



Texas Workforce Report

2021 to 2022



**Texas Workforce Commission's
Labor Market Information**

I. Introduction

The 2021 Texas Annual Economic Report provides a detailed analysis of the state's demographics, labor market, job market, and occupational employment trends.

The Labor Market Information Department of the Texas Workforce Commission (TWC) has produced this report to fulfill its commitment to providing the past year's statistical information to the Employment and Training Administration (ETA).

II. Executive Summary – State of the Workforce

Two years following the drastic employment decrease spurred by the COVID pandemic, the Texas total nonfarm job count surpassed the February 2020 pre-pandemic level by 474,100 positions in June 2022. Since April 2020, the state experienced job increases in 25 of 26 months including series-high employment levels for eight consecutive periods with 13,440,300 for June 2022. Recent job growth has been very strong. The 334,000 jobs added from January to June 2022 marked the most positions added over this timeframe in series history.

Mirroring this trend, eight major industries have pushed beyond pre-COVID employment levels. Trade, Transportation, & Utilities, Financial Activities and Professional & Business Services were the first industries to reach this milestone in March 2021. The Financial Activities industry experienced the COVID-related employment decrease later than most with an April 2020 start date. With the delayed employment decrease, the industry recovered the quickest at 12 months. The most recent three industries to recover as of June 2022 were Construction, Manufacturing, and Leisure & Hospitality—all of which reached this threshold in May 2022. It should be noted that two of the initial three industries to recover allow for more telework, while the latter three involve more in-person work.

In terms of jobless individuals, the unemployed fell by 64.2 percent from a series-high level of 1,668,100 in April 2020 to 597,700 in June 2022. The unemployment rate improved in 23 of the 26 months since then and at a June reading of 4.1 percent, marked the lowest level since the February 2020 pre-COVID mark of 3.5 percent.

As the economy strengthened and employers sought more workers, job openings rose to unprecedented heights and reached an apex of 1.0 million in March 2022. During this same timeframe, workers sensed more bargaining power and quit in record numbers which led to a series-high quits level of 445,000 in October 2021. This period saw accelerated wage growth for labor and increased effort from employers as they looked to fill positions with layoffs having reached a series-low 81,000 in April 2022.

The Texas Workforce Commission remains poised to achieve its mission to help employers, individuals, families, and communities to achieve and sustain economic prosperity.

III. Demographics

General population trends

Between 2020 and 2021, the Texas population grew at a faster rate than the national population, increasing by 1.1 percent as compared to 0.1 percent, respectively. Of the five largest states in the U.S., Texas had the highest percentage growth in population, adding 310,288 (1.1 percent) people as noted in the table below.

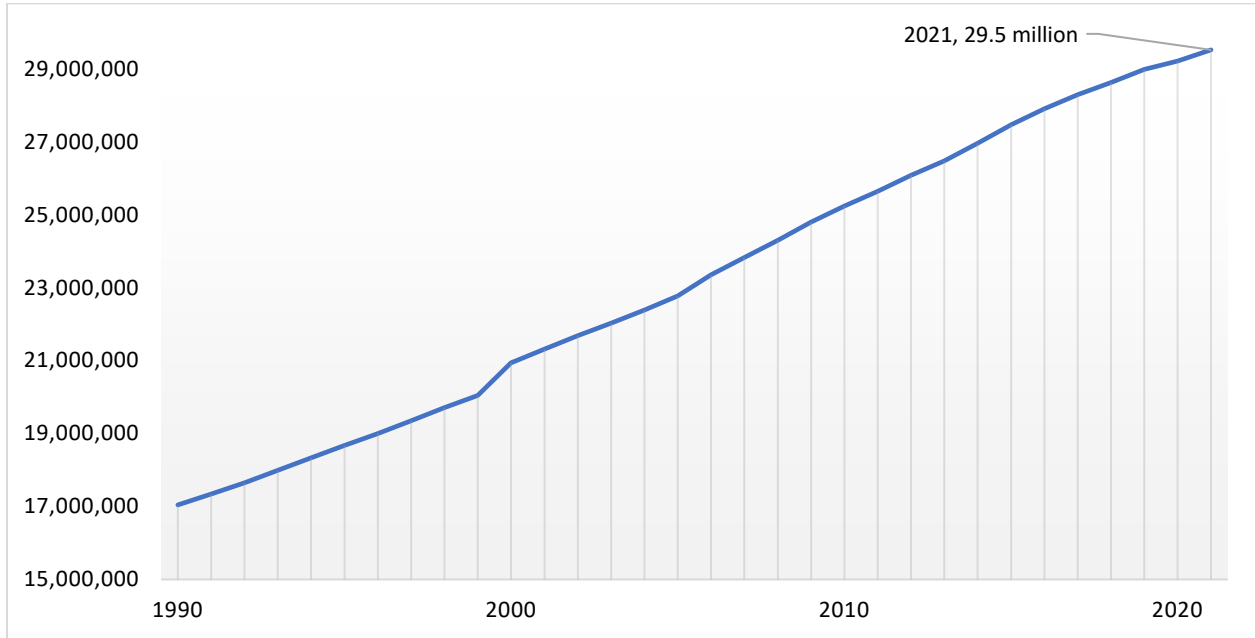
Table 1: Population Growth in Top Five Most-Populous States and the U.S., 2020 to 2021

Area	2020	2021	OTY % Change
United States	331,501,080	331,893,745	0.1%
Texas	29,217,653	29,527,941	1.1%
Florida	21,569,932	21,781,128	1.0%
Pennsylvania	12,989,625	12,964,056	-0.2%
California	39,499,738	39,237,836	-0.7%
New York	20,154,933	19,835,913	-1.6%

Data Source: U.S. Census Bureau, Annual Estimates of Resident Population, July 1, 2020 to July 1, 2021

Figure 1 shows the historical population trends in Texas since 1990. The U.S. Census Bureau estimates the Texas population at 29,527,941 persons in 2021. That represents an increase of 3.9 million persons from 2011-2021 or 15.1 percent.

Figure 1: Texas Historical Population Trend, 1990 to 2021



Data Source: U.S. Census Bureau, Annual Estimates of Resident Population, July 1, 1990 to July 1, 2021

Population growth among metropolitan areas in Texas continues to increase. Texas metro areas held the first, third, fourth and eighth rankings in actual growth among Metropolitan Statistical Areas in the United States and Puerto Rico from July 1, 2020 to July 1, 2021. The Dallas-Fort Worth-Arlington MSA added the most people of any MSA nationally from 2020 to 2021. The Houston-The Woodlands-Sugar Land and Austin Round-Rock MSAs ranked third and fourth, respectively for number of people added from 2020 to 2021, and San Antonio-New Braunfels ranked eighth. All six of Texas' largest metropolitan areas experienced growth over the year as shown in Table 2.

The table below also contains percentages of population with a high school diploma or higher and a bachelor's degree or higher for the largest MSAs. Educational attainment is closely watched since it is highly correlated with high-wage jobs. 2019 educational attainment data has been used, since the 2020 data was labeled "experimental" by the U.S. Census Bureau, and the 2021 data was not yet released when this report was prepared.

Table 2: Annual Growth Rates and Educational Attainment in Texas' Largest Metropolitan Statistical Areas, 2020-21

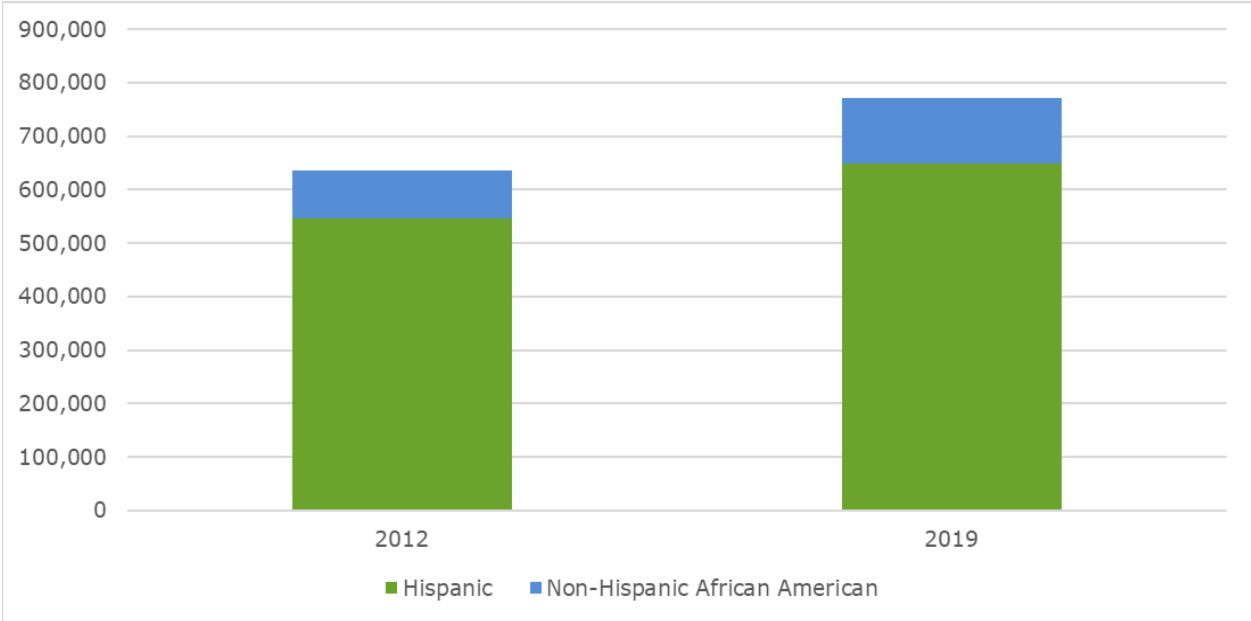
Texas Metropolitan Statistical Area	Population Estimate July 1, 2020	Population Estimate July 1, 2021	Number Change, 2020-21	Percent Change, 2020-21	Percent of Population with HS Diploma and Above	Percent of Population with Bachelor's Degree and Above
Dallas-Fort Worth-Arlington	7,662,325	7,759,615	97,290	1.3%	86.6%	36.3%
Houston-The Woodlands-Sugar Land	7,137,747	7,206,841	69,094	1.0%	84.6%	33.3%
San Antonio-New Braunfels	2,566,683	2,601,788	35,105	1.4%	85.6%	28.8%
Austin-Round Rock	2,299,125	2,352,426	53,301	2.3%	90.4%	46.2%
McAllen-Edinburg-Mission	872,204	880,356	8,152	0.9%	67.5%	19.0%
El Paso	869,289	871,234	1,945	0.2%	79.6%	23.3%

Data Sources: U.S. Census Bureau, Annual Estimates of Resident Population, July 1, 2020 to July 1, 2021; U.S. Census Bureau, American Community Survey, 1-Year Estimates, 2019. Educational attainment Age 25 and older.

Minority Business Ownership

As Texas becomes more diverse, so do our businesses. According to the US Census Bureau’s 2019 Annual Business Survey, 54,130 Texas firms are Hispanic-owned, with a payroll of \$22 billion and 648,261 employees. In 2019, 9,985 Texas firms are owned by non-Hispanic African-Americans, with a payroll of \$3.4 billion and 122,829 employees. According to the 2012 Census Bureau Survey of Business Owners, 48,596 Texas firms were Hispanic-owned, with a payroll of \$15.3 billion and 546,523 employees. In 2012, 9,042 Texas firms were owned by non-Hispanic African-Americans with a payroll of \$2.1 billion and 88,175 employees.

Figure 2: Number of Paid Employees by both Hispanic Total and Non-Hispanic Black or African American Business Owners in Texas 2012 and 2019

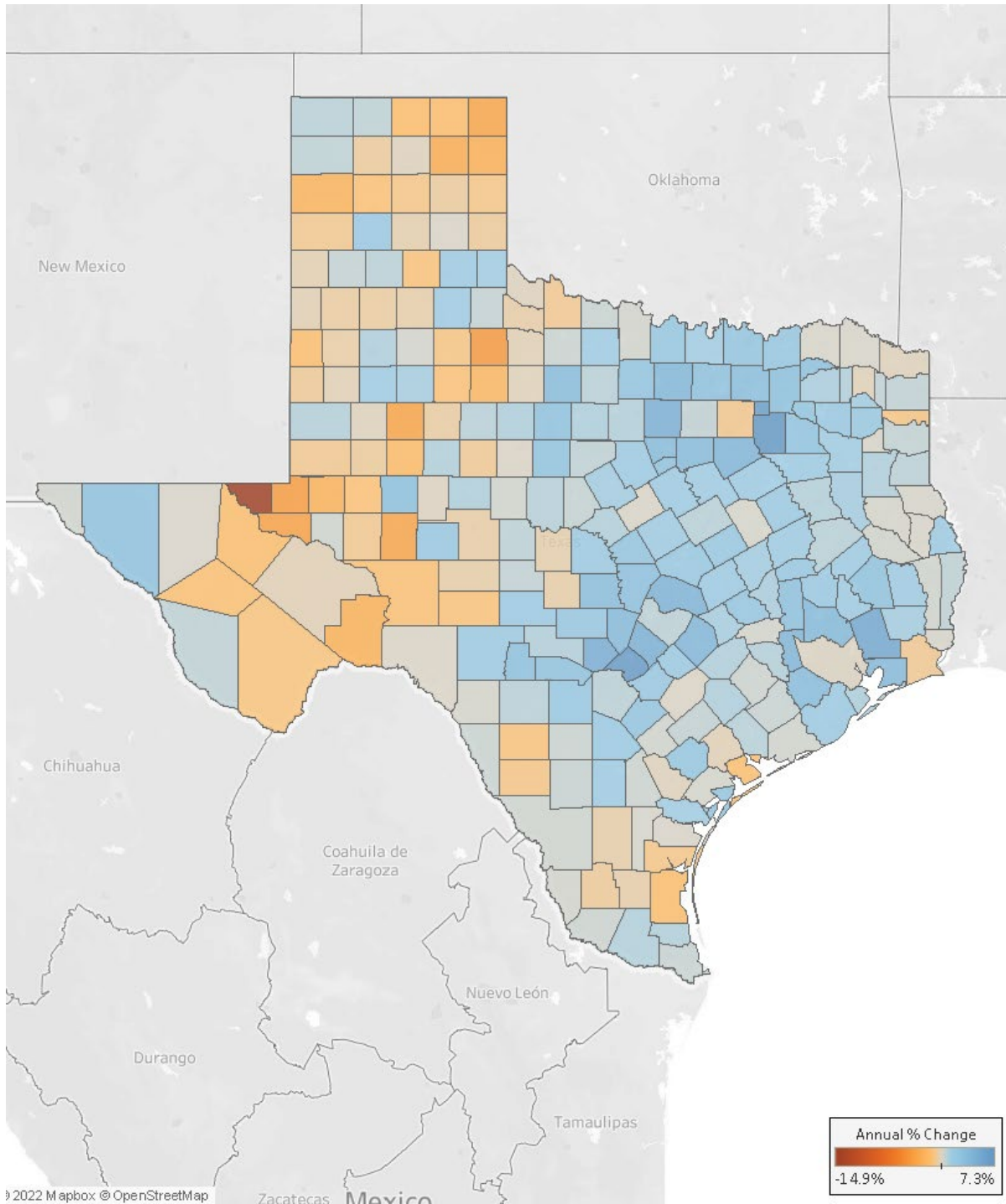


Data Sources: U.S. Census Bureau, Survey of Business Owners, 2012; U.S. Census Bureau, American Business Survey, 2019

County Population Growth

Population growth rates varied considerably across counties from 2020 to 2021, ranging from a low of -14.9 percent in Loving County to a high of 7.3 percent in Kaufman County as shown in Figure 3 below. Twenty-eight counties had a population growth rate of 3.0 percent or higher. Seventeen of the top 20 counties were also located within Metropolitan Statistical Areas. This suggests that in Texas, metropolitan areas continue to be a target for population growth. From 2020 to 2021, 171 counties experienced growth over the year, while 82 counties experienced a decline in population.

Figure 3: Annual Population Growth Rates for Counties in Texas, 2020-2021



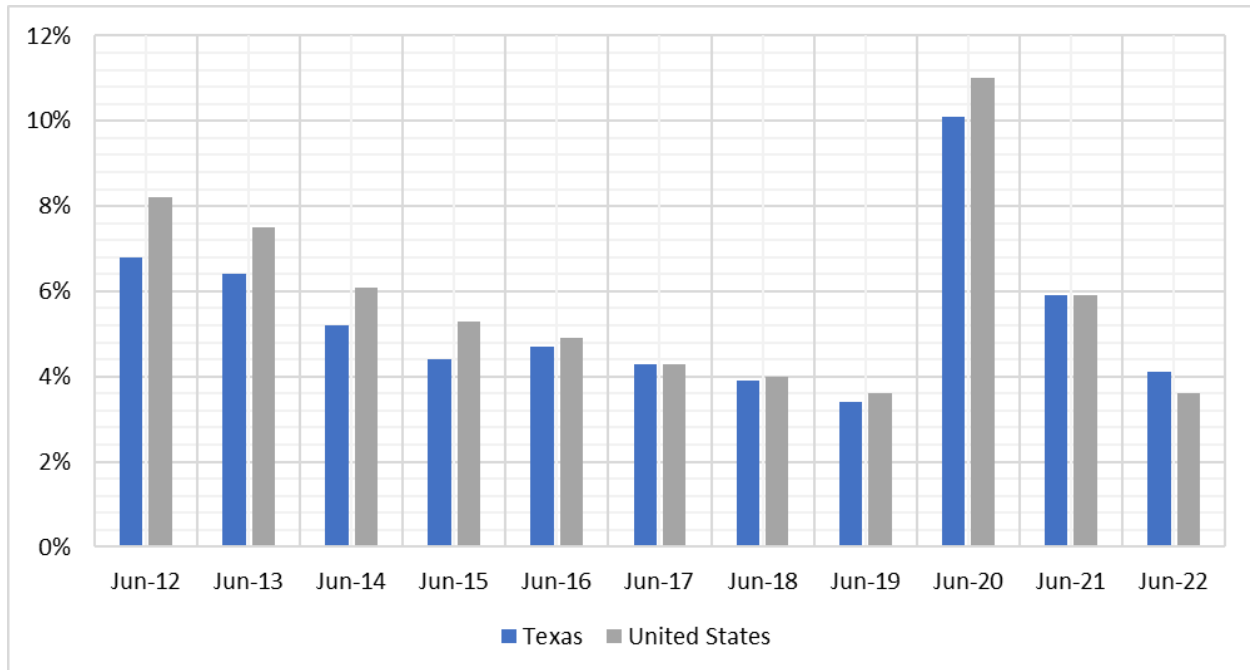
Data Sources: U.S. Census Bureau, Annual Estimates of Resident Population for Counties in Texas, July 1, 2020 to July 1, 2021

IV. Local Area Unemployment Statistics

Unemployment & Labor Force Participation Rates

Due to the impact of the novel coronavirus in 2020, labor forces across the United States and the world were heavily impacted by government mandated closures of many industries, causing both labor force participation rates to drop and unemployment rates to rise to unprecedented levels. From June 2020 (at 10.1 percent), the unemployment rate for Texas has dropped by 6.0 percentage points two years later.

Figure 4: Unemployment Rates, Seasonally Adjusted



Data Source: Local Area Unemployment Statistics

The unemployment rate for Texas in June 2022 is only one-half of a percentage point above the United States rate of 3.6 percent as is shown in Figure 4. Texas, for a variety of economic and demographic reasons, has weathered COVID-19 better thus far than many other states. Looking at the top ten largest states by population, Texas ranks fifth in lowest unemployment rate, outperforming California, Michigan, New York, Illinois, and Pennsylvania.

The unemployment rate is a relatively simple measure of labor surplus, representing the fraction of the total labor force that is not employed, but looking for work. Because of this, many experts consider the labor force participation rate (LFPR) a better gauge of labor market conditions. The LFPR is the percentage of the total civilian population that is either employed or unemployed (that is, either working or actively seeking work).

Figure 5 shows LFPR for both Texas and the United States since 1978. In June 2022, 63.8 percent of Texas’ civilian non-institutional population participated in the labor force. The United States had a 62.2 percent participation rate during the same period. As can be seen in Figure 5, participation rates have been declining over time for both Texas and the United States. This decline can be attributed to a variety of factors including: an aging population, an increase in disability, and an increase in young people delaying work to pursue higher education. In March 1993, for example, 77.3% of Texans 25 years and over graduated from high school and 22.1% obtained a bachelor’s degree. In March 2022, the percentages increased to 81.8% graduating from high school and 31.3% obtaining a bachelor’s degree.

Figure 5: Labor Force Participation Rates

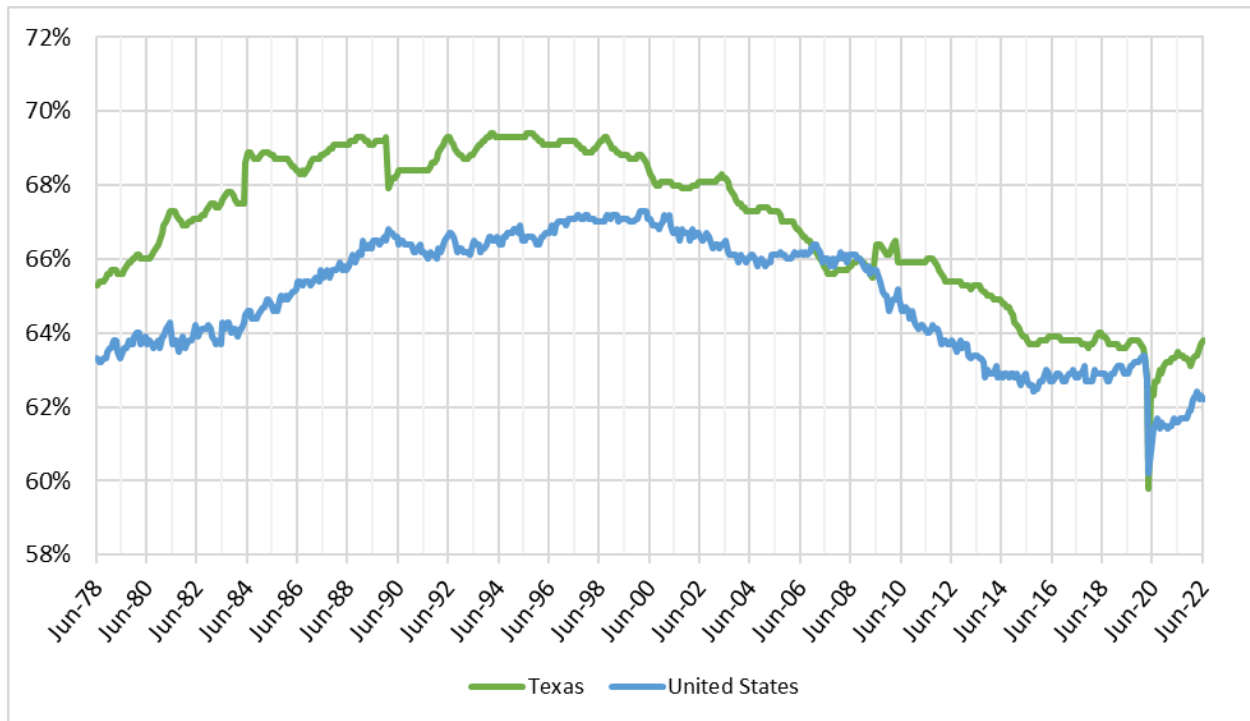
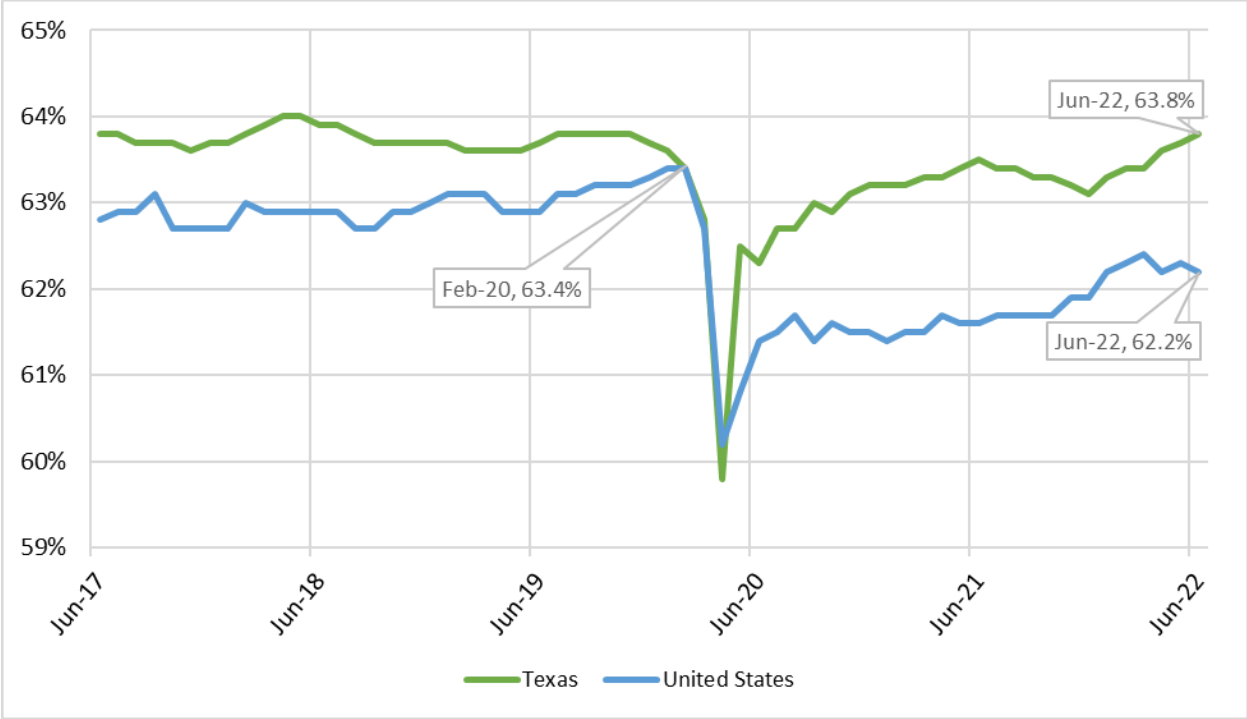


Figure 6: Labor Force Participation Rates June 2017 to June 2022



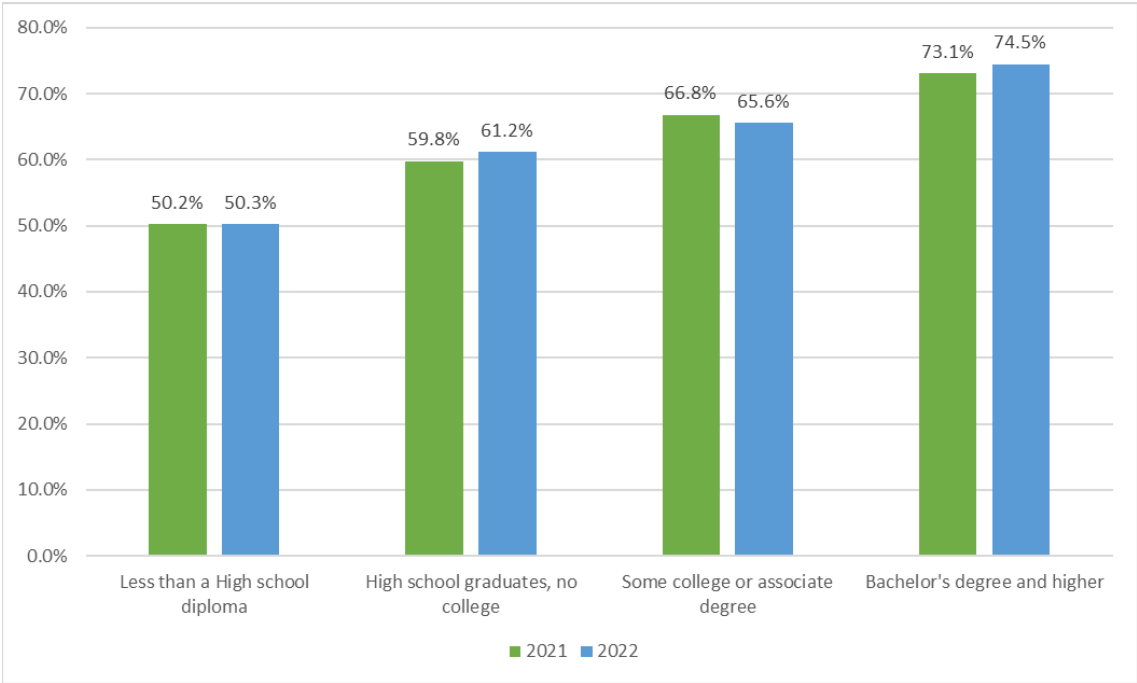
Data Source: Local Area Unemployment Statistics (Seasonally Adjusted)

As shown in the figure above, between June 2017 and February 2020, the labor force participation rate held nearly constant at about 63.7 percent for Texas and 63 percent for the United States. In April 2020, both Texas and the United States hit their lowest rates, at 59.8 percent for Texas and 60.2 percent for the U.S. The U.S. rate has not yet risen to pre-pandemic levels; however, the Texas rate in June 2022 is four-tenths of percentage point higher than the pre-pandemic level of 63.4 percent.

Educational Attainment

Figure 7 displays the average LFPR by educational attainment as of June 2021 and 2022. A clear trend is displayed, showing that those with more education have a higher likelihood of participating in the labor force. The effects of COVID-19 had a negative impact on participation rates last year with them dropping across all levels of educational attainment. This year, however, the effects of COVID-19 have begun to rescind as the rates rose across most levels of educational attainment. Those with some college or associate degree are still feeling the impact, as they experienced a drop of 12 percentage points.

Figure 7: Texas' Labor Force Participation Rate by Educational Attainment



Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Table 3 lists the June 2022 LFPR, Employment to Population Ratio (EP), and Unemployment Rate (U Rate), including a comparison to what the estimate was a year ago. The table shows those with more education have a higher tendency both of participating in the labor force and being employed. Those with some college or an associate degree have an unemployment rate of four percent, while the unemployment rate of those with less than a high school diploma is highest at 6.6 percent.

Table 3: Educational Attainment by Labor Force Statistics

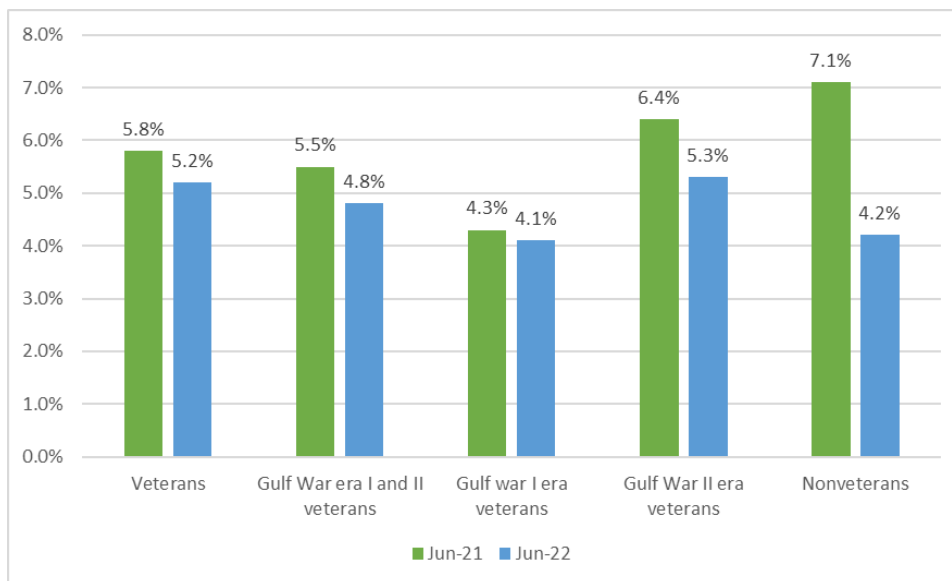
Education Level	LFPR	Annual Change	EP Ratio	Annual Change	U Rate	Annual Change
Less than a high school diploma	50.3%	-0.1%	47.0%	1.6%	6.6%	-2.8%
High school graduates, no college	61.2%	1.4%	58.5%	3.5%	4.4%	-3.5%
Some college or associate degree	65.6%	-1.2%	63.0%	0.7%	4.0%	-2.8%
Bachelor's degree and higher	74.5%	1.4%	72.7%	2.6%	2.4%	-1.8%

Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Veterans

Figure 8 compares unemployment rates for veterans and nonveterans, including the rates for veterans of Gulf War I and II. As with other demographic groups, Veterans experienced an increase in unemployment rates due to COVID-19 in 2021. This year, we can see that unemployment rates for both veterans and nonveterans dropped. The comparison shows that over the last year veterans in Texas have a higher unemployment rate than that of nonveterans. There is also a notable contrast between the unemployment rate for Gulf War I veterans when compared to the more recent war in the gulf. A likely cause is the longer time frame that Gulf War I veterans have had to work and gain experience, when compared to that of their Gulf War II counterparts.

Figure 8: Unemployment Rates for Veterans in Texas

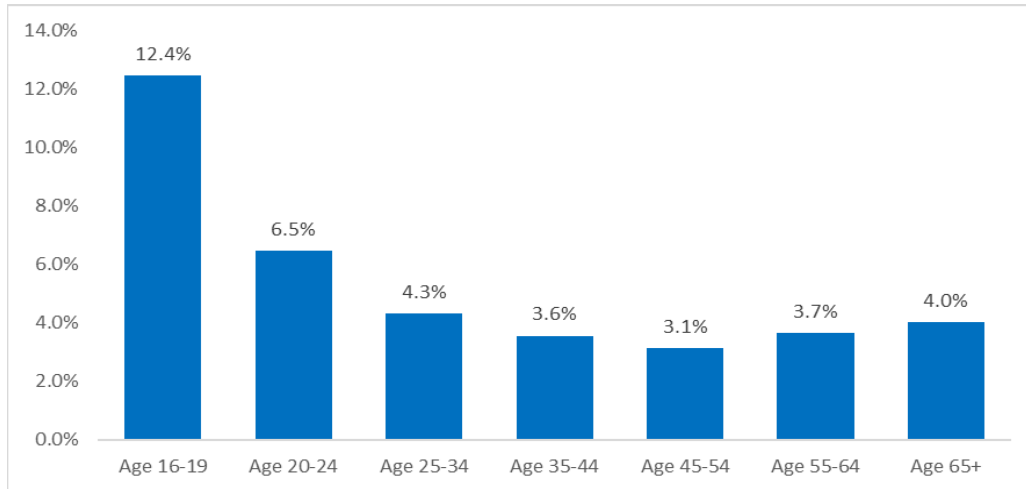


Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Age Groups

Unemployment rates in Texas vary noticeably by age group. Figure 9 below shows higher unemployment rates among younger age groups. A significant decrease is experienced by those age 25 or above, with all these age groups having a rate of 4.3 percent or below.

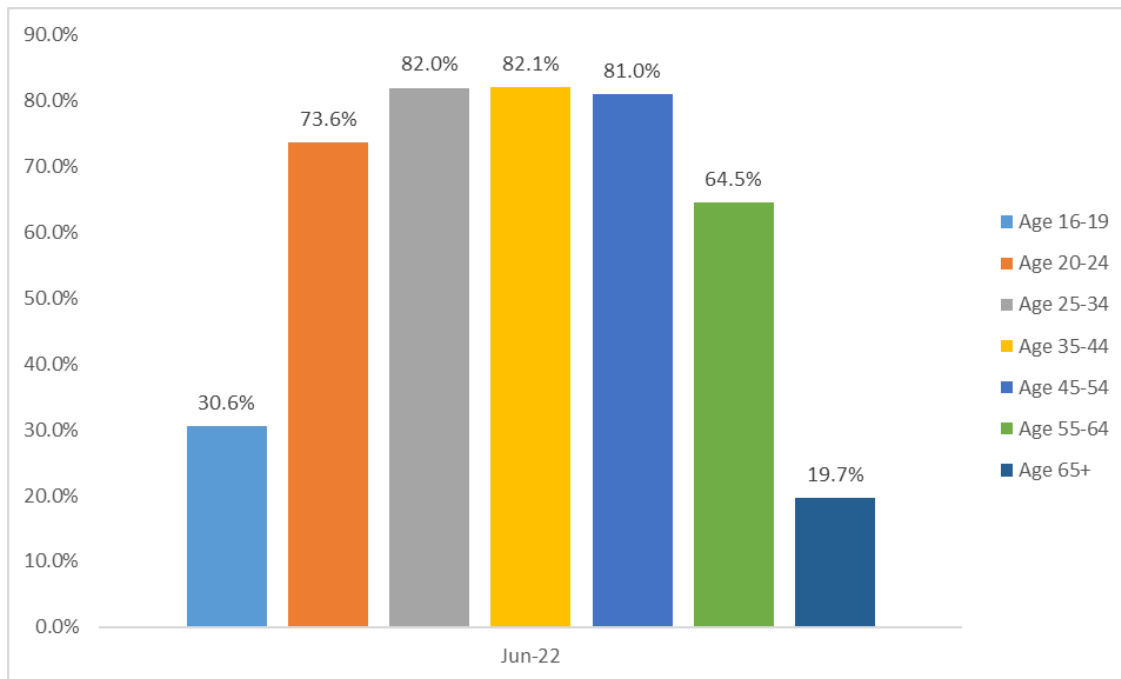
Figure 9: Unemployment Rates by Age Group in Texas



Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Figure 10 lists the LFPR for all available age groups 16 and above. LFPRs are on the lower ends for both the younger and older age ranges. This is to be expected, as those on the lower end of the age spectrum often forgo working to pursue education, and those on the upper end have a higher likelihood of being retired. The age ranges from 25 to 54 have the highest LFPRs, all of which are above 80 percent.

Figure 10: Labor Force Participation Rate by Age Group

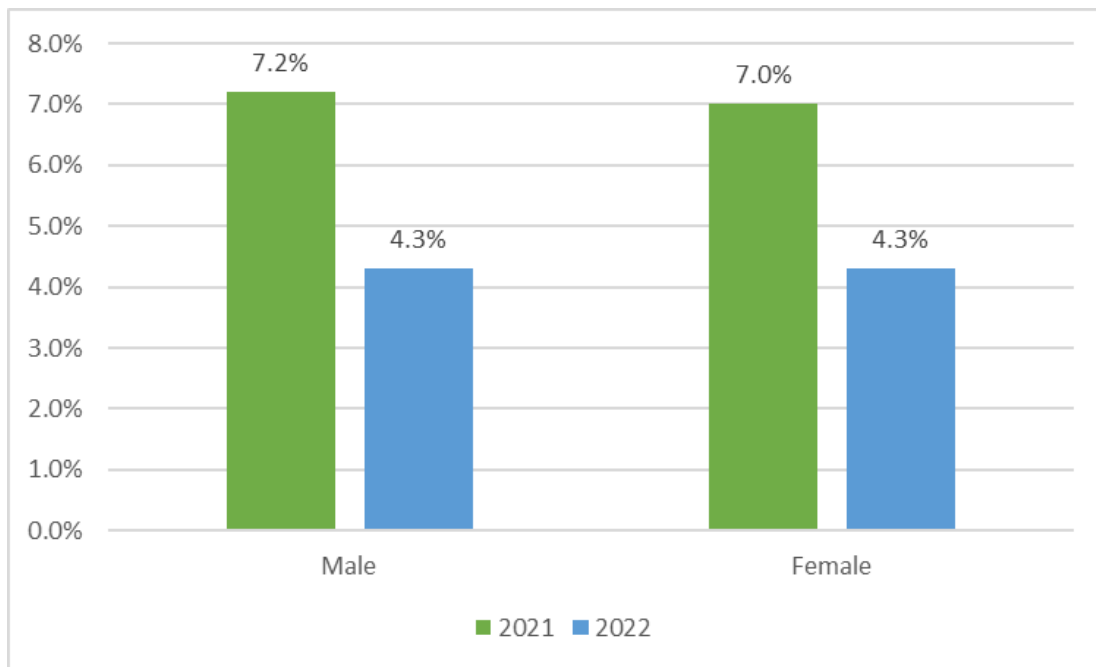


Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Sex

Prior to 2020, female unemployment rates were on average three-tenths of a percentage point higher than those of males. The post-covid economic recovery saw this dynamic shift with males experiencing a higher unemployment rate than females in 2021. Figure 11 illustrates the unemployment rates for Males and Females age 16 and up for 2021 and 2022 in Texas. This year, we can see the unemployment rates for both males and females are more aligned as they both stand at 4.3%. With the negative effects of COVID-19 waning, the 12-month rolling average unemployment rates for both groups have decreased.

Figure 11: Unemployment Rate by Sex



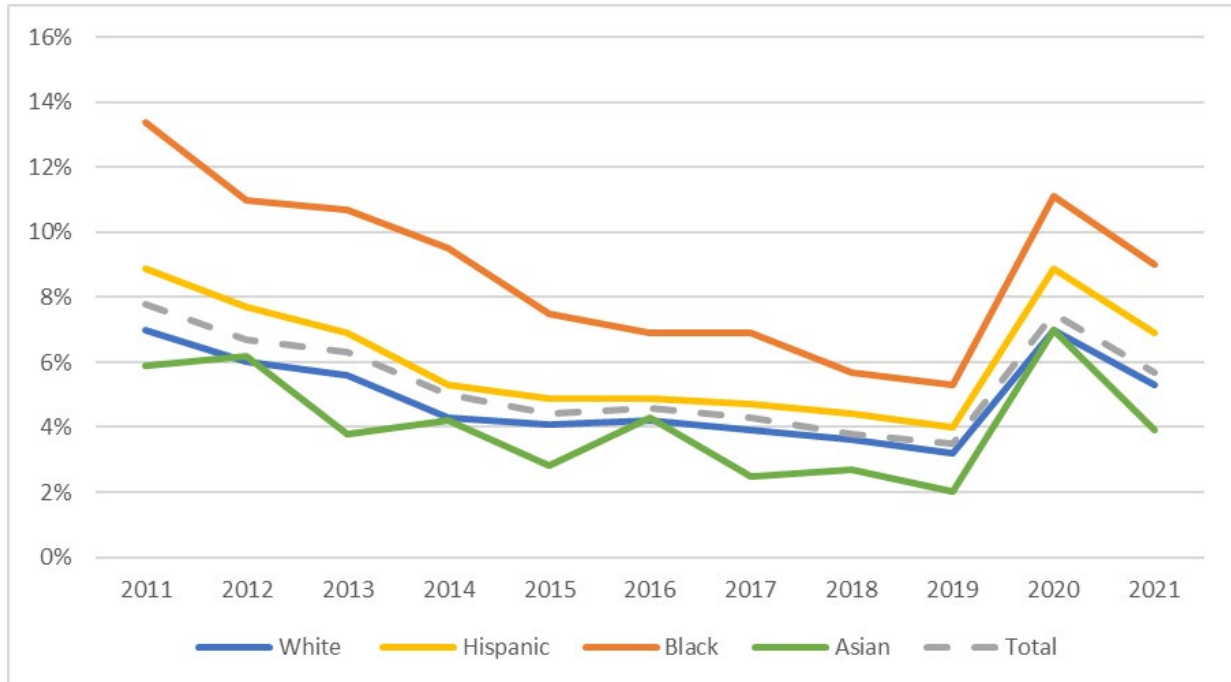
Data Source: Local Area Unemployment Statistics & Current Population Survey, 12-month rolling average July 2021 to June 2022 (Based on CPS)

Unemployment Rates by Race

The unemployment rate has decreased for Whites, Hispanics, Blacks and Asians between 2011 and 2021 despite the rise in unemployment rates in 2020.

Throughout the 10-year period, the Black category has experienced the highest unemployment rates, followed by Hispanics. The White and Asian categories have had the lowest rates, with Asians having the lowest rates for a majority of the time frame.

Figure 12: Unemployment Rates by Race in Texas

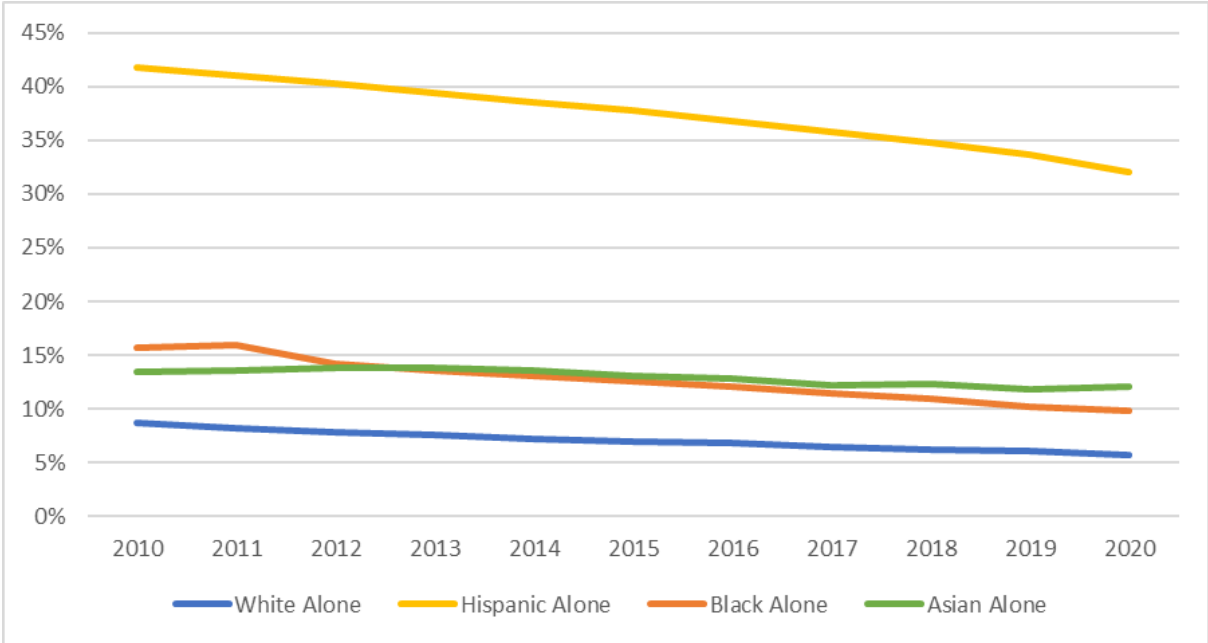


Data Source: BLS Geographic Profile, Table 14 (2011-2022)

Educational Attainment by Race

Looking at 5-year estimates, from 2010-2020, people identifying as Hispanic have trailed behind other races in terms of educational attainment with over 30 percent of the population receiving less than a H.S. Degree or equivalent. Hispanics have shown the most improvement since 2010 as the percentage for this category fell from a 2010 level of 41.8 percent to 32.0 percent in 2020. White alone in 2020 had the lowest percentage of other races with less than a H.S. degree at 5.7 percent.

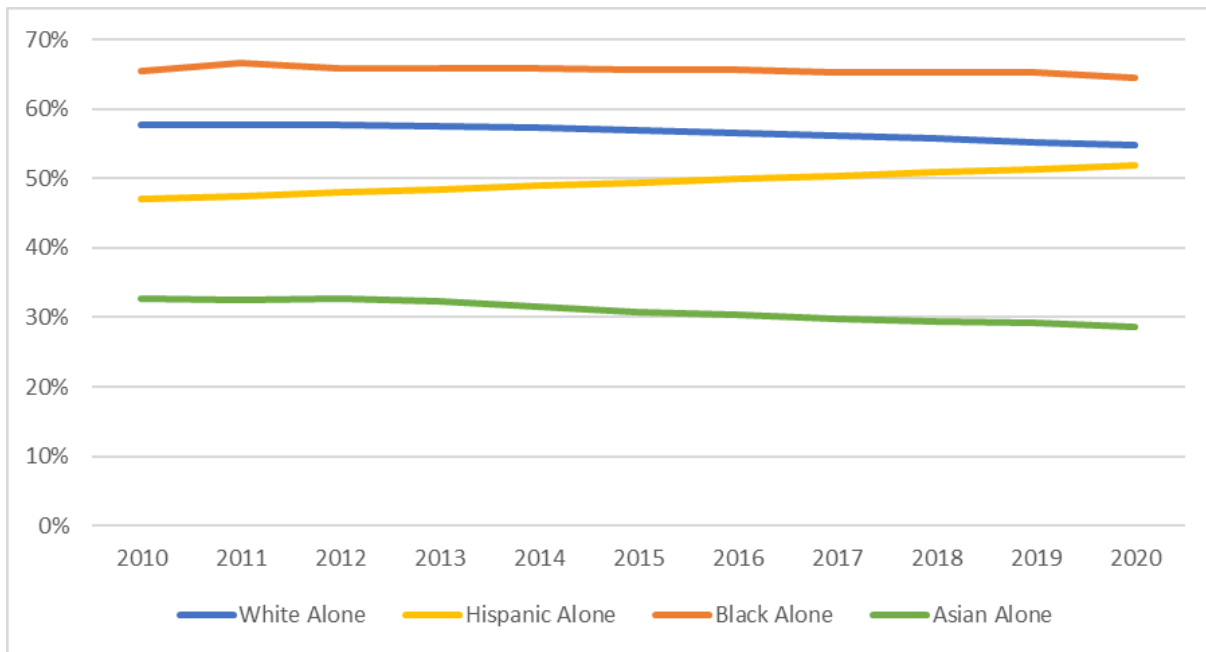
Figure 13: Educational Attainment by Race: Less than High School



Data Source: American Community Survey 5-Year Estimates

Over the last decade, people that identify as Asian alone have experienced a steady decline in the rate of people that obtain a High School degree and/or Associate's degree. In 2017 the rate drops below 30 percent, the lowest of all races. One reason for this drop could be due to the fact that Asians are getting Bachelor's degrees and higher at a higher rate over the same period as seen in Figure 14.

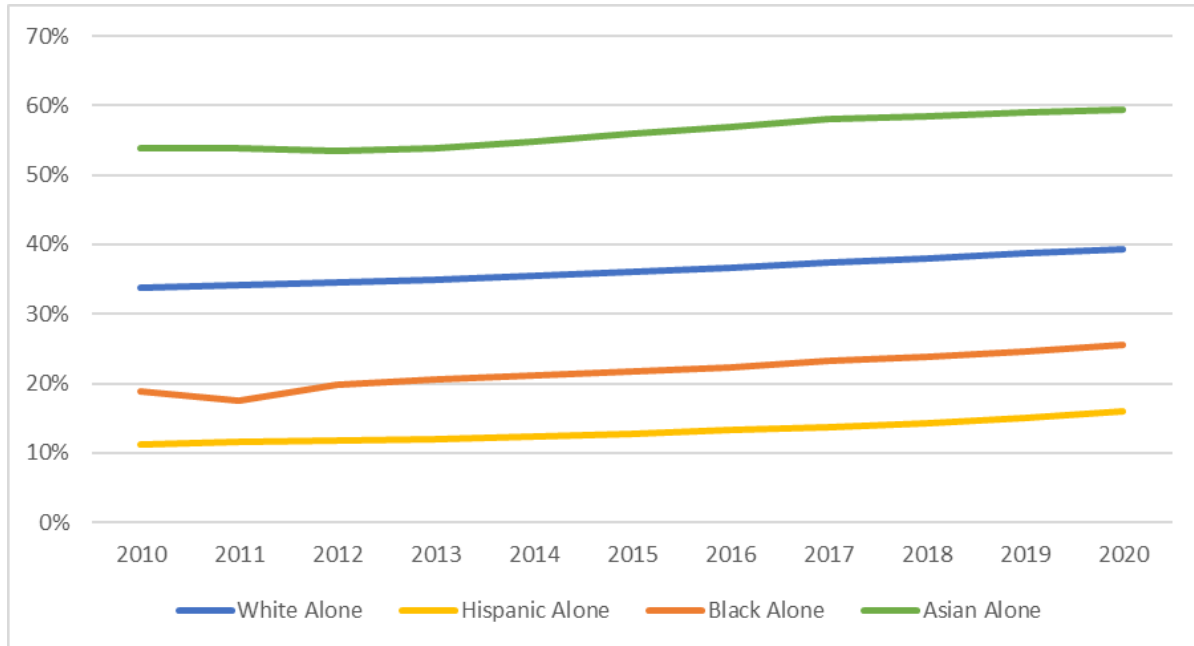
Figure 14: Educational Attainment by Race: High School but less than Bachelor's Degree



Data Source: American Community Survey 5-Year Estimates

In 2020, Hispanics continued to trail other races in terms of Bachelor's Degree or higher with only 16.0 percent of those aged 25 years or older having attained this level, although this has improved slightly. Asians continue to lead all races in this category with more than half of all Asians receiving a Bachelor's Degree or higher.

Figure 15: Educational Attainment by Race: Bachelor's Degree or higher

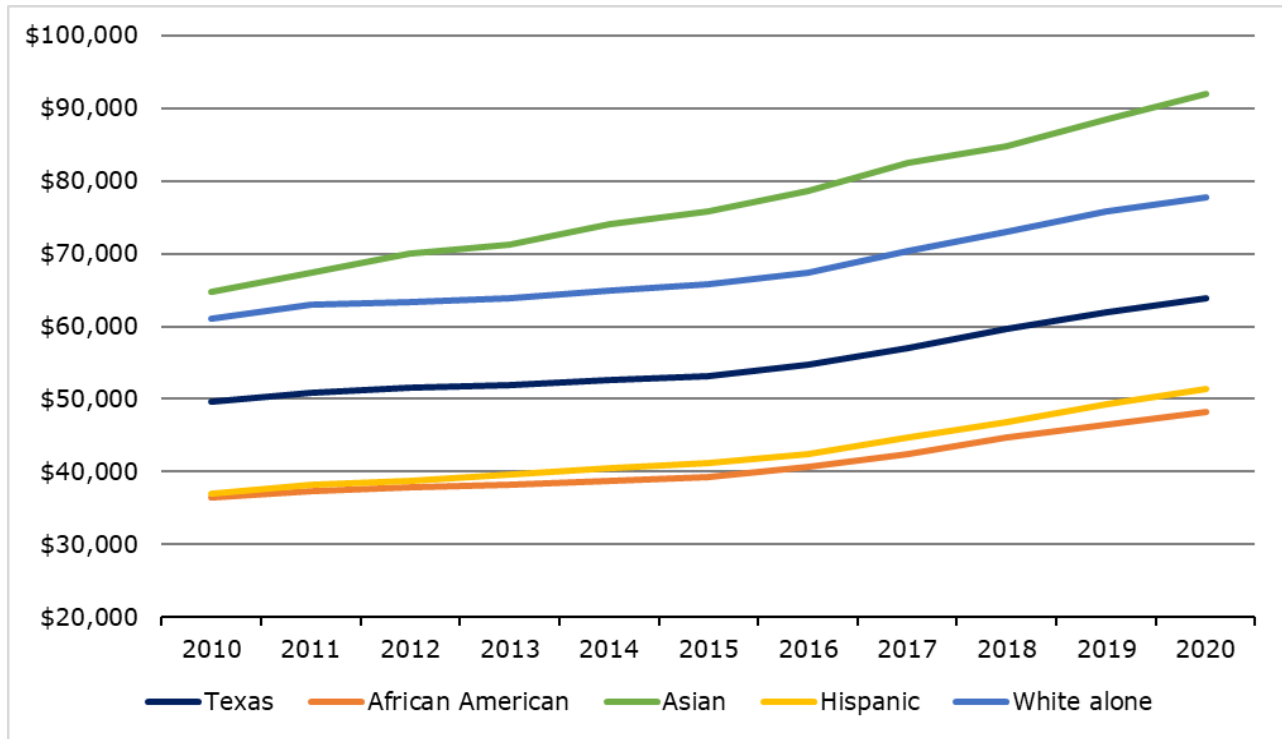


Data Source: American Community Survey 5-Year Estimates

Median Household Income by Race

Median household incomes have been steadily increasing for most racial groups over the last 10 years. In 2020, Asians had the highest median household income of \$91,879 followed by non-Hispanic Whites at \$77,821, both above the Texas median household income of \$63,826 which has increased by 28.6 percent since 2010.

Figure 16: Median Household Income by Race

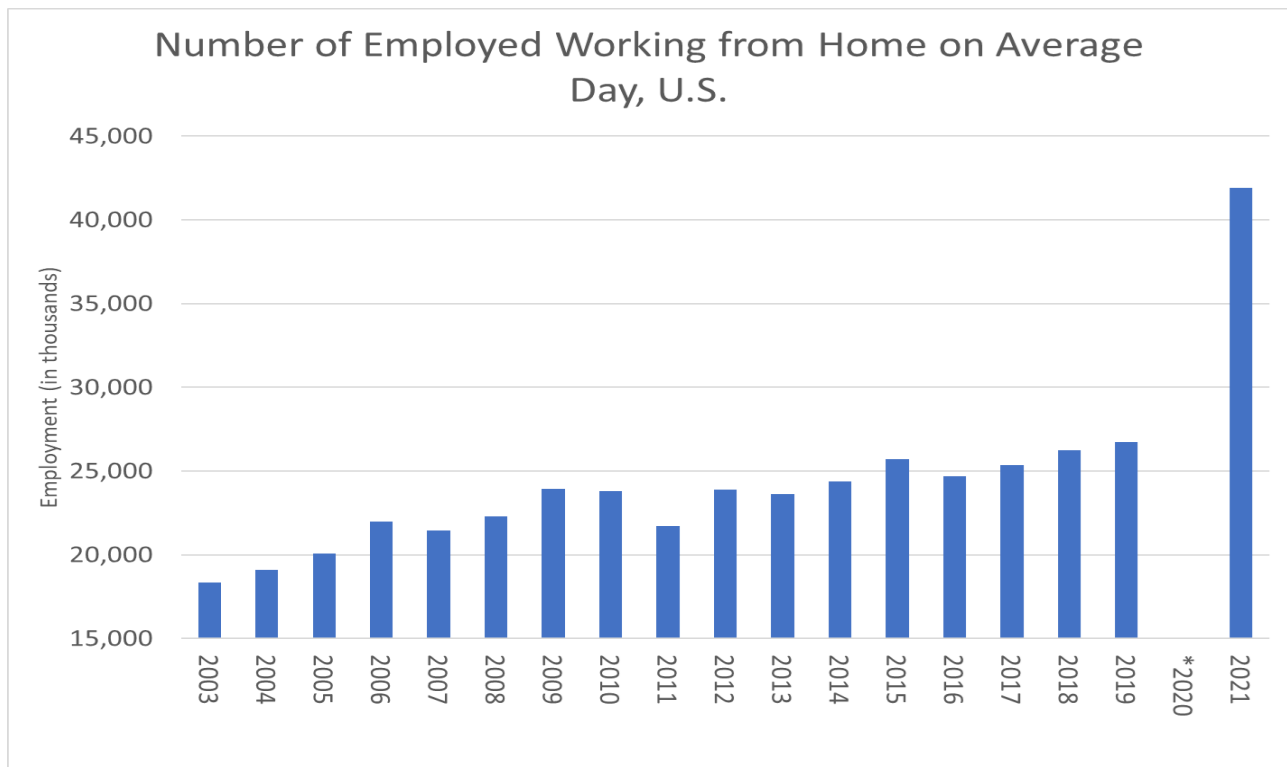


Data Source: American Community Survey 5-Year Estimates

V. Telework

COVID-19 brought about great challenges in the world of work as employers were faced with shifting as much work as possible to a virtual environment. On a national level according to the results of the Bureau of Labor Statistics' American Time Use Survey (ATUS), those workers who reported as having worked from home on an average day was already increasing before COVID as the number of employees grew from 18.3 million in 2003 to 41.9 million in 2021. The advent of the Coronavirus pushed previous work arrangements to the limits as social distancing mandates were put in place nationwide. According to the latest ATUS results, "38 percent of employed persons did some or all of their work at home and 68 percent of employed persons did some or all of their work at their workplace."

Figure 17: Number of Employed Working from Home on Average Day, U.S.

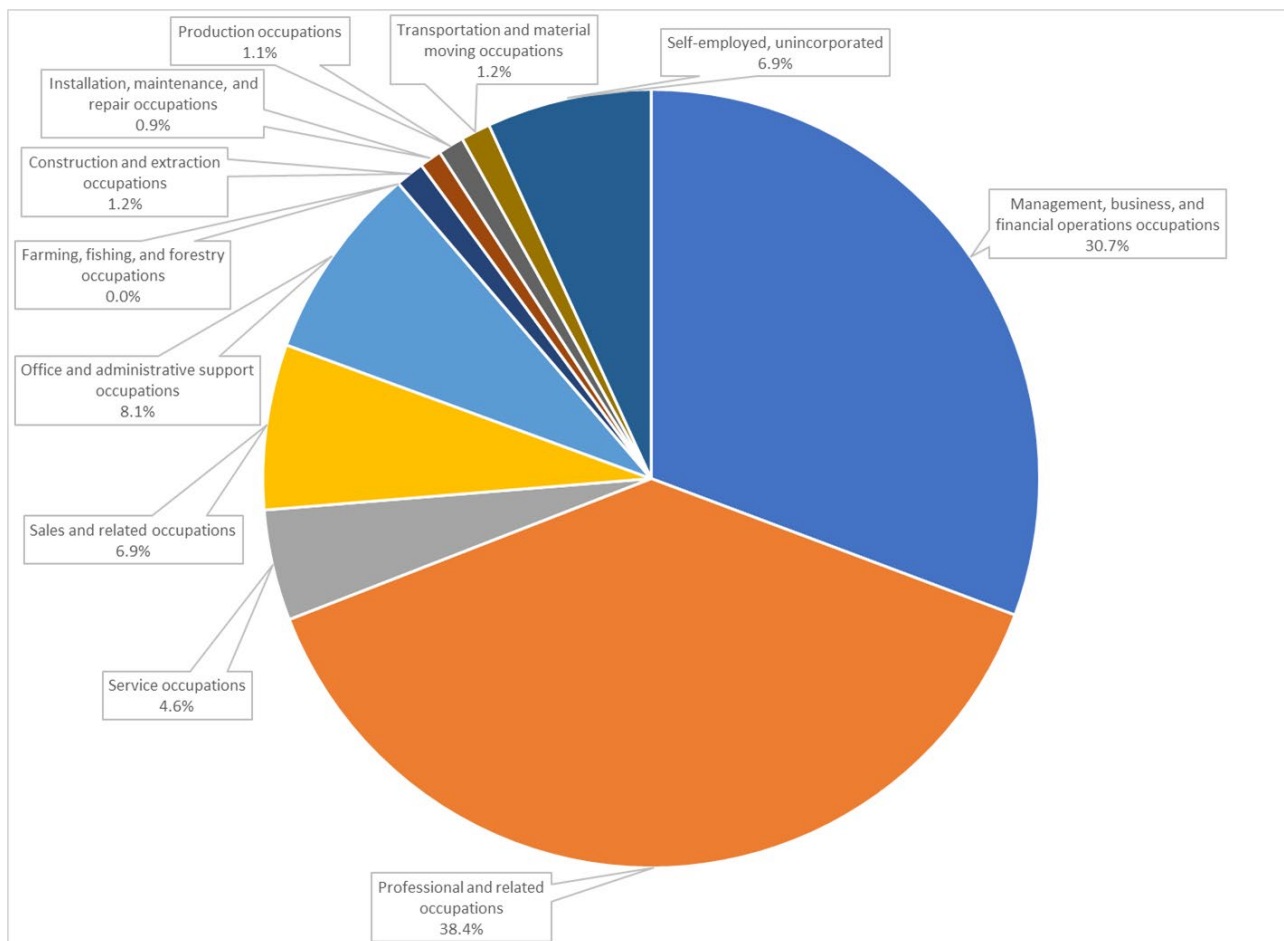


Source: Bureau of Labor Statistics, American Time Use Survey

The ability to work from home is conducive to many conditions including but not limited to occupational type and internet availability. In this report we will explore these two conditions and how this plays a role along racial and ethnic groups as well as how teleworking status varies by educational attainment. Finally, we will explore how internet connectivity varies among different regions of the state.

Of the 11 main occupational categories released by the ATUS in 2021, nationwide Professional and Related Occupations had the largest share of the total for all occupational groups that worked from home on an average day at 38.4 percent. This was followed by the Management, Business, and Financial Operations Occupations group with 30.7 percent of all occupational types working from home on an average day. After this, the remaining nine occupational groups proportions drop to single digits.

Figure 18: Participating on an Average Day – Working from Home in 2021 by Occupation Type



Source: Bureau of Labor Statistics, American Time Use Survey

When looking at the Census Bureau’s Occupation Classification System which is based on the Standard Occupational Classification System, we find that *Professional*

and Related Occupations is composed of Computer, Engineering, and Science Occupations as well as Education, Legal, Community Service, Arts, and Media Occupations, and Healthcare Practitioners and Technical Occupations. When viewing ONET job tasks for some of these occupations, we see many job tasks that can be done remotely such as *designing test plans, scenarios, scripts, or procedures* for Software Quality Assurance Analysts and Testers, or *produce three-dimensional models, using computer-aided design (CAD) software* for Mechanical Drafters.

Occupational groups that reported little work from home status such as Construction and Extraction have far more tasks that must be completed in person. Construction Laborers must *lubricate, clean, or repair machinery, equipment, or tools*, while Electricians may be called upon to *connect wires to circuit breakers, transformers, or other components*.

According to the U.S. Census Bureau American Community Survey’s 1-Year Estimates, the top five occupational groups varied between racial and ethnic groups in Texas. For African American Alone, Office and Administrative Support Occupations and Management, Business, and Financial Occupations were the top two groups with 13.3 percent and 12.9 percent respectively. For Asians, Computer, Engineering, and Science Occupations represented the largest share of people working in this career field with 21.2 percent, followed by Management, Business, and Financial Occupations at 17.7 percent. White Alone, Not Hispanic Texans had the largest share working in Management Business, and Financial Occupations at 21.2 percent followed by Education, Legal, Community Service, Arts, and Media Occupations with 13.5 percent.

For those who identified as Hispanic, the largest occupational group was Construction and Extraction Occupations with 13.0 percent followed by Office and Administrative Support Occupations and Management, Business, and Financial Occupations at 10.2 percent, each. Food Preparation and Serving Related Occupations rounded the top five at 8.0 percent. Coincidentally, this last group also has a high degree of tasks that must be performed in person and is less conducive to telework.

Table 4: Race/Race Ethnicity by Top Five Occupation Groups, African American Alone

Total	1,693,010	100.0%
Office and Administrative Support Occupations	224,694	13.3%
Management, Business, and Financial Occupations	218,109	12.9%
Education, Legal, Community Service, Arts, and Media Occupations	168,328	9.9%
Sales and Related Occupations	162,697	9.6%
Transportation Occupations	128,850	7.6%

Table 5: Race/Race Ethnicity by Top Five Occupation Groups, Asian Alone

Total	763,589	100.0%
Computer, Engineering, and Science Occupations	161,904	21.2%
Management, Business, and Financial Occupations	135,169	17.7%
Healthcare Practitioners and Technical Occupations	85,919	11.3%
Sales and Related Occupations	70,312	9.2%
Education, Legal, Community Service, Arts, and Media Occupations	67,346	8.8%

Table 6: Race/Race Ethnicity by Top Five Occupation Groups, Hispanic

Total	5,234,564	100.0%
Construction and Extraction Occupations	681,212	13.0%
Office and Administrative Support Occupations	534,485	10.2%
Management, Business, and Financial Occupations	531,796	10.2%
Sales and Related Occupations	520,391	9.9%
Food Preparation and Serving Related Occupations	416,741	8.0%

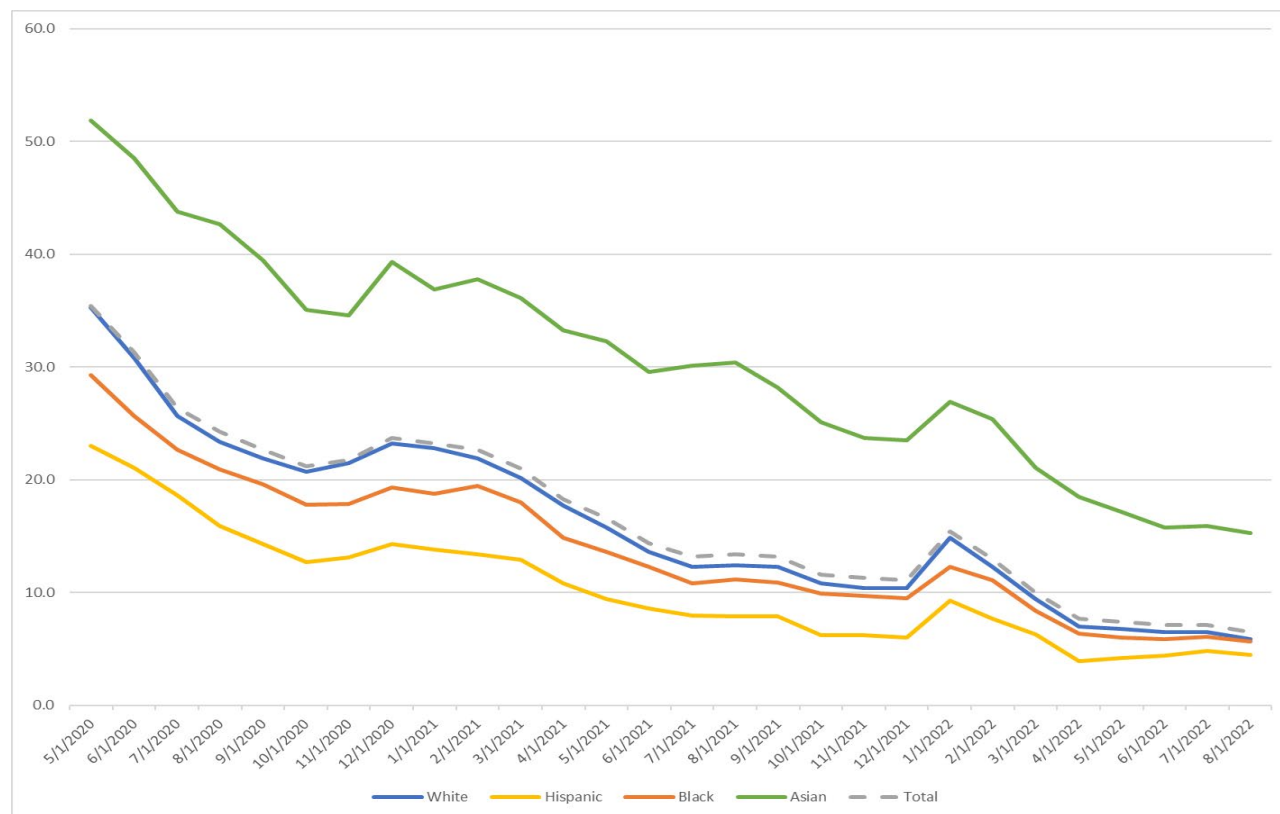
Table 7: Race/Race Ethnicity by Top Five Occupation Groups, White Alone

Total	5,920,422	100.0%
Management, Business, and Financial Occupations	1,253,558	21.2%
Education, Legal, Community Service, Arts, and Media Occupations	798,629	13.5%
Sales and Related Occupations	682,518	11.5%
Office and Administrative Support Occupations	630,110	10.6%
Computer, Engineering, and Science Occupations	430,442	7.3%

Source Tables 4-7: U.S. Census Bureau, 2019 American Community Survey Texas 1-Year Estimates

For the nation, according to the joint U.S. Census Bureau/Bureau of Labor Statistics' Current Population Survey (CPS), Asians had the highest proportion of people who teleworked because of the Coronavirus Pandemic from the start of the program's tracking in May 2020 through August 2022.

Figure 19: Persons Who Teleworked because of the Coronavirus Pandemic, U.S. by Race & Ethnicity

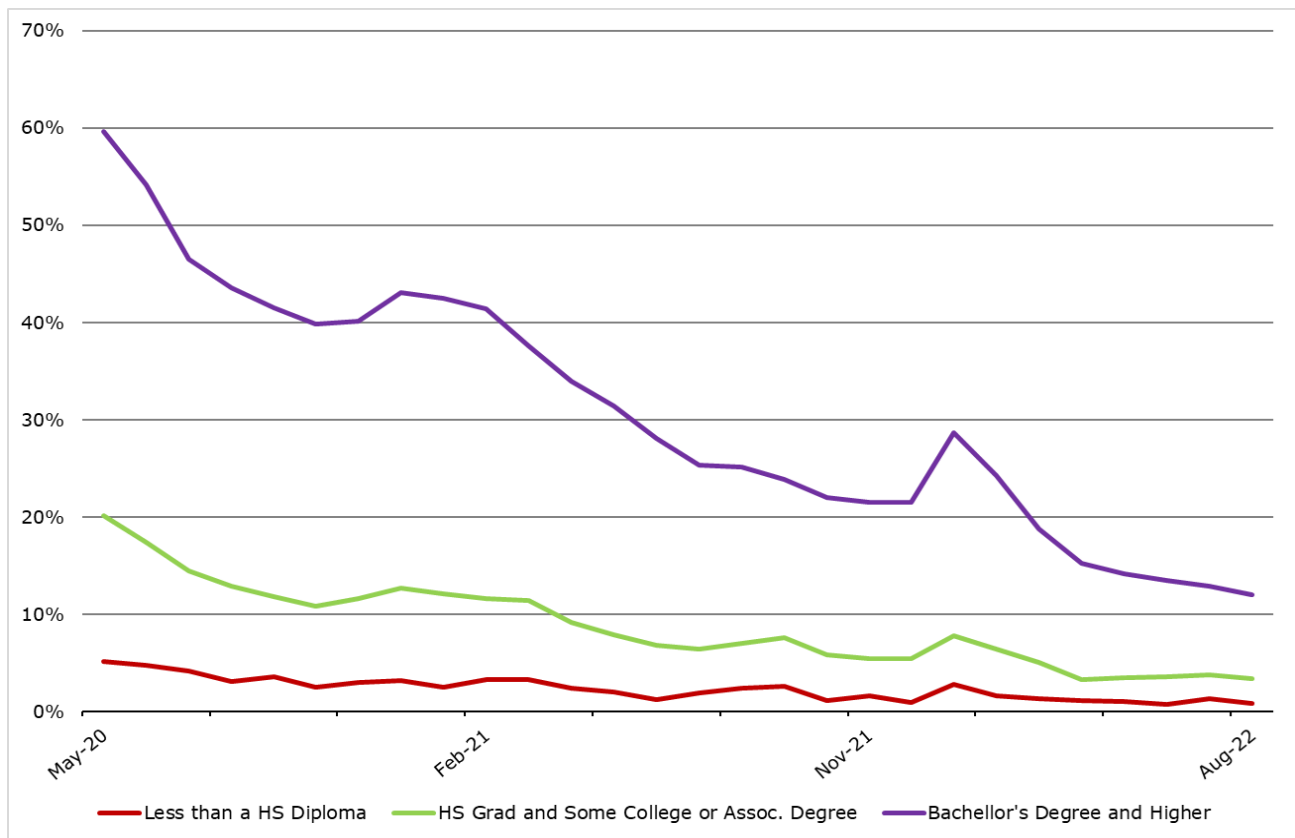


Source: Current Population Survey

In May 2020, just above half of all employed Asian people worked from home due to Coronavirus. This contrasts with the two racial and ethnic groups who had the lowest rates of telework with Black or African Americans at 29.3 percent and those with Hispanic or Latino Ethnicity at 23.0 percent. Telework participation rates for all groups gradually declined as the economy reopened and restrictions fell with about 15.3 percent of Asian people teleworking in August 2022 along with 5.9 percent of White people, 5.7 percent of Black or African American, and 4.5 percent for people of Hispanic or Latino Ethnicity.

Persons who teleworked in the U.S. because of coronavirus also varied by level of educational attainment with those employed individuals having attained a Bachelor's degree or higher being far more likely to telework versus employed individuals with less than a high school diploma or those with a high school education up to some college less than a four year degree.

Figure 20: Persons Who Teleworked because of the Coronavirus Pandemic, U.S. by Educational Attainment



Source: Current Population Survey

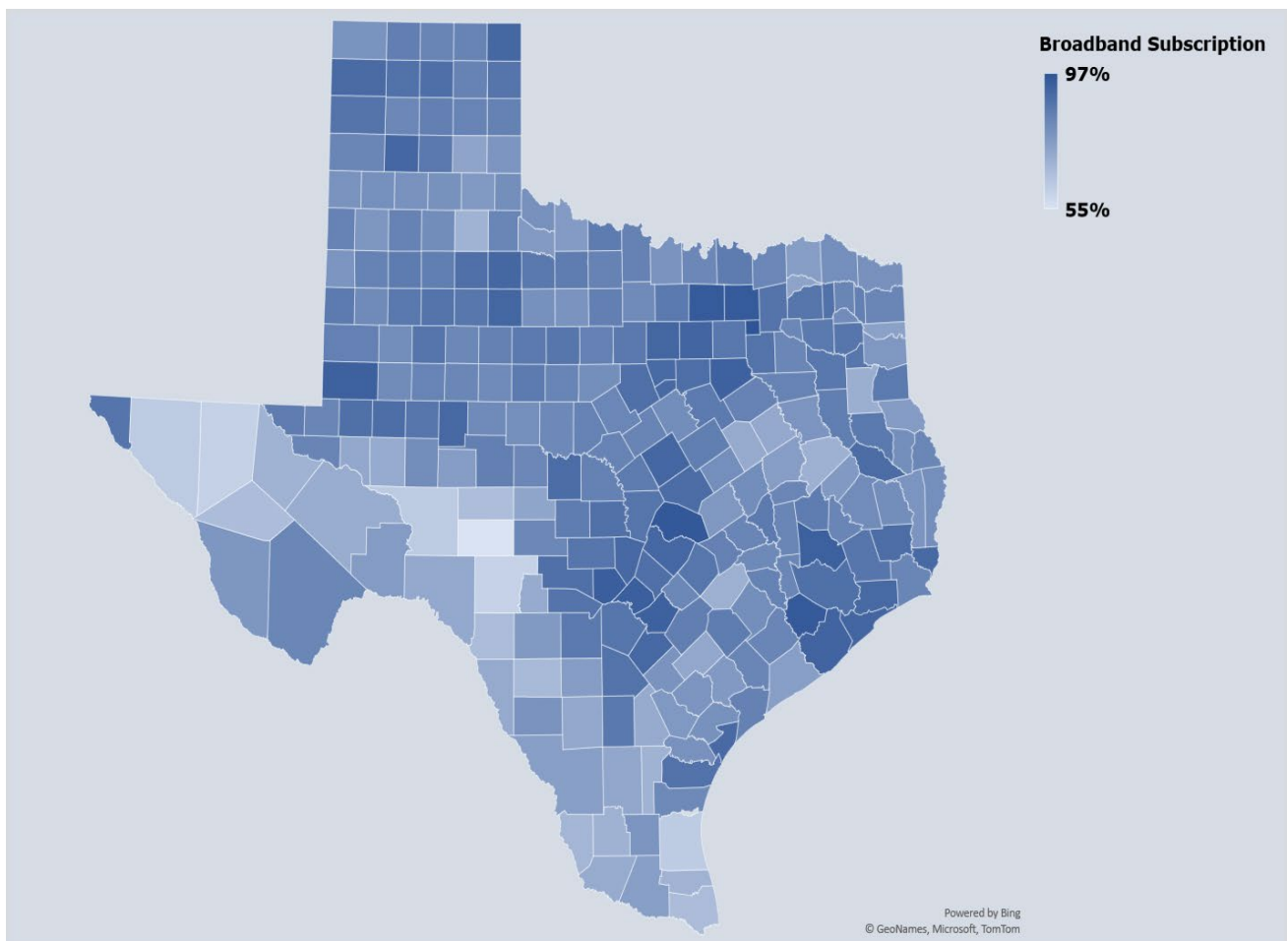
In May 2020, 59.6 percent of employed individuals with a Bachelor’s degree or higher worked from home versus 20.4 percent of high school graduates and those with some college or associate degree, and 5.2 percent of those with less than a high school degree. Similar to racial and ethnic groups, persons who teleworked because of coronavirus by educational attainment fell over time due to the reopening of the economy and fewer restrictions.

Internet Connectivity

In Texas in 2020 according to the U.S. Census Bureau’s 2016-2020 American Community Survey 5-Year Estimates, households with broadband subscriptions were more concentrated in urban and suburban counties with a few exceptions along the Texas-Mexico border and throughout the state. According to the survey, broadband includes internet service over cable, fiber optic, DSL, a cellular data plan, satellite, fixed wireless subscription, or other non-dial up subscription type.

The top eight counties in terms of broadband subscriptions were all located in suburban counties of the Dallas-Fort Worth, Houston, San Antonio, and Austin MSAs as shown on the map below. Overall, Rockwall and Williamson Counties, located in the Dallas-Fort Worth-Arlington and Austin-Round Rock MSAs, respectively, had the highest concentrations of households with a broadband subscription with a 2020 value of 96.6 and 95.3 percent, respectively.

Figure 21: Broadband Subscriptions by County



Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

In terms of counties home to Texas’s most populated cities, Tarrant County, home to Fort Worth, had the highest concentration of broadband subscriptions by household at 91.7 percent followed by Travis County, which is home to Austin, at 90.8 percent. Of this group, Dallas County had the lowest concentration of households at 86.3 percent.

Table 8: Percent of Households with a Broadband Subscription

County	Percent Households with a Broadband Subscription
Tarrant (Fort Worth)	91.7
Travis (Austin)	90.8
Harris (Houston)	88.4
Texas	87.3
El Paso (El Paso)	87.1
Bexar (San Antonio)	86.9
Dallas (Dallas)	86.3

Source: U.S. Census Bureau, 2016-2020 American Community Survey 5-Year Estimates

In far South Texas, Hidalgo County which is home to the fifth most populated MSA in Texas, the McAllen-Edinburg-Mission MSA, broadband concentration lagged behind other major metros and the state with only 74.9 percent of households having subscriptions. Nearby Cameron County which is home to the Brownsville-Harlingen MSA also ranked low in broadband connections at 66 percent. Finally, Webb County home to the Laredo MSA with a 2020 Census estimated population of 267,114, also ranked low among counties with 74.7 percent of households having a broadband subscription.

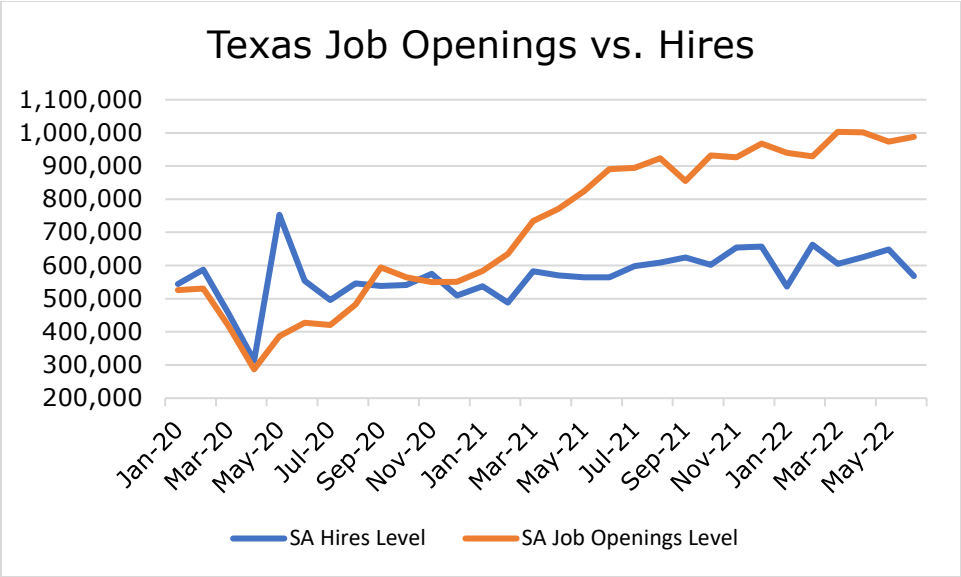
VI. Job Openings and Labor Turnover Survey (JOLTS)

In terms of labor market dynamics, there was a shift in bargaining power towards labor as job openings swelled which provided job seekers with ample opportunity. The unemployed per job openings ratio, fell to and remained at a series low 0.6 from March 2022 through June 2022. This highlighted the situation that there were more job openings than unemployed people compared to average value of 2.2 prior to June 2021. Feeling the pendulum swing, workers demanded more flexibility and higher pay from employers.

Job openings were elevated from July 2021 through June 2022 with an average level of 944,500 vacancies over this time frame. For the same time span one year earlier, the average number of job openings was 633,400. The job openings rate which represents the number of job openings compared to the sum of employment and job openings also rose to historic levels with a series-high reading of 7.1 percent in March 2022, when 1,003,000 job openings were recorded.

Employers determined to add staff faced difficulties as hires did not rise as quickly as job openings. The average hires level from July 2021 through June 2022 was 615,750 compared to 542,583 the prior year. This represented an increase of 13.5 percent compared to a gain of 49.1 percent for job openings. At a state House Business & Industry Interim Hearing on April 27, 2022, TWC Executive Director Ed Serna testified, "New opportunities became available during and post-pandemic that have allowed some workers to change occupations, find employment that offers more flexibility, earn higher wages, or simply have a better work-life balance. With the many jobs that have become available, job seekers were increasingly attracted to jobs with greater personal satisfaction, pay increases, and remote or teleworking jobs with limited to no customer interaction. This has provided workers with choices, yet simultaneously challenging employers with retention and talent acquisition."

Figure 22: Texas Job Openings versus Hires



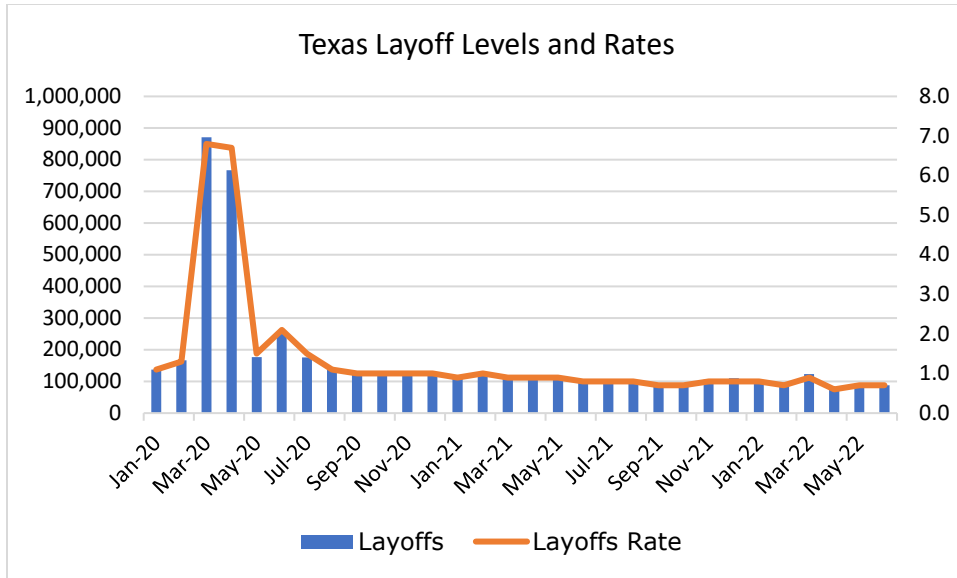
Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS), Jan 2020-July 2022

As a result of excess job vacancies, the Texas quits level rose 76.2 percent from the beginning of the pandemic with a June 2020 reading of 231,000 to 407,000 24 months later. This also included a series high quits level of 445,000 for October 2021. Since June 2021 the quits rate, which is computed by dividing the number of separations by employment, remained at or above 3.0 percent for all months except August 2021. Prior to this time frame, the series average quits rate which dates back to December 2000, was 2.3 percent.

Feeling the squeeze of a tight labor market, employers tried to retain the workers they had as evident by series low layoffs and wage growth. Average hourly earnings for all Texas private workers rose 4.5 percent annually for June 2022 and reached a series-high \$29.44 per hour. Year-over-year increases for wages was strong during this program year and reached a series-high 9.4 percent in January 2022. Wage growth was especially strong in certain industries with Financial Activities workers seeing annual wage growth reach double-digit increases in all but one month since June 2021. During this time, wages increased as much as 20.8 percent year-over-year for August 2021. Leisure and Hospitality which was hardest hit by employment decreases due to COVID experienced staffing difficulties as employers tried to find workers for restaurants and hotels. Annual wage increases in this industry averaged 11.0 percent from June 2021 to June 2022.

The shift from a March 2020 series maximum level of 871,000 to an April 2022 series low 81,000 layoffs was abrupt. For program year 2021, average layoffs were 98,300 and were elevated compared to a prior series average 150,600.

Figure 23: Texas Layoff Levels and Rates



Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey (JOLTS), Jan 2020-July 2022

VII. Current Employment Statistics

Statewide Payroll Employment

Texas Total Nonfarm employment expanded by 3.7 percent from February 2020—the pre-COVID employment peak—to June 2022. Like the nation, Texas faced unprecedented employment declines in 2020 due to COVID-19 and efforts to slow its spread. In November 2021 Texas total nonfarm employment first surpassed pre-COVID. By June 2022, eight of the 11 major industries in Texas exceeded February 2020 job counts. Overall, Private Sector employment expanded by 4.5 percent since February 2020.

Texas' recovery outpaced that of the U.S., which as of June 2022 was still below the pre-COVID peak by 0.3 percent. The Information industry, which has been in a state of overall employment decline since peaking in the year 2000, led major industries in June 2022 compared to February 2020, expanding by 9.9 percent over that span. Information industry employment first recovered in September 2021.

From February 2020 to June 2022 Mining and Logging employment declined by 8.4 percent, the most pronounced decline among major industries. However, the industry was the fastest growing annually for four consecutive months from March to June, when it reached 20.6 percent, bolstered by West Texas Intermediate crude oil prices approaching and even surpassing \$100 per barrel.

Table 9: Industry Employment, February 2020 (pre-COVID) to June 2022

Industry	Feb 2020	Jun 2022	Change	Percent Change	Months to Recovery
Total Nonagricultural	12,966,200	13,440,300	474,100	3.7%	21
Total Private	10,967,000	11,463,500	496,500	4.5%	21
Goods-Producing	1,925,400	1,918,600	-6,800	-0.4%	28 and counting
Service-Providing	11,040,800	11,521,700	480,900	4.4%	19
Mining & Logging	234,700	214,900	-19,800	-8.4%	28 and counting
Construction	781,100	782,300	1,200	0.2%	27
Manufacturing	909,600	921,400	11,800	1.3%	27
Trade, Transportation, & Utilities	2,526,300	2,694,200	167,900	6.6%	13
Information	212,200	233,200	21,000	9.9%	19
Financial Activities	817,800	894,900	77,100	9.4%	12*
Professional & Business Services	1,839,300	2,017,500	178,200	9.7%	13
Education & Health Services	1,777,300	1,812,100	34,800	2.0%	25
Leisure & Hospitality	1,415,500	1,447,400	31,900	2.3%	27
Other Services	453,200	445,600	-7,600	-1.7%	28 and counting
Government	1,999,200	1,976,800	-22,400	-1.1%	27* and counting

Data Source: Current Employment Statistics, Seasonally Adjusted

* Financial Activities first surpassed pre-COVID employment in March 2021, the same time as Professional and Business Services, and Trade, Transportation, and Utilities. However, unlike most industries, Financial Activities and Government did not begin showing monthly employment declines in March 2020; they began to decline in April 2020.

Note: Though outside the scope of this report, the Goods-Producing sector, which aggregates Mining & Logging, Construction, and Manufacturing, achieved full recovery by reaching 100.2 percent of its pre-pandemic employment in July 2022.

The Mining and Logging and Construction industries each comprise a larger share of Texas employment than they do at the national level. Combined, the two industries account for 7.4 percent of Texas employment, while accounting for 5.4 percent of all jobs at the national level. Texas has a lower share of Education and Health Services jobs compared to the United States (13.5 percent to 16.0 percent). From February 2020 to June 2022, the Information industry in Texas grew 9.9 percent, the highest percent growth among major industries in Texas during that time, and drastically outpacing nationwide industry employment. Mining and Logging declined compared to pre-COVID at both the state (-8.4 percent) and national (-8.5 percent) levels.

Table 10: Comparing Texas to U.S. Industry Percent Share and Growth Rates, February 2020 to June 2022

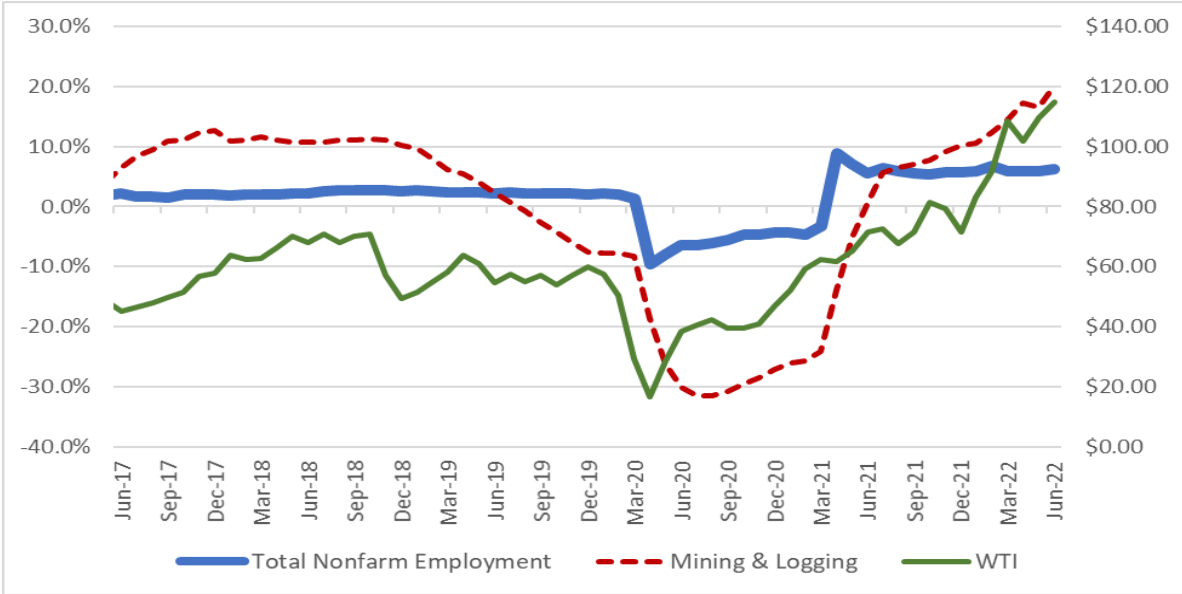
Industry	Texas % Share	U.S. % Share	Texas Growth Rate	U.S. Growth Rate
Total Nonagricultural	100.0%	100.0%	3.7%	-0.3%
Total Private	85.3%	85.4%	4.5%	0.1%
Goods-Producing	14.3%	13.9%	-0.4%	0.0%
Service-Providing	85.7%	86.1%	4.4%	-0.4%
Mining & Logging	1.6%	0.4%	-8.4%	-8.5%
Construction	5.8%	5.0%	0.2%	0.7%
Manufacturing	6.9%	8.4%	1.3%	0.1%
Trade, Transportation, & Utilities	20.0%	18.9%	6.6%	3.1%
Information	1.7%	2.0%	9.9%	3.6%
Financial Activities	6.7%	5.9%	9.4%	0.9%
Professional & Business Services	15.0%	14.7%	9.7%	4.2%
Education & Health Services	13.5%	16.0%	2.0%	-0.9%
Leisure & Hospitality	10.8%	10.3%	2.3%	-7.7%
Other Services	3.3%	3.7%	-1.7%	-4.5%
Government	14.7%	14.6%	-1.1%	-2.9%

Data Source: Current Employment Statistics, Seasonally Adjusted

Statewide Payroll Employment Growth, the Price of Oil, and Pandemic Recovery

Figure 24 below shows the last five years of growth and decline for West Texas Intermediate (WTI) crude oil prices compared to Mining and Logging and Total Nonfarm annual employment growth rates. WTI fluctuated cyclically and Mining and Logging followed going into 2020. In early 2020 the industry was impacted by international oil price wars and COVID-19, precipitating a sharp drop in fuel demand and thereby the price-per-barrel. This led to sharp declines in Texas' Mining and Logging industry and total nonfarm employment. However, following the trough of April 2020, the WTI price trended up sharply, first as employment levels rebounded and demand increased, then again later in 2022 when new sanctions reduced the oil and gas supply in Europe, resulting in price increases rippling across the world, reaching an average of \$114.84 in June 2022. Mining and Logging employment in Texas responded with positive annual growth beginning in June 2021 and grew at a faster rate than any other major industry from March to June 2022. As of June 2022, total nonfarm employment and WTI were both increasing. Texas' total nonfarm annual growth rate in June stood at 6.3 percent.

Figure 24: Annual Employment Growth (Actual) vs. West Texas Intermediate Crude Spot Price



Data Source: Current Employment Statistics, Not Seasonally Adjusted

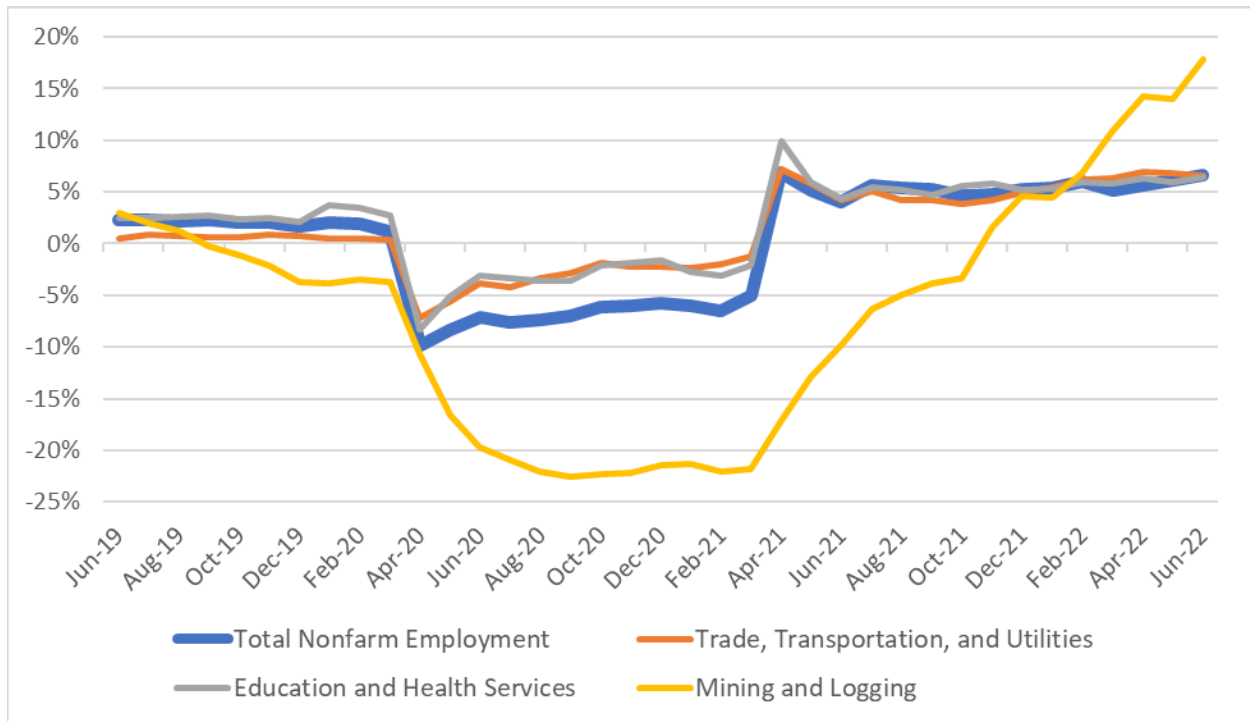
Payroll Employment Change in Largest Metro Areas

Houston-The Woodlands-Sugar Land MSA

Measured over a rolling three-year timeframe, the Houston-The Woodlands-Sugar Land Metropolitan Statistical Area (MSA) experienced employment declines for the first time since 2011 with the advent of COVID in 2020. Total nonfarm employment continued to decline on a rolling three-year basis for 17 months until September 2021. The MSA added 95,200 positions from June 2019 to June 2022, meaning the area expanded compared to the same time of year before COVID. By that measure, seven of 11 major industries in the MSA achieved positive annual growth compared to June 2019, led by Education and Health Services at 7.5 percent, followed by Trade, Transportation, and Utilities at 6.8 percent.

The industry with the most ground yet to cover is Mining and Logging, which contracted by 14.6 percent over the three-year span. It was, however, the fastest annually growing major industry in the area at 17.8 percent as of June 2022.

Figure 25: Houston-The Woodlands-Sugar Land MSA Annual Employment Growth Rate



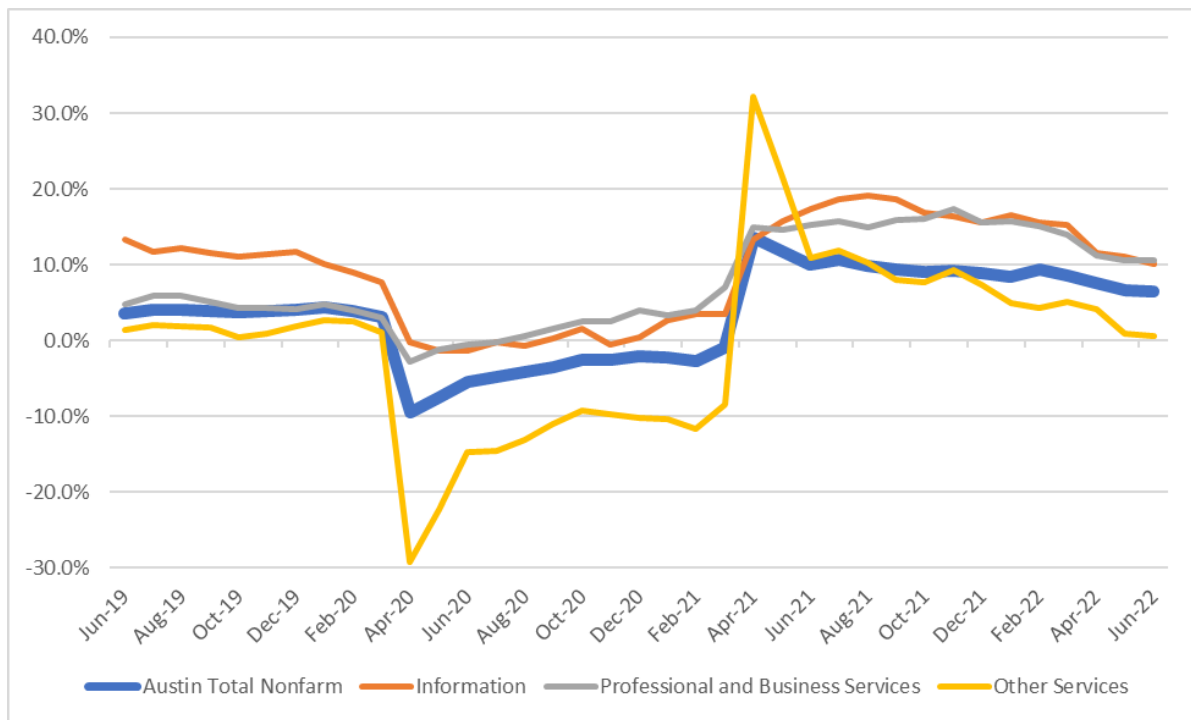
Data Source: Current Employment Statistics, Not Seasonally Adjusted

Austin-Round Rock MSA

The Austin-Round Rock MSA added 122,400 positions from June 2019 to June 2022, surpassing pre-pandemic total nonfarm employment levels by 10.9 percent. The area reached an all-time high in June 2022 at 1,243,400. Eight of the area's 10 major industries exceeded June 2019 employment. Information led with 27.6 percent expansion based on 10,800 positions gained. Professional and Business Services added 54,700, growing by 26.8 percent annually.

Two major industries contracted compared to June 2019. Other Services and Government each shed 2,300 positions. In June 2022 the former industry showed marginally positive growth on a 12-month basis, expanding at 0.7 percent.

Figure 26: Austin-Round Rock MSA Annual Employment Growth Rate



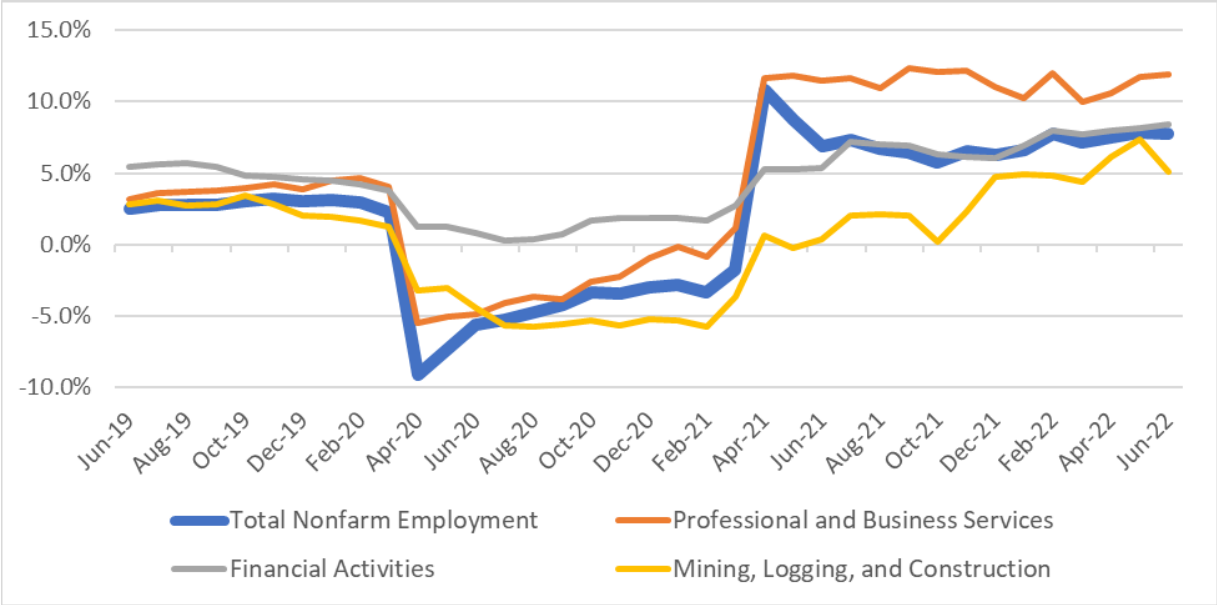
Data Source: Current Employment Statistics, Not Seasonally Adjusted

Dallas-Fort Worth-Arlington MSA

Dallas-Fort Worth-Arlington MSA total nonfarm employment expanded by 8.6 percent in the three years ending June 2022, faster than any other large metro. The area added 327,700 jobs in the 36 months ending June 2022, including 118,900 in Professional and Business Services, which expanded by 18.7 percent. Financial Activities also expanded rapidly by 15.1 percent with 48,400 positions added.

Mining, Logging and Construction saw the most marginal growth among private industries in the metro with 1,800 positions added for 0.8 percent expansion over three years. Government contracted by 0.7 percent.

Figure 27: Dallas-Fort Worth-Arlington MSA Annual Employment Growth Rate



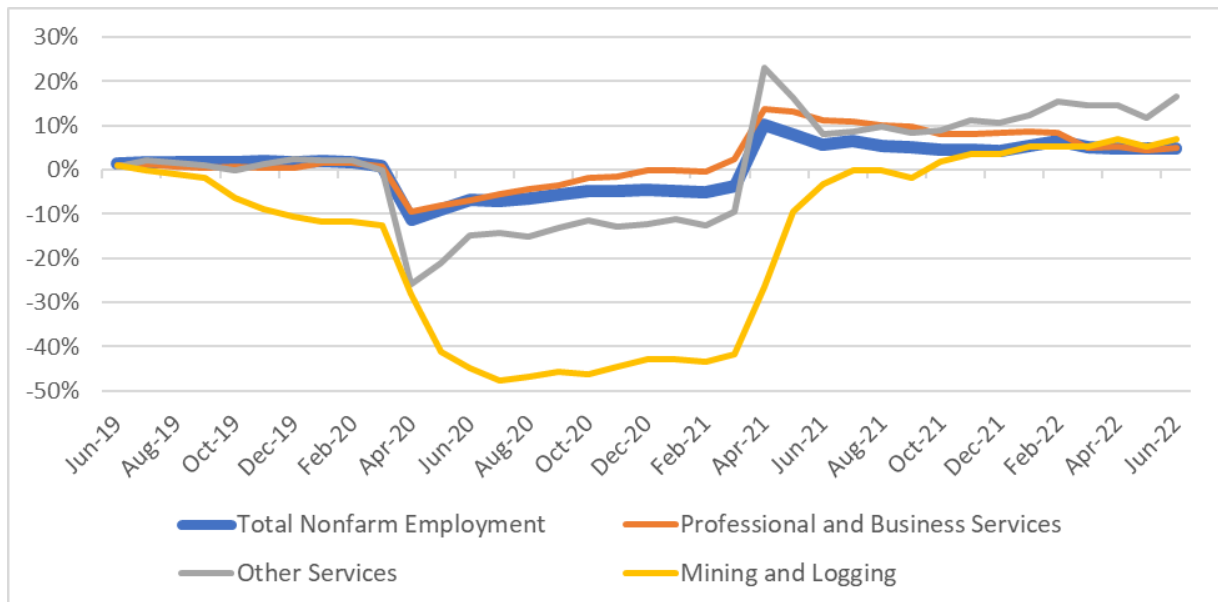
Data Source: Current Employment Statistics, Not Seasonally Adjusted

San Antonio-New Braunfels MSA

San Antonio-New Braunfels MSA total nonfarm employment expanded by 3.0 percent during the 36 months ending in June 2022, based on 32,800 positions added. Eight of 11 major industries achieved positive growth during that time, led by Professional and Business Services which expanded by 8.8 percent with 12,500 jobs gained. Other Services, which includes jobs in repair and maintenance, personal and laundry services, and religious, grantmaking, civic and similar organizations, added 3,000 jobs for 7.4 percent growth.

Mining and Logging was 4,700 positions shy of its June 2019 mark, a considerable 43.1 percent decline. However, the industry grew annually for nine consecutive months from October 2021 to June 2022.

Figure 28: San Antonio-New Braunfels MSA Annual Employment Growth Rate



Data Source: Current Employment Statistics, Not Seasonally Adjusted

VIII. Industry and Occupational Projections

Positive growth continues to drive demand for workers in Texas and across the nation. In some key occupations, local supply has at times struggled to keep up with demand. Texas remains driven by a continued economic shift towards high-skilled jobs in the Professional and Business Services sector, while the state's rapid population growth and aging baby-boomer population increases demand for service sector jobs, primarily in Education and Health Services. These two industries in addition to Trade, Transportation, and Utilities account for over 56 percent of the jobs in Texas.

The Projections program examines more than 750 occupations, segmenting them for specific industries. Employment in Texas is projected to grow by 18.3 percent from 2020 to 2030, which represents approximately 2.4 million jobs. On an annual basis, Texas is projected to have about 1.8 million job openings due to exits from the labor force, transfers from occupations, and growth. In this section, we will examine more closely projected growth in key industries and in-demand occupations in Texas over the 10-year period.

Health Care and Social Assistance

The Health Care and Social Assistance industry contained 1,707,487 positions in Texas during the first quarter 2022. The number of positions is 26,420 (1.6 percent) greater than the equivalent statistic for the first quarter of 2019, according to the Quarterly Census of Employment and Wages. According to long-term industry projections, Health Care and Social Assistance employment is expected to grow to approximately 1,935,146 jobs by 2030, with 23.4 percent projected from growth 2020 to 2030.

Ambulatory Health Care Services, which consists of doctors' and dentists' offices, outpatient care centers and medical and diagnostic laboratories, comprises about 47 percent of employment in the Health Care and Social Assistance industry during the first quarter 2022. The number of positions in Ambulatory Health Care in Texas increased by 43,448 (5.7 percent) from first quarter 2019 to first quarter 2022.

Help Wanted OnLine data from Burning Glass: Labor Insight continues to show strong demand for nursing. Registered Nurses ranks first among occupations in the Help Wanted OnLine database for August 2022 with 10,064 new job postings. In June 2020, Registered Nurses ranked sixth among occupations in the HWOL database for June 2020 with 4,756 new postings.

Table 11: Health Care and Social Assistance Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Registered Nurses	186,821	219,435	32,614	17.5	\$77,318
Medical and Health Services Managers	27,813	39,759	11,946	43.0	\$102,108
Licensed Practical and Licensed Vocational Nurses	58,775	68,904	10,129	17.2	\$48,519
Nurse Practitioners	12,707	22,049	9,342	73.5	\$121,009
Speech-Language Pathologists	8,891	13,141	4,250	47.8	\$77,291
Dental Hygienists	12,320	16,357	4,037	32.8	\$77,600*
Respiratory Therapists	10,852	14,518	3,666	33.8	\$61,937
Physician Assistants	8,001	11,630	3,629	45.4	\$120,743
Physical Therapists	13,198	16,784	3,586	27.2	\$99,040
Radiologic Technologists and Technicians	15,293	18,178	2,885	18.9	\$60,955*

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

Educational Services

Demand for Educational Services will continue to grow in Texas due to an ever-expanding population. From 2011 to 2020, Texas added 3,861,255 people—more than any other state in the nation. According to the U.S. Census Bureau’s American Community Survey, school enrollment for the Texas population three years of age and over increased by 733,176 from 2011 to 2020, a 10.5 percent increase.

Educational Services employment added 45,605 jobs over five years from first quarter 2017, a 3.9 percent increase. This places the industry’s employment at 1,257,276 jobs for first quarter 2022. Thankfully, the impact of COVID-19 on the economy appears to be receding as is evident when comparing employment levels from first quarter 2021 to first quarter 2022. During this period, Educational Services jobs increased by 47,408 jobs, a 3.9 percent increase. To summarize, QCEW data shows Educational Services employment levels are higher now than they were five years ago. The industry is expected to expand by another 13.6 percent from 2020 to 2030 according to TWC’s long-term industry projections.

TWC’s Occupational projections data estimates that Elementary School Teachers, Except Special Education, Secondary School Teachers, Except Special and Career/Technical Education, and Middle School Teachers, Except Special and Career/Technical Education will all increase by nearly 40,000 from 2020 to 2030. Educational Services occupations projected to add the most jobs in the long term that pay a wage above the state median are listed below.

Table 12: Educational Services Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Elementary School Teachers, Except Special Education	129,817	147,406	17,589	13.5%	\$60,902
Secondary School Teachers, Except Special and Career/Technical Education	95,797	108,890	13,093	13.7%	\$61,062
Middle School Teachers, Except Special and Career/Technical Education	64,807	73,598	8,791	13.6%	\$61,113
Health Specialties Teachers, Postsecondary	13,566	17,813	4,247	31.3%	\$104,077
Education Administrators, Kindergarten through Secondary	28,616	32,576	3,960	13.8%	\$80,783*
Educational, Guidance, and Career Counselors and Advisors	23,397	27,307	3,910	16.7%	\$61,100*
Coaches and Scouts	9,868	13,429	3,561	36.1%	\$45,353
Instructional Coordinators	15,686	17,943	2,257	14.4%	\$63,737
Kindergarten Teachers, Except Special Education	15,224	17,311	2,087	13.7%	\$60,902
Special Education Teachers, Secondary School	12,938	14,657	1,719	13.3%	\$61,681*

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

Retail Trade

Retail Trade is a large and changing industry. Texas' expanding economy and population have increased demand for retail goods.

Not seasonally adjusted Current Employment Statistics data for June 2022 indicates the industry represents 10.2 percent of Total Nonfarm employment in Texas at 1,379,000 jobs. According to industry projections, Retail Trade will add nearly 165,263 jobs by 2030, growing to 1,430,027 jobs total. COVID-19 sent the industry into negative five-year change starting in April 2020 after a long period of expansion. Starting in January 2022, the five-year change has returned to its pre-pandemic level. From July 2017 to July 2022, the industry saw a change rate of 4.6 percent. Technological advances like personalized shopper experiences and online ordering capabilities were already changing the industry when COVID-19 hit. From April 2020 to March 2021, the industry saw the highest 12-month decline in employment since January 1991.

Retail Trade occupations projected to add the most jobs in the long term that pay a wage above the state median are listed below. For this Texas industry, the median wage is \$29,153 while the state median wage for all industries is \$39,030.

Table 13: Retail Trade Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
General and Operations Managers	23,171	26,803	3,632	15.7%	\$83,162
Automotive Service Technicians and Mechanics	21,477	24,337	2,860	13.3%	\$46,676
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	14,874	16,711	1,837	12.4%	\$50,368*
Pharmacists	11,545	12,894	1,349	11.7%	\$128,443
First-Line Supervisors of Mechanics, Installers, and Repairers	5,324	6,292	968	18.2%	\$63,029
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4,951	5,856	905	18.3%	\$60,348
Securities, Commodities, and Financial Services Sales Agents	3,332	3,987	655	19.7%	\$61,762
Bookkeeping, Accounting, and Auditing Clerks	11,659	12,252	593	5.1%	\$43,206
Heavy and Tractor-Trailer Truck Drivers	3,221	3,754	533	16.5%	\$46,956
Sales Managers	4,582	5,088	506	11.0%	\$125,769

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

Construction

The Construction industry is projected to grow by 21.5 percent from 2020 to 2030, creating the need for 154,740 more workers over 10 years.

Occupational projections also indicate that some of the highest demand will be for construction managers, first-line supervisors of construction and extraction workers, and carpenters.

According to first quarter 2022 Quarterly Census of Employment and Wages report, private employment with the Construction industry reached 753,231 workers and has increased 5.4 percent over the last year.

Global supply chain issues have made it harder for builders to get materials to complete projects which makes them take longer to complete and cost more money.

According to the Federal Reserve Bank of St. Louis in 2021, the 5-year change in Lumber prices rose 71%. This was the largest increase since 1977.

Demand for construction workers has begun to recover from 12 months of decline onset by COVID-19. The average price of a home in Texas was \$370,929 in 2021, an annual increase of \$57,861 over the 2020 average price according to Texas A&M's Real Estate Center.

For the month of May 2022, the housing inventory is amongst the lowest (1.5 months) in the series that dates back to 1990 published by Texas A&M Real Estate Center. This indicates a high demand for and a shortage of residential housing in Texas. The year-over-year average home price increased sharply in 2021 after increasing very consistently since 2012 as reported by the Real Estate Center at Texas A&M University. These trends indicate very strong demand for residential building projects.

Construction occupations projected to add the most jobs long-term and pay above the Texas median wage of \$39,030 are listed below in Table 14.

Table 14: Construction Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Electricians	45,811	59,824	14,013	30.6%	\$48,591
First-Line Supervisors of Construction Trades and Extraction Workers	47,414	58,149	10,735	22.6%	\$62,385
Construction Managers	33,093	43,107	10,014	30.3%	\$96,287
Plumbers, Pipefitters, and Steamfitters	31,965	39,767	7,802	24.4%	\$48,943
Operating Engineers and Other Construction Equipment Operators	28,072	35,090	7,018	25.0%	\$46,141
General and Operations Managers	24,602	29,855	5,253	21.4%	\$83,162
Carpenters	28,245	32,732	4,487	15.9%	\$44,692
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	17,756	22,183	4,427	24.9%	\$47,976
Heavy and Tractor-Trailer Truck Drivers	12,638	15,640	3,002	23.8%	\$46,956
Welders, Cutters, Solderers, and Brazers	10,563	13,211	2,648	25.1%	\$47,819

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

Professional, Scientific, and Technical Services

In June 2022 Professional, Scientific, and Technical Services reached an all-time high of 960,100 jobs. In the 12 months ending June 2022, Professional, Scientific, and Technical Services grew by 69,200 positions for an annual growth rate of 7.8 percent. June marks the 18th consecutive month of positive annual growth for the industry. After losing 37,300 jobs in March and April 2022 due to COVID restrictions, the industry added 147,200 jobs from May 2020 to June 2022. In 25 of the last 27 months Professional, Scientific, and Technical Services employment expanded monthly. In June the industry achieved 112.9 percent of pre-pandemic employment levels reported in February 2020 after first surpassing pre-pandemic levels in February 2021. In not seasonally adjusted CES, all five subsectors achieved over 100 percent of pre-pandemic employment levels set in June 2019. Computer Systems Design and Related Services led with 129.8 percent followed by Management, Scientific and Technical Consulting Services with 122.1 percent.

According to first quarter 2022 QCEW report, employment in the Professional, Scientific, and Technical Services reached an average 955,588 workers and has grown 11.7 percent over the last two years. The average weekly wage from QCEW for first quarter 2022 was \$2,084.

From 2020 to 2030, the Professional, Scientific, and Technical Services industry is projected to grow by 26.8 percent, resulting in 204,135 jobs added. Establishments in this industry employ workers in many different occupations. Software Developers and Software Quality Assurance Analysts and Testers are projected to be the most in-demand through 2030 with an estimated employment of 67,204 jobs—a 10-year increase of 60.8 percent. Projections indicate other highly skilled jobs will be for Project Management Specialists and Business Operations Specialist, All Other, and Accountants and Auditors.

Professional, Scientific, and Technical Services occupations projected to add the most jobs in the long term that pay a wage above the state median are listed below.

**Table 15: Professional, Scientific, & Technical Services Industry
Long-Term Occupational Projections**

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Software Developers and Software Quality Assurance Analysts and Testers	41,789	67,204	25,415	60.8%	N/A*
Project Management Specialists and Business Operations Specialists, All Other	25,607	33,965	8,358	32.6%	N/A*
Accountants and Auditors	33,589	41,109	7,520	22.4%	\$77,643
General and Operations Managers	23,469	30,742	7,273	31.0%	\$83,162
Lawyers	30,290	37,067	6,777	22.4%	\$131,150
Computer User Support Specialists	14,127	20,202	6,075	43.0%	\$48,065*
Computer Systems Analysts	15,775	21,482	5,707	36.2%	\$100,238*
Paralegals and Legal Assistants	22,456	27,884	5,428	24.2%	\$49,051
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	15,818	21,125	5,307	33.6%	\$50,368*
Management Analysts	13,893	18,717	4,824	34.7%	\$85,780

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

N/A* - Hybrid occupation

Transportation and Warehousing

According to long term industry projections, Transportation and Warehousing employment is expected to grow to approximately 695,289 positions by 2030. From 2020 to 2030 the Transportation and Warehousing industry is projected to grow by 19.5 percent resulting in 113,391 jobs added. Heavy and Tractor-Trailer Truck Drivers are expected to be the most in-demand through 2030 with an estimated employment of 128,610 jobs.

According to CES not seasonally adjusted data, Transportation and Warehousing employment grew 14.3 percent from June 2020 to June 2022. Adding 76,300 jobs over this time period. QCEW quarterly data shows that from Q1 2020 to Q1 2022 NAICS 493 Warehousing and Storage has added 67,698 jobs a percentage increase of 65.3 percent.

Part of this enormous growth is due to the e-commerce boom that has taken place for delivery and warehousing companies during the COVID-19 pandemic. According to the United States Census Bureau e-commerce as a percent of retail sales was 11.4 percent in Q1 2020 and peaked in Q2 2020 at 15.7 percent in the US. As pandemic restrictions have started to decline into Q1, Q2 2022 e-commerce has still maintained 14.3 percent and 14.5 percent of retail sales in the last two quarters.

Total Retail e-commerce sales rose 7.4 percent from Q2 2022 when compared to Q2 2021 in the US.

Transportation and Warehousing occupations projected to add the most jobs in the long term are listed in Table 16.

Table 16: Transportation and Warehousing Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Heavy and Tractor-Trailer Truck Drivers	103,922	128,610	24,688	23.8	\$46,956
Flight Attendants	16,253	21,331	5,078	31.2	\$60,362
General and Operations Managers	7,479	9,172	1,693	22.6	\$83,162
Aircraft Mechanics and Service Technicians	9,092	10,782	1,690	18.6	\$67,305
Bus and Truck Mechanics and Diesel Engine Specialists	6,877	8,431	1,554	22.6	\$47,850
Cargo and Freight Agents	6,994	8,412	1,418	20.3	\$43,887
Reservation and Transportation Ticket Agents and Travel Clerks	9,081	10,243	1,162	12.8	\$47,387
First-Line Supervisors of Office and Administrative Support Workers	8,463	9,562	1,099	13.0	\$59,810
Production, Planning, and Expediting Clerks	3,972	4,886	914	23.0	\$47,279
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	4,215	5,113	898	21.3	\$50,368*

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

Manufacturing

According to the Federal Reserve Bank of Dallas, in 2019 Texas produced 9 percent of the total manufactured goods in the United States as cited in the August 2022 edition of Your Texas Economy, with manufacturing cooling a bit in recent months. According to the Federal Reserve Bank of Dallas monthly Texas Manufacturing Outlook survey, "Growth in Texas factory activity abated in August [2022], according to business executives responding to the Texas Manufacturing Outlook Survey. The production index, a key measure of state manufacturing conditions, ticked down to 1.2, a reading suggestive of very little change in output." In 2021, Texas Manufacturing produced 11.7 percent of the gross state product, \$232.0 billion in manufacturing output according to the Texas Comptroller of Public Accounts.

As of July 2022, statewide seasonally adjusted employment in Manufacturing is 924,800, compared with 909,600 in Feb. 2020 (the last month prior to the pandemic-induced downturn), according to seasonally adjusted data from the Current Employment Statistics program. The July 2022 Manufacturing employment is 70,000 jobs above where it was in April 2020 (the trough of the economic downturn).

With increased automation and robotics, the Manufacturing industry has changed in recent years with increased computerization, driving up manufacturing wages. This continues a demand increase for higher-skilled employees. Manufacturing industry employment is expected to increase by 111,642 jobs or 13.0 percent from 2020 to 2030. This increase includes a broad range of occupations as shown in Table 17 below. The three subsectors expected to grow the fastest 2030-30 are Fabricated Metal Product Manufacturing, Chemical Manufacturing, and Electrical Equipment, Appliance, & Component Manufacturing at 24.8, 24.6, and 20.8 percent employment growth from 2020-30, respectively.

Table 17: Manufacturing Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Industrial Machinery Mechanics	15,160	21,251	6,091	40.2	\$57,596
Welders, Cutters, Solderers, and Brazers	24,458	29,977	5,519	22.6	\$47,819
First-Line Supervisors of Production and Operating Workers	31,149	36,272	5,123	16.4	\$61,741
Machinists	17,375	21,667	4,292	24.7	\$47,585
Industrial Engineers	12,572	15,902	3,330	26.5	\$99,059
Software Developers and Software Quality Assurance Analysts and Testers	14,274	17,443	3,169	22.2	N/A*
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	16,609	19,396	2,787	16.8	\$60,348
General and Operations Managers	15,499	17,921	2,422	15.6	\$83,162
Heavy and Tractor-Trailer Truck Drivers	14,471	16,620	2,149	14.9	\$46,956
Mechanical Engineers	10,975	12,944	1,969	17.9	\$100,483

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

N/A* - Hybrid occupation

Agriculture, Forestry, Fishing and Hunting

The Agriculture, Forestry, Fishing and Hunting industry in Texas is one of the most robust in the country. In 2021, approximately 247,000 farms covered 126 million acres across the state generating \$24.9 billion in agricultural cash receipts, which ranked fourth in the country. Texas tops the lists for cotton and is second for calves and cattle.

After an increase in average employment from 2016 to 2017, the industry followed a trend of negative growth over the last five years. From first quarter 2016 to first quarter 2022, the Agriculture, Forestry, Fishing and Hunting industry shrank by 2 percent, losing 1,173 jobs. Overall, the industry is projected to gain 6,104 jobs by 2030, expanding to 65,406 jobs total.

Listed below are the Agriculture, Forestry, Fishing and Hunting industry jobs that pay a wage above the state median and are projected to be the most in-demand over the long term. Note: Many agriculture workers are considered self-employed and are therefore not included in the table below.

Table 18: Agriculture and Forestry Industry Long-Term Occupational Projections

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Farmers, Ranchers, and Other Agricultural Managers	11,162	12,895	1,733	15.5259	\$60,820
First-Line Supervisors of Farming, Fishing, and Forestry Workers	1,310	1,478	168	12.8244	\$48,042
Heavy and Tractor-Trailer Truck Drivers	1,866	1,989	123	6.5916	\$46,956
Farm Equipment Mechanics and Service Technicians	358	402	44	12.2905	\$46,228
Accountants and Auditors	165	184	19	11.5152	\$77,643
Directors, Religious Activities and Education	76	91	15	19.7368	\$60,639
Bookkeeping, Accounting, and Auditing Clerks	756	766	10	1.3228	\$43,206
Bus and Truck Mechanics and Diesel Engine Specialists	74	79	5	6.7568	\$47,850
Plumbers, Pipefitters, and Steamfitters	66	69	3	4.5455	\$48,943
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	89	92	3	3.3708	\$40,192

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

Mining, Quarrying, and Oil and Gas Extraction

The Mining, Quarrying, and Oil and Gas Extraction industry is projected to grow by 36.7 percent from 2020 to 2030, resulting in 67,850 jobs added. By 2030 the industry is projected to have 251,534 jobs. Service Unit Operators, Heavy and Tractor-Trailer Truck Drivers and Rotary Drill Operators are the top projected occupations for the industry.

According to not seasonally adjusted Current Employment Statistics data, employment in Mining, Quarrying, and Oil and Gas Extraction grew by 21.2 percent from June 2020 to June 2022. Over this time period 37,100 jobs have been added as the industry has begun to recover from its pandemic lows. The industry experienced its series low annual change rate of -31.8 percent in July 2020, largely due to COVID-19 and global turmoil in energy markets. In 2022 the industry has shown signs of recovery and as of June 2022 stood at 91.6 percent of the pre-pandemic employment level, up from a low of 72.2 percent for September 2020.

Mining, Quarrying, and Oil and Gas Extraction occupations projected to add the most jobs in the long term that pay a wage above the state median are listed below.

Table 19: Industry Long-Term Occupational Projections Mining, Quarrying, and Oil and Gas Extraction

Occupational Title	Employment 2020	Employment 2030	Change	Percent Growth	Median Annual Wage 2021
Service Unit Operators, Oil and Gas	14,047	20,174	6,127	43.6	\$47,486*
Heavy and Tractor-Trailer Truck Drivers	10,117	15,116	4,999	49.4	\$46,956
Rotary Drill Operators, Oil and Gas	4,642	6,726	2,084	44.9	\$55,922
Derrick Operators, Oil and Gas	3,865	5,615	1,750	45.3	\$46,900
Petroleum Engineers	6,360	8,002	1,642	25.8	\$130,854
Accountants and Auditors	6,244	7,748	1,504	24.1	\$77,643
Wellhead Pumpers	4,774	6,092	1,318	27.6	\$76,316
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,940	2,865	925	47.7	\$50,368*
Geological and Hydrologic Technicians	2,044	2,814	770	37.7	N/A*
Project Management Specialists and Business Operations Specialists, All Other	2,306	2,970	664	28.8	N/A*

Data Source: Texas Statewide Projections 2020 to 2030

Ranked by employment change for occupations with 2021 OEWS median wages higher than Texas median annual wage of \$39,030

*** 2021 OEWS estimate - SOC and/or title change**

N/A* - Hybrid occupation

IX. Glossary

Local Area Unemployment Statistics (LAUS)

This Federal/State cooperative program produces employment and unemployment estimates by place of residence.

Civilian Labor Force (CLF) - All persons classified as employed or unemployed.

Employed - All persons 16 years and over who, during the reference week, (a) did any work at all (at least 1 hour) as paid employees, worked on their own business, profession, or on their own farm, or worked 15 hours or more as unpaid family workers, or (b) were not working but who had jobs from which they were temporarily absent. Each employed person is counted only once, even if the person holds more than one job.

Employment Population Ratio - The proportion of the civilian non-institutional population who are employed over the age of 16. Used in conjunction with the unemployment rate to evaluate the status of the labor force, it provides a measure of change in employment.

Labor Force Participation Rate (LFPR) - Represents the proportion of the non-institutional population that is in the labor force. In the Current Population Survey (CPS), the participation rates are usually published for sex-age groups, often cross classified by other demographic characteristics.

Unemployed - All persons aged 16 years and over who had no employment, were available for work, and had made specific efforts to find employment. Includes persons who were waiting to be recalled to jobs from which they had been laid off.

Unemployment Rate - The unemployed number divided by the civilian labor force number.

Current Employment Statistics (CES)

This Federal/State cooperative program produces estimates drawn from a monthly survey of nonfarm business establishments used to collect wage and salary employment, worker hours and payroll by industry and area. It counts the number of jobs, not of people.

Nonagricultural Jobs - The total number of persons on establishment payrolls employed full or part time. Persons on the payroll of more than one establishment are counted in each establishment. Data exclude proprietors, self-employed, unpaid family or volunteer workers, farm workers, and domestic workers. Government employment only covers civilian employees.

Actual or Not Seasonally Adjusted - Describes the data series not subject to the seasonal adjustment process. In other words, the effects of regular, or seasonal, patterns have not been removed from these series.

Seasonally Adjusted - The effects of regular, or seasonal, patterns of hiring or layoffs (holidays, weather, etc.) have been removed from these series. These adjustments make it easier to observe the cyclical and other non-seasonal movements in a data series.

Quarterly Census of Employment and Wages (QCEW)

A Federal/State cooperative program which collects and compiles employment and wage data for workers covered by State unemployment insurance laws, and Federal civilian workers covered by unemployment compensation for federal employees. State employment security agencies collect and compile quarterly Unemployment Insurance (UI) contribution reports which are submitted by all employees. These data are maintained in the State in macro and microdata forms, and sent to the Bureau of Labor Statistics (BLS).

Average Weekly Wages (AWW) - Average weekly wage values are calculated by dividing quarterly total wages by the average of the three-monthly employment levels (all employees) and dividing the result by 13, for the 13 weeks in the quarter.

Occupational Employment Statistics (OEWS)

The Federal/State cooperative program which produces current estimates of industry staffing patterns through periodic surveys of the nonfarm wage and salary sector of the economy. Occupational wages are also made through the survey.

Hybrid Wage- OEWS estimates are calculated using data collected from six survey panels over three years. Because data will be collected under two different Standard Occupational Classification (SOC) systems, estimates for May 2020 will be based on a hybrid of the two classification systems. During the transition to the 2018 SOC system, OEWS estimates will be based on a "hybrid" structure that is a combination of the 2010 SOC and 2018 SOC.

Industry Staffing Patterns - The occupational make-up of an industry collected by the Occupational Employment Statistics (OES) survey

Standard Occupational Classification (SOC) - The SOC is a system for classifying all occupations in the economy. The 2010 SOC classifies workers at four levels of aggregation: major group, minor group, broad occupation, and detailed occupation. All occupations are clustered into one of the 23 major groups.

Projections

The Texas Workforce Commission's Labor Market Information Department produces industry and occupation employment projections. The program is funded by the Employment and Training Administration, U. S. Department of Labor. Projections are generated every two years for a 10-year period. The process of making employment projections depends on two main ingredients: industry employment and occupation employment within each industry (staffing patterns).

Employment Projections - Estimates of projected 10-year industrial and occupational employment for Texas and the 28 Workforce Development Areas.

Long-Term Projection System (LTPS) - Long-Term Industry Projection System (LTPS) was developed through the Asset Logistics Management Information System (ALMIS) Long-Term Industry Consortium. It is a PC-based system used to produce industry employment projections for Texas and the 28 Workforce Development Areas (WDAs) for a 10-year period. Texas and the WDA historical employment trends and U.S. relationships are used in conjunction with the forecast of Texas unemployment rates, gross state product, population, personal income, and labor force. The projections were developed through various types of regression and shift-share analyses.

Miscellaneous

Help Wanted OnLine - The Conference Board's data series provides monthly measures of labor demand (advertised vacancies) at the national, regional, state, and metropolitan area levels.

Current Population Survey (CPS) - National monthly household survey of sample households approximately 60,000 of the non-institutional population 16 years of age and older, employment and unemployment, demographic data and related subjects which are analyzed and published by Bureau of Labor Statistics (BLS). Each month, labor force information from this survey is published by Department of Labor in Employment and Earnings, and in the Employment Situation Summary press release. Annual demographic data are published in the Geographic Profile of Employment and Unemployment. Although the CPS is best known as the source for the monthly national unemployment rate, annual average CPS data for states are used in the Local Area Unemployment Statistics (LAUS) program as benchmarks and monthly data are used either in the extrapolation procedures or directly where the estimates meet BLS reliability standards.

Texas Geography

Metropolitan Division (MD) - A Metropolitan Statistical Area with a population of 2.5 million which is subdivided into smaller groupings is referred to as Metropolitan Divisions (MDs). An MD in Texas is made up of one or more counties.

Metropolitan Statistical Area (MSA) - A geographic area that contains at least one urbanized center of 50,000 or more population plus adjacent territory that has a high degree of social and economic integration with the core urban location. An MSA in Texas is made up of one or more counties.

Metro Area - Can refer either to a Metropolitan Statistical Area or a Metropolitan Division. Texas has 25 MSAs, including the Dallas-Fort Worth-Arlington MSA which is subdivided into two MDs.

Workforce Development Area (WDA) - The State of Texas is divided into twenty-eight (28) local workforce development areas. A WDA in Texas is made up of one or more counties and every county resides in a WDA.