What drives crude oil prices?

An analysis of 7 factors that influence oil markets, with chart data updated monthly and quarterly

September 12, 2023 | Washington, DC
Crude oil prices react to a variety of geopolitical and economic events

- Iraq invades Kuwait
- Saudis abandon swing producer role
- Iraqi revolution
- Arab Oil Embargo
- U.S. spare capacity exhausted
- Iran-Iraq War
- Asian financial crisis
- OPEC cuts targets 1.7 mmbpd
- OPEC cuts targets 4.2 mmbpd
- 9-11 attacks
- OPEC production quota unchanged
- Global financial collapse
- Global pandemic reduces oil demand
- U.S. spare capacity exhausted
- Iran-Iraq War
- Saudis abandon swing producer role
- Asian financial crisis
- OPEC cuts targets 1.7 mmbpd
- OPEC cuts targets 4.2 mmbpd
- 9-11 attacks
- Global financial collapse
- Global pandemic reduces oil demand

Data sources: U.S. Energy Information Administration, Refinitiv An LSEG Business
World oil prices move together due to arbitrage

Data sources: Bloomberg, Refinitiv An LSEG Business
Crude oil prices are the primary driver of petroleum product prices.

Data source: Short-Term Energy Outlook
Economic growth has a strong impact on oil consumption.
Changes in expectations of economic growth can affect oil prices

Note: Starting in January of each year, each line shows the expected forecast of GDP growth for the specified calendar year, which tends to move toward the actual realized growth outcome as the year progresses. Expectations continue to evolve into the next calendar year as revised GDP data become available (e.g., 2021 GDP expectations are revised even during 2022).

Data source: Oxford Economics
In OECD countries, price increases have coincided with lower consumption.
Rising oil prices held down global oil consumption growth from 2005-2008, despite high economic growth
Changes in non-OPEC production can affect oil prices

Data source: Short-Term Energy Outlook
Non-OPEC supply expectations indicate changes in market sentiment concerning oil supply

Note: Starting in January of each year, each line shows the expected forecast of non-OPEC supply for the specified calendar year, which tends to move toward the actual realized supply outcome as the year progresses.

Data source: Short-Term Energy Outlook
Changes in Saudi Arabia crude oil production can affect oil prices

Data sources: U.S. Energy Information Administration, Refinitiv An LSEG Business
Unplanned supply disruptions tighten world oil markets and push prices higher

Data sources: U.S. Energy Information Administration
During 2003-2008, OPEC’s spare production levels were low, limiting its ability to respond to demand and price increases.
The years 2003-2008 experienced periods of very strong economic and oil demand growth, slow supply growth and tight spare capacity.

Data source: Short-Term Energy Outlook

*World Capacity = OPEC capacity plus non-OPEC production
Inventory builds go hand-in-hand with increases in future oil prices relative to current prices (and vice versa).

Data source: Short-Term Energy Outlook
Open interest in crude oil futures grew over the last decade as more participants entered the market.
Physical participants’ (producers, merchants, processors, and end users) U.S. futures market contract positions

Data source: Commodity Futures Trading Commission, Commitments of Traders
Money managers tend to be net long in the U.S. oil futures market

Data source: Commodity Futures Trading Commission, Commitments of Traders
Crude oil plays a major role in commodity investment
Commodity index assets under management and Bloomberg commodity index level

Lean Hogs: 1.8%
Live Cattle: 3.6%
Nickel: 2.7%
Zinc: 3.1%
Aluminum: 4.2%
Copper: 5.4%
Silver: 4.8%
Gold: 15.0%
Coffee: 2.7%
Sugar: 2.8%
Wheat: 2.9%
Soybean Meal: 3.5%
Soybean Oil: 3.2%
Natural Gas: 8.0%
Crude Oil: Brent: 7.0%
Gas Oil: 2.6%
Gasoline: 2.2%
Heating Oil: 2.0%
Soybeans: 5.8%
Corn: 5.6%

Data source: Bloomberg
Commodity index investment flows have tended to move together with commodity prices
Correlations (+ or -) between daily price changes of crude oil futures and other commodities generally rose in recent years.

Note: Correlations computed quarterly
Correlations (+ or -) between daily returns on crude oil futures and financial investments have also strengthened.

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Note: Correlations computed quarterly

< -0.65  -0.65 to -0.4  -0.4 to -0.25  -0.25 to 0.25  0.25 to 0.4  0.4 to 0.65  > 0.65

Negative correlation  Positive correlation
For more information


Short-Term Energy Outlook | www.eia.gov/steo

Annual Energy Outlook | www.eia.gov/aeo

International Energy Outlook | www.eia.gov/ieo

Monthly Energy Review | www.eia.gov/mer

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