THE ECONOMY AT A GLANCE
HOUSTON

GREATER HOUSTON PARTNERSHIP
Making Houston Greater.

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LOCAL IMPACT OF A GLOBAL EVENT

Russia's invasion of Ukraine will impact Houston's economy, though how much remains uncertain. Crude prices will rise. Inflation will accelerate. Consumers will cut back on spending. The U.S. Federal Reserve will raise interest rates to combat inflation. Higher rates will reduce business investment. And the barrage of bad news from Ukraine will weigh on consumers' psyches.

Growth will slow, but a local recession is unlikely. The region is coming off its best year on record for job growth. Corporations continue to relocate or expand operations here. Population growth remains strong. The U.S. economy continues to expand. And while Houston has commercial connections to Russia and Ukraine, those ties represent a fraction of Houston's international business. The conflict may slow growth, but it's unlikely to drag the Houston into recession. That said, one should be aware of the risks the conflict poses for the local economy.

Weaker Trade

Recessions in Russia and Ukraine are certain. Moody's forecasts the Russian economy will shrink 15 percent or more this year, Ukraine's by as much as 30 percent. Houston's exposure to the Russian and Ukrainian economies is small, however. Combined, the two account for only 3.3 percent ($3.0 billion) of total Houston imports and 0.6 percent ($684 million) of the region's imports.

METRO HOUSTON IMPORT PARTNERS, 2021*

Rank	Country	$ Billions	% Total
1	China	13.023	14.2
2	Germany	7.778	8.5
3	Mexico	7.589	8.3
4	S. Korea	4.790	5.2
5	India	4.079	4.5
8	Russia	2.862	3.1
62	Ukraine	0.164	0.2
-	All Others	51.349	56.0
-	**Total**	**91.634**	100.0

* Ports of Freeport, Galveston, Houston, Texas City and Bush Intercontinental
Source: WISERTrade

METRO HOUSTON EXPORT PARTNERS, 2021*

Rank	Country	$ Billions	% Total
1	Mexico	11.22	9.0
2	Brazil	10.516	8.5
3	Japan	8.778	7.1
4	China	8.582	6.9
5	Netherlands	6.421	5.2
43	Russia	0.471	0.4
61	Ukraine	0.213	0.2
-	All Others	77.976	62.8
-	**Total**	**124.177**	100.0

* Ports of Freeport, Galveston, Houston, Texas City and Bush Intercontinental
Source: WISERTrade

Houston exported modest amounts of industrial machinery, vehicles, chemicals, plastics, and scientific instruments to the two countries last year. Crude accounted for 80 percent of Houston's imports from Russia in '21, followed by small volumes of steel, wood, aluminum, chemicals, and fertilizers. To Ukraine, Houston exported vehicles, fuel, and industrial machinery in '21 and imported steel, iron ore, electrical machinery, and animal fats.

Only a few local firms have operations in Russia. According to *Global Houston '21*, only 26 Houston firms operate subsidiaries in the country. Likewise, only four Russian firms have operations in Houston. To put that in perspective, 90 Houston firms operate 311 subsidiary offices in the United Kingdom, and 176 U.K. firms operate 365 subsidiary offices in Houston. Closer to home, 38 Houston firms operate 109 subsidiaries in Mexico and eight Mexican firms operate 21 subsidiaries in the Houston.

Rising Oil Prices

On March 8, U.S. President Joe Biden banned the import of crude and refined products from Russia. British Prime Minister Boris Johnson quickly announced the U.K. would follow suit. Several members of the European Union (EU) have signaled they would curtail Russian crude imports by the end of the year as well.

In Houston, the direct impact of the embargo will be felt at two refineries that import crude from Russia, ExxonMobil in Baytown and Valero in Texas City. The indirect impact will be felt by all Houstonians as higher prices at the pump.

Financial markets had anticipated the embargo and other supply constraints, pushing up prices in the days before Biden's announcement. Between February 24 (the day Russia invaded Ukraine) and March 8 (the day Biden announced the boycott), the spot price for West Texas Intermediate (WTI) jumped $23 per barrel, a 25.6 percent increase in ten days. Since then, prices have slipped but remain well above where they stood prior to the invasion.

Source: U.S. Energy Information Administration

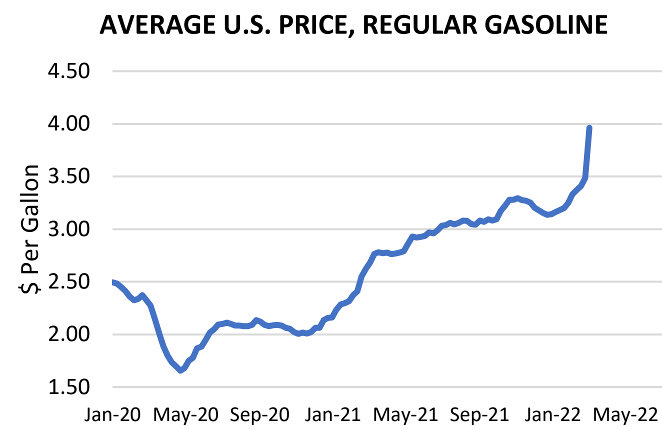
The surge in energy prices won't lead to hiring or drilling booms, at least not initially. Over the years, U.S. exploration firms have learned how to produce more oil with fewer employees. In Houston, upstream employment has fallen 34.2 percent (102,000 jobs) since December '14 while domestic crude production has jumped 21.0 percent (2.0 million barrels per day) over the same period. There's also a significant lag, as much as six to nine months, from when a company decides to ramp up drilling and when additional production comes online. Added to that, drillers were struggling to find crews to operate their rigs prior to the run-up in oil prices.

Higher prices will lead to higher profits in the near term, but the war and its sanctions will weigh on major oil producers for years. BP, Equinor, Exxon and Shell have all decided to halt all long-running operations in Russia. These four divestures alone will result in write-downs exceeding $33.2 billion. And Houstonians who manage these projects, provide translation services, and otherwise facilitate business with Russia may lose their jobs as well.

Higher Fuel Prices

The reopening of the global economy that began in '21 had already caused a run up in prices at the pump. From January '21 to January '22, the average price for a gallon of regular gasoline on the Texas Gulf Coast rose from $1.95 to $2.95 a gallon.

Those higher prices have cut into household budgets. The typical family of four (two parents, two children, two vehicles) consumes about 1,000 gallons of gasoline a year. The dollar-a-gallon increase translates into consumers needing $1,000 more to meet their basic transportation needs this year compared to last. Since January, the price of a gallon of regular has jumped another 88 cents a gallon. Now families will need to budget nearly $2,000 more for fuel purchases this year than they did at the start of '21.



Source: U.S. Energy Information Administration

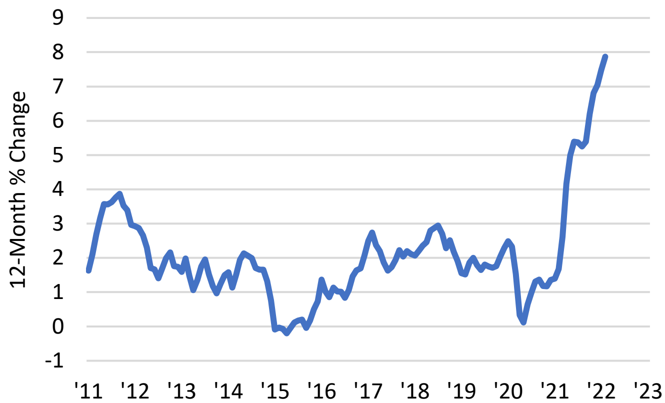
Diesel prices have followed a similar trajectory and are up 84 percent since January '21. Over 70 percent of the nation's freight is moved by trucks; the increase in diesel prices will be passed along to consumers.

How high will fuel prices go? Moody's estimates that every $10 increase in the price of crude results in 30 cents increase at the pump. How high will crude prices go? Goldman Sachs forecasts crude prices to hit $135 per barrel this year. Barclays and Rystad Energy warn prices could hit $200. The futures market, however, has a different outlook. On March 14, the day this newsletter was published, WTI futures traded on the NYMEX never topped $100 per barrel through the end of the year. The one exception being crude for delivery in April trading at $101.86 per barrel.

More Inflation

In the 12 months ending February '22, inflation accelerated to 7.9 percent. The largest increases occurred in the cost of fuel, food, and shelter. These are non-discretionary items, *i.e.,* spending necessary for daily existence. When the costs of essential items rises faster than wages, consumers pull back on discretionary spending, *i.e.,* lifestyle purchases. If inflation remains elevated, consumers will cut back on entertainment, travel, and dining out. Houston's leisure and hospitality sector would feel the brunt of this shift.

U.S. INFLATION



Source: U.S. Bureau of Labor Statistics

The day President Biden announced the U.S. would stop importing crude from Russia, Bloomberg modeled the impact higher crude prices might have on inflation. At $140 per barrel, inflation topped 9 percent. At $160, it hits 9.5 percent. At $180, it topped 10 percent. However, as noted earlier, crude is not expected to reach those heights.

Supply Chain Constraints

Russia is the world's largest supplier of wheat. Together with Ukraine, it accounts for 25 percent of global exports. Russia also ships significant amounts of soybeans, corn, barley, and other grains in addition to potash, potassium, and fertilizer. The U.S. is also a major wheat and grain exporter, so American farmers may benefit from the Russian sanctions, but at the expense of American consumers who will be paying more at the grocery store. And American farmers will likely be paying more for fertilizers, the cost of which will be passed along to consumers.

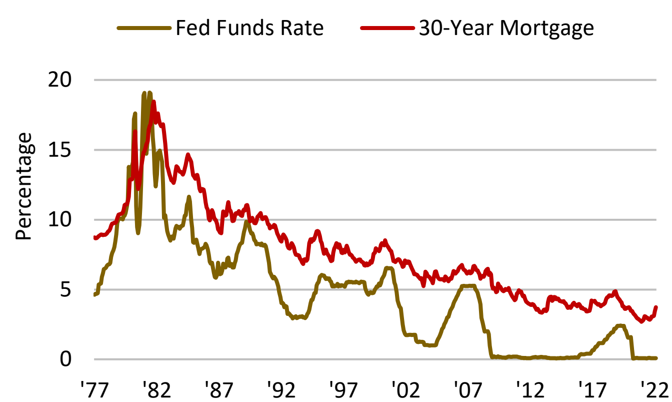
Russia is also a major exporter of aluminum, copper, cobalt, and nickel, and is the world's largest exporter of palladium, with over 20 percent of the global market. Palladium is used in catalytic converters. The automotive supply chain, already struggling from global computer chip shortages, could see more shortages and cost increases.

Interest Rate Increases

The traditional cure for inflation is higher interest rates. The U.S. Federal Reserve will begin raising rates later this month. In a normal environment, that would slow economic growth, tamp down price increases, and ease inflation. It's unclear, though, how effective the antidote will be when price hikes are aggravated by war and sanctions. In recent testimony to U.S. House and Senate, Federal Reserve Chairman Jerome Powell described the impacts of the invasion as "a game changer that will be with us for a very long time." Read into that, the forces driving inflation will be with us a long time.

Higher interest rates will make it more costly to finance major purchases. For example, if 30-year mortgage rates rise 1.0 percent, the monthly payment on a $350,000 home in Houston would rise by about $170. If rates go up by 2.0 percent, that same house would cost $350 more to finance each month. Higher interest rates will raise the cost of financing business inventories, equipment purchases, capital improvements, and real estate acquisitions.

FEDERAL FUNDS RATE V. 30-YEAR FIXED MORTGAGE

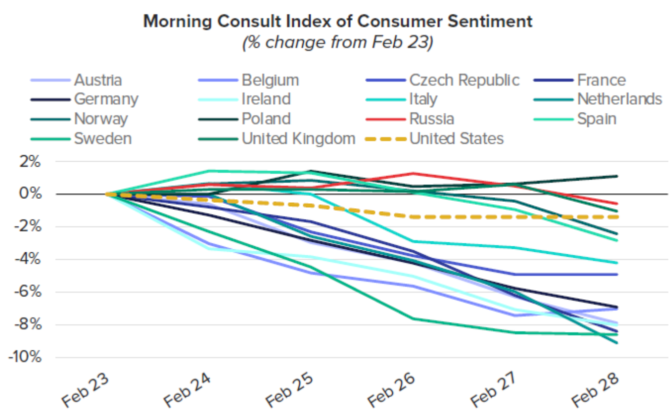


Sources: Freddie Mac; Board of Governors of the U.S. Federal Reserve

Consumer Confidence

The volatility in the stock market may further undermine consumer spending. It would do this through what's known as the "wealth effect." Consumers feel more financially secure and confident when their homes or investment portfolios increase in value. The opposite holds when their portfolios decline in value. A '20 Gallup poll found 55 percent of U.S. households own stocks, either outright or through retirement plans. In the week ending March 11, the S&P 500 and Nasdaq Composite lost 2.9 percent and 3.5 percent respectively, capping off the fourth weekly loss in the past five weeks for both indexes, according to *The Wall Street Journal*. If that trend continues, consumers are likely to pull back on their spending.

The constant barrage of news about the invasion is taking its toll as well. Analysts have compared the wall-to-wall coverage of Ukraine's war with Russia to the 24/7 coverage of European lockdowns in the early stages of the COVID pandemic. Both weigh on consumer psyches. Since Russia invaded Ukraine, consumer confidence has fallen in the EU, in the U.S. as well but not by as much.



Possible Spillover from the EU

The Russia-Ukraine war poses a greater threat to Europe's economy than it does to the U.S. The EU shipped $82.2 billion in merchandise and provided $30.1 billion in commercial services to Russia in '19, according to the World Trade Organization (WTO). The war, sanctions and energy embargo caused Moody's to revise downward its growth forecast for Europe from 3.9 percent earlier in the year to 2.0 percent at present.

Slower European growth could weaken demand for Houston exports. Houston shipped $34.5 billion in goods and commodities to the E.U. last year, or 19.5 percent of the region's total exports. Refined products, chemicals, plastics, and industrial machinery accounted for the bulk of the shipments. Houston engineering, construction and professional service firms also provide a significant amount of consulting services to client in the EU, or to Houston clients to conduct business in the EU. Since roughly one-fourth of Houston's economy is tied to exports, anything which reduces Houston exports impacts the region's economy.

Potential Upsides

Not all the risks are to the downside. Europe's need to reduce its dependence on Russian crude and natural gas should provide opportunities for Houston energy firms, especially those engaged in the export of liquified natural gas (LNG). Europe's need to diversify its fuel sources may also accelerate its transition away from carbon-based fuels, a sector in which many Houston firms are involved.

IN THE WINNER'S CIRCLE AGAIN

Metro Houston ranked among the nation's top metros for new and expanded facilities in '21, according to *Site Selection* magazine, which produced the rankings as part of the annual "Governor's Cup" competition. The Houston region logged 295 projects, behind metro Chicago and Dallas-Fort Worth but ahead of Austin and New York. Texas earned the top spot in the magazine's state rankings.

'21 TOP METROS BY NUMBER OF PROJECTS

Rank	Metro	Projects
1	Chicago	441
2	Dallas-Fort Worth	389
3	Houston	295
4	Austin	208
5	New York	157

Source: *Site Selection Magazine*

Site Selection's rankings focused on new projects with significant impact, including headquarters, manufacturing plants, Research and development operations, and logistics sites. Retail, government, school and hospital projects are not included. Projects included in the analyses meet at least one of three criteria: (a) involve a capital investment of at least $1 million, (b) create at least 20 new jobs or (c) add at least 20,000 sq. ft. of new floor area.

Top Houston job-creating projects in '21 include:

- United adding 3,000 new jobs at Bush Intercontinental Airport over the next five years,
- Chewy.com planning to add 1,200 jobs at a new Houston distribution center,
- Goodman/ Daikin adding 1,000 jobs at their facility in Waller County, and
- Strategic Manufacturers planing to hire 500 workers for a nitrile glove manufacturing plant in Katy.

Most new business announcements involved logistics and distribution operations (64), followed by advanced manufacturing (50), professional services (30), life sciences (18), digital tech (13) and energy 2.0 (10). A list of the Houston projects the submitted to Site Selection can be found at the Partnership's website.

Growth Better Than Previously Thought

Benchmark revisions to employment data released in early March paint a clearer picture of job losses early in the pandemic, job gains in ’20 and ’21, and total jobs recovered to date.

- Prior to the revisions, it was thought Houston lost 361,400 jobs in March and April of ’20. The losses have been revised downwards to 359,400.
- The original estimates indicated Houston lost 206,600 jobs in ’20 and added 151,800 in ’21. New data from TWC indicate the region lost 185,000 jobs in ’20 and added 159,700 in ’21.
- Through December ’21, the region had recouped 87.6 percent of all jobs lost early in the pandemic. New data place the recover at 95.8 percent as of December ’21.

The adjustments came from the annual benchmark revisions, a review that TWC starts each fall, culminating with the release of updated employment data in March. The job reports that TWC releases throughout the year are based on a sample of area employers. The revised job counts are based on unemployment insurance premiums paid by employers, and therefore provide a more accurate picture of job growth or losses.

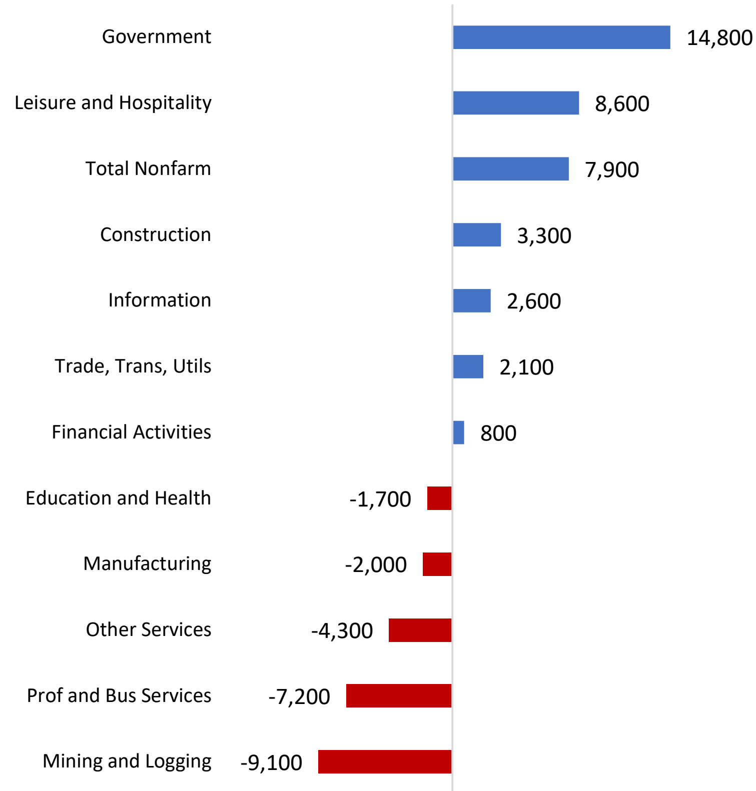
While revisions to overall job growth were modest, several sectors added more jobs in 2021 than originally reported.

- Government swung from a loss of 2,500 jobs to a gain of 12,300. The sector is primarily composed of school districts, community colleges, and universities.
- Leisure and hospitality, i.e., restaurants, bars, and hotels, saw its growth revised upward from 24,400 to 33,000 jobs.
- Construction saw an upward revision from 8,800 to 12,100.

The revisions also resulted in several sectors adding fewer jobs than originally reporting

- TWC originally reported that mining and logging added 11,900 jobs in ’21. That was revised downward to 2,800. As a result, the sector now ranks last in the percent of jobs recovered so far.
- Professional and business services saw its over-the-year growth revised downward from a gain of 30,300 jobs to 23,100 jobs. Many of these jobs support the oil and gas industry, another indicator of the slow pace of recovery in the sector.
- Manufacturing, despite its significant role in the energy industry, saw a relatively small downward revision, from 7,600 jobs to 5,600.

BENCHMARK REVISIONS, METRO HOUSTON
Overestimate/Underestimate



Source: Workforce Solutions

Additional details on jobs gained and lost in ’21 can be found on page 7.

Metro Houston shed 51,700 jobs in January ’22, a 1.6 percent decline in total employment. This was the largest January over-the-month decline since ’18. The average loss for the month of January is 44,400 jobs.

Over-the-month losses are typical each January due post-holiday layoffs and adjustments to population estimates by the U.S. Bureau of Labor Statistics. The primary drivers of this January's decline were in trade, transportation, and utilities; government; and professional and business services. Minor losses were also recorded in construction; leisure and hospitality; and education and health services.

This January’s losses marginally set back Houston’s recovery from the COVID-induced recession. As of January, the region had recouped 292,500 of the jobs lost in the pandemic, or 81.4 percent of the total.

KEY ECONOMIC INDICATORS

Aviation — The Houston Airport System (HAS) handled 3.5 million passengers in January '22, up from 2.0 million in January '21. This marked the fourth consecutive month with international passenger volume exceeding 600,000.

Crude Oil — The closing spot price for West Texas Intermediate (WTI), the U.S. benchmark for light, sweet crude, averaged $91.64 per barrel in February '22, up from $59.04 for the same month in '20, according to the U.S. Energy Information Administration (EIA). Since Russia's invasion of Ukraine, WTI has traded at $92 per barrel or higher.

Foreign Trade — The Houston-Galveston Customs District handled foreign trade valued at $273.1 billion in '21, up from 47.6 percent from $194.3 billion in '20. A jump in total tonnage and in the value of crude, a major Houston export, led to the growth.

Home Sales — Single-family home sales jumped 22.9 percent with 7,372 units sold compared to 5,997 in February of 2021, according to the Houston Association of Realtors. Compared to the last "normal" February ('20), the sales volume was up 23.3 percent. With fewer housing options available for purchase, consumers placed heavy demand on single-family rental homes in February.

Natural Gas — February's natural gas prices averaged $4.69 per million British thermal units (MMBtu), down 12.3 percent from $5.35 in February the year before. Gas prices last February were elevated due to the prolonged hard freeze which hit the southwestern U.S.

Purchasing Managers Index — Overall economic activity expanded at a strong pace again in February, according to the most recent Houston Purchasing Managers Index (PMI). The February '22 PMI registered 59.5, only a slight dip from 59.6 in January. Non-manufacturing activities expanded at a modestly slower rate while manufacturing activities expanded at a significantly faster pace during the month.

Rig Count — The Baker Hughes count of active domestic rotary rigs stood at 663 the second week of March '22, up from 402 the same week in March '21, according to data recently released by the company.

Sales Tax — Sales and use tax collections for the 12 most populous Houston-area cities1 totaled $1.1 billion in the 12 months ending January '22, up 18.5 percent from $955.2 million for the same period a year ago. Collections for the month of January totaled $88.0 million, up 16.9 percent from $75.2 million in January '21.

Unemployment — The unemployment rate for metro Houston was 5.5 percent in January '22, up from 4.8 percent in December '21 but down from 7.9 percent in January '21. The Texas rate was 4.8 percent, up from 4.2 percent in December but down from 7.0 percent in January of last year. The U.S. rate was 4.4 percent, up from 3.7 percent in December but down from 6.8 percent last January. The rates are not seasonally adjusted.

Vehicle Sales — Houston-area auto dealers sold 24,248 new vehicles in January '22, a decrease of 7.1 percent from January '21, according to TexAuto Facts, published by InfoNation, Inc. of Houston. Truck/SUV sales fell 3.3 percent compared to January '21 and car sales dropped 19.2 percent.

Elizabeth Balderrama, Heath Duran, Annaissa Flores, Patrick Jankowski and Roel Martinez and contributed to this issue of Houston, The Economy at a Glance.

Special thanks to Parker Harvey, Principal Economist with Workforce Solutions, Gulf Coast Workforce Board, for sharing his insights into the benchmark revisions.

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The Key Economic Indicators are **updated whenever any data change** — typically, ten or so times per month. If you would like to receive these updates by e-mail, usually accompanied by commentary, click here.

HOUSTON MSA NONFARM PAYROLL EMPLOYMENT (000)

				Change from		% Change from	
	Dec '21	Nov '21	Dec '20	Nov '21	Dec '20	Nov '21	Dec '20
Total Nonfarm Payroll Jobs	**3,177.0**	**3,160.7**	**3,017.3**	**16.3**	**159.7**	**0.5**	**5.3**
Total Private	***2,739.8***	***2,723.7***	***2,592.4***	***16.1***	***147.4***	***0.6***	***5.7***
Goods Producing	***497.9***	***492.5***	***477.4***	***5.4***	***20.5***	***1.1***	***4.3***
Service Providing	***2,679.1***	***2,668.2***	***2,539.9***	***10.9***	***139.2***	***0.4***	***5.5***
Private Service Providing	***2,241.9***	***2,231.2***	***2,115.0***	***10.7***	***126.9***	***0.5***	***6.0***
Mining and Logging	63.6	62.1	60.8	1.5	2.8	2.4	4.6
Oil & Gas Extraction	30.2	29.8	31.6	0.4	-1.4	1.3	-4.4
Support Activities for Mining	31.1	30.4	27.7	0.7	3.4	2.3	12.3
Construction	216.3	214.6	204.2	1.7	12.1	0.8	5.9
Manufacturing	218.0	215.8	212.4	2.2	5.6	1.0	2.6
Durable Goods Manufacturing	134.9	133.6	128.6	1.3	6.3	1.0	4.9
Nondurable Goods Manufacturing	83.1	82.2	83.8	0.9	-0.7	1.1	-0.8
Wholesale Trade	164.7	164.7	157.9	0.0	6.8	0.0	4.3
Retail Trade	324.1	319.1	311.6	5.0	12.5	1.6	4.0
Transportation, Warehousing and Utilities	179.6	176.8	167.7	2.8	11.9	1.6	7.1
Utilities	17.4	17.5	17.4	-0.1	0.0	-0.6	0.0
Air Transportation	18.2	18.1	16.7	0.1	1.5	0.6	9.0
Truck Transportation	27.7	27.8	26.8	-0.1	0.9	-0.4	3.4
Pipeline Transportation	12.4	12.4	12.4	0.0	0.0	0.0	0.0
Information	31.2	31.0	28.0	0.2	3.2	0.6	11.4
Telecommunications	12.2	12.2	12.3	0.0	-0.1	0.0	-0.8
Finance & Insurance	109.3	108.2	105.3	1.1	4.0	1.0	3.8
Real Estate & Rental and Leasing	61.8	60.8	60.0	1.0	1.8	1.6	3.0
Professional & Business Services	515.7	515.1	492.6	0.6	23.1	0.1	4.7
Professional, Scientific & Technical Services	245.3	244.9	234.3	0.4	11.0	0.2	4.7
Legal Services	*29.7*	*29.9*	*28.3*	*-0.2*	*1.4*	*-0.7*	*4.9*
Accounting, Tax Preparation, Bookkeeping	*26.4*	*26.2*	*24.9*	*0.2*	*1.5*	*0.8*	*6.0*
Architectural, Engineering & Related Services	*67.2*	*67.0*	*64.4*	*0.2*	*2.8*	*0.3*	*4.3*
Computer Systems Design & Related Services	*38.4*	*38.4*	*34.9*	*0.0*	*3.5*	*0.0*	*10.0*
Admin & Support/Waste Mgt & Remediation	226.9	226.5	214.2	0.4	12.7	0.2	5.9
Administrative & Support Services	*214.9*	*214.9*	*203.0*	*0.0*	*11.9*	*0.0*	*5.9*
Employment Services	*86.6*	*87.1*	*79.6*	*-0.5*	*7.0*	*-0.6*	*8.8*
Educational Services	70.3	69.7	61.9	0.6	8.4	0.9	13.6
Health Care & Social Assistance	354.1	356.9	341.3	-2.8	12.8	-0.8	3.8
Arts, Entertainment & Recreation	31.0	30.5	26.7	0.5	4.3	1.6	16.1
Accommodation & Food Services	287.9	284.6	259.2	3.3	28.7	1.2	11.1
Other Services	112.2	113.8	102.8	-1.6	9.4	-1.4	9.1
Government	437.2	437.0	424.9	0.2	12.3	0.0	2.9
Federal Government	32.6	32.3	31.7	0.3	0.9	0.9	2.8
State Government	94.6	94.7	91.9	-0.1	2.7	-0.1	2.9
State Government Educational Services	*54.9*	*55.1*	*52.0*	*-0.2*	*2.9*	*-0.4*	*5.6*
Local Government	310.0	310.0	*301.3*	0.0	8.7	0.0	2.9
Local Government Educational Services	*216.1*	*216.1*	*207.4*	*0.0*	*8.7*	*0.0*	*4.2*

SOURCE: Texas Workforce Commission