



UNIVERSITY of
LOUISIANA
L A F A Y E T T E

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Analysis of industrial job uptake in Louisiana

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Background and purpose

- Since the early 2010s, Louisiana has witnessed numerous announcements of massive industry investments, often touting large numbers of jobs. Capital expenditures in the billions and job impacts in the thousands are not uncommon.
- These jobs and the claims of transformative economic impact are often not visible to many residents, including those who live in communities near industry. Unlike a retail establishment, industrial jobs are often “hidden” behind the fence line for many area residents leaving communities unsure if jobs tied to major announcements ever materialized.
- What types of jobs are associated with industrial projects, and who gets them? Is the local workforce filling these positions?
- Our goal is to analyze the recent past of industrial job creation in Louisiana to quantify total number of jobs and the extent to which these jobs are filled by the local workforce. To do so, we examine a range of statewide and local employment data, including data on commuting patterns.



Key takeaways from the analysis

- Louisiana had strong job growth in chemical manufacturing and heavy construction during the 2010s.
- Industrial jobs are heavily concentrated in certain parishes. So were the 2010s job gains, especially in Cameron, Calcasieu, and Ascension.
- Commuting data shows that many of these industrial jobs tend to be filled by workers who live in nearby parishes, but not always in the same parish where the investment occurred.
- During local construction booms, workers often travel from much further distances with a significant number of workers in Texas building projects in Louisiana and a similar number from Louisiana building projects in Texas.
- Though industrial jobs pay well, employment in these jobs is uneven across demographic groups. Industrial workers are mostly men, and wage and employment levels differ by race and ethnicity.



How we analyze industrial employment

These questions are difficult to answer directly, partly due to the limitations of publicly available data. And while many studies focus on modeled or projected job creation, our aim is to examine the observed patterns of job creation.

To do so, our analysis combines a few approaches.

- We examine broad statewide trends in employment in construction and manufacturing industries, as well as trends in selected parishes where industrial employment is concentrated. We focus on the years since 2010.
- We explore local commuting patterns in places with high industrial employment, leveraging data that links where workers work with where they live. We focus on localized periods of dynamic growth in the 2010s.
- To describe the kinds of jobs and workers in industrial employment, we focus on the demographic makeup of different segments of the industrial workforce.

Taking data limitations into account, although we show specific numbers and localized maps of employment, we emphasize general patterns in the data.



What we mean when we say industrial employment

Construction phase

- Tends to be temporary and project-based.
- Most related to the Construction industry sector (NAICS 23).
- Construction projects (especially large and complex ones) often have complicated management and contracting arrangements that can affect where the jobs are “counted” in data.

Operations

- Tends to be ongoing, often at lower levels of employment than construction, especially for capital-intensive projects.
- Most related to the Manufacturing industry sector (NAICS 31-33), although other industries may be involved as well.
- This includes “downstream” oil and gas industries like refining and chemical manufacturing

Both construction and manufacturing are “goods-producing” industries, along with natural resources (as opposed to “services” industries). Note that commuting data only reports goods-producing jobs and does not differentiate construction and manufacturing.



Outline

- **Statewide industry trends** – A high-level scan of where industrial jobs are located and how they have changed
- **Local areas and commuting patterns** – Highlights from commuting patterns in key parishes
- **Characteristics of industrial workers** – Demographics, earnings, and other aspects of the industrial workforce in Louisiana
- **Implications**
- **Appendix: Parish vignettes** – Trends and maps for specific parishes, emphasizing periods of employment increase
- **Appendix: Top occupations in manufacturing and construction industries** – with wage and employment levels
- **Appendix: Key terms**

As a complement to this slide deck, see also the **executive summary** and **technical note**.



Statewide industry trends

Findings from statewide industry trends

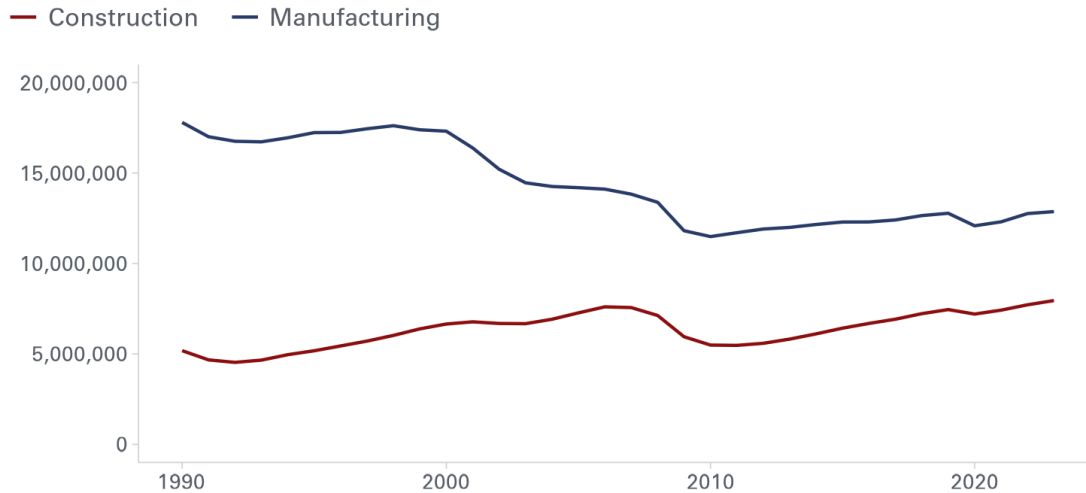
For context, we review trends and geographic patterns in industrial employment.

- Industrial growth since 2010 has translated into Louisiana jobs.
- Large capital investments at industrial sites are often marked by a construction boom followed by much smaller increases in long-term operational employment in manufacturing.
- Louisiana's employment trends reflect national trends of a declining manufacturing sector, aside from strong growth in chemical manufacturing and flat growth in refining.
- Industrial growth translated into major construction job surges in the 2010s, though jobs driven by industry-scale investments in facilities and infrastructure are difficult to disentangle from residential and commercial construction.



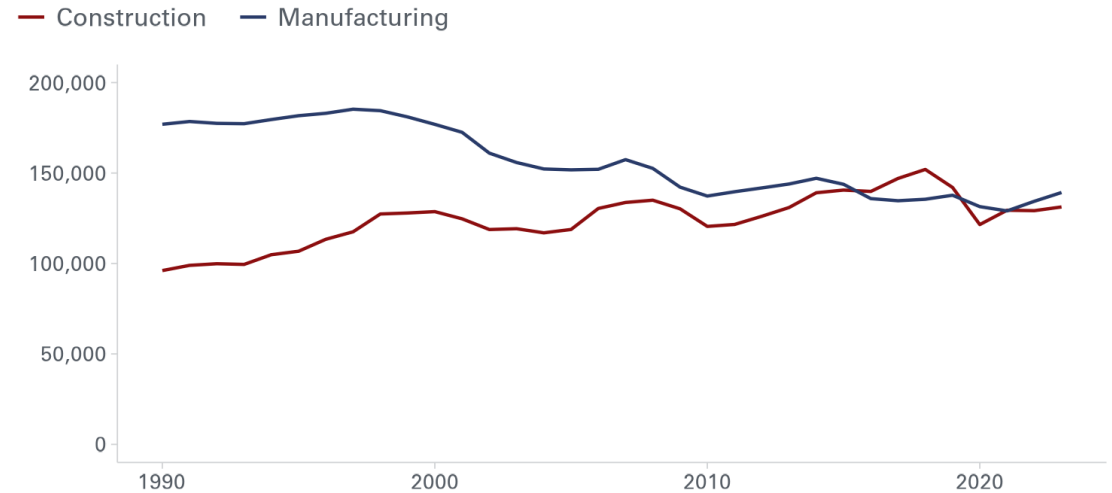
Over the long-term, manufacturing employment has declined nationally and in Louisiana. Louisiana average employment during 2015-2019 had fallen 24% from the 1990s average, compared with a decrease of 27.5% nationally. In the late 2010s, construction employment in Louisiana was at elevated levels relative to earlier years. This likely reflects, in part, industrial construction in the state during the 2010s.

U.S. employment in construction and manufacturing



Source: QCEW

Louisiana employment in construction and manufacturing



Source: QCEW

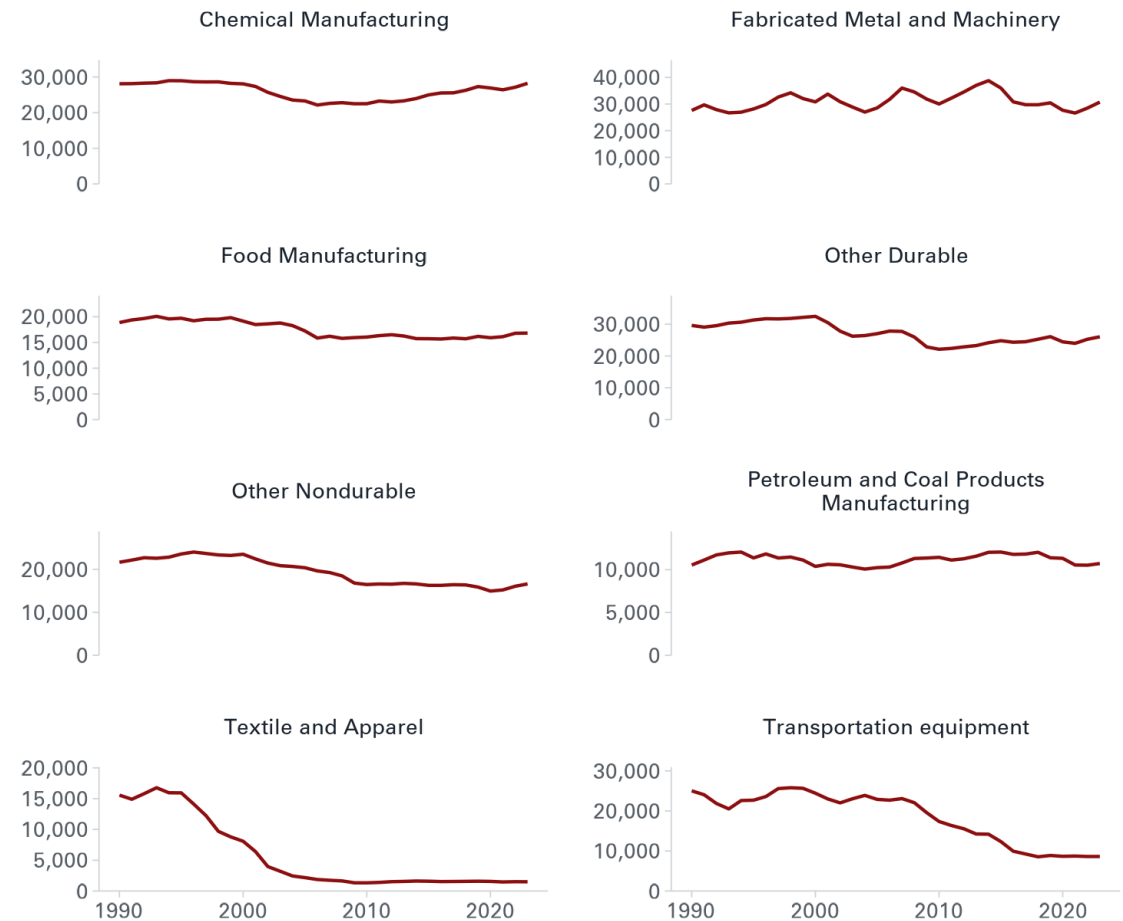
Manufacturing industries

The industries that make up the manufacturing sector in Louisiana have seen uneven growth in recent years.

Chemical manufacturing has seen steady growth since the late 2000s. Long-term growth in **petroleum and coal products manufacturing** (refineries) has been flat.

This contrasts with significant losses in textile and apparel manufacturing industries during the 1990s and 2000s and transportation equipment manufacturing during the late 2000s and 2010.

Louisiana employment in selected manufacturing industry groups



Source: QCEW



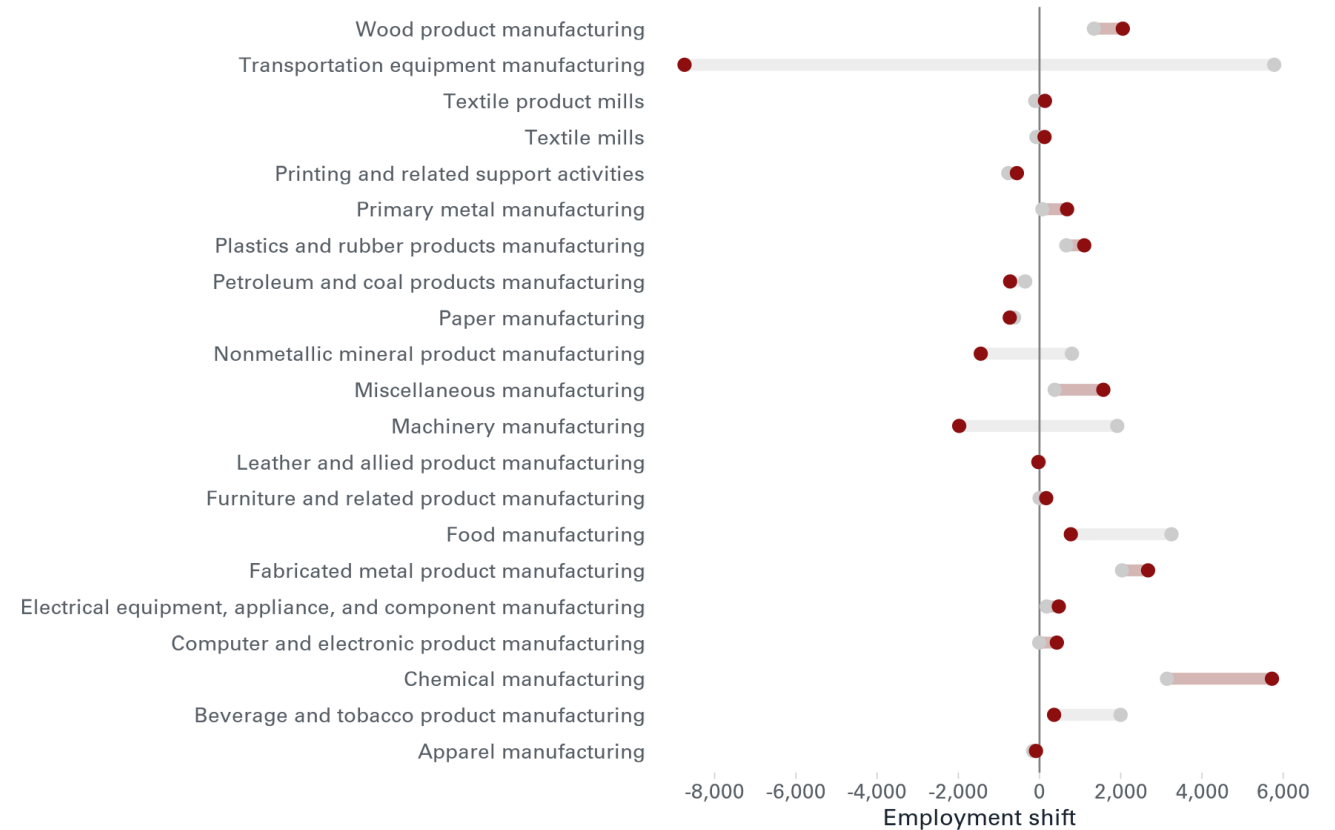
Among Louisiana's manufacturing industries, **chemical manufacturing** is the largest, and it has outpaced national growth.

Several other industries have underperformed relative to national trends. Notably, transportation equipment manufacturing lost thousands of jobs, chiefly due to closures (e.g., Avondale Shipyard).

Actual versus expected employment growth in manufacturing industries

Based on Louisiana and national manufacturing trends, 2010-2023

● Actual change ● Expected change ■ Outperforming ■ Underperforming



Source: Blanco Center analysis of QCEW. Note: This is a shift-share analysis of manufacturing industries based on 3-digit NAICS codes.

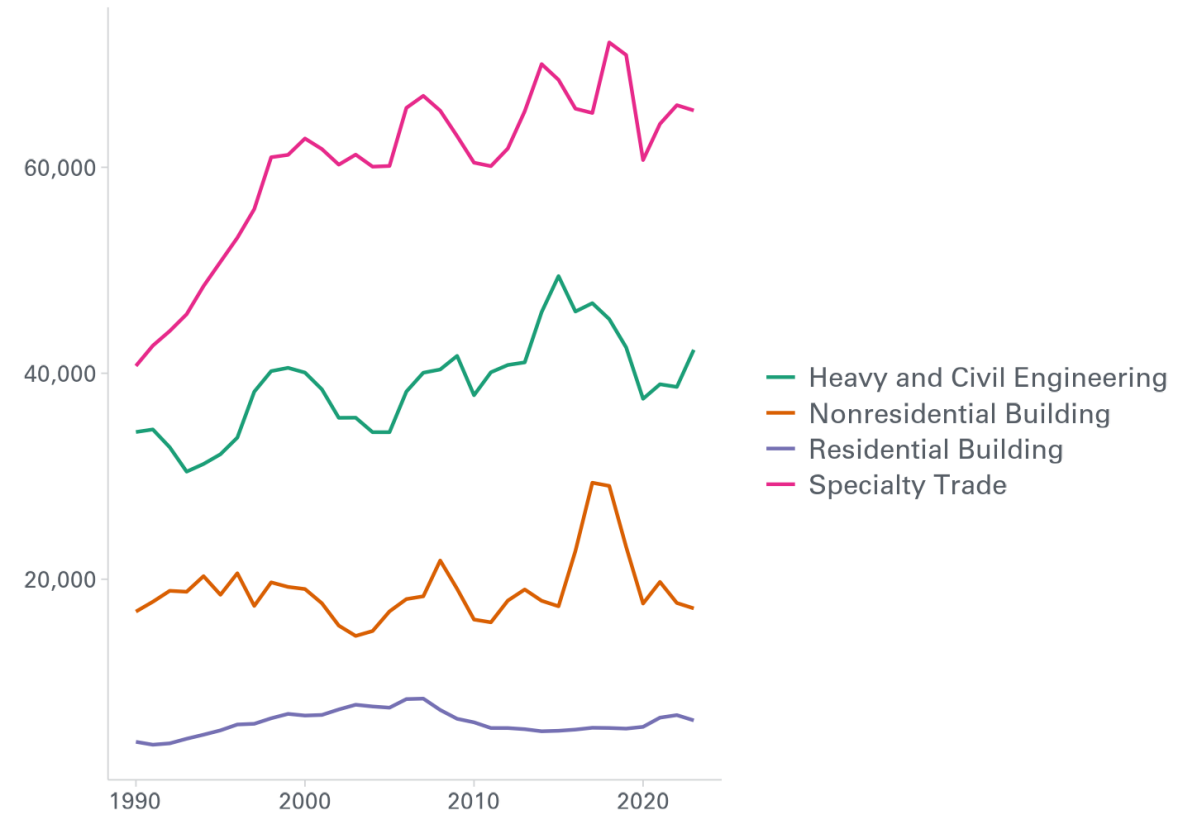
Construction industries

While **Residential Building** Construction remained flat, other construction industries experienced waves of jobs in the 2010s.

Specialty Trade Contractors accounts for roughly half of construction jobs, and it likely overlaps with industrial construction and other residential and commercial construction.

A large share of Louisiana's construction jobs are in **Heavy and Civil Engineering** Construction, and along with **Nonresidential Building** Construction, its employment can be tied to industrial scale construction projects.

Louisiana employment in major construction industries



Source: QCEW

Industry concentration*

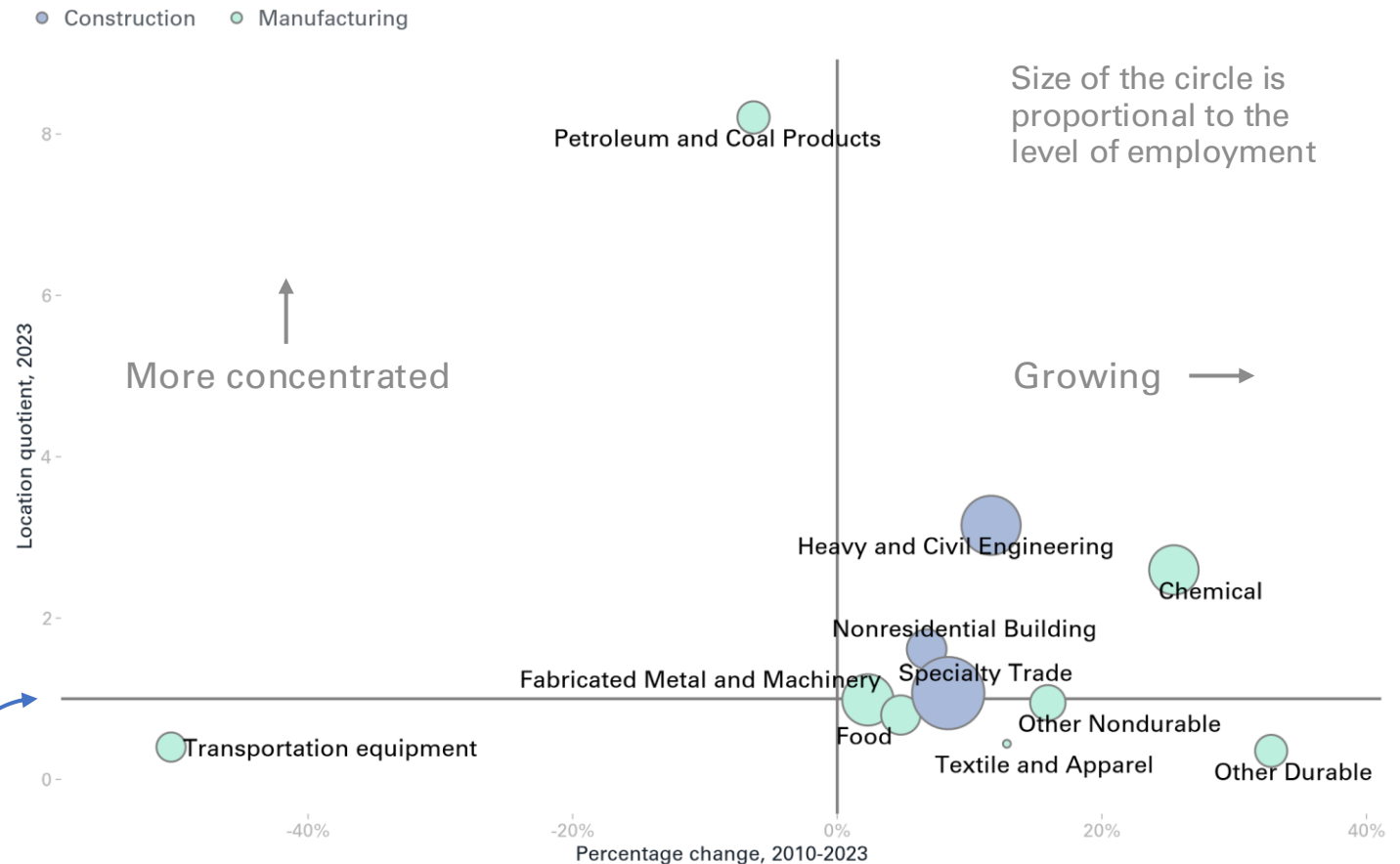
Louisiana's manufacturing sector has strong concentrations in petroleum refining and chemicals. Chemical manufacturing accounts for much of the job growth since 2014.

The Construction sector includes a strong concentration in Heavy and Civil Engineering Construction, which can include industrial facilities, infrastructure, and coastal and water management.

*A location quotient greater than one means that an industry is concentrated in the state.

Employment concentration and change by industry

Selected manufacturing and construction industries, 2010-2023

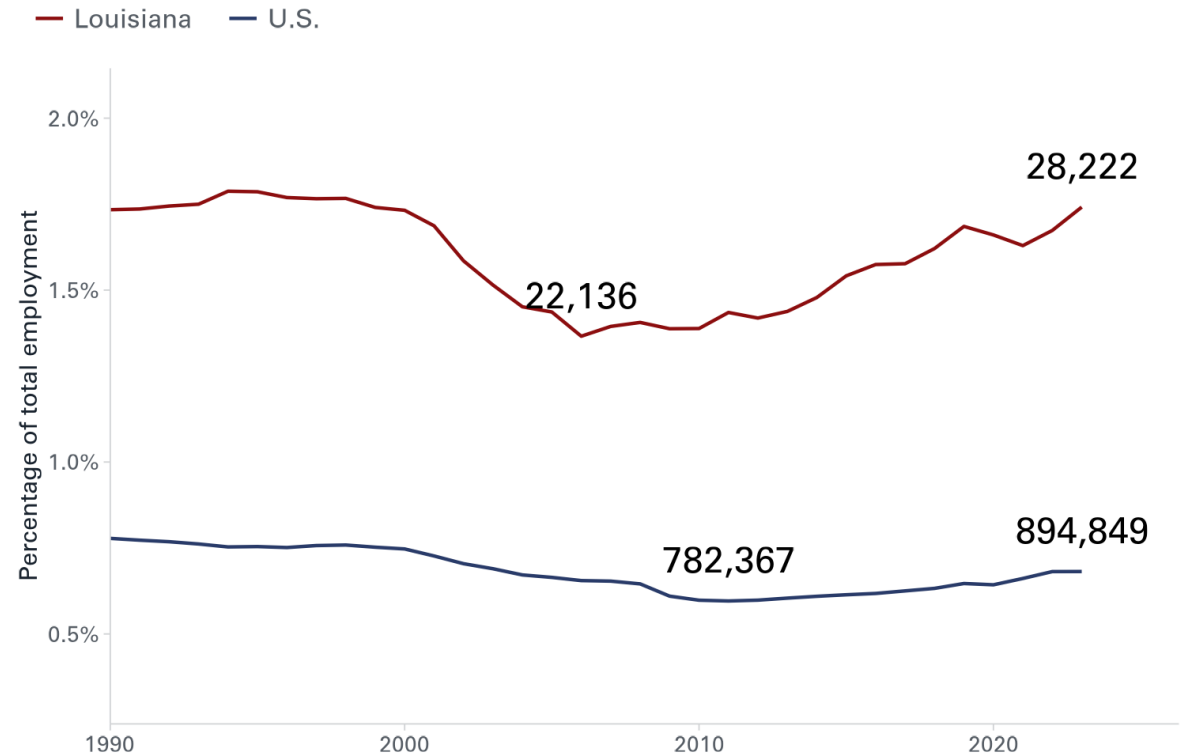


Chemical manufacturing spotlight

Louisiana's growth in chemical manufacturing is consistent with a national trend since the early 2010s.

However, chemical manufacturing accounts for a larger share of employment and has grown at a faster pace in the state than in the nation as a whole. Between 2010 and 2023, employment grew by 25% in Louisiana and 14% nationally.

Growth in chemical manufacturing employment



Source: QCEW



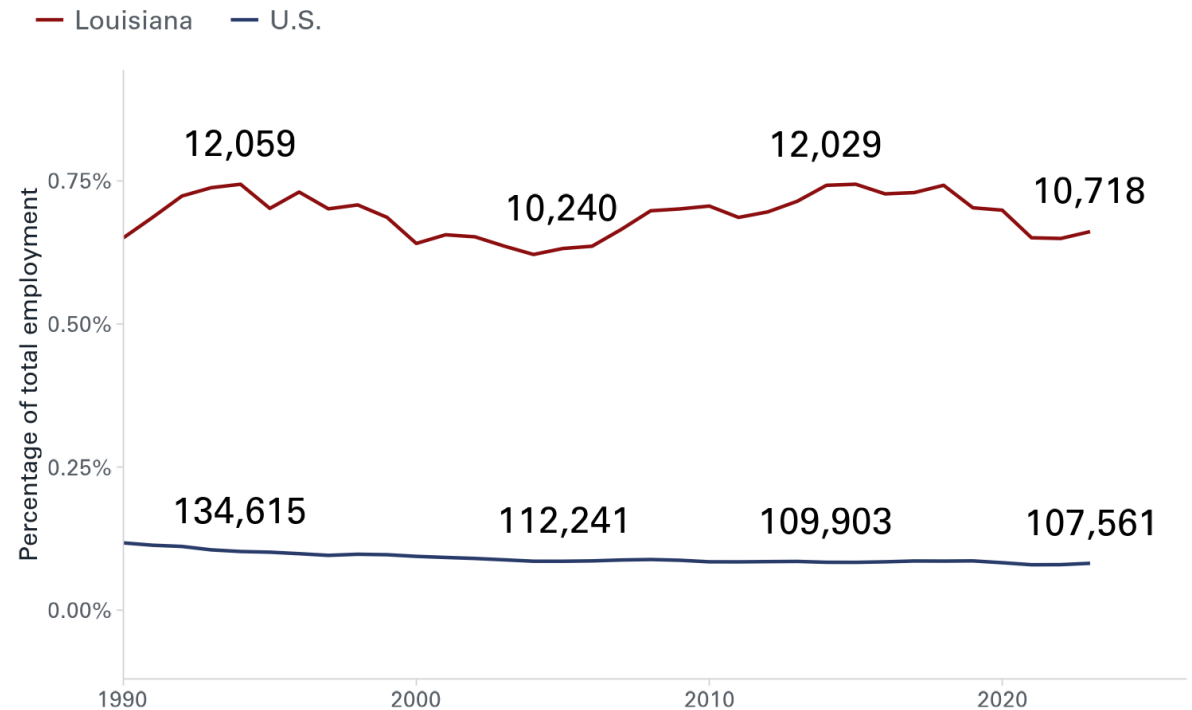
Petroleum refining spotlight

Nationally, employment has gradually declined.

In Louisiana, petroleum refining accounts for less than 1% of total employment, but this percentage is higher than in any other state. Louisiana's petroleum refining employment has been more cyclical over the long term but has declined since the mid-2010s.*

*These swings are likely tied to closings and re-openings of particular sites. Given national trends, recent closures may be permanent.

Growth in petroleum and coal products manufacturing employment



Source: QCEW



Employment “churn”

Industries have a certain amount of regular turnover as workers flow into and out of jobs.

Because of this constant churn, employment opportunities are not only limited to newly created jobs. Rather, regular churn opens available positions for new workers to fill.

Construction has a high rate of turnover, and manufacturing has a low rate. Both rates have been declining over time.

Quarterly employment turnover rates by industry

8-quarter rolling average for Louisiana workers



Source: QWI

Local areas and commuting patterns: Highlights

Local areas and commuting patterns

This section begins with **background** on:

- Recent major industry investments in Southwest Louisiana and the Mississippi River corridor and their alignment with employment trends in construction and manufacturing.
- A quick explanation for how we analyze commuting patterns linked to local changes in employment.

Then, we **summarize highlights** from the local analysis, using parish-level trends and commuting patterns for illustration.

A full set of commuting maps and employment trends for the following parishes are in the **parish vignettes** appendix:

- Cameron
- Calcasieu
- Ascension
- River Parishes (St. James, St. John the Baptist, St. Charles)



Key takeaways from local areas and commuting patterns

- Industrial investments often require significant short-term construction. The jobs created during Louisiana's industrial construction boom in the 2010s were concentrated in Ascension, Cameron, and Calcasieu Parishes.
- Many of these construction jobs were filled by workers who lived outside the parish where the job was located
 - The exchange of labor across the Louisiana-Texas border peaked during the 2010s (in both directions). In Cameron, Calcasieu, and Ascension Parishes, a significant portion of net new jobs were linked to workers who live within other regions of Louisiana or Texas.
 - While many industrial jobs are also filled by local workers in nearby parishes or counties, these workers do not always reside in the same parish where the job is located.
- A large share of new manufacturing jobs in Calcasieu and Ascension Parishes are also held by local or nearby parish residents.



Large Industrial Projects (\$500M+) since 2010 in Calcasieu Parish

Sasol Ethane Cracker and Chemical Complex

Announced: 2012
 Operations Started: tbd -late 2020's
 Estimated Cost: \$13 billion

Bayou Bridge Pipeline

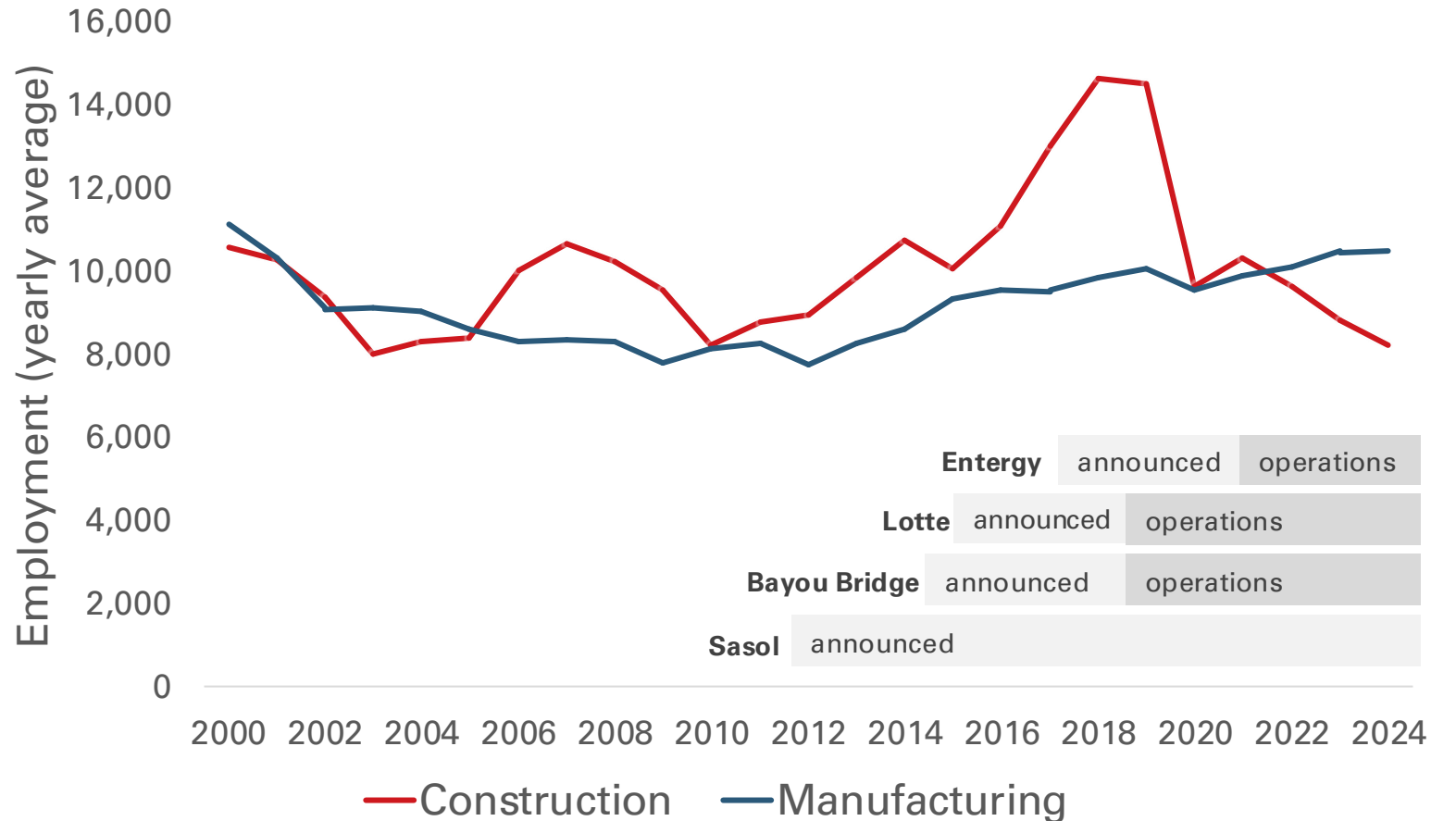
Announced: 2015
 Operations Started: 2019
 Estimated Cost: \$750 million

Lotte Chemical and Westlake Chemical Complex

Announced: 2016
 Operations Started: 2019
 Estimated Cost: \$3 billion

Entergy Lake Charles Power Plant

Announced: 2018
 Operations Started: 2021
 Estimated Cost: \$872 million



Note: specific investments cannot be directly linked to employment, but changing employment levels may track with announced construction and operations periods.

Major liquid natural gas (LNG) projects in Cameron Parish

Cameron LNG (Phase 1)

Announced: 2014, Operational: 2019-2020
 Estimated cost: \$10 billion

Cameron LNG Expansion

Announced: 2016
 Estimated cost: \$5-8 billion

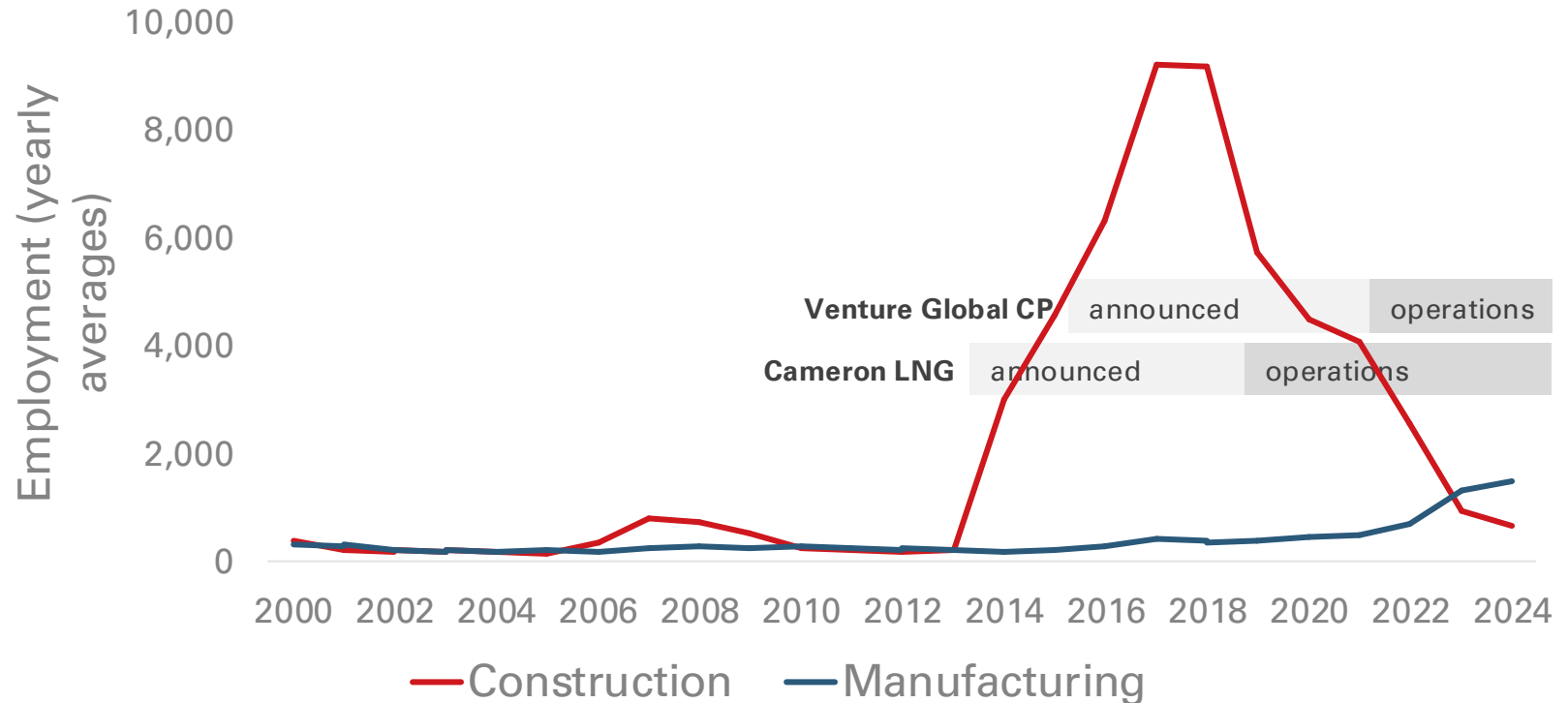
Venture Global Calcasieu Pass (CP1)

Announced: 2014, First production: 2022
 Estimated cost: \$4.5 billion

Venture Global CP2

Announced: 2016
 Estimated cost: \$15 billion

Additional LNG projects are proposed or in construction in nearby Calcasieu Parish and on the other side of coastal Louisiana in Plaquemines Parish.



Note: specific investments cannot be directly linked to employment, but changing employment levels may track with announced construction and operations periods.

Large Industrial Projects (\$1B+) since 2010 in Mississippi River corridor (Ascension, St. James, St. John, St. Charles, St. Bernard, and Plaquemines)

South Louisiana Methanol Facility (St. James Parish)

Announced: 2013, Operations Started: 2013

Estimated Cost: \$1.3 billion

Shandong Yuhuang Chemical Methanol Facility (St. James Parish)

Announced: 2014, Operations Started: 2017

Estimated Cost: \$1.85 billion

Formosa Plastics "The Sunshine Project" (St. James Parish)

Announced: 2018, Operations Started: Not yet started
(Construction delayed)

Estimated Cost: \$9.4 billion

Methanex Geismar 3 Methanol Plant (Ascension Parish)

Announced: 2019, Operations: 2024

Estimated Cost: \$1.4 billion

Shell Chemicals Olefins Facility Expansion (Ascension Parish)

Announced: 2019, Operations: 2020

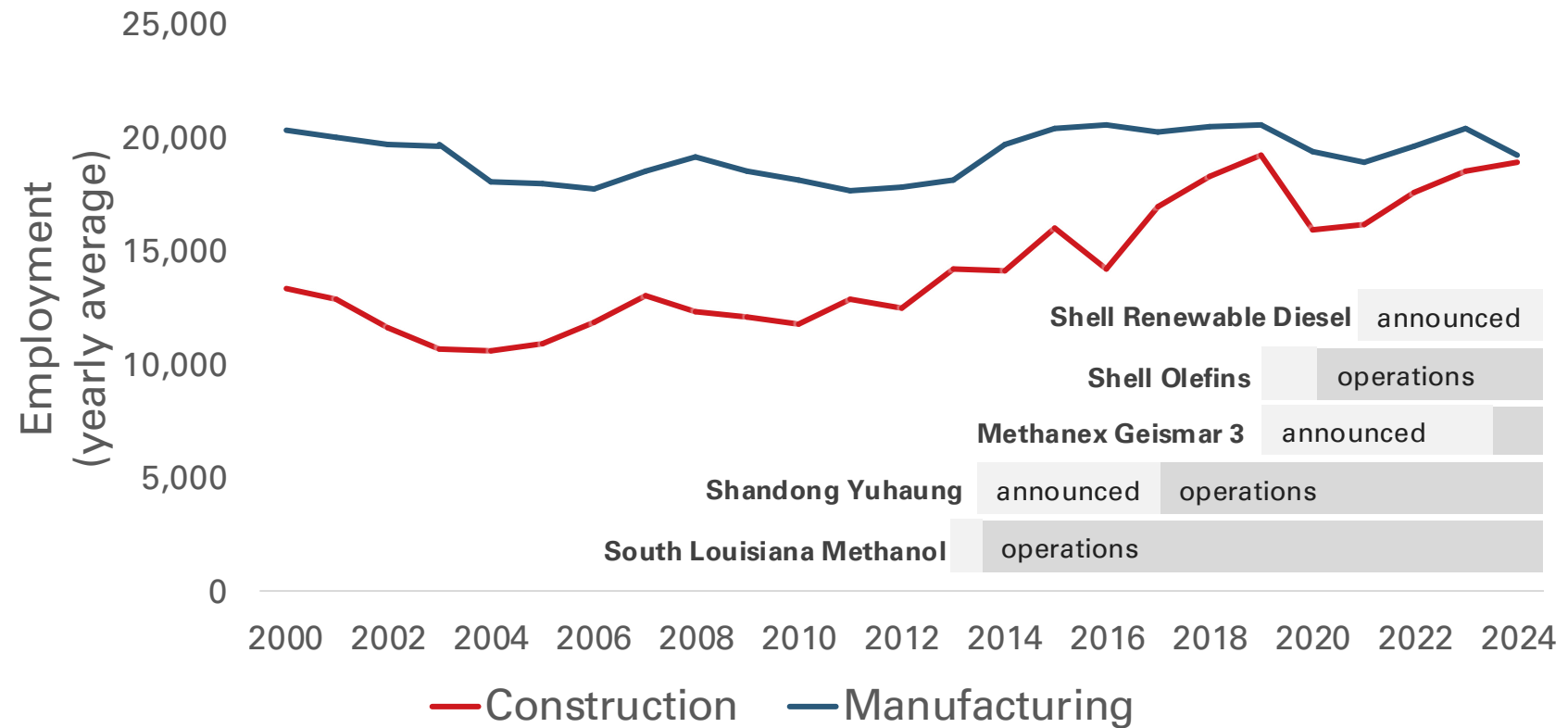
Estimated Cost: \$1.1 billion

Shell Renewable Diesel (St. James Parish)

Announced: 2022

Operations: 2025

Estimated Cost: \$1.5 billion



Note: specific investments cannot be directly linked to employment, but changing employment levels may track with announced construction and operations periods.

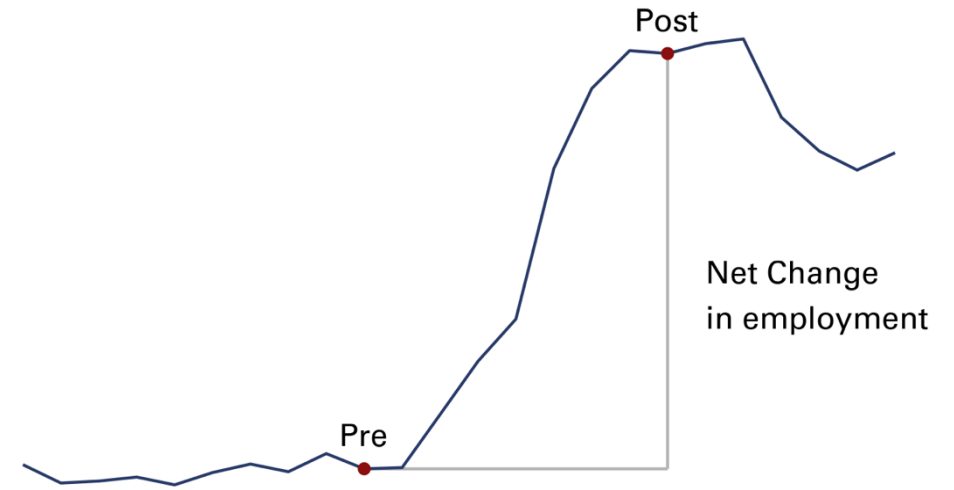
Analyzing Commuter Patterns

The slides that follow highlight takeaways from our analysis of local trends and commuting patterns.

Detailed maps and trends are included separately in the **parish vignettes** section.

Parts of the analysis focus on **local periods of dynamic employment change** when a significant number of jobs were added beyond typical rates of annual change.

Note that the commuting data only allows us to identify **goods-producing** jobs, not construction and manufacturing. However, we focus on industrial census tracts with high levels manufacturing employment.



Subtracting the “**pre**” employment level before a dynamic period from the “**post**” level afterward gives **net change in employment**.

We analyze these net new jobs by comparing where the workers live at a time of peak employment (“post”) and at an earlier time of lower employment (“pre”).

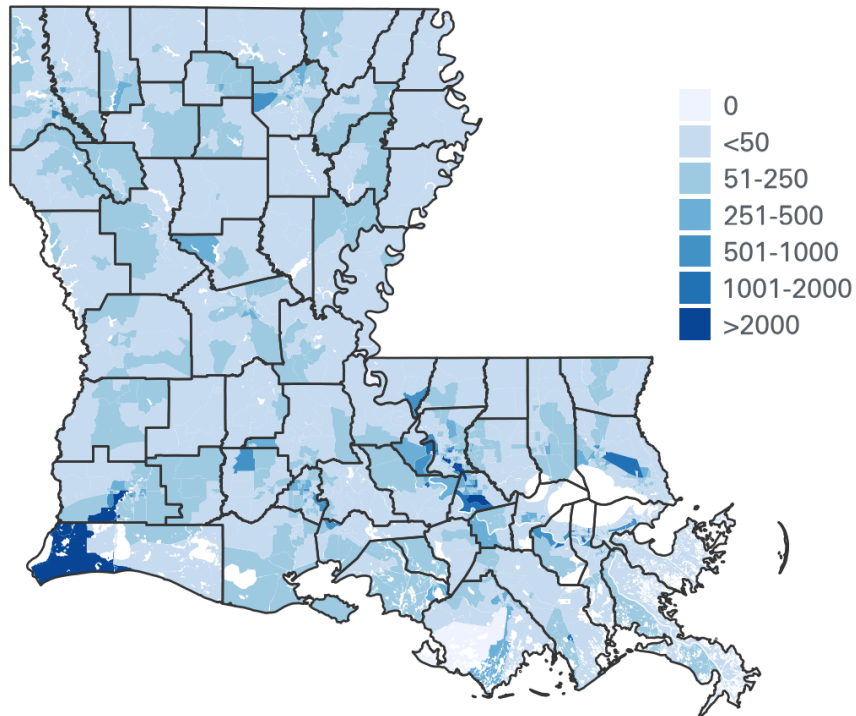


Louisiana's industrial manufacturing and construction jobs are geographically concentrated.

Many fall within major industry corridors in Southwest LA and the River Parishes, with smaller industrial corridors located across the state.

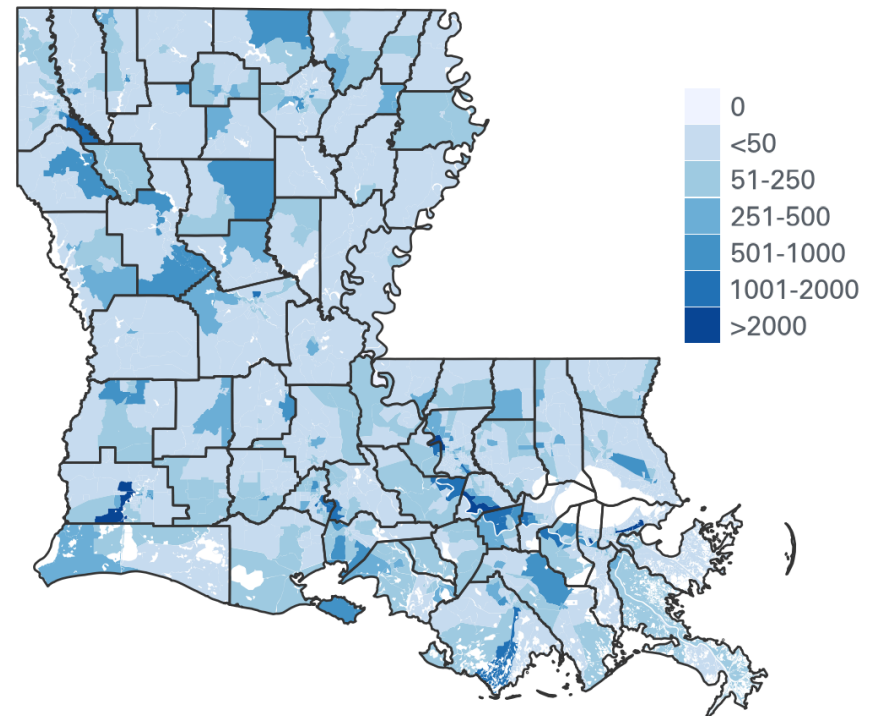
Where Construction workers work

Employment by census tract of work, 2022



Where Manufacturing workers work

Employment by census tract of work, 2022

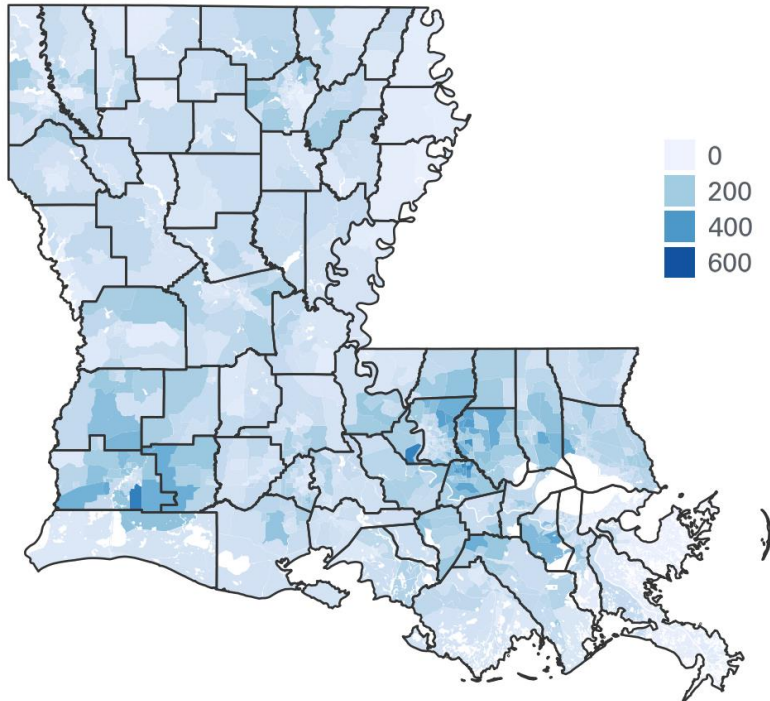


Where the workers live is more geographically diffuse.

Where workers live is shaped by a mix of factors, including commuting distance. Demographic and socioeconomic factors that vary at the neighborhood (census tract) level are also correlated with access to jobs.

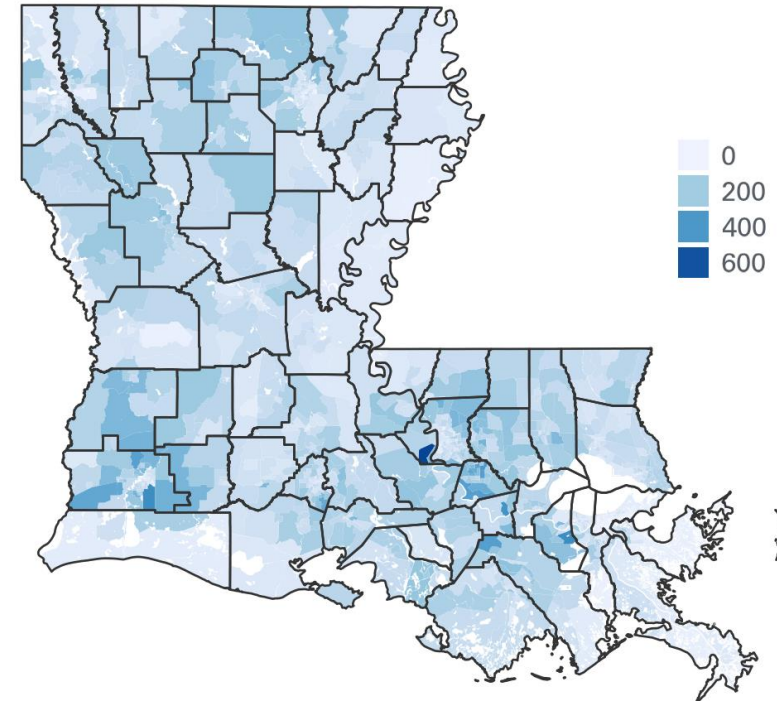
Where construction workers live

Employment by census tract of residence, 2022



Where manufacturing workers live

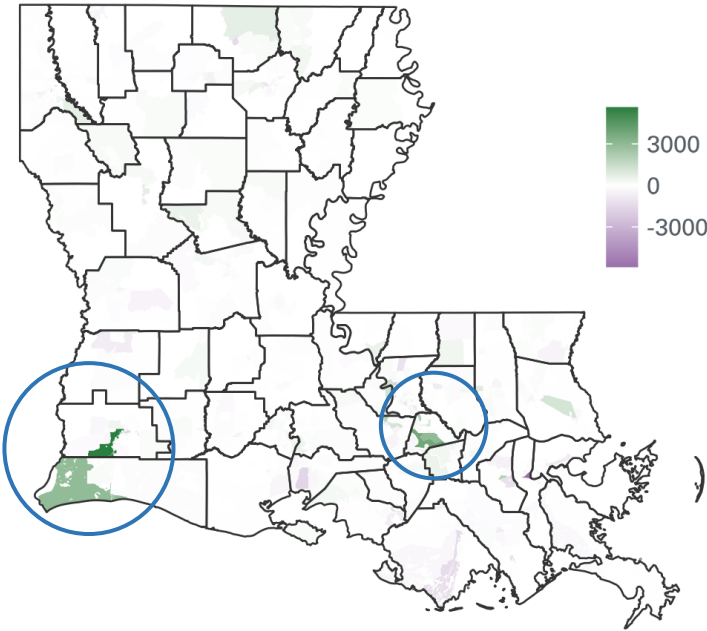
Employment by census tract of residence, 2022



Industrial employment gains also have been uneven across the state.

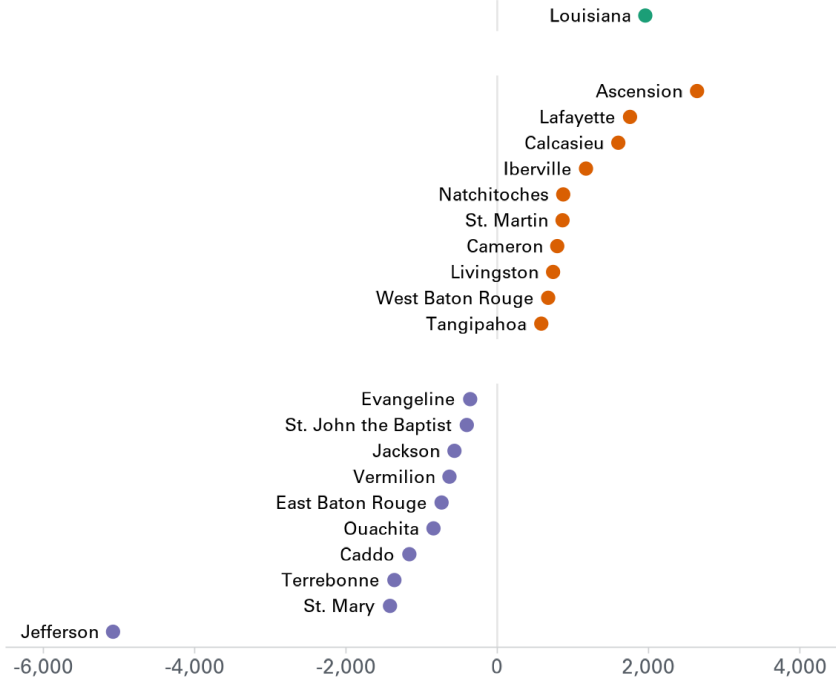
At the census tract level, the largest gains in goods-producing industry employment (including construction and manufacturing) are in Ascension, Calcasieu, and Cameron Parishes.

Change in goods-producing employment
Employment by census tract of work, 2010-2022



Source: LODES

Manufacturing employment gains and losses
Top 10 and bottom 10 parishes, 2010-2023



Source: QCEW

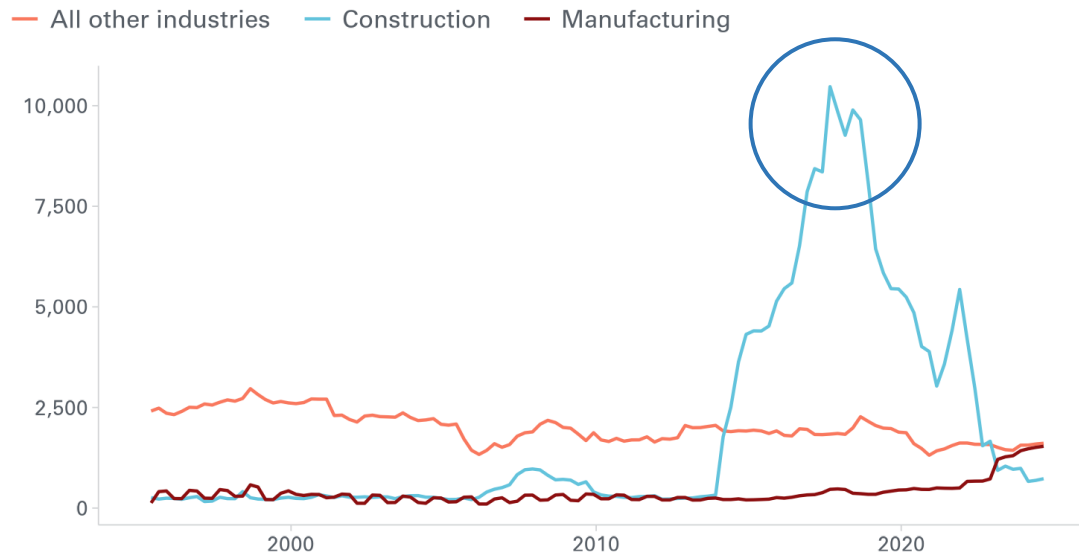
Note: Goods-producing includes construction and manufacturing.

In some parishes, booms in local construction employment hit a peak during the 2010s.

Fueled by liquified natural gas (LNG) investment, construction employment in Cameron Parish hit a peak in 2017 at 4 times the level of employment in all industries in 2010. Ascension and Calcasieu also experienced peaks in construction employment followed by gradual increases in manufacturing.

Cameron employment trends

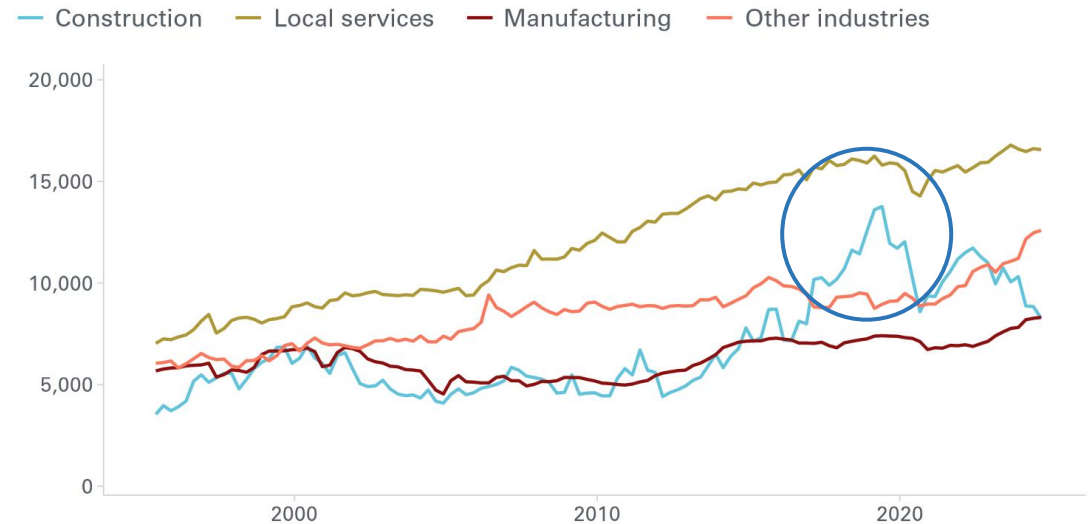
Jobs located in the parish



Source: QWI (U.S. Census Bureau)

Ascension employment trends

Jobs located in the parish



Source: QWI (U.S. Census Bureau). Note that local services does not include Educational Services, which is intermittently reported as zero in some quarters for Ascension.

Industrial job trends were more moderate in the River Parishes.

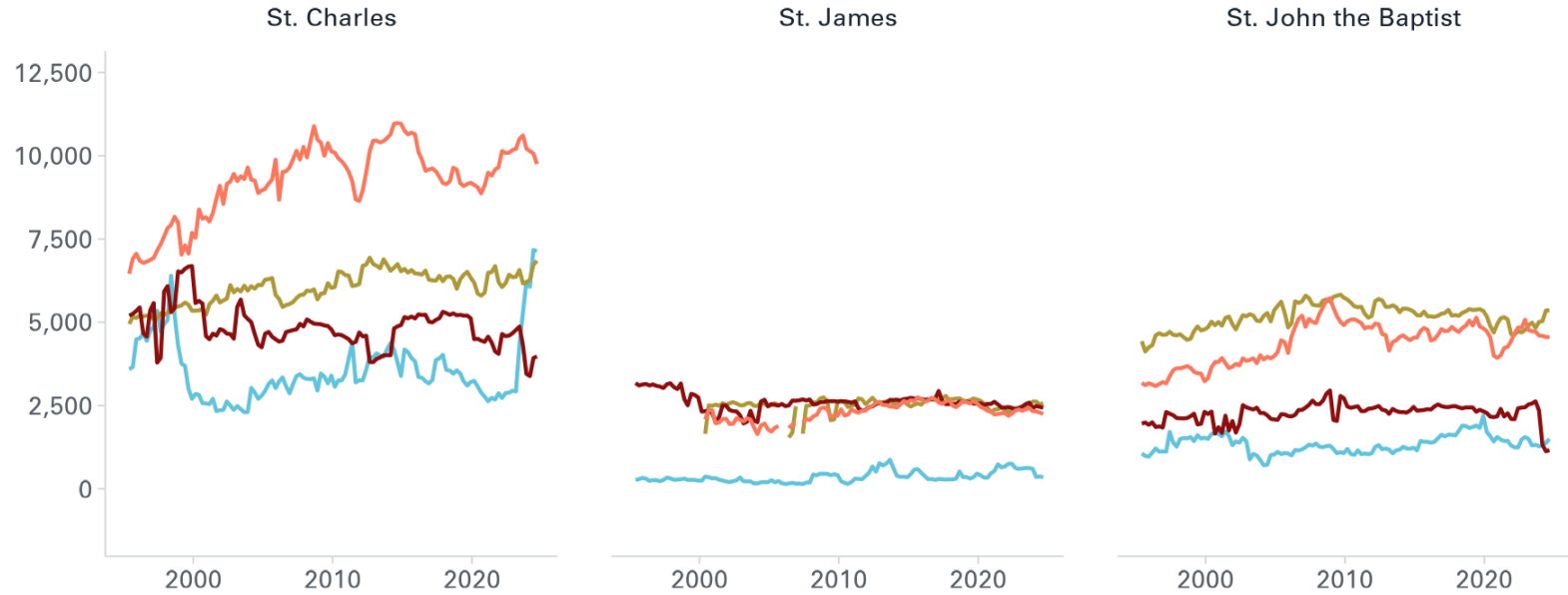
In the St. Charles, St. John, and St. James, manufacturing accounts for a large share of total employment.

Construction increased modestly during the late 2010s, but manufacturing employment was relatively flat. Very recently (since 2023), St. Charles has seen a spike in construction.

River Parishes employment trends

Jobs located in each parish

— Construction — Local services — Manufacturing — Other industries



Source: QWI (U.S. Census Bureau)



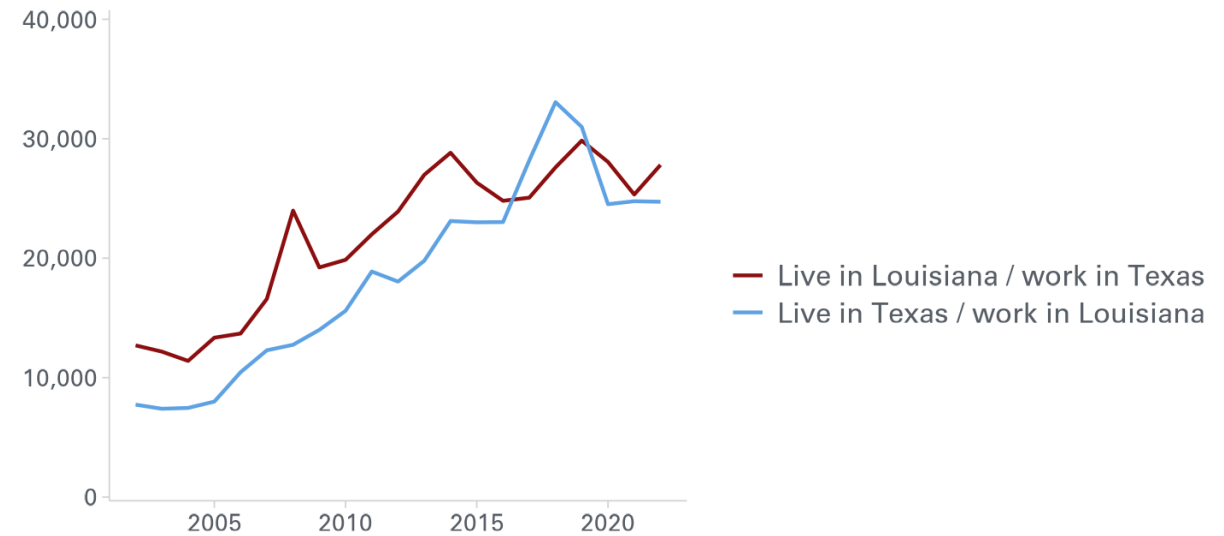
Louisiana-Texas commuting links

Large projects draw from a specialized mobile workforce during periods when demand is temporarily elevated beyond local capacity, such as during peak construction phases. This is consistent with trends in commuting data.

First, during the 2010s construction boom, the exchange of labor across the Louisiana-Texas border intensified in both directions. This peak in cross-border employment was concentrated in tracts with high industrial activity and areas undergoing construction surges.

Commuting links between Louisiana and Texas

2014-2022



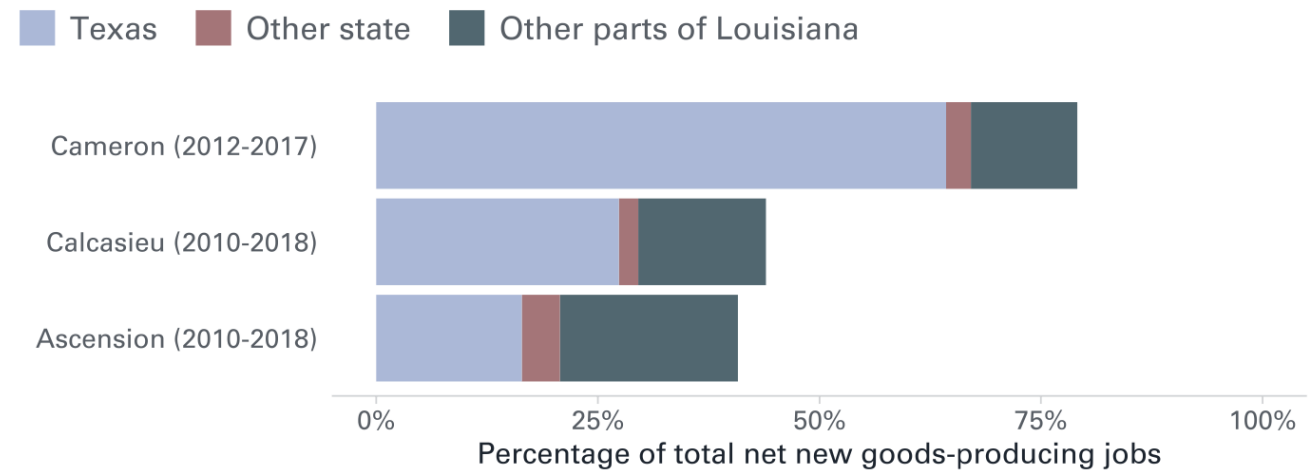
Source: Blanco Center analysis of LODES

Second, a portion of new jobs during **local booms in Louisiana** were filled by residents of remote parts of Louisiana or Texas rather than by workers who reside in surrounding parishes.

By far, this pattern was most pronounced during the LNG build-out in Cameron Parish, but the peak of construction booms in Calcasieu and Ascension parishes also show evidence of a workforce drawn from beyond the immediately surrounding parishes (see Parish Vignettes appendix).

Long-distance commuting and local construction booms

Percent of net new goods-producing jobs linked to residences beyond surrounding Louisiana parishes by location of residence



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

Even regional workers often commute longer distances for industrial jobs than for other jobs.

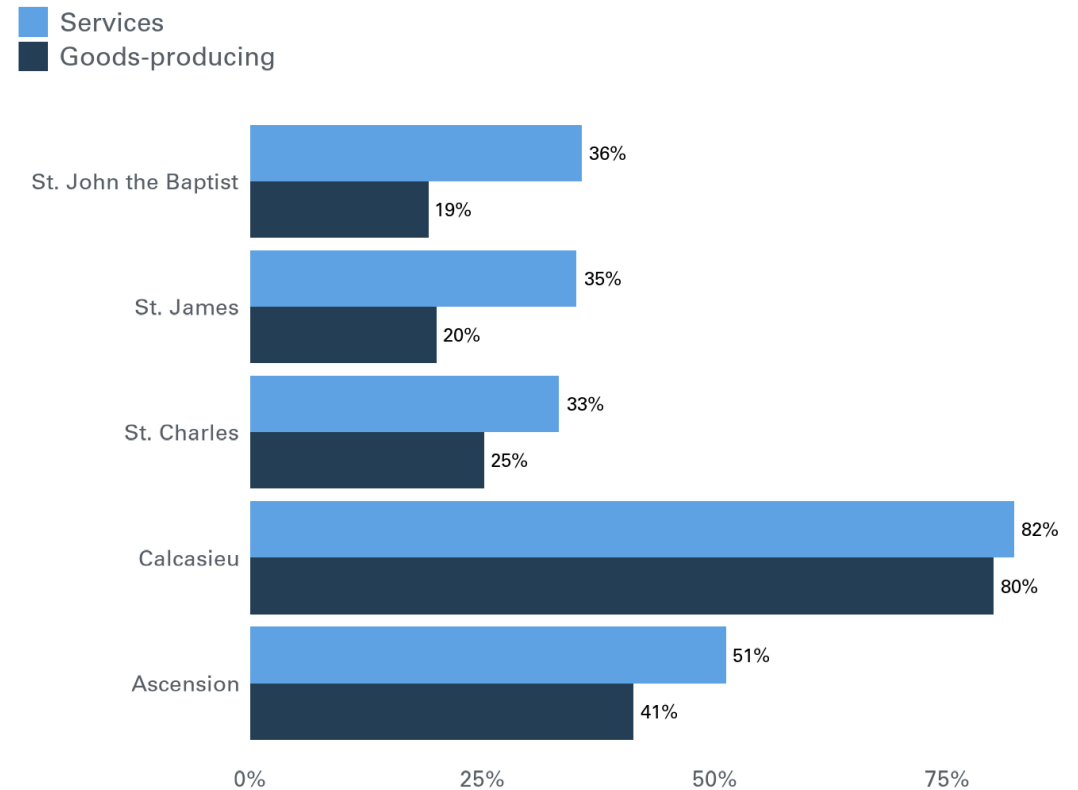
For jobs located in tracts with high industry employment and held by residents within normal commuting distance, goods-producing industries are linked to residents of the same parish at lower rates than services industries.*

This suggests that industry-scale construction and manufacturing jobs are less likely to go to residents of the parishes where the jobs are located.

*The denominator includes only residents of nearby parishes and excludes other states and distant parts of Louisiana.

Percentage of jobs linked to workers living the same parish

For jobs in census tracts with high industrial employment in 2022, and excluding commuters from outside of the surrounding parishes



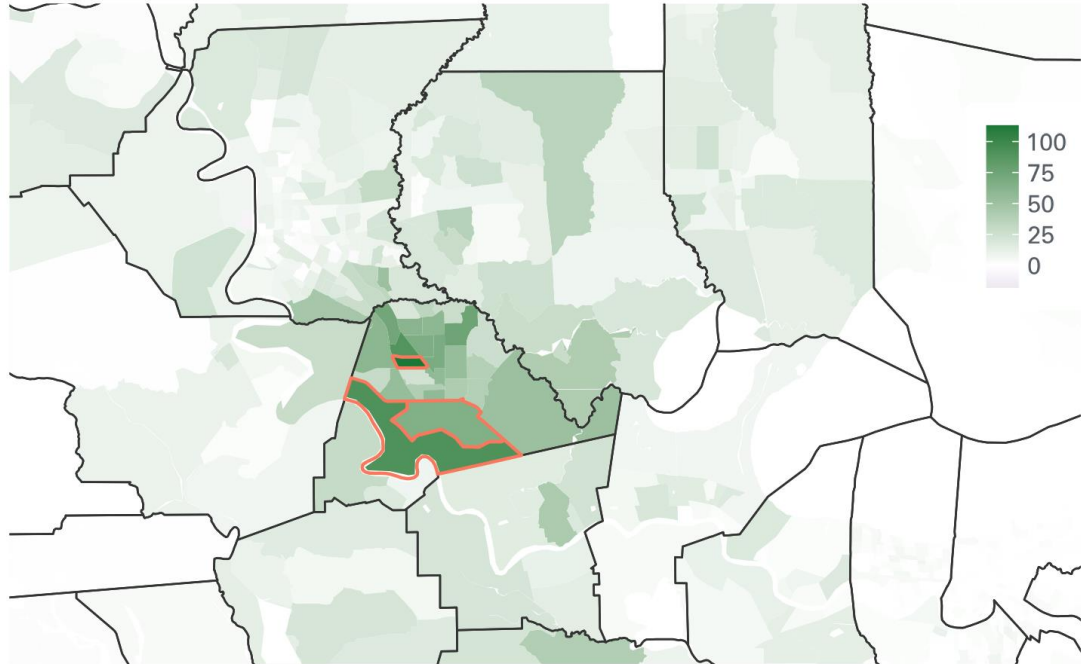
Source: Blanco Center analysis of LODES

Note: Goods-producing includes construction and manufacturing.

Similarly, in Ascension, 2010-2018, 38% of net new goods-producing jobs linked to residents of any nearby parishes were linked to Ascension residents, compared with 48% of percent net new services jobs. Many of the goods-producing jobholders commute from East Baton Rouge, Livingston, and Tangipahoa.

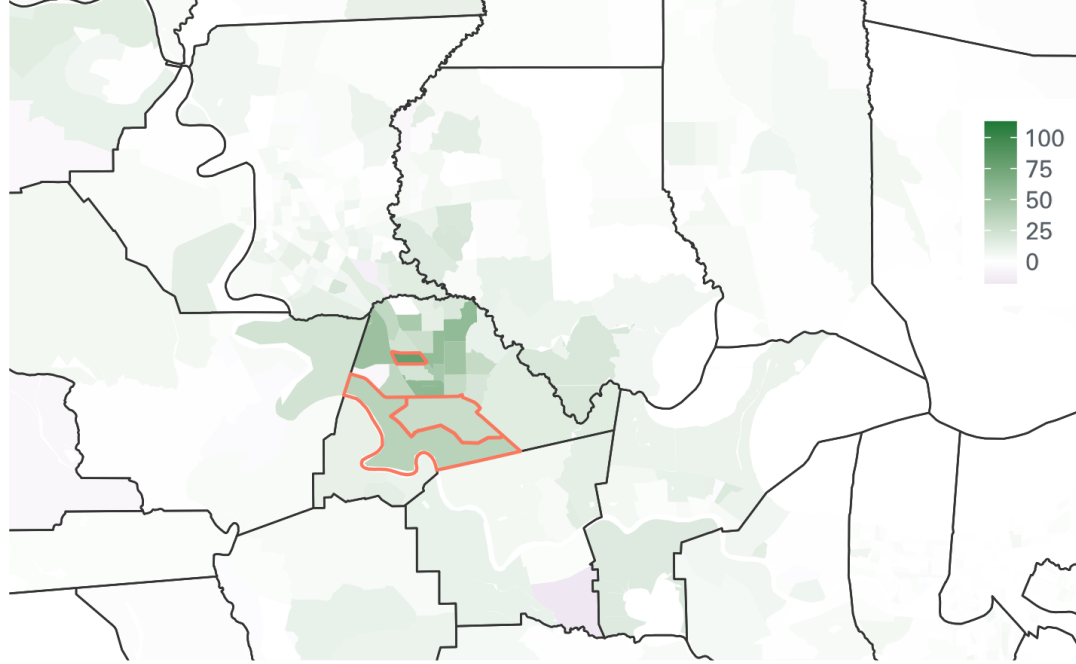
Ascension: Changes in where workers in key industrial tracts live

Goods-producing industry jobs, 2010-2018



Ascension: Changes in where workers in key industrial tracts live

Services industry jobs, 2010-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

Characteristics of industrial workers

Findings on the characteristics of workers

- Industrial jobs in Louisiana offer strong wages and often do not require four-year degrees, but employment in these opportunities is uneven across demographic groups.
- In manufacturing and construction industries, more than 4 in 5 workers are men.
- Compared with the workers across all industries,* White and older workers are over-represented in manufacturing, Hispanic workers are over-represented in construction, and Black workers are under-represented in both construction and manufacturing.
- For workers employed within these industries, there are also large earnings differences by race and ethnicity – though this research does not investigate the underlying drivers.

*In the charts that follow, we also include Services industry workers for comparison. Services industry jobs account for most employment, and they are wide-ranging, including both low-paying jobs like retail and food service and high-paying specialized and professional jobs.



Demographic summary of construction and manufacturing workers in Louisiana, with services industries for comparison

		Construction	Energy-related and heavy manufacturing	Light manufacturing	Services	All industries
Race/ethnicity	Asian	0.7%	1.6%	1.2%	2.2%	2.0%
	Black	16.3%	19.3%	32.4%	31.0%	28.6%
	Hispanic	15.9%	4.3%	4.7%	4.3%	5.3%
	Other	2.7%	2.0%	1.7%	2.4%	2.4%
	White	64.4%	72.8%	60.0%	60.1%	61.8%
Sex	Female	11.5%	15.6%	30.8%	57.5%	49.1%
	Male	88.5%	84.4%	69.2%	42.5%	50.9%
Educational attainment	Less than HS	18.8%	7.4%	10.6%	8.3%	9.4%
	HS diploma	45.4%	36.5%	42.4%	28.0%	30.8%
	Some college	20.1%	22.7%	22.2%	24.7%	23.9%
	Associate	4.9%	9.9%	8.0%	7.3%	7.2%
	Bachelor	8.8%	18.7%	13.9%	20.0%	18.6%
	Graduate or professional degree	1.9%	4.7%	2.8%	11.7%	10.0%
Age (under 65)	24 and under	10.9%	7.9%	9.5%	14.8%	13.7%
	25-34	24.5%	24.1%	21.0%	24.5%	24.3%
	35-44	25.2%	24.0%	23.9%	23.0%	23.5%
	45-54	22.7%	24.8%	24.8%	20.6%	21.1%
	55-64	16.8%	19.2%	20.8%	17.1%	17.4%
	Mean age	41.9	42.9	43.7	41.6	41.9

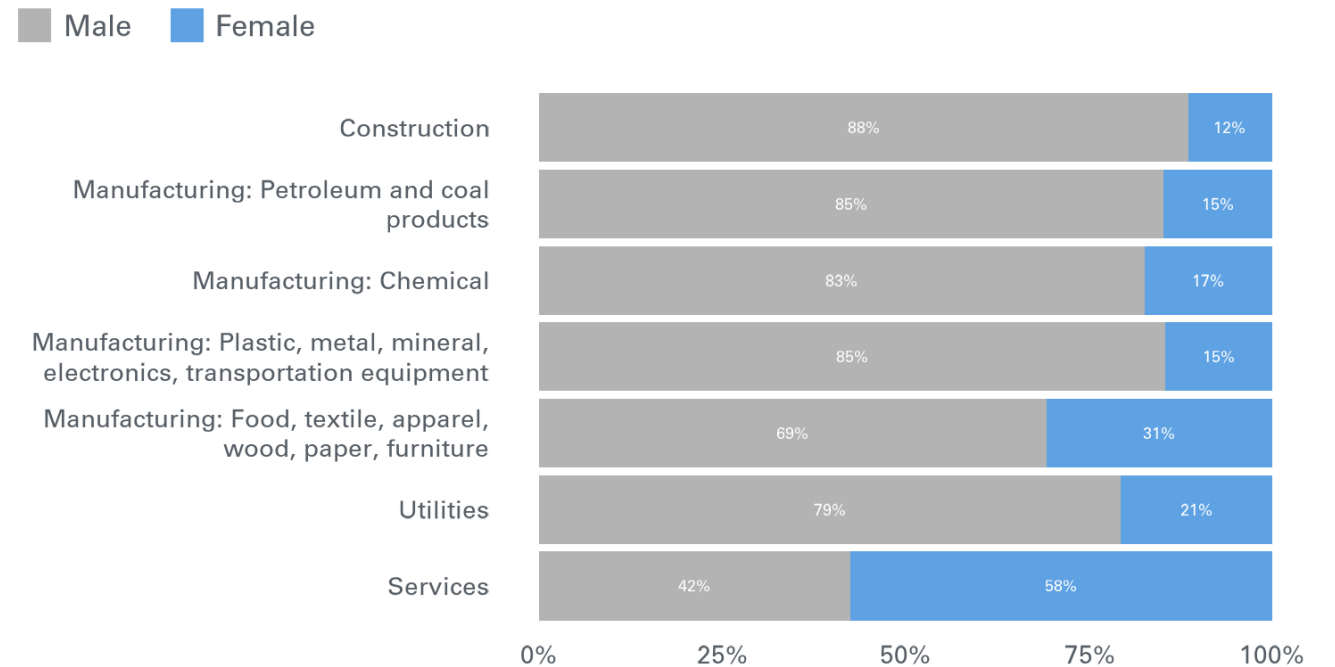
Source: Blanco Center analysis of IPUMS-USA

Manufacturing and construction industries tend to have an overwhelmingly male workforce.

This also applies to most other goods-producing industries.

Employment by sex for selected industry categories

Louisiana workers 2015-2019 and 2021-2022



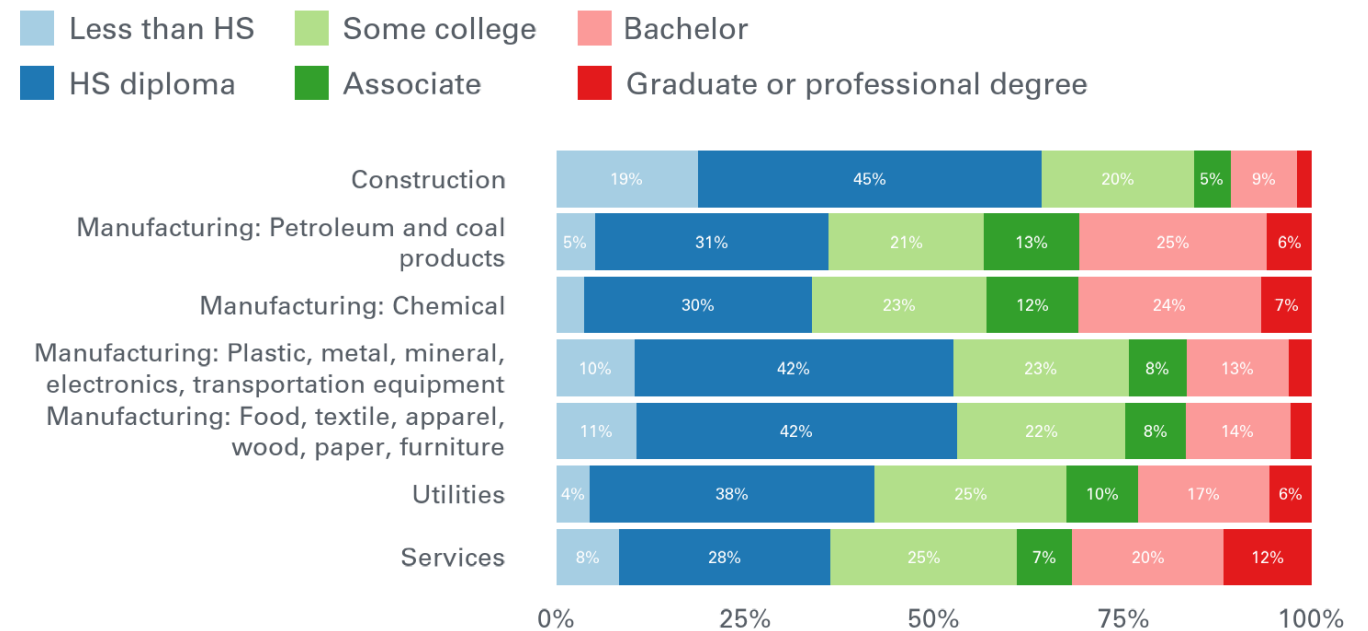
Source: Blanco Center analysis of IPUMS-USA



With higher rates of bachelor's and associate degrees, workers in refining (Petroleum and Coal Products) and Chemical Manufacturing have higher levels of educational attainment than in other goods-producing industries in Louisiana, such as construction.

Employment by educational attainment for selected industry categories

Louisiana workers 2015-2019 and 2021-2022



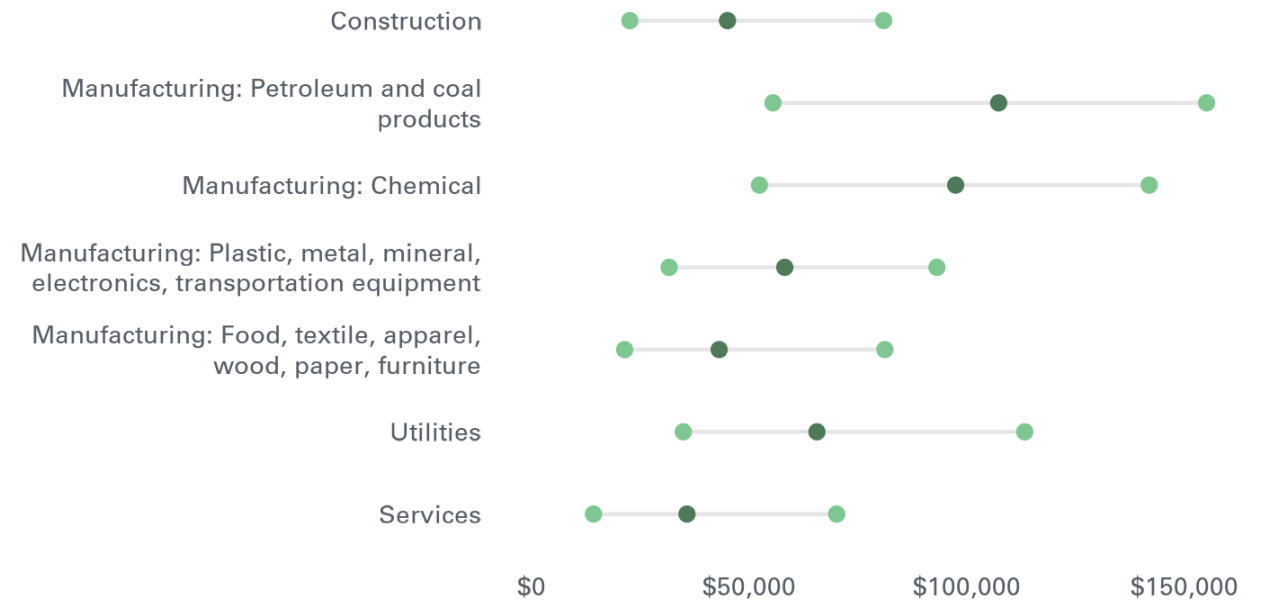
Source: Blanco Center analysis of IPUMS-USA

Refining (Petroleum and Coal Products) and Chemical Manufacturing also tend to pay well, with reported annual earnings around \$100,000 for a typical (median) worker.

This is substantially higher than for other manufacturing and construction workers, though all are higher than workers in services industries.

Median, 20th, and 80th percentile earnings for selected industry categories

Louisiana workers 2015-2019 and 2021-2022



Source: Blanco Center analysis of IPUMS-USA



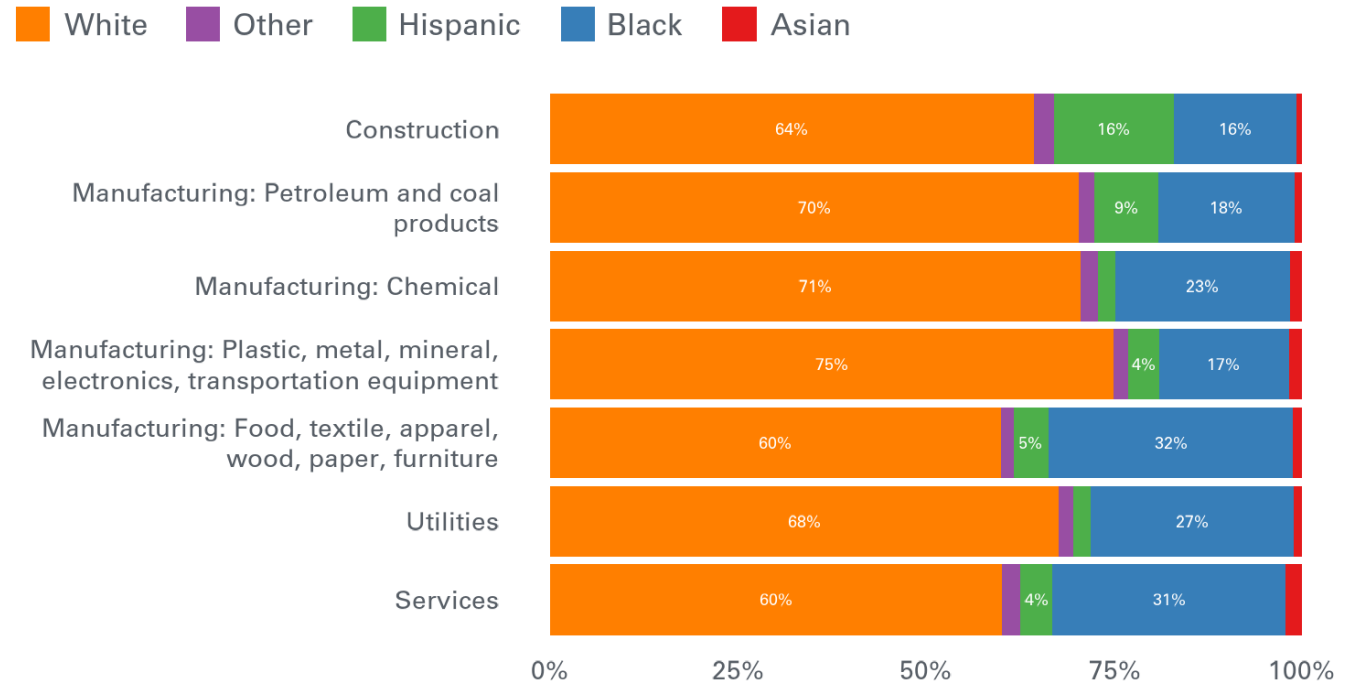
Compared with the workforce as a whole, White workers are over-represented in higher-paying manufacturing industries, and Black workers are under-represented.

In construction, Hispanic workers are over-presented, and Black workers are under-represented.

For context, the entire workforce was 2% Asian, 28.6% Black, 5.3% Hispanic, and 61.8% White.

Employment by race for selected industry categories

Louisiana workers 2015-2019 and 2021-2022



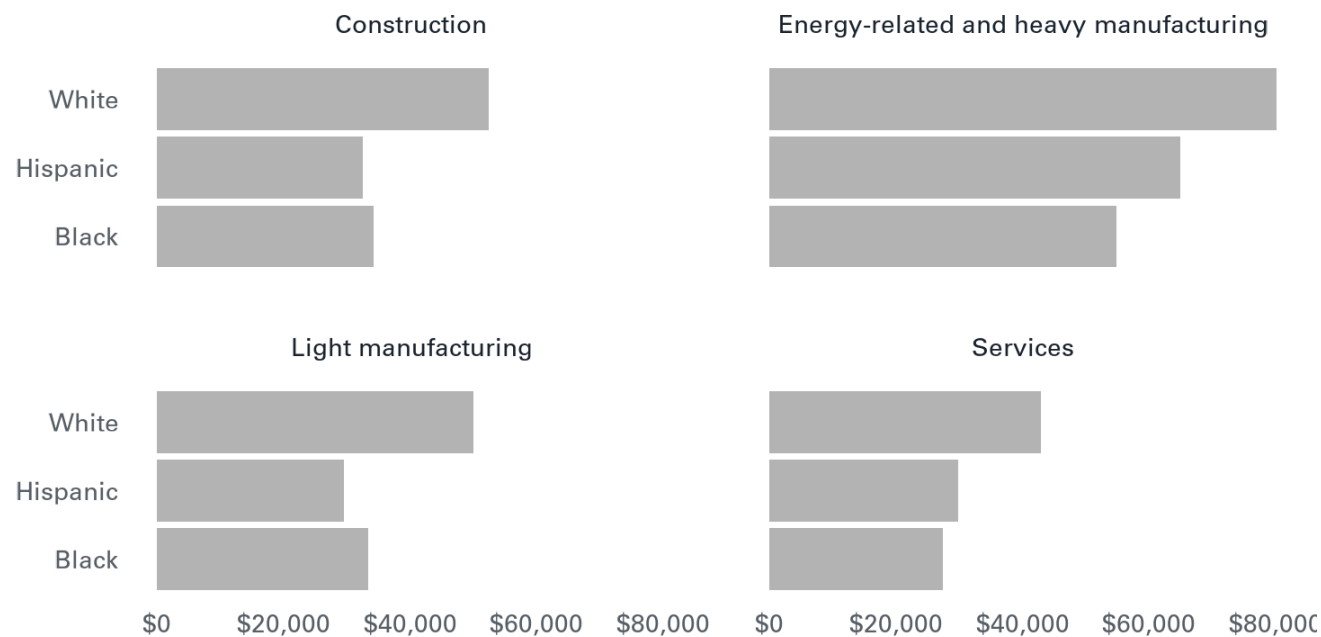
Source: Blanco Center analysis of IPUMS-USA

Even within these industries, there are significant pay differences by race and ethnicity. While a full examination of the underlying causes is beyond the scope of this analysis, pay differences can be related to differences in educational background, occupation, and experience, among other factors.

In construction and manufacturing industries, Black median earnings are roughly 2/3 of White median earnings.

Median earnings by race/ethnicity for selected industry categories

Louisiana workers 2015-2019 and 2021-2022



Source: Blanco Center analysis of IPUMS-USA

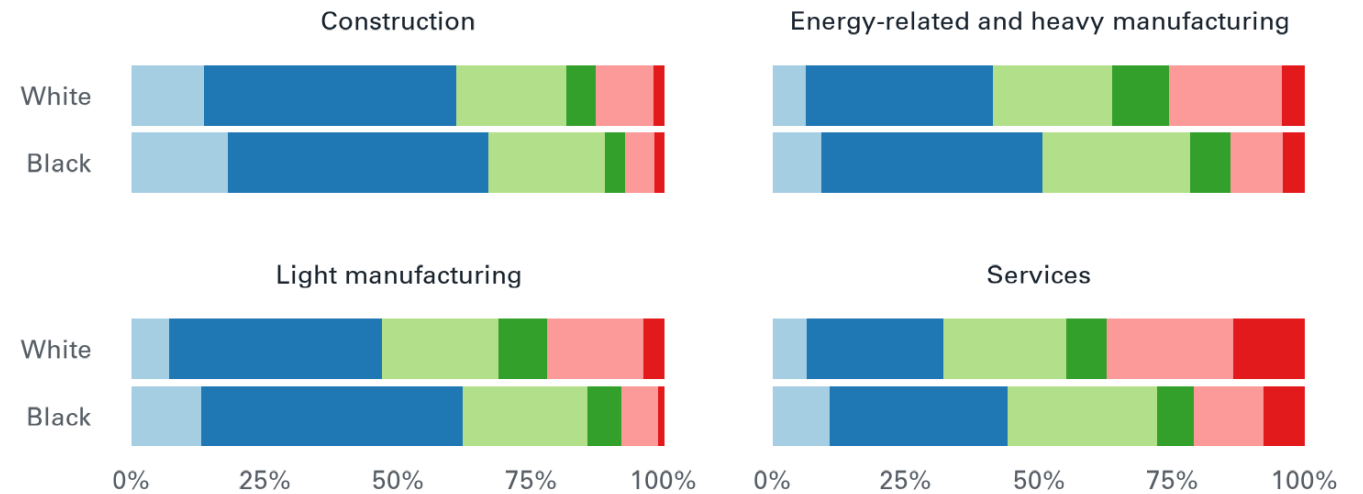


Rates of educational attainment among the industry workforce contribute to pay differences by race.

In goods-producing industries, older workers are also more likely to be White.

Educational attainment for Black and White workers in selected industries

Louisiana workers 2015-2019 and 2021-2022



Source: Blanco Center analysis of IPUMS-USA

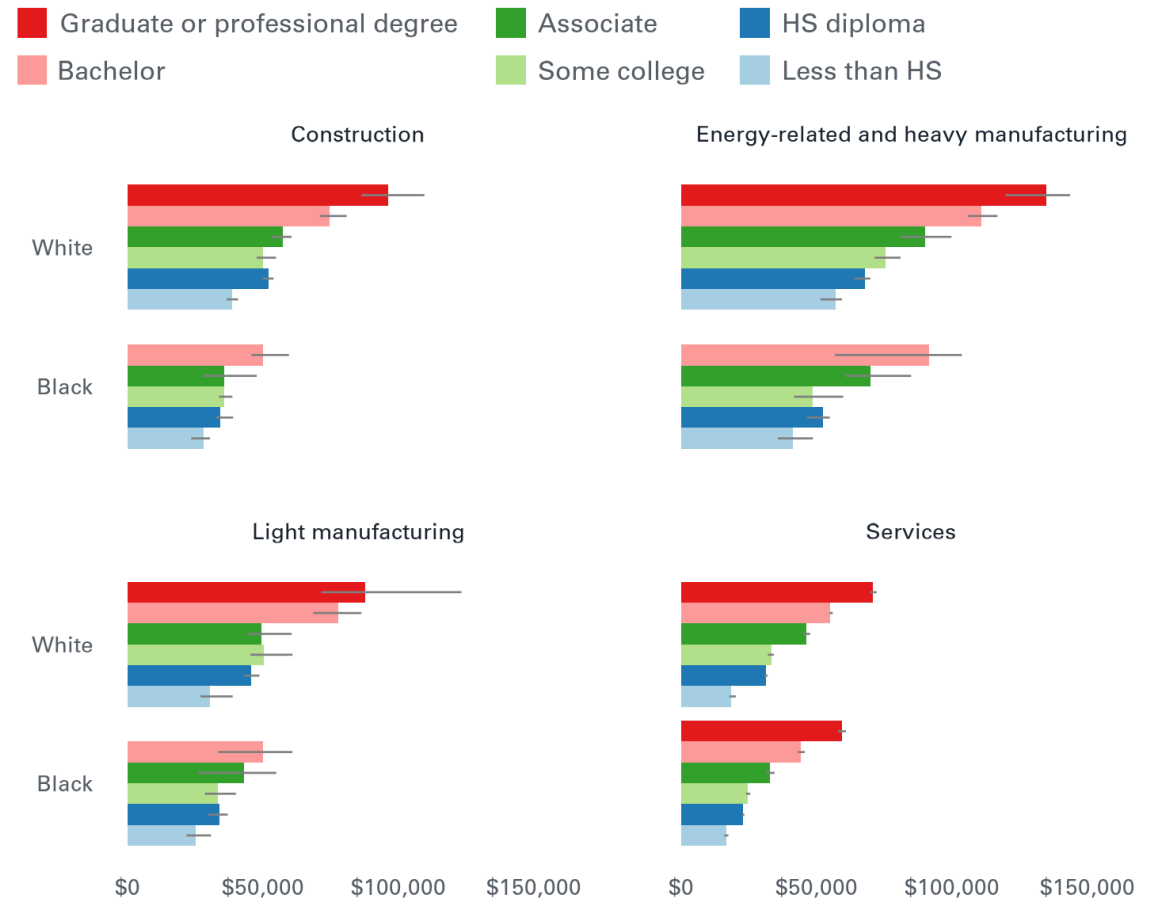
The pay disparity is reduced but not eliminated when controlling the comparison to people within the same industry category and level of education.

Note that, although sample sizes render estimates imprecise for small subgroups of workers,* the general pattern holds.

*The lines show 95% confidence intervals, cells with fewer than 50 observations are suppressed, and we do not show Hispanic workers due to small population cells.

Median earnings by educational attainment for Black and White workers in selected industries

Louisiana workers 2015-2019 and 2021-2022



Source: Blanco Center analysis of IPUMS-USA

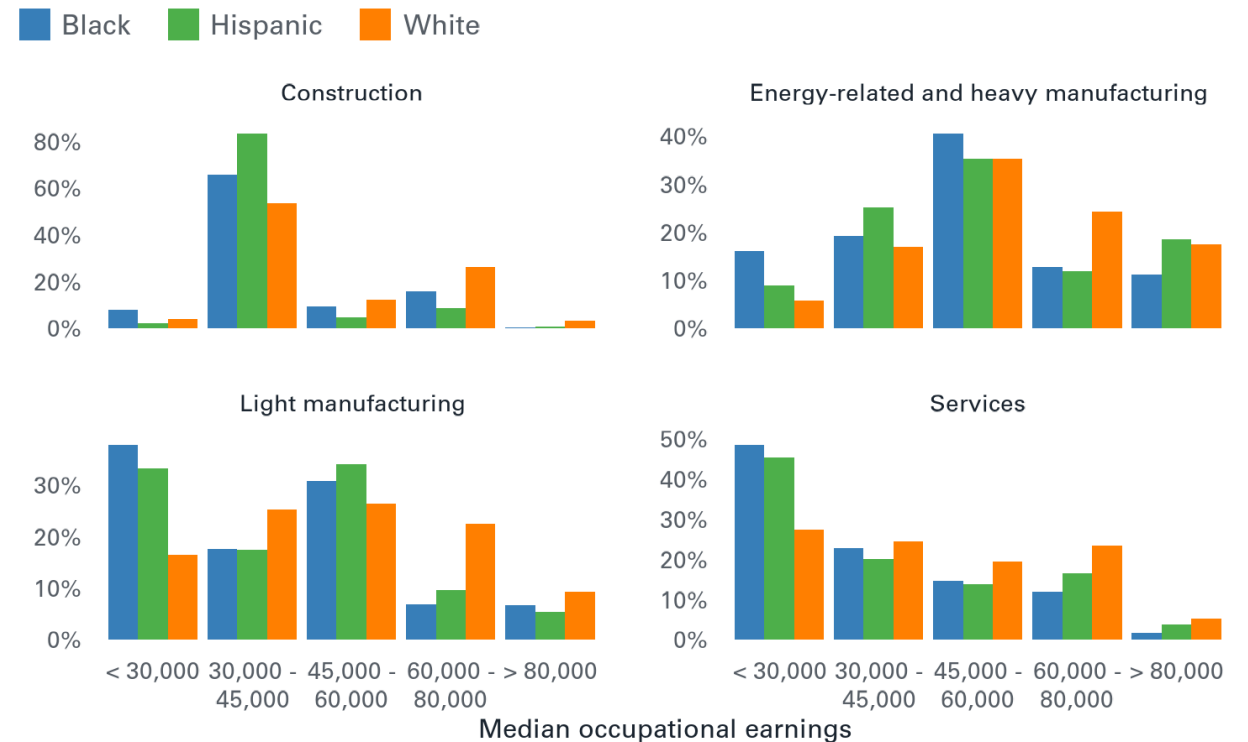
Generally, White workers are concentrated in higher paying management, professional, and specialized occupations.*

This applies to occupations in the construction and manufacturing sectors, as well as the much broader set of occupations that make up the services sector.

*Due to small sample sizes, we caution that estimates for Hispanic workers may be imprecise, especially for manufacturing.

Employment by occupational earnings levels

Share of industry employment for each demographic group by median occupational earnings



Blanco Center analysis of IPUMS-USA. Note: Each race/ethnicity-by-industry group sums to 100%.

Implications

- Industrial growth in the 2010s led to Louisiana jobs.
- Louisiana's industrial jobs are geographically concentrated, and the 2010s industrial construction boom was even more concentrated.
- During local construction booms, a large portion of net new jobs were linked to residents outside the region where the job was located.
- While many industrial jobs are also filled by local workers in nearby parishes or counties, these workers do not always reside in the same parish where the jobs are located.
- Industrial expansions are often characterized by a construction boom followed by a smaller bump in manufacturing employment.
- Employment in industrial jobs is uneven across demographic groups.
- Further research is needed to explore how industrial jobs are filled.



Appendix

Local areas and commuting
patterns: Parish vignettes

Parish vignettes

The following slides expand on the section “Local areas and commuting patterns: Highlights” with additional detail on each parish we examined:

- Cameron
- Calcasieu
- Ascension
- River Parishes (St. James, St. John the Baptist, St. Charles)

Each vignette shows employment trends, current commuting patterns (2022), and a pre-post analysis of commuting patterns during a recent period of dynamic employment change. In the commuting maps, goods-producing industries include construction and manufacturing industries.



Chart notes (1/4)

Since maps summarize complicated data on commuting flows, this example introduces how the maps work.

- Census tracts with high industry employment are **Outlined**. For every job depicted on the map, the workplace is in one of these tracts.
- For these jobs, where the workers live is shown by the **shading** of tracts on the map. Darker-shaded tracts indicate that more workers live there who work in the highlighted tracts (some maps also show reductions in employment, shaded with a different color).

In other words, the map shows how many workers commute from the shaded tracts to the outlined tracts.

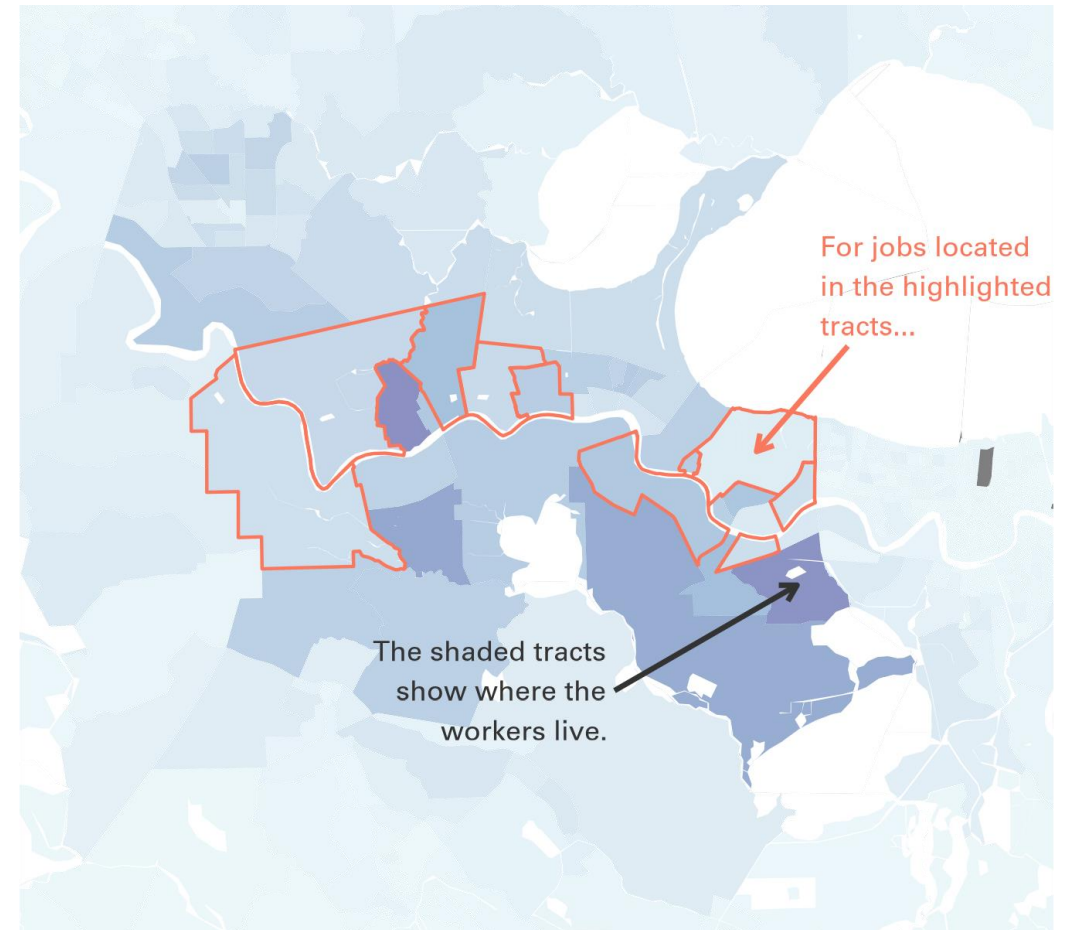
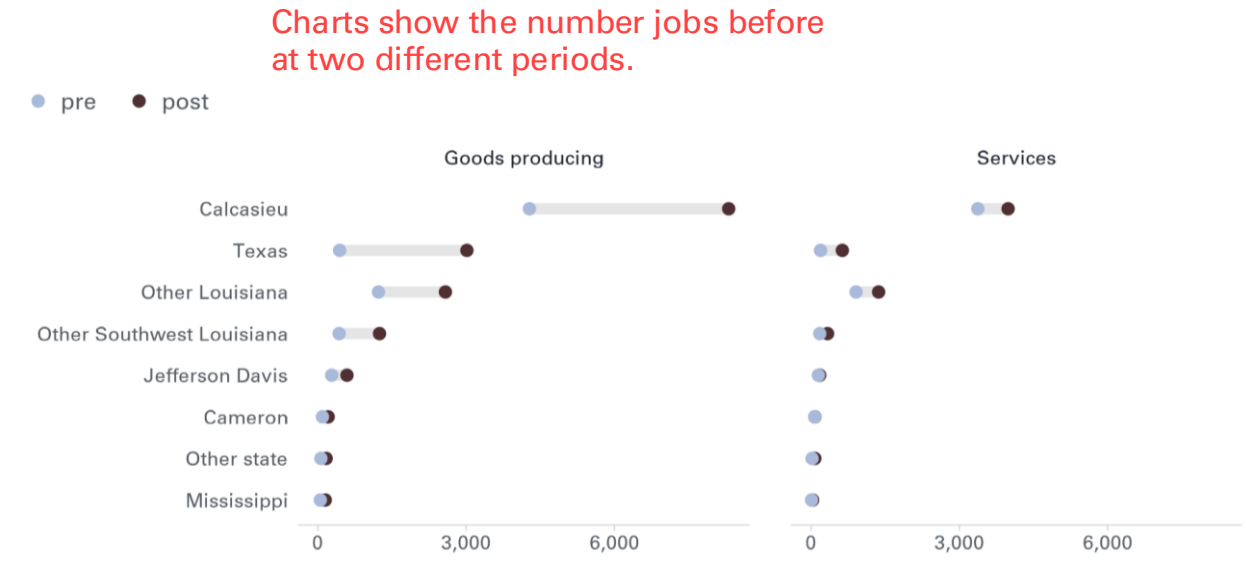


Chart notes (2/4)

We use maps and charts to show “net new jobs” in industrial census tracts during periods of dynamic change, broken down by where the workers live. Subtracting the “pre” employment level before a dynamic period from the “post” level afterward gives **net change in employment**.

The charts summarize the **same information** in the maps.

- The maps provide tract-level detail on approximately where the workers live
- The charts show higher-level customized breakdowns by grouping these tracts into parishes, multi-parish regions, or states.



Maps show the same differences at the census tract level.

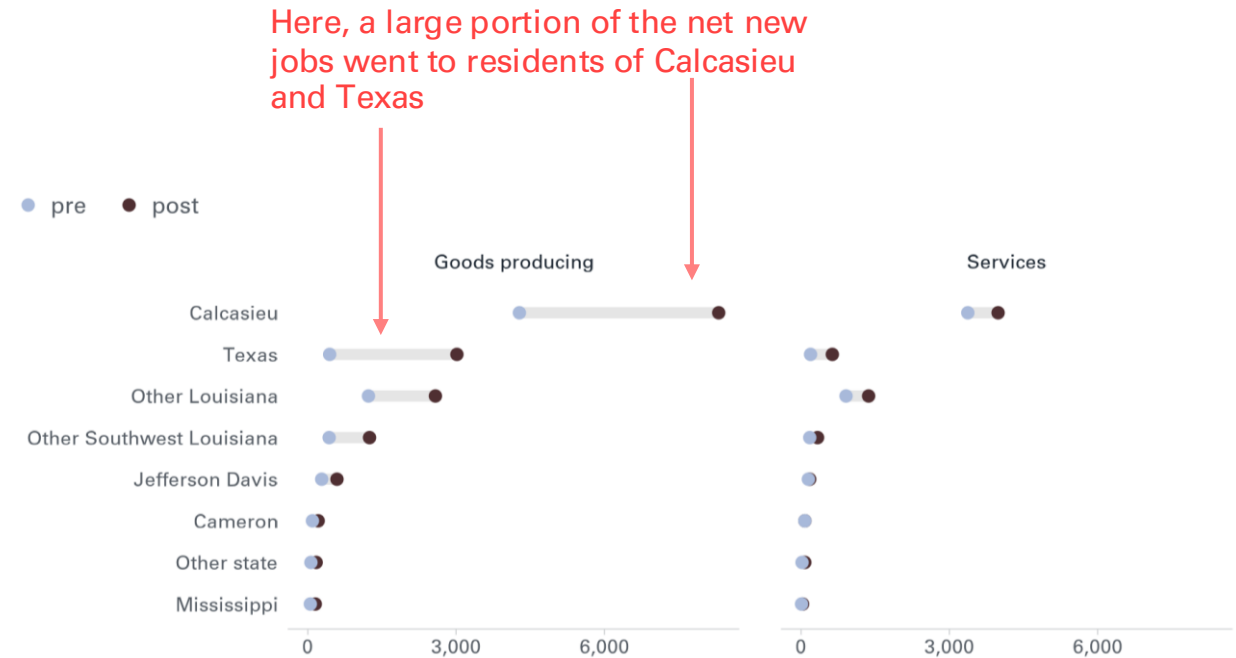


Chart notes (3/4)

For the maps, darker colors mean more **net new jobs**.

For the charts:

- The dots show residences of job-holders for the time periods analyzed – **pre** and **post** – and the difference is **net new jobs**.
- The jobs are broken down into goods-producing (mostly industrial) jobs and services (all other) jobs.
- The vertical axis shows geographic breakdowns, which are customized for each chart.
- The horizontal axis is the reference for the number of jobs.



Geographies shown in this **example** chart:

- “Other Southwest Louisiana” includes parishes within the region but not listed on the chart.
- “Other Louisiana” are from parishes outside the immediate region.
- “Texas” and “Mississippi” are from anywhere in those states.
- “Other state” is from anywhere in any state other than Louisiana, Texas, or Mississippi.

Chart notes (4/4)

For parish-level employment trends, we focus on the **construction** and **manufacturing** sectors. For comparison, we also show employment in other industry sectors, which we group together as follows:

- **Local services** primarily serve local demand and often account for the most jobs in regional economies. They include Retail trade; Educational services; Health care and social assistance; Arts, entertainment, and recreation; Accommodation and food services; Other services (except public administration)
- **Other industries** include Agriculture, forestry, fishing and hunting; Mining, quarrying, and oil and gas extraction; Utilities; Wholesale trade; Transportation and warehousing; Information; Finance and insurance; Real estate and rental and leasing; Professional, scientific, and technical services; Management of companies and enterprises; Administrative and support and waste management and remediation services; Public administration



Cameron Parish

- A massive increase in construction employment occurred in Cameron Parish, coinciding with major investments in LNG. Quarterly employment numbers increased from a few hundred in the early 2010s to a peak of 10,000 in 2017. Meanwhile employment in other industries was flat.
- Comparing 2012 with the 2017 peak of construction employment, 15 percent of net new Goods-producing jobs were linked to Calcasieu residents, 12 percent to residents of Louisiana outside Southwest regional parishes, and 64 percent to Texas residents. In contrast, about half of net new services jobs were linked to Cameron Parish residents. During this period, total net new goods-producing and services jobs were 6,308 and 441, respectively.



Cameron Parish

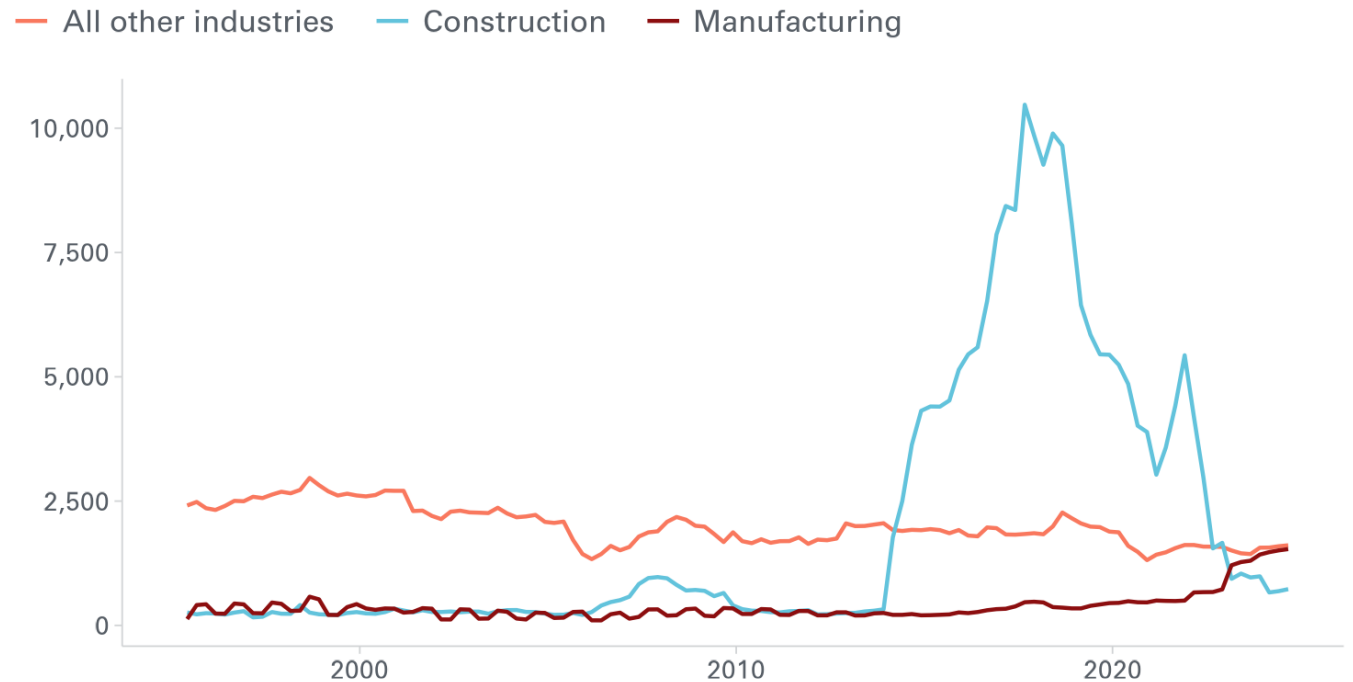
A massive increase in construction employment occurred in Cameron Parish. This period coincides with major investments in LNG.

At its peak in 2017, the level of new construction employment alone was quadruple total parish employment in 2010.

Manufacturing employment also increased in the later years of data.

Cameron employment trends

Jobs located in the parish

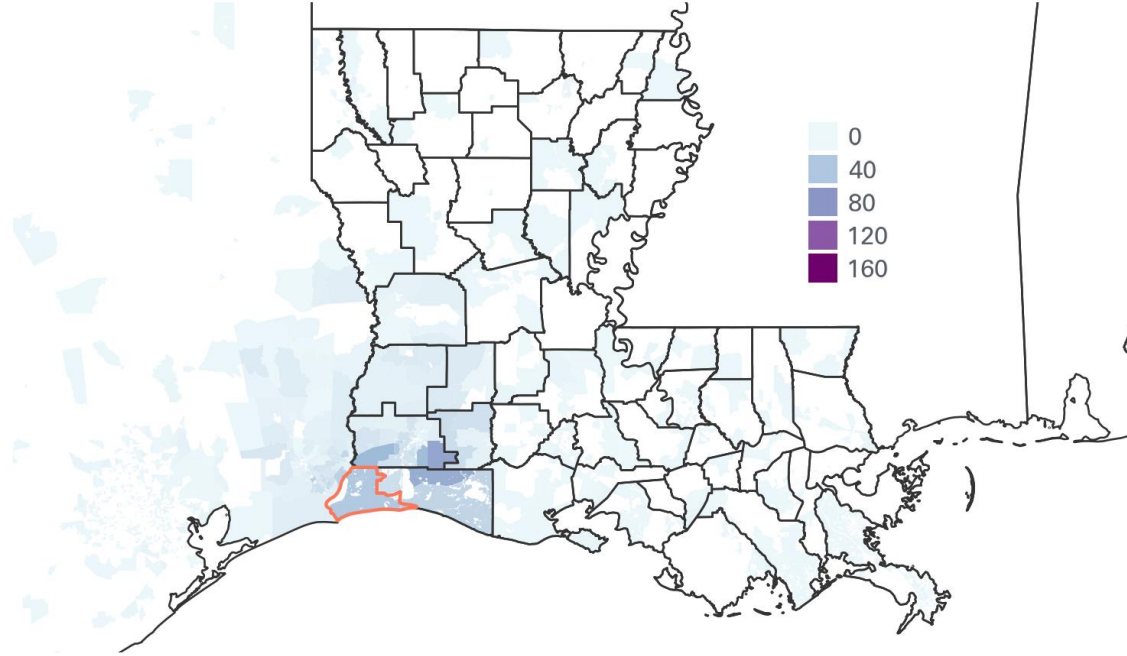


Source: QWI (U.S. Census Bureau)



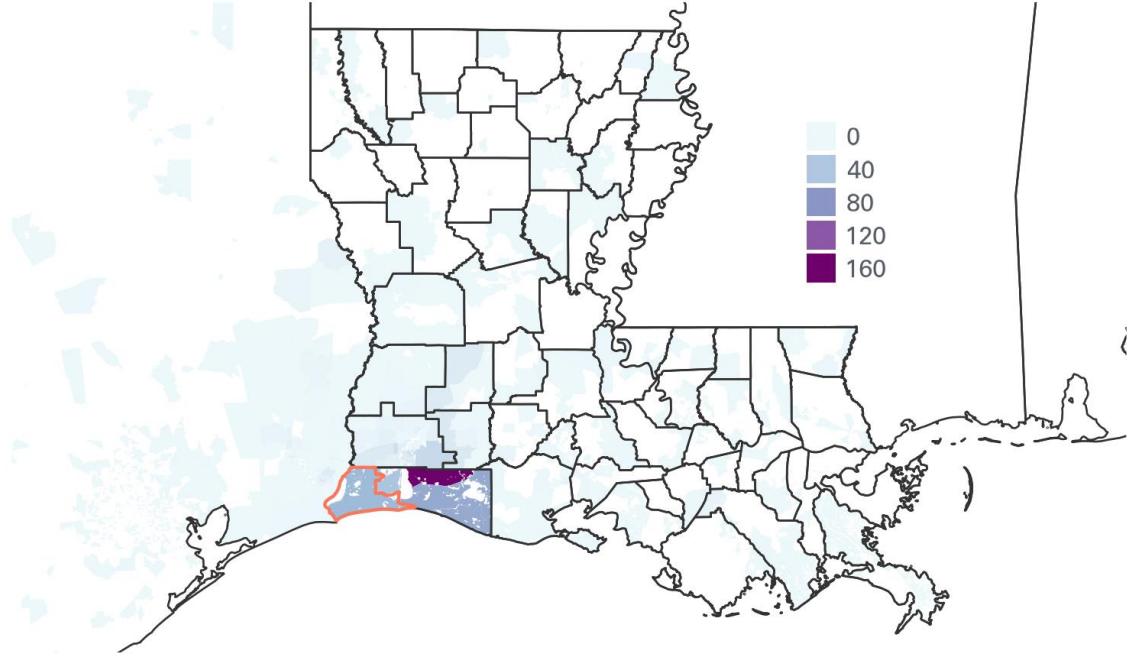
These maps show where workers live in the most recent data (2022). These are the home census tracts of workers in jobs in Cameron's main industrial tract (highlighted), where most LNG terminal and liquefaction facilities are located.

Cameron Parish: Where workers in key industrial tracts live
Goods-producing industry jobs 2022



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Cameron Parish: Where workers in key industrial tracts live
Service industry jobs 2022



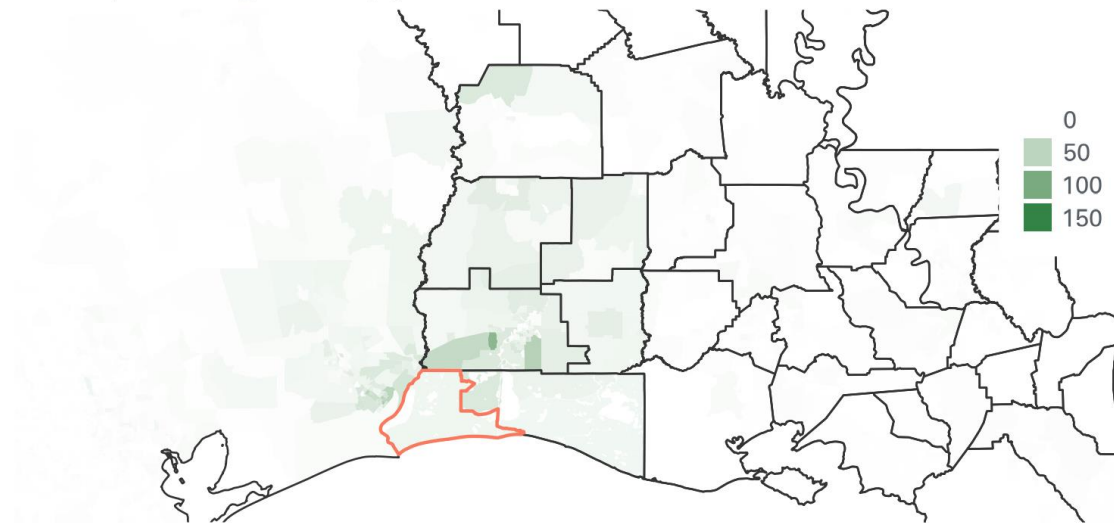
Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

These maps show changes in where workers live before and at the peak of LNG employment, 2010-2017. Note that while services jobs were linked to Cameron Parish residents, many of the goods-producing jobs were linked to residences in Texas and other parts of Louisiana.

Cameron Parish: Changes in where workers in key industrial tracts live

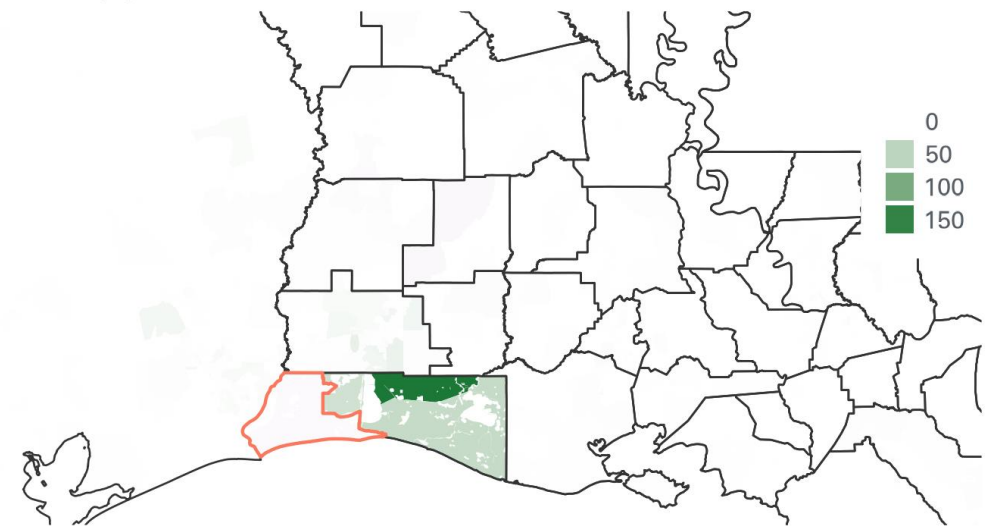
Goods-producing industry jobs, 2012-2017



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Cameron Parish: Changes in where workers in key industrial tracts live

Services industry jobs, 2012-2017



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

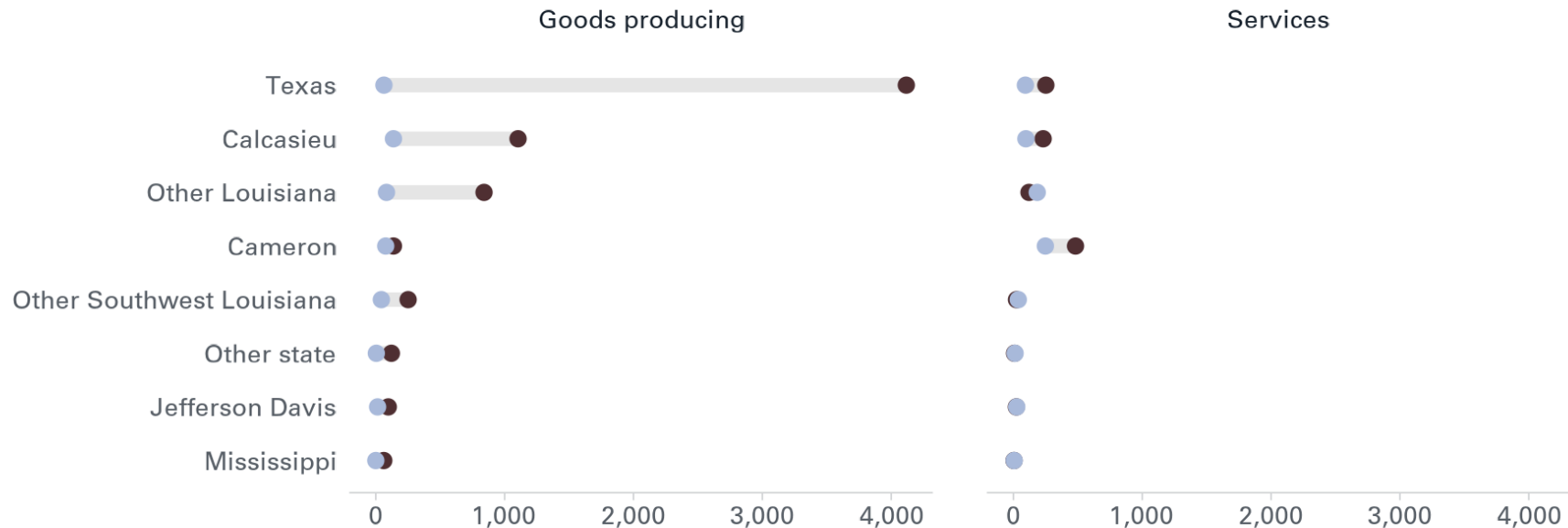
Note: Goods-producing includes construction and manufacturing.

Many of the jobs created during the peak of LNG construction in Cameron Parish were linked to Texas residents (64% of net new jobs), Calcasieu residents (15%) , and Louisiana residents of parishes outside the Southwest region (12%). For the smaller number of Services industry jobs, a high percentage were linked to Cameron Parish residents.

Cameron Parish: Changes in where workers in key industrial tracts live

Number of jobs by place of residence for those employed in key industrial tracts pre- and post-expansion (2012 and 2017)

● pre ● post



Note: Goods-producing includes construction and manufacturing.

Calcasieu Parish

- Calcasieu Parish saw several major project announcements in the 2010s. Construction employment peaked in the latter half of the 2010s, and manufacturing employment increased by over 2,000 since the early 2010s. Many of the goods-producing workers in Calcasieu's main industry employment census tracts live in Calcasieu.
- Comparing these tracts during a dynamic period between 2010 and 2018, Goods-producing employment increased by about 8 thousand, with the largest share going to Calcasieu. Many goods-producing jobs were also linked to Texas residents, Louisiana residents outside of the Southwest region of the state, and other parishes in the Southwest region.



Calcasieu Parish

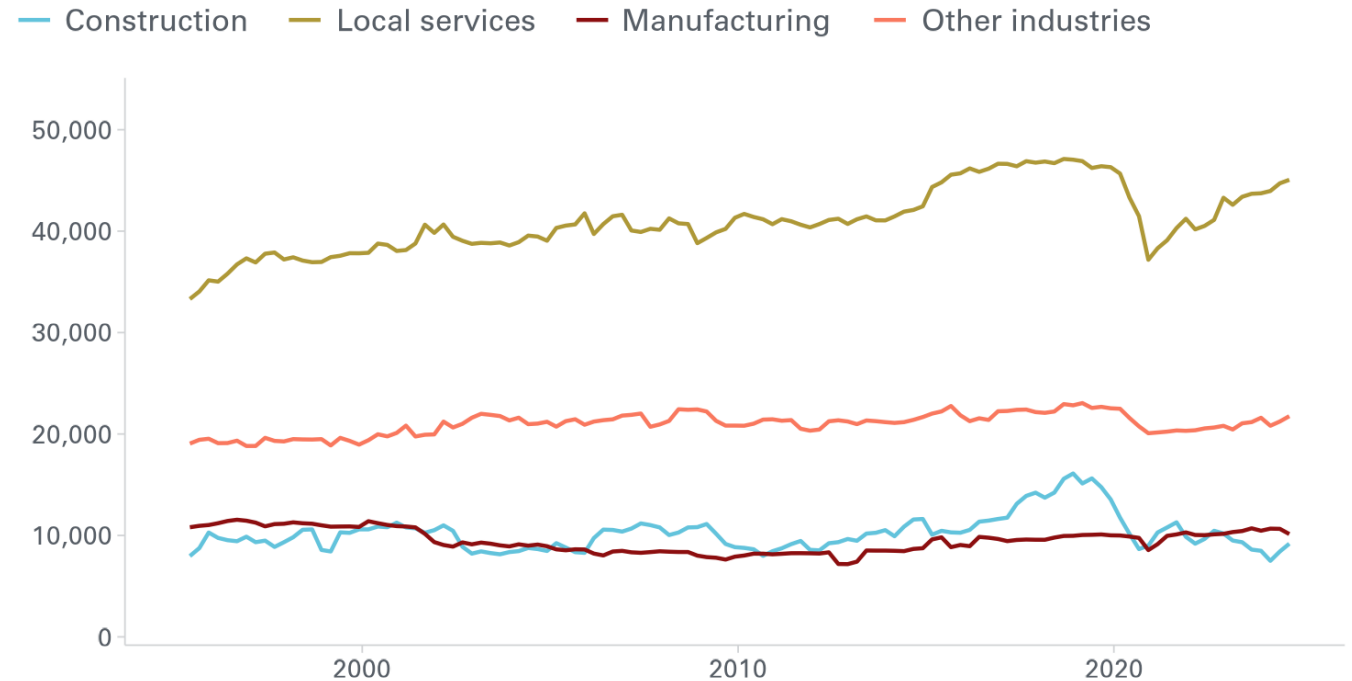
Construction employment peaked in the late 2010s, and manufacturing employment increased by over 2,000 since the early 2010s.

This tracks with project announcements, for which several started construction during the 2010s and began operations toward the end of the decade.

In addition to the pandemic, employment in Calcasieu was also affected by Hurricanes Laura and Delta in 2020.

Calcasieu employment trends

Jobs located in the parish



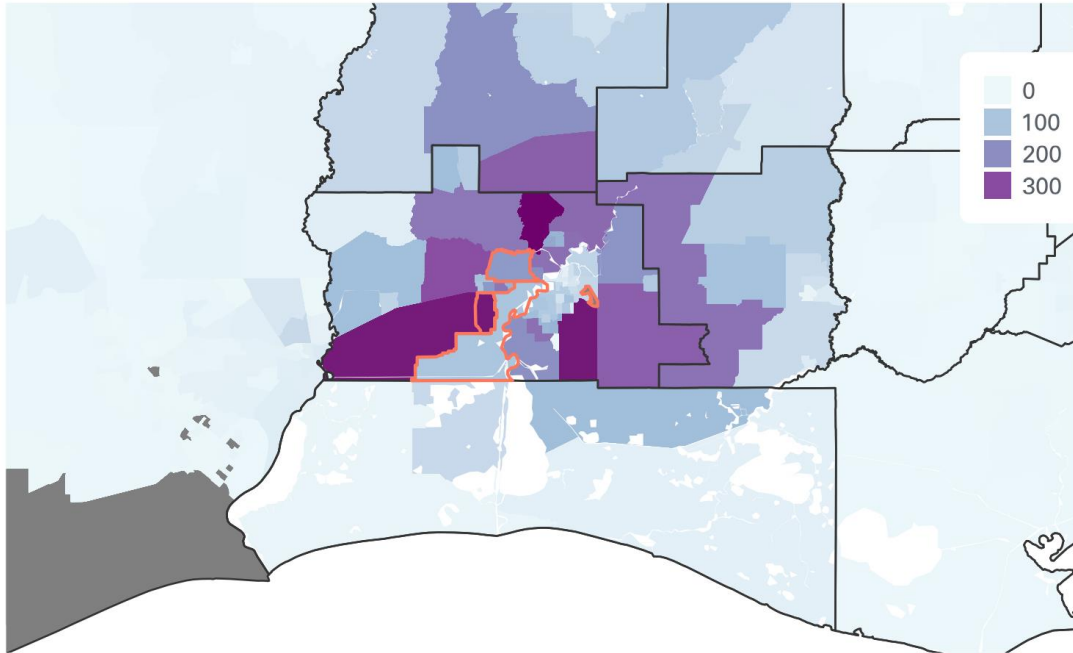
Source: QWI (U.S. Census Bureau)



These maps show where workers live in the most recent data (2022). These are the home census tracts of workers in jobs in Calcasieu's main industrial tracts (highlighted). Many of the goods-producing workers live in areas surrounding Lake Charles (Calcasieu) and neighboring parishes, with relatively few linked to Lake Charles proper.

Calcasieu Parish: Where workers in key industrial tracts live

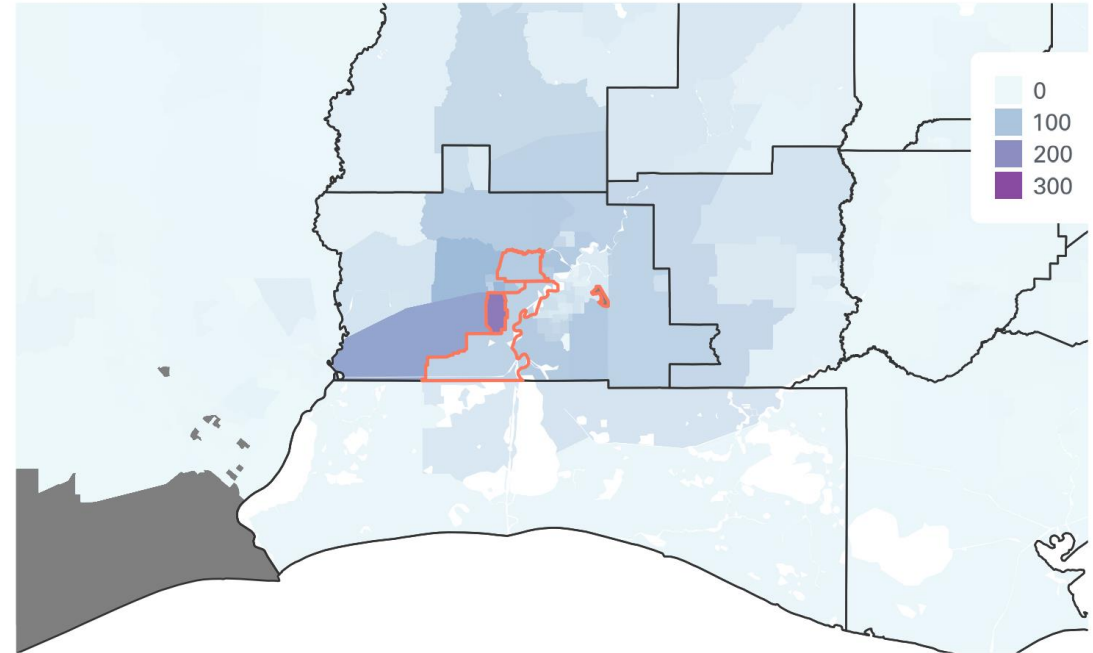
Goods-producing industry jobs, 2022



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Calcasieu Parish: Where workers in key industrial tracts live

Services industry jobs, 2022



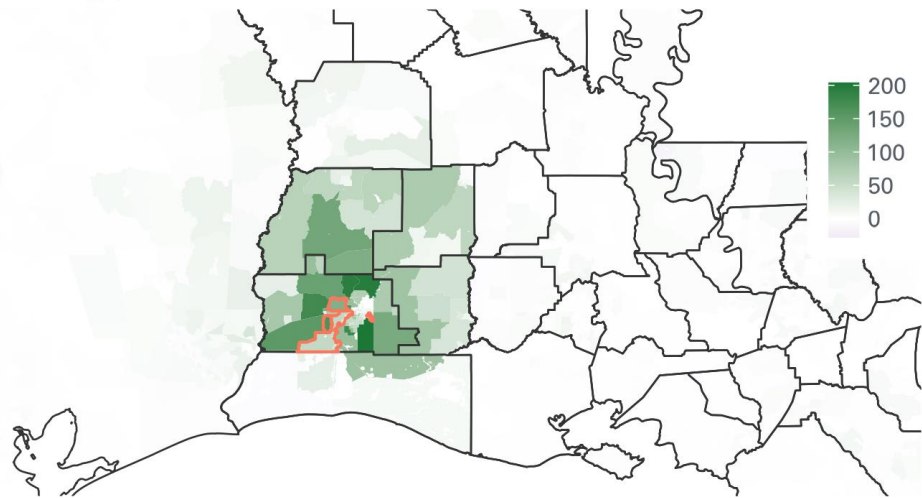
Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

These maps show changes in where workers live before and after a dynamic employment period, 2010 to 2018. Goods-producing employment increased by about 8 thousand, affecting Calcasieu, surrounding parishes, and parts of Texas. Services employment in the same tracts fell by 1 thousand, with most of the decrease falling within Calcasieu Parish.

Calcasieu: Changes in where workers in key industrial tracts live

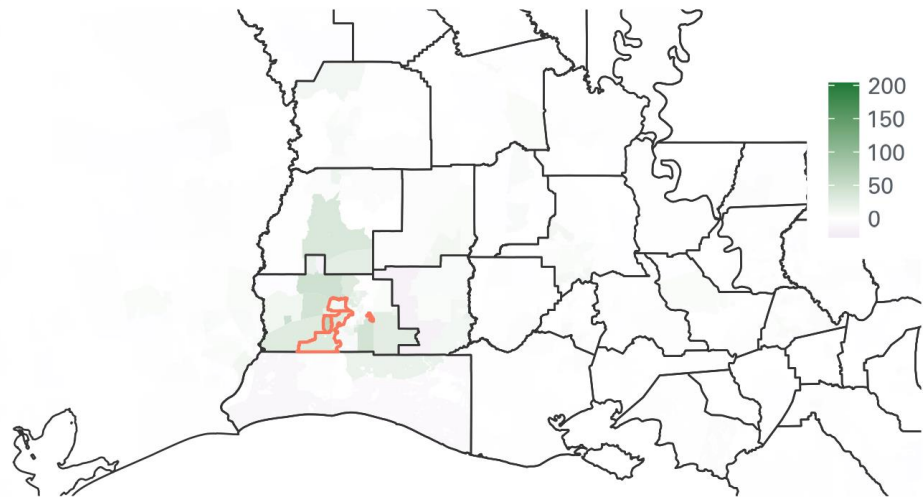
Goods-producing jobs, 2010-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Calcasieu: Changes in where workers in key industrial tracts live

Services jobs, 2010-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

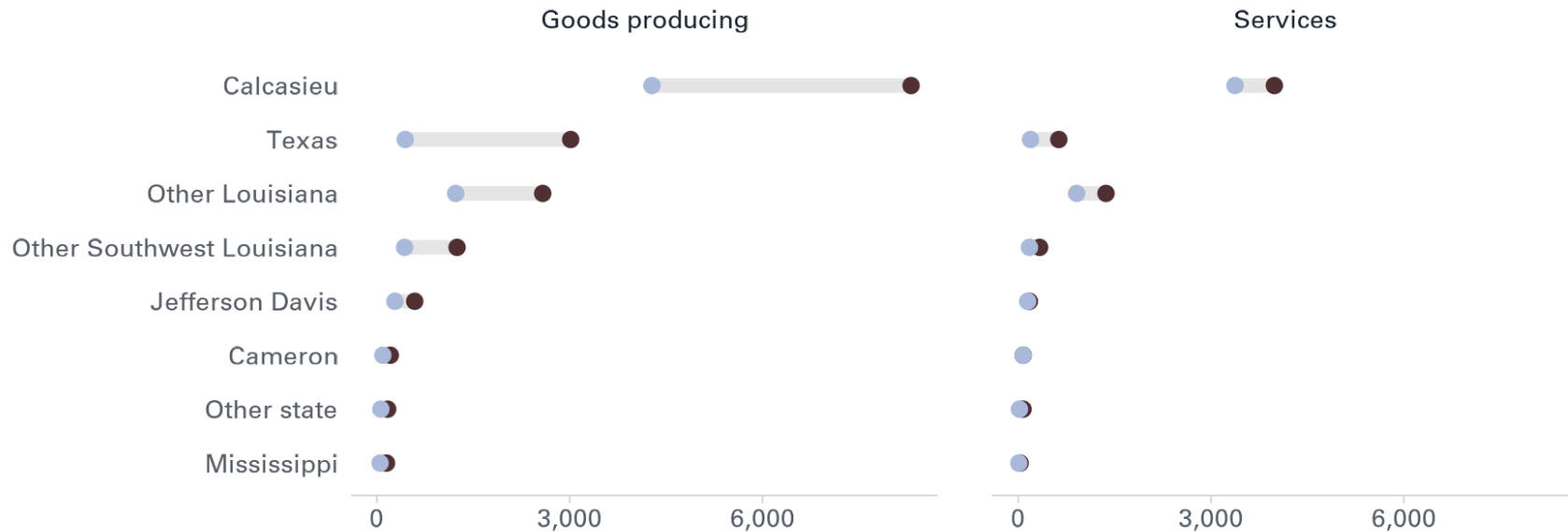
Note: Goods-producing includes construction and manufacturing.

Local resident workers in Calcasieu gained many of the goods-producing jobs. Many goods-producing jobs were also linked to Texas residents and Louisiana residents outside of the Southwest part of the state.

Calcasieu: Changes in where workers in key industrial tracts live

Number of jobs by place of residence for those employed in key industrial tracts pre- and post-expansion (2010 and 2018)

● pre ● post



Note: Goods-producing includes construction and manufacturing.

River Parishes (St. James, St. John, St. Charles)

- In the River Parishes, manufacturing accounts for a large share of total employment. Construction increased modestly during the late 2010s, but manufacturing employment was relatively flat. About half of the Manufacturing employment and most of the employment in non-Manufacturing, non-Construction industries is in St. Charles Parish.
- Without a clear period of employment increase, we compare 2013 and 2018, when goods-producing industry employment increased by about 1,500 in the main industrial employment tracts. Many of the new goods-producing jobs were tied to the St. Charles Parish (especially, the westbank). A significant number of commuters come from other nearby parishes like Ascension and Jefferson.



River Parishes (St. Charles, St. John the Baptist, and St. James)

In the River Parishes, manufacturing accounts for a large share of total employment. Construction increased modestly during the late 2010s, but manufacturing employment was relatively flat. Very recently (since 2023), St. Charles has seen a spike in construction.

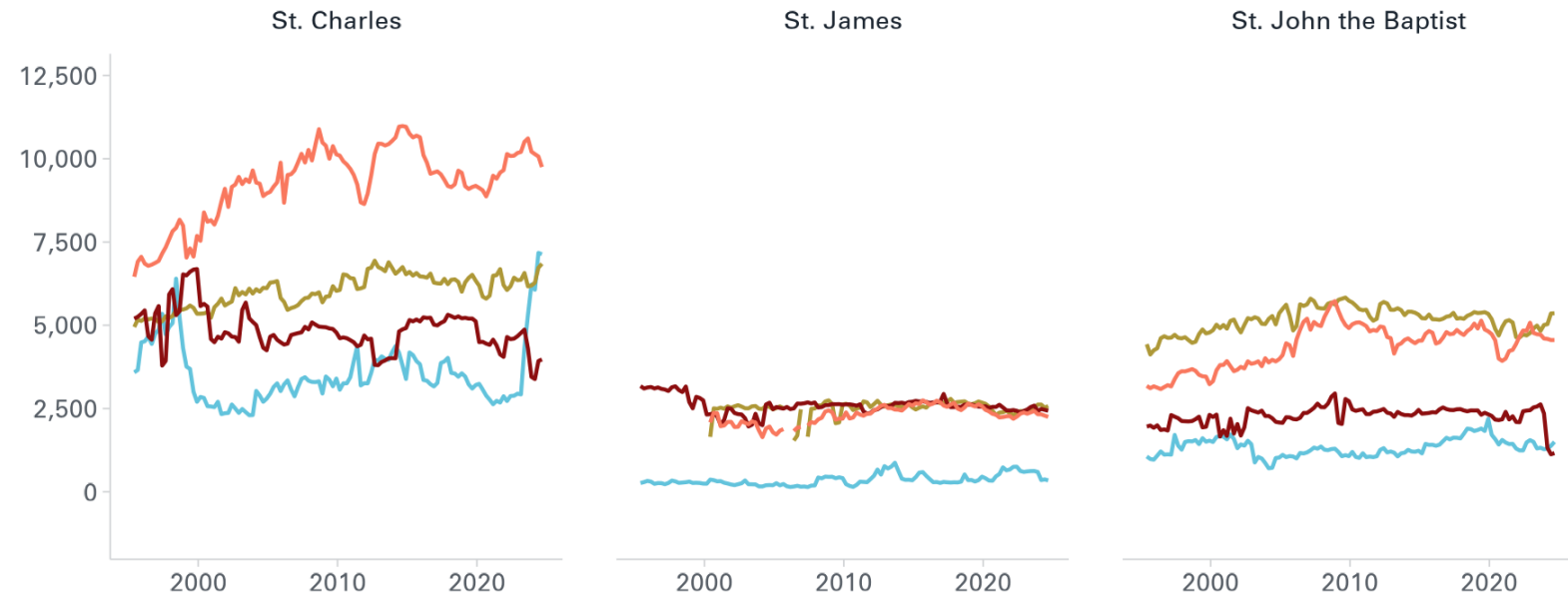
Note:

Without a clear pre/post period, the analysis below compares 2013 with 2018, when goods-producing industry employment increased by about 1,500 in the main industrial employment tracts.

River Parishes employment trends

Jobs located in each parish

— Construction — Local services — Manufacturing — Other industries



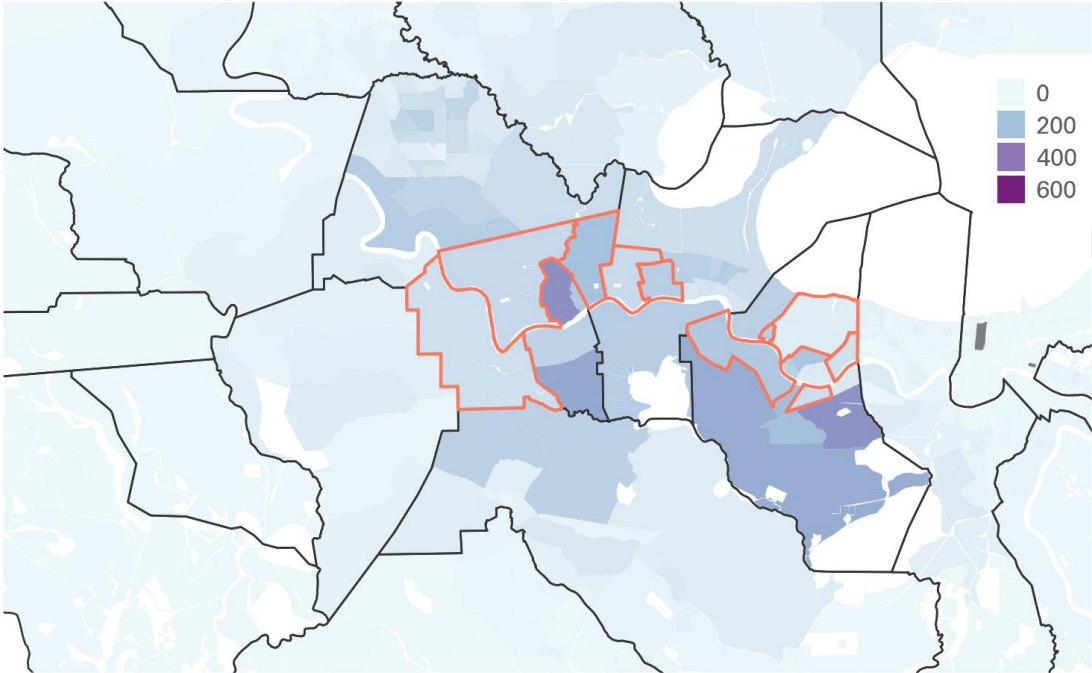
Source: QWI (U.S. Census Bureau)



These maps show where workers live in the most recent data (2022). These are the home census tracts of workers in jobs in the three River Parishes' main industrial tracts along the Mississippi River (highlighted).

River Parish: Where workers in key industrial tracts live

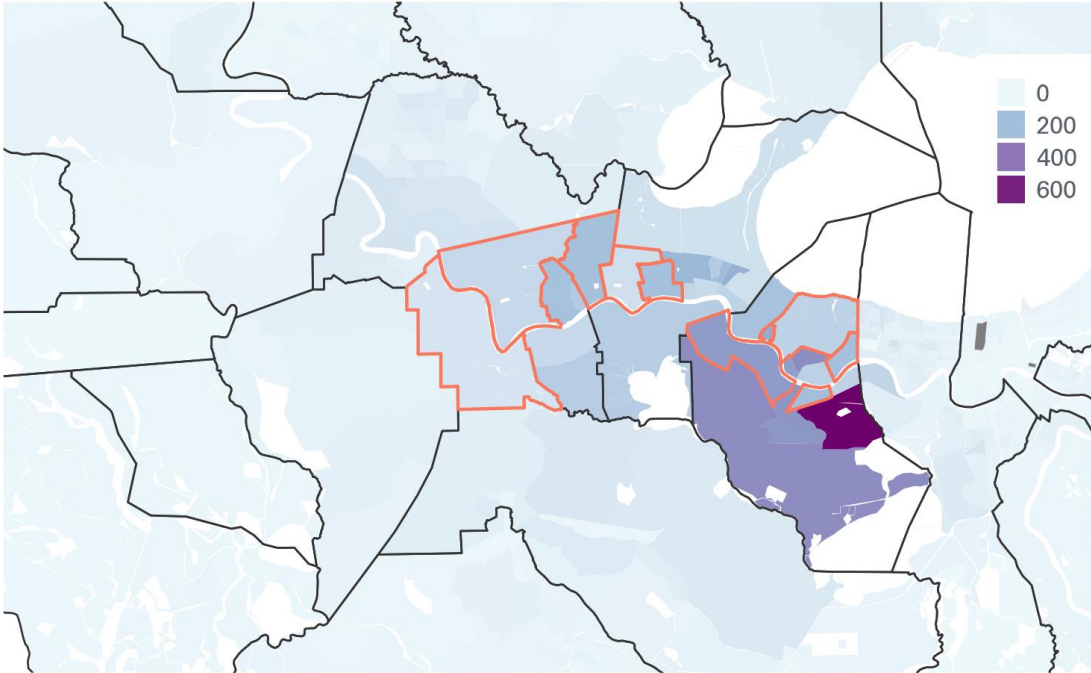
Goods-producing industry jobs, 2022



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

River Parishes: Where workers in key industrial tracts live

Services industry jobs, 2022



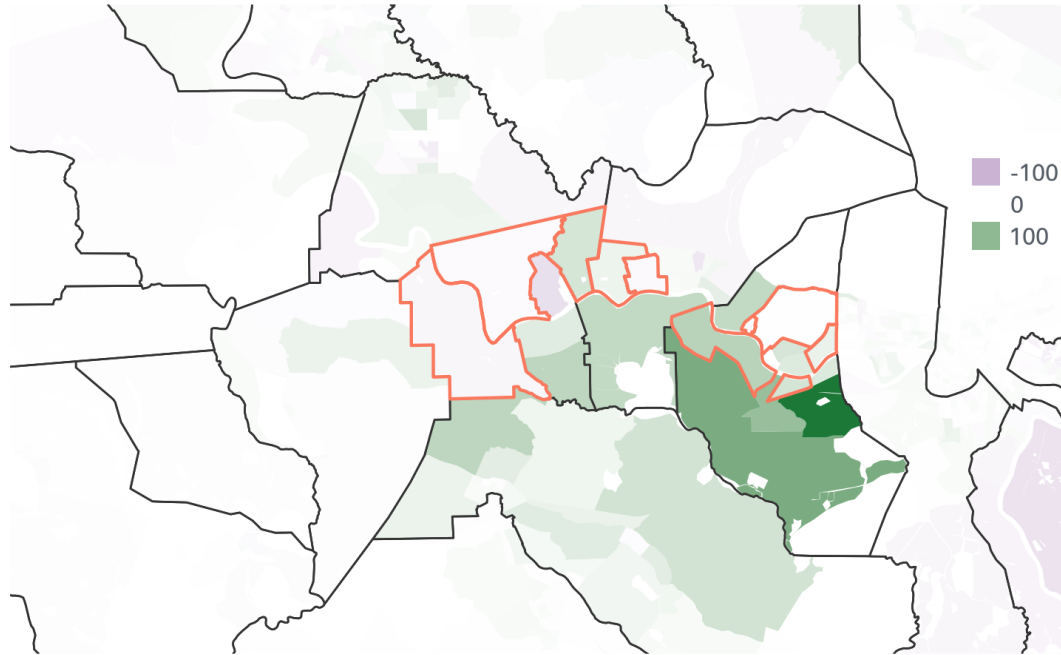
Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

These maps show changes in where workers live before and after a dynamic employment period, 2013-2018. Impacts on resident employment was uneven in the River Parishes, with places like the eastbank of St. John seeing losses and the westbank of St. Charles seeing gains.

River Parishes: Changes in where workers in key industrial tracts live

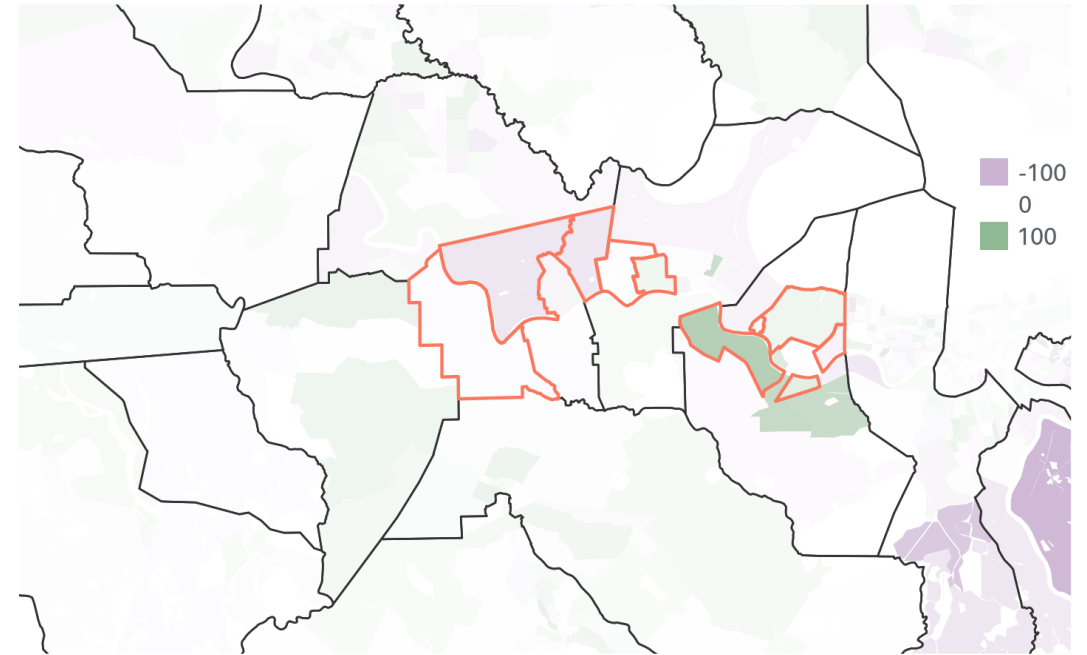
Goods-producing jobs, 2013-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

River Parishes: Changes in where workers in key industrial tracts live

Services jobs, 2013-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

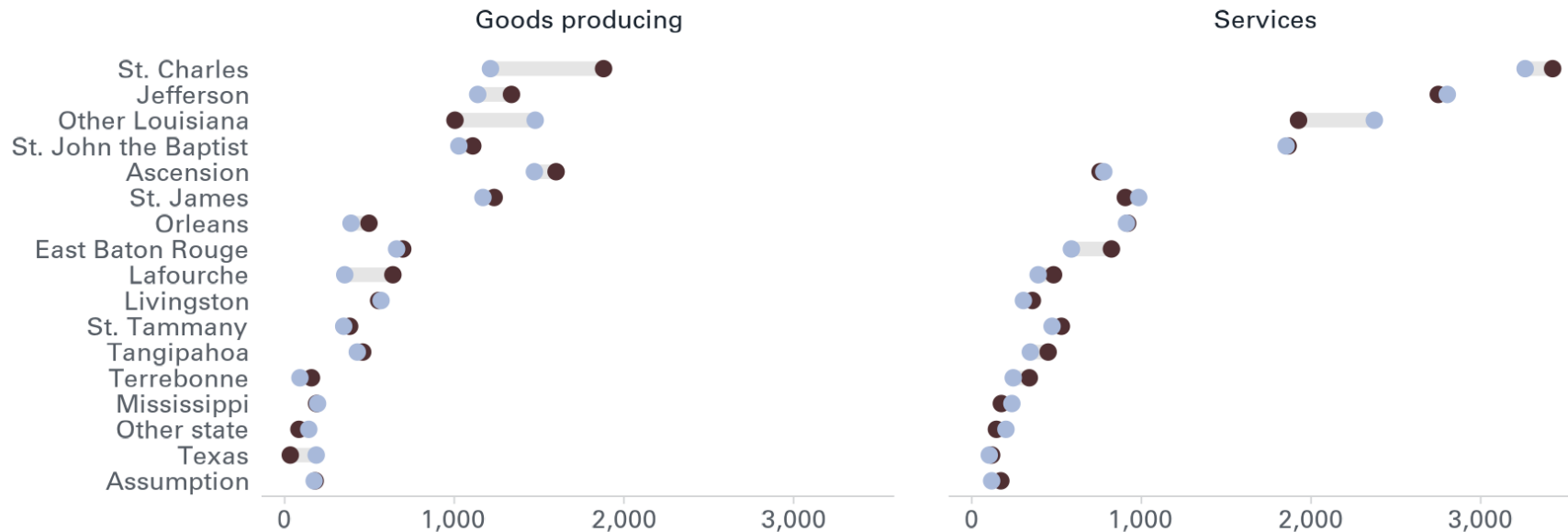
Note: Goods-producing includes construction and manufacturing.

Many of the new River Parish jobs were linked to St. Charles Parish, with other gains in Ascension, Jefferson, and Lafourche. During the 2013-2018 period examined, residents of St. James and St. John saw only very small increases in employment linked to tracts with high industrial employment.

River Parishes: Where workers in key industrial tracts live

Number of jobs by place of residence for those employed in key industrial tracts pre- and post-expansion (2013 and 2018)

● pre ● post



Note: Goods-producing includes construction and manufacturing.

Ascension Parish

- Two sources contribute to Ascension Parish's strong employment gains: the parish's population growth as an outlying suburb of the Baton Rouge metro area and industrial job growth within the parish. Construction employment in the late 2010s reached over twice the level in the early 2010s, and manufacturing employment also saw a notable increase.
- Comparing employment in 2018 and 2010, a relatively large proportion of new jobs in Ascension were linked to residents of the same parish. Many workers also commute from nearby parishes like East Baton Rouge, Livingston, and Tangipahoa. Residents of Texas and other parts of Louisiana are also linked to many of the jobs in Ascension.



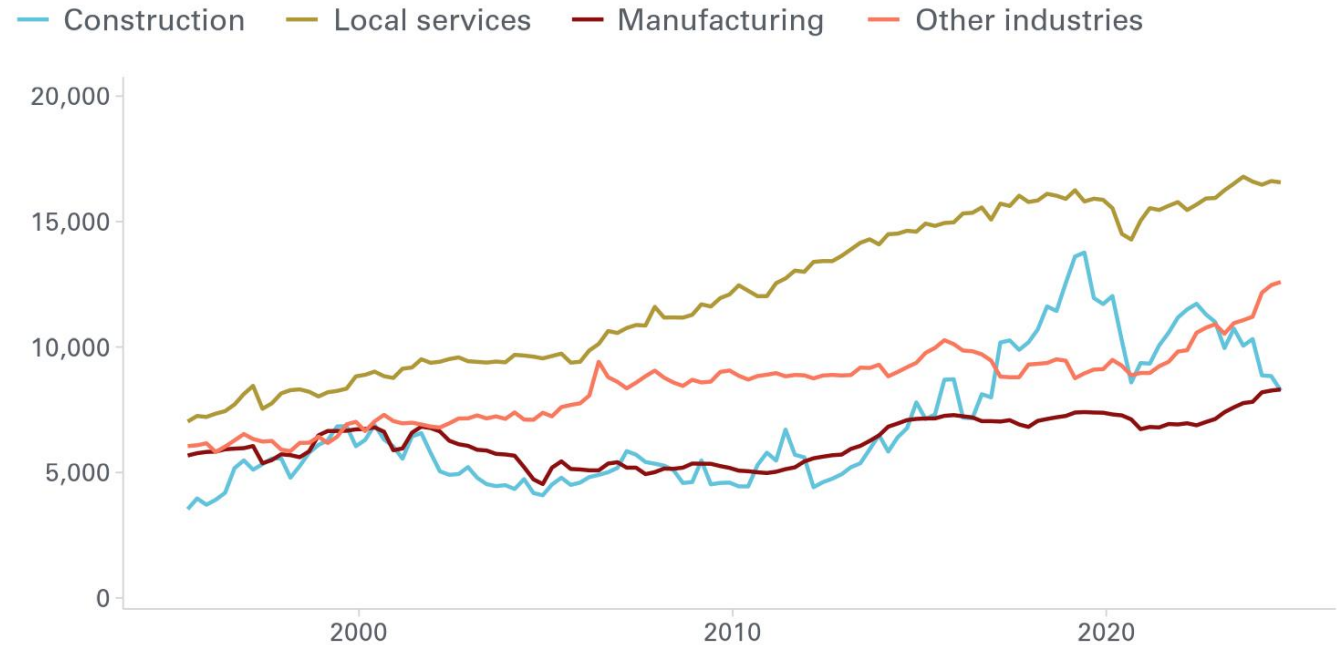
Ascension Parish

Employment in Ascension Parish has seen both industry-driven growth as well as growth tied to suburban population growth.

Construction employment in the late 2010s reached over twice the level in the early 2010s, and manufacturing employment also saw a notable increase.

Ascension employment trends

Jobs located in the parish



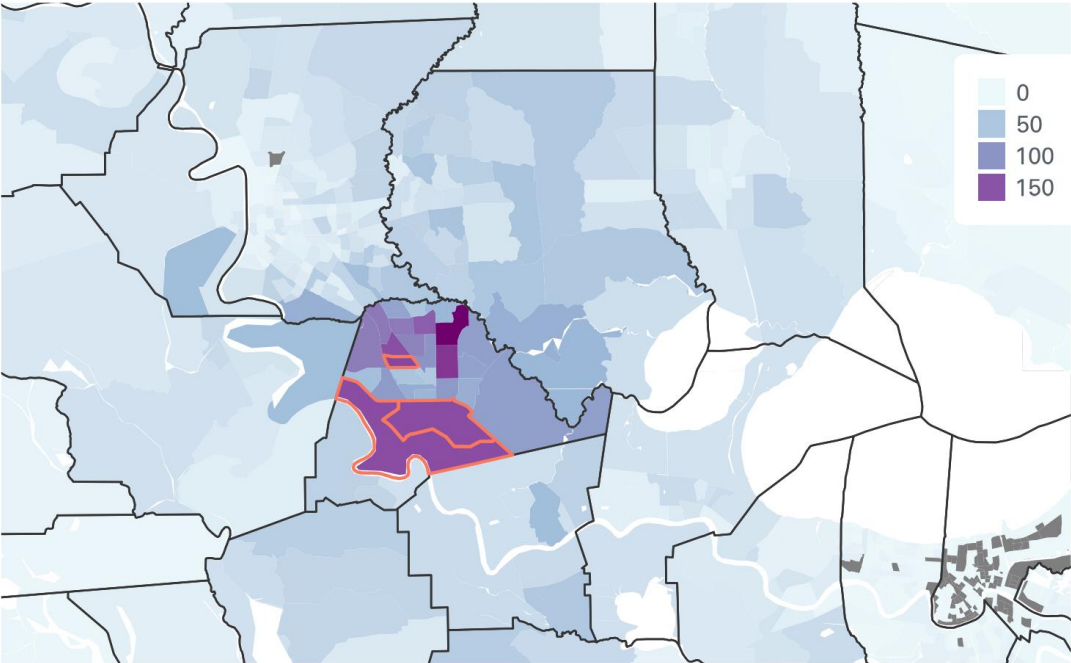
Source: QWI (U.S. Census Bureau). Note that local services does not include Educational Services, which is intermittently reported as zero in some quarters for Ascension.



These maps show where workers live in the most recent data (2022). These are the home census tracts of workers in jobs in Ascension's main industrial tracts on the eastbank near the Mississippi River (highlighted).

Ascension: Where workers in key industrial tracts live

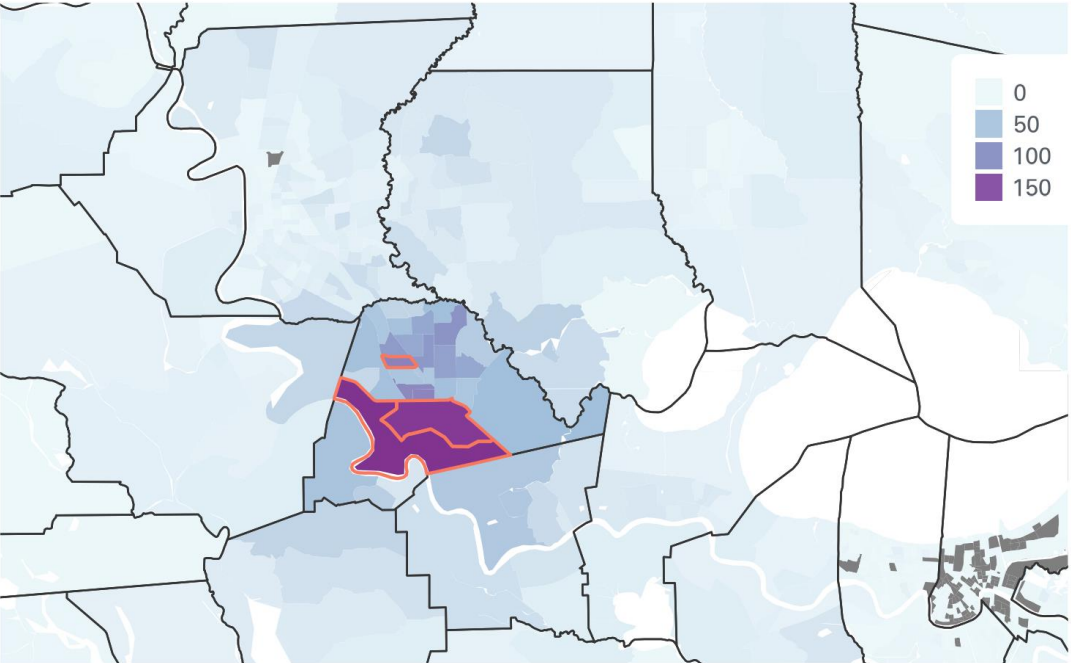
Goods-producing industry jobs, 2022



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Ascension: Where workers in key industrial tracts live

Services industry jobs, 2022



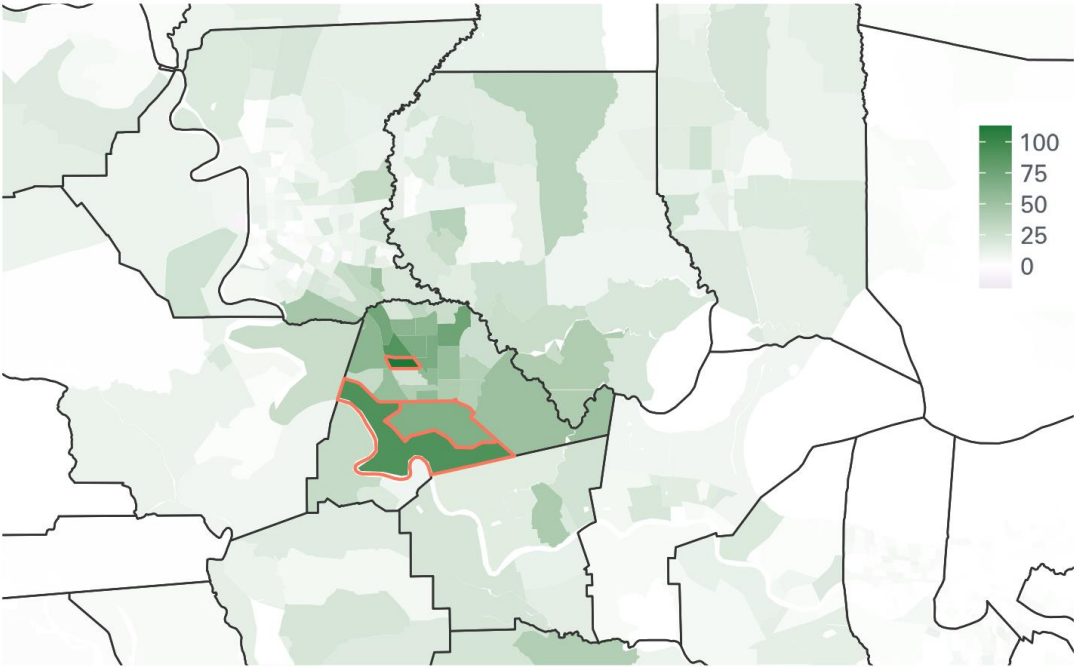
Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

These maps show changes in where workers live before and after the dynamic period in Ascension, 2010-2018. Many of the jobs were linked to residences in Ascension and nearby parishes.

Ascension: Changes in where workers in key industrial tracts live

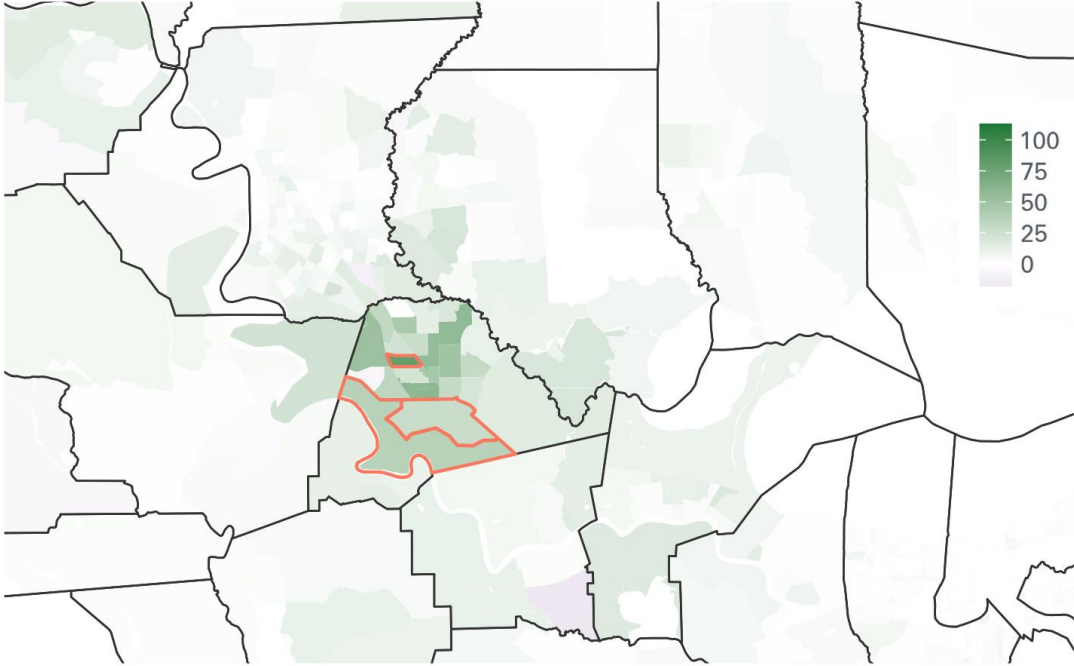
Goods-producing industry jobs, 2010-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Ascension: Changes in where workers in key industrial tracts live

Services industry jobs, 2010-2018



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

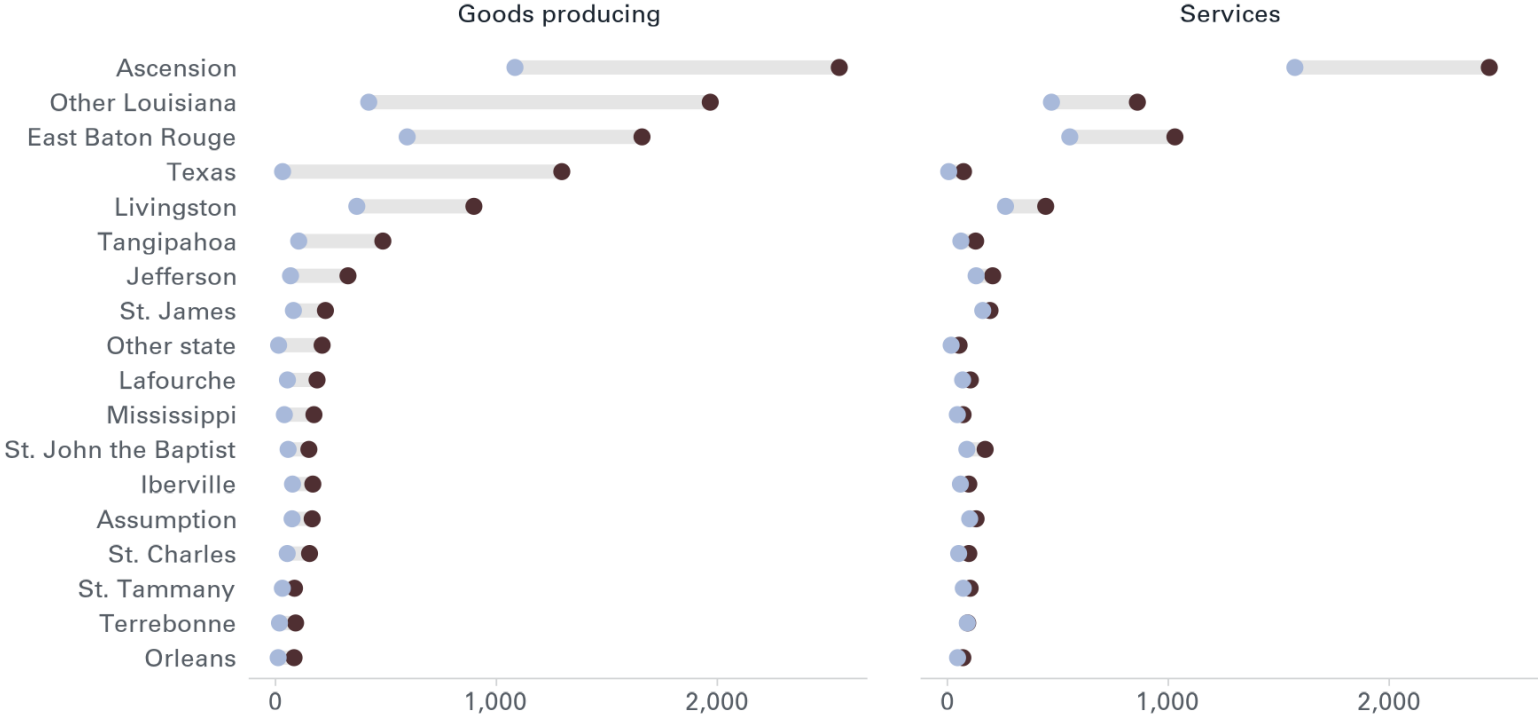
Note: Goods-producing includes construction and manufacturing.

A large share of the net new job in high industry tracts in Ascension were linked to Ascension residents, though many were also linked to distant residences.

Ascension: Changes in where workers in key industrial tracts live

Number of jobs by place of residence for those employed in key industrial tracts pre- and post-expansion (2010 and 2018)

● pre ● post



Source: Blanco Center analysis of LODES (U.S. Census Bureau)

Note: Goods-producing includes construction and manufacturing.

Appendix

Top occupations

Top occupations

The following slides show the top 10 occupations in four industry groups highlighted in the section **Characteristics of Industrial Workers**. The listed occupations are the most common jobs held by workers whose primary job is in each associated industry group and who are residents of Louisiana.

The tables report the following estimates for employed workers in the state of Louisiana for the years 2018-2022 (excluding 2020):

- Average annual employment (N)
- Median earnings
- Earnings range (20th and 80th percentile)



Top 10 occupations in the construction industry sector in Louisiana

SOC	Occupation title	N	Median earnings (\$)	Earnings range (\$, 20-80 percentile)
472061	Construction Laborers	23,682	35,814	22,142-60,962
472031	Carpenters	16,098	37,400	23,876-60,962
119021	Constructions Managers	12,622	93,230	56,000-148,031
471011	First-Line Supervisors of Construction Trades and Extraction Workers	12,404	77,755	47,752-120,000
472111	Electricians	9,466	57,231	34,961-86,394
472140	Painters and Paperhangers	8,758	34,339	21,946-53,607
1191XX	Other Managers	7,794	75,749	45,785-131,631
472152	Plumbers, Pipefitters, And Steamfitters	6,702	50,000	34,339-80,000
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	5,678	47,551	29,845-75,593
472070	Construction Equipment Operators	5,116	50,000	32,736-68,677

Source: Blanco Center analysis of IPUMS-USA.

Note: Analysis uses a modified SOC crosswalk developed by IPUMS-USA, earnings are for full-time year-round workers, and N is an annual average (2018, 2019, 2021, 2022).

Top 10 occupations in the light manufacturing industries in Louisiana

SOC	Occupation title	N	Median earnings (\$)	Earnings range (\$, 20-80 percentile)
5191XX	Miscellaneous Production Workers, Including Equipment Operators and Tenders	3,840	64,096	32,233-116,538
1191XX	Other Managers	2,606	75,749	45,785-131,631
537062	Laborers and Freight, Stock, and Material Movers, Hand	2,063	32,398	21,599-58,269
511011	First-Line Supervisors of Production and Operating Workers	1,680	83,566	43,893-139,675
37201X	Janitors and Building Cleaners	1,400	27,471	17,923-44,449
414010	Sales Representatives, Wholesale and Manufacturing	1,295	72,355	44,284-120,000
519111	Packaging and Filling Machine Operators and Tenders	1,267	34,339	21,800-46,558
513099	Food Processing Workers, All Other	1,214	35,638	23,876-55,561
537051	Industrial Truck and Tractor Operators	957	40,000	25,000-60,962
533030	Driver/Sales Workers and Truck Drivers	942	47,752	28,043-73,155

Source: Blanco Center analysis of IPUMS-USA.

Note: Analysis uses a modified SOC crosswalk developed by IPUMS-USA, earnings are for full-time year-round workers, and N is an annual average (2018, 2019, 2021, 2022).

Top 10 occupations in the utilities industry sector in Louisiana

SOC	Occupation title	N	Median earnings (\$)	Earnings range (\$, 20-80 percentile)
518031	Water and Wastewater Treatment Plant and System Operators	1,852	42,351	29,845-66,388
499051	Electrical Power-Line Installers and Repairers	1,432	74,082	43,214-107,594
1191XX	Other Managers	1,262	75,749	45,785-131,631
472111	Electricians	1,084	57,231	34,961-86,394
511011	First-Line Supervisors of Production and Operating Workers	997	83,566	43,893-139,675
518010	Power Plant Operators, Distributors, and Dispatchers	848	98,776	58,524-146,309
499071	Maintenance and Repair Workers, General	735	53,996	32,398-85,347
472152	Plumbers, Pipefitters, And Steamfitters	533	50,000	34,339-80,000
436014	Secretaries And Administrative, Except Legal, Medical, And Executive	489	38,574	26,998-54,827
434051	Customer Service Representatives	487	34,961	23,459-54,000

Source: Blanco Center analysis of IPUMS-USA.

Note: Analysis uses a modified SOC crosswalk developed by IPUMS-USA, earnings are for full-time year-round workers, and N is an annual average (2018, 2019, 2021, 2022).

Top 10 occupations in the energy-related and heavy manufacturing industries in Louisiana

SOC	Occupation title	N	Median earnings (\$)	Earnings range (\$, 20-80 percentile)
5191XX	Miscellaneous Production Workers, Including Equipment Operators and Tenders	8,512	64,096	32,233-116,538
511011	First-Line Supervisors of Production and Operating Workers	6,128	83,566	43,893-139,675
514041	Machinists	4,470	60,962	43,893-86,991
1191XX	Other Managers	4,083	75,749	45,785-131,631
514120	Welding, Soldering, and Brazing Workers	3,894	59,690	34,961-86,429
172041	Chemical Engineers	3,359	134,991	93,230-176,272
414010	Sales Representatives, Wholesale and Manufacturing	2,865	72,355	44,284-120,000
537062	Laborers and Freight, Stock, and Material Movers, Hand	2,732	32,398	21,599-58,269
17302X	Other Engineering Technologists And Technicians, Except Drafters	2,030	62,954	42,000-102,000
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,954	66,388	34,139-98,776

Source: Blanco Center analysis of IPUMS-USA.

Note: Analysis uses a modified SOC crosswalk developed by IPUMS-USA, earnings are for full-time year-round workers, and N is an annual average (2018, 2019, 2021, 2022).

Appendix

Key terms

“Industrial employment”: A shorthand in this analysis for jobs related to major industrial capital investments in Louisiana, mainly construction (temporary, project-based) and manufacturing (ongoing, longer term) jobs.

Industry versus occupation: When the terms are used in reference to employment data, industry is a type of business, like chemical manufacturing, and occupation is a type of job, like Chemical Plant and System Operator. Both are identified by standardized codes: NAICS for industry and SOC for occupation.

Workers versus jobs: Jobs are regular employment relationships, and workers are the people who hold them. Most of the data describes jobs except for the section on the characteristics of industrial workers.

Goods-producing industries: Extract raw materials, create tangible products and physical structures (Natural Resources and Mining, Construction, and Manufacturing). Also known as primary and secondary sectors. Encompasses all construction and manufacturing industries.

Services industries: All other industries, also known as tertiary sectors. Includes low-paid industries like leisure and hospitality, high paid professional services, education and health, as well as trade, transportation, and utilities and others.



Regional labor market: A geographic area where people live and where they commonly commute to work, usually defined as a set of parishes/counties (e.g., MSA).

“Downstream” industry: Related to the processing of crude oil and natural gas, most associated in Louisiana with refining and chemical manufacturing.

LNG: Liquid natural gas. Can also refer to industrial facilities associated with it, such as liquefaction, port, and pipeline facilities.

Occupational sorting: The economic and social processes by which individuals are distributed across different jobs within a labor market. Often, this sorting is uneven with respect to demographics, education and skill backgrounds, social networks, and other group-level factors that shape access to jobs and, consequently, contribute to differences in wages and other employment outcomes.

Location quotient: A measure of industry specialization or concentration, defined as the percent of area employment in an industry divided by the percent of national employment in the same industry.

Shift-share: A decomposition of employment change into components that reflect general, industry-specific, and area-specific trends. Used in this analysis to compare “actual” employment trends in Louisiana industries against “expected” trends based on national employment.

River Parishes: Parishes clustered around the Mississippi River south of Baton Rouge - St. James, St. John the Baptist, and St. Charles parishes.

