



**February 26, 2024**



**TXOGA's chartbook provides a vital reference for our members as well as those who are interested in understanding data which tell the story of what's happening with the economy, oil and gas markets at the global, U.S. and Texas levels.**

## **Key points for the week of February 26, 2024**

- **Improved U.S. economic indicators.** The Univ. of Michigan's consumer sentiment index rose in February to a level 30% higher than it was in Nov. 2023, suggesting consumer spending should remain strong. Additionally, the ADS Index from the Philadelphia Federal Reserve shows business conditions have supported economic growth in Q1 2024.
- **Weakened oil market fundamentals.** With ongoing geopolitical tensions in the Middle East, oil prices for immediate delivery, as of Feb. 23, were nearly \$3 per barrel higher than futures prices for the April delivery contract. This price gap reflects financial market expectations of a looser supply-demand balance.

Strong U.S. petroleum net exports of 3.0 million barrels per day (mb/d) were balanced against high domestic crude oil production of 13.0 mb/d and a decrease in petroleum demand to 18.9 mb/d, which is below the 5-year range. These factors led to a rise in U.S. crude oil stocks for a 4<sup>th</sup> consecutive week, according to the latest data from the U.S. Energy Information Administration's (EIA) as of February 16.

- **Natural gas markets remained well supplied.** Heading into the winter, there were concerns that a return to normal seasonal patterns might stress global natural gas trade and supplies. Current low prices as of Feb. 23—around \$8 per million Btu (mmbtu) for LNG in Asia, \$6 per mmbtu in Europe, and as low as \$1.60 per mmbtu in the U.S.—indicate that markets have managed well. U.S. natural gas prices have stayed below their historical mean, with futures markets suggesting that prices could double by December 2024.
- **The [Chart of the Week](#) highlights growth of Texas' oil and natural gas industry jobs and wages.** The latest data, published on Feb. 21, show continued job growth and a reduction in labor inflationary pressures within the industry.

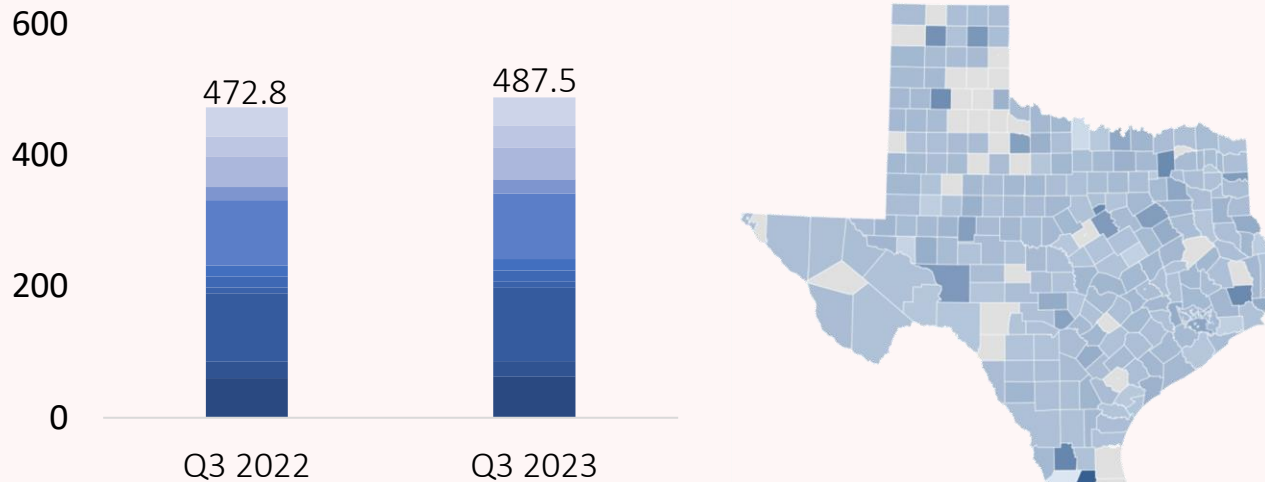
# TXOGA Chart of the Week: Texas' oil and natural gas industry's jobs and wages have continued to grow



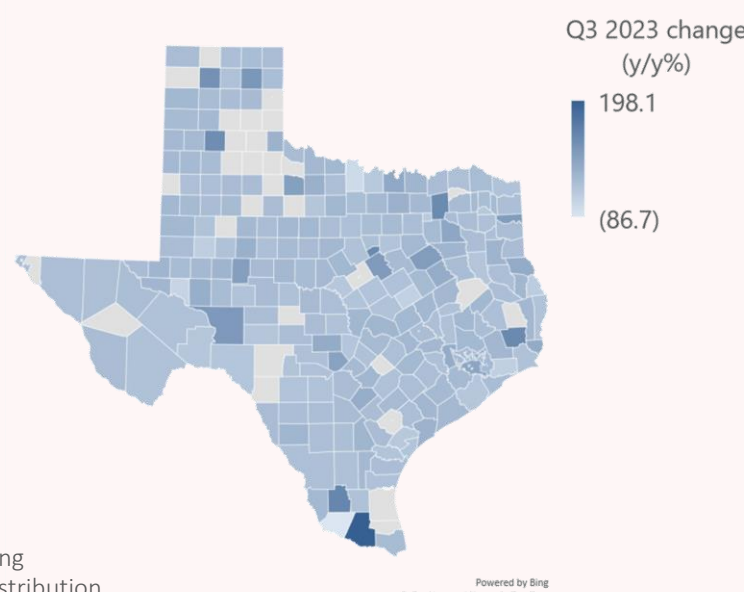
- ▶ Texas' oil and natural gas industry employment rose by 3.1% y/y in Q3 2023 with half of the job growth in upstream support services and another nearly 20% in oil & gas field machinery and equipment manufacturing, per data the latest data (released on Feb. 21, 2024) from the U.S. Census Bureau and Texas Workforce Commission
- ▶ Q3 2023 industry wage growth of 3.6% y/y was nearly on par with job growth of 3.1% y/y, which reflected an easing of inflationary pressures

## Texas oil and natural gas industry direct employment rose by +3.1% y/y in Q3 2023

Thousand Jobs



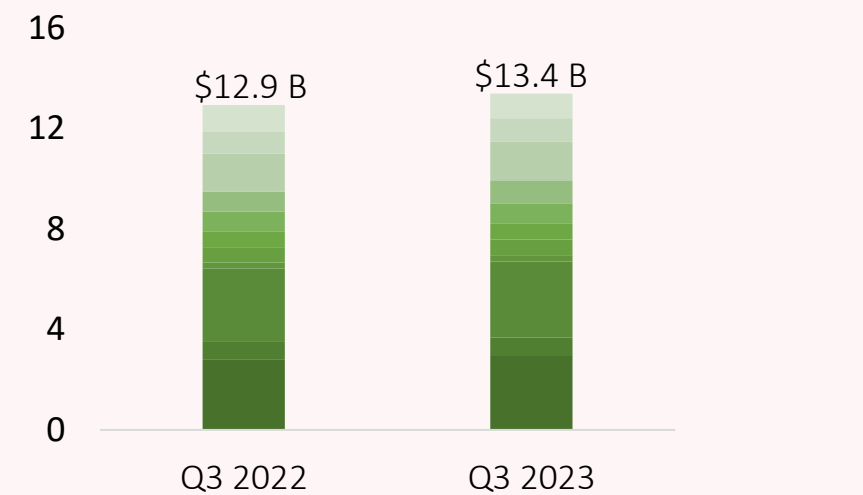
- Oil & gas extraction
- Support activities for o&g ops.
- Petroleum refineries
- Gas stations & fuel dealers
- All other\*
- Pipeline construction
- Oil & gas drilling
- Natural gas distribution
- Petrochemical mfg.
- Pipeline transportation
- Oil & gas field mach. and eq. mfg.



\* 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 +3.6% y/y in Q3 2023

Billion dollars

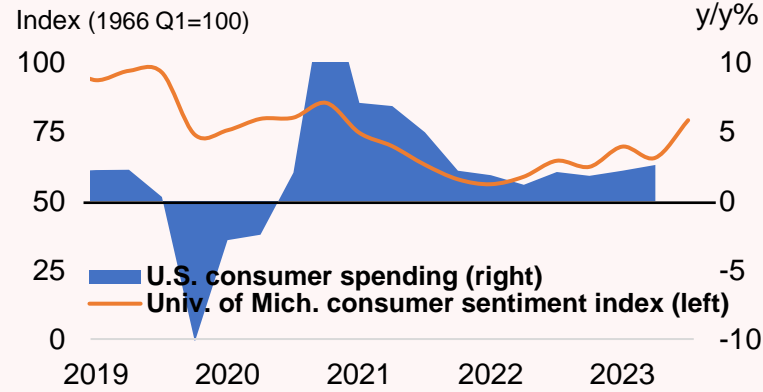


- Pipeline construction
- All other\*
- Gas stations & fuel dealers
- Petroleum refineries
- Support activities for o&g ops.
- Oil & gas extraction
- Oil & gas field mach. and eq. mfg.
- Pipeline transportation
- Petrochemical mfg.
- Natural gas distribution
- Oil & gas drilling



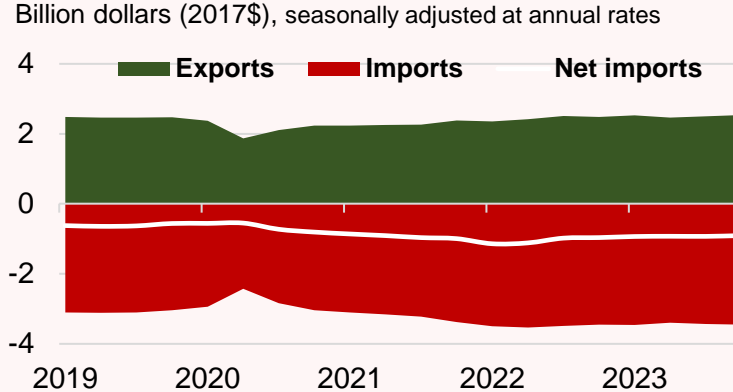
# U.S. economic indicators

## Consumer sentiment vs. spending



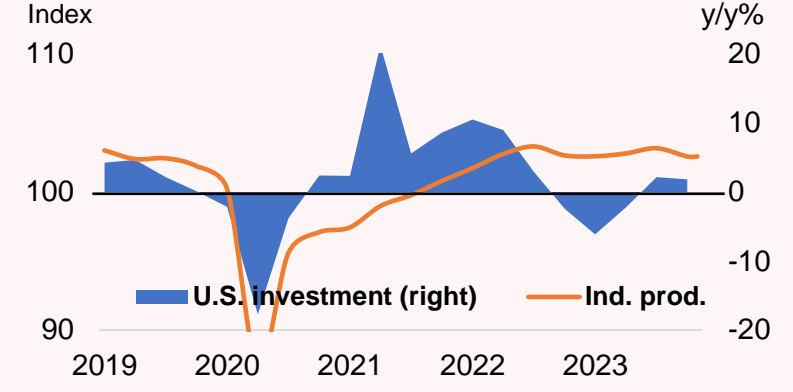
**Consumer sentiment rose further.** In its initial reading for February 2024, the Univ. of Michigan consumer sentiment index rose (by 0.8% m/m) to 79.6 and is 30% higher than it was in Nov. 2023. This is consistent with the historical correspondence to consumer spending growth that rose by 2.6% y/y in Q4 2023.

## Real net exports of goods and services



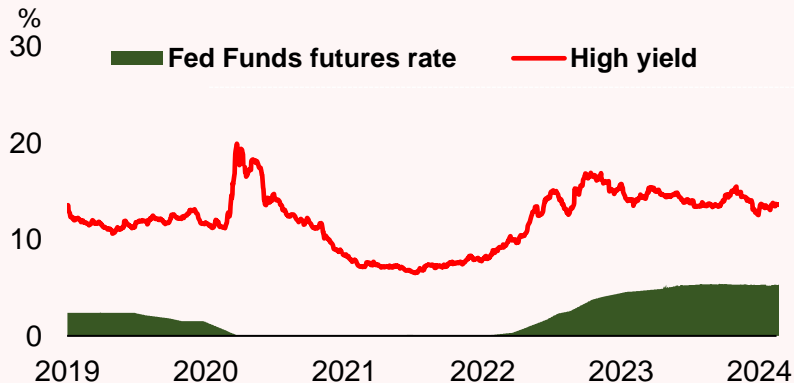
**The U.S. trade deficit narrowed in Q4 2023.** The U.S. real trade deficit ran at an annualized rate of \$908 billion in Q4 2023, down from \$931 billion in Q3 per the U.S. Bureau of Economic Analysis. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$16 billion in Q4 2023, down from \$29.1 billion in Q3.

## Industrial production and investment growth



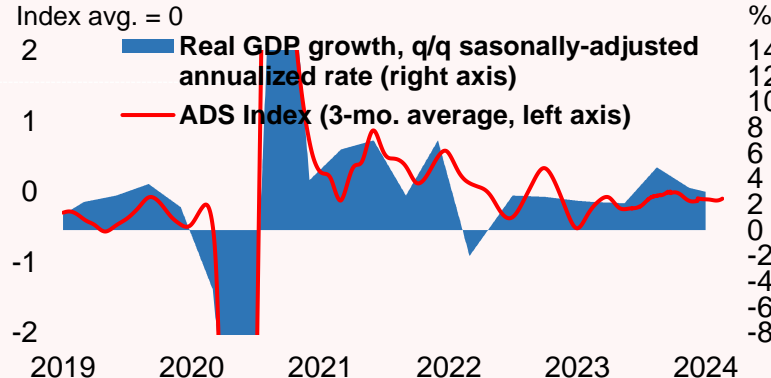
**Industrial production remained flat in Jan. 2024** and consistent with slow economy-side investment growth in Q1. Investment rose by 1.8% y/y in Q4 per the Bureau of Economic Analysis.

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



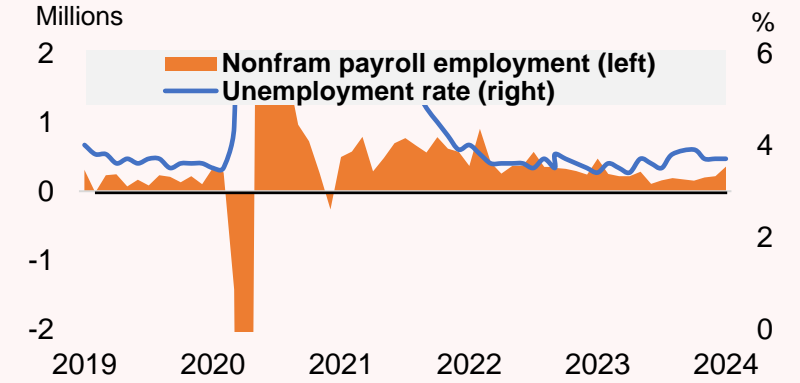
**Steady bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Feb. 23, HY rates remained near 13.7% while the Fed Funds futures also held at 5.3%, yielding no change to the risk spread.

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



**Business conditions consistent with Q1 2024 real GDP 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 the increase in Q4 2023 real GDP and remains consistent with continued GDP growth so far in Q1 2024.

## Nonfarm payroll employment & unemployment rate

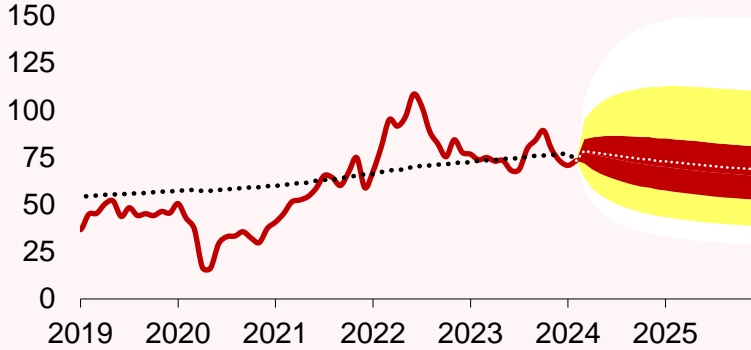


**Steady unemployment rate, increased payrolls.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate held steady at 3.7% in January per BLS, while non-farm payrolls rose by 353,000.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

Dollars per barrel (2024\$)



**Futures prices have aligned with their historical mean.** The futures strip remained 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

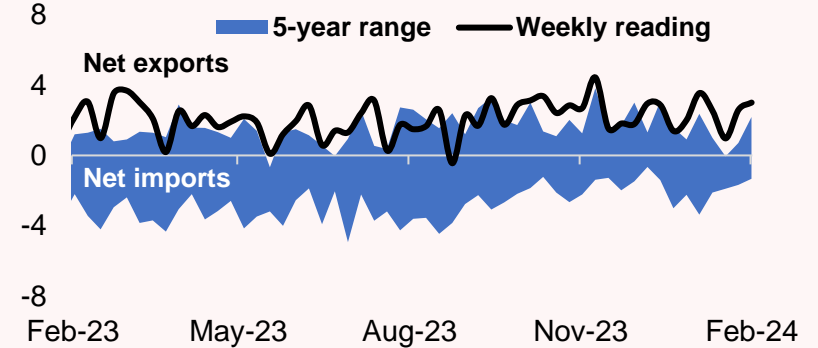
Dollars per barrel



WTI crude oil prices held near \$77 per barrel for the week ended Feb. 23, continuing to reflect a geopolitical premium despite weaker fundamentals.

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

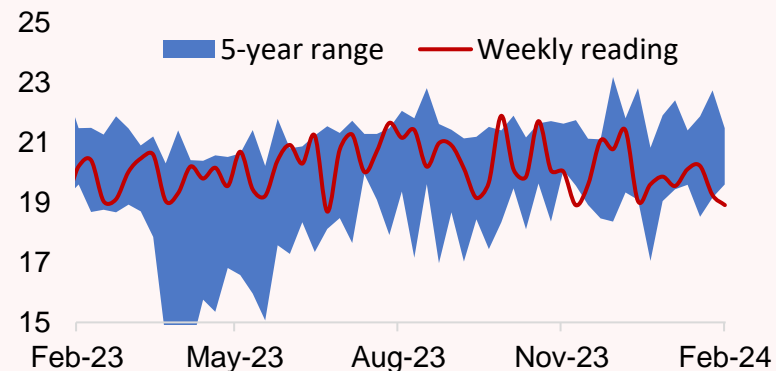
Million barrels per day, mb/d



**Petroleum net exports rose.** The U.S. was a petroleum net exporter of 3.0 mb/d for the week ended Feb. 16, up by 0.4 mb/d w/w and a record level for this time of the year.

## U.S. petroleum demand

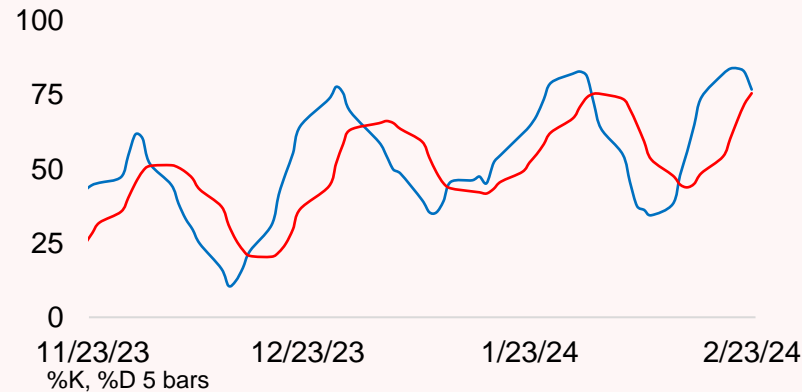
Million barrels per day (mb/d)



**Petroleum demand decreased.** U.S. petroleum demand, as measured by deliveries, fell by 0.3 mb/d w/w to 18.9 mb/d for the week ended Feb. 16 and below the 5-year range.

## WTI crude prompt month futures slow stochastic

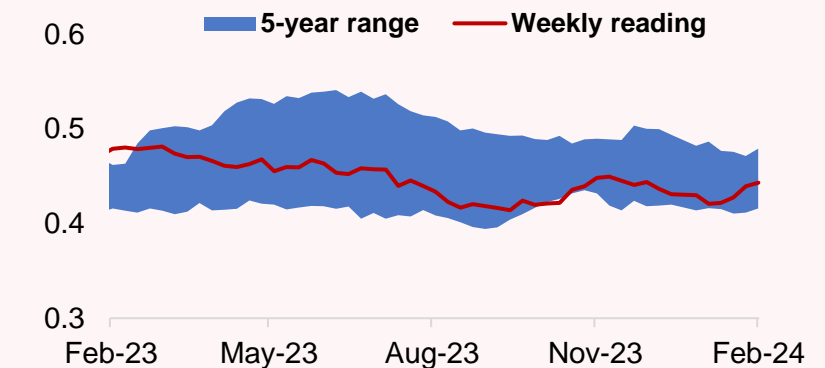
Index level



Price momentum rose but then slowed for the week ended Feb.23.

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

Billion barrels (mb)

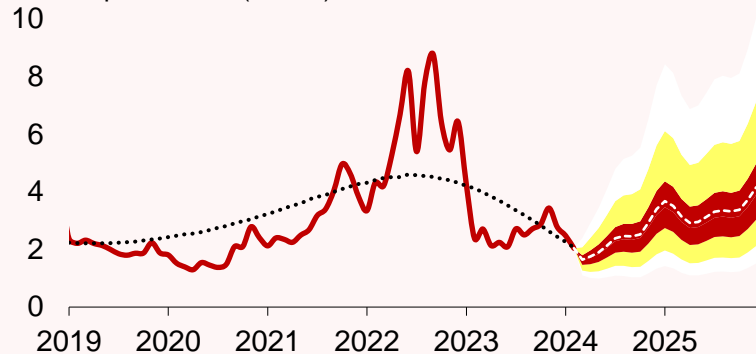


**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 3.5 million barrels (mb) for the week ended Feb. 16 and to the middle of the 5-year range.

# U.S. natural gas market indicators

## Natural gas price mean reversion analysis

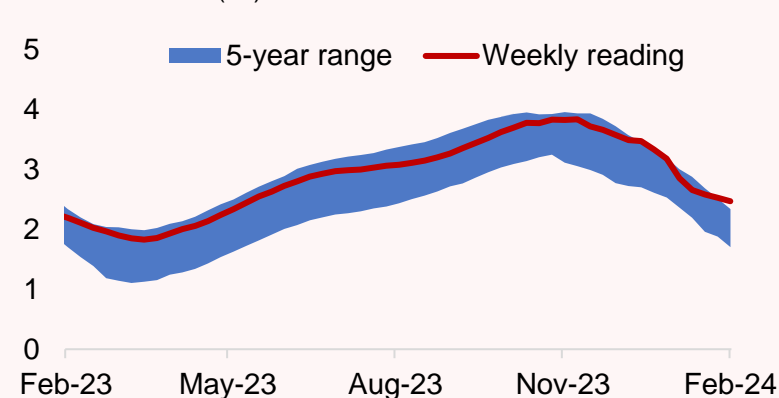
Dollars per mMBtu (2024\$)



**Natural gas futures prices fell below their historical mean.** Natural gas futures prices through June 2024 remained below the historical mean reversion target. Futures prices rise progressively beginning in March 2024. Confidence intervals based on past prices show the potential for greater upside than downside.

## U.S. weekly working gas storage

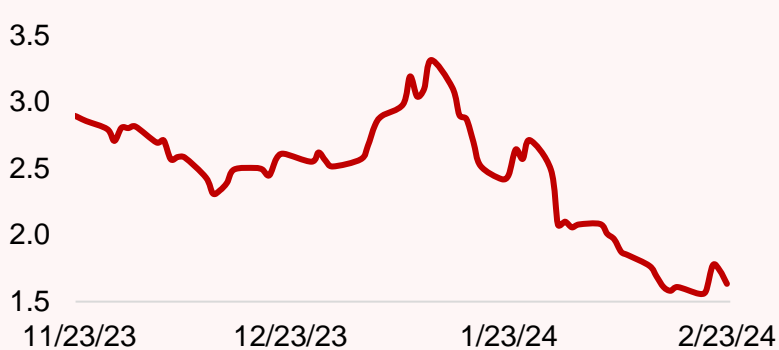
Trillion cubic feet (tcf)



Working gas in underground storage fell by 2.4% w/w to 2.47 tcf as of Feb. 16 but climbed above the 5-year range.

## Natural gas prompt month futures prices

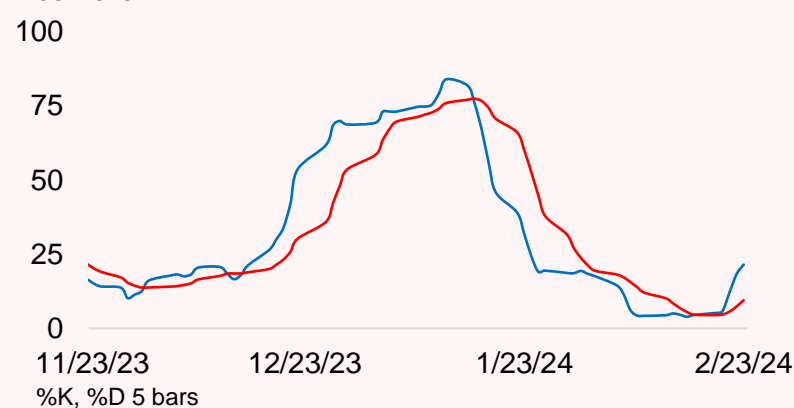
Dollars per million Btu



Natural gas prices at Henry Hub varied near \$1.60 per million Btu for the week ended Feb. 23 as storage withdrawals slowed and storage levels exceeded the 5-year range.

## Natural gas futures slow stochastic

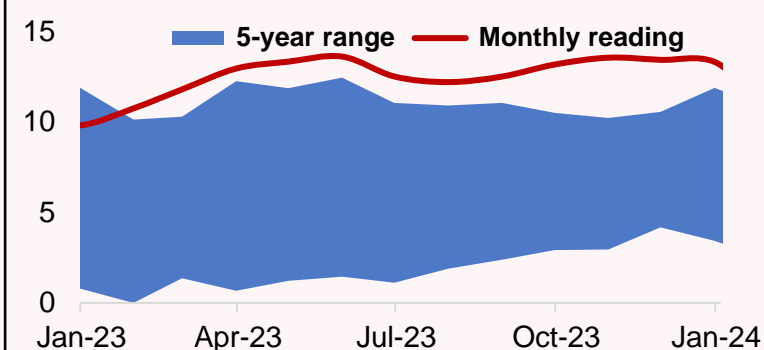
Index level



Natural gas price momentum continued to fall and slowed during the week ended Feb. 23.

## U.S. natural gas net exports

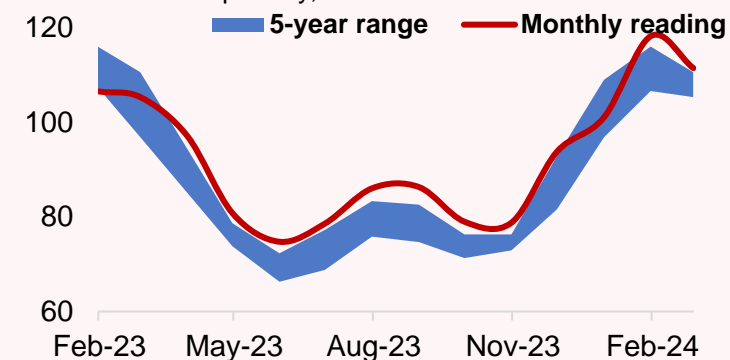
Billion cubic feet per day, bcf/d



**Strong net exports have continued.** U.S. natural gas net exports in February are estimated at 12.4 bcf/d, up from 11.8 bcf/d a year ago and above the 5-year range, per the EIA.

## U.S. natural gas consumption

Billion cubic feet per day, bcf/d

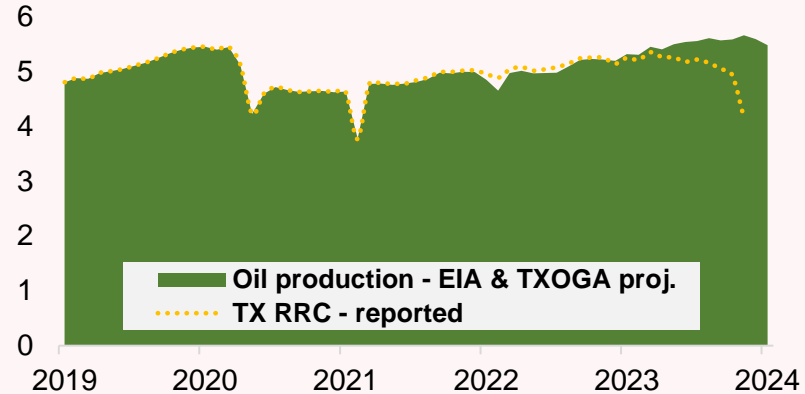


**Record high consumption has continued.** EIA estimates that natural gas consumption has eased from a record monthly high of 118 bcf/d in January to 111 bcf/d in February -- the highest U.S. consumption on record for the month of February.

# Texas' oil and natural gas production

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

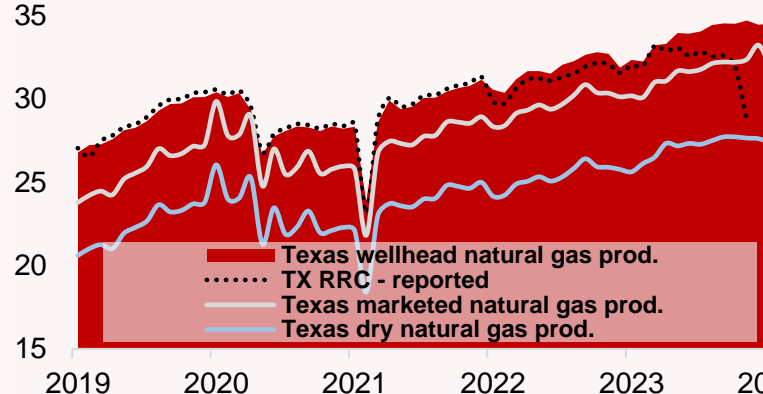
Million barrels per day (mb/d)



**Record high production in November.** Texas' oil production of 5.7 mb/d in November was a record high per the EIA. TXOGA estimates that Texas crude oil production eased to 5.6 mb/d in December and 5.5 mb/d in January.

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

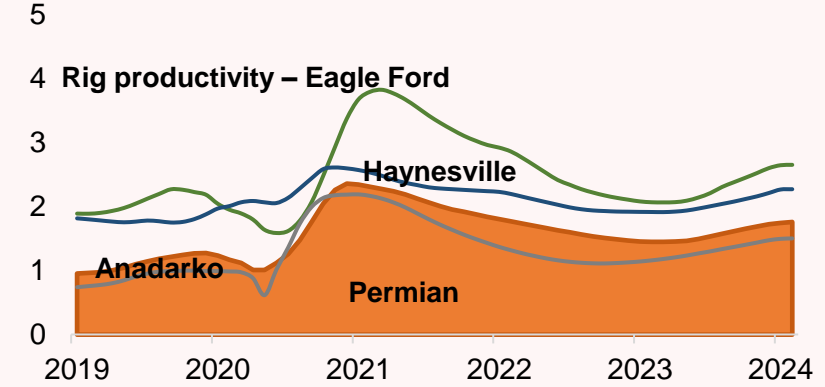
Billion cubic feet per day (bcf/d)



**November production records.** Texas' natural gas production of 34.7 bcf/d of gross withdrawals and 32.4 bcf/d of marketed production in November were record highs per EIA. TXOGA estimates that production eased through January to 34.5 bcf/d of gross withdrawals, 32.0 bcf/d of marketed production, and 27.4 bcf/d of dry gas production.

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

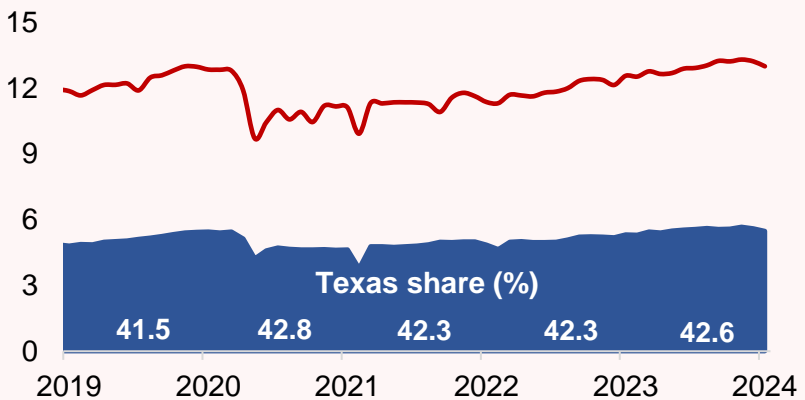
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity to start the year.** EIA estimates of rig productivity for February 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+29.6% y/y), Eagle Ford (+28.2% y/y), Permian (+21.4% y/y), and Haynesville (+18.6% y/y).

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

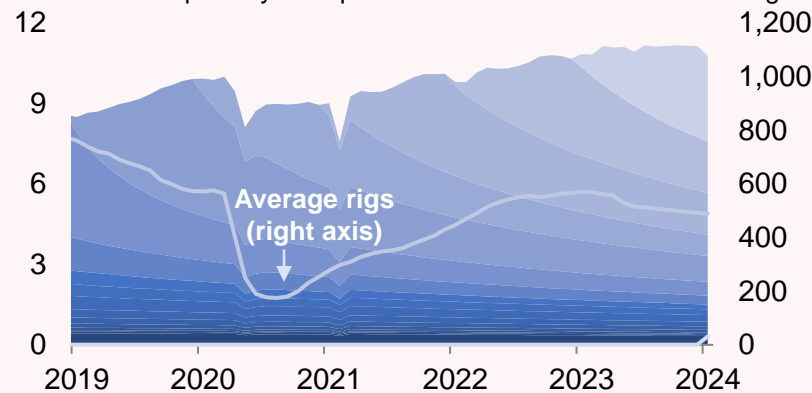
Million barrels per day (mb/d)



**Texas' share rose.** In 2023, Texas accounted for 42.6% of U.S. crude oil production by EIA and TXOGA's estimates, the highest share since 2020.

Texas shale basin wellhead oil & natural gas production

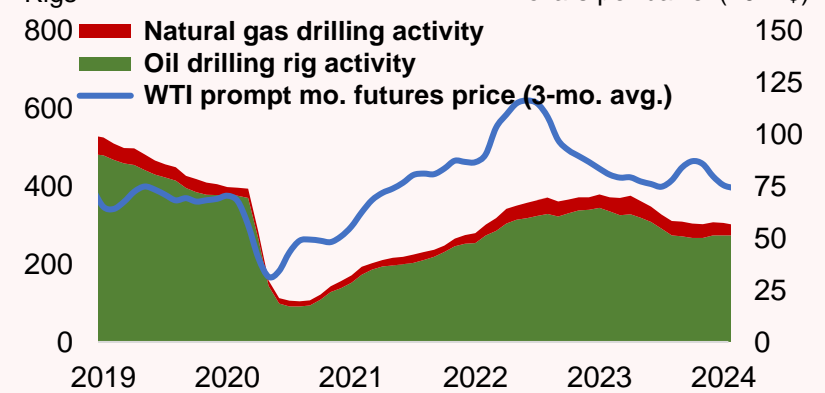
Million barrels per day oil-equivalent



EIA estimates Jan 2024 production growth across Texas shale basins has been mixed, with increases year-over-year in the Permian (+6.3% y/y) and Eagle Ford (+3.6% y/y) but decreases in the Haynesville (-0.2% y/y) and Anadarko (-1.2% y/y) regions.

Texas drilling activity and WTI crude oil futures prices

Rigs Dollars per barrel (2024\$)



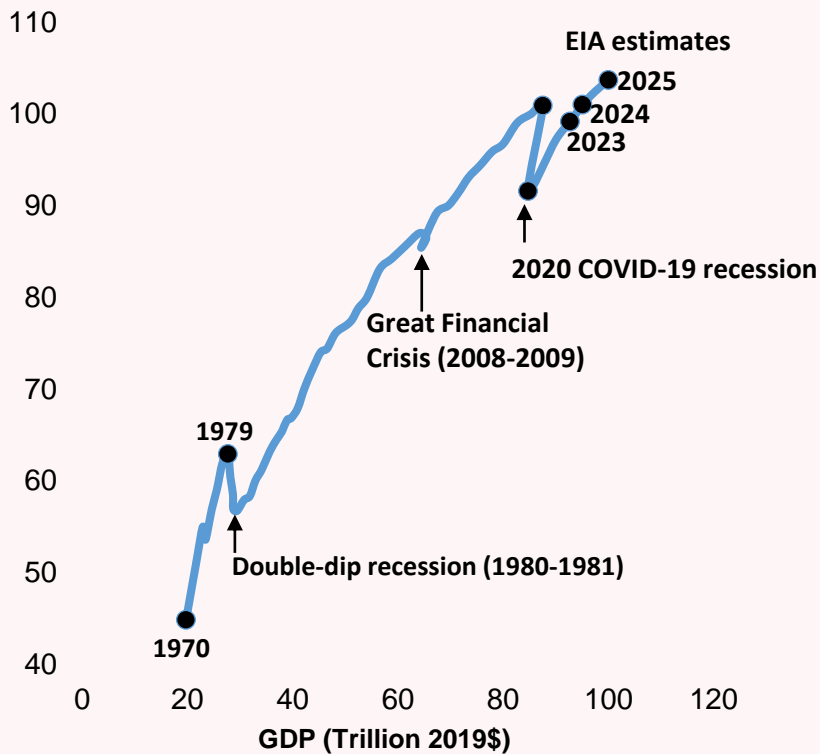
Texas' drilling rig activity increased for the week ended Feb.23 per Baker Hughes. Texas had 275 oil-directed rigs (up by 2 rigs w/w) and 26 natural gas-directed rigs (unchanged w/w).

# Global Oil Market Balance Projections to 2025 by EIA

- Record-high demand. Global oil demand is expected by the EIA rise from a record 101.0 mb/d in 2023 to 102.4 mb/d in 2024 and 103.7 mb/d in 2025.
- Supply shift. As global oil supply is projected to rise 2.4 mb/d by 2025, EIA expects the U.S. to supply about one-third of global production growth over the next two years, compared with over 60% in 2023.
- For oil inventories, the EIA projects global stock withdrawals with a deficit of 0.8 mb/d in Q1 2024, corresponding with Brent crude oil prices of \$82.42 in 2024, compared with \$81.62 per barrel currently.

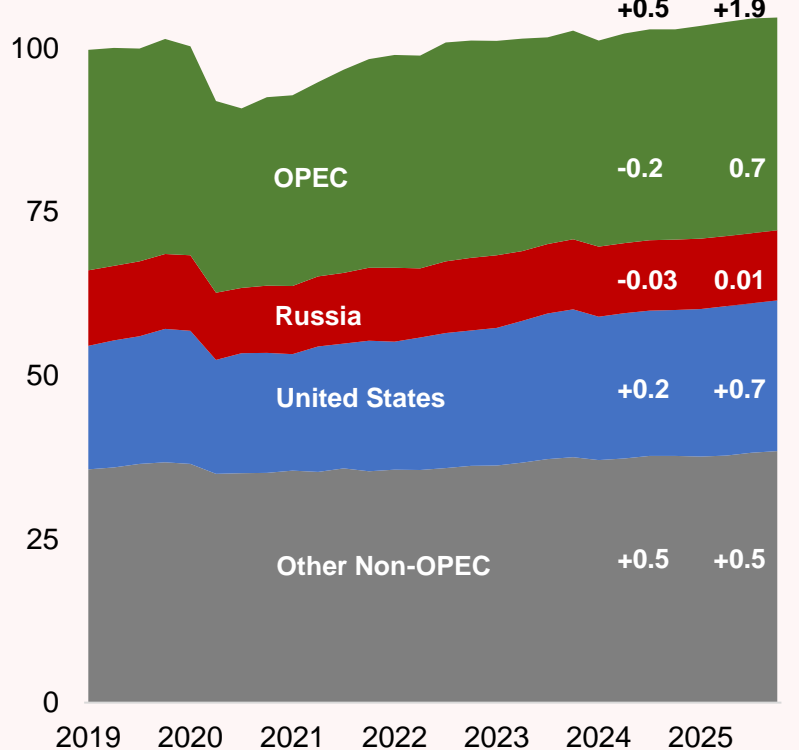
**Global oil demand and GDP**

Million barrels per day (mb/d)



**Oil production by country/region**

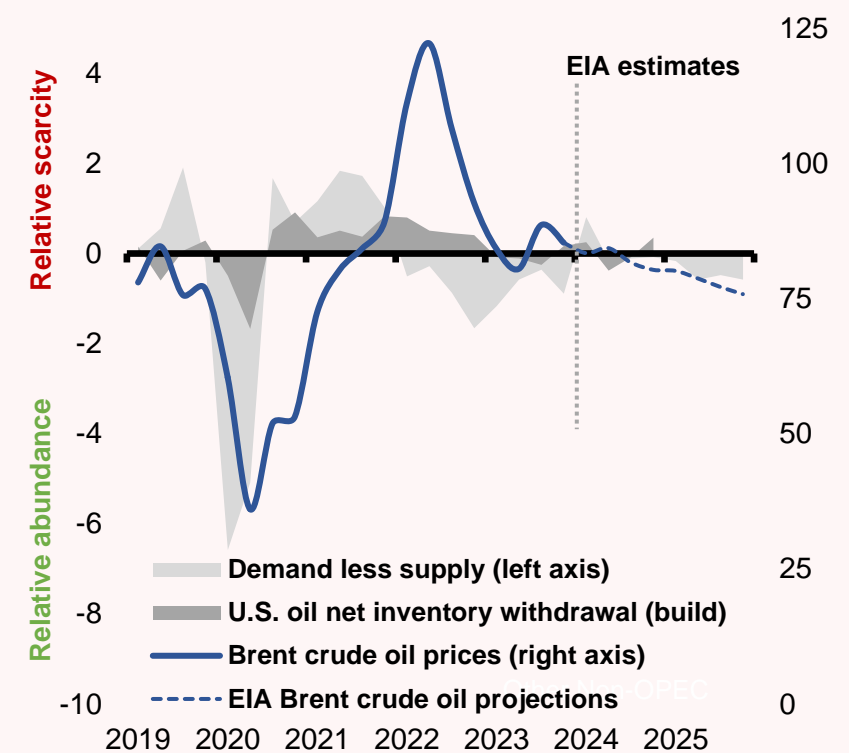
Million barrels per day, mb/d



**Global demand/supply & Brent prices**

Million barrels per day (mb/d)

2024\$/Bbl





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