



January 15, 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 January 15, 2024

➤ **U.S. economic indicators signal growth.** Bond premiums for low credit quality declined last week and remained down by 192 basis points (1.9%) year-over-year (y/y). Business conditions, as indicated by the ADS Index from the Philadelphia Federal Reserve Bank, are consistent with steady GDP growth so far in Q1 2024.

➤ **Oil demand projections revised up amid strong market fundamentals.** As highlighted in the [Chart of the Week](#), the U.S. Energy Information Administration (EIA) increased its global oil supply and demand forecasts, with demand projected at 102.5 million barrels per day (mb/d) in 2024 and 103.7 mb/d in 2025, setting potential consecutive record highs. The EIA also anticipates a supply shift, where the U.S. could account for one-third of global supply growth over the next two years, compared with over 60% in 2023.

According to EIA data for the week ended Jan. 5, U.S. petroleum consumption was within historical norms, net exports of crude and products were robust at 1.4 mb/d, and crude oil ending stocks edged up by 1.3 million barrels (0.3%) week-over-week (w/w). Additionally, tensions in the Middle East, particularly those involving Iran-backed entities, have bolstered oil prices.

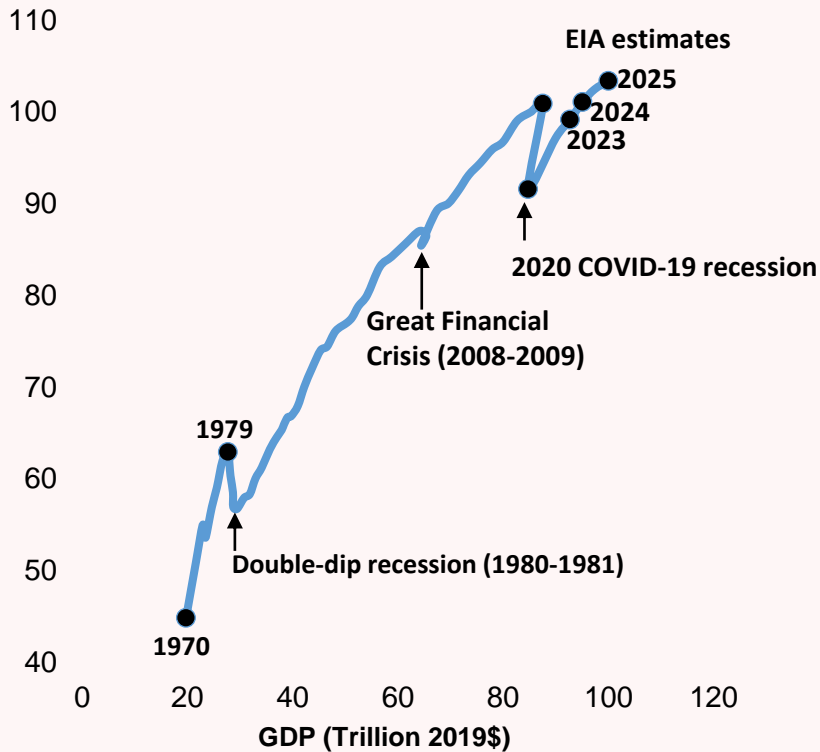
➤ **U.S. natural gas prices rose due to winter demands and storage depletions.** Prices for U.S. natural gas climbed 12.8% w/w to approximately \$3.30 per million Btu as of January 12. This surge was due to a significant drop in natural gas storage—the largest since Feb. 2023—along with increased heating requirements and sustained high levels of natural gas exports.

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

- ▶ **Record-high demand.** Global oil demand is expected by the EIA rise from a record 101.1 mb/d in 2023 to 102.5 mb/d in 2024 and 103.7 mb/d in 2025.
- ▶ **Supply shift.** As global oil supply is projected to rise 2.2 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 \$82.50 in 2024, compared with \$78.20 per barrel currently.

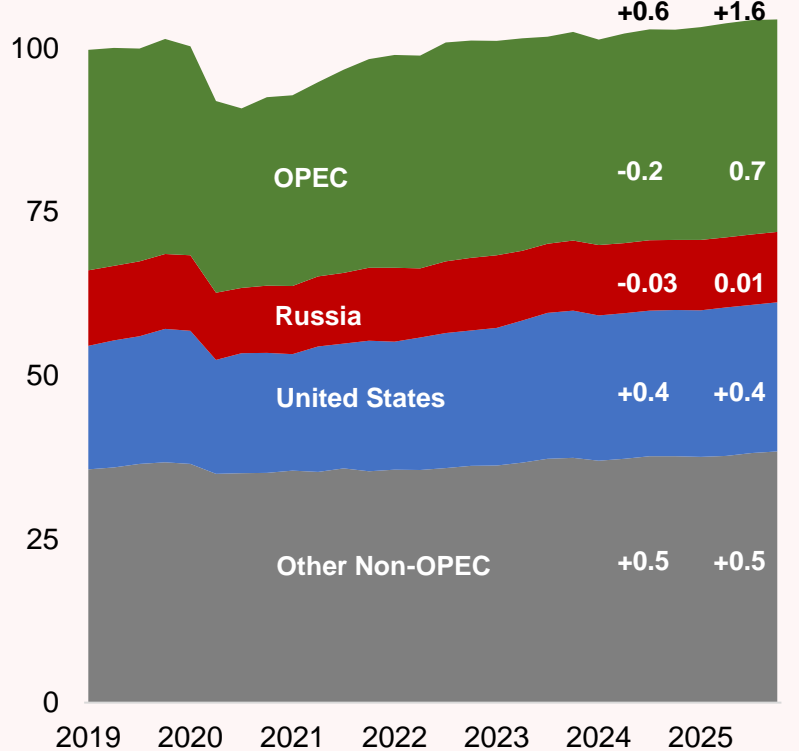
Global oil demand and GDP

Million barrels per day (mb/d)



Oil production by country/region

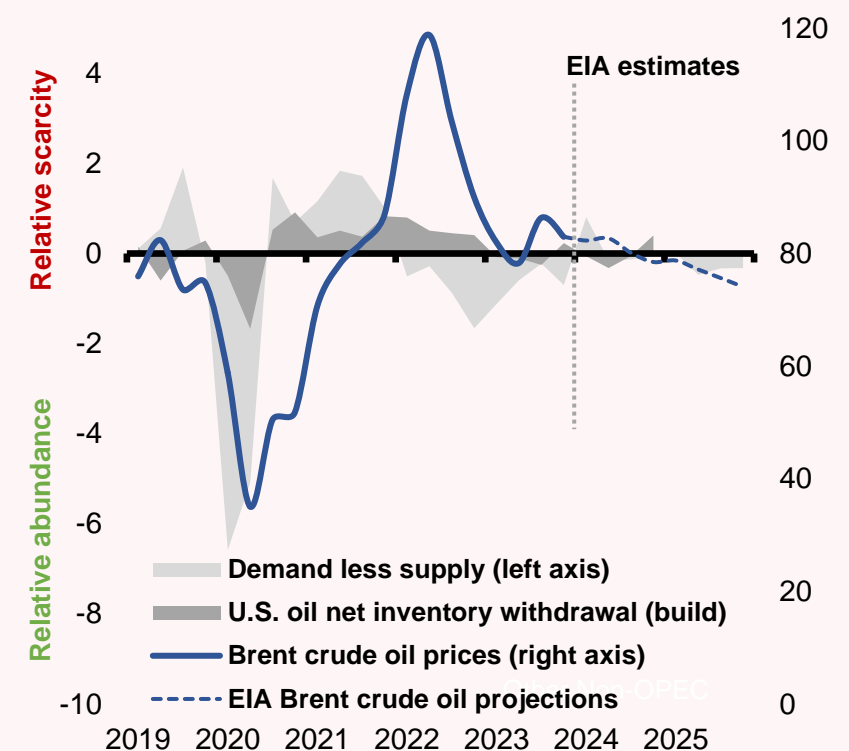
Million barrels per day, mb/d



Global demand/supply & Brent prices

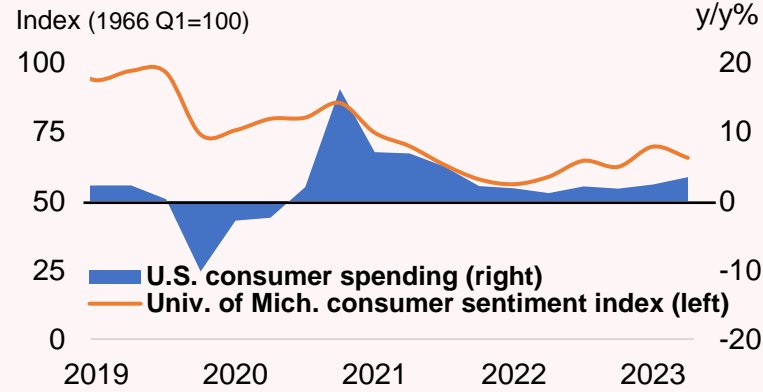
Million barrels per day (mb/d)

2024\$/Bbl



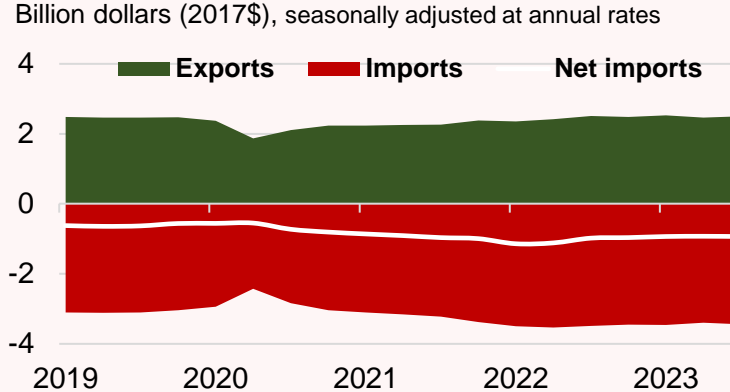
U.S. economic indicators

Consumer sentiment vs. spending



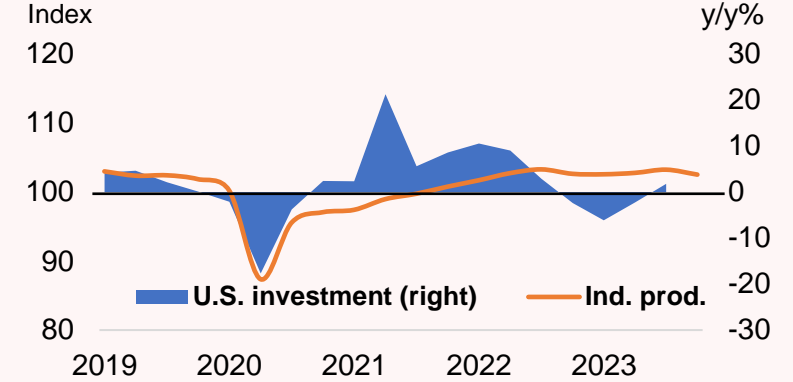
Buoyant consumer sentiment entering December. In its final reading for December, the Univ. of Michigan consumer sentiment index rose to 69.7 from 61.3 in November. The index remained consistent with consumer spending growth.

Real net exports of goods and services



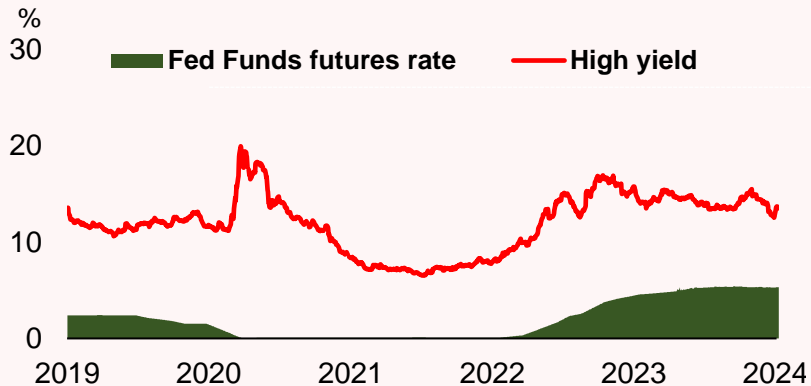
The U.S. trade deficit revised down for Q3 2023. The U.S. real trade deficit ran at an annualized rate of \$931 billion in Q3 2023, down from an initial estimate of \$935 billion per the U.S. Bureau of Economic Analysis. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$29 billion in Q3 2023.

Industrial production and investment growth



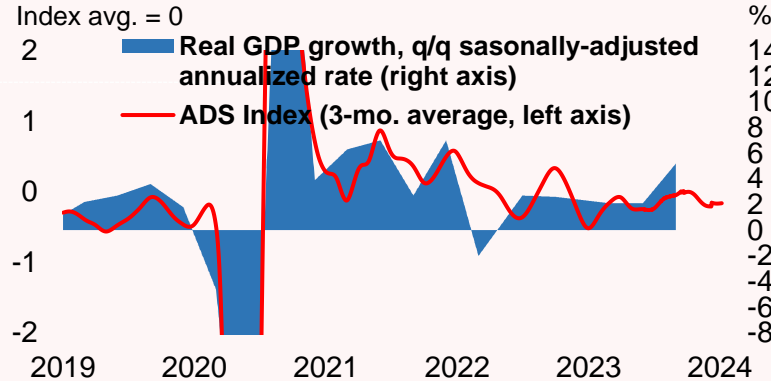
Industrial production has remained consistent with investment growth of 2.25% y/y in Q3 2023, as revised up from an initial reading of 1.8% y/y by the Bureau of Economic Analysis. Industrial production has remained flat in recent months, and in November 2023 rose by 0.2% m/m and remained up by 0.1% y/y year-to-date.

Fed Funds rate and CCC and lower corporate bond yields



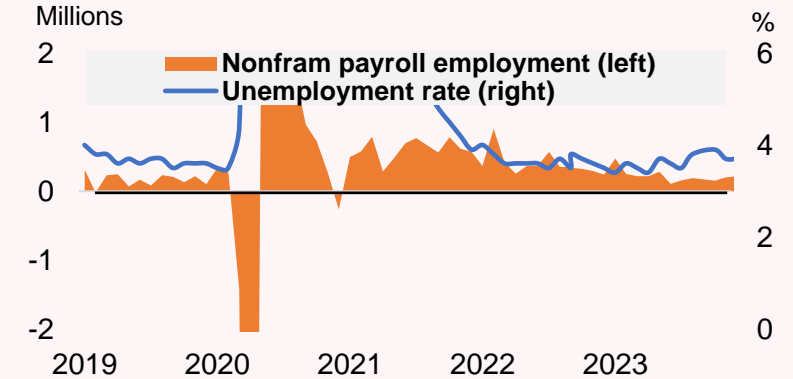
Bond premium for low credit quality fell. High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Jan. 12, HY rates fell by 0.2% w/w to 13.5%, while the Fed Funds futures held steady at 5.3%, resulting in a 20 basis-point (0.2%) w/w decrease in the premium for low credit quality.

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



Business conditions consistent with Q4 2023 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 Q3 2023 real GDP and has remained consistent with continued GDP growth through Q1 2024.

Nonfarm payroll employment & unemployment rate

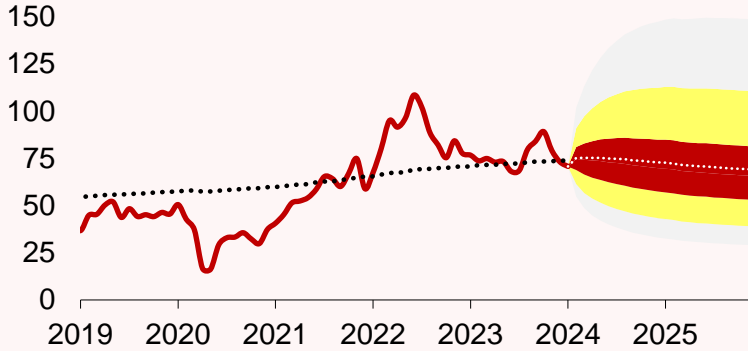


With a rebound in payroll increases, the unemployment rate fell in November. The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate held steady at 3.7% in December per BLS, while non-farm payrolls rose by 216,000.

U.S. oil market indicators

WTI crude oil price mean reversion analysis

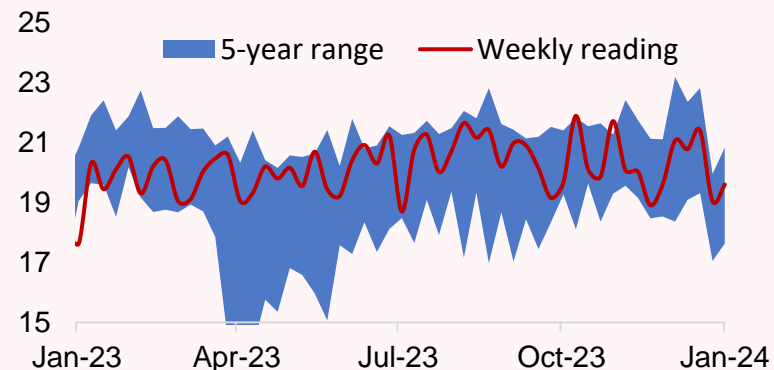
Dollars per barrel (2024\$)



Futures prices fell below the historical mean reversion target. A best-fit curve through historical prices (MR target) exceeded futures prices for February and March delivery, but aligned beginning with March as the futures price strip currently increases until May ("in contango"). Confidence intervals based on past prices show the potential for greater upside than downside.

U.S. petroleum demand

Million barrels per day (mb/d)



Petroleum demand increased within its historical range. U.S. petroleum demand, as measured by deliveries, was 19.6 mb/d for the week ended Jan. 5 and was in the top 40% of its five-year range.

WTI crude prompt month futures prices

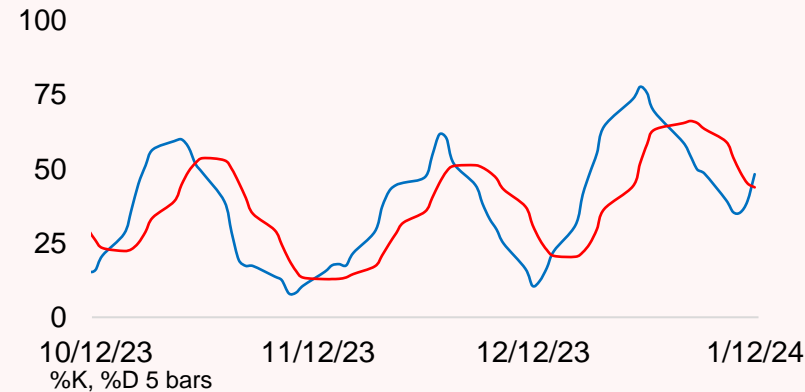
Dollars per barrel



WTI crude oil prices varied near \$73 per barrel per barrel for the week ended Jan. 12 as market fundamentals remained solid.

WTI crude prompt month futures slow stochastic

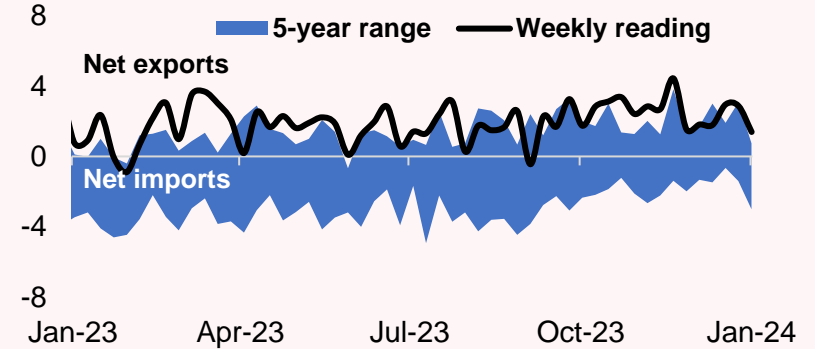
Index level



Price momentum rose reversed for the week ended Jan. 12.

U.S. petroleum net exports (imports)

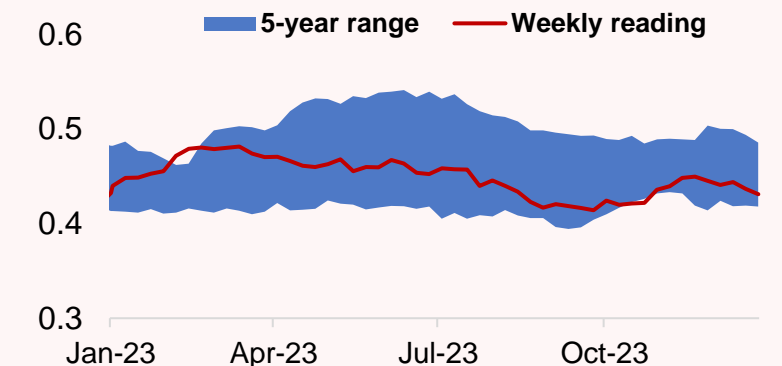
Million barrels per day, mb/d



Petroleum net exports decreased. The U.S. was a petroleum net exporter of 1.4 mb/d for the week ended Jan. 5, which continued at the top of the 5-year range.

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

Million barrels (mb)

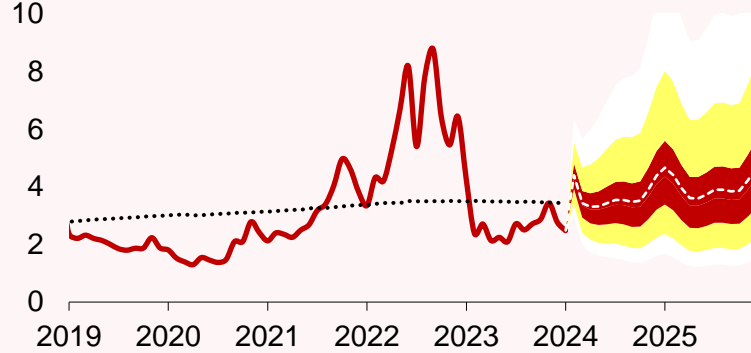


Inventories edged up. U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) rose by 1.3 million barrels (mb) for the week ended Jan. 5 but remained in their lowest 25% within the 5-year range.

U.S. natural gas market indicators

Natural gas price mean reversion analysis

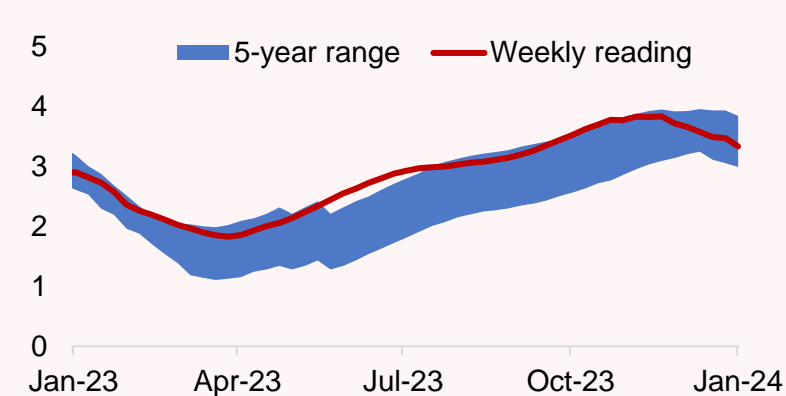
Dollars per mMBtu (2024\$)



Near-term natural gas futures prices remained below the historical mean reversion target. As natural gas prices rose to \$3.30 per million Btu, futures prices for Mar. through Sep. remained below \$3.00 per million Btu and their historical mean. Historical variation continued to show more potential upside than downside.

U.S. weekly working gas storage

Trillion cubic feet (tcf)



Storage fell within its 5-year range. Working gas in underground storage (3.3 tcf as of Jan. 5) fell by 4.0% w/w to the bottom 40% of its 5-year range. This was the largest percentage weekly drawdown since Feb. 2023.

Natural gas prompt month futures prices

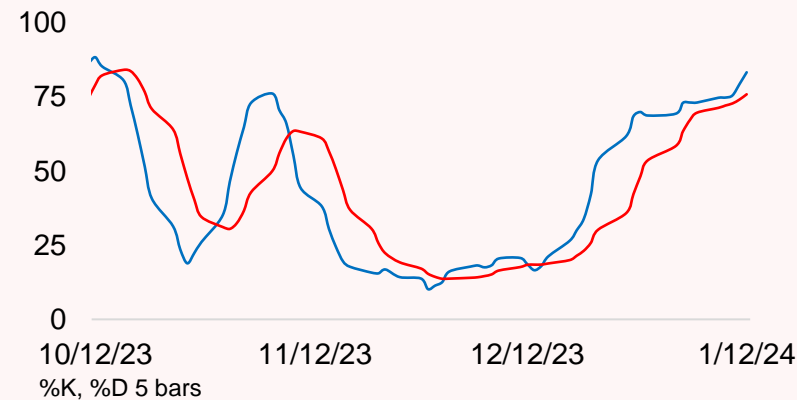
Dollars per million Btu



Natural gas prices at Henry Hub rose by 12.8% w/w to \$3.30 per million Btu for the week ended Jan. 12 with the onset of winter weather and large storage withdrawals.

Natural gas futures slow stochastic

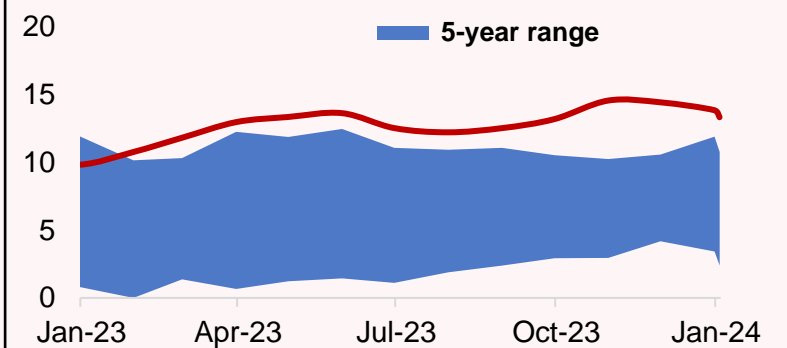
Index level



Natural gas price momentum continued to rise during the week ended Jan. 12.

U.S. natural gas net exports

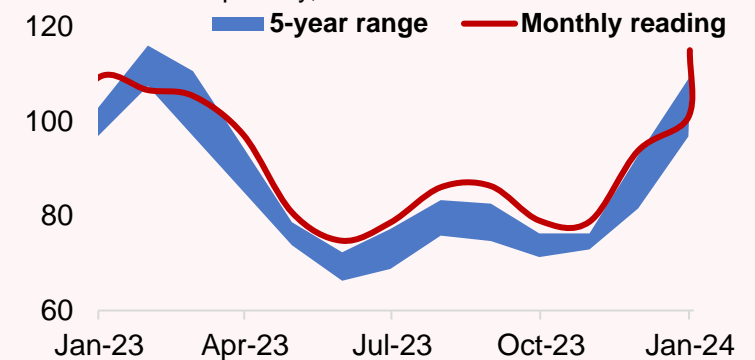
Billion cubic feet per day, bcf/d



Strong net exports have continued. U.S. natural gas net exports in January are estimated at 13.3 bcf/d, above the 5-year range, per the EIA.

U.S. natural gas consumption

Billion cubic feet per day, bcf/d

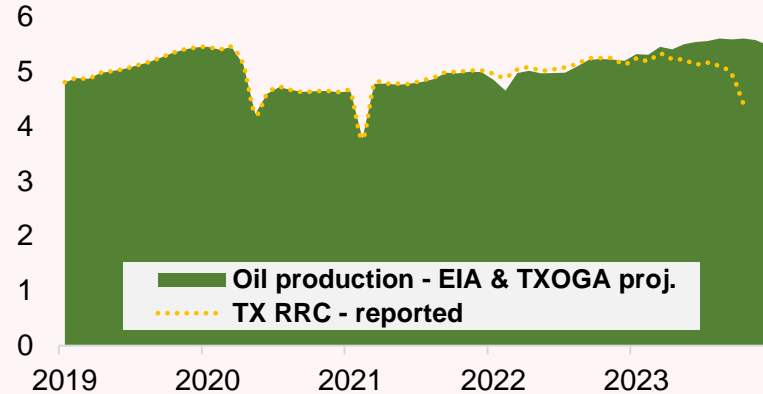


January consumption estimated by EIA to exceed its 5-yr. range. In its January projections, EIA estimated that natural gas consumption rose from the top third of its 5-year range in December to exceeding it so far in January.

Texas' oil and natural gas production

Texas crude oil production, Jan. 2019 – Dec. 2023

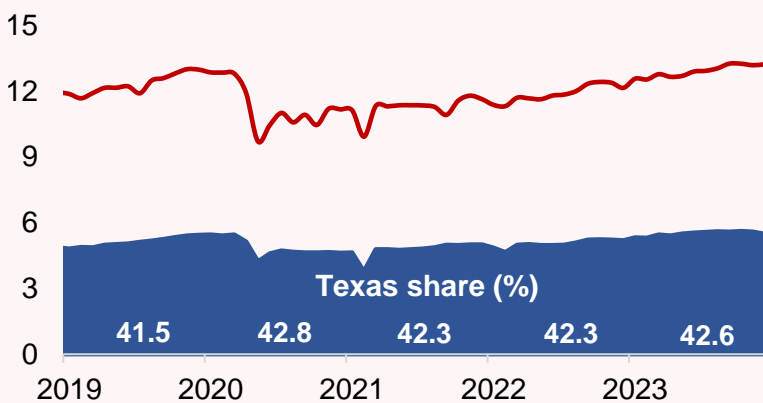
Million barrels per day (mb/d)



Strong production. Texas' oil production of 5.6 mb/d held steady in October per the EIA. TXOGA estimates that Texas crude oil production held at 5.6 mb/d in November and edged down to 5.5 mb/d in December.

U.S. and Texas crude oil production, Jan. 2019 – Dec. 2023

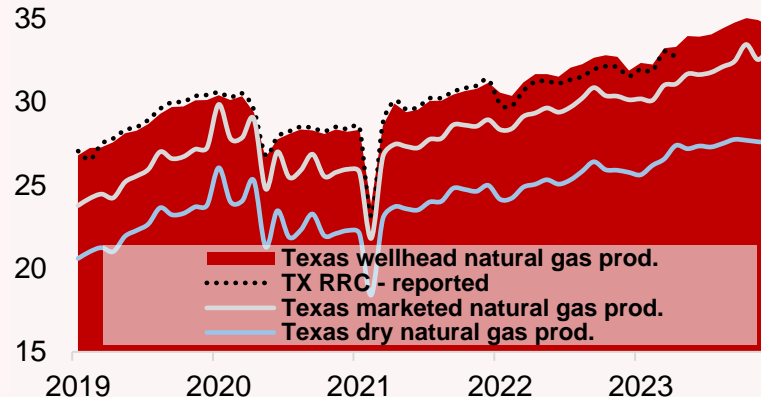
Million barrels per day (mb/d)



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 natural gas production, Jan. 2019 – Dec. 2023

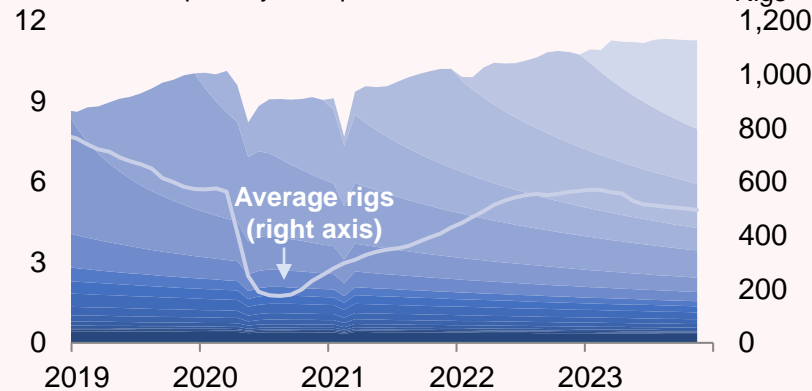
Billion cubic feet per day (bcf/d)



Record production in October. Texas' natural gas production set records for 35.0 bcf/d of gross withdrawals and 33.5 bcf/d of marketed production in October per EIA. TXOGA estimates that natural gas production eased through December to 34.6 bcf/d of gross withdrawals, 33.3 bcf/d of marketed production, and 27 bcf/d of dry gas production.

Texas shale basin wellhead oil & natural gas production

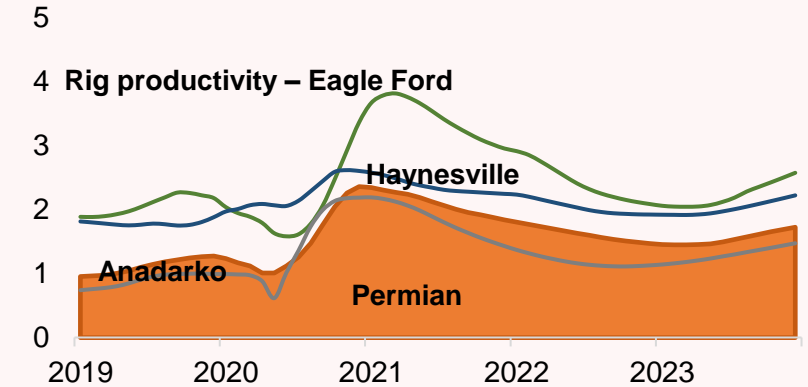
Million barrels per day oil-equivalent



EIA estimates Dec. 2023 production growth across Texas shale basins has been mixed, with strong increases year-over-year in the Permian and Eagle Ford, flat Haynesville production, and decreases in the Anadarko.

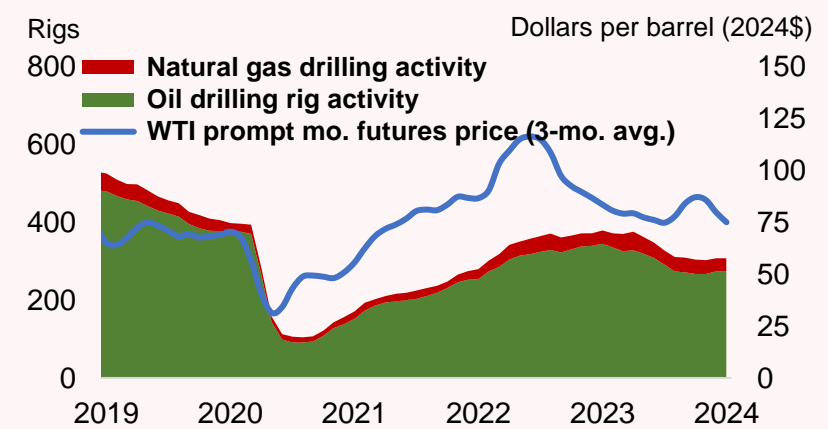
Texas rig productivity by basin – new monthly prod. per rig

Thousand barrels per day oil-equivalent, kb/dae



Strong productivity. EIA estimates of rig productivity for December 2023 show increases year-over-year across the major Texas basins, including the Anadarko (+30.6% y/y), Eagle Ford (+23.3% y/y), Haynesville (+15.6% y/y), and Permian (+17.4% y/y).

Texas drilling activity and WTI crude oil futures prices



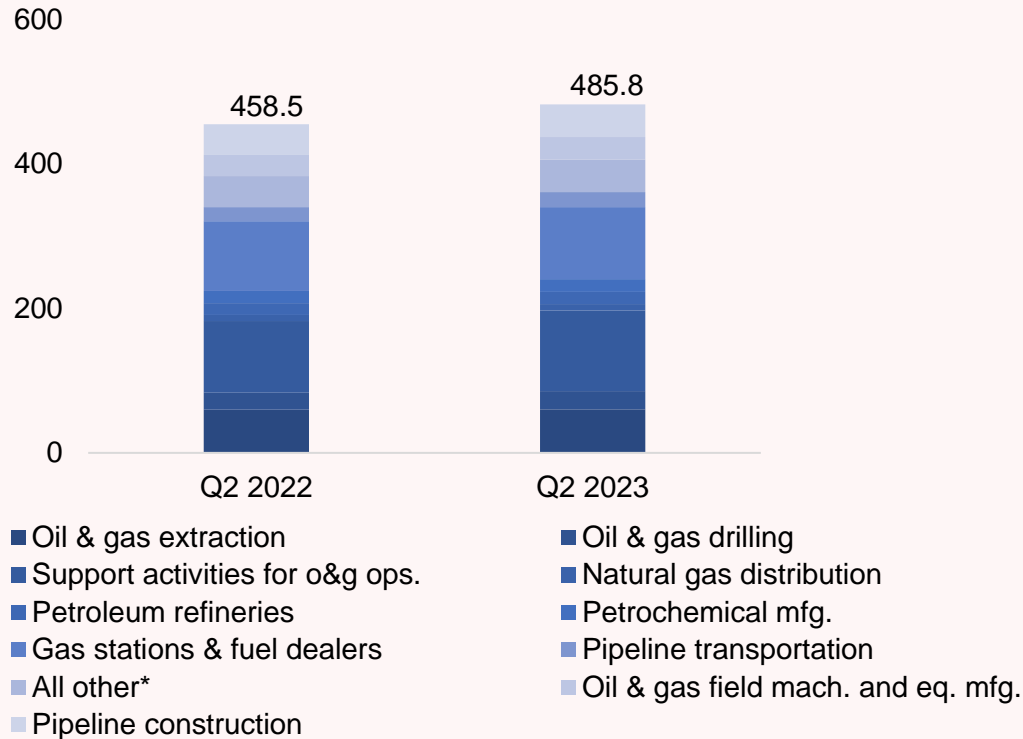
Texas' drilling rig activity remained steady on net for the week ended Jan. 12 per Baker Hughes. Texas had 276 oil-directed rigs (up by 2 rigs w/w) and 32 natural gas-directed rigs (down by 2 rigs w/w).

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

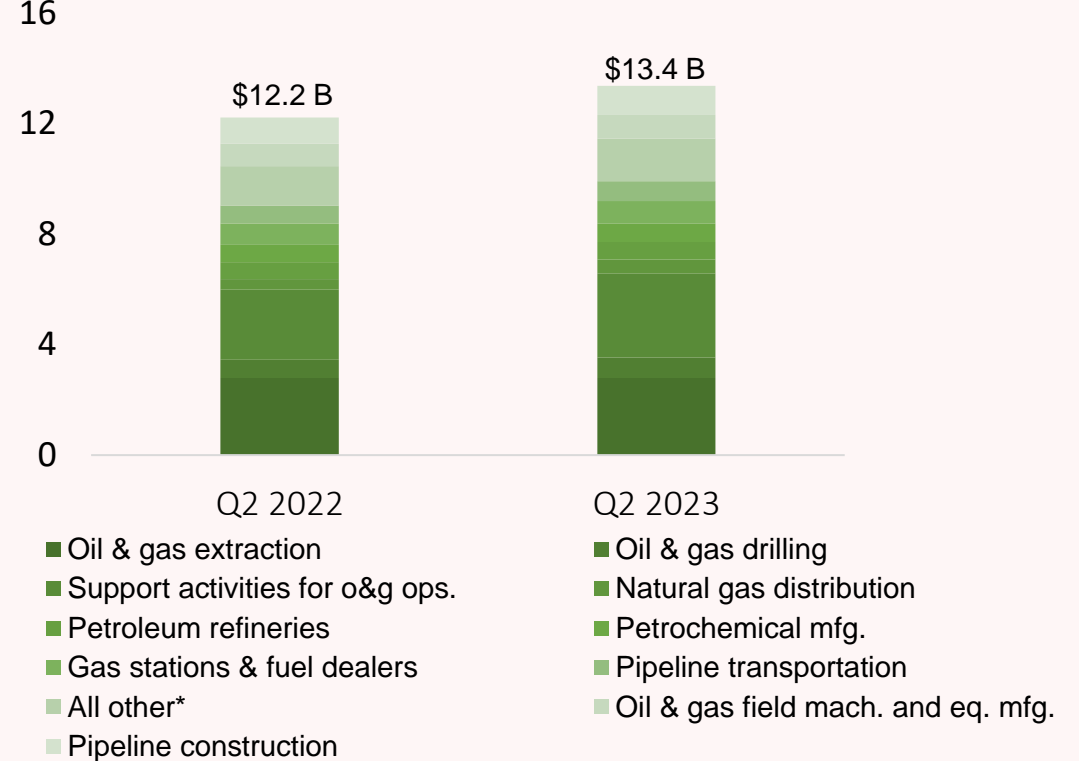
Texas Oil & Gas Industry Employment Rose by +6.0% y/y in Q2 2023

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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