



September 16, 2024

The TXOGA Chartbook serves as an essential resource for our members and those keen on comprehending the data that narrate ongoing developments within the economy and the oil and gas sectors, both internationally and domestically, including specific trends in Texas.

Key points for the week of September 16, 2024

- **U.S. economic indicators remained steady.** Business conditions, as measured by the ADS Index from the Philadelphia Federal Reserve, improved and remained aligned with GDP growth. Consumer price inflation rose by 2.6% year-over-year (y/y) in August, easing for the fifth consecutive month to its lowest annual increase since March 2021. Yields on high-yield corporate bonds fell by 0.4% week-over-week (w/w) to 12.8%, while 30-day Fed Funds futures remained unchanged at 5.0%, reflecting a lower risk premium for low-credit-quality bonds in anticipation of a potential Fed Funds rate cut next week.
- **Oil market fundamentals weakened, but prices stabilized.** Weekly U.S. petroleum data showed that U.S. crude oil inventories increased by 0.8 million barrels w/w as of September 6, remaining at the lower end of the 5-year range, according to the Energy Information Administration (EIA). West Texas Intermediate (WTI) crude oil prices rose by \$1.50 per barrel w/w to over \$69 per barrel as of September 13, as the market factored in delays in supply increases by OPEC+. Despite record-high global demand, concerns over slower economic growth and future oil demand continued to exert downward pressure on oil prices. The International Energy Agency (IEA) echoed these concerns in its September outlook, though it upgraded its forecast for global gasoline demand in 2025. As highlighted in the [Chart of the Week](#), the EIA's September outlook reflects increased global net inventory withdrawals in Q4 2024 (1.3 million barrels per day, mb/d), while maintaining its projected oil demand at a record-high 104.6 mb/d for 2025.
- **U.S. natural gas prices rose as storage levels dropped further within the 5-year range.** U.S. natural gas exports and domestic consumption remained historically strong, leading to a 1.5% w/w price increase to \$2.31 per mmBtu as of September 13. Near-term futures prices fell below their historical mean, while December 2024 futures contracts traded 31% higher at \$3.03 per mmBtu.

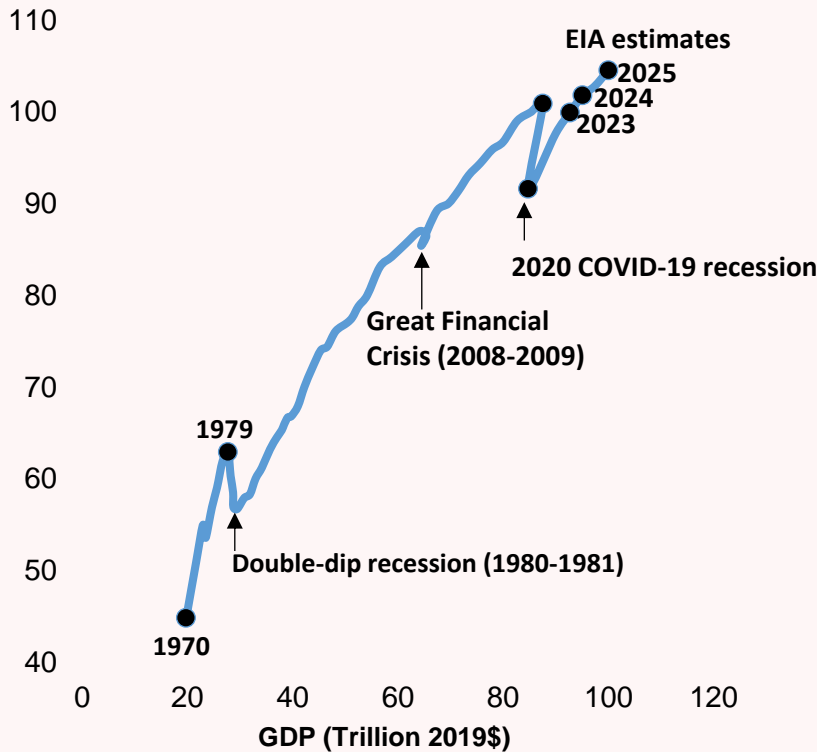
TXOGA Chart of the Week: Global Oil Market Balance Projections to 2025



- **Solid demand and inventory drawdowns.** EIA's August 2024 Short-Term Energy Outlook projects global demand of 102.2 mb/d this year and 104.6 mb/d in 2025 – both record highs.
- **For oil inventories, EIA projects global stock withdrawals to continue through Q2 2025,** including 1.0 mb/d in Q3 2024, 1.3 mb/d in Q4 2024, and 0.9 mb/d in 2025, corresponding with Brent crude oil prices of \$82 in Q4 2024 and \$84 on average in 2025, compared with \$72 per barrel currently.

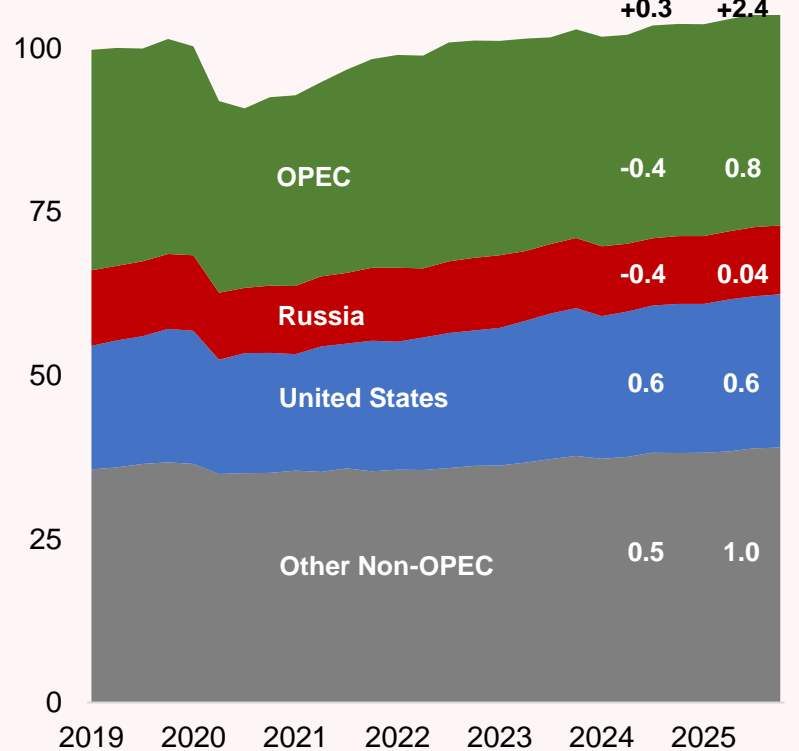
Global oil demand and GDP

Million barrels per day (mb/d)



Oil production by country/region

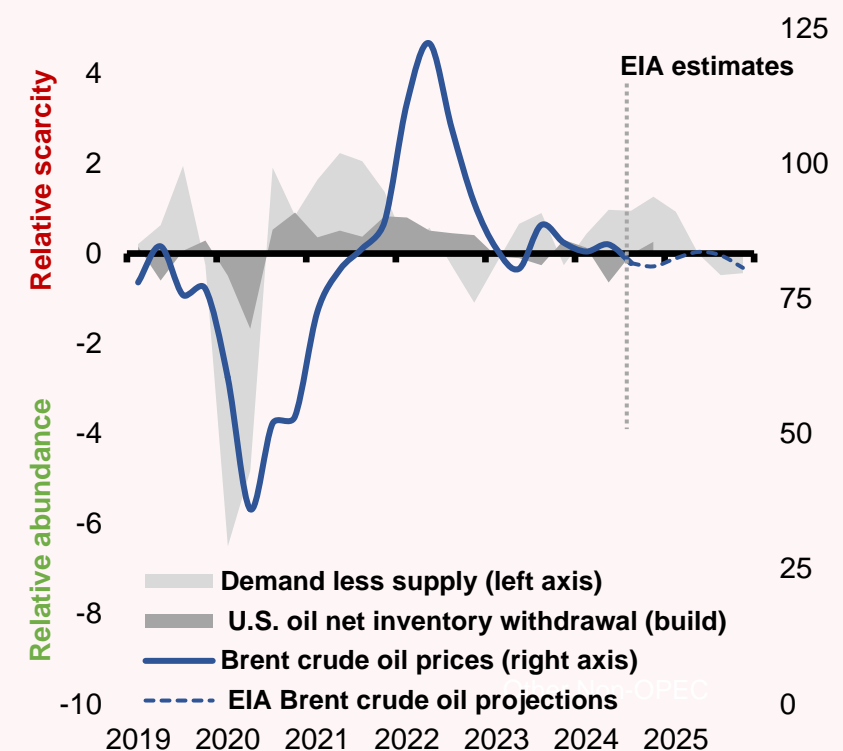
Million barrels per day, mb/d



Global demand/supply & Brent prices

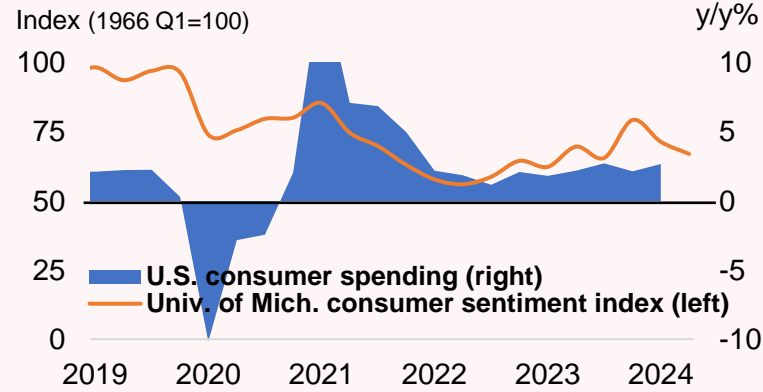
Million barrels per day (mb/d)

2024\$/Bbl



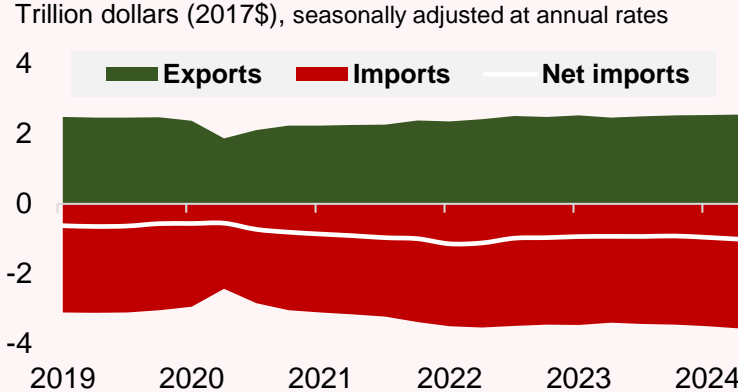
U.S. economic indicators

Consumer sentiment vs. spending



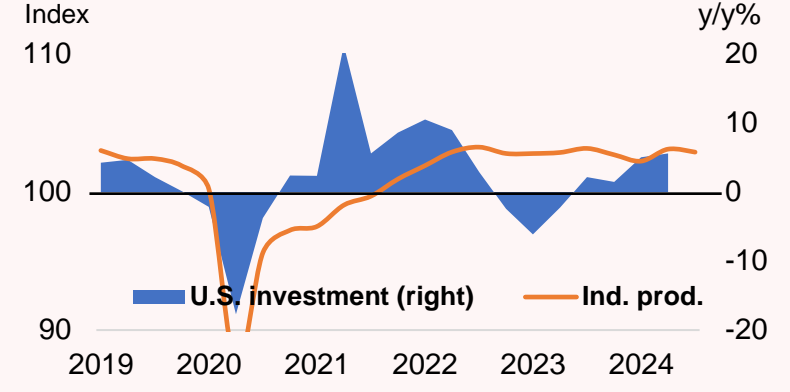
Consumer spending was revised upwards by 0.2% y/y to 2.7% y/y in Q2 2024 per the Bureau of Economic Analysis. Consumer sentiment rose in August by 2.1% m/m, according to the University of Michigan's survey. This historically implies consumer spending growth for Q3 2024.

Real net exports of goods and services



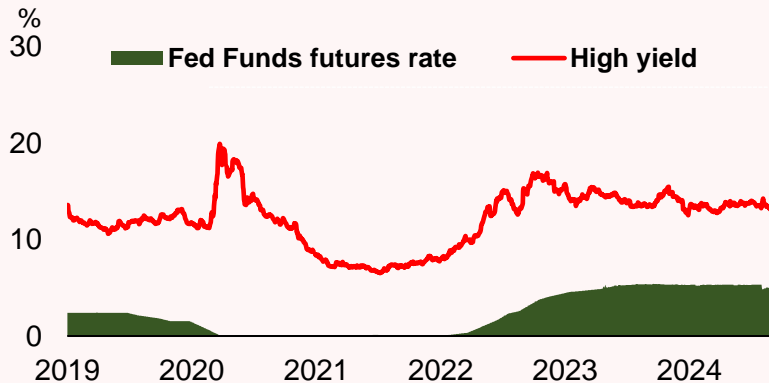
U.S. trade deficit was revised to be slightly wider in Q2 2024. The U.S. real trade deficit ran at an annualized rate of \$1.01 trillion in Q2 2024 per BEA. On a nominal basis, the trade surplus for petroleum and products was revised upwards by \$5.6 billion to \$32.6 billion Q2 2024, which was still below the \$52 billion surplus in Q1 2024.

Industrial production and investment growth



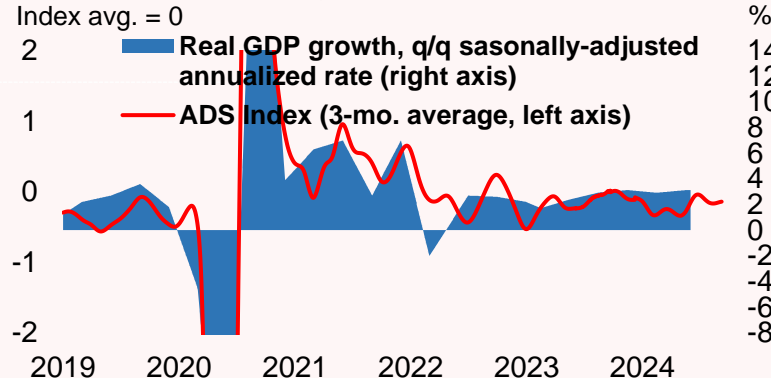
U.S. economywide investment growth was revised downwards by 0.8% y/y to 5.0% y/y for Q2 2024. This growth remained consistent U.S. industrial production, per the Federal Reserve Board – and continues to suggest investment growth in Q3 2024.

Fed Funds rate and CCC and lower corporate bond yields



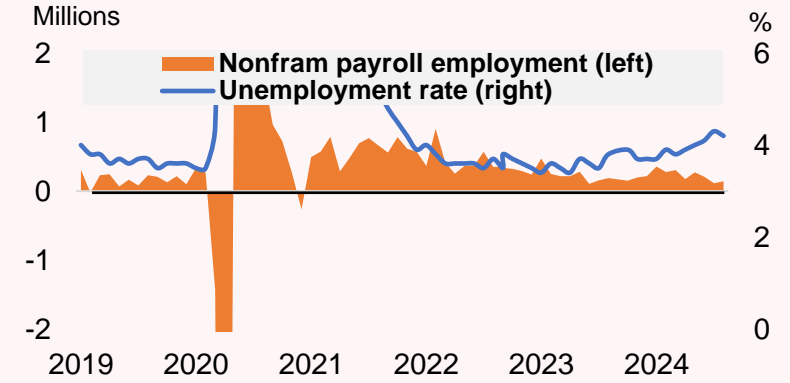
Lower bond premium for low credit quality. High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Sep. 13, HY rates fell by 0.4% w/w to 12.8%, while Fed Funds futures rate remained at 5.0%, resulting in a premium for low credit quality of 7.8%.

Aruoba-Diebold-Scotti Business Conditions Index (qtr. avg.) vs. U.S. real GDP growth



The ADS index stabilized. The ADS business conditions index, published by the Philadelphia Fed. Res. Bank, is a leading indicator of GDP growth. A rolling 3-month average of the ADS index has accurately reflected real GDP growth and, with readings as of Sep. 12, remained consistent with further growth in Q3 2024.

Nonfarm payroll employment & unemployment rate

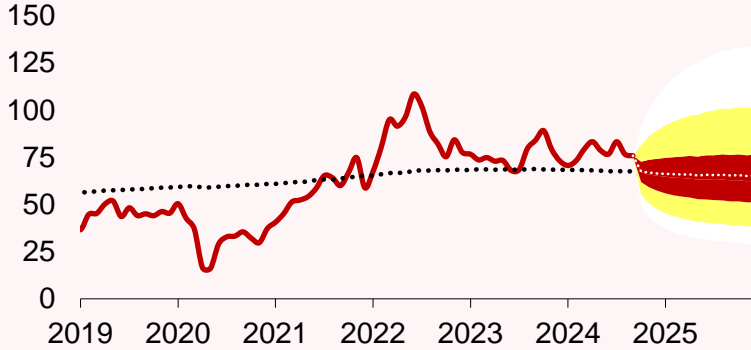


Labor market conditions remained weak in August. The employment situation is a lagging indicator of GDP growth. Non-farm payrolls were revised down by 22% to 89,000 in July and came in at 142,000 for August. The U.S. unemployment rate fell by 0.1% m/m to 4.2% in August per BLS,

U.S. oil market indicators

WTI crude oil price mean reversion analysis

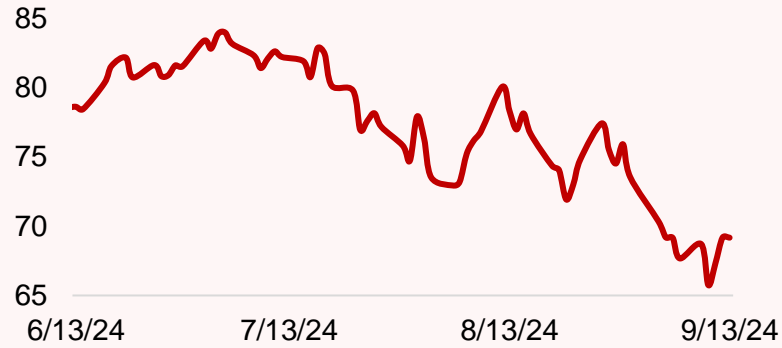
Dollars per barrel (2024\$)



Futures prices have aligned with the historical mean reversion target. The futures strip remains backwarddated (that is, futures prices currently are lower than spot prices). Confidence intervals based on past prices show the potential for greater upside than downside.

WTI crude prompt month futures prices

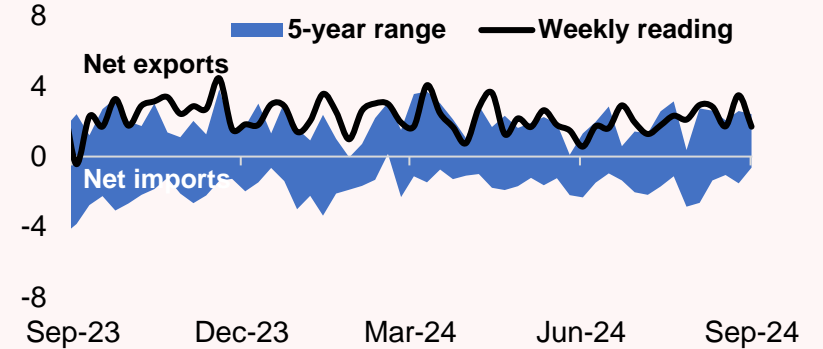
Dollars per barrel



WTI crude oil prices rose by \$1.50 per barrel w/w to \$69 per barrel as of September 13, as the market balanced concerns for economic growth and OPEC+ supply compliance with Middle East geopolitical uncertainties and historically low U.S. crude oil inventories.

U.S. petroleum net exports (imports)

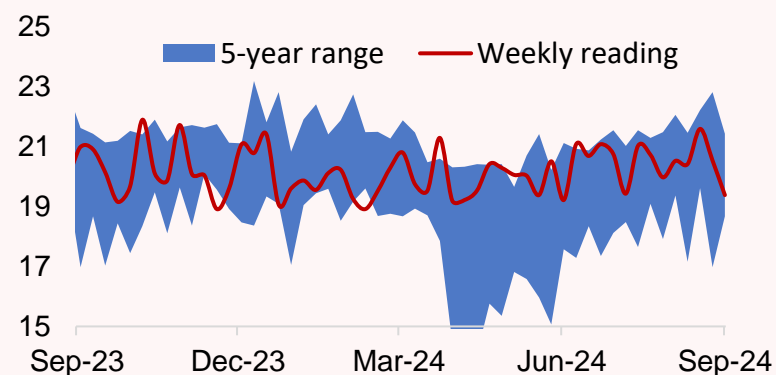
Million barrels per day, mb/d



Petroleum net exports fell. The U.S. was a petroleum net exporter of 1.7 mb/d for the week ended Sep. 6, down by 1.8 mb/d from the prior week.

U.S. petroleum demand

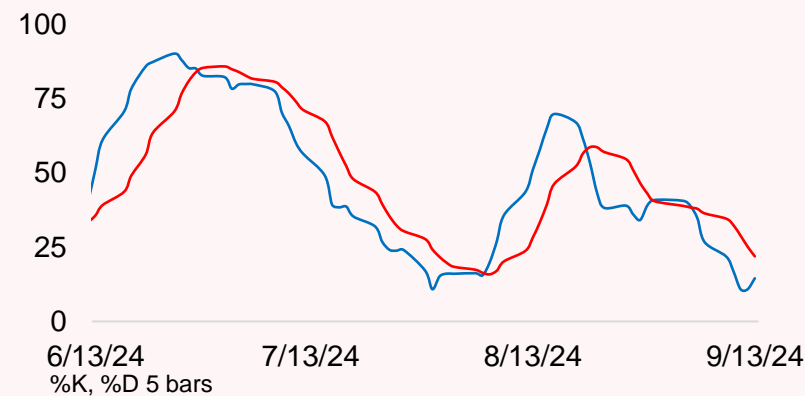
Million barrels per day (mb/d)



Petroleum demand decreased. U.S. petroleum demand, as measured by deliveries, fell by 1.2 mb/d w/w to 19.3 mb/d for the week ended Sep 6.

WTI crude prompt month futures slow stochastic

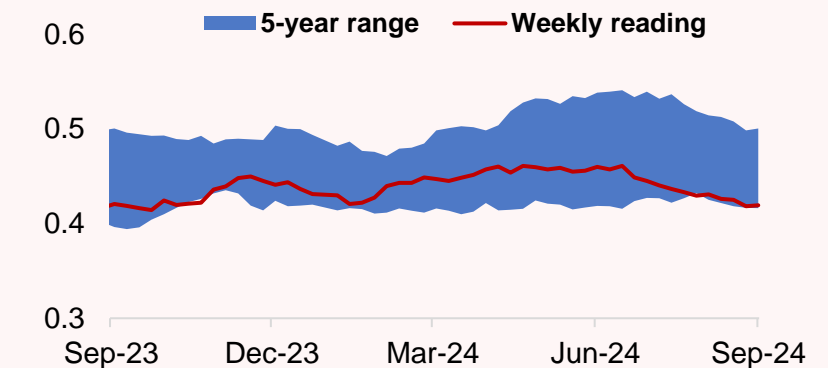
Index level



Price momentum fell during the week ended Sep. 13.

U.S. ending stocks of crude oil (excluding the SPR)

Billion barrels

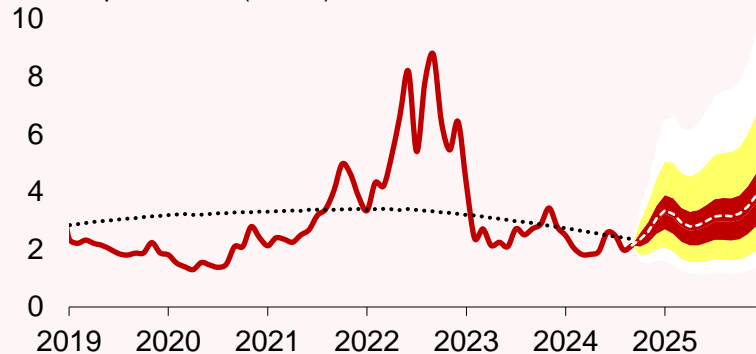


Inventories increased. U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 0.8 million barrels (mb) for the week ended Sep. 6 and remained at the bottom of the 5-year range.

U.S. natural gas market indicators

Natural gas price mean reversion analysis

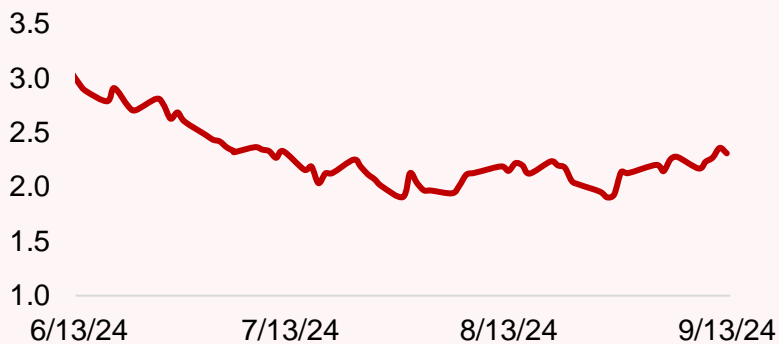
Dollars per mmBtu (2024\$)



Near-term natural gas futures prices have fallen below the historical mean reversion target but rise by 31% between the October and December contracts. Confidence intervals based on past prices show the potential for greater upside than downside.

Natural gas prompt month futures prices

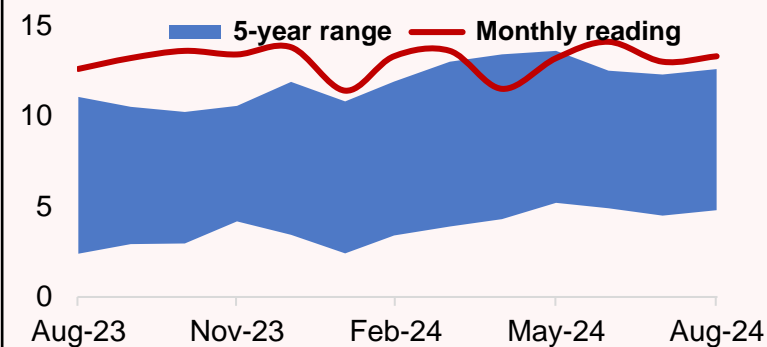
Dollars per million Btu



Natural gas prices at Henry Hub rose by 1.5% w/w to \$2.31 per million Btu for the week ended September 13.

U.S. natural gas net exports

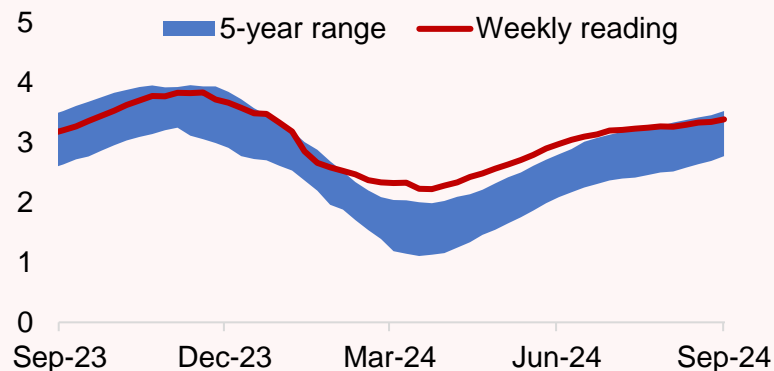
Billion cubic feet per day, bcf/d



Natural gas net exports of 13.3 bcf/d, as projected for August by EIA, slowed from a revised record-high 14.1 bcf/d in June.

U.S. weekly working gas storage

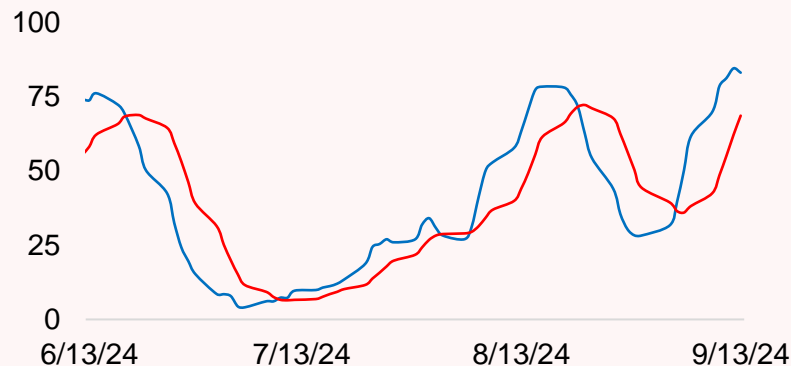
Trillion cubic feet (tcf)



Storage continued to recede into the 5-year range. Working gas in underground storage rose by 1.2% w/w to 3.39 tcf as of Sep. 6 but fell to the 82nd percentile within the 5-year range.

Natural gas futures slow stochastic

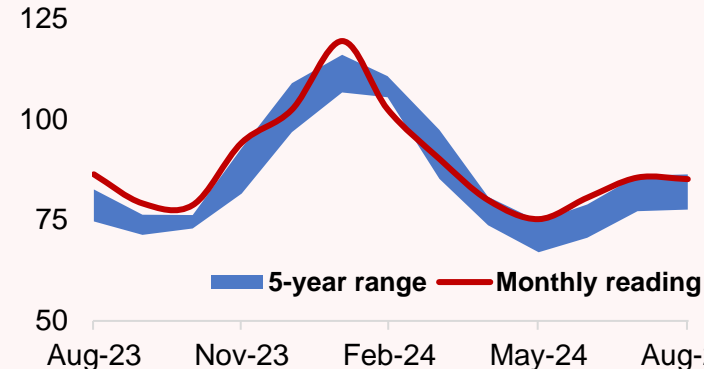
Index level



Natural gas price momentum rose during the week ended September 13.

U.S. natural gas consumption

Billion cubic feet per day, bcf/d

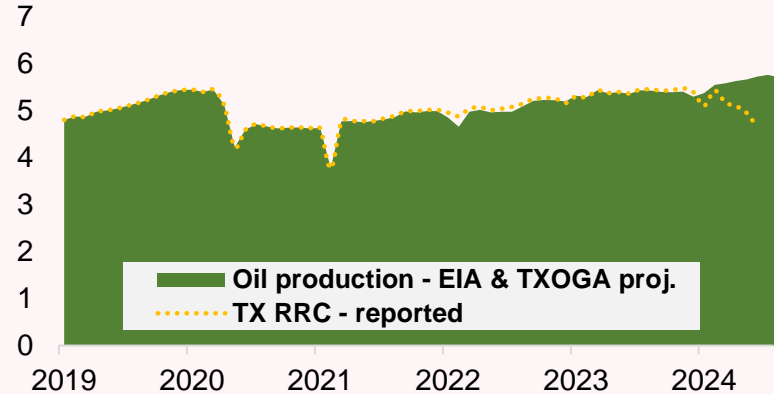


Consumption held steady. U.S. natural gas consumption fell by 0.4 bcf/d m/m to 85.1 bcf/d in August per EIA but remained near the top of the five-year range.

Texas' oil and natural gas production

Texas crude oil production, Jan. 2019 – Aug. 2024

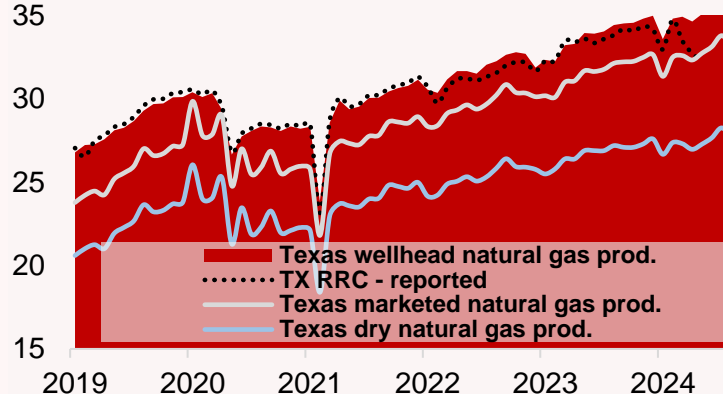
Million barrels per day (mb/d)



Record-high oil production. Texas' oil production rose to 5.73 mb/d in June per EIA, and TXOGA estimates that grew to 5.76 mb/d in July and edged down to 5.72 mb/d in August.

Texas natural gas production, Jan. 2019 – Aug. 2024

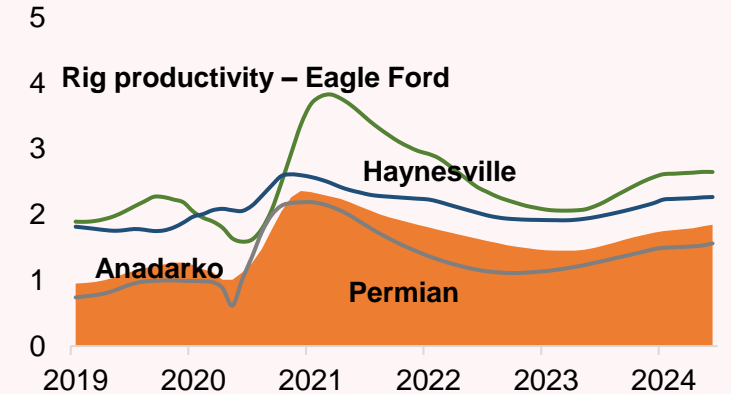
Billion cubic feet per day (bcf/d)



Record-high natural gas production. Texas produced record highs of 35.5 bcf/d of natural gas gross withdrawals and 33.1 bcf/d of marketed production in June per EIA. TXOGA estimates that Texas' marketed production was 33.2 bcf/d in August with 27.7 bcf/d of dry gas production.

Texas rig productivity by basin – new monthly prod. per rig

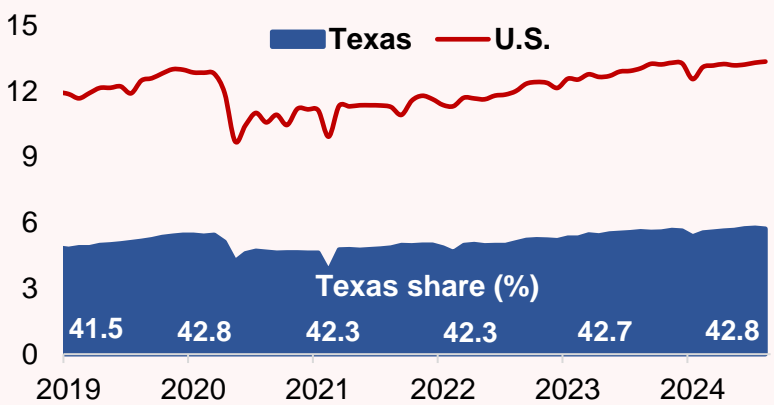
Thousand barrels per day oil-equivalent, kb/dae



Strong productivity to start the year. EIA estimates of rig productivity for July 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+20.1% y/y), Eagle Ford (+20.6% y/y), Permian (+20.1% y/y), and Haynesville (+13.9% y/y).

U.S. and Texas crude oil production, Jan. 2019 – Aug. 2024

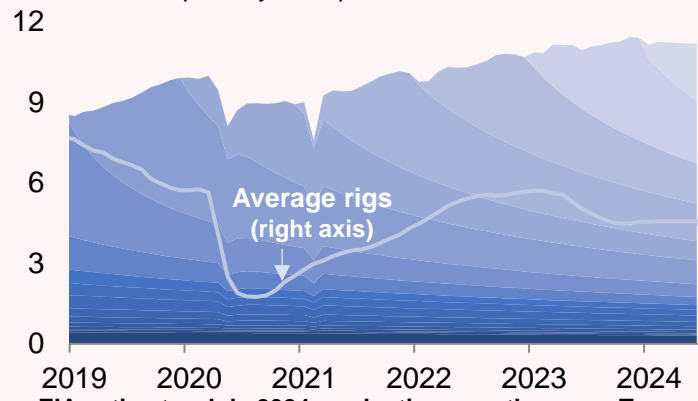
Million barrels per day (mb/d)



Texas' share increased. Texas accounted for an estimated 42.8% of U.S. crude oil production year-to-date through August by TXOGA's estimates.

Texas shale basin wellhead oil & natural gas production

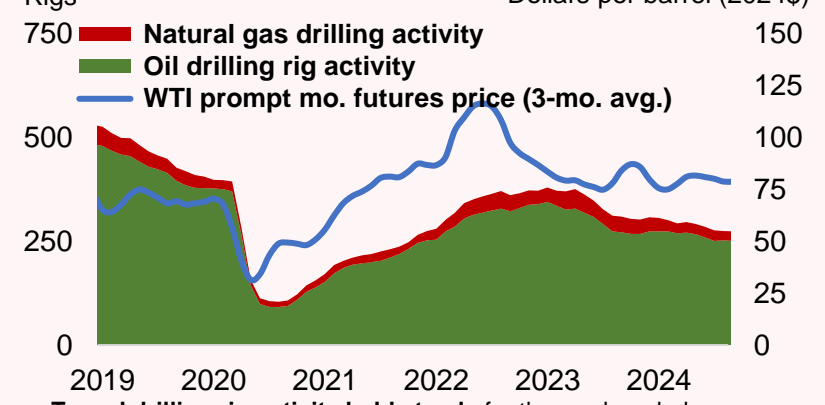
Million barrels per day oil-equivalent



EIA estimates July 2024 production growth across Texas shale basins has continued to grow year-over-year in the Permian (+8.0% y/y) but fallen in the Eagle Ford (-4.5% y/y), Haynesville (-9.5% y/y), and Anadarko (-2.1% y/y) regions.

Texas drilling activity and WTI crude oil futures prices

Rigs (left axis), Dollars per barrel (2024\$) (right axis)

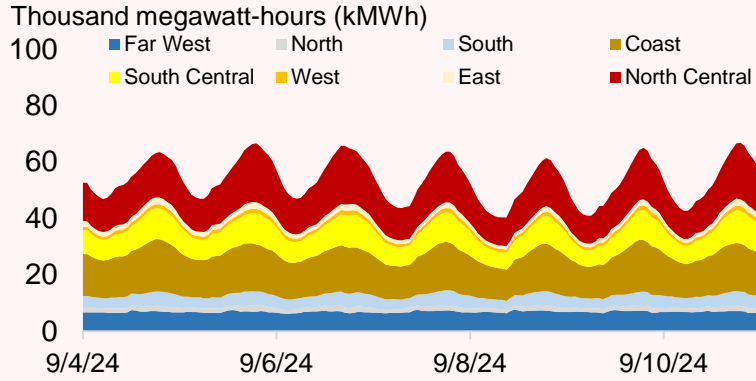


Texas' drilling rig activity held steady for the week ended September 13 per Baker Hughes. Texas had 250 oil-directed rigs (down by 2 rigs w/w) and 24 natural gas-directed rigs (up by 2 rigs w/w).

Texas Electricity Analysis

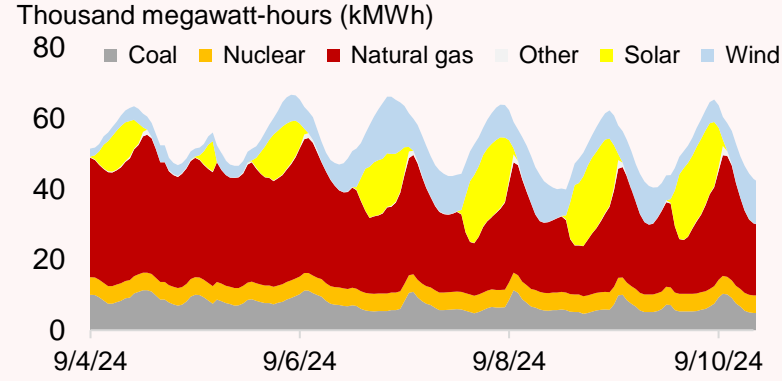


ERCOT electricity load by region



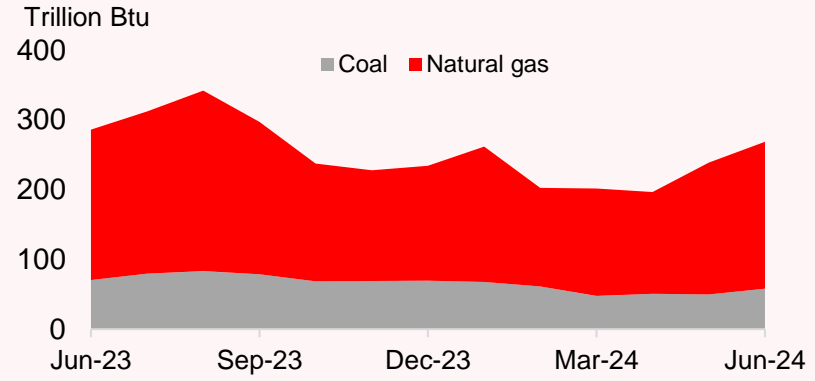
For Sep. 4-10, ERCOT's average hourly electricity load was 53.8 kMWh, down by 9.1% w/w, while the maximum load hourly load of 68.8 kMWh fell by 13.1% w/w. Variability was the highest in the North Central and South Central regions.

ERCOT hourly electricity generation by source



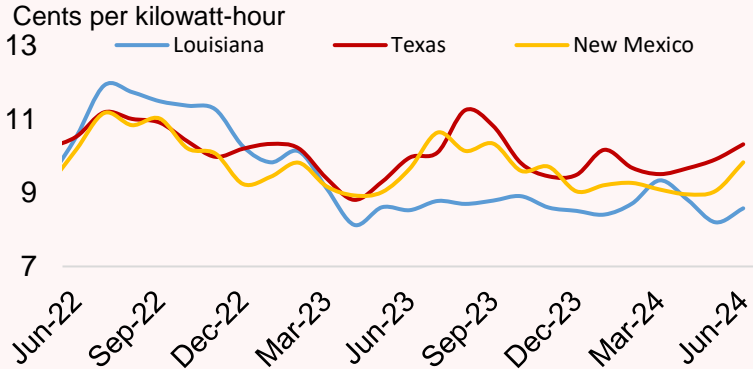
Thermal and dispatchable resources generated as much as 94.9% of ERCOT's electricity. ERCOT's hourly electricity generation for the period Sep. 4-10 ranged between 40 and 67 kMWh with a standard deviation of 7.3 kMWh, down by 9.0% w/w. Thermal and dispatchable sources generated 94.9% of the region's power in the morning of Sep. 5, including 65.6% from natural gas.

Texas electricity plant receipts of natural gas and coal



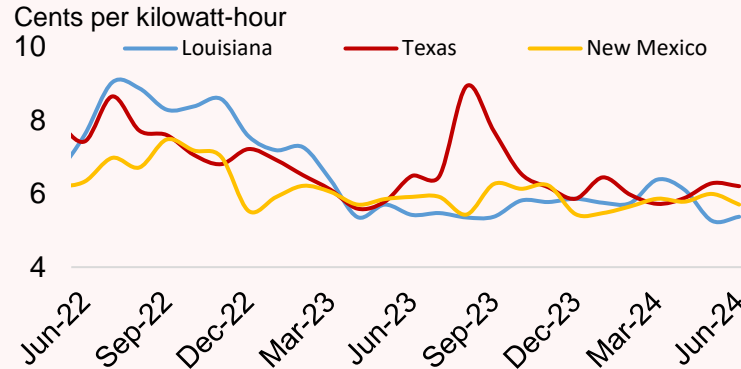
Texas electricity plant receipts of natural gas and coal increased seasonally but decreased year-over-year by 2.4% y/y and 17.7% y/y, respectively, in June 2024.

Electricity prices – average across all end-use sectors



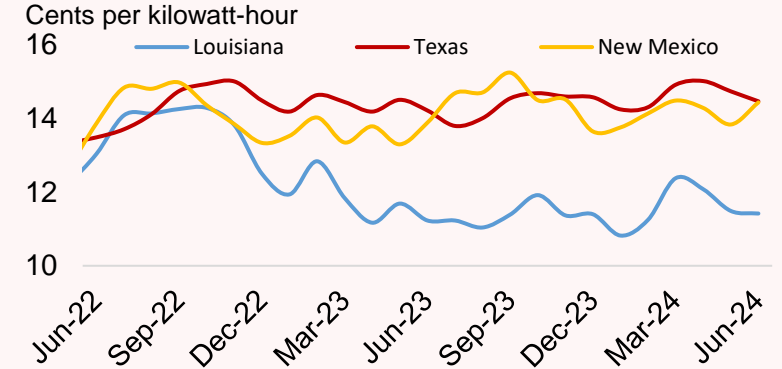
Texas' electricity prices rose in June. The average price of electricity in Texas increased by 3.6% y/y in June to 10.32 cents per kWh, compared with 8.58 cents per kWh in Louisiana and 9.83 cents per kWh in New Mexico.

Industrial electricity prices



Texas' industrial electricity prices decreased. Texas' industrial electricity prices averaged 6.20 cents per kWh in June, down by 1.3% m/m and by 4.3% y/y. Rates in New Mexico and Louisiana remained lower at 5.70 cents per kWh and 5.37 cents per kWh, respectively.

Residential electricity prices



Texas' residential electricity prices fell from May but rose versus last year. For Texas' residential consumers, the average price of electricity (14.47 cents per kWh) fell by 1.8% m/m from May but rose by 1.8% y/y from a year ago, remaining above rates in Louisiana (11.42 cents per kWh) and on par with New Mexico (14.44 cents per kWh).

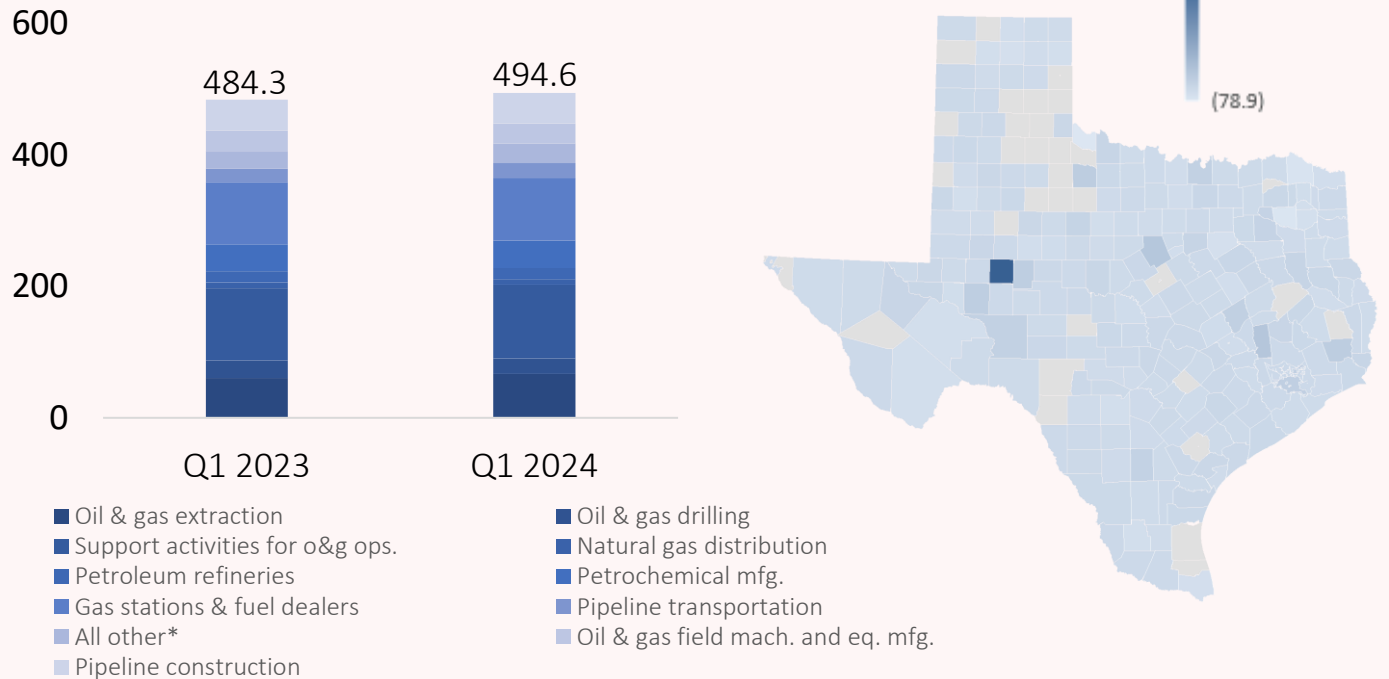
Texas' oil and natural gas industry wages eclipsed \$20.8 billion in Q1 2024



- ▶ Texas' oil and natural gas industry employment and wages grew by 2.1% y/y and 6.5% y/y, respectively, in Q1 2024, raising the totals to nearly 494,593 jobs and \$20.8 billion in wages – the highest wages since the 2020 pandemic.
- ▶ Two-thirds of the year-over-year job growth occurred in the upstream and supporting services, while another quarter of the job growth occurred in pipeline transportation per the latest data (released on August 20, 2024) from the U.S. Census Bureau and Texas Workforce Commission.

Texas oil and natural gas industry direct employment rose by +2.1% y/y in Q1 2024

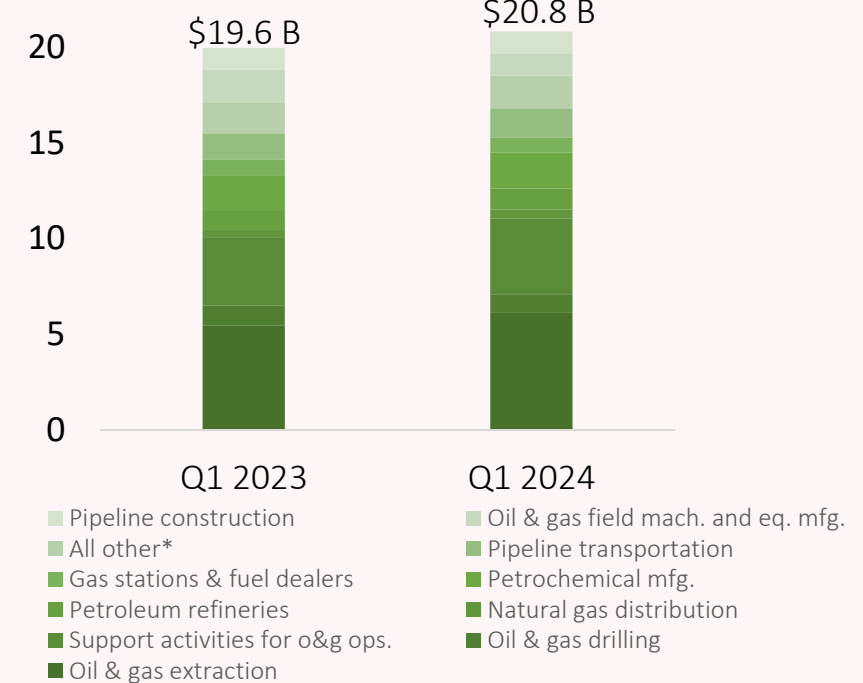
Thousand Jobs



* Other industry segments include petroleum and pet. product wholesalers, lubricant mfg., asphalt mfg., industrial sand mining, nitrogenous fertilizer mfg., basic organic chem. mfg., plastics and resin mfg.

Texas oil and natural gas industry direct wages rose by +6.5% y/y in Q1 2024

Billion dollars



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