



February 5, 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 5, 2024

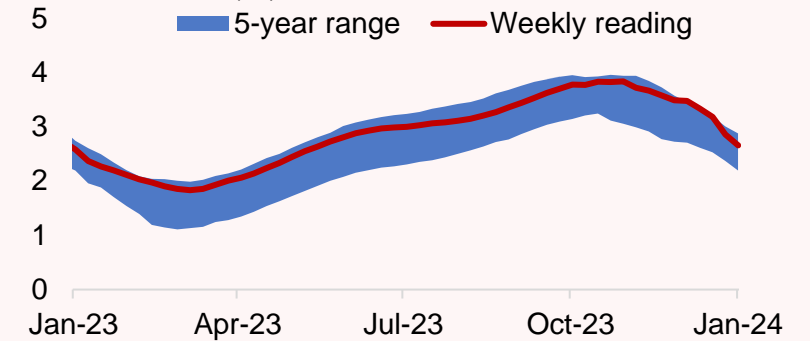
- **The U.S. economic outlook showed further improvement.** Consumer sentiment reached its highest level since July 2021, according to the University of Michigan's survey. Non-farm payroll additions saw a significant increase of 353,000 in January, with the unemployment rate remaining stable at 3.7%. The ADS Business Conditions Index, published by the Federal Reserve Bank of Philadelphia, indicated solid GDP growth in Q1 2024.
- **Despite supportive market fundamentals, oil prices decreased.** West Texas Intermediate (WTI) crude oil prices dropped to around \$72 per barrel for the week ended February 2, despite strong domestic demand, record-high petroleum net exports for the season, and historically low inventories. According to the U.S. Energy Information Administration's (EIA) data for the week ended Jan. 26, U.S. petroleum demand increased by 0.6 million barrels per day (mb/d) to 20.1 mb/d, landing in the middle of its 5-year range. Meanwhile, U.S. crude oil stocks rose by 1.2 million barrels week-over-week (w/w) but were among the lowest 10% in their 5-year range.
- **The U.S. natural gas market experienced a dichotomy: record low prices amid weakened storage levels.** The [Chart of the Week](#) highlights that domestic real natural gas futures prices reached their lowest levels on record for early February, even as working gas storage levels decreased by 23.5% over the last four weeks, according to the latest data (released on Feb. 1) by the EIA.

TXOGA Chart of the Week: U.S. Natural Gas Markets

- ▶ **Low natural gas storage levels amid seasonal trends.** The U.S. market has experienced seasonal demand and exports surpassing strong production, leading to a 23.5% decrease in natural gas working storage levels over the past four weeks.
- ▶ **Unprecedented low prices.** Typically, reductions in natural gas storage to below-normal seasonal levels have led to price increases. However, in a striking turn, natural gas futures prices fell by over 37% in the last three weeks, moving from \$3.31 per million British thermal units (mmBtu) before Winter Storm Heather to \$2.08 per mmBtu by Feb. 2. **This year's early February real natural gas futures prices are the lowest recorded since 1994 per EIA data.**
- ▶ **Market dynamics.** The significant price drop despite low storage levels suggests market confidence that heating demands will remain lower than usual for the rest of the winter—aligning with Punxsutawney Phil's [prediction](#)—or that the oil and natural gas industry's production will continue to be robust despite the price decrease.
- ▶ **Drilling activity slowed.** Notably, U.S. natural gas drilling has seen a 2.5% decrease year-to-date through Feb. 2, according to Baker Hughes, while oil drilling has edged down by 0.5% in the same period. This slowdown raises questions about the potential production response, especially if there isn't an increase in the utilization of previously drilled but uncompleted wells.

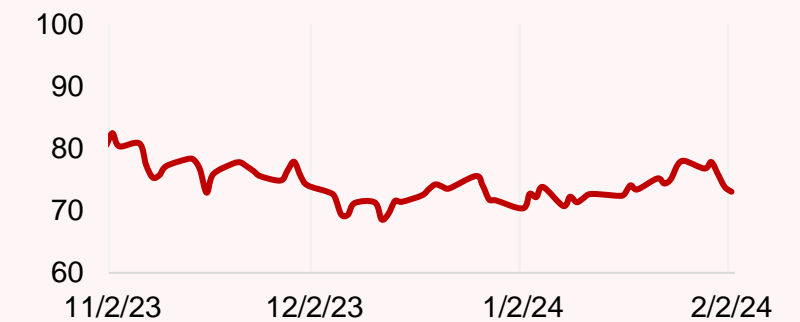
U.S. weekly working gas storage

Trillion cubic feet (tcf)



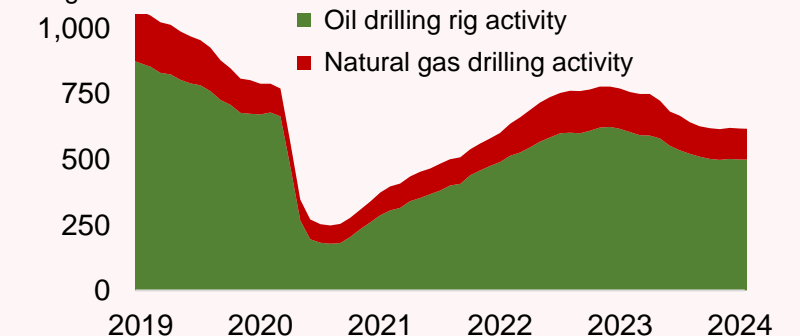
WTI crude prompt month futures prices

Dollars per barrel



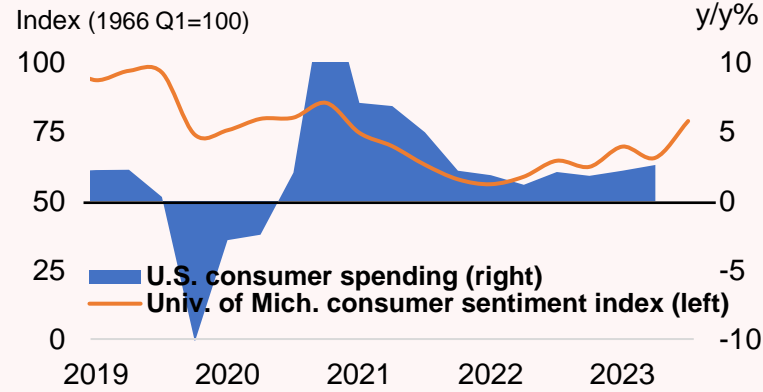
U.S. oil and natural gas drilling activity

Rigs



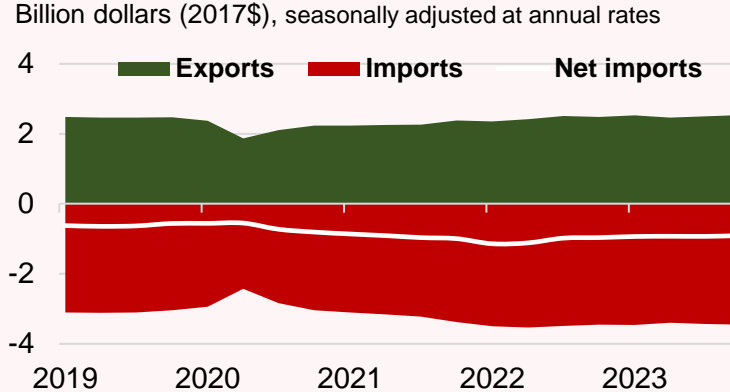
U.S. economic indicators

Consumer sentiment vs. spending



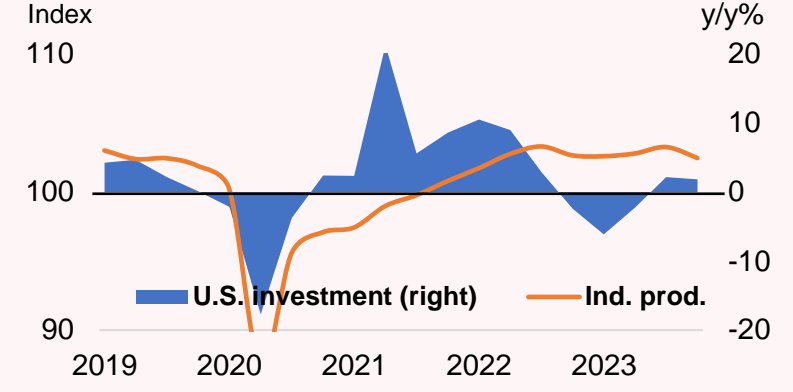
Consumer sentiment rose further. In its final reading for January 2024, the Univ. of Michigan consumer sentiment index was revised up (by 0.2) to 79.0, the highest reading since July 2021. This is consistent with the historical correspondence to consumer spending growth that rose by 2.6% y/y in Q4 2023.

Real net exports of goods and services



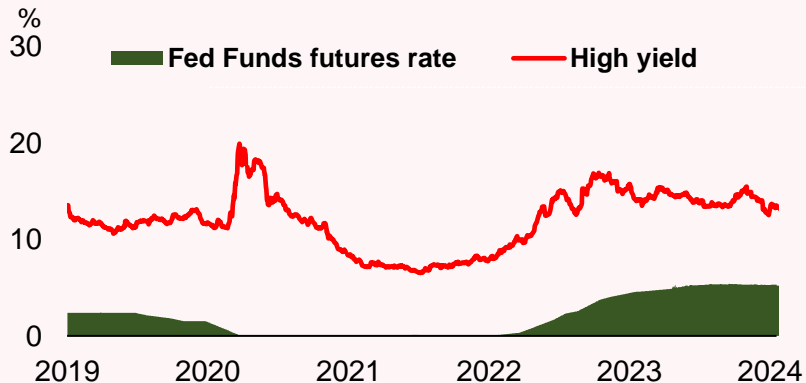
The U.S. trade deficit narrowed in Q4 2023. The U.S. real trade deficit ran at an annualized rate of \$908 billion in Q4 2023, down from \$931 billion in Q3 per the U.S. Bureau of Economic Analysis. On a nominal basis, the trade surplus for petroleum and products ran at annualized rate of \$16 billion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

Industrial production and investment growth



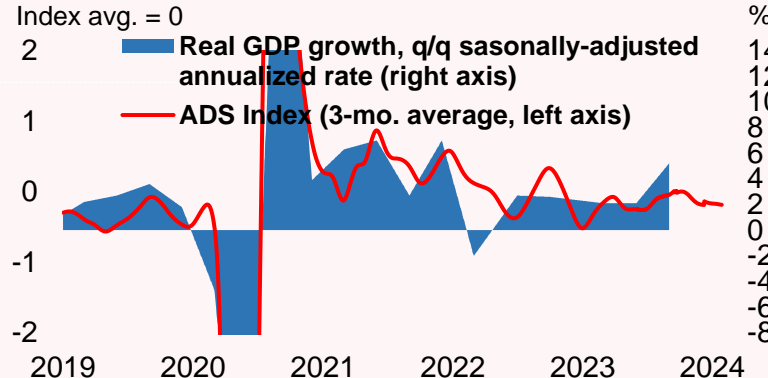
Investment growth continued in Q4 2023. Consistent with industrial production, economy-wide was revised up to 2.1% y/y for Q3 and rose by 1.8% y/y in Q4 per the Bureau of Economic Analysis. Industrial production has remained flat in recent months, and in December 2023 it rose by 0.1% m/m and 1.0% y/y.

Fed Funds rate and CCC and lower corporate bond yields



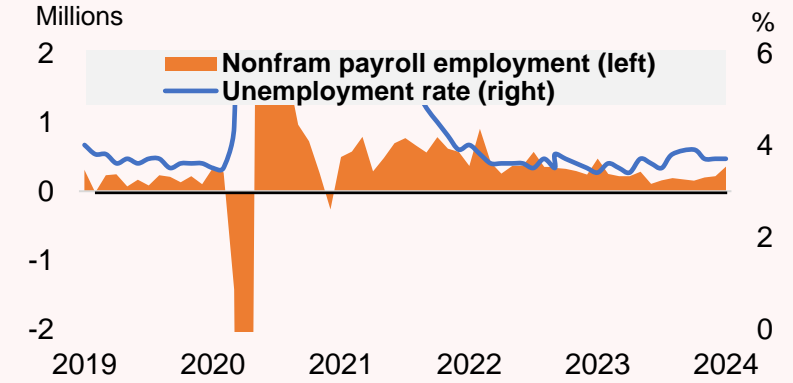
Bond premium for low credit quality increased. High yield (HY) rates reflect debt costs for firms with below-investment grade credit quality. For the week ended Feb. 2, HY rates of 13.5% rose by 0.25% w/w while the Fed Funds futures rate held steady at 5.2%.

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

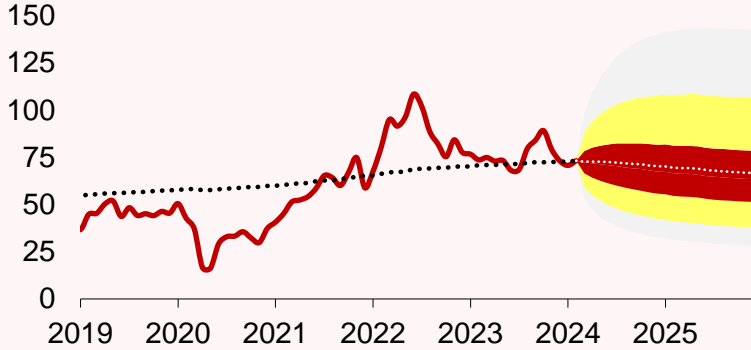


Steady unemployment rate, increased payrolls. The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate held steady at 3.7% in January per BLS, while non-farm payrolls rose by 353,000.

U.S. oil market indicators

WTI crude oil price mean reversion analysis

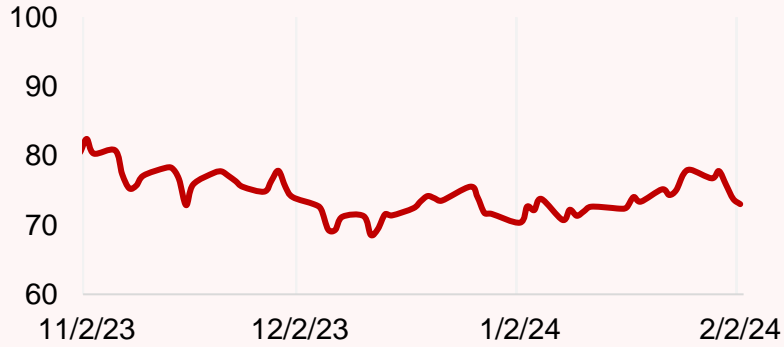
Dollars per barrel (2024\$)



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

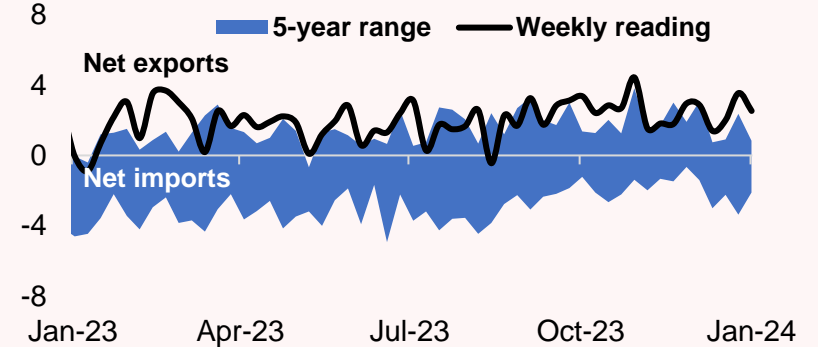
Dollars per barrel



WTI crude oil prices fell to nearly \$72 per barrel for the week ended Feb. 2 despite solid domestic demand and historically low inventories.

U.S. petroleum net exports (imports)

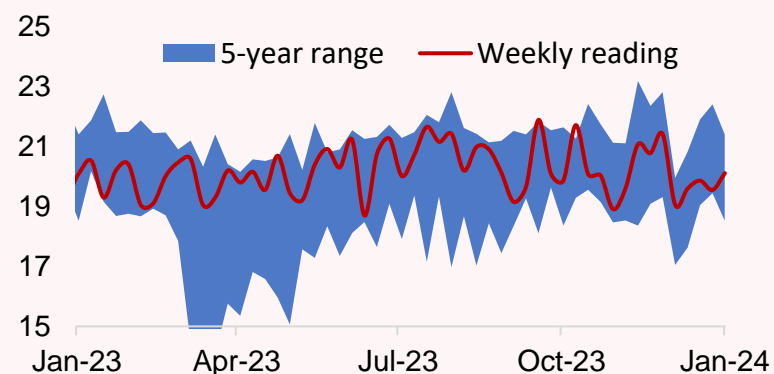
Million barrels per day, mb/d



Petroleum net exports fell. The U.S. was a petroleum net exporter of 2.5 mb/d for the week ended Jan. 26, down by 1.0 mb/d w/w but a record for this time of year.

U.S. petroleum demand

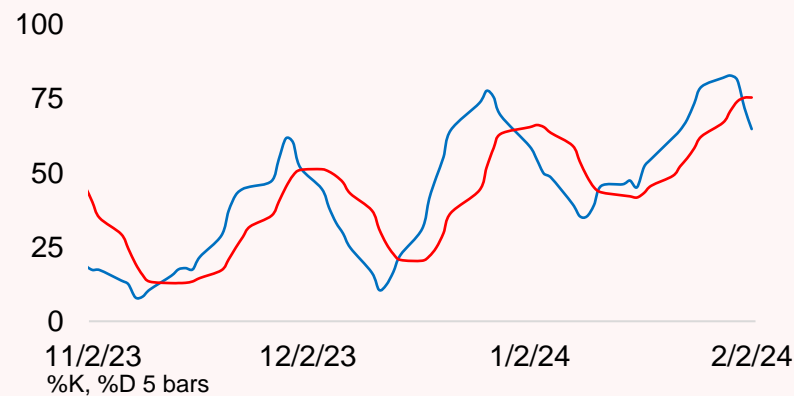
Million barrels per day (mb/d)



Petroleum demand increased. U.S. petroleum demand, as measured by deliveries, rose by 0.6 mb/d w/w to 20.1 mb/d for the week ended Jan. 26 to the middle of the 5-year range.

WTI crude prompt month futures slow stochastic

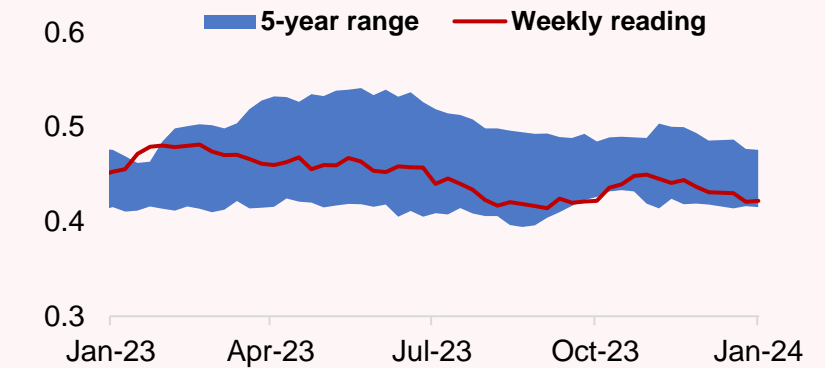
Index level



Price momentum strengthened rose and then paused for the week ended Feb. 2.

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

Billion barrels (mb)

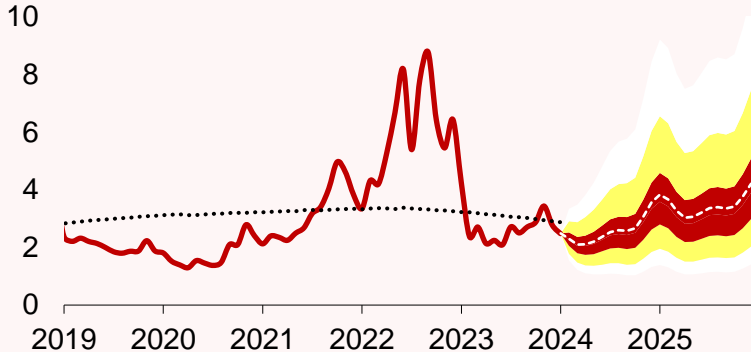


Inventories edged up. U.S. ending stocks of crude oil excluding the Strategic Petroleum Reserve (SPR) increased by 1.2 million barrels (mb) for the week ended Jan. 26 but remained in the lowest 10% of the 5-year range.

U.S. natural gas market indicators

Natural gas price mean reversion analysis

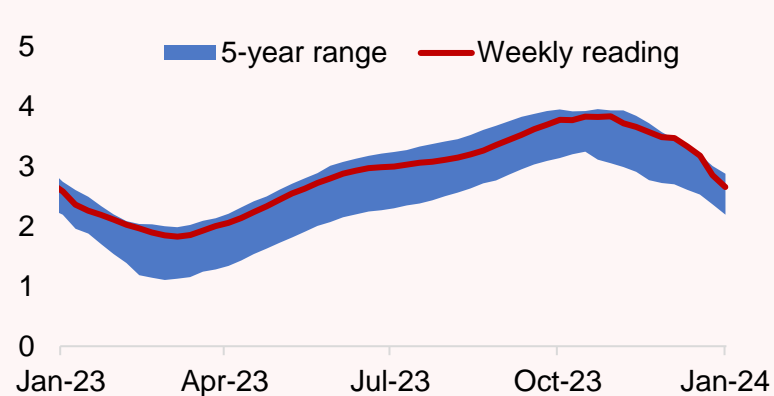
Dollars per mmbtu (2024\$)



Natural gas futures prices fell below their historical mean. Natural gas futures prices through October 2024 fell below their historical mean. Futures prices progressively rise beginning in April 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)



Storage dropped below its 5-year range. Working gas in underground storage (2.7 tcf as of Jan. 26) fell by 6.9% w/w and lower within the 5-year range.

Natural gas prompt month futures prices

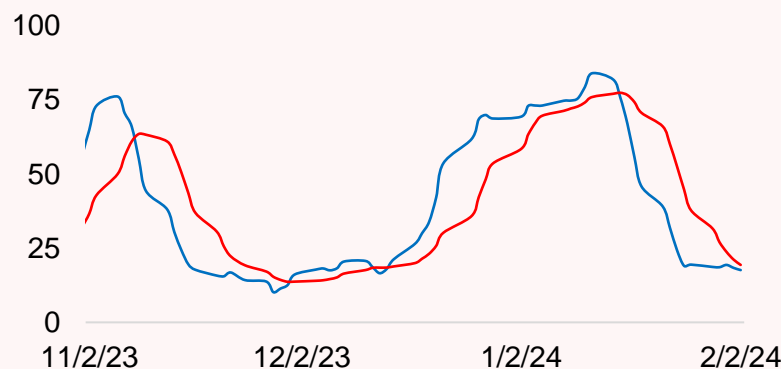
Dollars per million Btu



Natural gas prices at Henry Hub remained dropped to just over \$2 per million Btu for the week ended Feb. 2 despite continued storage withdrawals and historically low inventories.

Natural gas futures slow stochastic

Index level

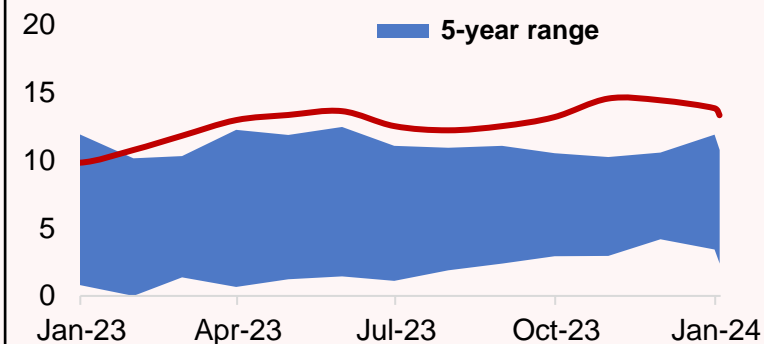


%K, %D 5 bars

Natural gas price momentum decreased and then paused during the week ended Feb. 2.

U.S. natural gas net exports

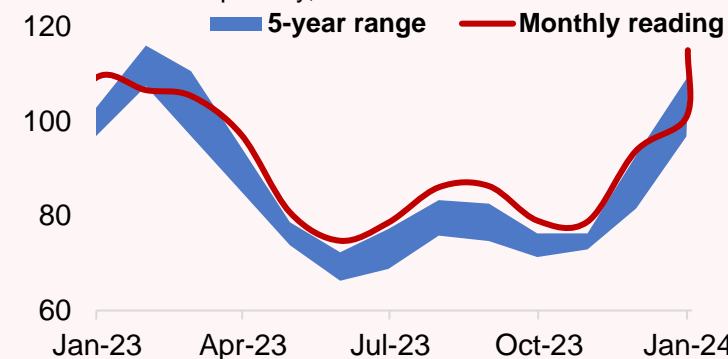
Billion cubic feet per day, bcf/d



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

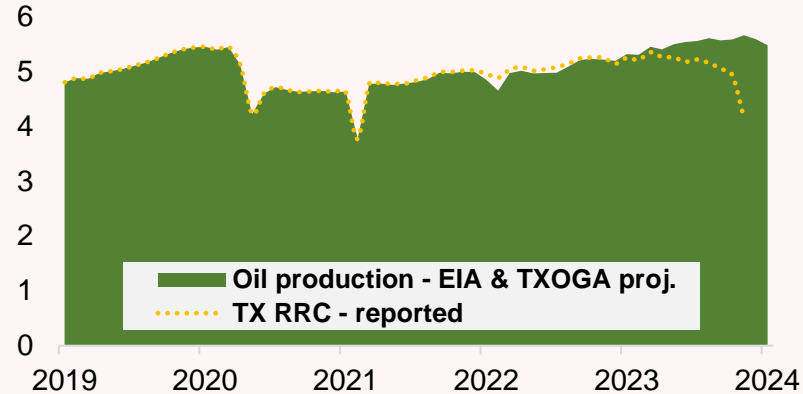


January consumption estimated by EIA to exceed its 5-yr. range. In its January projections, EIA estimated that natural gas consumption rose from the top third of its 5-year range in December to exceeding it in January.

Texas' oil and natural gas production

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

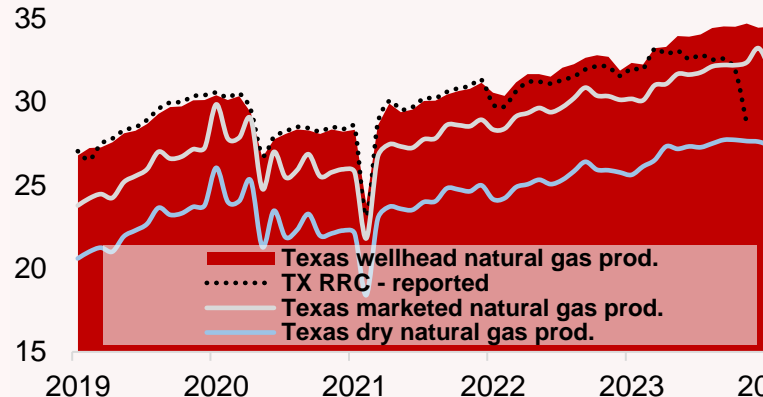
Million barrels per day (mb/d)



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

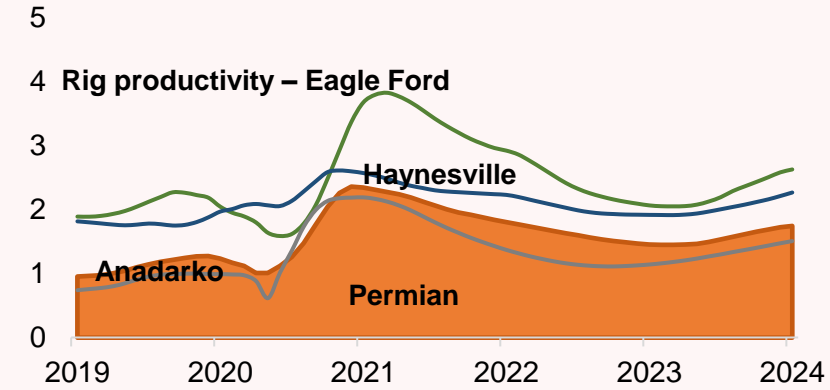
Billion cubic feet per day (bcf/d)



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

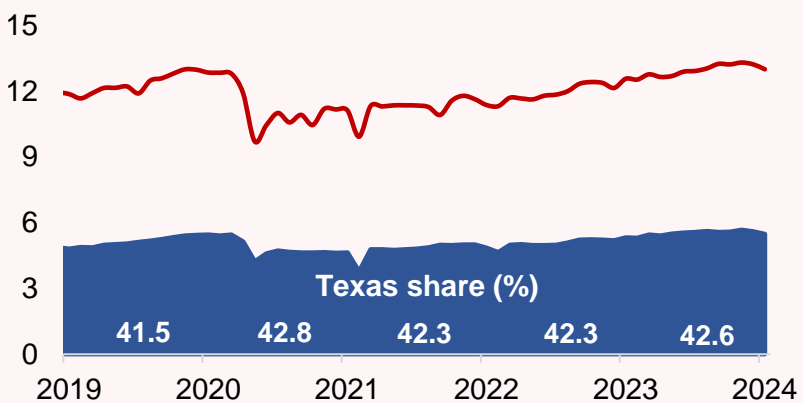
Thousand barrels per day oil-equivalent, kb/dae



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

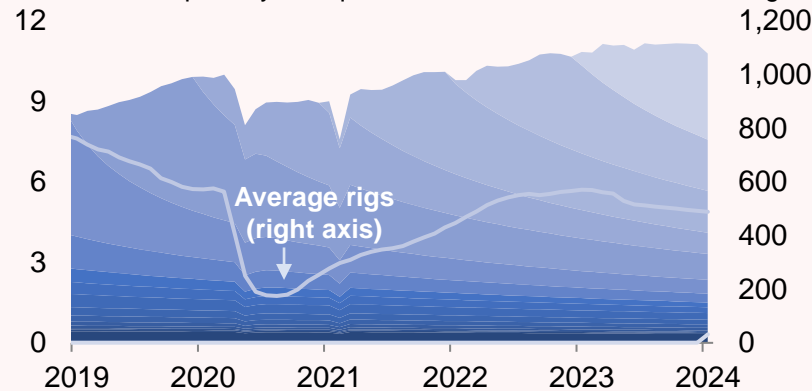
Million barrels per day (mb/d)



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

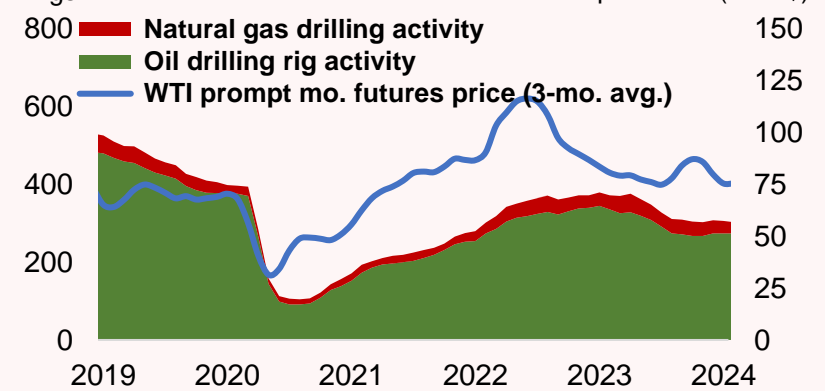
Million barrels per day oil-equivalent



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\$)



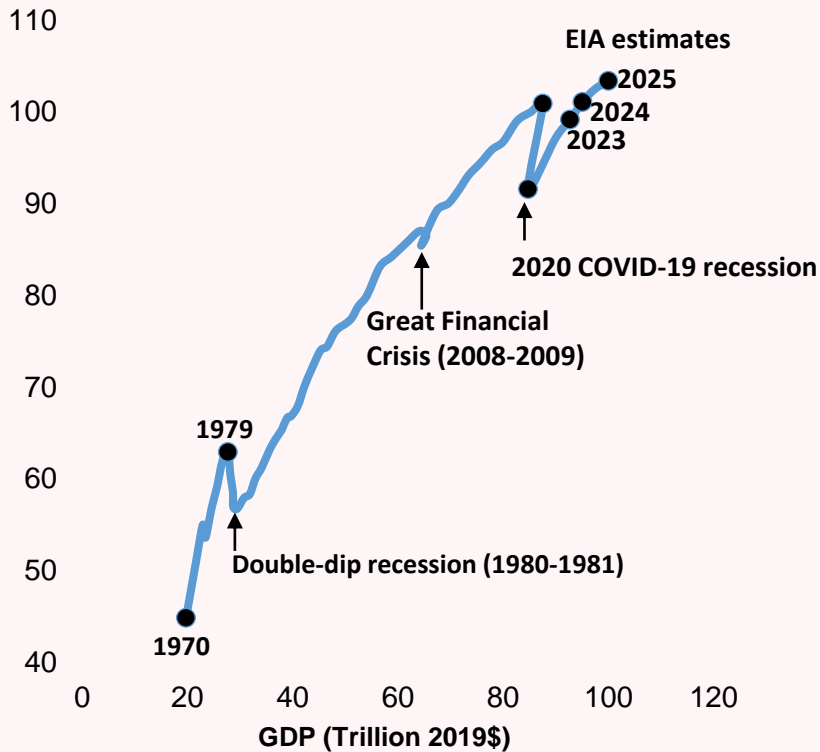
Texas' drilling rig activity decreased on net for the week ended Feb. 2 per Baker Hughes. Texas had 274 oil-directed rigs (up by 1 rig w/w) and 29 natural gas-directed rigs (down by 2 rigs w/w).

Global Oil Market Balance Projections to 2025 by EIA

- Record-high demand. Global oil demand is expected by the EIA rise from a record 101.1 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 \$83.55 per barrel currently.

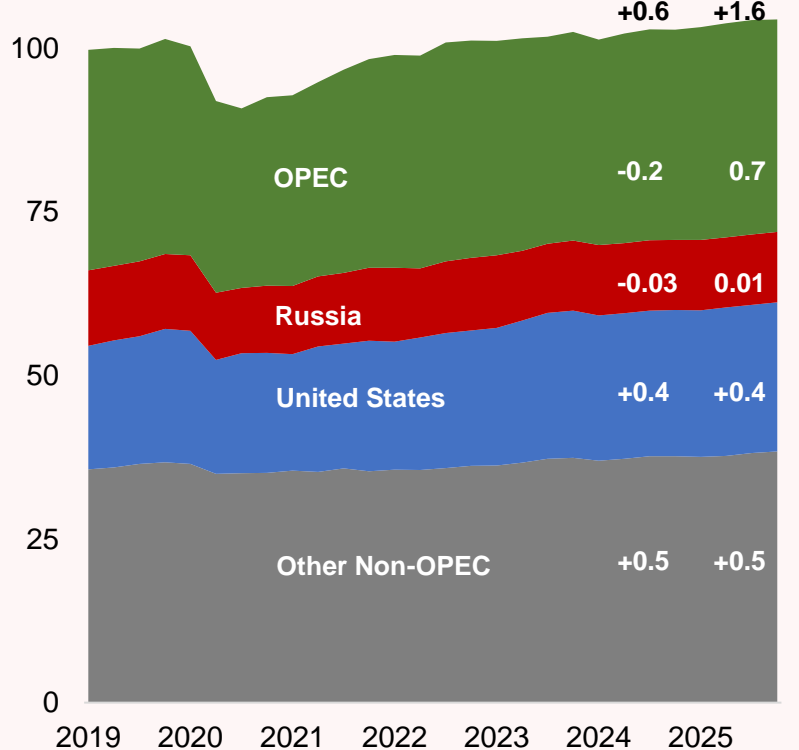
Global oil demand and GDP

Million barrels per day (mb/d)



Oil production by country/region

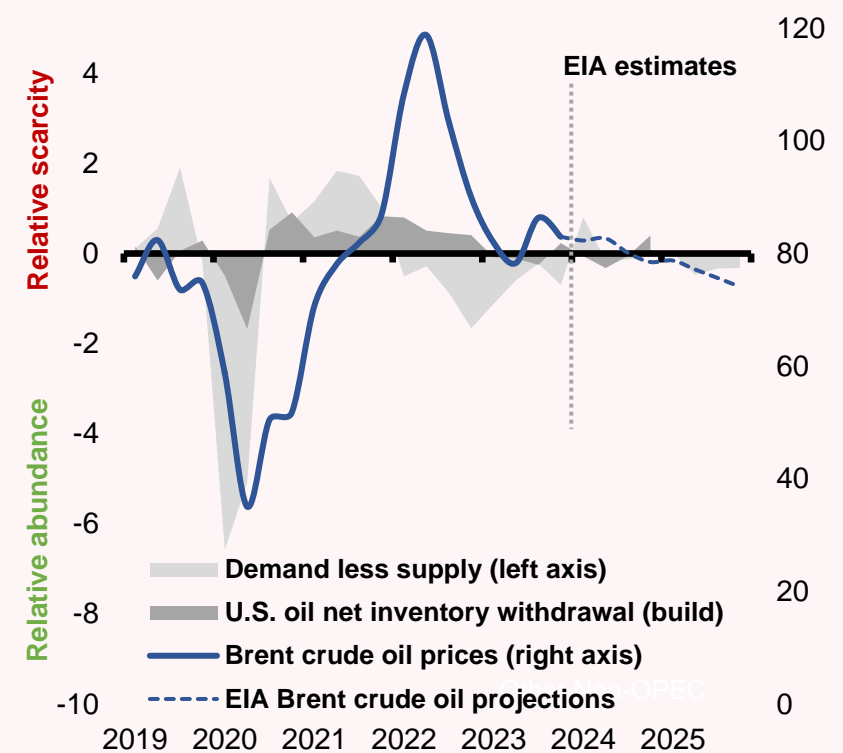
Million barrels per day, mb/d



Global demand/supply & Brent prices

Million barrels per day (mb/d)

2024\$/Bbl

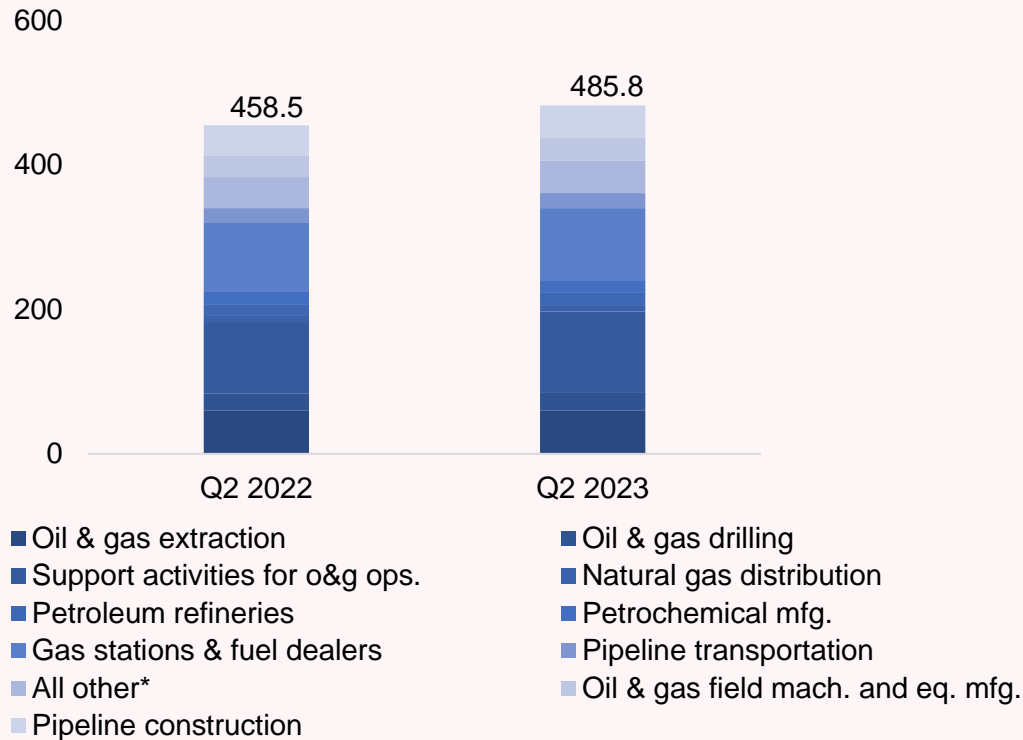


Texas' oil and natural gas industry's jobs and wages rose solidly

- ▶ 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

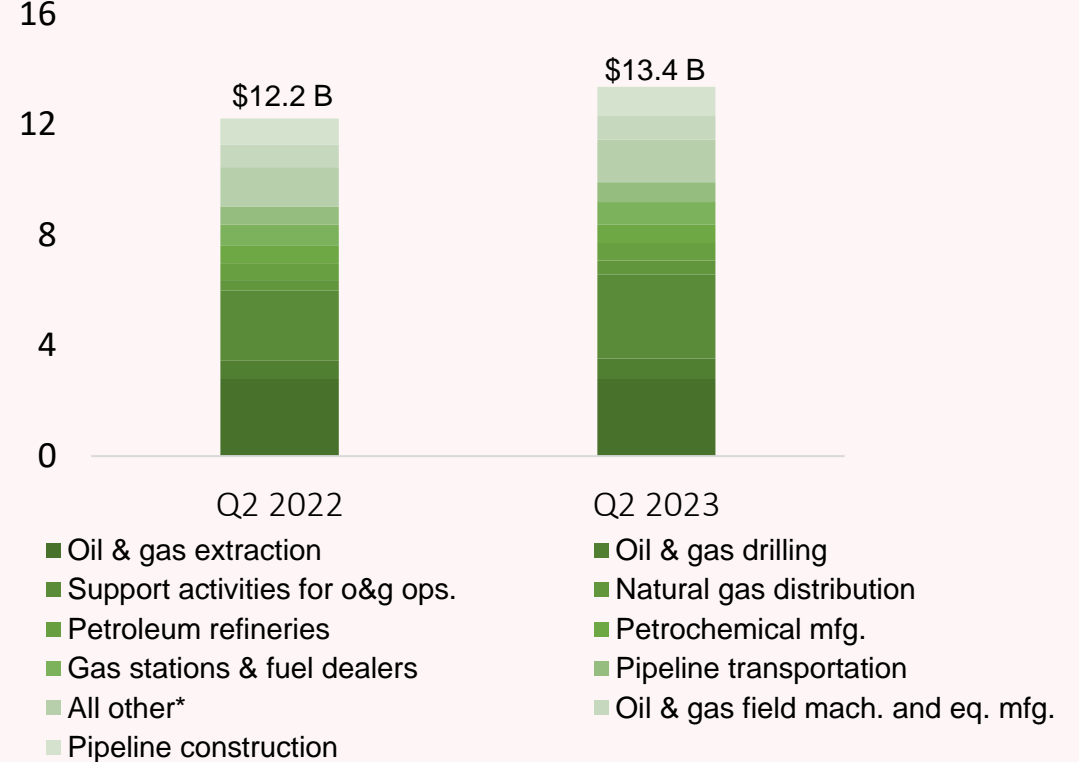
Texas Oil & Gas Industry Employment Rose by +6.0% y/y in Q2 2023

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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