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 July 24, 2023

- **Business conditions improved from weak levels.** The Bureau of Economic Analysis’ initial reading of Q2 2023 GDP growth comes at the end of July, but three indicators – the Univ. of Michigan’s consumer sentiment index, the ISM PMIs for manufacturing and services, and the Philadelphia Fed’s Aruoba-Diebold-Scotti (ADS) Business Conditions Index – broadly showed improvement from historically weak levels.

- **Oil market fundamentals tightened further.** As the U.S. Energy Information Administration (EIA) upgraded its global oil demand projections – including record-high global demand of 101.2 million barrels per day (mb/d) for this year – the Weekly Petroleum Status Report (WPSR) showed that the U.S. summer driving is off to a solid start (see the Chart of the Week), while domestic oil production remained flat, and U.S. ending stocks of crude oil fell to their lowest for the month of July since 1986.

- **Natural gas prices rebounded.** After rising by 22.7% m/m in June, natural gas prices at Henry Hub of $2.76 per mmBtu as of July 20 reached their highest level this month so far. Prices were about on par with where they were at the end of June, but remained historically low as markets assess impact of slower drilling, which for the U.S. in total fell to its lowest since March 2022 per Baker Hughes.
In the four weeks since the summer of 2023 officially began, the driving season has started strongly with average gasoline deliveries of 9.1 million barrels per day (mb/d), up by 4.7% y/y from a year ago.

Jet fuel has also risen by 8.4% y/y, in line with a 7.4% y/y increase in flights per Flightradar24.

Distillate demand for trucking and industrial use was 3.4 mb/d, down by 8.2% y/y in line decreased activity per DAT Trucking Industry Trends.

Other oils – including naphtha, gasoil, propane and propylene – that are used in refining and petrochemicals were 5.8 mb/d (28.5% of U.S. petroleum demand) and grew by 3.4% y/y.

In total, these show U.S. petroleum demand of 20.3 mb/d over the past four weeks, up by 1.0% y/y to their highest since 2021, beating historical averages for the same period over the past 5 and 10 years.
Consumer sentiment rebounded in July to its strongest level since Sep. 2021. The Univ. of Michigan survey of consumers has historically corresponded with the changes in U.S. consumer spending, which represents 68% of GDP. The improved sentiment has historically corresponded with positive spending growth.

The large U.S. trade deficit has dragged on growth. The U.S. real trade deficit continued in Q1 2023 at an annualized rate of $1.24 trillion, which if sustained would represent the second largest annual deficit in 94 years on record.

Industrial production was flat in Q2 2023. Industrial production growth (-0.4% y/y in June, rendering zero change for Q2) and capacity utilization (78.9% in June) historically correspond with weak U.S. investment changes.

The unemployment fell, but payroll growth slowed. The employment situation is a lagging indicator of GDP growth. The U.S. unemployment rate fell to 3.6% in June per BLS, while non-farm payrolls rose by 209,000, which was the lowest monthly increase since Dec. 2019.
**U.S. oil market indicators**

**WTI crude oil price mean reversion analysis**
Dollars per barrel (2023$)

Mean reversion analysis can be useful in assessing short-term market actions. The historical mean reversion target exceeds prompt month futures prices as of July 21. Futures prices remain slightly backwardated, and confidence intervals based on past prices show the potential for greater upside than downside.

**WTI crude prompt month futures prices**
Dollars per barrel

With reports of tightened oil supply/demand fundamentals, China’s stimulus efforts, and optimism that Federal Reserve rate hikes may end soon, oil prices neared $77 per barrel as of July 21.

**U.S. petroleum net exports (imports)**
Million barrels per day, mb/d

Steady global demand for U.S. oil. Petroleum net exports were 1.3 million barrels per day (mb/d) for the week ended July 14. In 2023 so far, there has only been one week (Feb. 3) with petroleum net imports, so 2023 has remained on track to set a U.S. exports’ record.

**U.S. petroleum demand**
Million barrels per day (mb/d)

Back towards the top of the 5-year range. In the week following the July 4 holiday, U.S. petroleum demand, as measured by deliveries, 20.8 mb/d for the week ended July 14 – 85th percentile towards the top of its 5-year range.

**WTI crude prompt month futures slow stochastic**
Index level

Oil price momentum slowed but did not turn down despite oil prices reaching their highest level since April.

**U.S. ending stocks of crude oil (commercial & SPR)**
Million barrels (mb)

Lowest inventories for July since 1986. Crude oil ending stocks fell by 0.7 mb for the week ended July 14, 2023, but remained historically low.

Sources: EIA; BLS; TXOGA analysis
Natural gas price mean reversion analysis
Dollars per mmBtu (2023$)

Natural gas futures prices of $2.76 per mmBtu for Aug. 2023 delivery (rising to $3.78 per mmBtu for Jan. 2024 delivery) came in line with their mean reversion target. Historical variation has continued to show more potential upside than downside.

Natural gas prompt month futures prices
Dollars per million Btu

After rising by 22.7% m/m in June, natural gas prices at Henry Hub of $2.76 per mmBtu as of July 20 reached their highest level so far this month.

Natural gas futures slow stochastic
Index level

Natural gas price momentum fell during the week ended July 21 but appeared to turn at the end of the week.

U.S. natural gas consumption
Billion cubic feet per day, bcf/d

Natural gas total consumption has exceeded its five-year historical range each month since March 2023.

sources: EIA; CME Group; BLS; TXOGA analysis
Lower prices have recently corresponded with less drilling activity in Texas, as of June 23, with 306 oil-directed rigs and 39 gas-directed rigs.

Following record high 5.86 mb/d of Texas crude oil production in Jan., production apparently slipped to 5.40 mb/d in March per EIA. Based on weekly Texas drilling activity and U.S. production, TXOGA estimates that Texas crude oil production has remained at 5.4 mb/d in June.

Texas natural gas production has remained near its record high levels. EIA reported Texas’ production at 33.0 bcf/d of gross withdrawals and 30.5 bcf/d of marketed production. TXOGA estimates gross withdrawals rose to 33.1 bcf/d in June.

As of June 2023, Texas has driven 75% of U.S. crude oil production so far this year and accounted for an increased share of total U.S. oil production.

EIA’s drilling productivity report estimates that production across Texas shale basins -- Eagle Ford and parts of the Permian, Haynesville, and Anadarko -- set a record high in Q2 2023 but have appeared to level off in July.

EIA-estimated rig productivity has steadied (decreased of 0.8% y/y in July 2023) across oil-producing basins at levels that are 18% higher above pre-pandemic productivity from Dec. 2019.
Texas’ oil and natural gas industry employment and wages have risen solidly.

Texas Oil & Gas Industry Employment Rose by +8.3% y/y

Texas Oil & Gas Industry Wages Rose by +11.0% y/y

Heatmap of employment changes by county

* 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.
Global oil market balance at-a-glance

- Led by resurgent emerging markets, global oil demand is expected by EIA to reach a record 101.2 mb/d in 2023 and 102.8 mb/d in 2024.
- EIA reduced its oil production 2023 projection by 0.2 mb/d to 1.3 mb/d but raised its 2024 estimate by the same amount to 1.5 mb/d. These are volumes needed to balance global markets in their view. The U.S. is assumed to be largest single contributor this year.
- For global oil inventories, EIA's shifted from projecting a balanced market in Q3 2023 to net stock draws of 1.0 mb/d, corresponding with Brent crude oil prices nearly $80 per barrel in Q3 rising to $85 per barrel in 2024 per their view.