

## Oil Tracker: Market Focus Still on Downside and Low Volatility Despite Middle East Tensions

Brent prices recovered slightly from the high 60s to just over \$70 given mixed geopolitical developments, but oil markets remain focused on price downside. On the negative side for prices, the Kremlin backed the idea to not hit energy infrastructure for 30 days, and the US said talks for a full Ukraine ceasefire would start immediately, potentially incrementally reducing the probability of a near-term tightening in Russia sanctions. On the positive side for prices, a nearly two-month Gaza ceasefire ended, Israel launched overnight airstrikes, the US ramped up military strikes on Yemen-based Houthi militants to secure safe passage in the Red Sea and claimed Iran would be held responsible for any continued Houthi attacks, and the Trans Niger pipeline in Nigeria (which handles roughly 15% of Nigeria's oil export flows) was shut following an explosion.

Finally, despite rising tensions in Middle East, Brent implied volatility remains very low relative to our model-implied fair value, and option markets are focused on downside with the put options implied volatility skew rising to a multi-year high. While we reduced our Brent forecast range by \$5/bbl to \$65-80, we expect oil prices to edge up in coming months, and think that market pricing of volatility and of the upside risk from potentially lower sanctioned supply remains too low. That said, tariff escalation and high spare capacity skew the medium-term risks to our forecast to the downside.

Our trackable net supply decreased by 0.5mb/d as our first February reading of OECD Europe demand nowcast rose 0.7mb/d on seasonal demand increases (although our nowcast remains 0.2mb/d below our February expectation). This demand increase outweighed increases from our Russia and Iran production nowcasts which both edged up by 0.1mb/d. Our OECD commercial stocks nowcast rose a substantial 39mb following the March IEA Oil Market Report, but total visible stocks remain at their lowest level since July 2022 on a 45-day moving average (keeping the Brent 1M/36M timespread \$4/bbl below its inventory-implied fair value). Meanwhile, oil net managed money fell further to the 2nd percentile in a sample from 2011 to the present.

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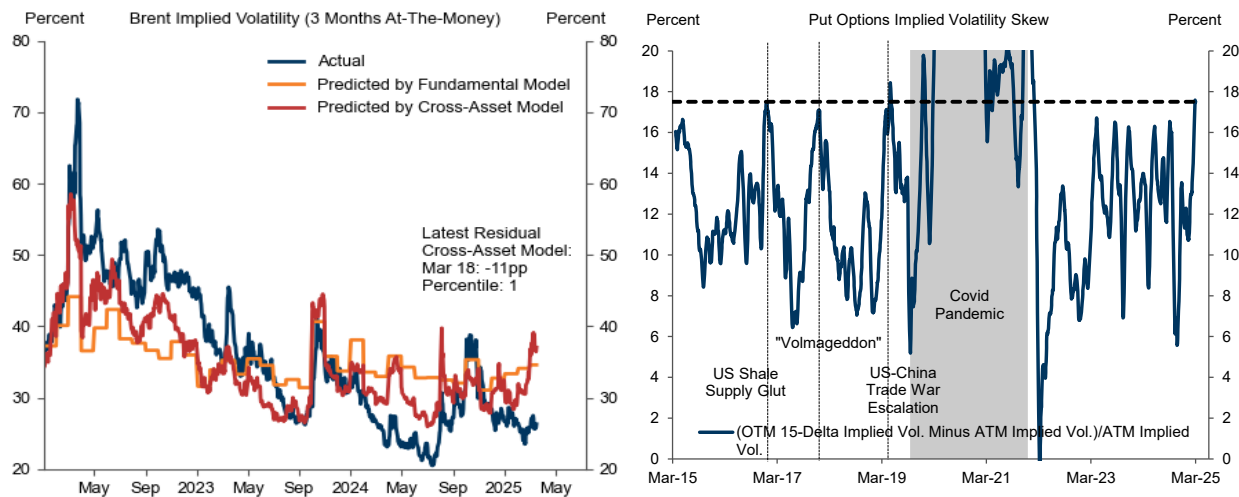
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### Chart of the Week

**Exhibit 1: While Brent Implied Volatility Remains Well Below our Modeled Fair Value, Options Markets Are Focused on Downside With the Put Options Implied Volatility Skew Rising to a Multi-Year High**



Put options implied volatility skew is shown as a 15-day moving average

Source: ICE, Goldman Sachs Global Investment Research

**Key Trends**

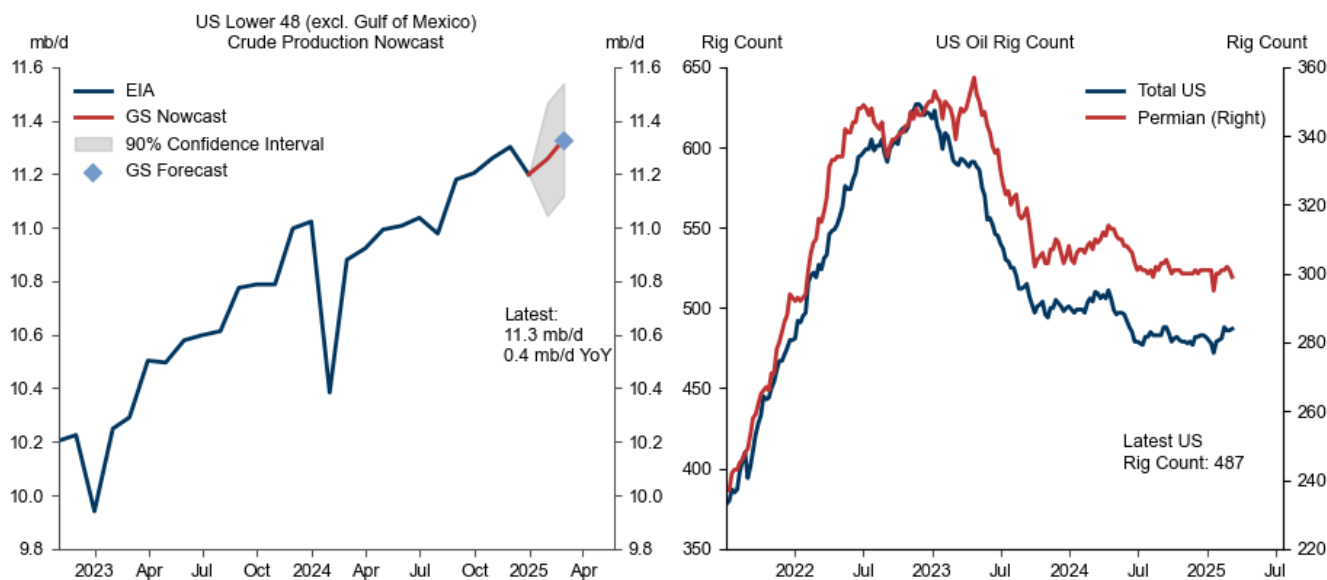
- On the positive side for prices:
  - Our global commercial visible inventories estimate declined 12mb last week and remains at the lowest level since July 2022 on a 45-day moving average
  - We estimate that the Brent 1M/36M timespread is \$4/bbl below its inventory-implied fair value
  - Oil net managed money positioning decreased by 33mb last week and stands at its 2nd percentile, leaving room for mean-reverting increases
- On the negative side for prices:
  - Our OECD commercial stocks nowcast was revised up by 39mb
  - Our Russia total liquids production nowcast (42-day moving average) edged up 0.1mb/d to 10.6mb/d on higher seaborne exports but stands in line with our March expectation
  - Our Iran crude production nowcast edged up 0.1mb/d to 3.5mb/d, and is now 0.1mb/d above our March expectation
- Northwest-Europe net refining margins edged down but remain above their seasonal averages amidst continued Russian refinery disruptions
- The Brent implied volatility remained low last week standing 11pp below the fair value from our cross-asset model

**Exhibit 2: Our Trackable Net Supply Decreased by 0.5mb/d Week-on-Week Led by a Seasonal Increase in OECD Europe Demand**

Indicator	Current value	Change from last week	Change from 4 weeks ago
<b>Supply</b>			
US Lower 48 crude nowcast (mb/d)	11.3	0.0	0.0
Canada liquids nowcast (mb/d)	6.4	0.0	-0.2
Russia liquids nowcast (mb/d)	10.6	0.1	0.4
Iran crude nowcast (mb/d)	3.5	0.1	0.0
Iraq crude nowcast (mb/d)	4.2	0.0	0.0
Libya crude nowcast (mb/d)	1.3	0.0	-0.1
<b>Demand</b>			
China oil (mb/d)	16.6	0.0	0.4
OECD Europe oil	13.4	0.7	0.7
<b>Total change in trackable imbalance, Supply-Demand (mb/d)</b>		<b>-0.5</b>	<b>-1.0</b>
<b>Inventories</b>			
OECD commercial stocks (mb)	2759	39	32
Global commercial stocks (mb)	4598	-12	-29
<b>Timespreads</b>			
Brent 1M/36M gap with fair value (pp)	-6	4	3
Average crude basis (% change in pp)	0.9	-0.1	-0.4
Average crude prompt timespread (% change in pp)	0.7	-0.2	0.1
<b>Volatility</b>			
Brent implied volatility gap with modeled fair value (pp)	-11	1	-4
<b>Oil net managed money positioning (mb)</b>	<b>224</b>	<b>-33</b>	<b>-219</b>

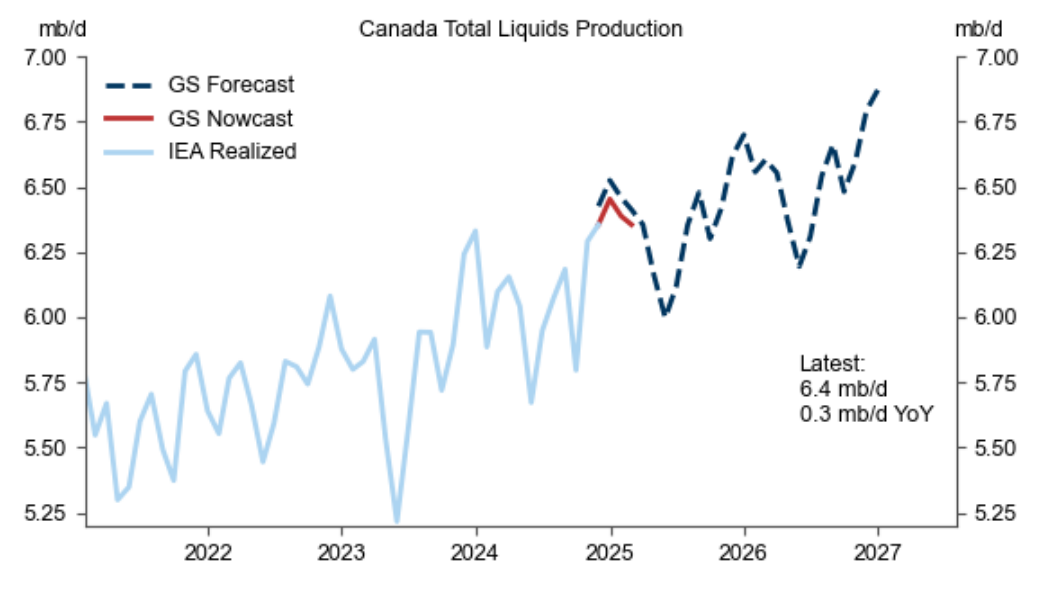
Our 1- and 4-week changes are the corresponding changes in the most recent indicators' estimates (i.e. most recent vintage of the corresponding series). Red color highlights changes in our trackable imbalance that are positive for prices, blue color highlights changes that are negative for prices.

Source: Goldman Sachs Global Investment Research

**Supply****Exhibit 3: Our US Lower 48 (excl Gulf of Mexico) Crude Production Nowcast Remained at 11.3mb/d Last Week (in Line With Our February Expectation); the US Oil Rig Count Edged Up by 1 to 487**

Source: EIA, Genscape, Baker Hughes, Haver Analytics, Bloomberg, Primary Vision, Goldman Sachs Global Investment Research

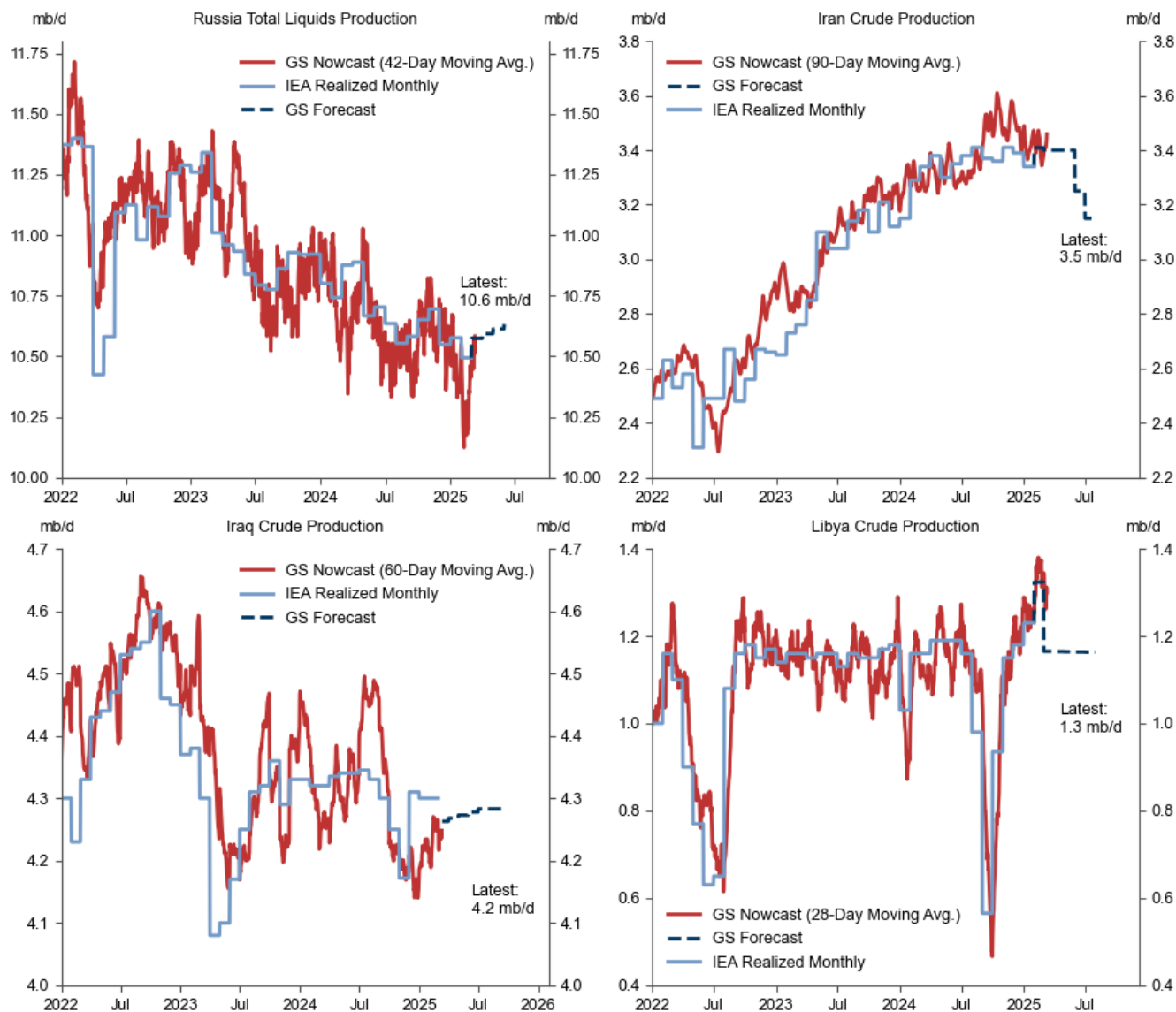
**Exhibit 4: Our Canada Total Liquids Production Nowcast Remained at 6.4mb/d Last Week (0.1mb/d Below Our February Forecast)**



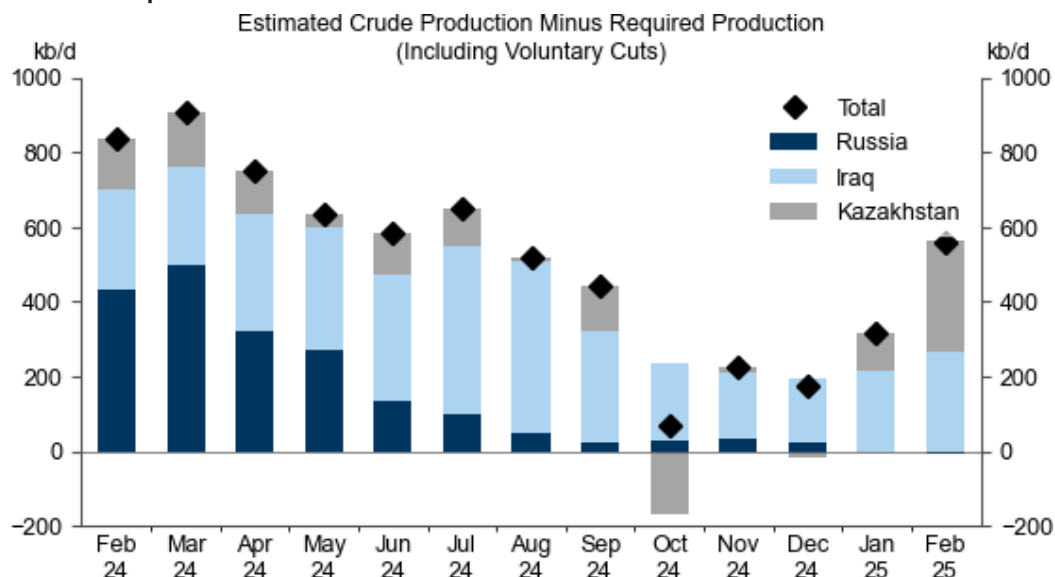
Source: IEA, AER, EIA, Kpler, IIR, Goldman Sachs Global Investment Research

**Exhibit 5: Our Russia Total Liquids Production Nowcast (42-Day Moving Average) Edged Up by 0.1mb/d to 10.6mb/d on Higher Seaborne Exports (but Stands in Line With Our March Forecast); Our Iran Crude Production Nowcast (90-Day Moving Average) Also Edged Up 0.1mb/d to 3.5mb/d Last Week (0.1mb/d Above Our March Forecast)**

#### OPEC+ Production Nowcasts

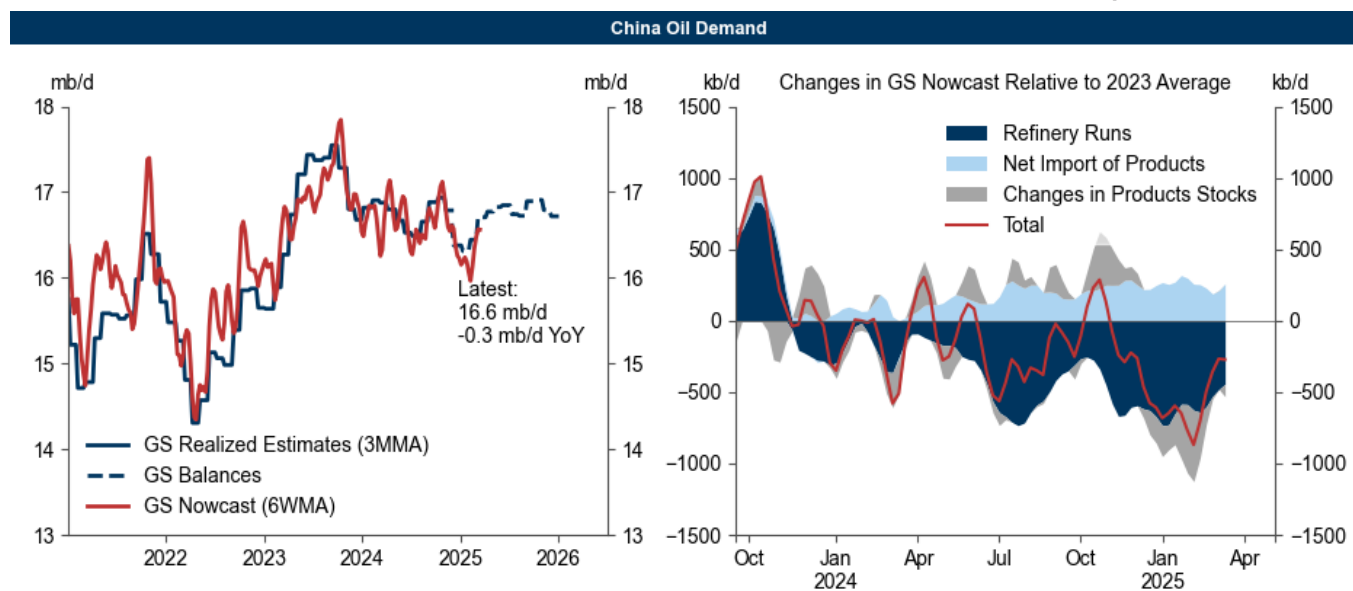


Source: IEA, Petro-Logistics, Kpler, IIR, JODI, OPEC, GTT, Goldman Sachs Global Investment Research

**Exhibit 6: Compliance With OPEC+ Production Cuts Remains in Focus**

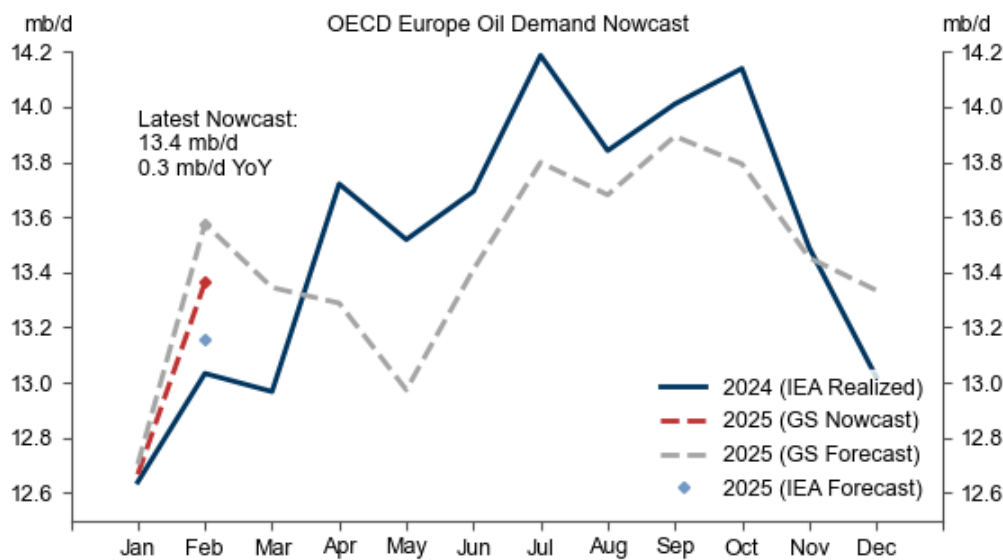
Realized crude production is from OPEC secondary sources for Russia, and Kazakhstan and from our nowcast for Iraq. Required production corresponds to required October production levels from the OPEC Sep 5, 2024 statement and does not include revised compensation pledged adjusted for the recent overproduction from Iraq and Kazakhstan.

Source: OPEC, S&P Global, Kpler, Goldman Sachs Global Investment Research

**Demand****Exhibit 7: Our China Oil Demand Nowcast Remained at 16.6mb/d Last Week and Stands in Line With Our March Expectation**

Source: IEA, S&P, Kpler, GTT, Oilchem, MySteel, Bloomberg, Goldman Sachs Global Investment Research

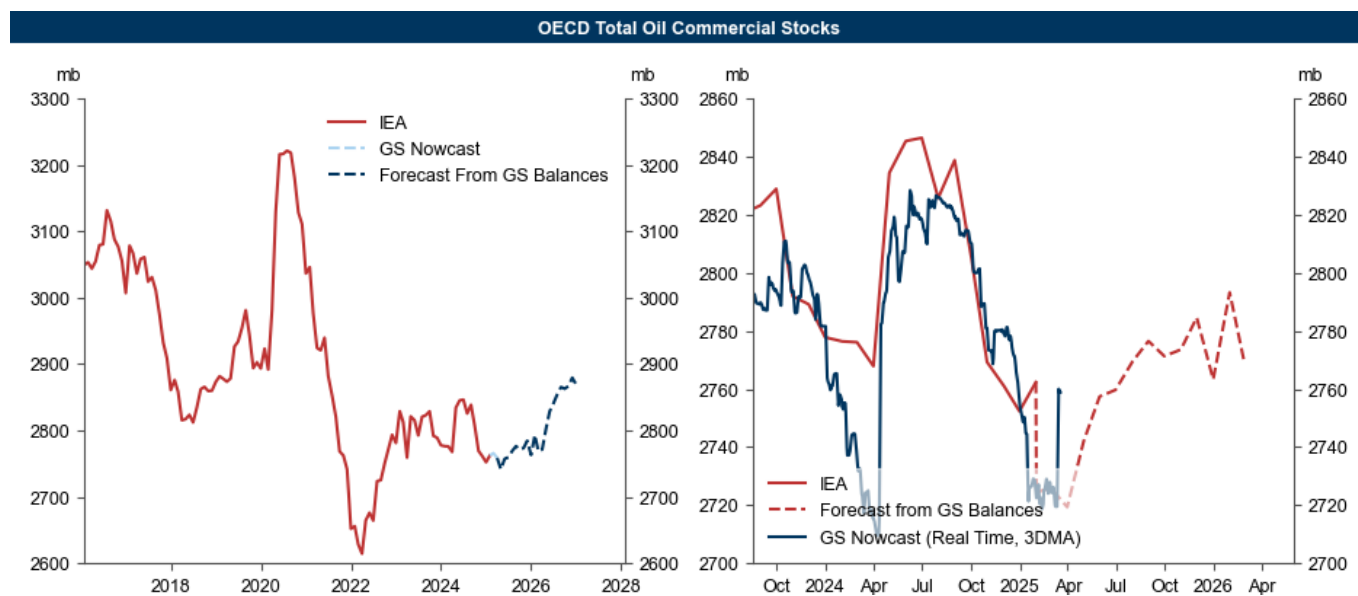
**Exhibit 8: Our OECD Europe Oil Demand Nowcast Jumped by 0.7mb/d on Seasonal Increases to 13.4mb/d Last Week in Our First March Reading but Stands 0.2mb/d Below Our March Expectation**



Source: IEA, Goldman Sachs Global Investment Research

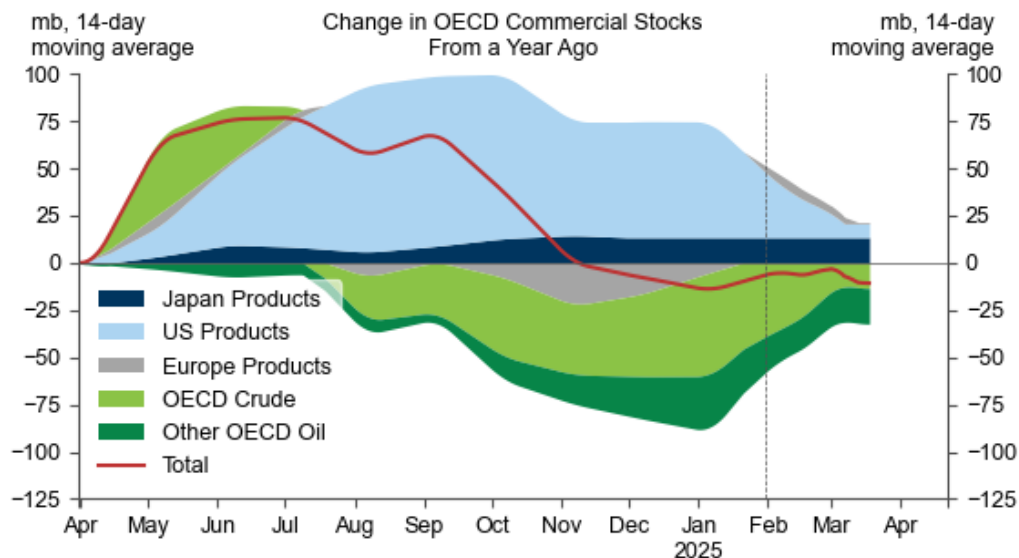
## Inventories

**Exhibit 9: Our OECD Total Oil Commercial Stocks Nowcast Jumped by 39mb Last Week to 2,759mb Last Week and Stands 40mb Above Our End-of-March Forecast of 2,719mb**



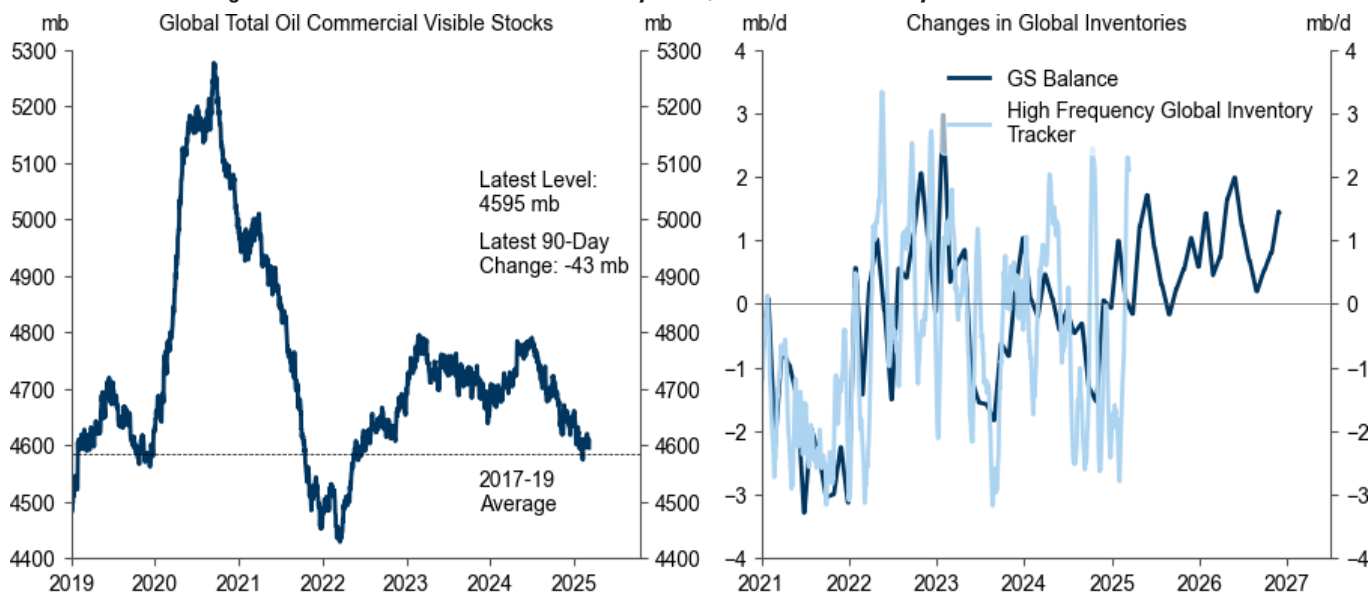
Source: IEA, Kpler, DOE, Euroilstocks, ARA PJK, PAJ, Haver, Goldman Sachs Global Investment Research



**Exhibit 10: Our OECD Commercial Stocks Nowcast Is Down 11mb From Its Year-Ago Level**

The dotted line indicates the latest realized observation from the IEA (end of January).

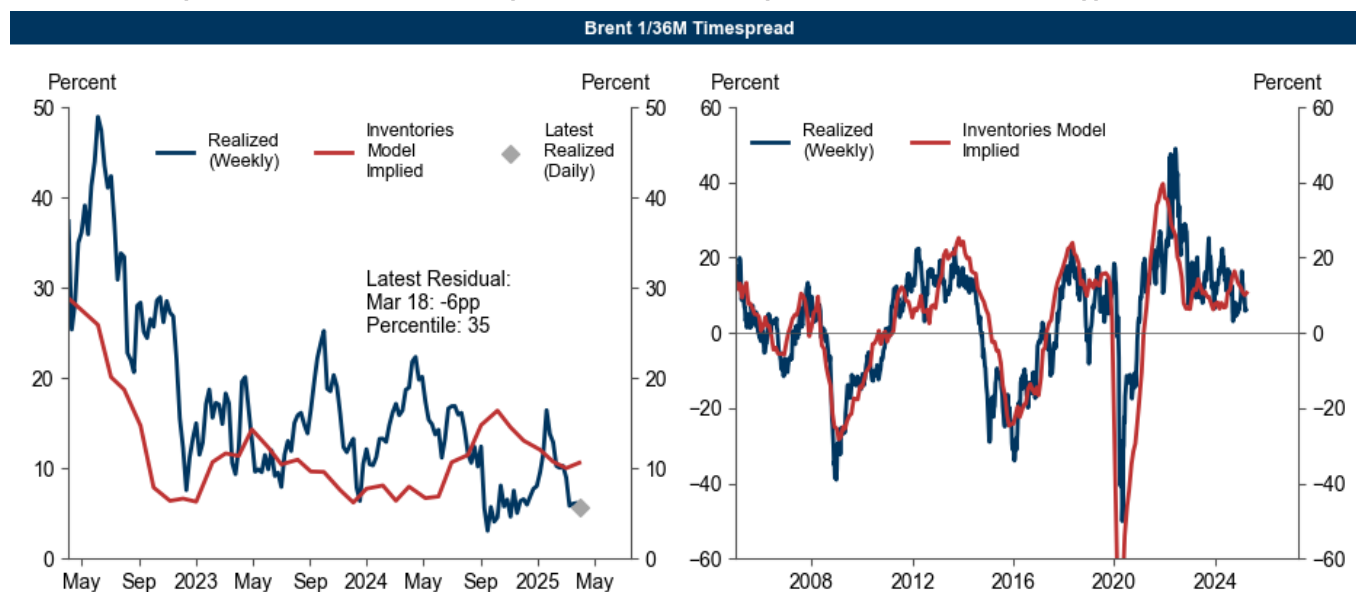
Source: IEA, Kpler, DOE, Euroilstocks, PAJ, ARA PJK, Haver, Goldman Sachs Global Investment Research

**Exhibit 11: Our Tracking of Global Oil Commercial Stocks Drew by 0.5mb/d Over the Last 90 Days**

LHS: The chart shows the sum of all data available through the coverage period of the last US DoE Weekly Petroleum Report, and assumes a few datapoints not reported yet remain stable (by forward-filling). RHS: GS Balance series is a 28-day moving average of monthly balances. The high frequency global inventory tracker is a 28-day change, 14-day moving average that uses all visible crude and product stocks data with rescalings to estimate invisible stocks. Areas of coverage include the US, ARA (Antwerp-Rotterdam-Amsterdam) in Europe, Fujairah in the Middle East, and Singapore and the locations covered by Longzhong in China.

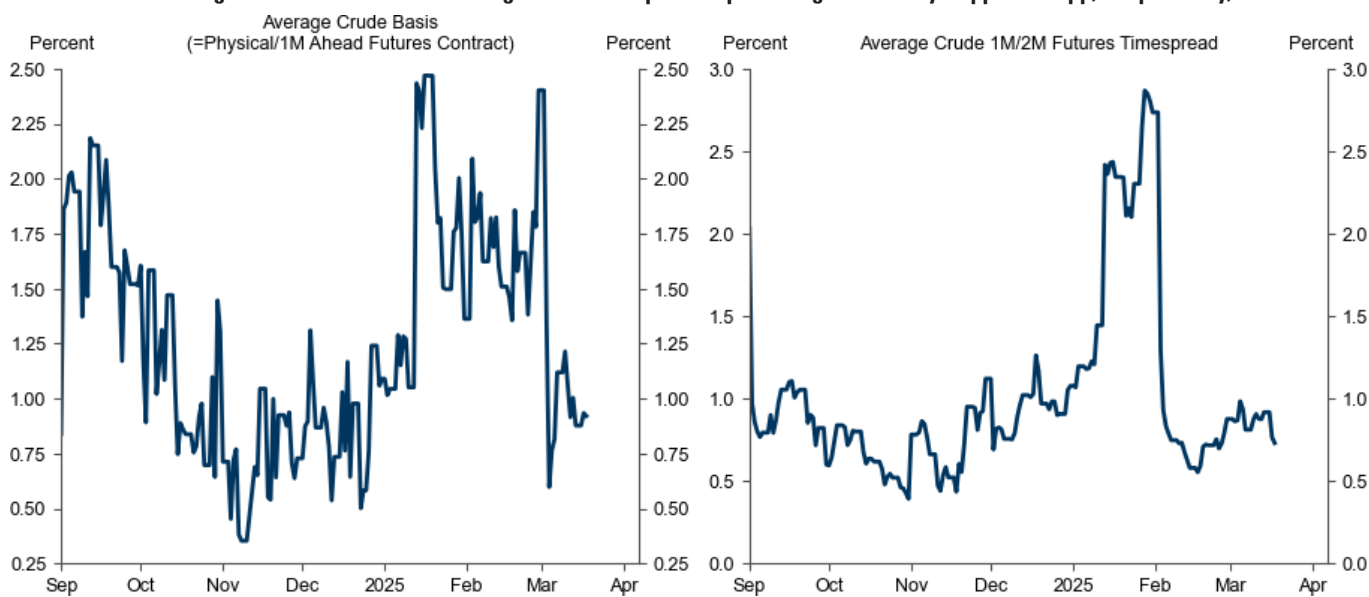
Source: Kpler, DOE, Euroilstocks, ARA PJK, PAJ, Singapore Enterprise, Fujairah, OilChem, Goldman Sachs Global Investment Research

## Prices

**Exhibit 12: The Gap Between the Brent 1/36M Timespread and Its Inventory-Implied Fair Value Now Stands at 6pp**

We report the percentile of the timespread's residual in a sample from January 1st, 2005 till the most recent observation.

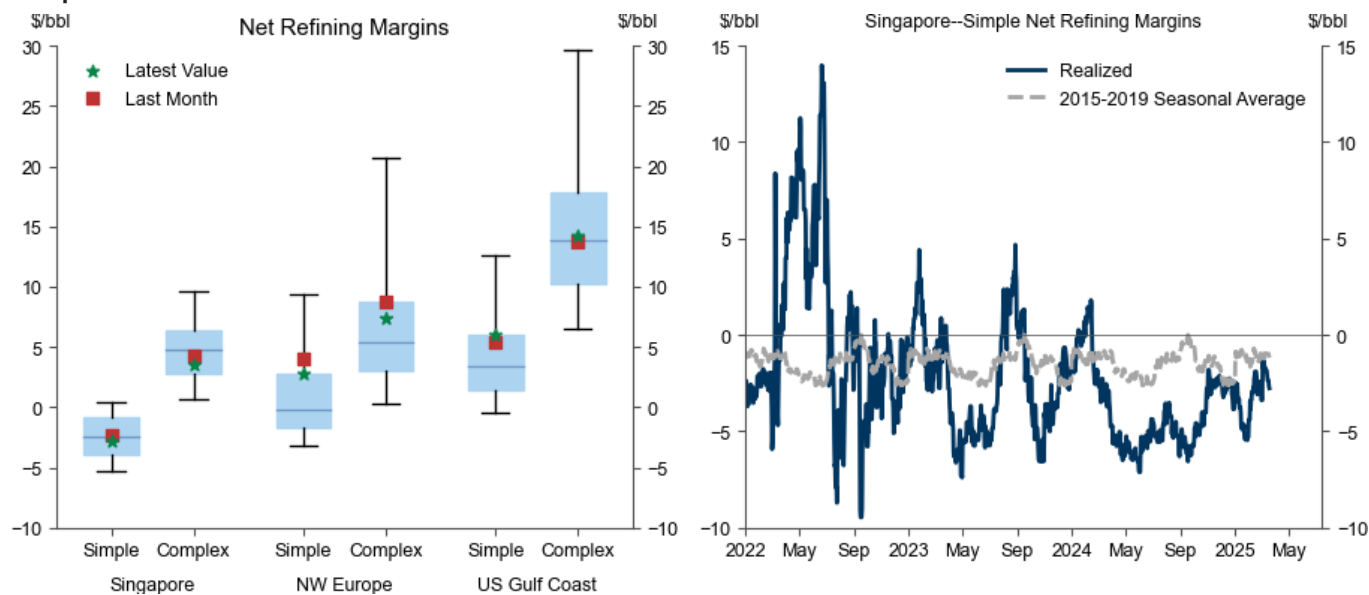
Source: IEA, CME, Goldman Sachs Global Investment Research

**Exhibit 13: The Average Crude Basis And the Average Crude Prompt Timespread Edged Down by 0.1pp and 0.4pp, Respectively, Last Week**

Basis represents the difference (in % of 1M ahead futures) between spot physical crude futures and 1M ahead financial futures. We include Brent, Dubai, and WTI in crude basis on the left panel and Brent, Dubai, WTI, Mars, Midland, LLS, and WTI-MEH in 1M/2M timespreads on the right panel. We construct average crude spreads by first taking an unweighted average of crude types within a region and then taking a production-weighted average across regions.

Source: Platts, CME, Goldman Sachs Global Investment Research

**Exhibit 14: European Net Refining Margins Edged Down Last Week But Remain Above Seasonal Averages Admistr Russia Refinery Disruptions**

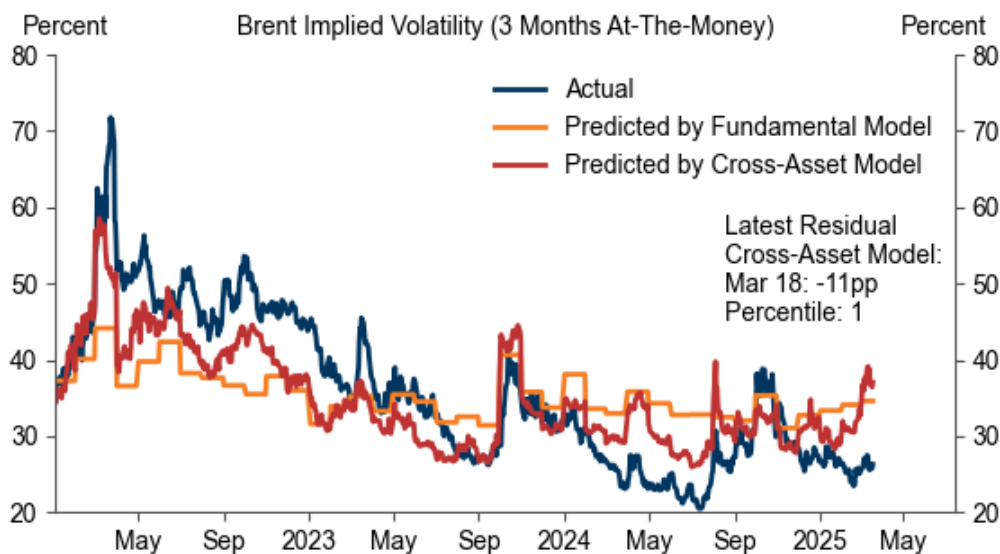


The whiskers on the left panel capture the 10-to-90th percentile range of the historic distribution, the boxes show 25-to-75th percentile range, and the horizontal lines within the boxes capture the median. Month-specific percentiles are estimated on data in a sample from January 1st 2014 to the most recent observation.

Source: Refinitiv Eikon, Platts, Goldman Sachs Global Investment Research

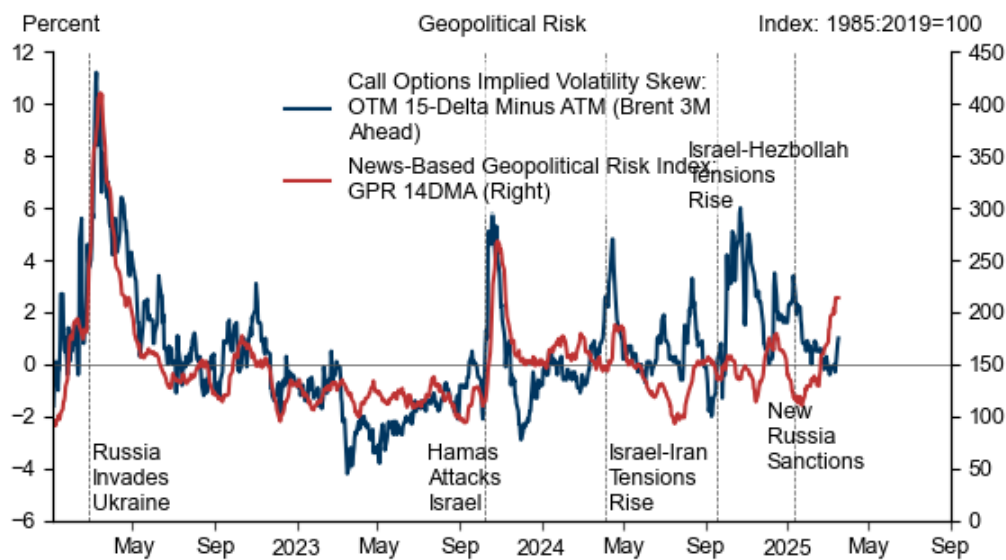
## Volatility and Geopolitical Risks

**Exhibit 15: Brent Implied Volatility Remains Well Below Its Model-Implied Estimate**



Source: ICE, Goldman Sachs Global Investment Research

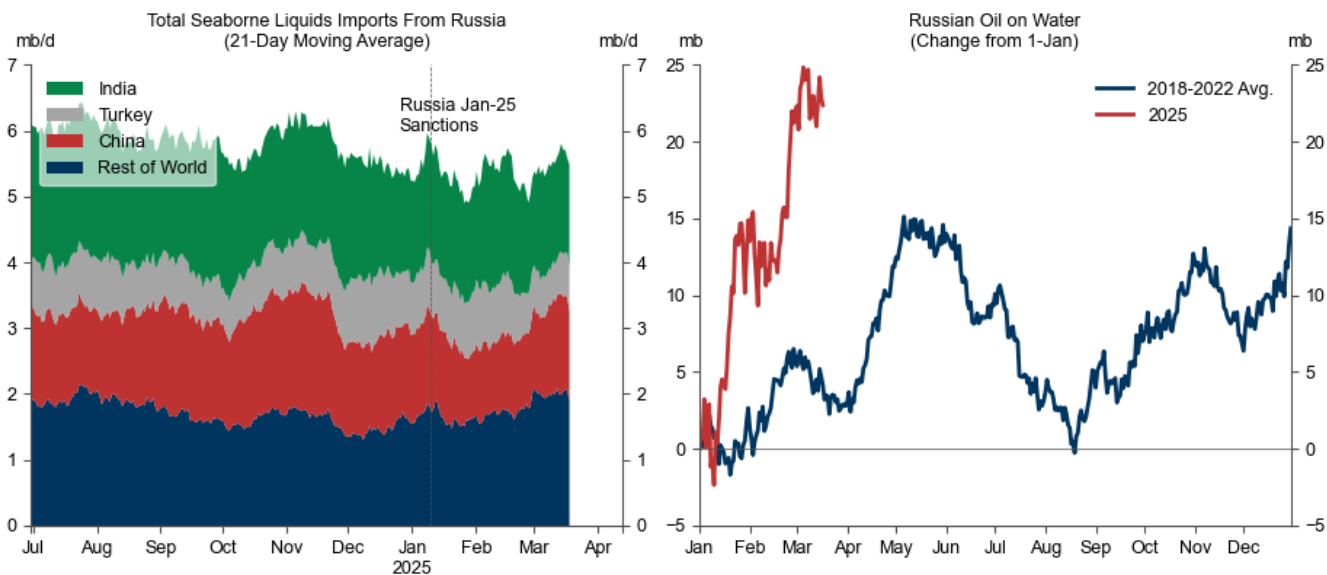
**Exhibit 16: The Call Options Implied Volatility Skew Edged Up by 1.1pp While the News Based Geopolitical Risk Index Rose**



Source: Federal Reserve Board, ICE, Goldman Sachs Global Investment Research

## Tracking Sanctioned Supply

**Exhibit 17: Total Seaborne Liquids Imports From Russia Remained Roughly Flat Week-Over-Week While Russian Oil on Water Remains Elevated**



We define oil on water as crude/condensate + products

Source: Kpler, Goldman Sachs Global Investment Research

## Performance of Open Trade Recommendations

### Exhibit 18: We Currently Don't Have Open Trade Recommendations After Closing Our Two Tactical Tariff Trades In February

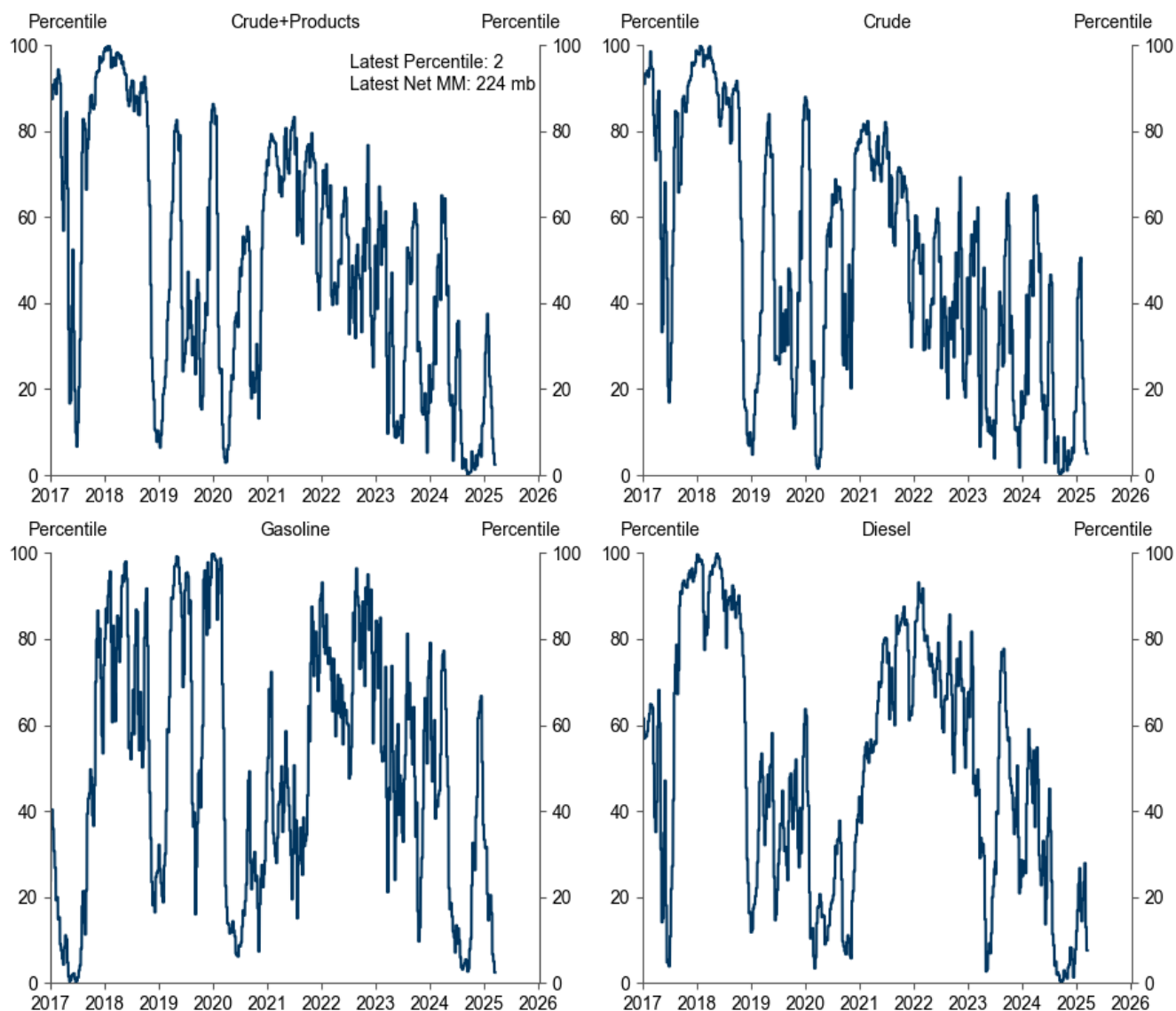
Performance of Trades Closed Over the Last 12 Months (\$/bbl)						
Trade Name	Trade Specification	Opening Date	Value at Opening	Closing Date	Value at Closing	Profit at Closing
<b>Constructive Crude</b>	Long Dec24 Brent	2022-09-27	71.25	2024-03-13	79.69	8.44
<b>OPEC Range Winter24 Short Put</b>	Short Dec24 Brent \$70 put	2024-02-23	4.26	2024-03-13	3.07	1.19
<b>Summer24 Deficit</b>	Long Aug/Sep-24 Brent spreads	2023-11-16	0.26	2024-04-07	0.96	0.70
<b>OPEC Range Winter24</b>	Long Dec24 Brent \$80/\$90 call spread	2024-02-23	3.30	2024-06-25	4.43	1.13
<b>Structurally Long Refining</b>	Long Dec-24 NW European (ARA) Gasoil-Brent Crack Swaps	2024-03-11	23.58	2024-12-31	17.48	-6.10
<b>Well-Timed</b>	Brent Timespreads Long May-Jun25, Short May-Jun26	2024-11-14	0.02	2025-01-12	0.45	0.43
<b>Fading Canada Tariff Fears 1</b>	Long 2Q25 WCS Hardisty-WCS Houston	2025-01-17	-13.15	2025-02-10	-9.65	3.50
<b>Fading Canada Tariff Fears 2</b>	Short Jun-25 NYH Heating oil-European Gasoil	2025-01-17	4.31	2025-02-10	4.76	-0.45

Source: Goldman Sachs Global Investment Research

## Positioning

**Exhibit 19: Total Oil Net Managed Money Positioning Decreased by 33mb to 224mb Last Week and Now Stands at the Very Low 2nd Percentile (in a Sample From 2011)**

### Oil Net Managed Money as a Percent of Open Interest



We report the percentile of net managed money, not including other reportables, for Brent, WTI, Nymex HO, Nymex RBOB, and ICE Gasoil as a percent of open interest in a sample from January 1st, 2017 till the most recent observation.

Source: CFTC, Refinitiv Eikon, Goldman Sachs Global Investment Research

## Methodology Notes for GS High Frequency Oil Indicators

- Russia total liquids production nowcast:** Our Russia supply nowcast estimates total liquids production as the sum of refinery runs, crude stock changes at ports and refineries, and crude seaborne and pipeline exports (latest methodology [here](#)).
- US Lower 48 crude production nowcast:** Our Lower 48 crude production nowcast includes all crude production from the US excluding Alaska and the Gulf of Mexico. We estimate crude production using daily pipeline-implied flows from Genscape,

equipment needed to fracture oil wells (frac spreads), and the gap between official EIA and pipeline-based production estimates (latest methodology [here](#).)

3. **Iran crude production nowcast:** Our Iran supply nowcast estimates crude production as the sum of tracked crude exports, untracked crude exports, refinery intake of crude, and changes in crude inventories (latest methodology [here](#)).
4. **Libya crude production nowcast:** Our Libya supply nowcast estimates crude production as the sum of tracked crude exports, refinery intake of crude, and changes in crude inventories.
5. **Iraq crude production nowcast:** Our Iraq supply nowcast estimates crude production as the sum of tracked crude exports, refinery intake of crude, direct burns of crude for electricity and the energy industry, and changes in crude inventories. We also subtract other products commingled into the crude stream (latest methodology [here](#)).
6. **Canada total liquids production nowcast:** Our Canada supply nowcast estimates total liquids production using changes in Alberta production and changes in implied production defined as the sum of exports, refinery runs, and changes in crude inventories (latest methodology [here](#)).
7. **OPEC model implied probability:** Our estimated probability of OPEC production decision is based on an unweighted average of five ordered multinomial logit models that regress OPEC decisions to decrease, hold, or increase production on OECD commercial stocks, cyclical oil price moves, Saudi's market share, and speculative positioning (latest methodology [here](#)).
8. **China demand:** We perform a bottom-up nowcast of China oil products demand as the sum of refinery runs, net products imports, and product stock draws. We model monthly changes in S&P refinery runs as a function of monthly changes in refinery utilization rates from Mysteel, and monthly changes in capacity utilization from IIR. We then estimate model-implied 4-week changes in weekly refinery runs from 4-week changes in the 4-week moving average of refinery utilization rates and slow-moving changes in capacity. We initialize our refinery runs nowcast to match the level of "realized" refinery runs over the last 2 years. Similarly, we model changes in GTT net imports of products as a function of monthly changes in Kpler net imports of the corresponding products. We smooth the final nowcast using a 2-week moving average (latest methodology [here](#)).
9. **OECD Europe demand:** We estimate OECD Europe demand based on demand in the EU4 (Germany, France, Spain and Italy), and incorporate jet demand using our jet fuel demand model. Our nowcast uses timely inputs on oil markets (e.g. refinery runs), macro activity (e.g. PMIs), fuel retail sales, preliminary national oil demand releases, and flight schedules (latest methodology [here](#)).
10. **Jet demand:** Our methodology for measuring jet fuel demand uses global commercial flight schedule data combined with our aircraft efficiency database. We further calibrate this model on monthly IEA/JODI/Woodmac jet-type kerosene demand data for the OECD and a handful of other countries to estimate non-commercial flight demand (latest methodology [here](#)).



- 11. Global total oil commercial visible stocks:** We add up all visible oil stocks for both crude and products without any rescaling. Our data includes onshore crude stocks, crude oil on water, products on water, and measures of products stocks at various locations. The locations are the US, 16 European Majors, ARA (Antwerp-Rotterdam-Amsterdam) in Europe, Japan, Fujairah in the Middle East, and Singapore and the locations covered by Longzhong in China. The China Longzhong stocks cover all stocks except for those at SOE refineries, gas stations, and the national strategic reserves.
- 12. OECD commercial stocks:** Our OECD commercial stocks nowcast consists of several region- and product-specific models, which regress IEA monthly historical data on high frequency stocks measures. We model monthly changes in OECD commercial stocks components using relevant high-frequency stocks and trade data, seasonality, Covid effects, and lagged stock changes for products (latest methodology [here](#)).
- 13. Brent timespreads:** We estimate timespreads using our OECD commercial stocks nowcast and our OECD demand forecast. We estimate Brent 1/36M timespreads based on the historical relationship with 1-4M ahead OECD commercial stocks as days of demand covered (DoDC) vs their 5-yr average after accounting for the impact of 3-Year US Treasury yields. We keep stocks as DoDC vs their 5-yr average constant over the next 1-4 months at the most recent observation based on our nowcast (latest methodology [here](#)). Finally, we remove March 2020-February 2023 observations from our sample to calculate the 5-year average for OECD commercial stocks DoDC.
- 14. Net refining margins:** We calculate regional refining margins for the three main refining hubs: US Gulf Coast, NW Europe, and Singapore. In each hub, we leverage local refined product prices and yields, take account of the regional refining crude input slate, adjust appropriately for crude transportation costs, and lastly, adjust for variable processing costs as a function of regional power, oil, natural gas, and carbon costs.
- 15. Brent implied volatility:** We estimate two linear regression models for the fair value of Brent implied volatility. The fundamental model uses the GS Current Activity Indicator for the US (excluding Mar 2020-Aug 2020 outliers), deviations in OECD inventories, global spare capacity, oil balances volatility, and the geopolitical risk index for major oil producers. We nowcast the latter using predicted monthly changes based on global daily geopolitical risk index. Our cross-asset model extends the fundamental model by incorporating high frequency perceptions of macroeconomic volatility via S&P 500 implied volatility (latest methodology [here](#)).
- 16. Oil flows through Bab-EI-Mandeb Strait:** We take the 14-day moving average of all north and south bound liquids flows through the Suez Canal. We use the historic relationship between these flows and the capacity of vessels transiting the Suez Canal as recorded in Kpler port-level data.
- 17. Release lags for nowcasts using Kpler exports and inventories data:** Given the frequent and sizable revisions to the early vintages of high frequency data, we wait 3 and 7 days before publishing nowcasts using high frequency inventories and



exports Kpler data, respectively.

# Disclosure Appendix

## Reg AC

We, Daan Struyven, Callum Bruce, CFA, Ephraim Sutherland and Yulia Zhestkova Grigsby, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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