

**JOSHUA ROBERSON** LEAD DATA ANALYST

**WESLEY MILLER** SENIOR RESEARCH ASSOCIATE **WEILING YAN** RESEARCH INTERN

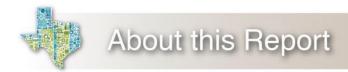
JOHN SHAUNFIELD RESEARCH INTERN



TECHNICAL REPORT

About this Report	3
2021 Annual Summary	
Economic Activity	
Major Metros Gross Domestic Product	
Major Metros Business Cycle Index	
Texas Business Cycle Index and Leading Index	10
Consumer Confidence Index	10
Financial Activity	11
30-Year Mortgage Rate and Ten-Year Bond Yield	11
Texas Mortgage Applications	11
Housing	12
Total Housing Sales	12
Texas Residential Construction Index	12
Energy	13
Crude Oil and Natural Gas Prices	13
Texas Production of Crude Oil and Rig Count	13
Retail Gas Prices	14
Employment	15
Total Nonfarm Annual Employment	15
Labor Force Participation Rate	15
Unemployment Insurance Claims: Initial Applications	16
Unemployment Rate	16
Major Metros Unemployment Rate	17
Total Private Employee Hourly Earnings	17
Major Metros Total Private Employee Hourly Earnings	18
Major Metros Employment Growth Rate	18
Employment Growth Rate	19
Manufacturing	20
Manufacturing Employment	20
Major Metros Manufacturing Employment	20
Manufacturing Employee Hourly Earnings	21
Major Metros Manufacturing Employee Hourly Earnings	21
Manufacturing Outlook Survey	22

Construction	23
Construction Employment	23
Construction Employee Hourly Earnings	23
Texas Construction Values	24
Major Metros Total Construction Values	24
Services	25
Services Sector Outlook Survey	25
CPI Inflation Rates	25
CPI Inflation Rates (Houston Components)	26
Real Trade Weighted Value of U.S. Dollar	26
Trade	27
Exports (All Commodities)	27
Manufacturing Exports	27
Crude Oil Exports	28
Texas Exports by Country	28
Texas Residential Construction Index	29



Texas Real Estate Research Center economists continuously monitor many facets of the global, national, and Texas economies. *Outlook for the Texas Economy* summarizes significant state economic activity and trends. All measurements are calculated annually, unless stated otherwise.

This publication is designed to be a one-stop resource for economic indicators. We hope you find them as useful as we do. Your feedback is always appreciated. Send comments and suggestions to info@recenter.tamu.edu.

Joshua Roberson, Wesley Miller, Weiling Yan, and John Shaunfield

Data current as of Feb. 23, 2022

© 2022, Texas Real Estate Research Center. All rights reserved.



WTI OIL PRICE PER BARREL

\$67.99

NONFARM EMPLOYMENT 429,967 jobs

LABOR FORCE PARTICIPATION RATE

62.4%

REAL COMMODITY EXPORTS

35.8% ANNUALLY

The COVID-19 global pandemic persisted throughout 2021, causing challenges not only for the Texas economy, but economies across the globe. Emerging variants have disrupted the reopening of the economy, though there have been tremendous improvements in the manufacturing, energy, and trade sectors. The WTI crude oil spot price averaged \$67.99, nearly doubling over the previous year. Governors across the nation have gradually eased up on COVID restrictions, allowing households more options to engage in the economy and normal life. Increased activity has had a positive impact on many service-related sectors, including retail and dining/restaurants. In November, Texas' economy achieved pre-pandemic levels. It is currently expanding, growing past 2019 and 2020 first-quarter levels.

Labor market conditions significantly improved over 2020 levels, boosting the economy from recovery to expansion by the end of the year. Overall employment returned to pre-COVID-19 levels. Some industries, such as the leisure and hospitality sector, have not recovered, while others, such as professional and business services, experienced significant growth. Texas' housing market boomed with record sales amid historically low interest rates. However, depleted inventory will likely remain a significant headwind in 2022.

Texas' **real gross domestic product** (GDP) jumped 10.1 percent in the fourth quarter, the largest increase of any state. Texas' impressive growth brought its RGDP to \$1.8 trillion, second only to California. According to the Bureau of Economic Analysis, professional, scientific, and technical services was the primary contributor to the state's growth.

The Lone Star State's economy is now expanding beyond its pre-pandemic level, according to the **Dallas Fed's Texas Business-Cycle Index.** The index gained over 13 points compared with last year, signaling strong economic recovery and expansion. Austin remained the state leader for the index, followed by Dallas and Fort Worth. Houston posted the strongest recovery over last year with 12 index points, and San Antonio contributed the lowest number of index points of the major metropolitan statistical areas (MSAs) with 5 points.

The state's long-term outlook rose continuously throughout the year as indicated by the **Texas Leading Economic Index** (a measure of *future* directional changes in the business cycle). The index experienced drastic improvement of over 12 points as the economy began to open up and people

<sup>&</sup>lt;sup>1</sup>All measurements are calculated annually, unless stated otherwise.



began engaging in normal business practices again. The index's outlook appears positive despite the emergence of new COVID variants. The **Consumer Confidence Index** averaged 10 points higher in 2021 than in 2020, with July 2021 seeing the highest index since the pandemic began.

The Federal Reserve is expected to reduce its balance sheet assets and increase the Federal funds rate as many as seven times in 2022. The **ten-year U.S. Treasury bond yield** ticked up 55 basis points in 2021, averaging 1.5 percent while both bond and mortgage rates rebounded after August. Meanwhile, the **Federal Home Loan Mortgage Corporation's 30-year fixed-rate** fell to 3 percent. Mortgage rates for both conventional and quasi-governmental purposes plummeted within Texas, highlighting a year of historical low levels. Mortgage rates plunged to 3 percent for conventional/non-GSE loans, while the median mortgage rate for GSE borrowers diminished to 3.2 percent. Mortgage application counts declined drastically, and refinance activity dried up. In 2021, refinance applications shrunk 27.1 percent on a seasonally adjusted average rate, while purchase applications shrunk by 12.6 percent. Amid the reduced mortgage rate and bolstered home prices, average loan sizes decreased 2.6 percent for refinance applications, and the sizes increased 15.3 percent for purchase applications. (For more information, see *Finding a Representative Interest Rate for the Typical Texas Mortgagee.*)

The Texas **Residential Construction Cycle (Coincident) Index,** which measures current construction activity, increased nationally and within Texas due to rising employment amid heightened construction gains. The Texas **Residential Construction Leading Index (RCLI)** peaked in April with an increase in weighted building permits and residential construction value starts while the tenyear real Treasury bill continued to fall. The trend later reverted on the state and metros levels, indicating slower activity in the coming months. Current inflationary conditions due to supply chain issues are putting downward pressure on construction activity and may impede construction activity in the coming months.

The West Texas Intermediate (WTI) crude oil spot price averaged \$71.13 in December. The annual average price skyrocketed to a staggering \$67.99 in 2021, a 74 percent increase from \$39.07 in 2020. Americans traveled more in 2021 as COVID restrictions eased and more businesses reopened. As a result, demand for oil increased with Texas' crude oil output holding at 4.9 million barrels per day for the sixth month in a row in December. The 2021 average was 4.8 million barrels per day.

The Lone Star State accounted for more than 40 percent of national oil production, increasing the number of active rigs from 157 in January 2021 to 260 in December. This is still far below the prepandemic levels of 350-plus active rigs. However, with restrictions lifting statewide and throughout the nation, oil production is expected to pick up in the coming months. On the natural gas front, the February freeze and cold winter caused natural gas prices to spike, elevating the annual rate. With this surge in demand, the average 2021 **Henry Hub natural gas spot price** rose to \$3.89 per million British thermal unit (BTU).

Texas gained 429,967 **nonfarm jobs** in 2021, amounting to 3.5 percent of this year's payrolls, putting the economy back at pre-pandemic levels of employment. Moreover, Texas' **labor force participation rate** ticked down to a new all-time low of 62.4 percent. This was still above the nationwide rate of 61.7 percent. Women in the 25- to 34-year-old age group were more likely than men to leave the labor force to take care of children amid in-person school closures.

All major MSAs posted strong gains in total nonfarm jobs throughout the year, with most metros seeing positive additions in almost every job category. Dallas added 132,400 jobs (5.1 percent), the highest of any MSA, with the private service sector making up the majority of these gains. Houston gained 68,000 nonfarm jobs (2.3 percent), with most of these in the service-providing sector (88,700). The gains were offset by the goods-producing sector shedding 20,500. Austin and Fort Worth had employment boosts of 76,600 (7 percent) and 38,500 (3.7 percent), respectively. The majority of the jobs added in Austin came from the professional and business sector at 26,800.

Texas' initial unemployment insurance claims shrank by more than half in 2021 to 1.7 million. Despite a surge in March, monthly claims steadily decreased the remainder of the year, dropping from 213,900 in January to 94,000 in December. Likewise, the statewide unemployment rate fell more than 160 basis points annually to an average of 6.1 percent. Given the June 2019 record-low of 3.4 percent and the February 2020 pre-COVID rate of 3.7 percent, the Texas labor market still has room to recover. Among the major MSAs, joblessness was highest in Houston. The metro lost 12,500 of workers in air transportation and arts/entertainment/recreation in 2020, and it had recovered only 62 percent of these positions in 2021. At 5.5 percent, the metrics in both San Antonio and DFW were lower than the state average. Austin maintained the lowest rate at 4.4 percent.

Average real private hourly earnings reached historical highs since the Great Recession, accelerating 6.4 percent annually in Texas. With the new annual averages, the U.S.-Texas spread improved to a \$2 difference. Dallas and Austin led the state average with nominal rates of \$32.45 and \$30.85, respectively. Fort Worth and Houston followed closely, posting rates around \$30 per hour. San Antonio observed a wage gap, offering workers on average \$25.80 per hour. Not only did Dallas have the highest nominal earnings at the metropolitan level, it also had the largest real earning growth at 8 percent year over year (YOY).

Texas' goods-producing sector shed 7,500 workers due to the lost energy-related positions outweighing the gained manufacturing-related positions. Despite the marginally increased positions in non-durable goods manufacturing, the goods-producing sector has a long way to fully rebound. The energy industry suffered the most during the pandemic. While the other major segments returned to pre-pandemic levels, the mining/logging/construction segments discharged 11,700 workers after laying off 94,500 workers in 2020.

The **Texas Manufactured Housing Survey** reported labor-supply constraints during the economic recovery. Texas' **average real hourly manufacturing earnings** increased 2.3 percent YOY as pressure for manufacturing workers grew. Gains were concentrated in North Texas as inflation-



adjusted wages in DFW consistently rose. San Antonio's real earnings spiked in December, raising the year-end growth to 8.9 percent, although the metric declined for eight months prior. The **Dallas Fed's Manufacturing Outlook Survey** supported wage increases. However, business executives reported robust employment growth and longer workweeks in December. The supply-chain disruptions, however, are concerns heading into 2022.

The construction industry had a net loss of 300 positions in 2021 after losing 37,100 workers in 2020. **Real hourly construction earnings** fell 2.5 percent year to date (YTD) in 2021 as inflation outweighed nominal gains. **Total construction values**, on the other hand, increased 11.2 percent in 2021 despite the state's restricting construction permits in the second half of the year. The overall expansion was exclusively attributed to the residential sector, where nonresidential sector shrank marginally. Single-family houses in particular surged across all four major MSAs, surpassing the increased apartment and multifamily house values. On the nonresidential side, construction activity shifted from schools/colleges and hotels/motels to manufacturer-owned warehouses.

The service-providing sector not only recovered all the positions lost during the economic downturn, but it also hit a record high since 1990) rising by 437,500 positions annually. At the subsector level, professional/business services and leisure/hospitality payrolls reported the largest net gains and percentage growths, increasing 129,000 and 117,000 jobs, or 7.3 percent and 9.9 percent, respectively. Supported by the third-fastest-growing payroll in transportation/warehousing/utilities services, retail trade and wholesale payrolls both recouped jobs. The **Dallas Fed's Service Sector Outlook Survey** corroborated strong economic growth but with some uncertainty due to continued variants. The survey index increased 25 points over 2020, indicating respondents have regained confidence in the sector. Overall general business activity is expected to improve.

The number of Texas retailers hit record levels in 2021 as shoppers eagerly returned to the stores. Multiple retail groups, such as food/beverage stores, health/personal care stores, and general merchandise stores, surpassed their pre-pandemic levels. Meanwhile, clothing/clothing accessories stores, while registering the largest net gain, recovered only 87.5 percent of their pre-pandemic employment levels. Inflation-adjusted retail sales shot up 23 percent in 2021, corresponding to an annual surge in the **Dallas Fed's Retail Outlook Survey**'s revenue index. Perceptions of future activity and company outlook for the new year were solidly optimistic due to steady demand and vaccine boosters.

The **U.S. Consumer Price Index (CPI)** had gone through the roof in 2021 compared with the Federal Reserve's 2 percent YOY benchmark. Inflation rose 7 percent YOY in December, averaging 4.7 percent growth over the year. This annual consumer price jump was the largest percent change since 1990. The rampant growth rate was also reflected in the core inflation, which increased 5.5 percent at year-end. The Houston CPI ticked up in December as transportation fully rebounded from last year's loss of performance and exceeded all historical measures, accelerating at an impressive rate of 20.6 percent YOY.

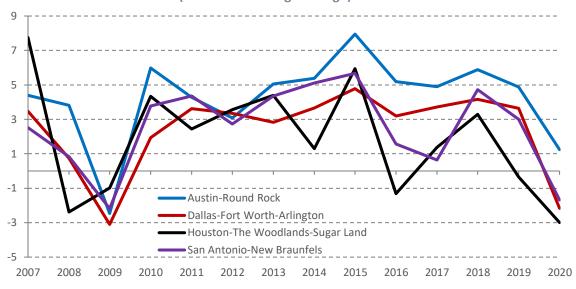
The **Texas trade-weighted value of the dollar** dropped 2.9 percent in 2021, with April seeing the sharpest monthly decline at a 10 percent drop month over month. The depreciating purchasing power of the dollar relative to foreign currencies, which causes exports to be less expensive, accelerated all of Texas' export activities. **Crude oil exports** rose on average 39.4 percent YOY as global economies reopened and oil demand gradually returned to pre-pandemic levels. Recuperating worldwide economic activity caused **Texas' commodity exports** to skyrocket 35.8 percent in real terms. Additionally, **real manufacturing exports** jumped 10.3 percent amid growing energy-related products and chemical shipments.

Exports from Texas to Mexico and China both hit record-high numbers in 2021 (series started in 2002). Mexico, Texas' top trading partner, reported an astonishing surge in energy resources, at 134.2 percent growth in oil/gas sector and 63.8 percent growth in petroleum/coal products. The United States-Mexico-Canada Agreement went into effect on July 1, 2020, and automakers obtained two extra years of duty-free origin and labor requirements (three-fourths of the product must originate from North America, and workers must earn at least \$16 per hour). However, the transportation export values in 2021 did not reflect accelerated trade ratifications as Mexico reported moderate growth and Canada reported a marginal decline. Canada's exports in petroleum/coal products and oil/gas sectors increased steadily. Meanwhile, China's purchase of agricultural products and oil and gas shot up 289.4 percent and 170.3 percent, respectively, helping replenish the country's emergency reserves.



### **Major Metros Gross Domestic Product**

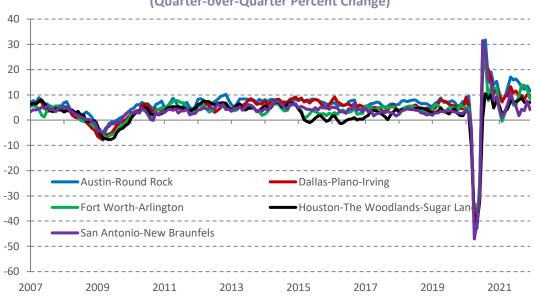
(Annual Percentage Change)



Note: Annual. Not seasonally adjusted. Source: Bureau of Economic Analysis

### **Major Metros Business Cycle Index**

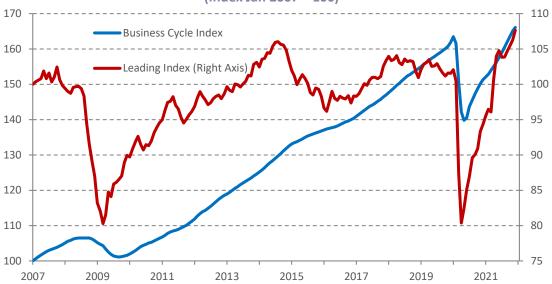
(Quarter-over-Quarter Percent Change)



Note: Seasonally adjusted. For more information, see <u>Texas Business Cycle Index</u>. Source: Federal Reserve Bank of Dallas

# **Texas Business Cycle Index and Leading Index**

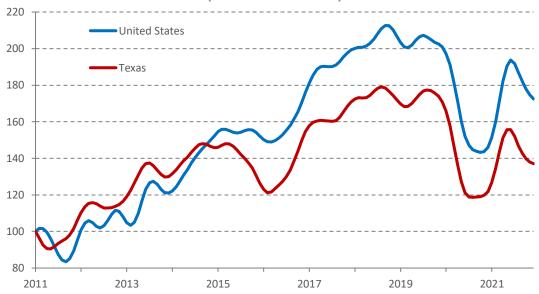
(Index Jan 2007 = 100)



Note: Seasonally adjusted. For more information, see <u>Texas Business Cycle Index</u>. Source: Federal Reserve Bank of Dallas

### **Consumer Confidence Index**

(Index Jan 2011 = 100)



Note: Seasonally adjusted and detrended.

Source: Conference Board



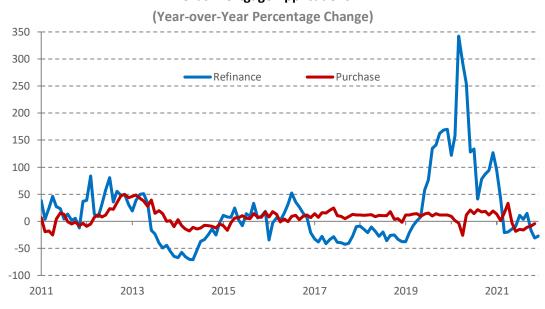
# 30-Year Mortgage Rate and Ten-Year Bond Yield



Note: Annual average.

Sources: Federal Home Loan Mortgage Corporation and Federal Reserve Board

### **Texas Mortgage Applications**



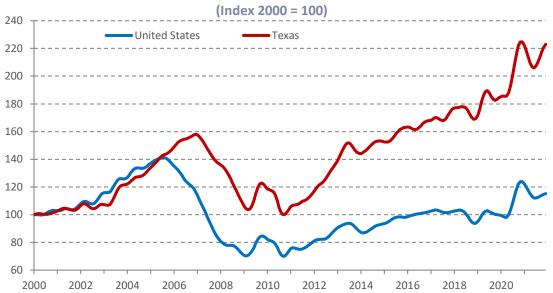
Note: Seasonally adjusted.

Source: Mortgage Bankers Association





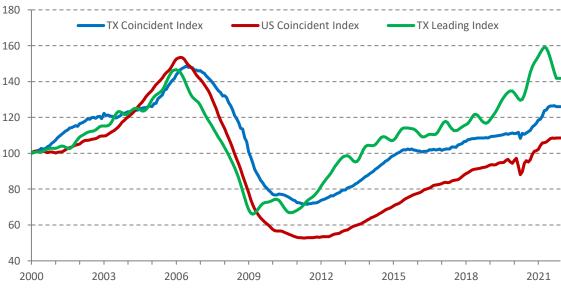




Note: Annual sum. Sales for the United States include all existing homes and new single-family homes; new non-single-family homes are not included. Texas includes all existing and new homes. For more information, see <a href="Housing Sales">Housing Sales</a>. Sources: U.S. Census Bureau, National Association of Realtors, and Texas Real Estate Research Center at Texas A&M University

#### **Texas Residential Construction Index**

(Index Jan 2000 = 100)

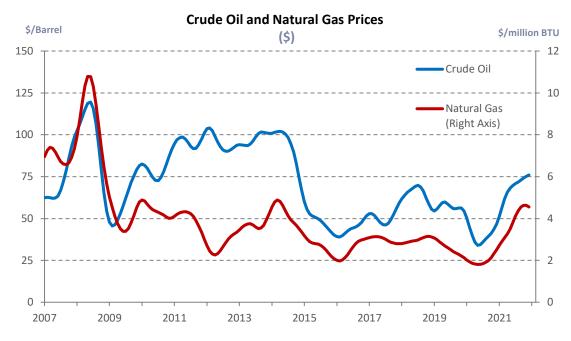


Note: Annual average.

Source: Texas Real Estate Research Center at Texas A&M University and Federal Reserve Bank of Dallas

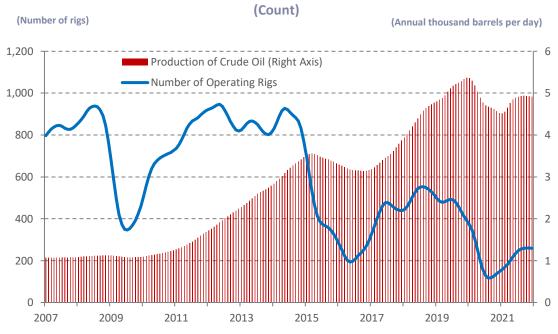






Note: Annual average. For more information, see <u>Crude Oil and Natural Gas Prices</u>. Source: U.S. Energy Information Administration received from Thomson Reuters

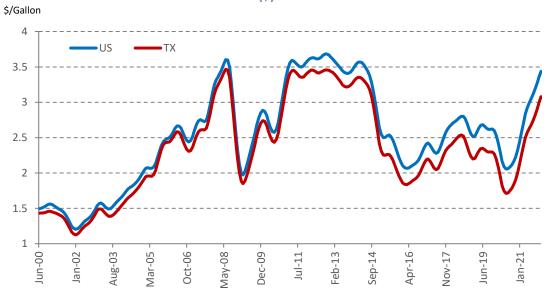
## **Texas Production of Crude Oil and Rig Count**



Note: Annual average. For more information, see <u>Texas Production of Crude Oil and Rig Count</u>. Sources: Baker Hughes and U.S. Energy Information Administration

# **Retail Gas Prices**

(\$)

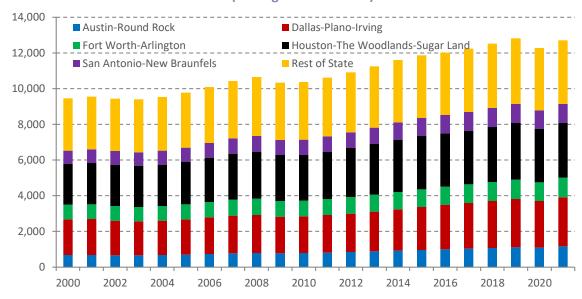


Source: U.S. Energy Information Administration



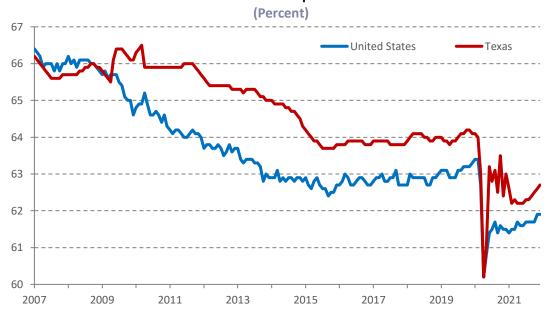
### **Total Nonfarm Annual Employment**

(Average in Thousands)



Note: Annual average. December 2020 is preliminary. For more information, see <u>Employment Growth Rate</u>. Source: Bureau of Labor Statistics

### **Labor Force Participation Rate**

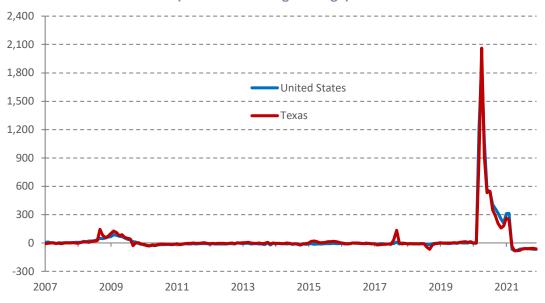


Note: Annual average. For more information, see <u>Unemployment Rate</u>. Source: Bureau of Labor Statistics



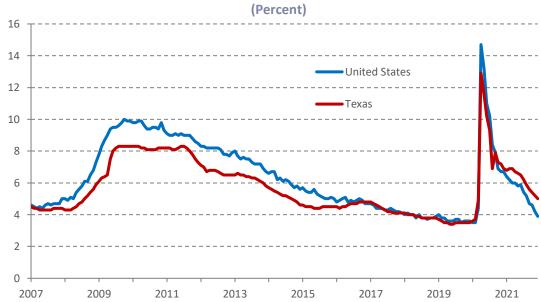
### **Unemployment Insurance Claims: Initial Applications**

(Annual Percentage Change)



Note: Annual average. For more information, see <u>Unemployment Insurance Claims: Initial Applications</u>. Source: Department of Labor

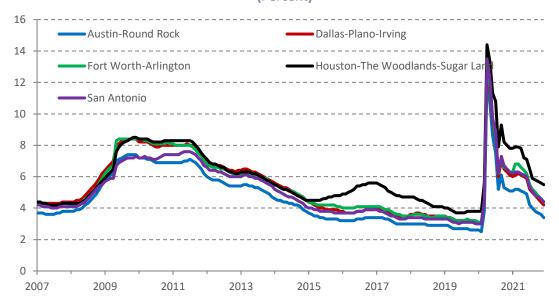
# **Unemployment Rate**



Note: Annual average. December 2020 is preliminary. For more information, see <u>Unemployment Rate</u>. Source: Bureau of Labor Statistics

### **Major Metros Unemployment Rate**

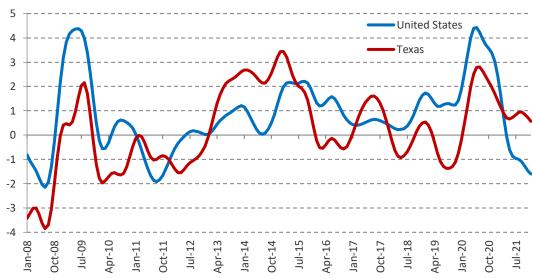
(Percent)



Note: Annual average. December 2020 is preliminary. For more information, see <u>Unemployment Rate</u>. Sources: Bureau of Labor Statistics and Texas Real Estate Research Center at Texas A&M University

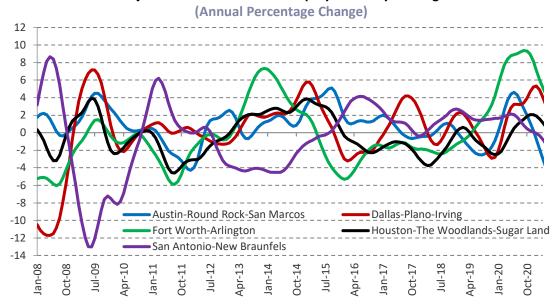
### **Total Private Employee Hourly Earnings**

(Annual Percentage Change)



Notes: Inflation adjusted. Annual average. December 2020 is preliminary. For more information, see <u>Total Private Employee Hourly Earnings</u>. Source: Bureau of Labor Statistics

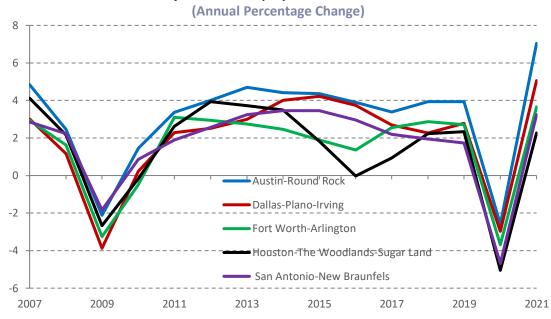
### **Major Metros Total Private Employee Hourly Earnings**



Notes: Inflation adjusted. Annual average. December 2020 is preliminary. For more information, see <u>Total Private Employee</u> Hourly Earnings.

Source: Bureau of Labor Statistics

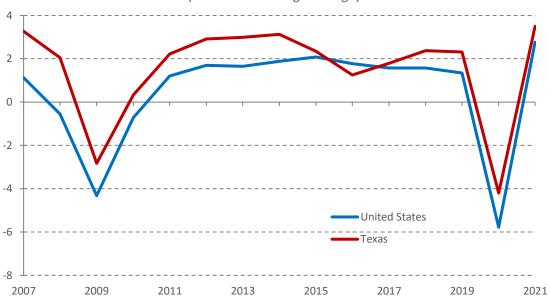
### **Major Metros Employment Growth Rate**



Note: Annual average. December 2020 is preliminary. For more information, see <a href="Employment Growth Rate"><u>Employment Growth Rate</u></a>. Source: Bureau of Labor Statistics

# **Employment Growth Rate**

(Annual Percentage Change)



Note: Annual average. December 2020 is preliminary. For more information, see <u>Employment Growth Rate</u>. Source: Bureau of Labor Statistics



### **Manufacturing Employment**

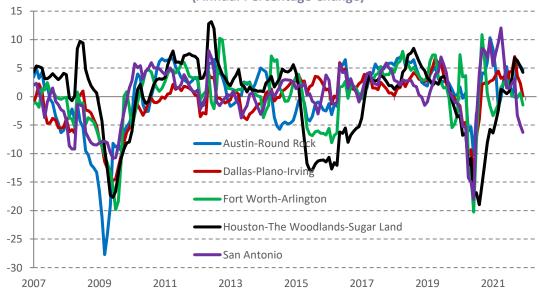
(Annual Percentage Change)



Note: Annual. December 2020 is preliminary. For more information, see Employment Growth Rate. Source: Bureau of Labor Statistics

### **Major Metros Manufacturing Employment**

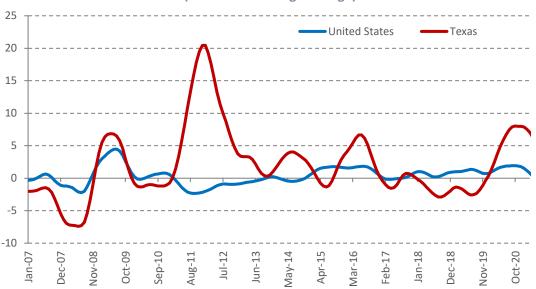
(Annual Percentage Change)



Note: Annual. December 2020 is preliminary. For more information, see Employment Growth Rate. Source: Bureau of Labor Statistics

### **Manufacturing Employee Hourly Earnings**

(Annual Percentage Change)

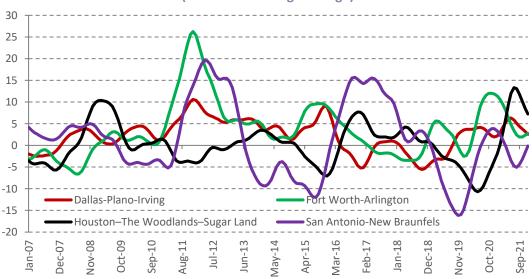


Notes: Inflation adjusted. Annual Average. December 2020 is preliminary. For more information, see <u>Total Private Employee</u> <u>Hourly Earnings</u>.

Source: Bureau of Labor Statistics

### **Major Metros Manufacturing Employee Hourly Earnings**

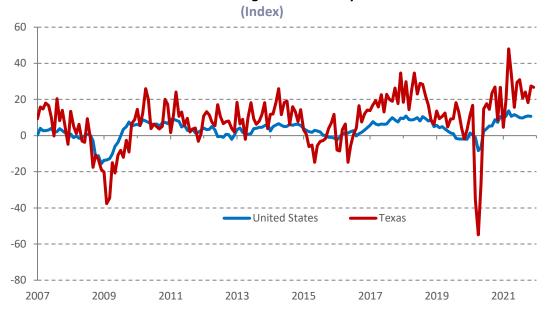
(Annual Percentage Change)



Notes: Inflation adjusted. Annual average. December 2020 is preliminary. For more information, see <u>Total Private Employee Hourly Earnings</u>.

Source: Bureau of Labor Statistics

# **Manufacturing Outlook Survey**



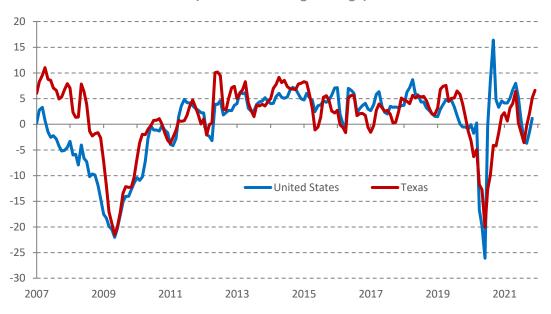
Note: Seasonally adjusted. For more information, see <u>Manufacturing Outlook Survey</u>. United States index is adjusted -50 to be on scale with Texas index

Sources: Federal Reserve Bank of Dallas and Institute for Supply Management



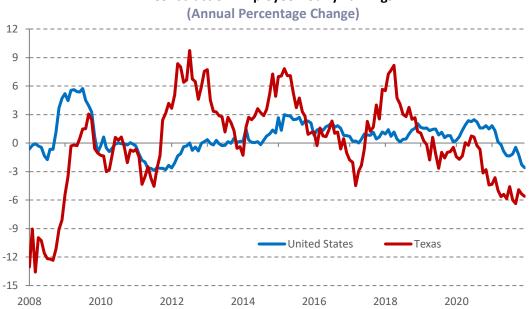
### **Construction Employment**

(Annual Percentage Change)



Note: Annual. December 2020 is preliminary. For more information, see <u>Employment Growth Rate</u>. Source: Bureau of Labor Statistics

## **Construction Employee Hourly Earnings**



Notes: Inflation adjusted. Annual average. December 2020 is preliminary. For more information, see <u>Total Private Employee</u> Hourly Earnings.

Source: Bureau of Labor Statistics



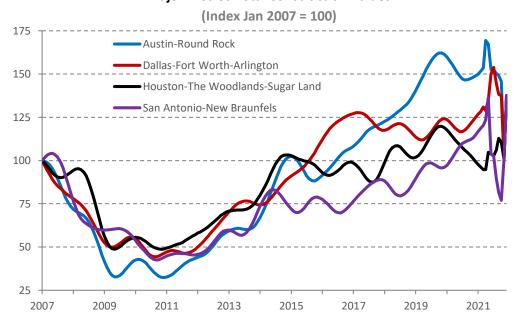
### **Texas Construction Values**

(Index Jan 2007 = 100)



Note: Real value. Annual Sum. Source: Dodge Analytics

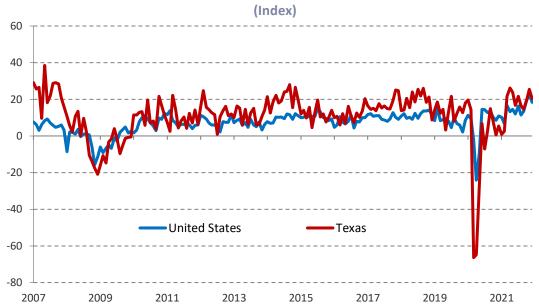
### **Major Metros Total Construction Values**



Note: Real values. Annual sum. Source: Dodge Analytics



### **Services Sector Outlook Survey**

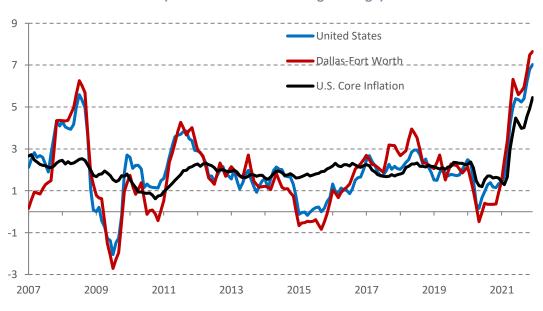


Note: Seasonally adjusted. For more information, see <u>Services Sector Outlook Survey</u>. United States index is adjusted -50 to be on scale with Texas index.

Sources: Federal Reserve Bank of Dallas and Institute for Supply Management

#### **CPI Inflation Rates**

(Year-over-Year Percentage Change)

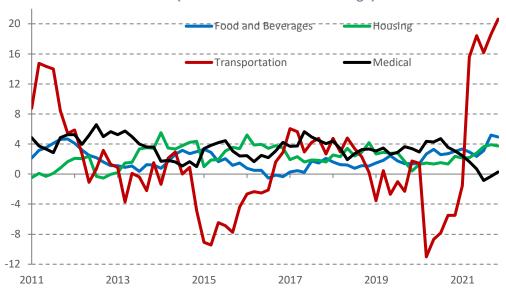


Note: Seasonally adjusted. For more information, see  $\underline{\text{CPI Inflation Rates}}$ . Source: Bureau of Labor Statistics



### **CPI Inflation Rates (Houston Components)**

(Year-over-Year Percent Change)

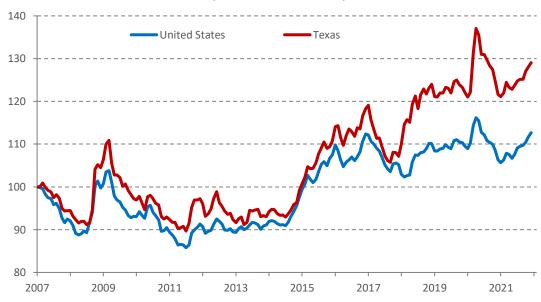


Note: The Houston CPI is composed of the following major groups: Food and Beverages, Housing, Apparel, Transportation, Medical Care, Recreation, Education and Communication, and Other Goods and Services. The four major components are included in the graph above.

Source: Bureau of Labor Statistics

### Real Trade Weighted Value of U.S. Dollar

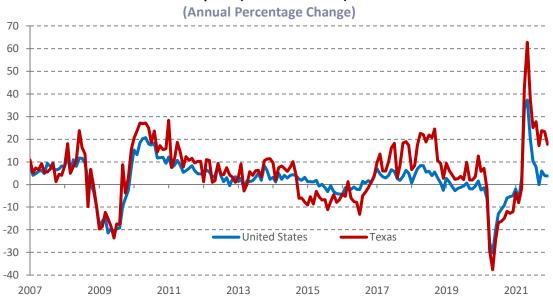
(Index Jan 2007 = 100)



Note: For more information, see <u>Real Trade Weighted Value of U.S. Dollar</u>. Sources: Federal Reserve Bank of Dallas and Federal Reserve Bank of St. Louis

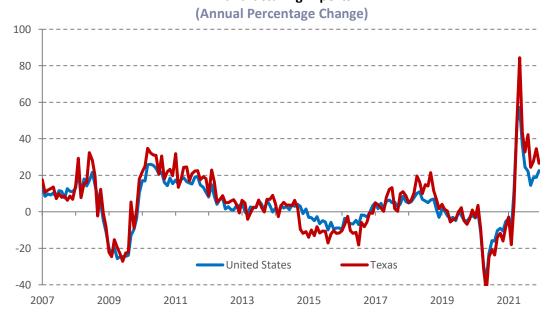


### **Exports (All Commodities)**



Note: Inflation adjusted with Bureau of Labor Statistics export indices. Annual sum. For more information, see <a href="Exports"><u>Exports.</u></a>. Sources: International Trade Administration, Foreign Trade Division and U.S. Census Bureau

### **Manufacturing Exports**

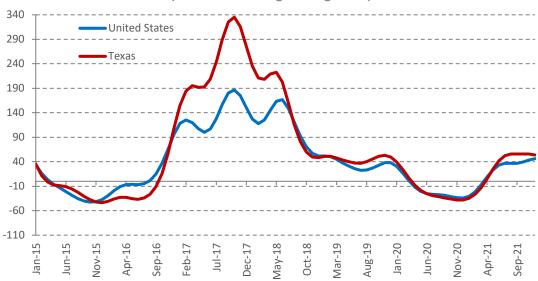


Note: Inflation adjusted with Bureau of Labor Statistics export indices. Annual sum. For more information, see <a href="Manufacturing">Manufacturing</a> Exports.

Sources: International Trade Administration, Foreign Trade Division and U.S. Census Bureau

### **Crude Oil Exports**

(Annual Percentage Change YOY)

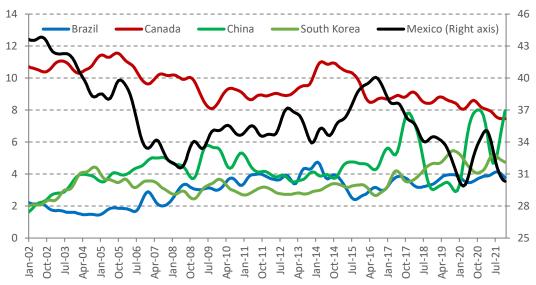


Note: Inflation adjusted and detrended with Bureau of Labor Statistics export indices. Annual sum. For more information, see <a href="Crude Oil Exports">Crude Oil Exports</a>.

Sources: International Trade Administration, Foreign Trade Division and U.S. Census Bureau

# **Texas Exports by Country**

(Percent of World Total)

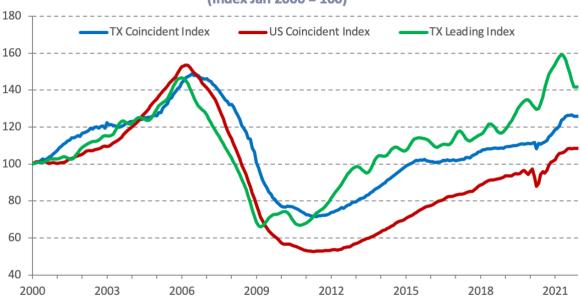


Note: Annual sum. For more information, see **Exports**.

Sources: International Trade Administration, Foreign Trade Division, and U.S. Census Bureau

### **Texas Residential Construction Index**

(Index Jan 2000 = 100)



Note: Annual average.

Source: Texas Real Estate Research Center at Texas A&M University and Federal Reserve Bank of Dallas



#### DIVISION OF ACADEMIC AND STRATEGIC COLLABORATIONS

Texas A&M University 2115 TAMU College Station, TX 77843-2115 http://recenter.tamu.edu 979-845-2031

#### **EXECUTIVE DIRECTOR**

GARY W. MALER

#### **ADVISORY COMMITTEE**

DOUG JENNINGS, CHAIRMAN DOUG FOSTER, VICE CHAIRMAN

Fort Worth Lockhart

TROY ALLEY, JR. BESA MARTIN

DeSoto Boerne

RUSSELL CAIN TED NELSON

Port Lavaca Houston
VICKI FULLERTON BECKY VAJDAK

The Woodlands Temple

PATRICK GEDDES BARBARA RUSSELL, EX-OFFICIO

Dallas Denton









