



**February 19, 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.**

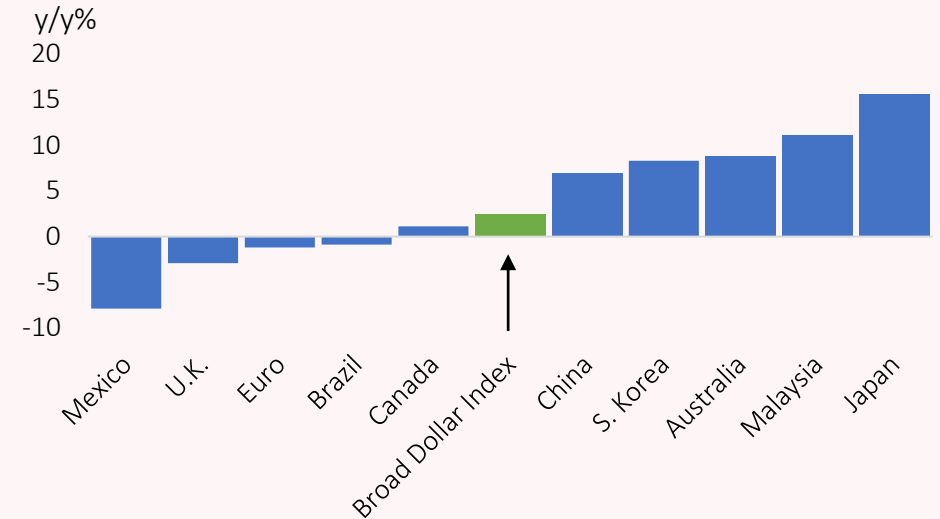
## **Key points for the week of February 19, 2024**

- **U.S. economic outlook held steady.** Industrial production remained flat in January 2024 but was consistent with slow continued growth of economy-wide investment. Although interest rates crept up during the week, the premium for low credit quality on corporate bond yields remained steady. The [Chart of the Week](#) highlights the U.S. dollar's exchange rate and the implications of potential Federal Funds rate cuts given its historical correlation with oil prices.
- **Oil prices rose despite mixed fundamentals.** West Texas Intermediate (WTI) crude oil prices climbed above \$79 per barrel for the week ended February 16, apparently due to geopolitical uncertainties. Data from the U.S. Energy Information Administration (EIA) for the week ended February 9 showed that: U.S. petroleum demand fell by 1.0 million barrels per day (mb/d) to 19.2 mb/d; petroleum net exports increased by 1.6 mb/d week-over-week (w/w); and crude oil stocks rose by 12.0 million barrels, which was in the top 1% of weekly increases on record in data since 1982.
- **As natural gas price continued to fall, futures prices pointed higher.** The U.S. natural gas market has continued to record-low prices for February despite continued storage withdrawals. Prices dropped to near \$1.60 per million Btu (mmbtu), leaving the futures strip in contango (that is, futures price progressively exceed spot prices) with prices over \$2 per mmbtu by July and over \$3 per mmbtu next winter.

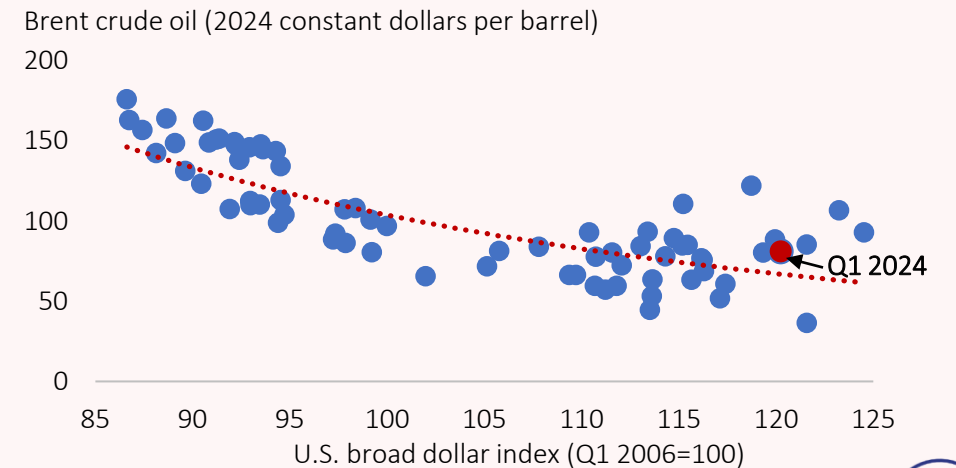
## TXOGA Chart of the Week: The U.S. dollar and oil prices

- ▶ **A historically strong dollar persists.** With interest rate hikes since 2022, the U.S. dollar's exchange value versus the currencies of its trading partners appreciated to historically high levels, which helped exert downward pressure on prices of imports and commodities such as oil that are generally traded in U.S. dollars.
  - As of Feb. 2024, the U.S. dollar appreciated 2.4% y/y and within the top 5% of its values since 2006, but also was marked by regional divergences, appreciating significantly versus the Asian basket of currencies but falling versus the euro, UK pound, Mexican peso, and Brazilian real.
- ▶ **Prospective Fed Funds rate cuts.** However, as the Federal Reserve considers rate cuts in coming months, the U.S. dollar's dynamics could be important to monitor for the potential impact on broad price levels and energy.
- ▶ **Inverse historical relationship with oil prices.** Historically there has been a statistically significant inverse correlation of -0.77 between the USD's and oil prices, due to oil being priced in U.S. dollars, commodity trading dynamics, terms of trade, and indirect effects of monetary policy.
- ▶ **Historical relationship 3:1.** Historically, each 1% U.S. dollar depreciation from strong current levels has correlated with 3.1% appreciation in Brent crude oil prices.

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

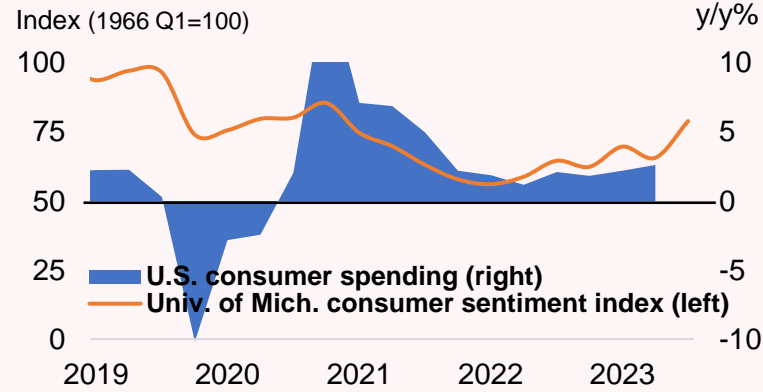


U.S. broad dollar index and Brent crude oil prices, Q1 2006-Q1 2024



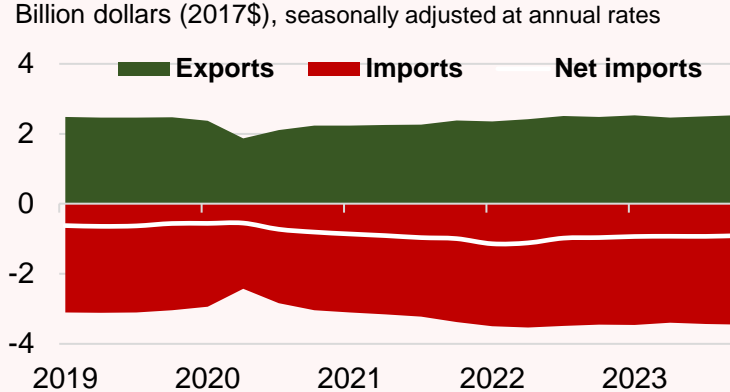
# U.S. economic indicators

## Consumer sentiment vs. spending



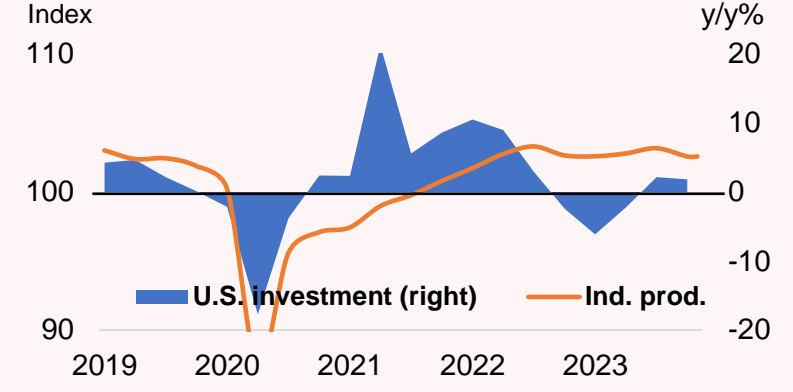
**Consumer sentiment rose further.** In its final reading for January 2024, the Univ. of Michigan consumer sentiment index was revised up (by 0.2) to 79.0, the highest reading since July 2021. This is consistent with the historical correspondence to consumer spending growth that rose by 2.6% y/y in Q4 2023.

## Real net exports of goods and services



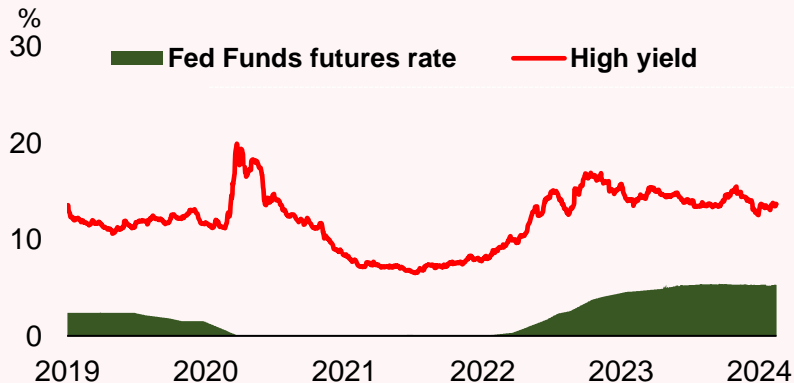
**The U.S. trade deficit narrowed in Q4 2023.** The U.S. real trade deficit ran at an annualized rate of \$908 billion in Q4 2023, down from \$931 billion in Q3 per the U.S. Bureau of Economic Analysis. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$16 billion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

## Industrial production and investment growth



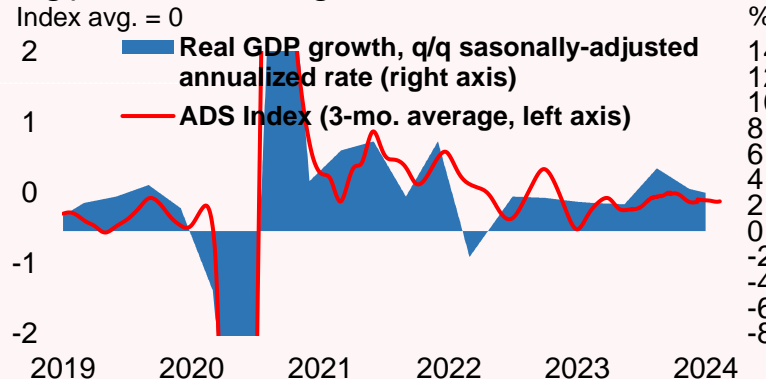
**Industrial production remained flat in Jan. 2024** and consistent with slow economy-side investment growth in Q1. Investment rose by 1.8% y/y in Q4 per the Bureau of Economic Analysis.

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



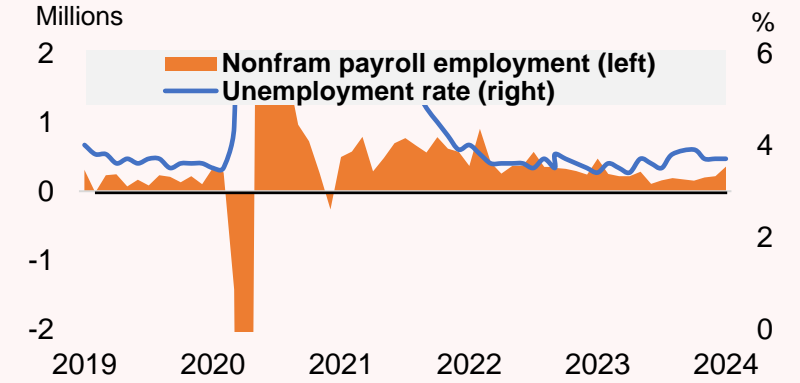
**Steady bond premium for low credit quality.** High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Feb. 15, HY rates of 13.68% rose by 0.06% (6 bps) w/w while the Fed Funds futures rate rose by 0.05%, yielding little change in the risk spread for the week.

## 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

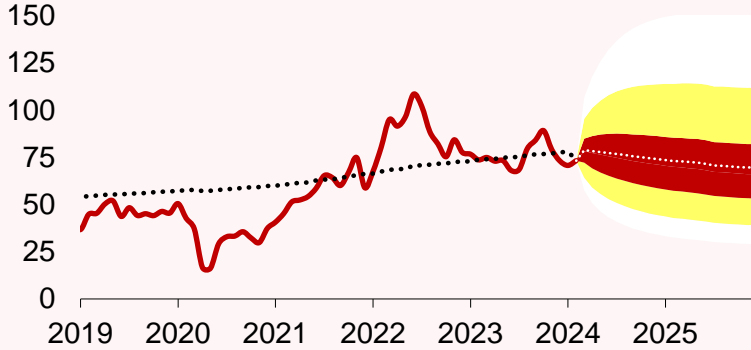


**Steady unemployment rate, increased payrolls.** The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate held steady at 3.7% in January per BLS, while non-farm payrolls rose by 353,000.

# U.S. oil market indicators

## WTI crude oil price mean reversion analysis

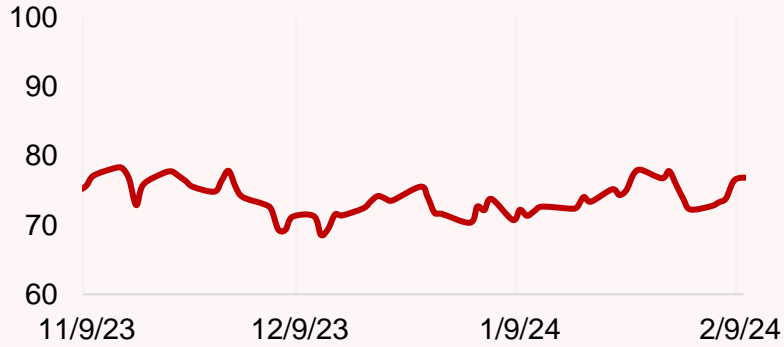
Dollars per barrel (2024\$)



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

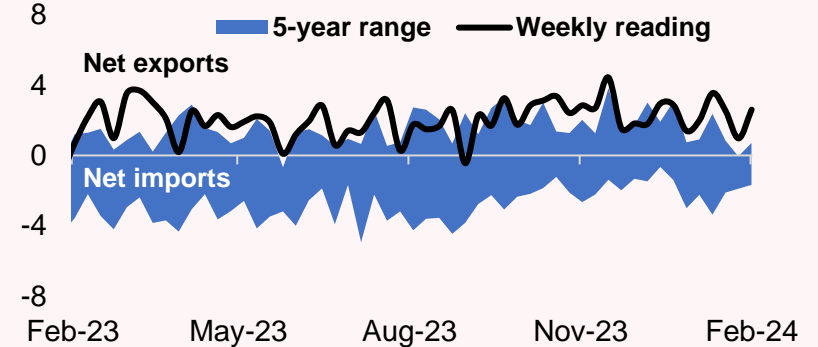
Dollars per barrel



WTI crude oil prices rose to over \$79 per barrel for the week ended Feb. 16, reflecting a geopolitical premium and despite weaker fundamentals for the week.

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

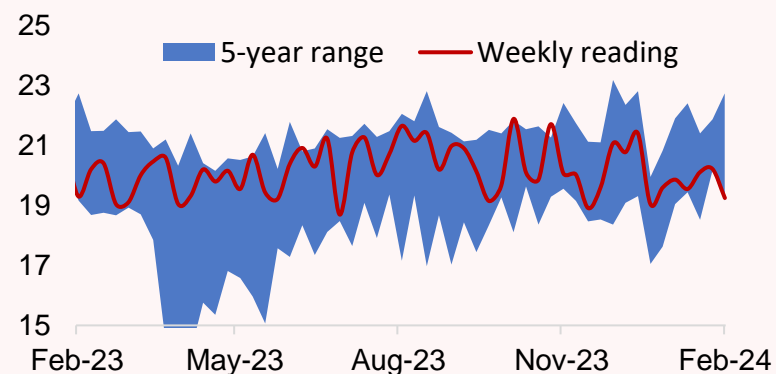
Million barrels per day, mb/d



**Petroleum net exports rose.** The U.S. was a petroleum net exporter of 2.6 mb/d for the week ended Feb. 9, up by 1.6 mb/d w/w and a record level for this time of the year.

## U.S. petroleum demand

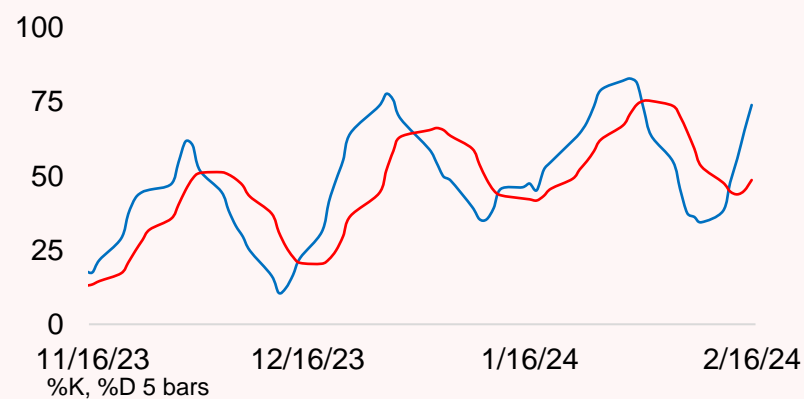
Million barrels per day (mb/d)



**Petroleum demand decreased.** U.S. petroleum demand, as measured by deliveries, fell by 1.0 mb/d w/w to 19.2 mb/d for the week ended Feb 9.

## WTI crude prompt month futures slow stochastic

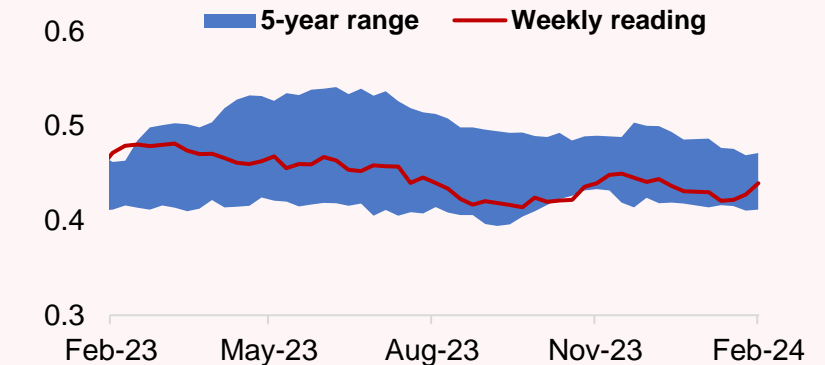
Index level



Price momentum fell but then reversed for the week ended Feb.16.

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

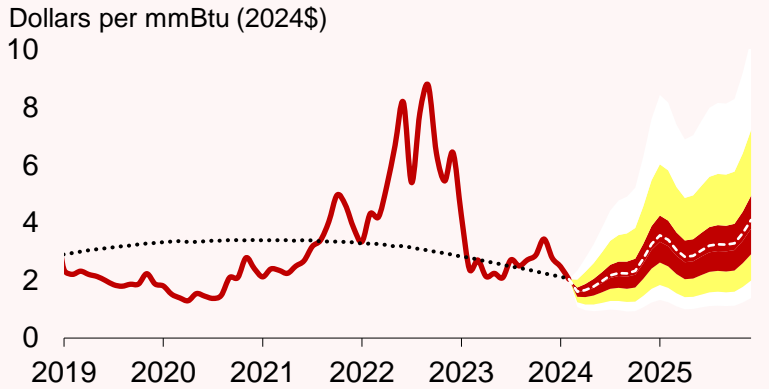
Billion barrels (mb)



**Inventories increased.** U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 12.0 million barrels (mb) for the week ended Feb. 9 and to the middle of the 5-year range.

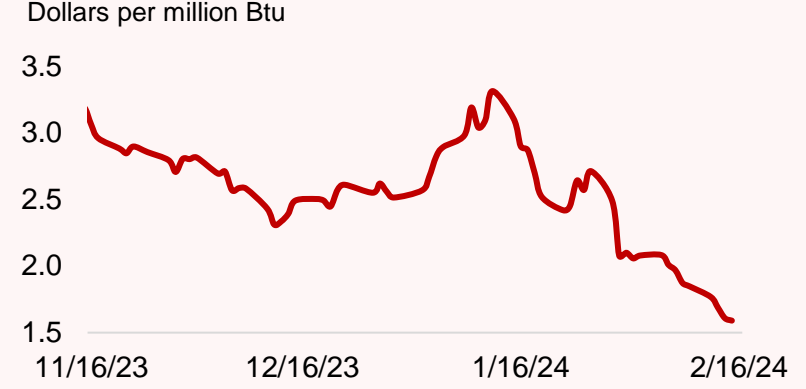
# U.S. natural gas market indicators

## Natural gas price mean reversion analysis



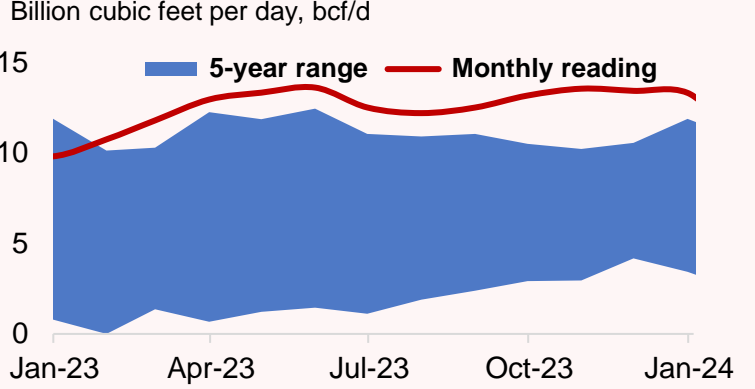
**Natural gas futures prices fell below their historical mean.** Natural gas futures prices through October 2024 fell below their historical mean. Futures prices progressively rise beginning in March 2024. Confidence intervals based on past prices show the potential for greater upside than downside.

## Natural gas prompt month futures prices



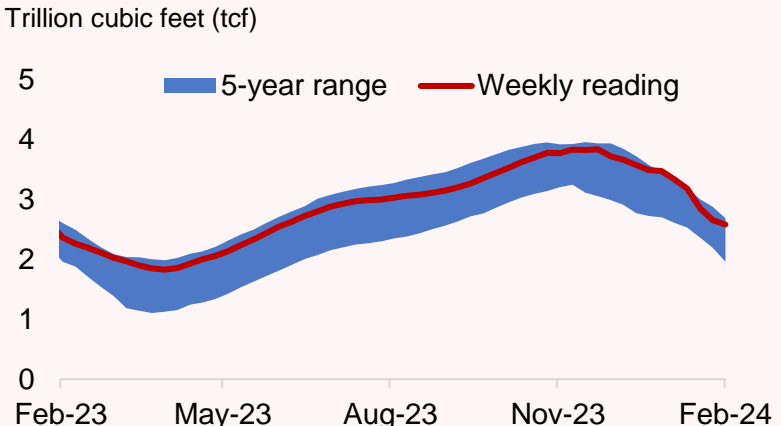
Natural gas prices at Henry Hub remained dropped to \$1.60 per million Btu for the week ended Feb. 16 despite continued storage withdrawals and to the lowest real prices for February on record since 1994.

## U.S. natural gas net exports



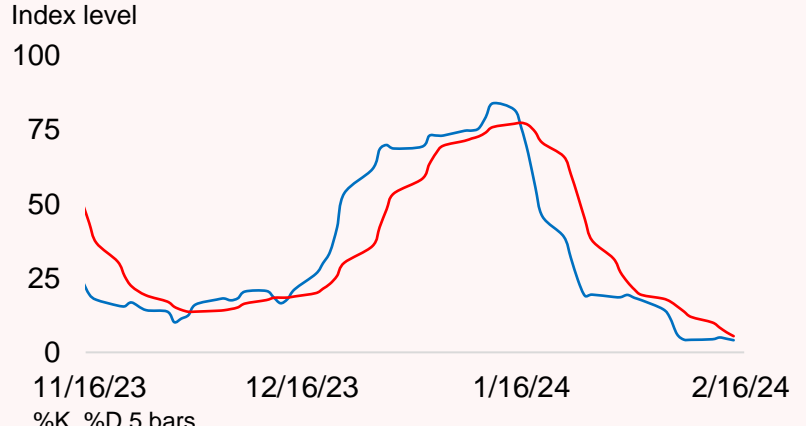
**Strong net exports have continued.** U.S. natural gas net exports in February are estimated at 12.4 bcf/d, up from 11.8 bcf/d a year ago and above the 5-year range, per the EIA.

## U.S. weekly working gas storage



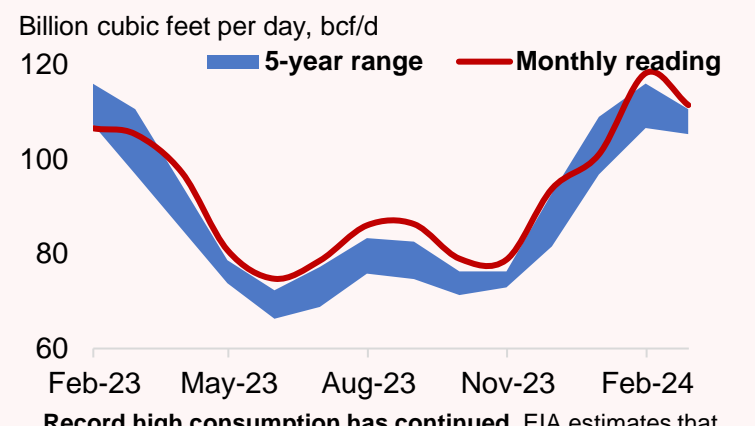
Working gas in underground storage fell by 1.9% w/w to 2.5 tcf as of Feb. 9 but climbed within the 5-year range.

## Natural gas futures slow stochastic



Natural gas price momentum continued to decrease during the week ended Feb. 16.

## U.S. natural gas consumption



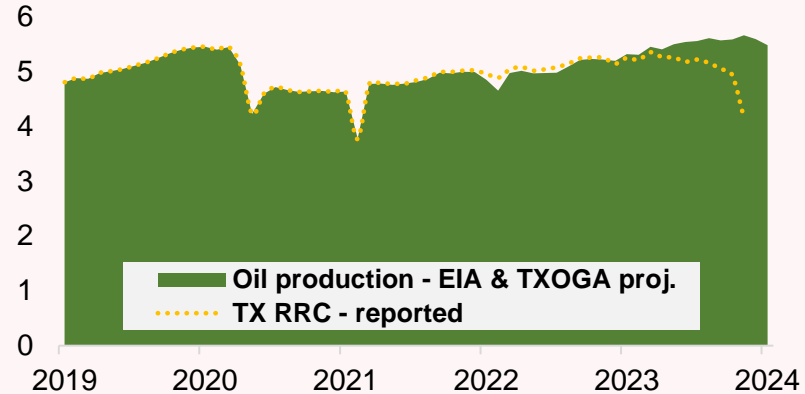
**Record high consumption has continued.** EIA estimates that natural gas consumption has eased from a record monthly high of 118 bcf/d in January to 111 bcf/d in February -- the highest U.S. consumption on record for the month of February.



# Texas' oil and natural gas production

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

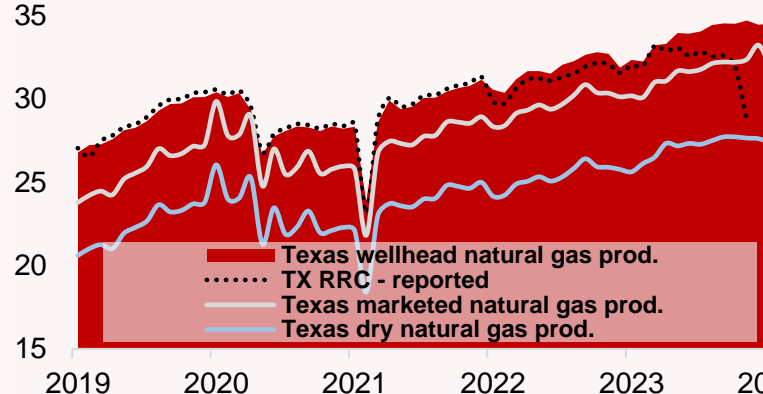
Million barrels per day (mb/d)



**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

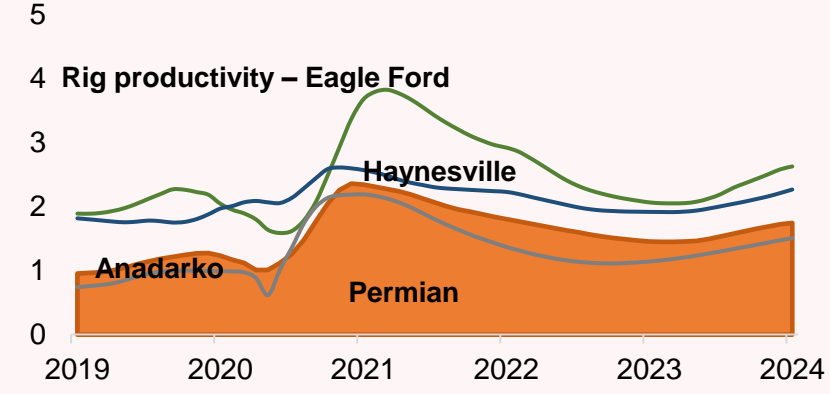
Billion cubic feet per day (bcf/d)



**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

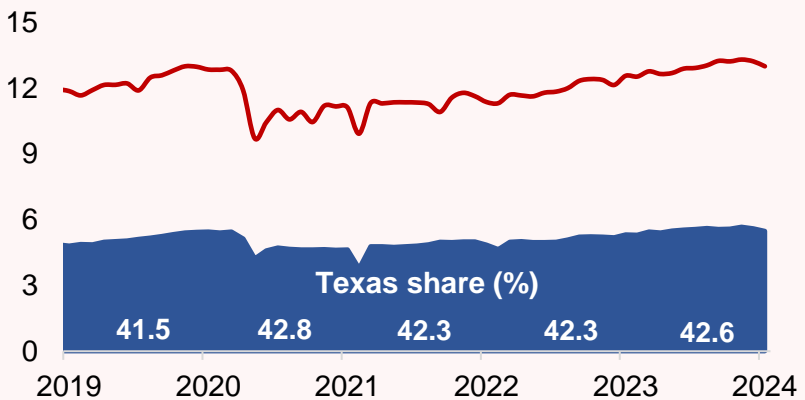
Thousand barrels per day oil-equivalent, kb/dae



**Strong productivity to start the year.** EIA estimates of rig productivity for January 2024 show continued increases year-over-year across the major Texas basins, including the Anadarko (+32.0% y/y), Eagle Ford (+27.2% y/y), Haynesville (+18.3% y/y), and Permian (+20.0% y/y).

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

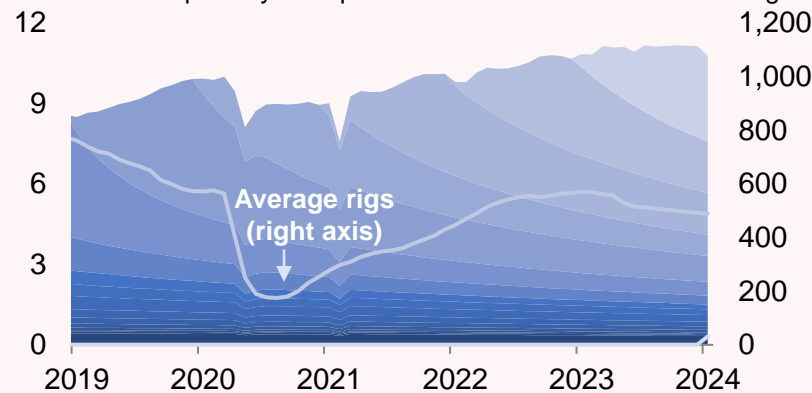
Million barrels per day (mb/d)



**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

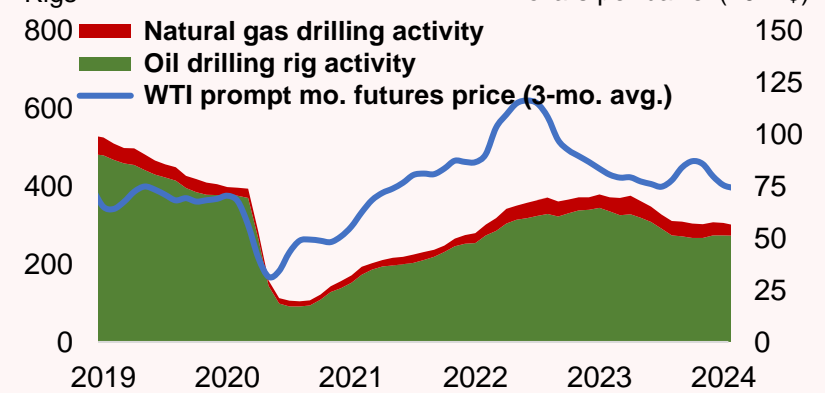
Million barrels per day oil-equivalent



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\$)



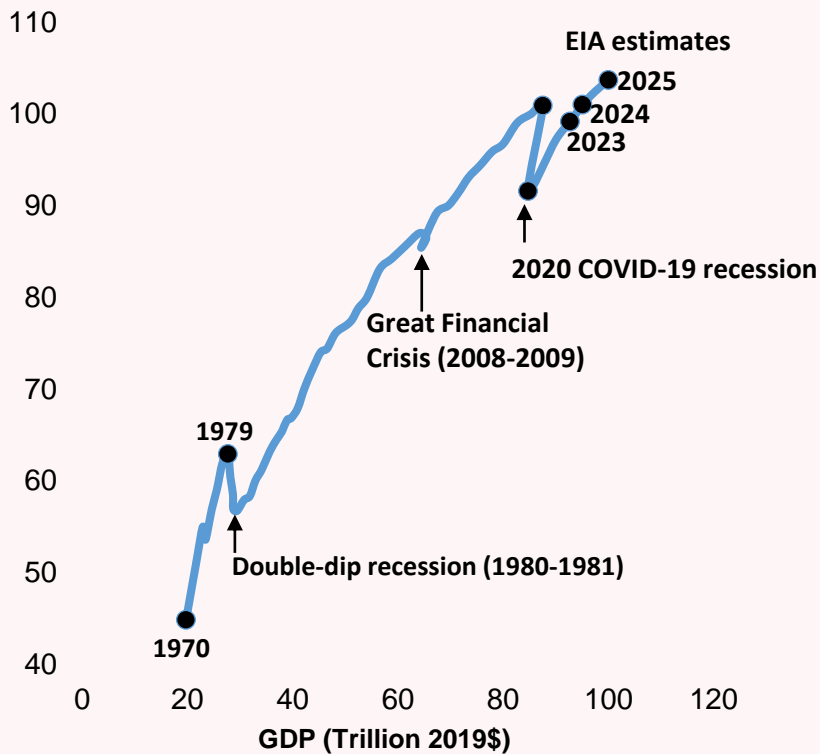
Texas' drilling rig activity decreased for the week ended Feb. 16 per Baker Hughes. Texas had 273 oil-directed rigs (down by 1 rig w/w) and 26 natural gas-directed rigs (down by 1 rigs w/w).

# 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.

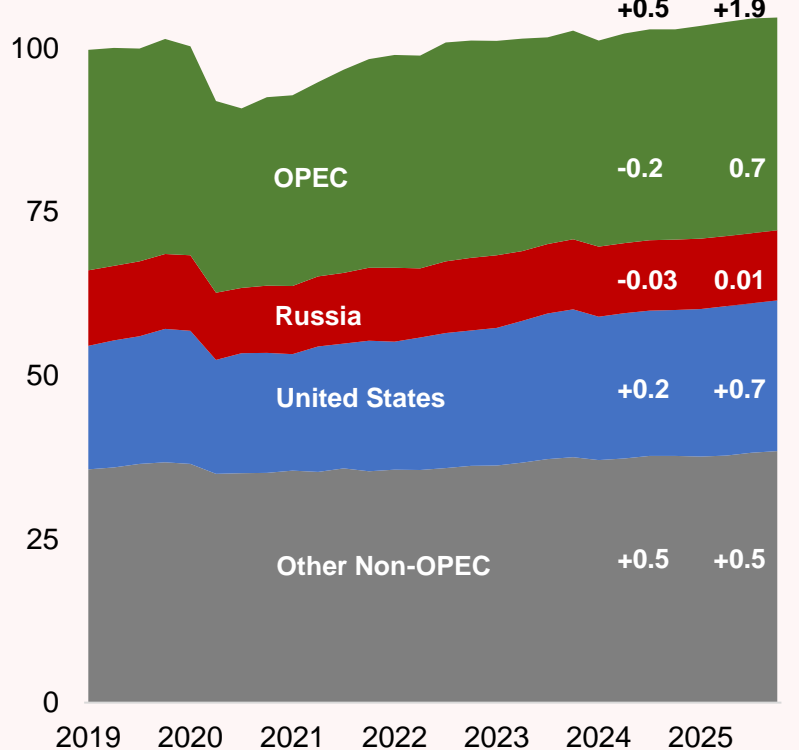
**Global oil demand and GDP**

Million barrels per day (mb/d)



**Oil production by country/region**

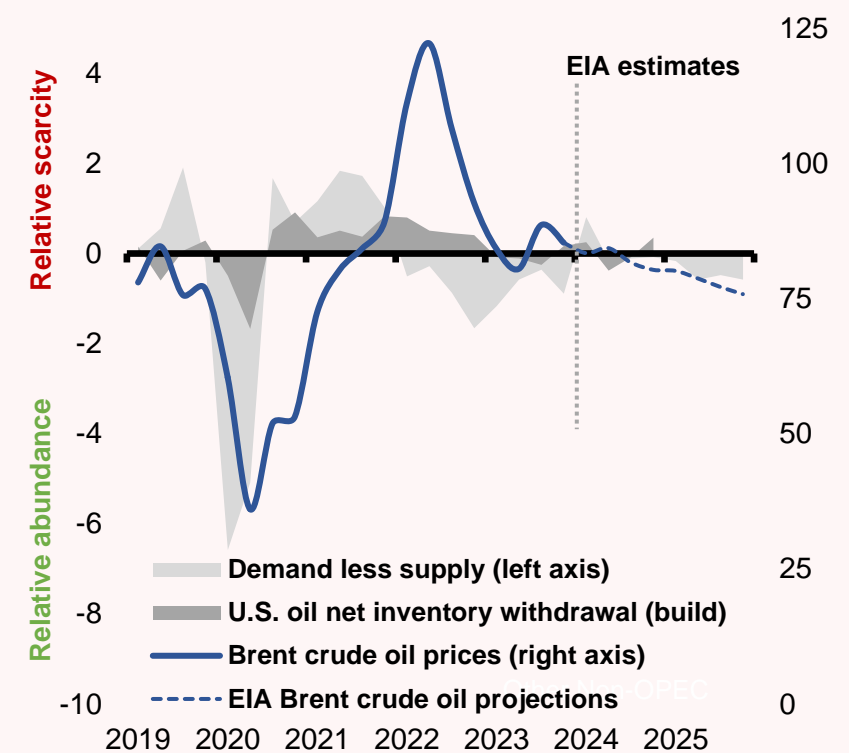
Million barrels per day, mb/d



**Global demand/supply & Brent prices**

Million barrels per day (mb/d)

2024\$/Bbl



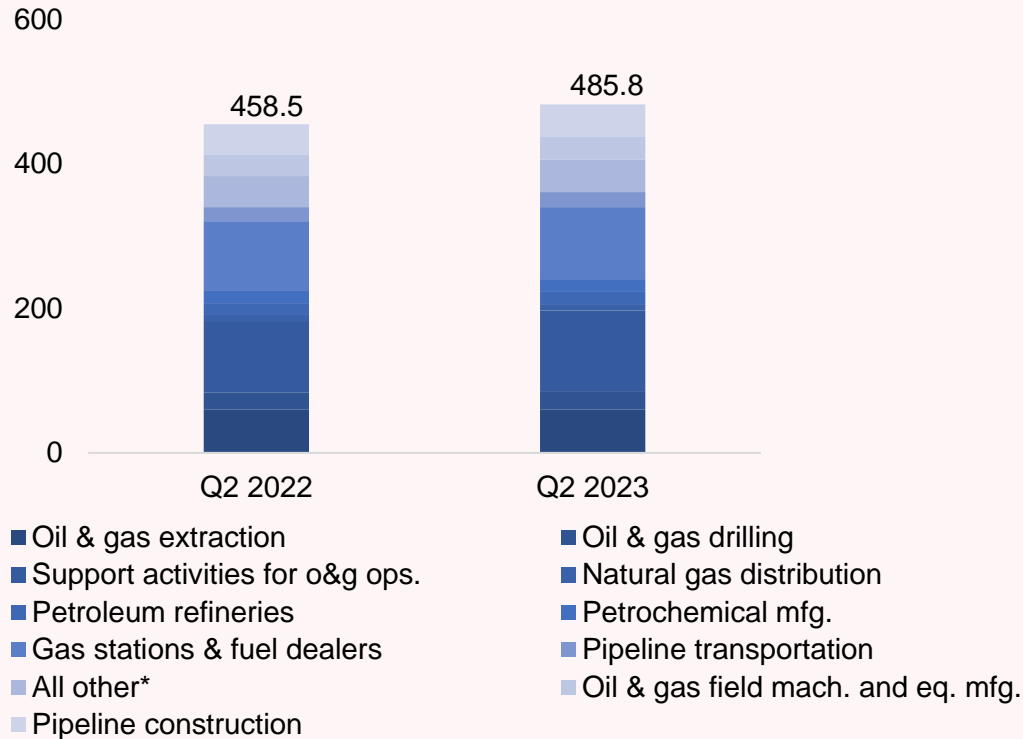


# Texas' oil and natural gas industry's jobs and wages rose solidly

- ▶ Texas' oil and natural gas industry employment rose by 6.0% y/y in Q2 2023 with over half of the job growth in upstream drilling, extraction and support services, per data from the U.S. Census Bureau and Texas Workforce Commission
- ▶ Industry wage growth of 9.3% y/y outpaced job growth of 6.0% y/y, which reflected wage escalation

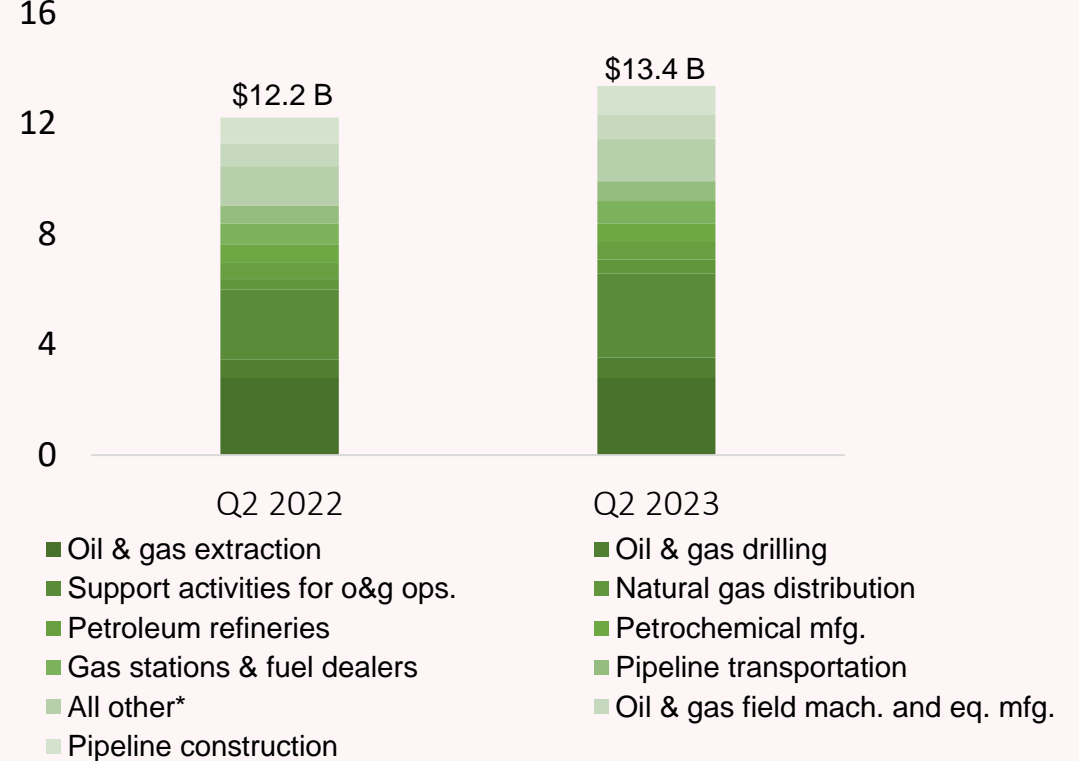
**Texas Oil & Gas Industry Employment Rose by +6.0% y/y in Q2 2023**

Thousand Jobs



**Texas Oil & Gas Industry Quarterly Wages Rose by +9.3% y/y in Q2 2023**

Billion dollars



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

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