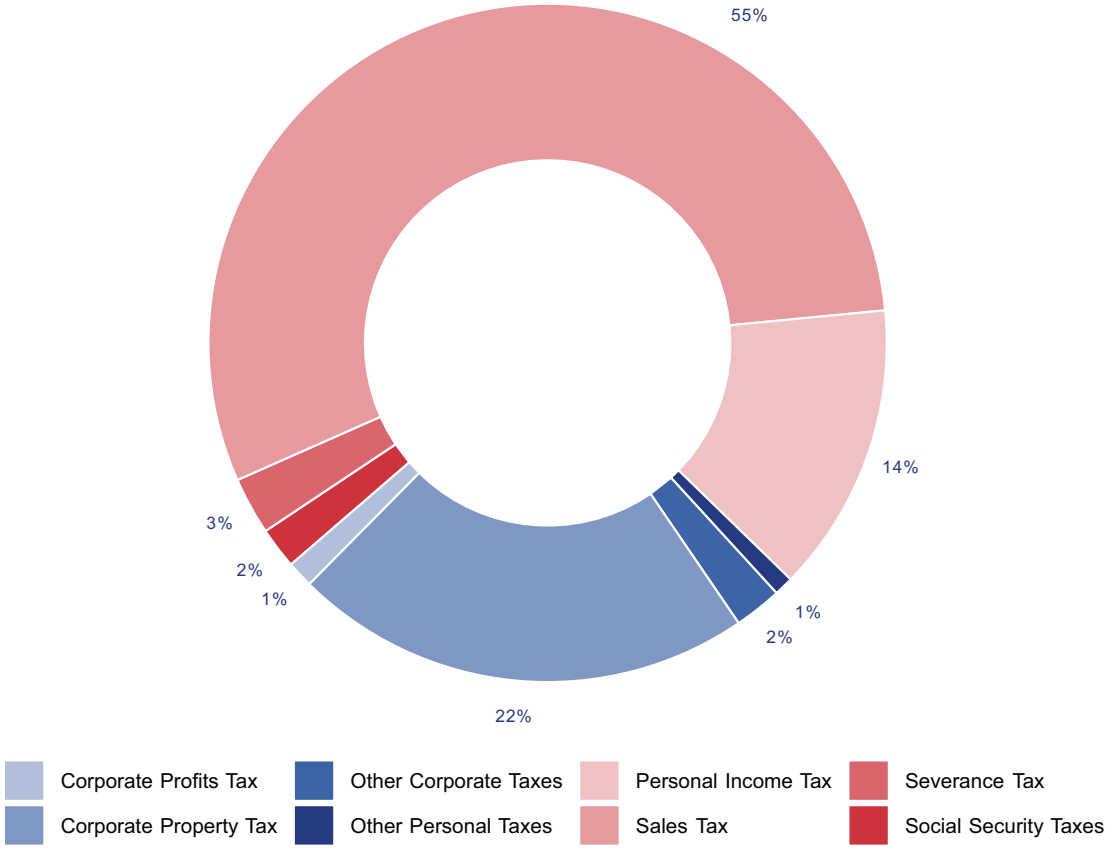


Figure 12: State Tax Revenues by Receipt Types



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