



**November 18, 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 November 18, 2024**

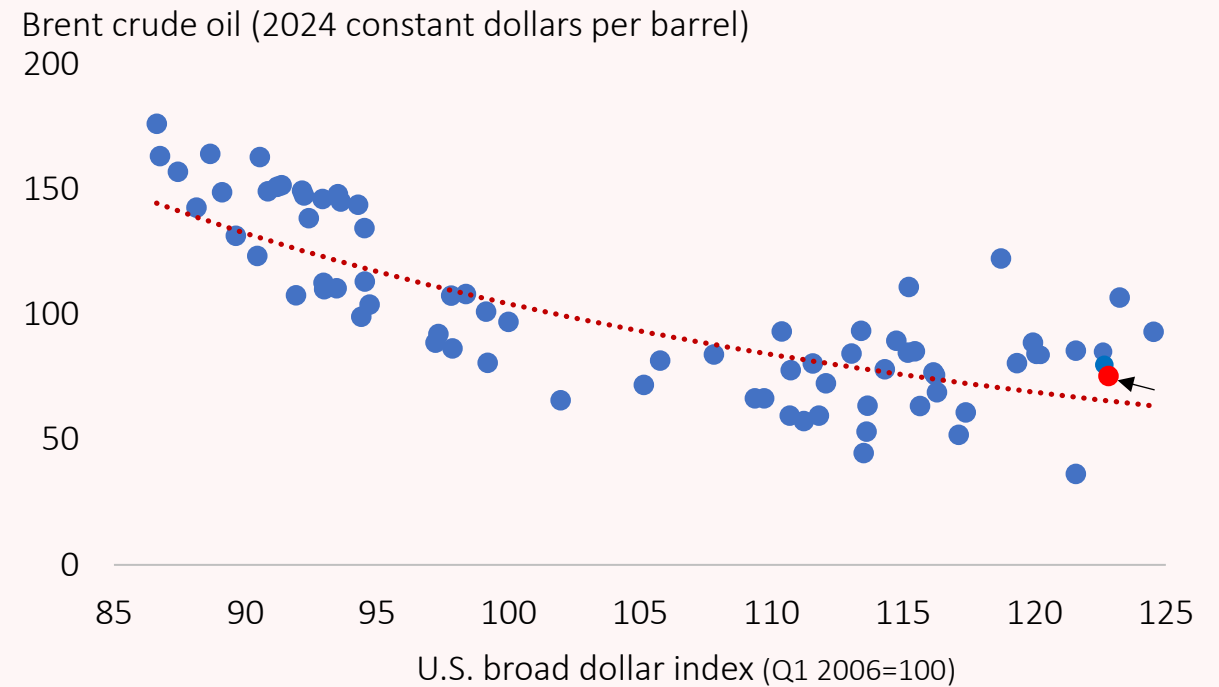
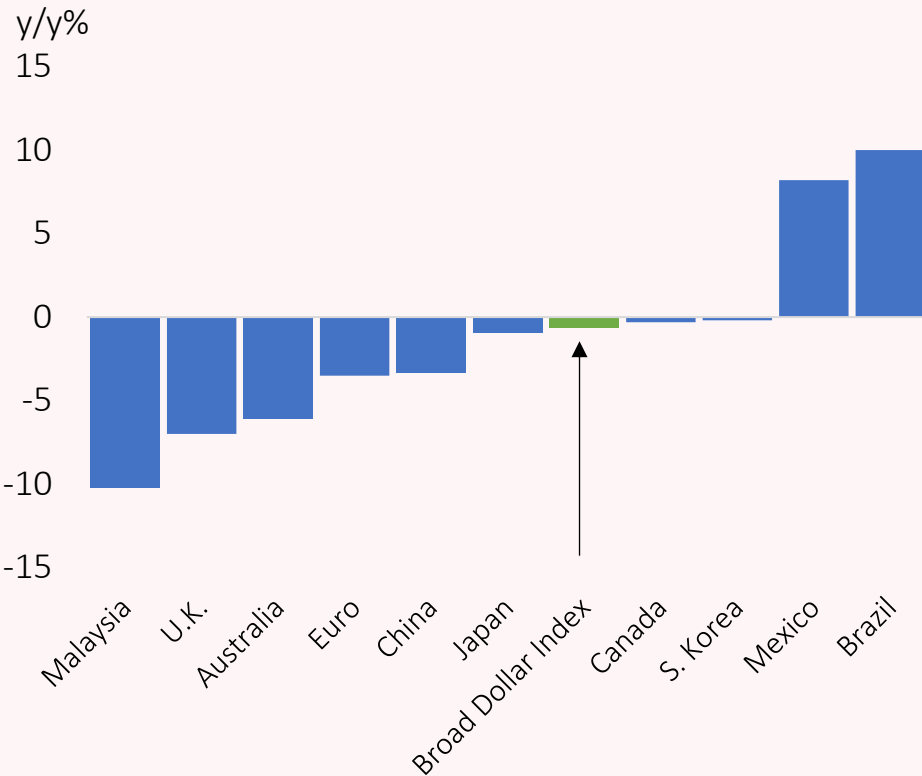
- ▶ **U.S. economic indicators strengthened.** Following the presidential election, consumer sentiment rose by 3.5% month-over-month in the University of Michigan's preliminary November survey. The survey's economic expectations component reached its highest level since July 2021. The yield premium on low-grade corporate bonds decreased to 11.5%, while 30-day Fed Fund futures continued to anticipate a quarter-point rate cut in December. The Philadelphia Fed's ADS Index indicates favorable business conditions, supporting GDP growth for Q4 2024.
- ▶ **Oil prices fell on weaker market fundamentals.** West Texas Intermediate (WTI) crude oil prices declined by 4.8% week-over-week (w/w) to \$67 per barrel. U.S. weekly data showed an increase in crude oil inventories due to the combined effect of lower crude production and reduced petroleum net exports, partially offset by higher domestic demand, according to the Energy Information Administration (EIA). The [Chart of the Week](#) also highlights how a historically strong U.S. dollar has continued to exert downward pressure on oil prices.
- ▶ **U.S. natural gas futures prices rose despite high inventories.** U.S. natural gas inventories rose by 1.1% week-over-week to 3.97 trillion cubic feet (tcf) as of November 8, positioning them 15% above the five-year range. Nevertheless, natural gas futures prices increased by 5.1% week-over-week to \$2.81 per million Btu in anticipation of winter demand.

# A persistently strong U.S. dollar has exerted downward pressure on oil prices



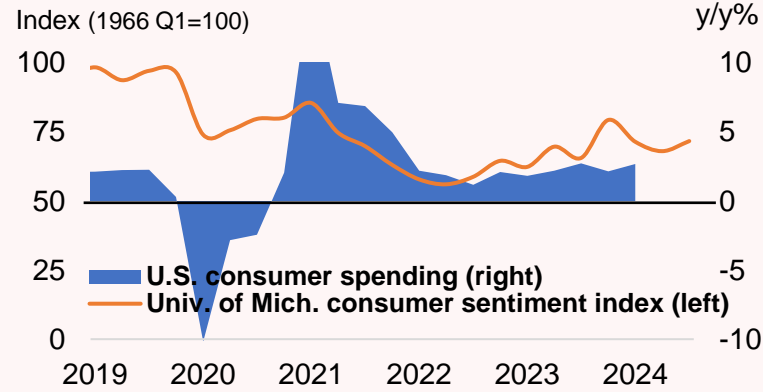
- A key challenge for the U.S. trade deficit: The U.S. dollar remains near its strongest levels on record, due to a geopolitical premium and as trading partners also cut interest rates
- Myriad factors influence global oil prices, but U.S. dollar's strength has historically remained inversely correlated with oil prices, due to oil being priced in U.S. dollars, commodity trading dynamics, terms of trade, and indirect effects of monetary policy

## U.S. dollar appreciation (depreciation) versus main trading partners' currencies, October 2024



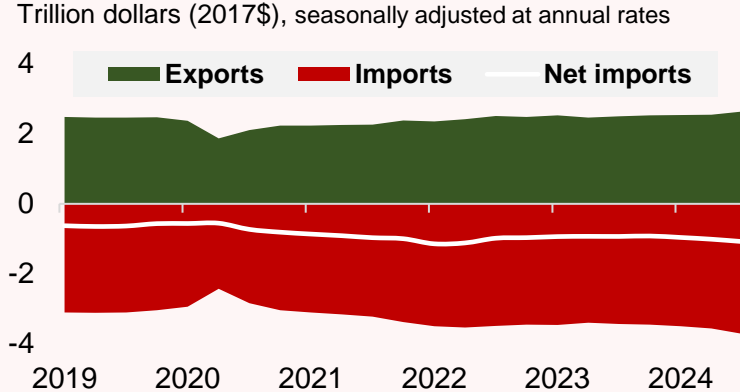
# U.S. economic indicators

## Consumer sentiment vs. spending



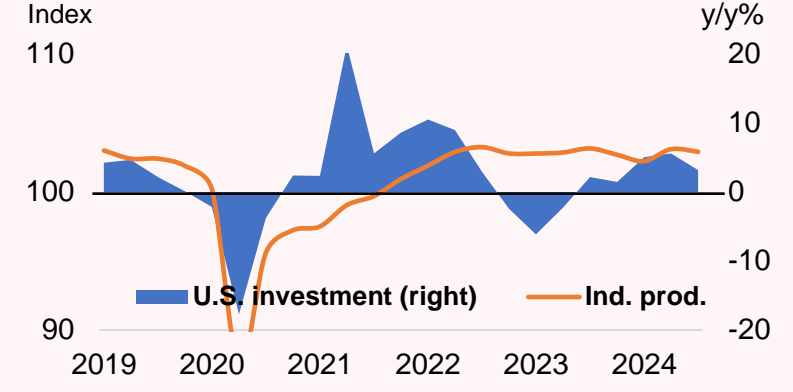
**Consumer sentiment rose by 3.5% m/m** in the University of Michigan's initial survey for November, including the highest economic expectations reading since July 2021. Historically this implies consumer spending growth in Q4 2024. Consumer spending grew by 3.0% y/y in Q3 2024 (up from a 2.7% y/y in Q2) per the Bureau of Economic Analysis.

## Real net exports of goods and services



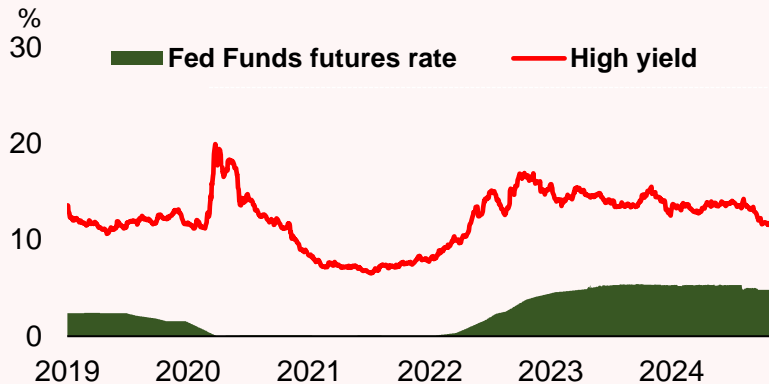
**U.S. trade deficit widened in Q3 2024.** The U.S. real trade deficit ran at an annualized rate of \$1.1 trillion in Q3 2024 (up from a revised \$1.0 trillion in Q2) per BEA. On a nominal basis, the trade surplus for petroleum and products grew by \$11.2 billion q/q to \$46.9 billion in Q3.

## Industrial production and investment growth



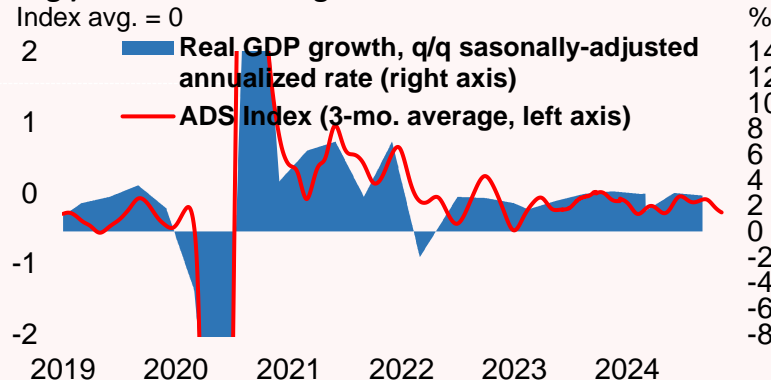
**Solid investment growth.** Initial GDP data for Q3 2024 show economy-wide investment grew by 3.2% y/y per BEA. U.S. industrial production edged down by 0.2% m/m in September, per the Federal Reserve Board – but remained consistent with the investment growth in Q3 2024.

## Fed Funds rate and CCC and lower corporate bond yields



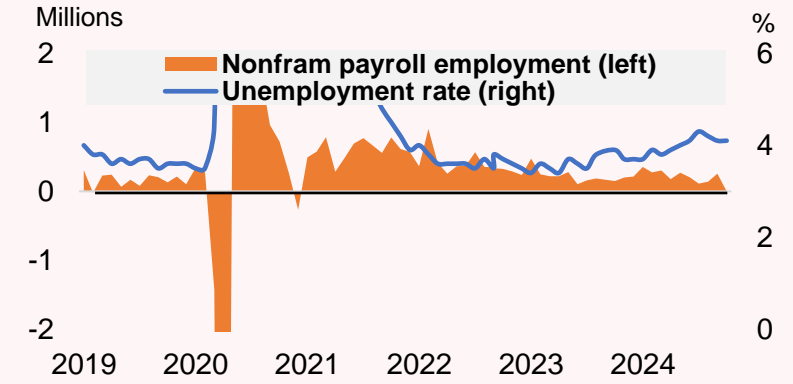
**Decreased bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Nov. 15, HY rates fell by 0.1% w/w to 11.5%, while 30-day Fed Funds futures was 4.4%, resulting in a premium for low credit quality of 7.1%.

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



**The ADS index accurately anticipated growth.** 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 accurately reflected real GDP growth in Q3 2023, and readings as of Nov. 8 remained consistent with further growth in Q4 2024.

## Nonfarm payroll employment & unemployment rate

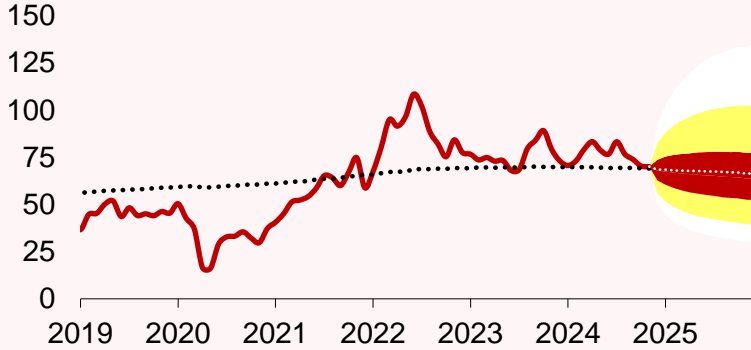


**Labor market conditions weakened in October.** The employment situation is a lagging indicator of GDP growth. As non-farm payrolls rose by 12,000—the lowest since contracting in 2020 – the U.S. unemployment rate remained at 4.1% in October per BLS.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

Dollars per barrel (2024\$)



**Futures prices aligned with the historical mean reversion target.** The futures strip remains backwardated (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

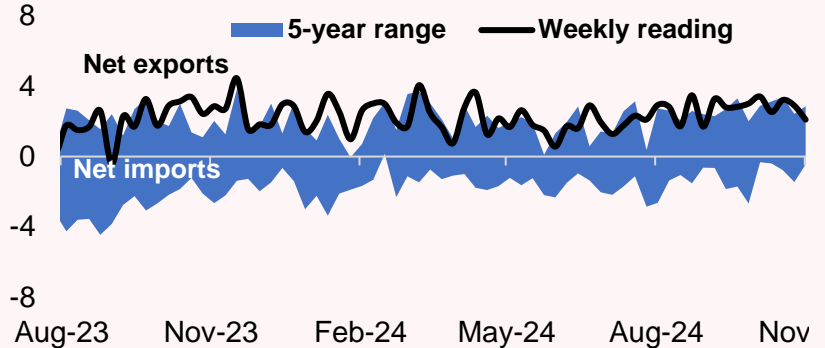
Dollars per barrel



WTI crude oil prices fell by 4.8% w/w to \$67 per barrel as of November 15, as the market emphasized looser market fundamentals and downplayed geopolitical uncertainties.

## U.S. petroleum net exports (imports)

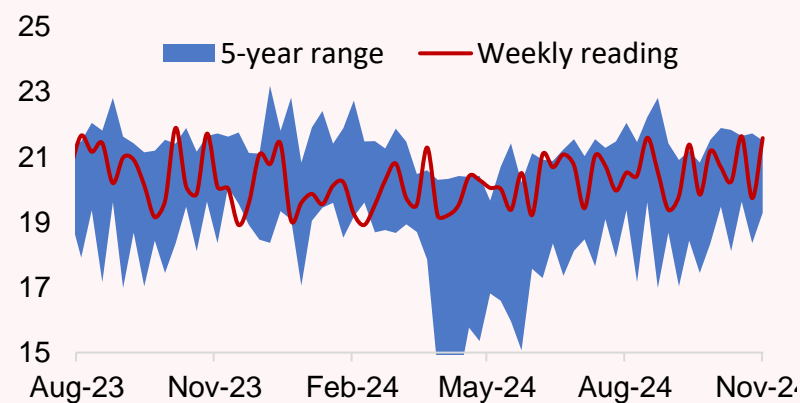
Million barrels per day, mb/d



**Petroleum net exports fell.** The U.S. was a petroleum net exporter of 2.1 mb/d for the week ended Nov. 8, down by 0.8 mb/d from the prior week.

## U.S. petroleum demand

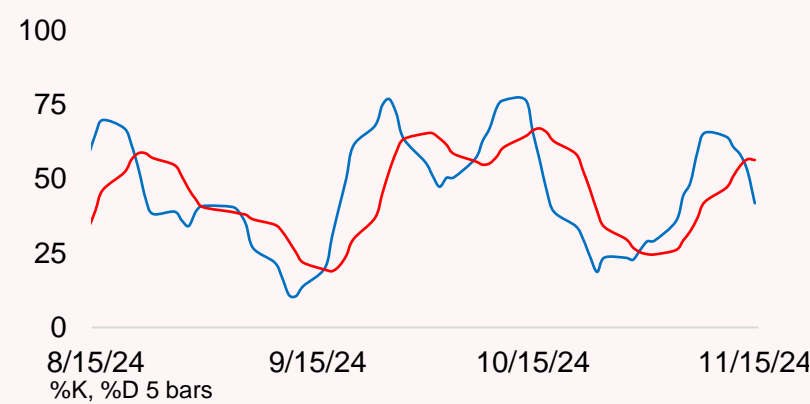
Million barrels per day (mb/d)



**Petroleum demand increased.** U.S. petroleum demand, as measured by deliveries, rose by 1.8 mb/d w/w to 21.6 mb/d for the week ended Nov. 8.

## WTI crude prompt month futures slow stochastic

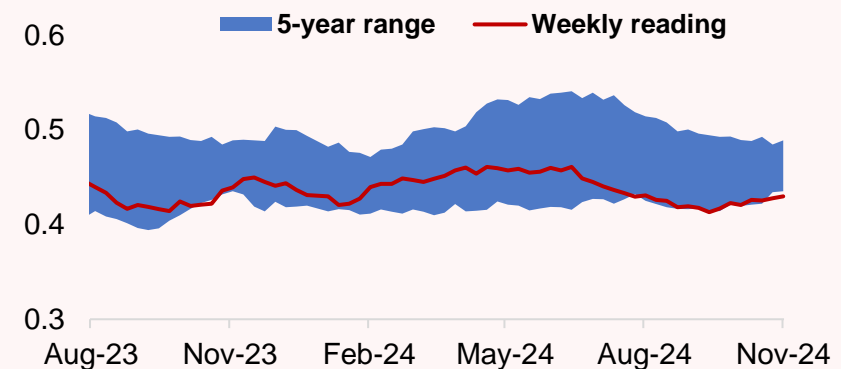
Index level



Price momentum increased but slowed during the week ended Nov. 15.

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

Billion barrels

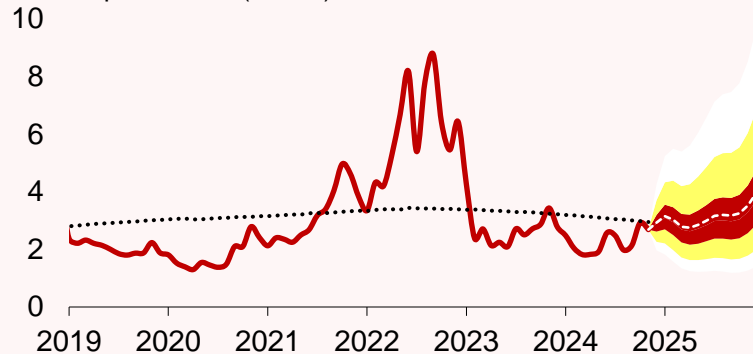


**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 2.1 million barrels (mb) for the week ended Nov. 8, but remained 10% below the 5-year range.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

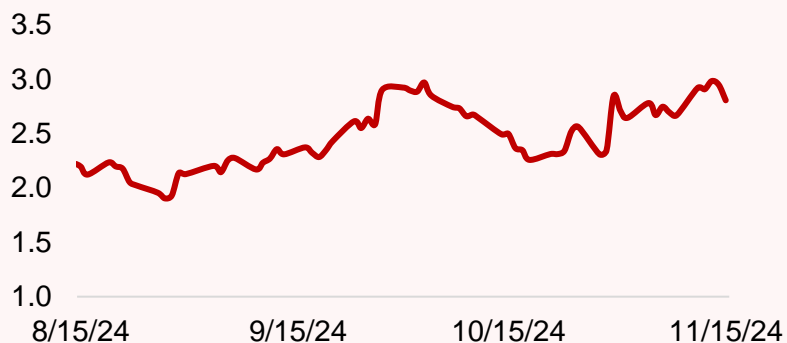
Dollars per mmBtu (2024\$)



Futures prices for the upcoming winter vary in line with the historical mean reversion target – and anticipate low winter seasonality. Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices

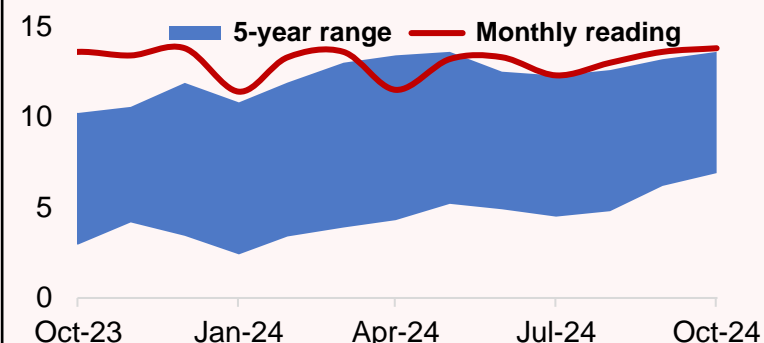
Dollars per million Btu



Natural gas prices at Henry Hub rose by 5.1% w/w to \$2.81 per million Btu for the week ended November 15 with increased winter seasonality.

## U.S. natural gas net exports

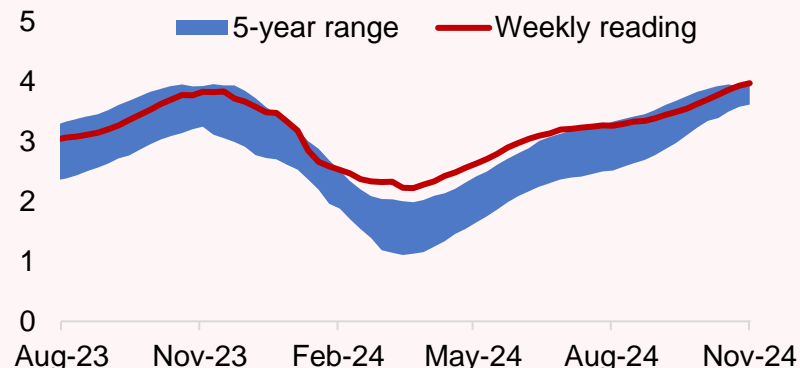
Billion cubic feet per day, bcf/d



Natural gas net exports of 13.8 bcf/d, as projected for October by EIA, rose above the 5-year range and to a record high for any month on record.

## U.S. weekly working gas storage

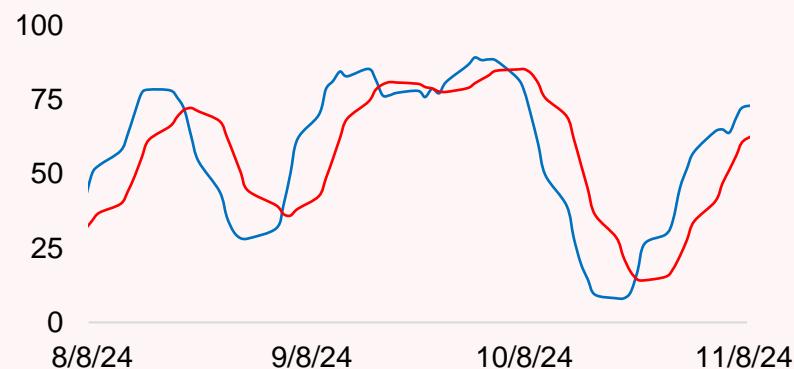
Trillion cubic feet (tcf)



Storage continued to rise above the 5-year range. Working gas in underground storage rose by 1.1% w/w to 3.97 tcf as of Nov. 8 and to 15% above the top of the 5-year range.

## Natural gas futures slow stochastic

Index level

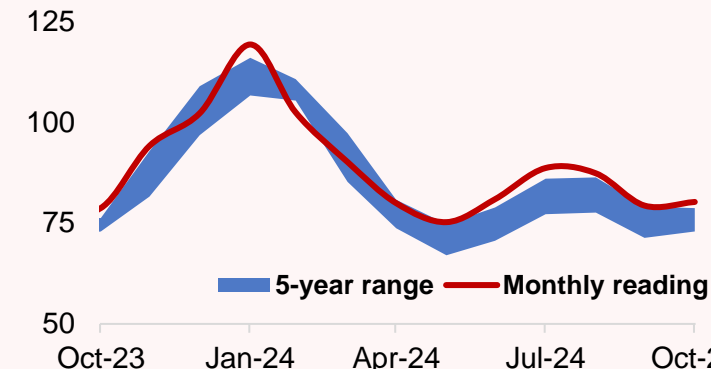


%K, %D 5 bars

Natural gas price momentum increased during the week ended November 15.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

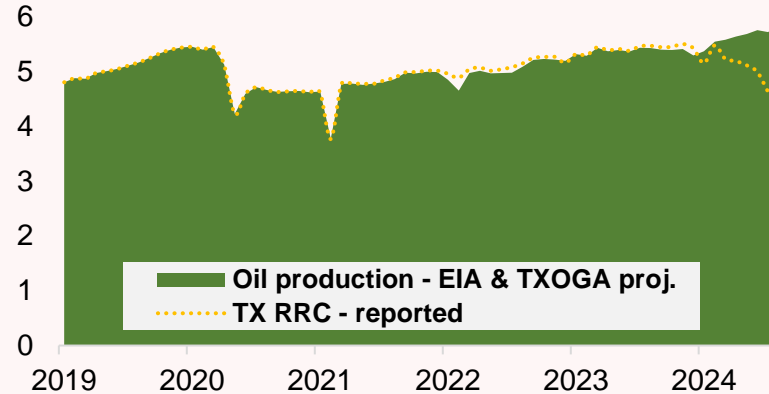


Consumption remained strong. U.S. natural gas consumption of 80.2 bcf/d in October per EIA remained above the top of the 5-year range.

# Texas' oil and natural gas production

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

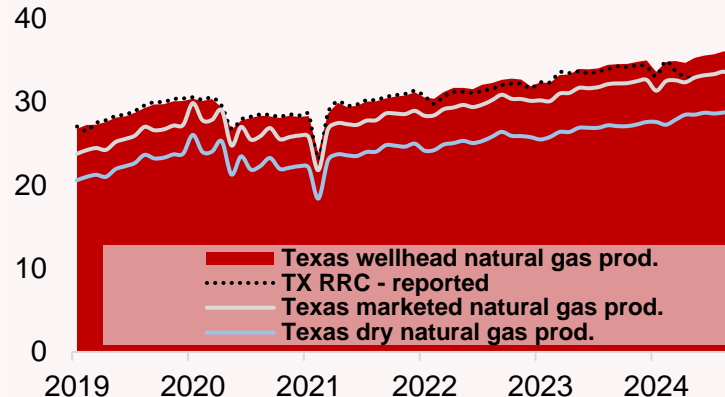
Million barrels per day (mb/d)



**Record-high oil production.** Texas' oil production set a record high of 5.8 mb/d in August per EIA, and TXOGA estimates that it eased to 5.74 mb/d in October.

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

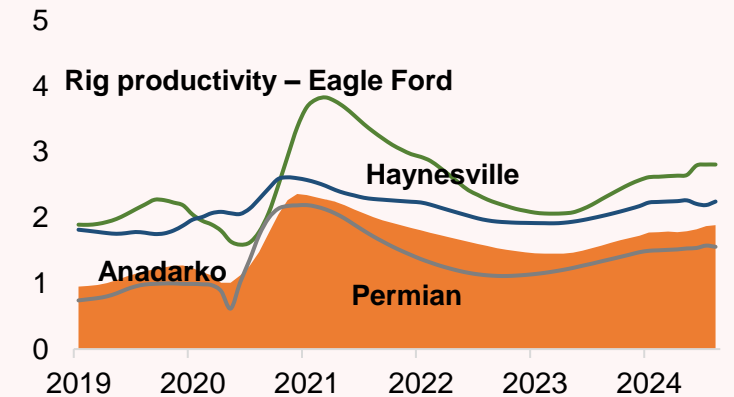
Billion cubic feet per day (bcf/d)



**Record-high natural gas production.** Texas produced record highs of 36.1 bcf/d of natural gas gross withdrawals and 33.6 bcf/d of marketed production in August per EIA. TXOGA estimates that Texas' marketed production climbed to another record of 33.8 bcf/d in October.

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

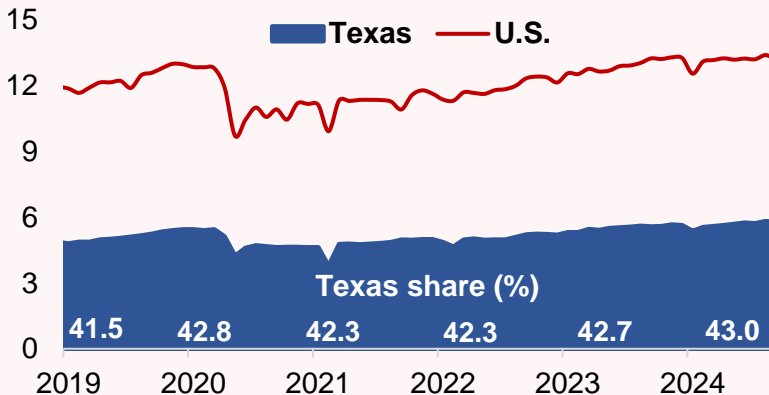
Thousand barrels per day oil-equivalent, kb/doe



**Solid productivity.** EIA estimates of rig productivity for September 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+13.7% y/y), Eagle Ford (+19.0% y/y), Permian (+16.5% y/y), and Haynesville (+9.1% y/y).

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

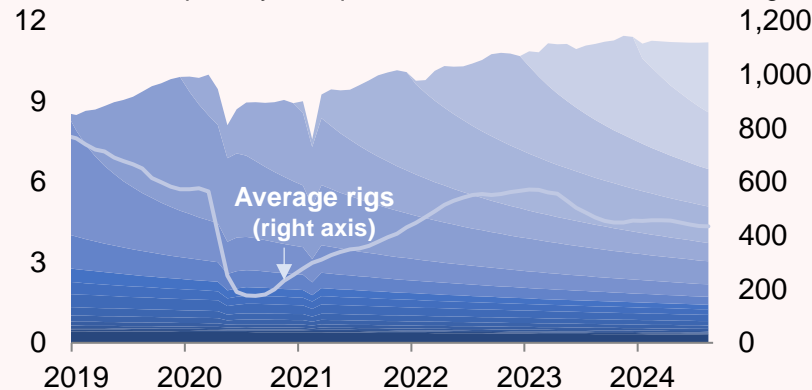
Million barrels per day (mb/d)



**Texas' share rose.** Texas accounted for an estimated 43.0% of U.S. crude oil production year-to-date through October by TXOGA's estimates.

Texas shale basin wellhead oil & natural gas production

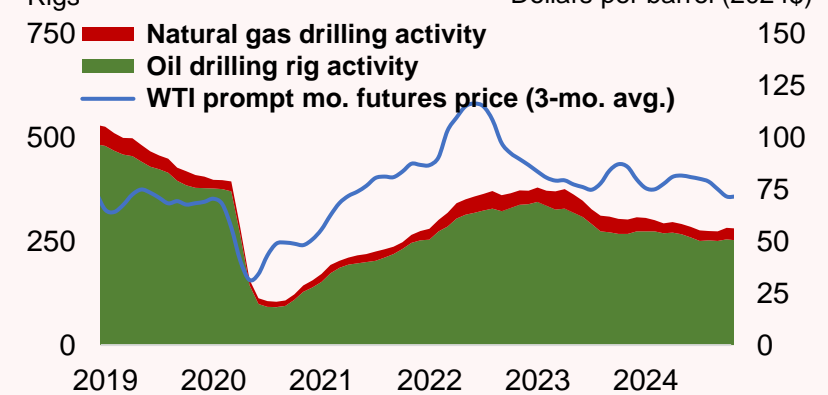
Million barrels per day oil-equivalent



**EIA estimates show oil and natural gas production across Texas shale basins changes in September 2024:** Permian (+5.2% y/y), Eagle Ford (-1.9% y/y), Anadarko (-3.5% y/y) and Haynesville (-11.0% y/y).

Texas drilling activity and WTI crude oil futures prices

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

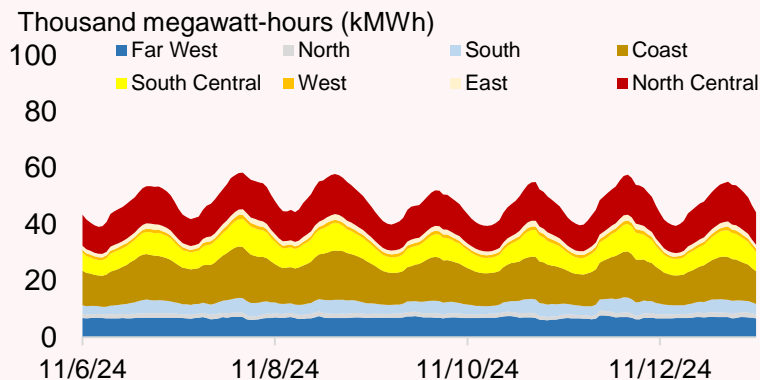


**Texas' drilling rig activity decreased** for the week ended November 15 per Baker Hughes. Texas had 249 oil-directed rigs (down by 2 rigs w/w) and 30 natural gas-directed rigs (unchanged w/w).

# Texas Electricity Analysis

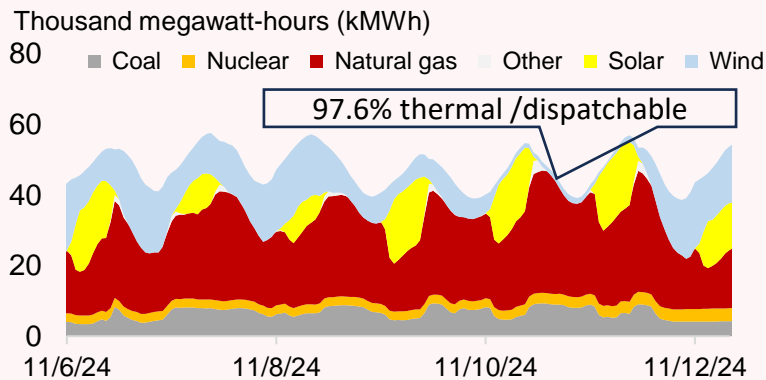


## ERCOT electricity load by region



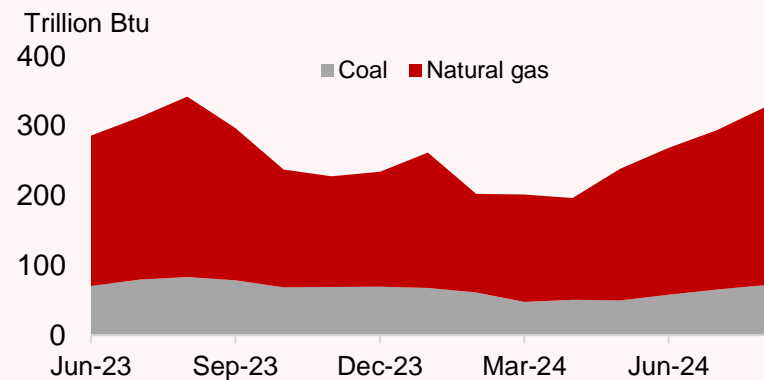
For Nov. 6-12, ERCOT's average hourly electricity load was 48.2 kMWh, down by 6.7% w/w, while the maximum load hourly load of 58.3 kMWh fell by 12.3% w/w. Variability was the highest in the South and South Central regions.

## ERCOT hourly electricity generation by source



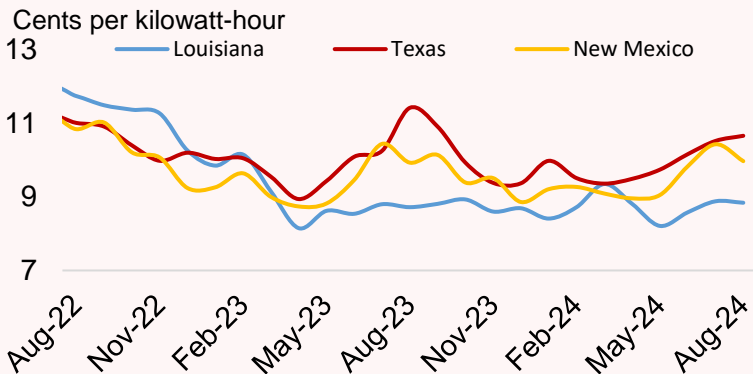
**Thermal and dispatchable resources generated up to 97.6% of ERCOT's electricity.** ERCOT's hourly electricity generation for the period Nov. 6-12 ranged between 38 and 58 kMWh with a standard deviation of 5.5 kMWh. Thermal and dispatchable sources generated 97.6% of the region's power on the night of Nov. 10, including 71.9% from natural gas.

## Texas electricity plant receipts of natural gas and coal



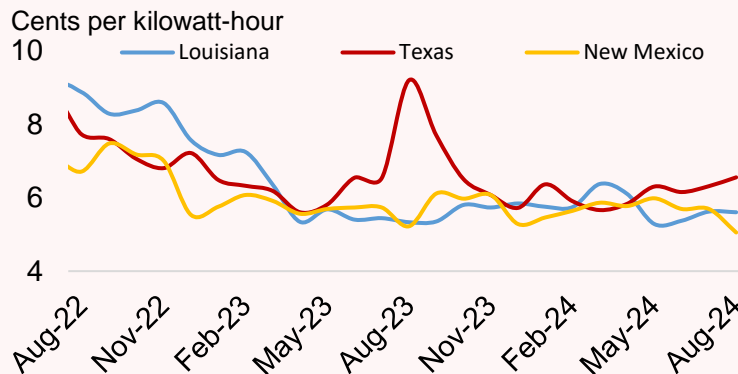
**Texas electricity plant receipts of natural gas and coal increased** by 11.7% m/m and 9.7% m/m, respectively, in August 2024.

## Electricity prices – average across all end-use sectors



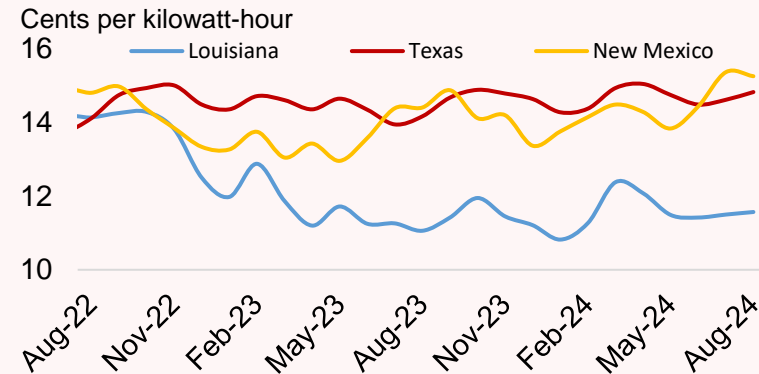
**Texas' electricity prices rose in August.** The average price of electricity in Texas increased by 1.3% m/m in August to 10.66 cents per kWh, compared with 8.84 cents per kWh in Louisiana and 9.97 cents per kWh in New Mexico.

## Industrial electricity prices



**Texas' industrial electricity prices increased.** Texas' industrial electricity prices averaged 6.55 cents per kWh in August, up by 3.8% m/m. Rates in New Mexico and Louisiana remained lower at 5.05 cents per kWh and 5.60 cents per kWh, respectively.

## Residential electricity prices



**Texas' residential electricity prices rose.** For Texas' residential consumers, the average price of electricity (14.83 cents per kWh) rose by 1.4% m/m in August, remaining above rates in Louisiana (11.57 cents per kWh) but lower than that in New Mexico (15.26 cents per kWh).



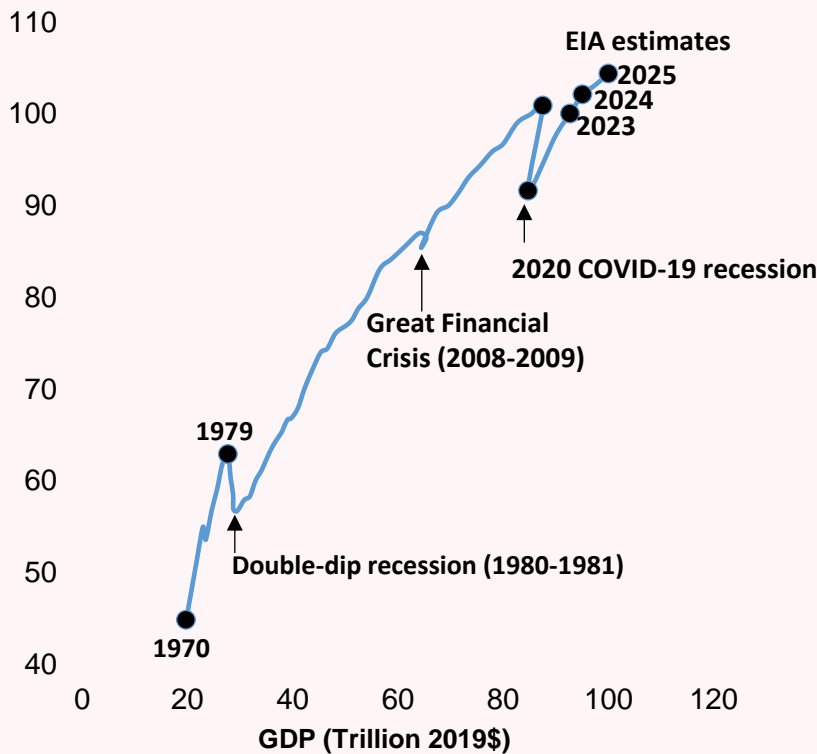
# Global Oil Market Balance Projections to 2025



- Record-high global demand. EIA's November 2024 Short-Term Energy Outlook projects global demand to increase by 1.3 mb/d to 104.4 mb/d in 2025 – a record high.
- Supply shifts. In the latest forecast, EIA projects global supply increases of 2.0 mb/d, led by the U.S. and other non-OPEC producers, coupled with increased OPEC output.
- For oil inventories, EIA projects global stock withdrawals to continue, including 0.6 mb/d in Q4 2024 and Q1 2025, corresponding with Brent crude oil prices of \$77 on average in 2025, compared with \$74 per barrel currently.

## Global oil demand and GDP

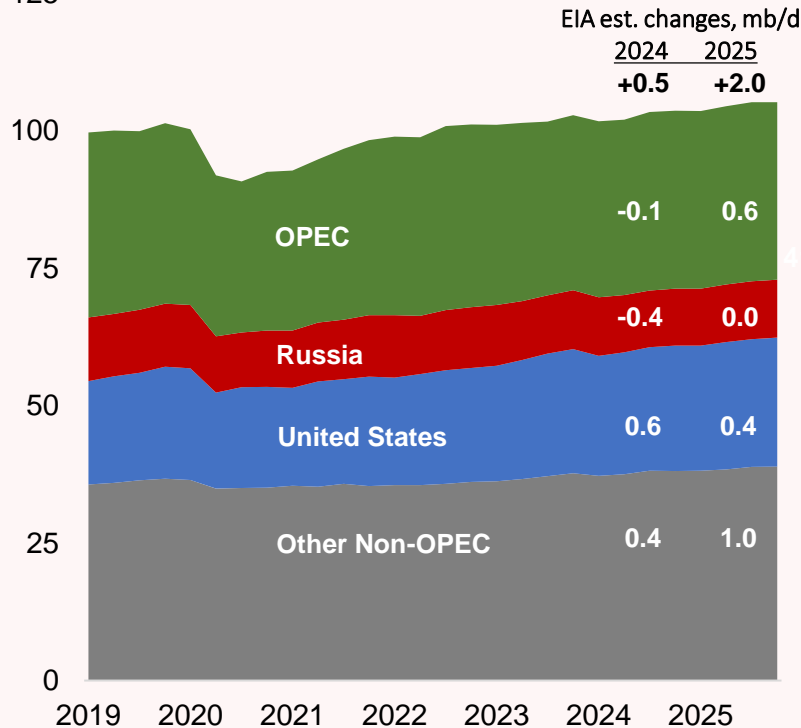
Million barrels per day (mb/d)



## Oil production by country/region

Million barrels per day, mb/d

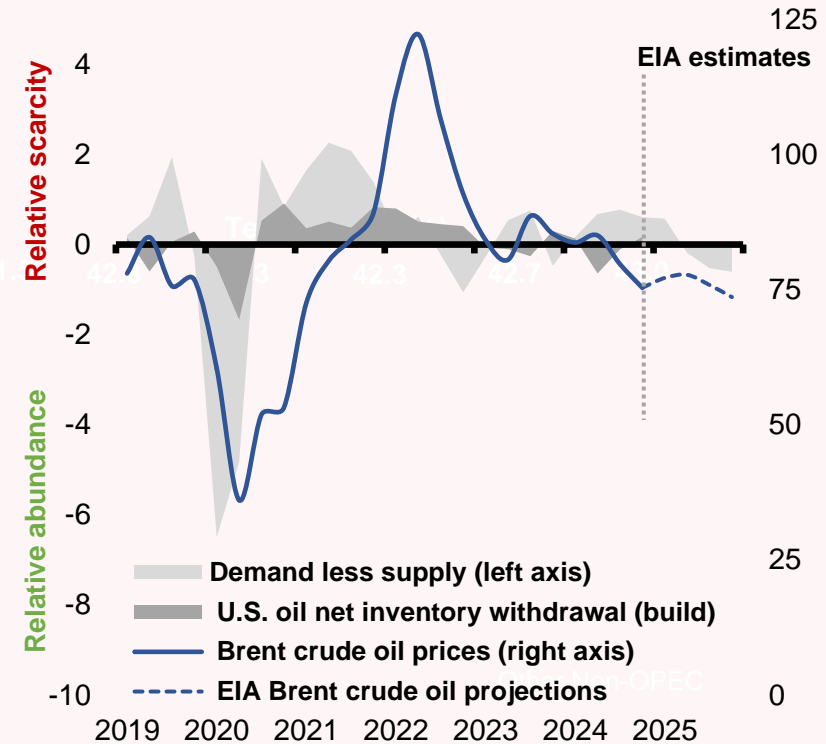
125



## Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl



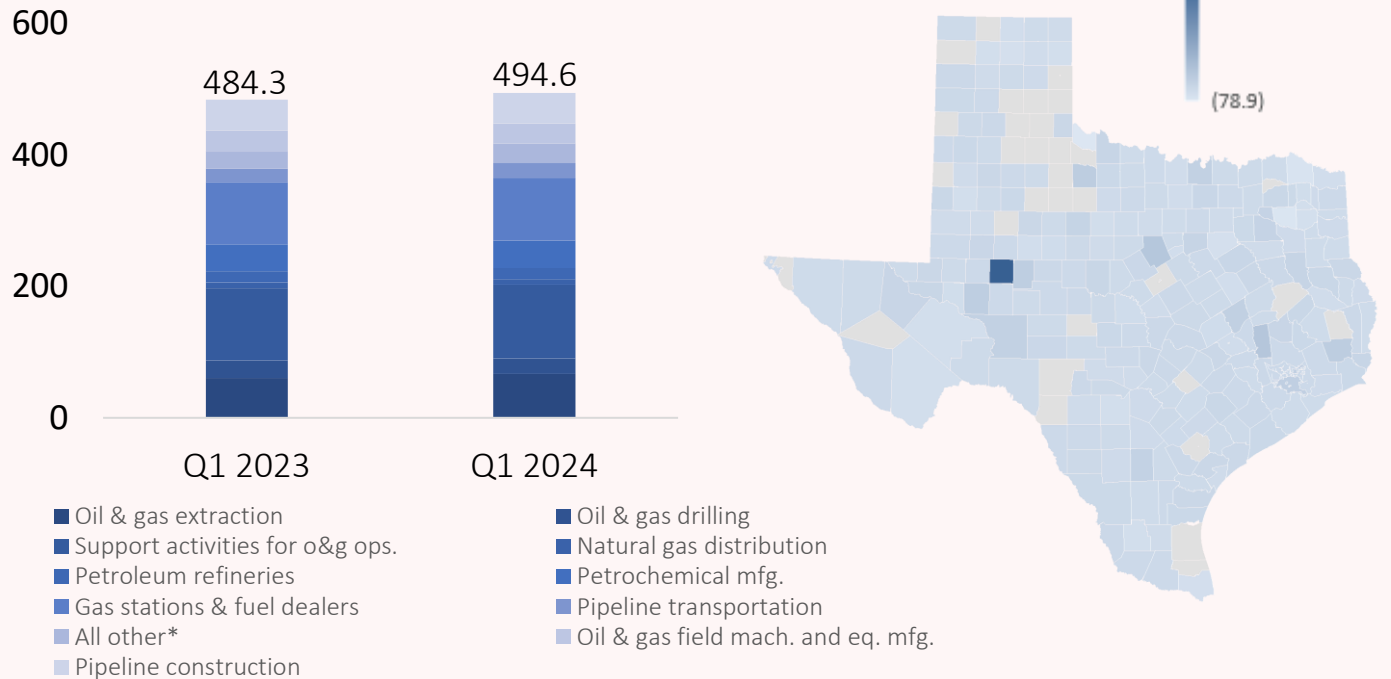
# Texas' oil and natural gas industry wages eclipsed \$20.8 billion in Q1 2024



- ▶ 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

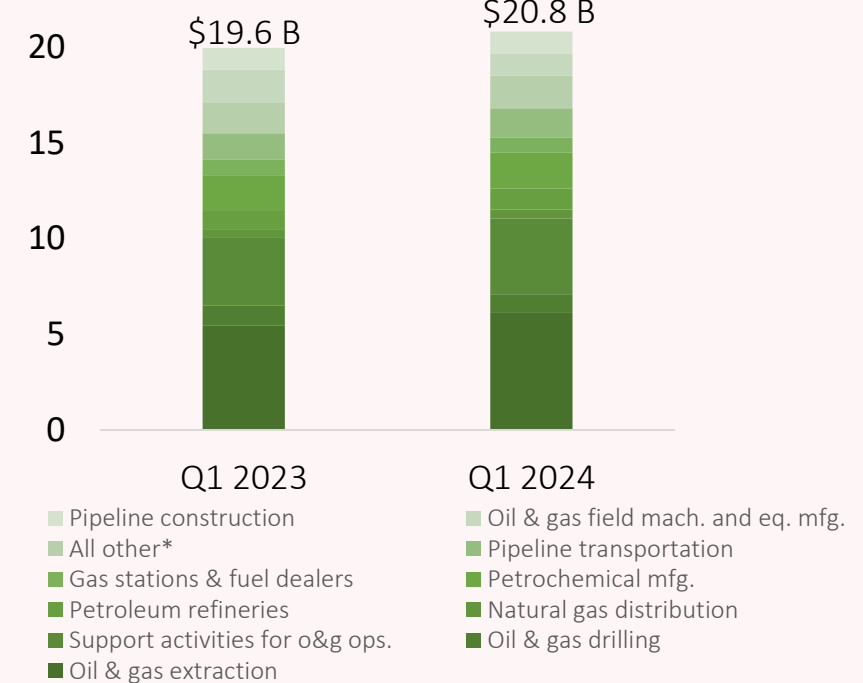
Thousand Jobs



\* 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



**R. Dean Foreman, Ph.D.**  
**[dforeman@txoga.org](mailto:dforeman@txoga.org)**