October 13, 2026 07:28 PM GMT

The Oil Manual

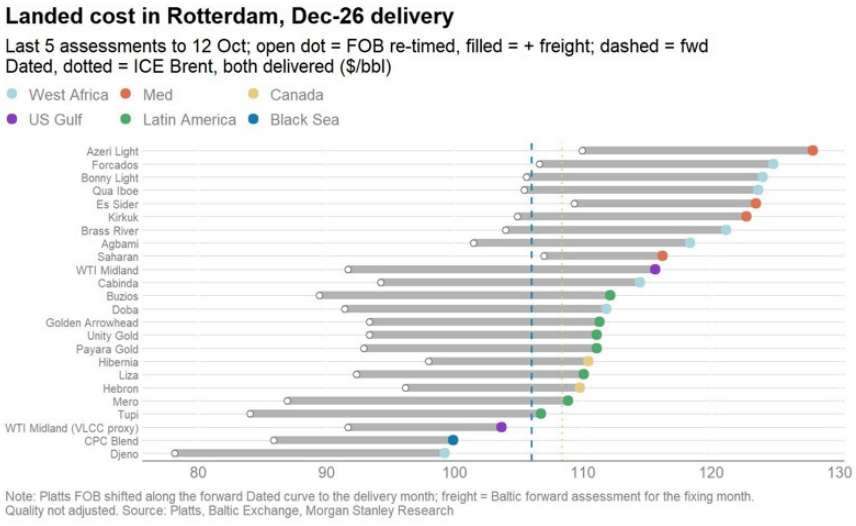
Exceptional Shipping Cost and Its Impact on Brent Prices

Gulf crude exports are back within 10% of pre-conflict levels, yet Brent holds above $100/bbl. Supply, inventories and geopolitical risk all play a role, but one factor benefits Brent specifically: its short-haul nature at a time when freight is unusually expensive.

Key Takeaways

- Gulf and Russian crude supply is still 5.5 mb/d below last year, onshore crude stocks are at multi-year lows and tanker attacks have risen from <4 to ~11 a week
- Tanker rates are at records in every size class. A VLCC from the Middle East to China costs ~$34/bbl, against $1-3/bbl over the last five years
- Longer voyages, ship-to-ship transfers, ships in the wrong place and a sanctioned fleet (17% of dwt) have all cut the supply of available tankers
- Brent grades land in Rotterdam $10-15/bbl cheaper than long-haul crudes, which leaves December Brent at ~$106/bbl well underpinned
- NW Europe crude imports look ~0.5 mb/d lower m/m in October, and refinery maintenance is low. We raise our 4Q26 and 1Q27 Dated Brent forecasts by $5/bbl

Exhibit 1: The majority of crudes that are often imported into Northwest Europe have landed costs of $110-120/bbl for December, making Brent look competitive at ~$106/bbl.



Note: Platts FOB shifted along the forward Dated curve to the delivery month; freight = Baltic forward assessment for the fixing month. Quality not adjusted. Source: Platts, Baltic Exchange, Morgan Stanley Research

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Exhibit 2 : We add $5/bbl to our Dated Brent forecast for 4Q26 and 1Q27

Dated Brent price forecasts

($/bbl)	4Q26	1Q27	2Q27	3Q27	4Q27
New	105.0	100.0	90.0	80.0	75.0
Previous	100.0	95.0	90.0	80.0	75.0
Change	*5.0*	*5.0*	*0.0*	*0.0*	*0.0*

Source: Morgan Stanley Research

Previous research:

- The Oil Manual: A US Diesel Export Ban...What If? (23 Sep 2026)
- The Oil Manual - Chartbook: Everything Everywhere All at Once (15 Sep 2026)
- The Oil Manual: Slower Road to Full Recovery; Raising Brent Forecasts (23 Aug 2026)
- The Oil Manual: Cheap Crude, Dear Diesel - Why Crack Spreads Are So High (19 July 2026)

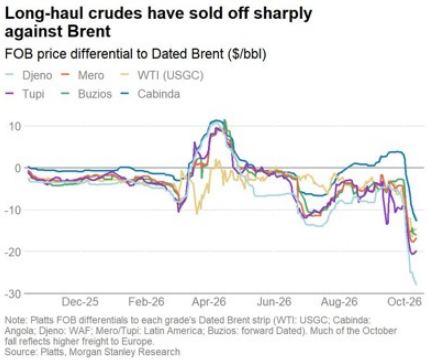
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Exceptional Shipping Cost and Its Impact on Brent Prices

Exhibit 3: Several crude oil prices have fallen, just not Brent



With Hormuz flows sharply increased, why is crude still $100?

Over the last ~4 weeks, crude oil exports from the Middle East have sharply increased again. Taking into account all routes, exports are within 10-15% of pre-conflict levels – from 7-8 mb/d earlier on in the crisis, to 15-16 mb/d recently. But despite such a large increase in supply, the front-month Brent future has remained robust at over $100/bbl – this raises the question: why?

Several factors play a role:

- **First, total supply has not recovered yet**: Exports may be up, but total supply to the market – i.e. including into domestic refineries – is still tracking well below last year's levels. This is not only an issue in the Middle East but in Russia too. Taking the seven impacted countries in the Middle East Gulf and Russia combined, total crude supply was ~29.5 mb/d in September, according to Petro-Logistics data, still down 5.5 mb/d year-on-year.
- **Second, onshore crude oil inventories are low and still falling**: Oil-on-water has recently increased, but land-based crude oil inventories continue to decline steadily, and are now at multi-year lows.
- **Third, geopolitical risks stay high**: The number of tanker attacks has notably increased again. There were typically 2-3.5 tanker attacks per week during July and August. However, this increased to 5.5/week in early September, 8/week in late September and has reached a pace of ~11/week in the last two weeks. At the same time, attacks on Saudi Arabia's infrastructure have increased. Crude oil exports continue, but uncertainty around it remains elevated.

In addition, there is another factor that is benefitting the price of Brent crude oil specifically: **freight**. Crude oil shipping rates have risen so sharply that they are now a material part of the landed cost of crude. In turn, this benefits Brent crude oil disproportionately, at least in relative terms.

Exhibit 4: Oil exports from the Middle East have recovered sharply...

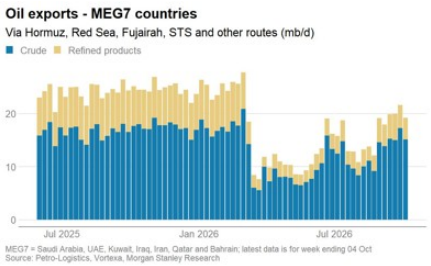


Exhibit 5: ...but total crude supply is still down 5-6 mb/d year-on-year...

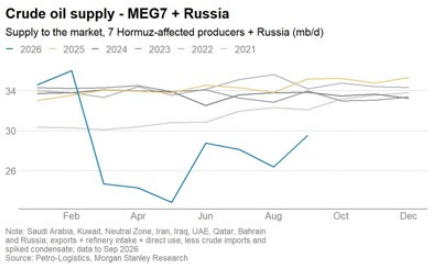


Exhibit 6: ...land-based crude inventories are low and falling...

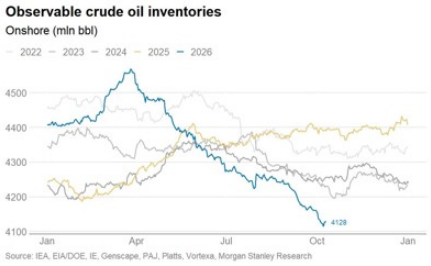
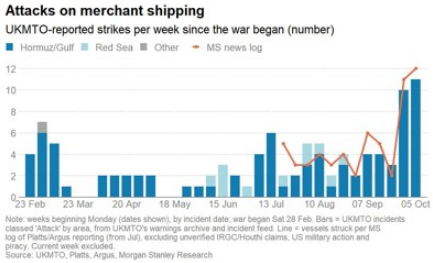


Exhibit 7: ...and geopolitical risks remain elevated, with rising tanker attacks



First, freight rates and why they have risen so much

Tanker rates are historically volatile but have recently risen to record highs in every size class. On several routes, rates are multiples of previous records. For example, take the route TD3C, i.e. Middle East to China, using a Very Large Crude Carrier – arguably the benchmark route for VLCCs.

Over the last five years, this rate has typically been $6-22 per metric tonne. There are 7.3 barrels of crude in a tonne, so this equalled $1-3 per barrel – small relative to the price of crude. At the moment, that rate is ~$250/tonne, or ~$34/bbl. The Dubai benchmark was assessed at $110/bbl yesterday; delivered in China, this becomes $144/bbl.

Several factors have come together to explain this unusual rise:

- **Shuttle and ship-to-ship (STS) operations use two ships per barrel, plus days of waiting**. Crude oil exports via the Strait of Hormuz have increased, but the logistics of these exports are complex and inefficient. Crude is shuttled out of the Gulf and transferred in the Gulf of Oman onto ships for the onward voyage. Each transfer takes several days, and Fujairah waits can exceed 10 days. Clarksons estimates that STS waiting alone ties up about 5% of global VLCC capacity.
- **Voyages have become much longer**. The Houthi threat closed Bab el-Mandeb to VLCCs. No visible VLCC has transited since 9 September, against 63 in July. Yanbu crude now goes via SUMED and Sidi Kerir and then round the Cape: about 15,000 miles to Asia against 6,700 miles direct. Asia has also replaced Gulf barrels with long-haul US, Brazilian and Guyanese crude.
- **Ships are in the wrong place**. Flows that stop and restart keep forcing fleet repositioning. VLCCs moved east in July in anticipation of Hormuz reopening, and then had to come back west. Charterers in the US Gulf and Brazil now face a record-thin supply of ships heading back towards them. A ship elsewhere in the world is no use for a loading in the Atlantic next week.
- **The pool of ships open to mainstream charterers was alre conflict**. Clarksons counts 982 tankers under sanctions (17% rising to about 1,400 ships (25%) including the wider shadow crude Aframax capacity is listed as sanctioned. The US block Chinese buyers towards non-sanctioned barrels, which need Ownership has also concentrated: Sinokor controls about 91 July), and Middle Eastern interests are buying prompt tonnag

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of the spot market. This did not cause the spike, but it means the shock hit the market when it had very little spare capacity.

- **Buyers can afford to pay**. Record refining margins and very low stocks make crude demand insensitive to freight.

Exhibit 8: Freight rates have increased far outside their historical ranges

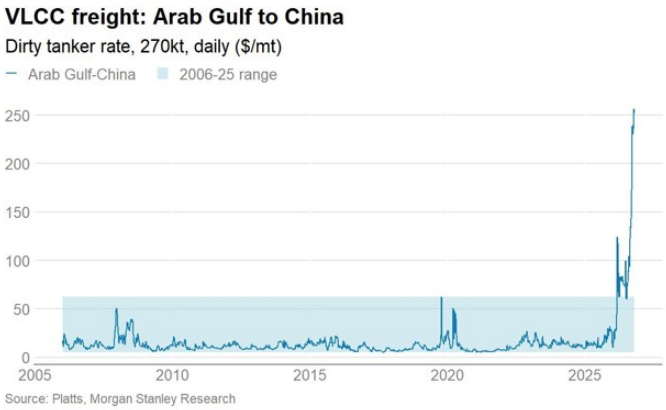


Exhibit 9: Landed in China, most crudes cost ~$130/bbl

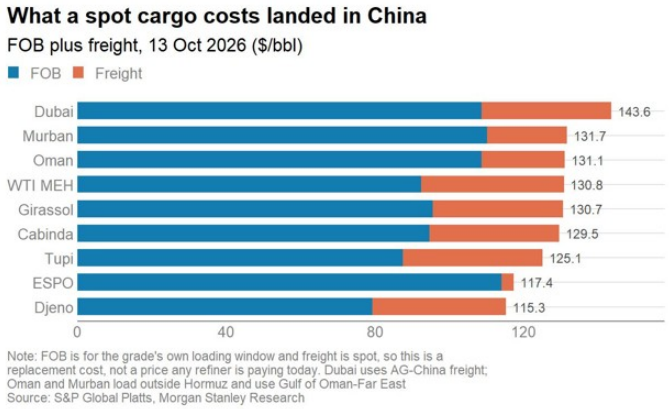
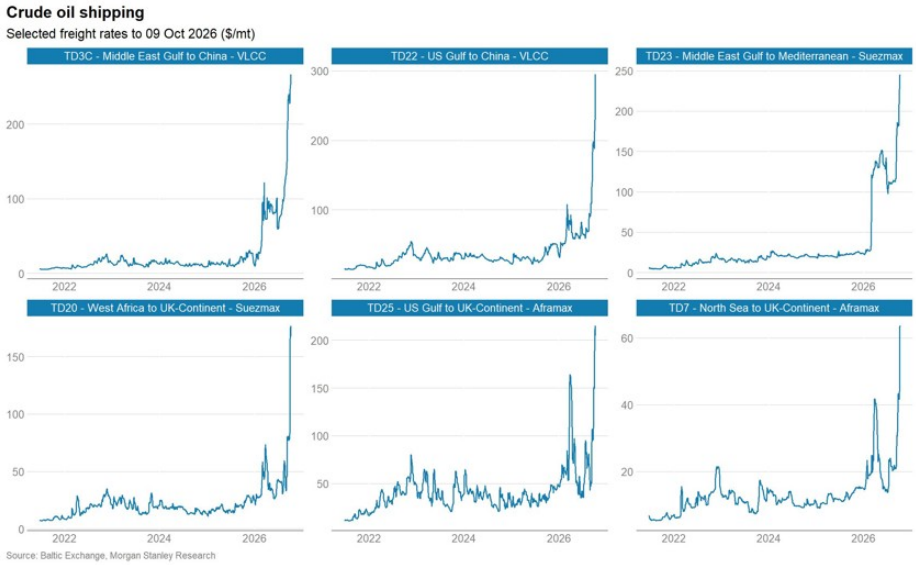


Exhibit 10:

Freight rates have reached record highs across all vessel classes and all key routes



Second, how freight impacts Brent disproportionately

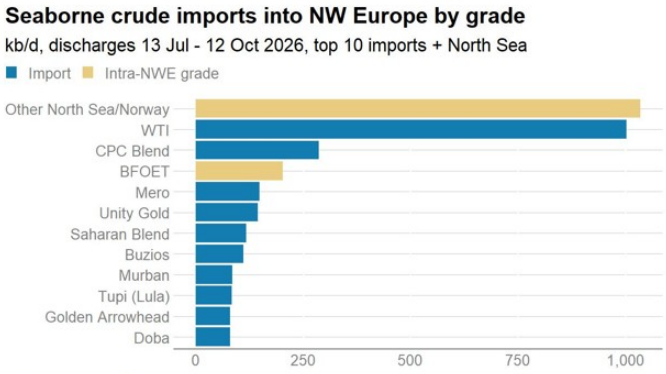
Freight is not neutral to the price of crude oil: it affects different grades differently. The market tends to focus on Brent as the global indicator for 'oil', and with two-thirds of internationally traded crudes priced directly off Brent, that makes sense. However, at the moment, Brent benefits from a specific advantage that gives it more price support than other crudes – short shipping distances.

Gross seaborne crude oil imports into Northwest Europe are typically ~4.5 mb/d.

Approximately 0.2 mb/d of that comes from the Brent, Forties, Oseberg, Ekofisk and Troll fields ('BFOET') – five of the six crudes that constitute the Brent basket – with another ~1 mb/d from elsewhere offshore UK and Norway. However, that still leaves over 3 mb/d to be imported from other regions, including ~1 mb/d of WTI from the US, ~0.3 mb/d of CPC Blend from Kazakhstan, etc. – see Exhibit 11 .

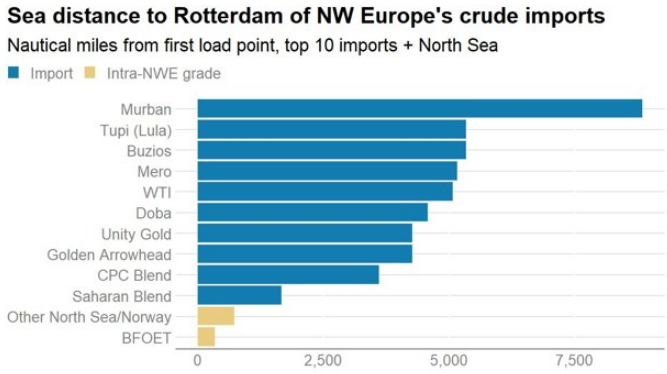
The average shipping distance into, say, Rotterdam – a key refining centre – is ~340 miles for the BFOET crudes and ~700 miles for other UK/Norway crudes. Beyond that, most other crudes come from 4,000-5,000 miles away. When freight rates are ~90 cents/bbl per 1,000 miles on an Aframax vessel, this does not make a big difference; most other crudes could be delivered to Northwest Europe within $3/bbl of the Brent benchmark. However, rates are now ~$5.5/bbl per 1,000 miles, and at that rate, the difference becomes very notable; at the moment, the **Brent grades have a $10-15/bbl cost advantage into Northwest Europe compared to longer-haul crudes, which are still required to meet demand**.

Exhibit 11: Beyond crudes from UK/Norway, Northwest Europe still needs additional imports...



Northwest Europe as defined by Vortexa. Excludes pipeline crude and intra-NWE relays. Source: Vortexa, Morgan Stanley Research

Exhibit 12: ...which typically come from sources 4,000-5,000 miles away, giving short-haul Brent an advantage



Shortest open sea route; Cape routing where the cargo's waypoints show it. Source: Vortexa, searoute, Morgan Stanley Research

Third, the impact on imports is slowly becoming visible

Exhibit 13 shows how this impacts the relative cost position of various crudes delivered into Rotterdam:

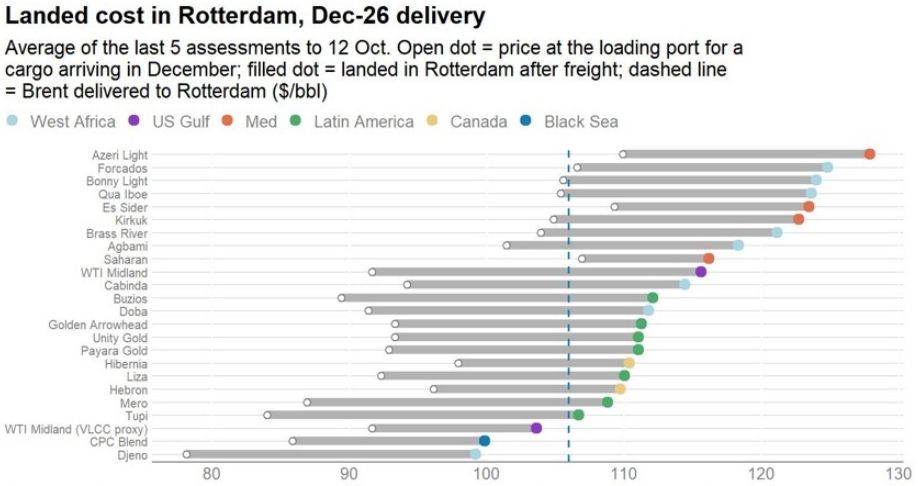
The open dots are based on each crude's 'free on board' (FOB) price, i.e. the price at the port of loading, but moved along the forward curve so that all arrivals are synchronised in December 2026. The grey bars add shipping cost, based on data from the Baltic Exchange. The filled dots are therefore our best estimate of the delivered cost of each crude in Rotterdam in December 2026. The vertical dashed line represents the price of forward Dated Brent, also delivered in Rotterdam in the same month.

This shows how competitive the various Brent grades are in December 2026 on a fully delivered basis. The majority of other crudes have delivered prices above forward Dated Brent. In turn, this also means they cannot be commercially delivered into Rotterdam in that period – the arbitrage is closed, unless either the buyer or seller has access to cheaper freight.

Only three crudes in this chart are shown to have a fully delivered cost below Brent.

These include our VLCC proxy for WTI. Most WTI is delivered to Northwest Europe on Aframax vessels (0.7 mb cargo) but a significant minority has historically come on VLCCs (2 mb cargo). There is no direct quote for the shipping cost on a VLCC for the route USGC–NWE, but 'half of the Aframax rate' is usually a reasonable proxy, which is what we have assumed here. However, VLCC exports of WTI to Northwest Europe have recently declined sharply, so the practicalities of this route may be more complicated than the chart below suggests. Also, the CPC loading terminal has come under attack several times this year, creating some uncertainty over the deliverability of this crude.

Exhibit 13: A majority of crudes included in this chart would probably not be commercially deliverable into Northwest Europe in December at current spot-market freight rates

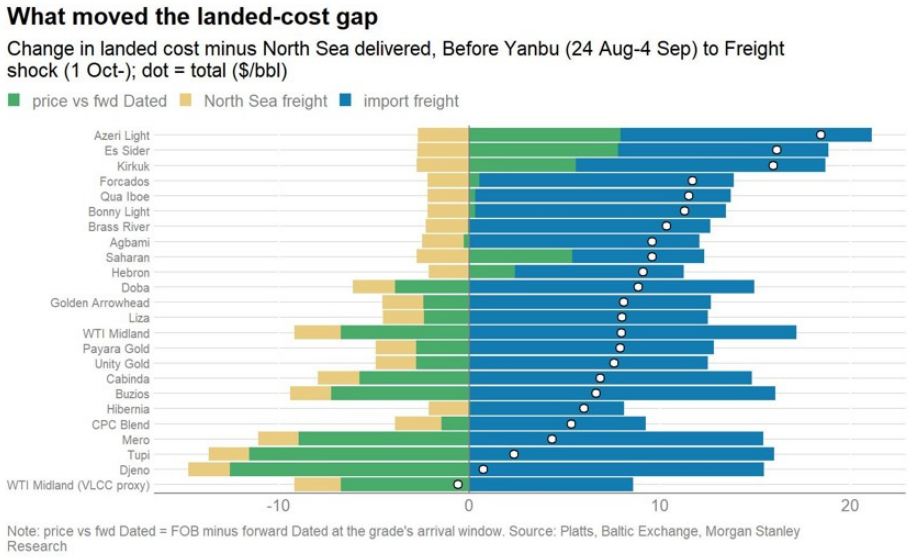


Note: Each grade's loading-port price is moved to a December arrival along the forward Dated Brent curve, assuming its premium or discount to Brent stays the same. Freight is the Baltic Exchange forward rate for the month the ship would be chartered. Brent delivered = forward Dated Brent for December plus North Sea freight. No adjustment for crude quality. Source: Platts, Baltic Exchange, Morgan Stanley Research

To stay competitive, some crudes have simply been discounted to offset the rise in freight rates. The impact of this is shown in Exhibit 14 . This chart compares the situation in late August – i.e. before the recent rally in freight – to early October. The blue bars show the increase in freight rates for each crude to Rotterdam, the yellow bars show the change in the freight from Brent crudes into Rotterdam, and the green bars show the change in their FOB price relative to forward Dated Brent. The white dots show the net increase in the delivered price.

As shown, several long-haul crudes from Brazil (Buzios, Mero, Tupi), West Africa (Cabinda, Djeno) and also WTI from the US have seen their FOB price fall relative to Brent to (partially) absorb the rise in freight cost.

Exhibit 14: How the cost of crude landed in Rotterdam has changed between late August and early October, broken down by component – several West African and Brazilian crudes have had to fall sharply to compensate for the rise in freight



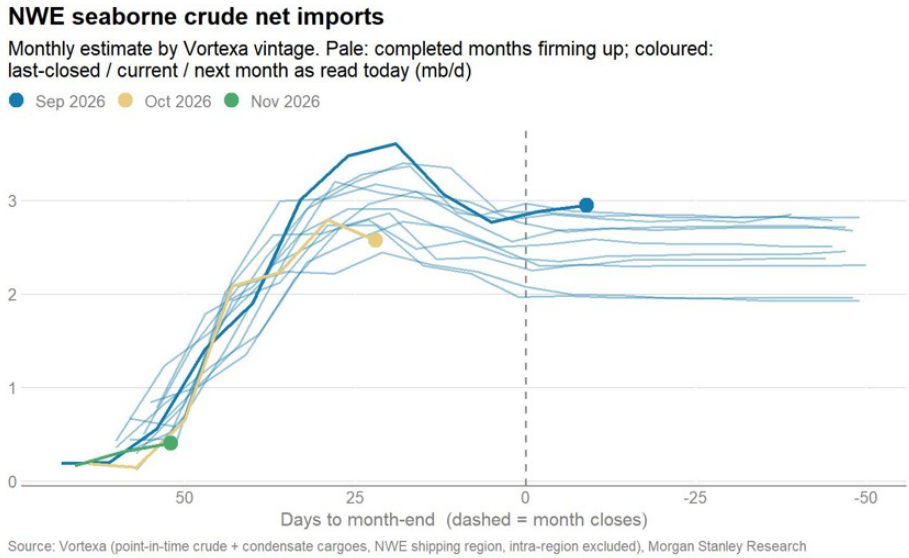
Note: price vs fwd Dated = FOB minus forward Dated at the grade's arrival window. Source: Platts, Baltic Exchange, Morgan Stanley Research

To be clear, whether an arbitrage is actually open or not depends on many other practical issues that are often hard to model. Buyers or sellers may have their own tanker fleet or may have locked in rates under a longer-term contract, and an individual tanker may be available at a different rate than what we can observe from the Baltic Exchange. For a variety of reasons, even if our calculation shows an arbitrage to be closed, substantial amounts of oil might continue to flow.

However, when an arbitrage is closed, flows should still be expected to slow, and that appears to be the case. Exhibit 15 tracks available data on net crude oil imports into Northwest Europe from outside the region, based on scheduled tanker movements. Each line represents a month; the horizontal axis shows the number of days remaining to the end of a particular month; the vertical axis shows the net amount of crude oil known at that time scheduled to be net-imported in a particular month. (Note that the data nets imports against exports; given that imports are long-haul, information about them is typically available earlier than for exports, which creates the usual 'roll-over' that this chart shows.)

Net imports were relatively strong in September, but are already tracking significantly lower for October, compared at the same number of days before the end of the month. Much can still change for November; there may well be a catch-up. However, so far the number of tanker movements scheduled for November appears light compared to the historical range.

Exhibit 15: Crude oil imports into Northwest Europe appear to be ~0.5 mb/d lower month-on-month in October; it's still early days for November, but so far scheduled tanker movements are tracking low

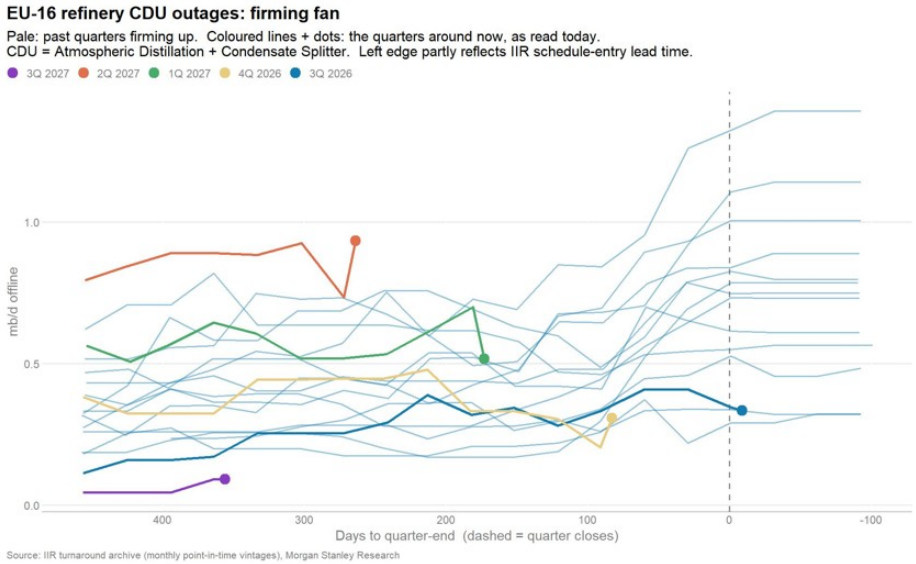


Source: Vortexa (point-in-time crude + condensate cargoes, NWE shipping region, intra-region excluded), Morgan Stanley Research

Refinery runs for 4Q, however, do not look light at all. The chart below shows a similar 'firming fan' but in this case for refinery outages, most of which are for maintenance. The yellow line shows the data we have for 4Q26. Recently, planned outages for 4Q have been declining: as refineries want to benefit from current high margins, they have been delaying scheduled maintenance, first into 1Q27 and recently even further into 2Q27. By now, 4Q maintenance in Europe looks low by historical standards, implying high refinery runs.

This is mostly a short-term tactical view, but **if the majority of crudes typically shipped to Northwest Europe have landed costs in the $110-120/bbl range for December delivery, net crude imports from outside the region already appear to be slowing, and refinery runs are set to be high, then December Brent at ~$106/bbl appears well underpinned.** On that basis, we add modestly to our Dated Brent forecasts for 4Q26 and 1Q27, as shown in Exhibit 2.

Exhibit 16: By historical standards, refinery maintenance in Europe in 4Q looks set to be low



Supply/demand balance

Exhibit 17:

Total oil liquids

	2025	1Q26	2Q26	3Q26	4Q26	2026	1Q27	2Q27	3Q27	4Q27	2027	Change '25-26	Change '26-27
Demand	**105.4**	**104.7**	**99.8**	**103.0**	**104.4**	**103.0**	**103.7**	**104.5**	**106.3**	**106.8**	**105.4**	**- 2.4**	**2.4**
OECD	46.3	46.0	44.7	46.2	46.3	45.8	45.6	45.7	46.6	46.4	46.1	- 0.5	0.3
Non-OECD	59.1	58.7	55.1	56.8	58.1	57.2	58.1	58.8	59.7	60.4	59.3	- 1.9	2.1
Non-OPEC supply	**76.7**	**75.8**	**76.1**	**77.4**	**77.6**	**76.8**	**78.2**	**79.2**	**80.2**	**80.3**	**79.5**	**0.0**	**2.7**
United States C+C	13.7	13.6	13.8	13.9	14.0	13.8	14.1	14.1	14.1	14.1	14.1	0.2	0.3
UAE	3.9	3.5	3.9	4.4	4.1	4.0	4.3	4.4	4.6	4.6	4.5	0.1	0.5
Other	59.2	58.7	58.4	59.1	59.5	58.9	59.8	60.7	61.6	61.6	60.9	- 0.3	2.0
OPEC NGLs and condensate	4.6	4.2	3.0	3.2	3.4	3.4	3.8	4.2	4.6	4.7	4.3	- 1.2	0.9
Call on OPEC crude	**24.0**	**24.7**	**20.6**	**22.4**	**23.4**	**22.8**	**21.8**	**21.1**	**21.5**	**21.8**	**21.6**	**- 1.2**	**- 1.2**
OPEC crude	25.7	23.6	18.0	20.9	22.7	21.3	23.6	24.6	25.7	26.1	25.0	- 4.4	3.7
Implied balance	**1.7**	**- 1.1**	**- 2.6**	**- 1.4**	**- 0.7**	**- 1.4**	**1.8**	**3.5**	**4.2**	**4.3**	**3.5**	**- 3.1**	**4.9**
Misc to bal	- 0.4	- 0.2	0.7	0.1	0.5	0.3	- 0.5	- 1.1	- 1.3	- 1.3	- 1.0	0.7	- 1.3
Observed stock change	**1.2**	**- 1.3**	**- 1.9**	**- 1.3**	**- 0.2**	**- 1.2**	**1.4**	**2.5**	**2.9**	**2.9**	**2.4**	**- 2.4**	**3.6**
of which:													
SPR (IEA members)	0.0	- 0.1	- 1.9	- 0.4	-	- 0.6	0.5	0.5	0.5	0.5	0.5	- 0.6	1.1
China	0.3	0.6	- 0.3	- 1.1	-	- 0.2	0.3	0.3	0.3	0.3	0.3	- 0.5	0.5
Other non-OECD	0.1	0.2	- 0.1	- 0.4	-	- 0.1	0.3	0.3	0.3	0.3	0.3	- 0.2	0.4
Commercial OECD	**0.1**	**- 0.2**	**- 0.9**	**0.8**	**- 0.2**	**- 0.1**	**0.3**	**1.4**	**1.8**	**1.8**	**1.3**	**- 0.3**	**1.4**
Oil-on-water	0.6	- 1.8	1.4	- 0.2	-	- 0.1	-	-	-	-	-	- 0.8	0.1

Crude + condensate only

	2025	1Q26	2Q26	3Q26	4Q26	2026	1Q27	2Q27	3Q27	4Q27	2027	Change '25-26	Change '26-27
Runs	**83.8**	**83.1**	**78.1**	**80.8**	**81.3**	**80.8**	**81.6**	**82.3**	**83.8**	**83.6**	**82.8**	**- 2.9**	**2.0**
West of Suez	43.3	43.0	43.1	43.7	43.2	43.3	42.3	42.7	43.7	42.9	42.9	- 0.0	- 0.4
East of Suez	40.5	40.1	35.1	37.1	38.1	37.6	39.3	39.7	40.2	40.7	39.9	- 2.9	2.4
Direct use	**0.9**	**0.7**	**1.1**	**1.1**	**0.8**	**1.0**	**0.7**	**0.9**	**1.1**	**0.7**	**0.9**	**0.1**	**- 0.1**
Non-OPEC C+C supply	**58.5**	**57.9**	**58.1**	**58.8**	**59.3**	**58.5**	**59.8**	**59.8**	**60.4**	**60.9**	**60.2**	**0.1**	**1.6**
United States	13.7	13.6	13.8	13.9	14.0	13.8	14.1	14.1	14.1	14.1	14.1	0.2	0.3
Other	44.8	44.3	44.3	44.9	45.3	44.7	45.7	45.6	46.3	46.8	46.1	- 0.1	1.4
OPEC	**27.1**	**25.0**	**19.1**	**22.0**	**23.7**	**22.5**	**24.8**	**26.0**	**27.1**	**27.6**	**26.4**	**- 4.6**	**3.9**
Crude	25.7	23.6	18.0	20.9	22.7	21.3	23.6	24.6	25.7	26.1	25.0	- 4.4	3.7
Condensate	1.4	1.4	1.1	1.1	1.0	1.2	1.2	1.4	1.4	1.4	1.4	- 0.3	0.2
Implied stock change	**0.9**	**- 1.0**	**- 2.0**	**- 1.1**	**0.9**	**- 0.8**	**2.3**	**2.5**	**2.6**	**4.2**	**2.9**	**- 1.7**	**3.7**

Dated Brent forecasts (period averages)

Base	**69.1**	**75.7**	**104.9**	**90**	**105**	**94**	**100**	**90**	**80**	**75**	**86**
Bull	69.1	75.7	104.9	120	120	105	120	120	120	120	120
Bear	69.1	75.7	104.9	60	60	75	60	60	60	60	60

WTI

Base	**64.7**	**71.4**	**93.4**	**85**	**95**	**86**	**90**	**82**	**74**	**71**	**79**
Bull	64.7	71.4	93.4	115	115	99	115	115	115	115	115
Bear	64.7	71.4	93.4	55	55	69	55	55	55	55	55

Source: Argus, IEA, EIA/DOE, Vortexa, S&P Global Energy, Petro-Logistics, Rystad Energy, Morgan Stanley Research

Key market indicators

Exhibit 18:

Global oil prices

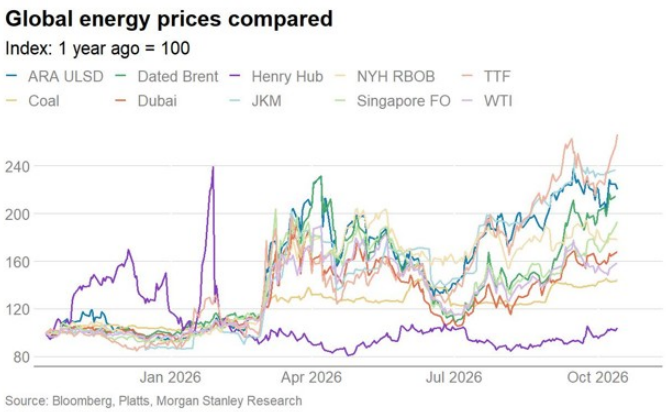
Latest value as per 13 Oct 2026

Instrument	Latest	Change 1 wk	Change 4 wk	Unit	Last 1m	1Y low	1Y range	1Y high	Rationale for including
Global benchmarks									
ICE Brent M1 future (Dec)	105.6	5.0	−3.2	$/bbl		58.9		118.3	Global crude benchmark; anchor for Atlantic pricing
NYMEX WTI M1 future (Nov)	93.9	4.5	−11.9	$/bbl		55.3		113.0	US marginal barrel; key global risk benchmark
Platts Dubai Mo01 (physical)	108.8	3.1	−19.0	$/bbl		58.2		169.8	Asia sour benchmark; core signal for Middle East flows
Term structure									
ICE Brent future M1-M2 (Dec/Jan)	2.8	−0.2	−2.6	$/bbl		−0.8		14.4	Prompt tightness/storage signal in Brent complex
ICE Brent future M2-M3 (Jan/Feb)	2.4	−0.1	−2.2	$/bbl		−0.2		8.0	Cleaner structure signal when M1 rolls/noisy
NYMEX futures M1-M2 (Nov/Dec)	0.98	0.0	−4.1	$/bbl		−0.01		13.94	US prompt balance signal; inventories & pipeline pull
NYMEX futures M2-M3 (Dec/Jan)	0.95	−0.1	−4.3	$/bbl		0.03		8.65	Back-end prompt signal; reduces expiry distortion
Dubai swap M1-M2	3.6	0.6	−3.4	$/bbl		−1.6		14.2	Asia prompt balance; sour crude tightness indicator
Dubai swap M2-M3	2.1	0.3	−2.4	$/bbl		−1.1		6.1	Structure beyond front; filters front-month noise
North Sea									
Dated Brent	134.2	5.9	5.0	$/bbl		60.2		144.4	Physical spot benchmark; sets Atlantic Basin crude value
Brent DFL (M1)	4.7	0.6	−4.8	$/bbl		−1.0		13.8	Bridge between Dated and futures; spot vs paper alignment
Cash BFOE	106.2	7.6	−2.3	$/bbl		59.1		120.7	Forward physical marker; tracks physical vs paper convergence
Brent CFD (Week 1)	24.6	−4.2	−2.9	$/bbl		−2.4		43.9	Very prompt NS tightness; near-term cargo availability
Forties vs Dated Brent strip	19.4	1.5	7.1	$/bbl		−1.2		21.2	Marginal sour North Sea grade; barometer for basin length
Ekofisk vs Dated Brent strip	21.7	1.1	8.5	$/bbl		0.6		22.6	Sweet premium proxy; refinery demand for light/sweet yield
J. Sverdrup vs Dated Brent strip	4.0	−7.2	−8.3	$/bbl		−2.9		24.4	Medium sour NS value; competes with ME grades
United States									
WTI Cushing M1 (cash)	93.7	4.3	−7.7	$/bbl		55.3		113.0	Physical WTI anchor at Cushing; pipeline hub clearing price
WTI Midland vs WTI Cushing	0.45	0.0	−1.4	$/bbl		−2.50		4.50	Permian takeaway stress signal; pipes vs production growth
WTI MEH vs WTI Cushing	1.0	0.2	−1.6	$/bbl		−0.7		7.8	Export outlet premium/discount; USGC pull vs inland
WCS Hardisty vs WTI Cushing CMA	−25.6	−1.0	−8.8	$/bbl		−25.6		−9.9	Heavy-light & Canada logistics; refinery margin barometer
WTI-Brent spread	−12.7	−0.6	−4.7	$/bbl		−17.0		0.5	Key east-west arb signal; drives US export economics
Middle East									
Brent-Dubai EFS (M1)	4.1	−0.3	−6.3	$/bbl		−0.3		18.5	Atlantic vs Asia arb; key driver of Brent vs Dubai relative value
Cash Dubai premium	8.0	−2.6	−21.8	$/bbl		−4.1		65.7	Cash Dubai premium to Dubai swap; spot tightness vs swaps, immediate OSP pressure signal
West Africa									
Kissanje vs Dated Brent strip	−14.8	−8.0	−14.8	$/bbl		−14.8		10.1	China-bound WAF barrel; marginal Atlantic supply signal
Jubilee vs Dated Brent strip	−13.3	−7.0	−12.4	$/bbl		−13.3		10.0	Atlantic sweet clearing level; tracks China/Europe demand
Hungo vs Dated Brent strip	−22.7	−9.8	−20.6	$/bbl		−22.7		11.3	Medium sweet WAF value; sensitive to China buying swings
Djeno vs Dated Brent strip	−28.1	−7.1	−23.5	$/bbl		−28.1		10.6	Sour WAF grade; key China-bound arb and freight sensitivity
Long-haul arbitrage grades									
WTI FOB USGC vs Dated Brent strip	−14.6	−2.5	−8.6	$/bbl		−16.4		2.0	US export competitiveness vs Brent; arb opens/closes
Guyana Liza vs Dated Brent strip	−20.6	−19.2	−20.1	$/bbl		−20.6		8.3	Growth light sweet barrel; clears into China/Europe
Tupi (Brazil) vs Dated Brent strip	−19.8	−1.6	−6.2	$/bbl		−20.7		9.4	Core Brazil export arb; long-haul pull indicator
CPC Blend vs Dated Brent strip	−20.5	−1.6	−9.5	$/bbl		−20.5		0.0	Black Sea arb barrel; freight/geopolitics sensitive
Freight									
Platts Global VLCC TCE Index	1,168.8	72.5	334.9	k$/day		29.6		1,181.0	Single global crude freight gauge; ton-mile weighted signal
Persian Gulf → China (VLCC)	251.6	0.0	42.6	$/mt		10.0		255.7	Main ME→Asia flow cost; drives Dubai/Murban economics
US Gulf Coast → China (VLCC)	296.3	70.4	148.2	$/mt		31.5		300.0	Key cost for US exports; links WTI FOB to Asia clearing
West Africa → China (VLCC)	256.2	21.1	86.6	$/mt		18.7		269.0	Cost for China-bound Atlantic grades; clears WAF differentials
Refined products									
Asian Naphtha crack vs Brent	−1.7	4.0	2.8	$/bbl		−13.8		27.4	Petchem demand gauge; Asia light-end support signal
USGC Gasoline crack vs WTI	32.7	−1.7	0.8	$/bbl		10.8		45.8	Gasoline margin driver; swing refining runs and crude demand
Spore Jet crack vs Brent	67.8	2.5	−10.5	$/bbl		17.5		114.2	Asia travel demand proxy; middle distillate strength signal
ICE Gasoil crack vs Brent	83.0	4.8	−5.5	$/bbl		20.4		99.4	Global distillate benchmark margin; key crude demand driver
Spore 380 CST FO crack vs Dubai	7.4	4.2	11.3	$/bbl		−9.5		14.0	Residual value signal; heavy sour crude support/drag

Source: Argus, Bloomberg, Platts, General Index, Morgan Stanley Research

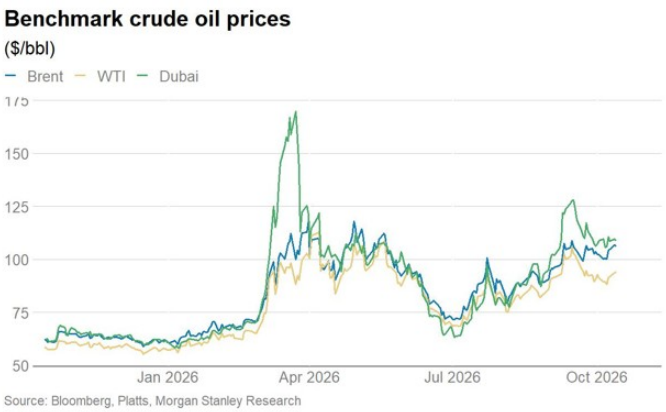
Prices

Exhibit 19:



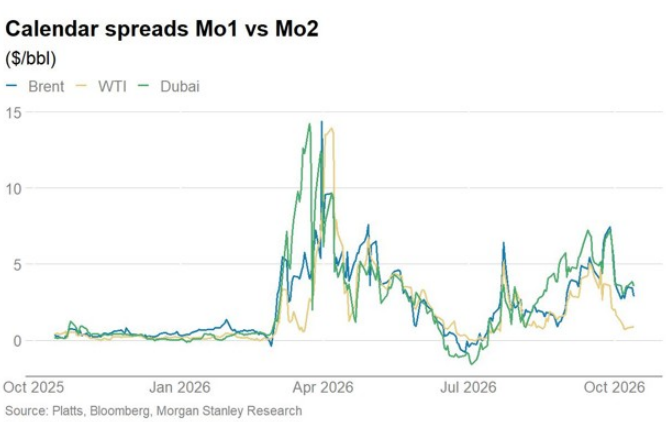
Source: Bloomberg, Platts, Morgan Stanley Research

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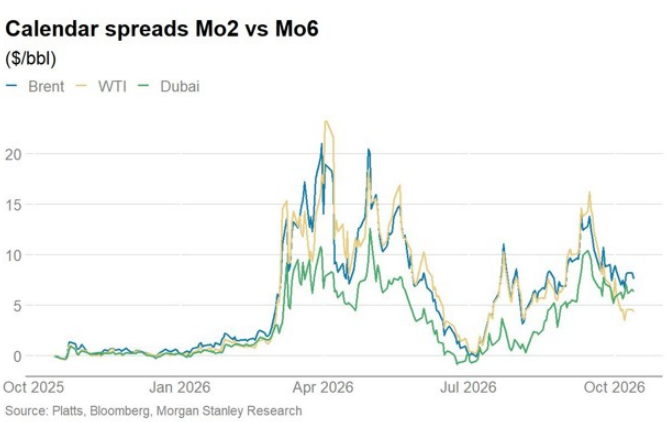
Source: Bloomberg, Platts, Morgan Stanley Research

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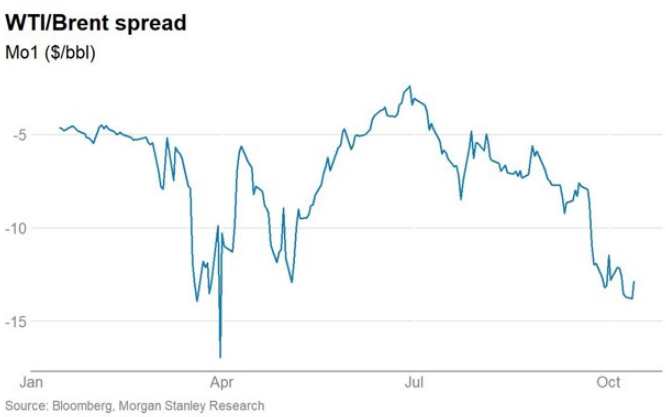
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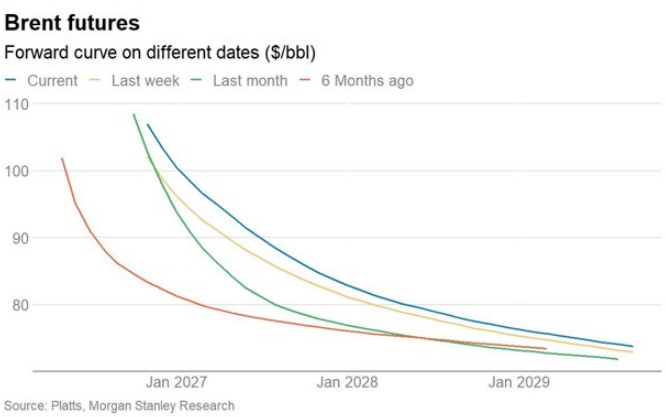
Source: Platts, Bloomberg, Morgan Stanley Research

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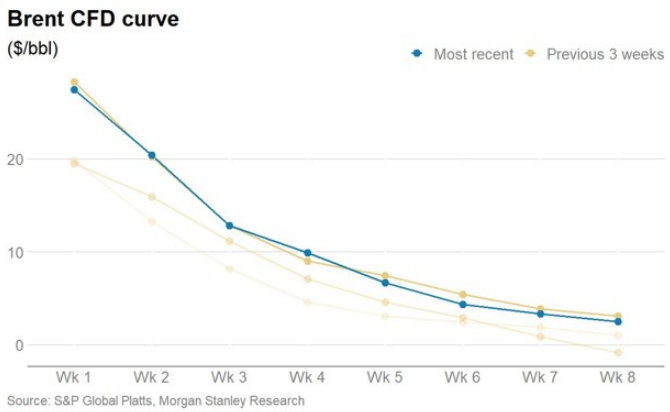
Source: Bloomberg, Morgan Stanley Research

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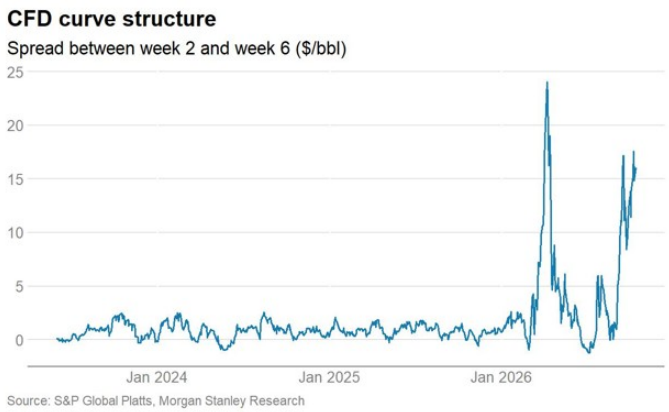
Source: Platts, Morgan Stanley Research

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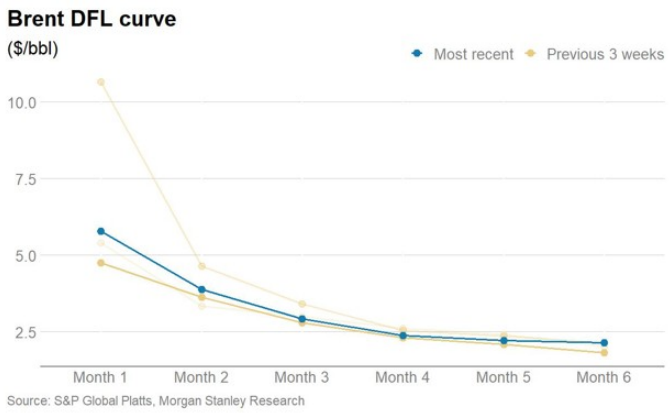
Source: S&P Global Platts, Morgan Stanley Research

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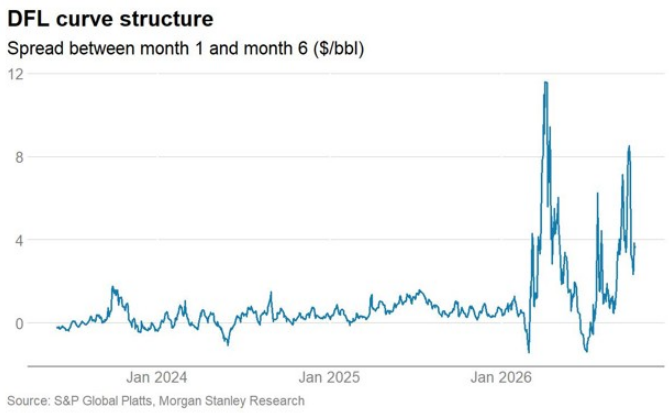
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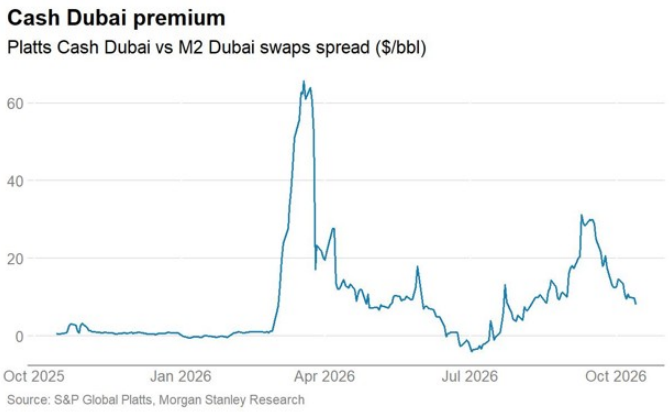
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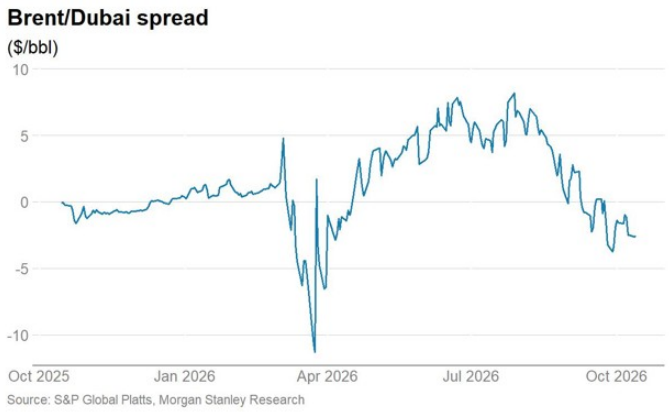
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 29:



Source: S&P Global Platts, Morgan Stanley Research

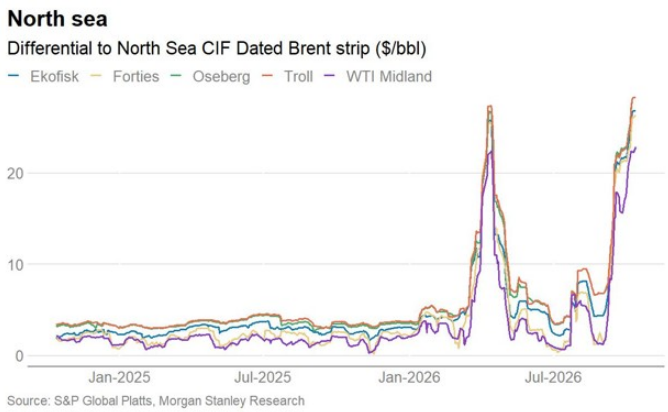
Exhibit 30:



Source: S&P Global Platts, Morgan Stanley Research

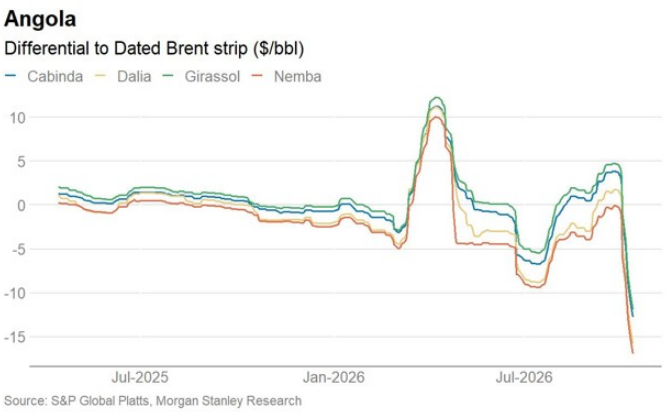
Differentials

Exhibit 31:



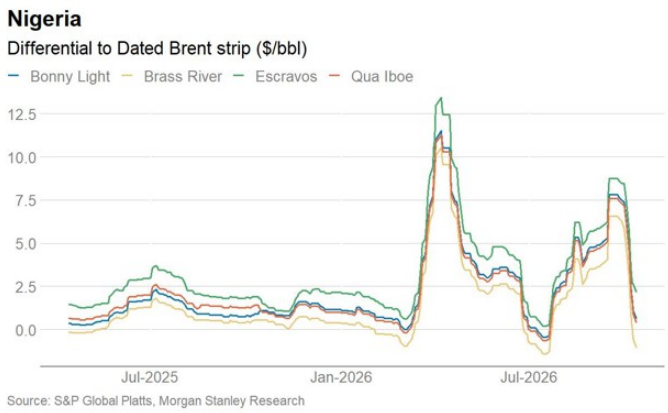
Source: S&P Global Platts, Morgan Stanley Research

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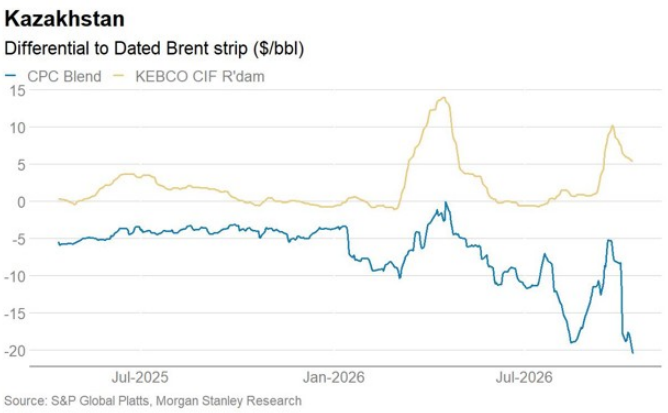
Source: S&P Global Platts, Morgan Stanley Research

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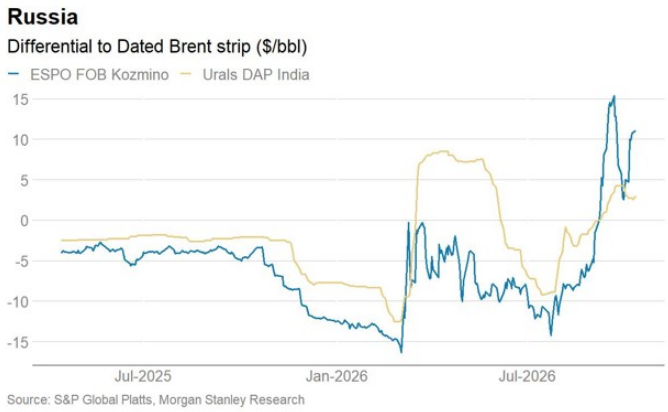
Source: S&P Global Platts, Morgan Stanley Research

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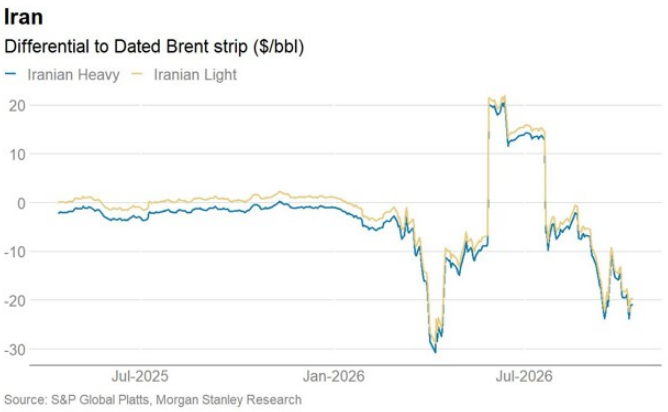
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 35:



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 36:



Source: S&P Global Platts, Morgan Stanley Research

Crude Quality

Exhibit 37:

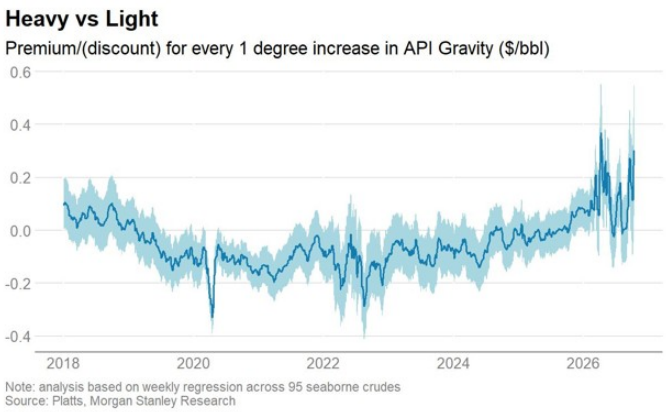


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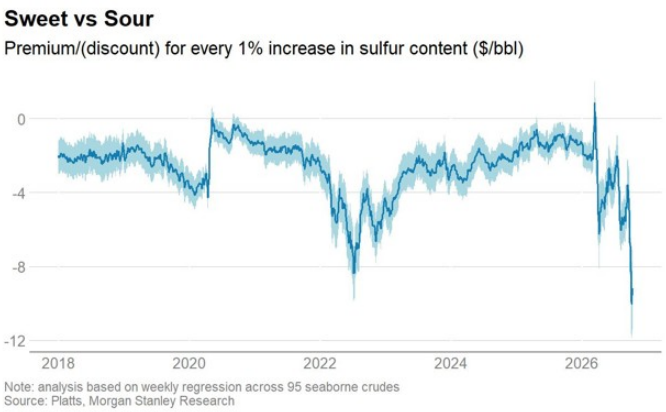


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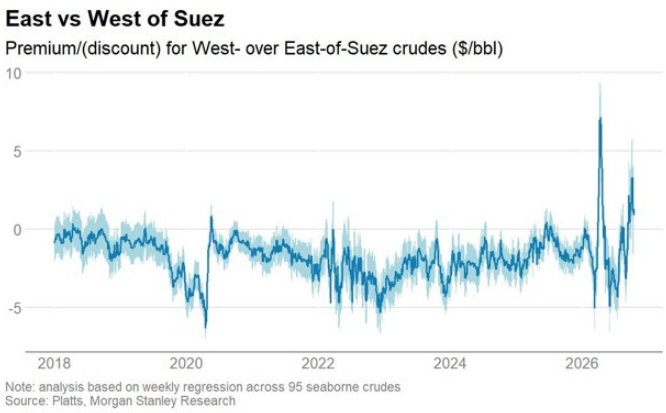
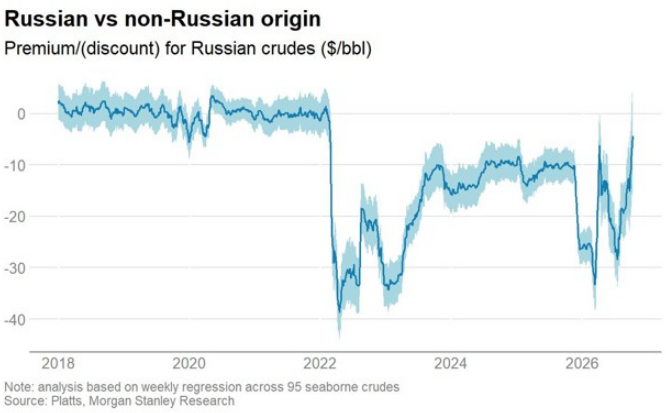


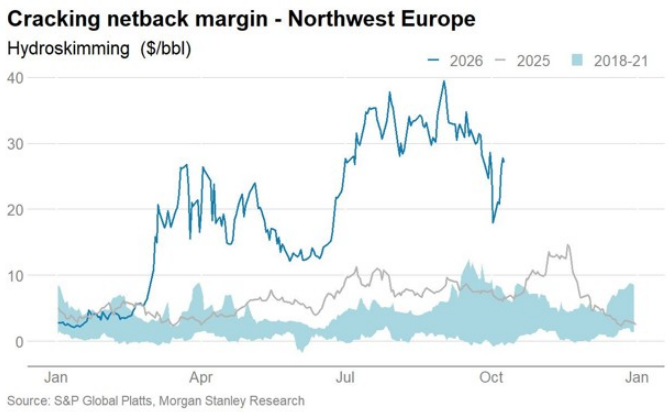
Exhibit 40:



The analyses above are based on a daily regression of the price of 95 seaborne crudes against 1) their API gravity, 2) their sulphur content, 3) a dummy variable indicating whether the crude's origin is East or West of Suez, and 4) another dummy variable indicating whether the grade is of Russian origin or not. The charts above show how the sensitivity of these 95 crude prices to each of these variables has changed over time.

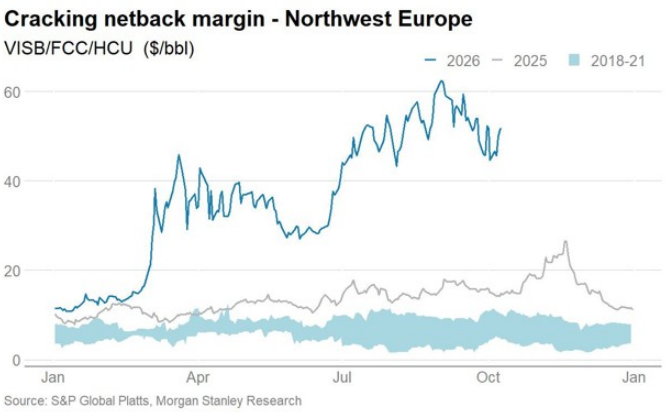
Refining Margins

Exhibit 41:



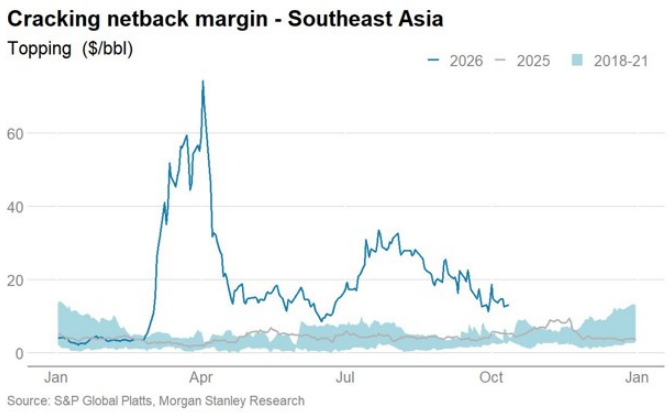
Source: S&P Global Platts, Morgan Stanley Research

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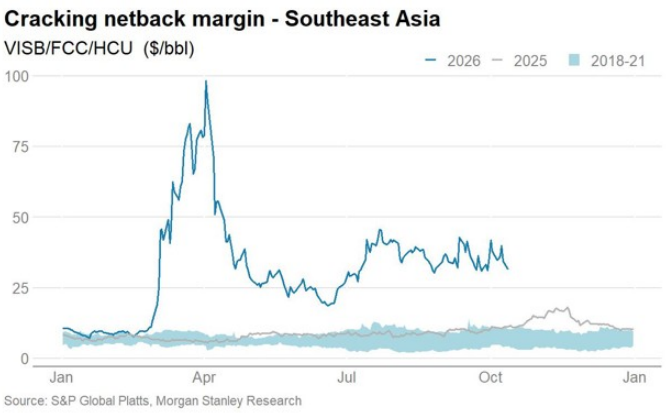
Source: S&P Global Platts, Morgan Stanley Research

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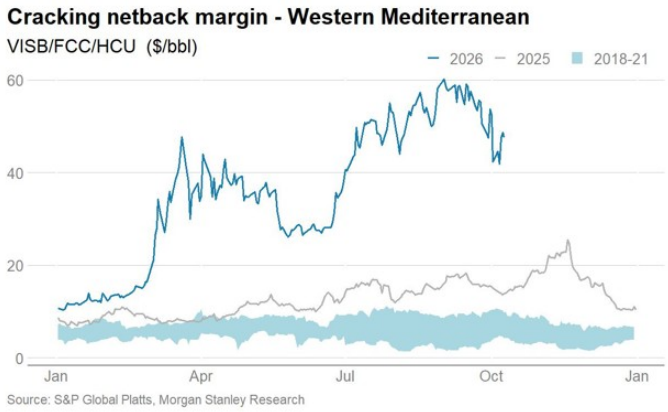
Source: S&P Global Platts, Morgan Stanley Research

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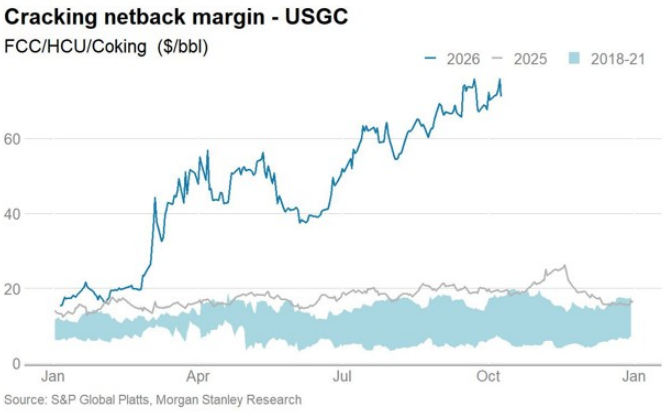
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 45:



Source: S&P Global Platts, Morgan Stanley Research

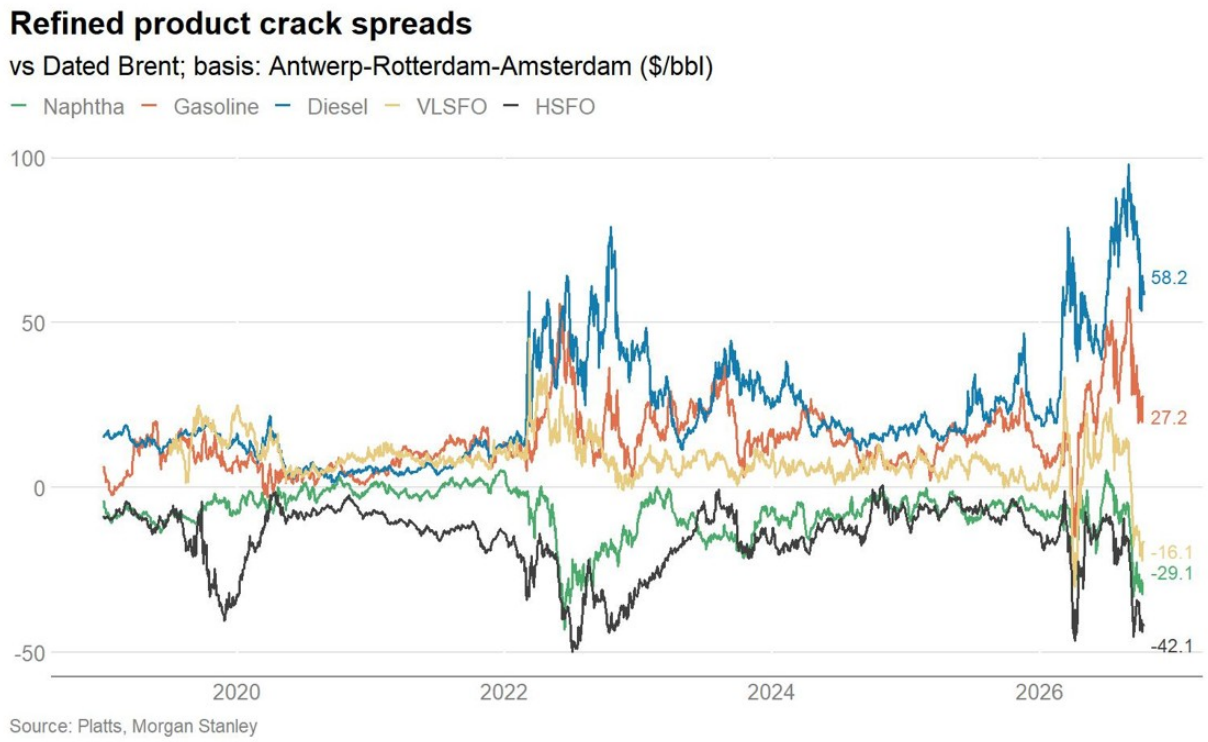
Exhibit 46:



Source: S&P Global Platts, Morgan Stanley Research

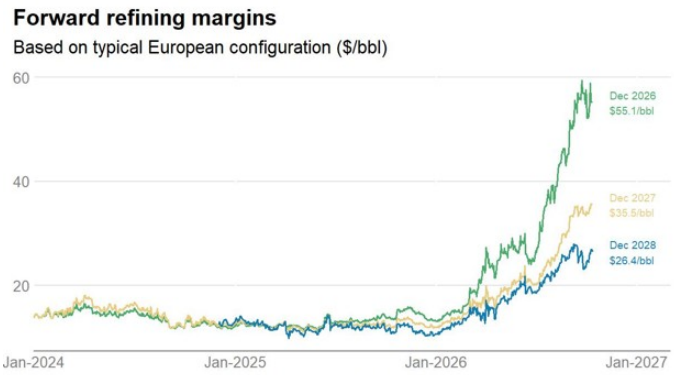
Product Crack Spreads

Exhibit 47:



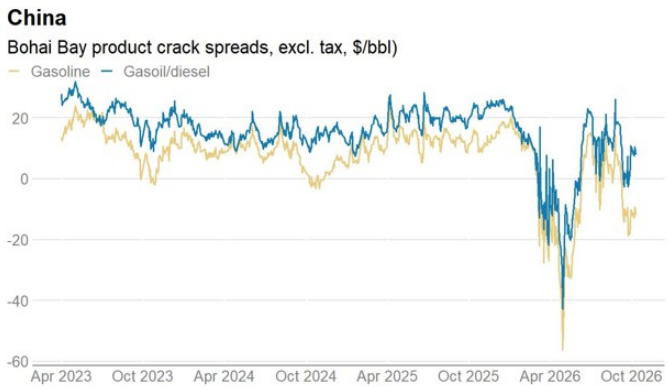
Source: Platts, Morgan Stanley

Exhibit 48:



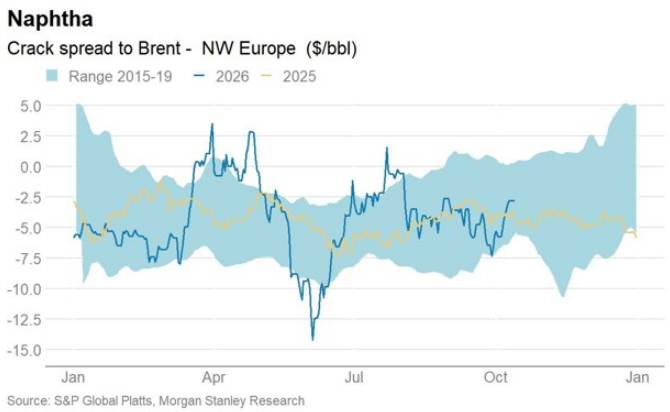
Note: Analysis assumes yields of 30% gasoline, 60% middle distillate, 5% naphtha and 5% HSFO
Source: Bloomberg, Morgan Stanley Research

Exhibit 49:



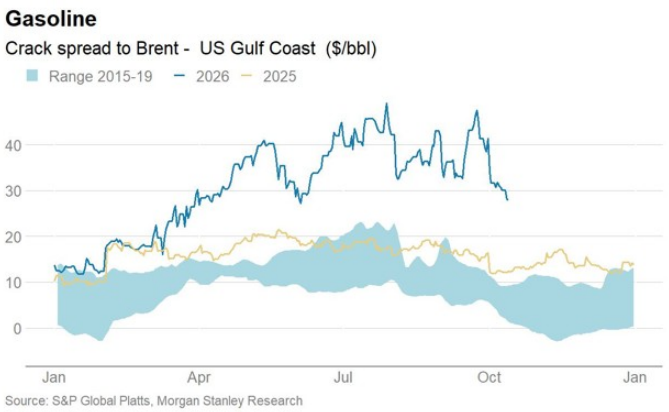
Source: Argus, Morgan Stanley Research

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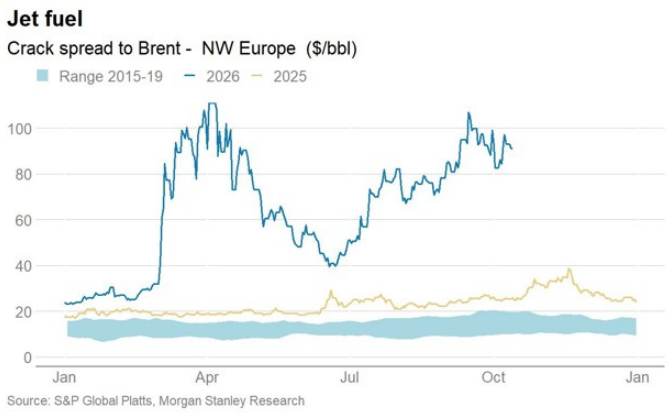
Source: S&P Global Platts, Morgan Stanley Research

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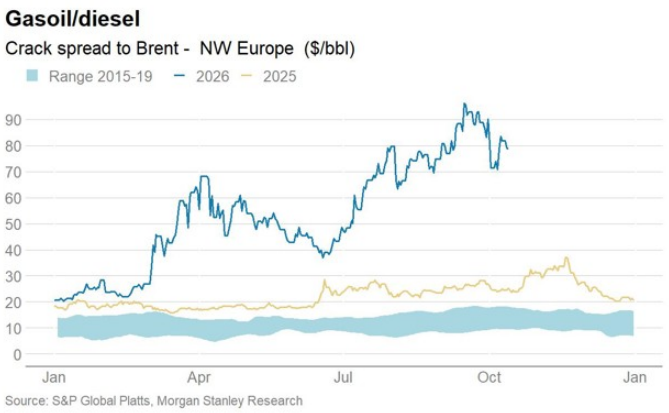
Source: S&P Global Platts, Morgan Stanley Research

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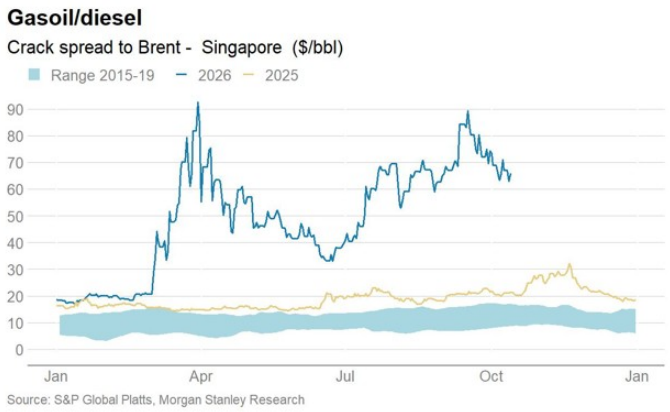
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 53:



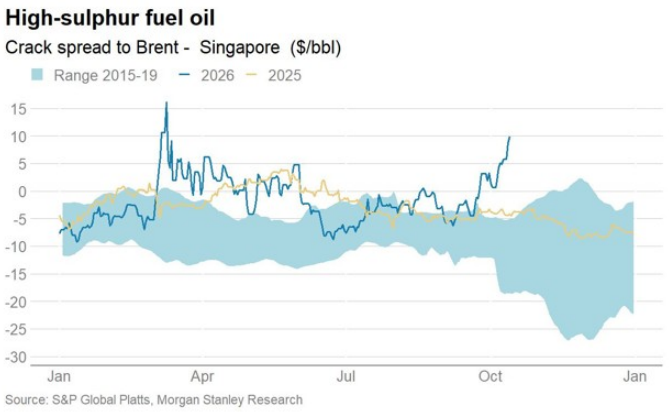
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 54:



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 55:



Source: S&P Global Platts, Morgan Stanley Research

Refinery Outages

Exhibit 56:

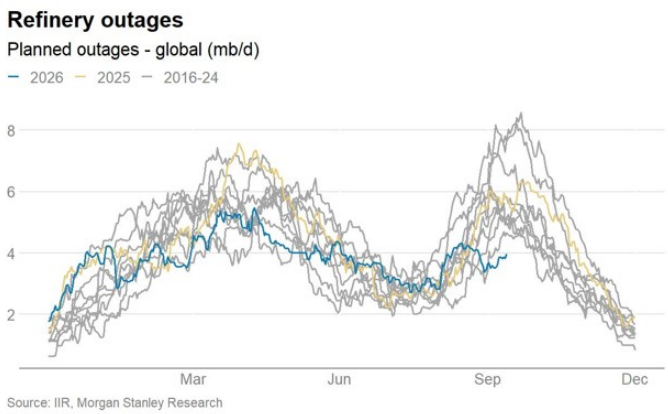
Refinery outages

(mb/d)

	Actual													Known outlook	
region	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026	Jul 2026	Sep 2026	Oct 2026	Nov 2026	Aug 2026
Africa	0.47	0.28	0.26	0.23	0.41	0.54	0.21	0.13	0.03	0.05	0.10	0.08	0.09	0.12	0.00
Brazil	0.09	0.12	0.07	0.06	0.05	0.01	0.03	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.01
China	0.86	0.96	1.21	1.17	1.12	0.53	0.55	0.92	1.45	1.77	2.17	1.33	0.90	0.47	1.81
Europe	0.57	0.96	1.08	0.36	0.28	0.78	1.20	0.69	0.60	0.40	0.25	0.40	0.40	0.38	0.35
India	0.15	0.14	0.22	0.26	0.00	0.00	0.11	0.55	0.54	0.38	0.22	0.09	0.09	0.20	0.20
Japan	0.42	0.46	0.42	0.10	0.13	0.15	0.15	0.33	0.30	0.41	0.40	0.37	0.34	0.26	0.27
Korea	0.00	0.17	0.17	0.17	0.00	0.24	0.38	0.52	0.36	0.29	0.00	0.00	0.41	0.40	0.00
Middle East	0.09	0.88	1.20	0.52	0.43	0.38	1.90	2.21	2.05	1.81	1.59	1.44	1.79	0.98	1.71
Other	1.15	1.23	0.73	0.49	0.67	0.99	1.20	1.87	1.55	1.18	0.98	1.47	0.85	0.59	0.98
Russia	2.05	2.21	1.98	1.50	0.72	0.78	0.98	1.92	2.25	3.30	4.60	4.79	4.55	1.97	4.06
Taiwan	0.24	0.24	0.24	0.31	0.15	0.00	0.18	0.18	0.00	0.10	0.10	0.10	0.18	0.34	0.10
US	0.78	1.41	0.53	0.05	0.74	1.18	0.87	1.03	0.43	0.38	0.21	0.61	0.48	0.08	0.10
World	**6.70**	**8.96**	**8.12**	**4.81**	**4.61**	**5.37**	**7.63**	**10.12**	**9.59**	**10.02**	**10.50**	**10.62**	**9.96**	**5.34**	**9.52**

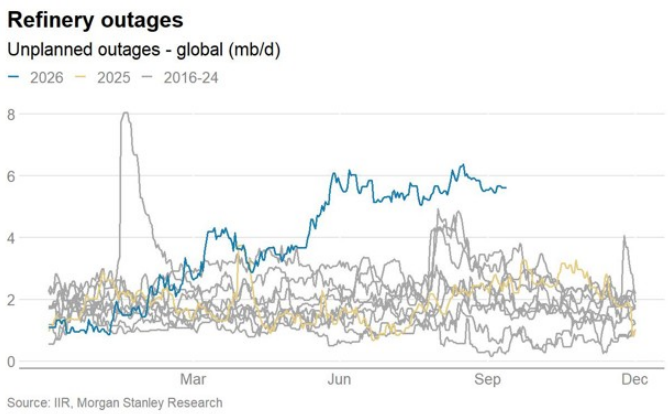
Source: IIR, Morgan Stanley Research

Exhibit 57:



Source: IIR, Morgan Stanley Research

Exhibit 58:



Source: IIR, Morgan Stanley Research

Inventories

Exhibit 59:

Observable crude oil inventories

(million bbl)

		Level	Average daily change					
		Current	-4 wks	-13 wks	-26 wks	Sep	Aug	Jul
Commercial								
	United States	426.2	0.10	0.18	−0.21	0.21	0.60	0.01
	Japan	67.3	−0.25	−0.06	0.10	−0.33	0.40	0.00
	ARA region	50.7	0.02	0.02	−0.01	0.08	0.04	0.16
	Other OECD	574.2	−0.23	0.20	0.16	−0.08	−0.02	0.88
	China	981.7	−1.56	−1.14	−0.70	−1.92	−0.34	−1.15
	Other non-OECD	1,110.9	−0.32	−0.55	−0.15	−0.33	−0.95	0.19
	Floating storage	89.1	−0.18	0.12	−0.06	−0.77	−0.02	0.80
	Oil-in-transit	1,245.8	3.27	−0.42	0.84	2.78	−2.15	−1.97
Sub-total	—	**4,545.9**	**0.8**	**−1.6**	**0.0**	**−0.4**	**−2.4**	**−1.1**
SPR								
	United States	283.0	−0.07	−0.37	−0.69	−0.10	−0.59	−0.67
	Japan	184.5	0.01	−0.03	−0.41	0.03	0.01	−0.15
	ARA region	2.9	0.00	0.00	0.01	0.00	0.00	0.00
	Other OECD	255.3	0.00	0.11	−0.01	0.00	0.00	0.32
	China	191.3	−0.14	−0.03	0.02	−0.14	−0.09	0.21
Sub-total	—	**917.0**	**−0.2**	**−0.3**	**−1.1**	**−0.2**	**−0.7**	**−0.3**
Total	—	**5,462.9**	**0.6**	**−2.0**	**−1.1**	**−0.6**	**−3.1**	**−1.4**

Source: IEA, EIA/DOE, PJK, IE, Genscape, PAJ, Platts, Vortexa, Morgan Stanley Research

Exhibit 60:

Observable oil products inventories

(million bbl)

		Level	Average daily change					
		Current	-4 wks	-13 wks	-26 wks	Sep	Aug	Jul
On land								
	Light ends	402.5	−0.19	−0.11	−0.30	−0.05	−0.26	−0.18
	Middle distillates	681.5	−0.12	−0.20	−0.09	−0.02	−0.03	−0.50
	Fuel oil & resid	126.7	−0.05	0.00	−0.02	0.02	0.13	−0.16
	Other/not specified	605.7	−0.15	0.25	0.27	0.10	0.30	0.79
Sub-total	—	**1,816.51**	**−0.51**	**−0.06**	**−0.14**	**0.05**	**0.14**	**−0.05**
At sea								
	Light ends	196.4	0.70	0.20	−0.02	0.86	−0.08	−0.30
	Middle distillates	358.4	0.54	0.27	0.05	0.31	0.33	0.22
	Fuel oil & resid	113.7	−0.33	−0.10	−0.12	−0.33	0.18	0.05
	Other/not specified	164.2	0.15	−0.13	0.12	0.02	0.23	−0.66
Sub-total	—	**832.62**	**1.06**	**0.24**	**0.03**	**0.86**	**0.66**	**−0.69**
Total	—	**2,649.13**	**0.55**	**0.18**	**−0.11**	**0.91**	**0.80**	**−0.74**

Source: IEA, EIA/DOE, PJK, IE, Genscape, PAJ, Platts, Vortexa, Morgan Stanley Research

Exhibit 61:

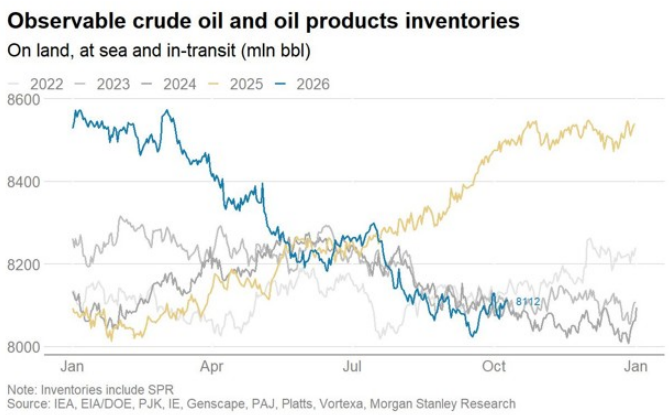


Exhibit 62:

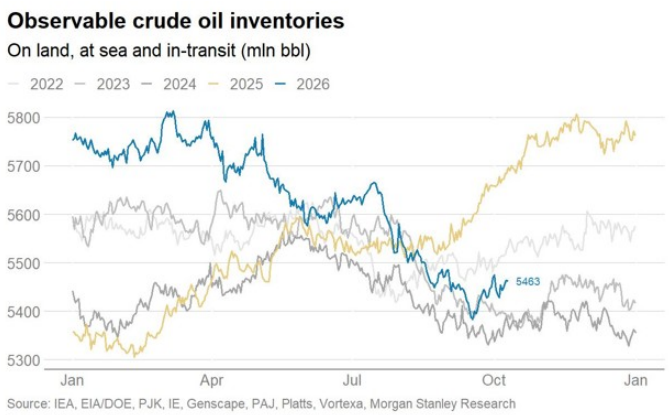
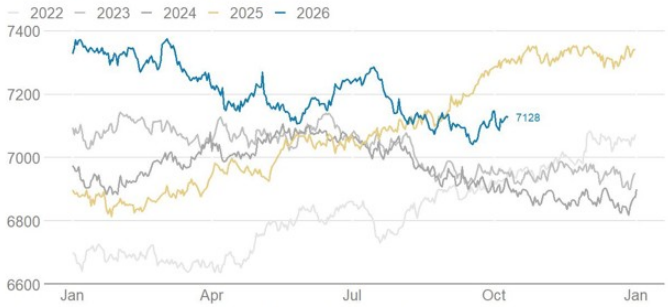


Exhibit 63:

Observable crude oil and oil products inventories

In commercial storage only (mln bbl)

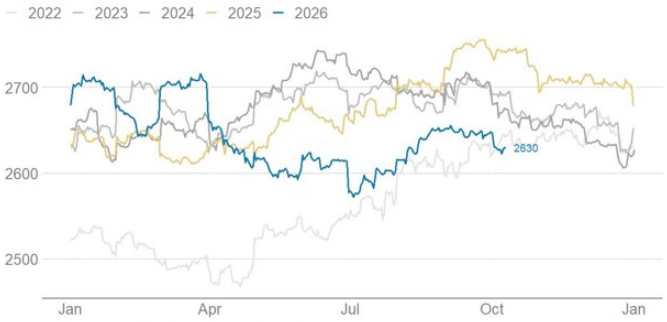


Note: inventories on land, at sea and in-transit, not including SPR in OECD countries
Source: IEA, EIA/DOE, PJK, IE, Genscape, PAJ, Platts, Vortexa, Morgan Stanley Research

Exhibit 64:

OECD commercial oil inventories

Total oil, on land only (mln bbl)

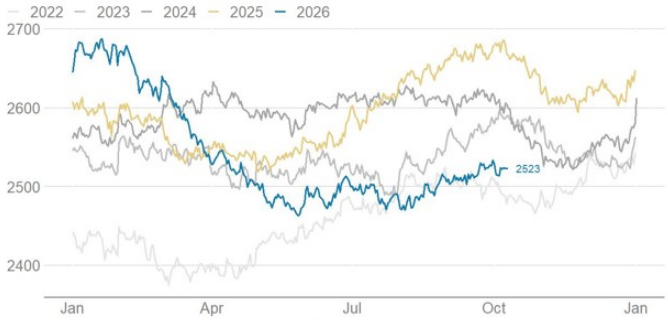


Source: IEA, EIA/DOE, PJK, PAJ, Platts, Vortexa, Morgan Stanley Research

Exhibit 65:

Observable refined oil products inventories

On land, at sea and in-transit (mln bbl)

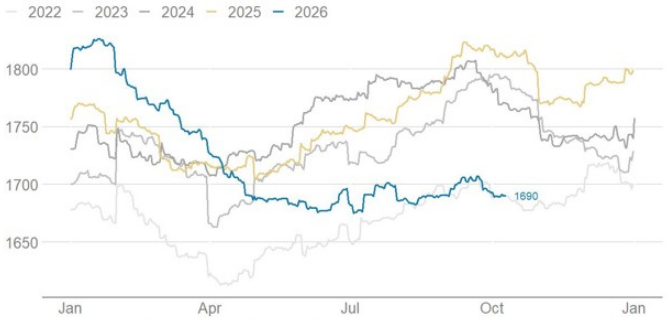


Source: IEA, EIA/DOE, PJK, IE, PAJ, Platts, Morgan Stanley Research

Exhibit 66:

Observable refined oil products inventories, on-land only

(mln bbl)

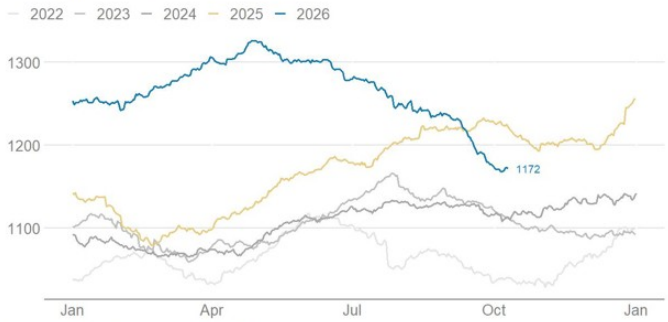


Source: IEA, EIA/DOE, PJK, IE, PAJ, Platts, Morgan Stanley Research

Exhibit 67:

Observable crude oil inventories in China

On land (mln bbl)

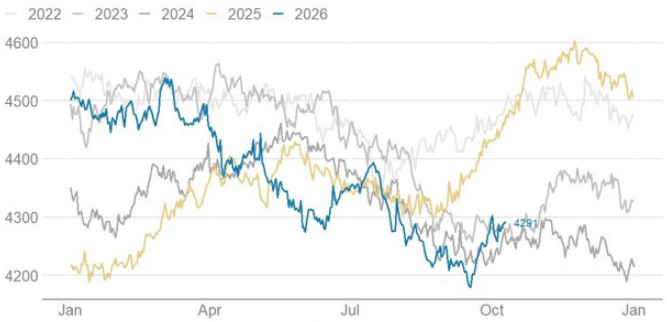


Source: Vortexa, Morgan Stanley Research

Exhibit 68:

Observable crude oil inventories outside China

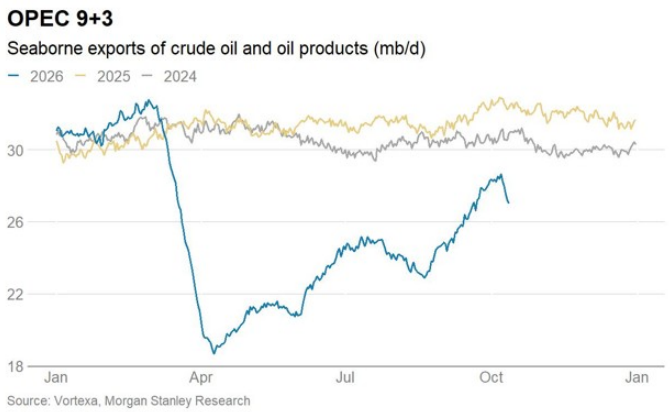
On land, at sea and in-transit (mln bbl)



Source: IEA, EIA/DOE, PJK, IE, PAJ, Platts, Morgan Stanley Research

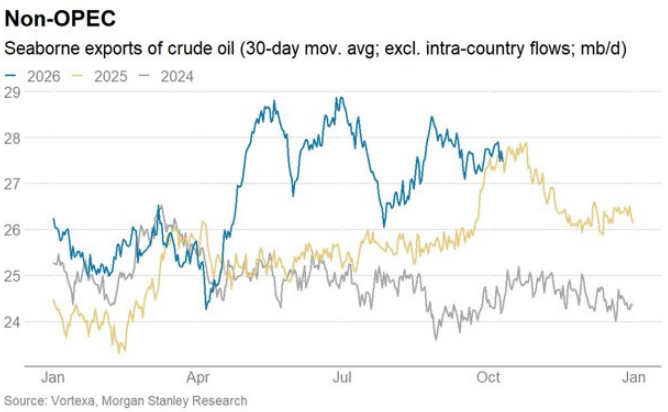
Seaborne Exports

Exhibit 69:



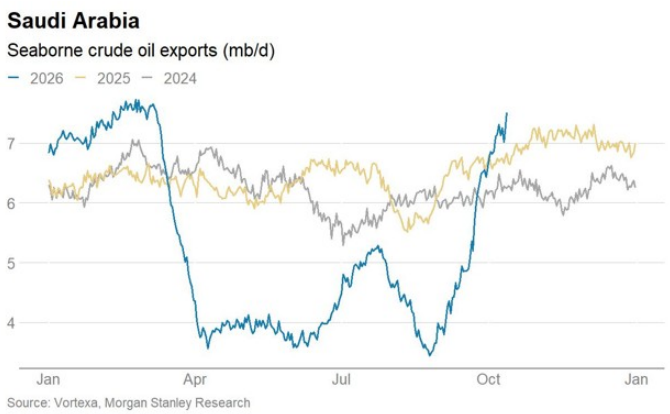
Source: Vortexa, Morgan Stanley Research

Exhibit 70:



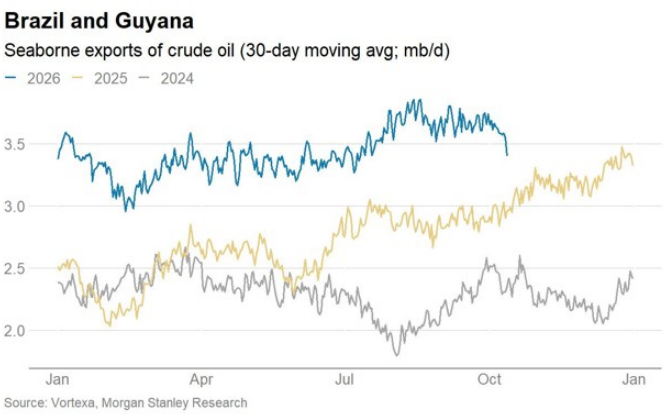
Source: Vortexa, Morgan Stanley Research

Exhibit 71:



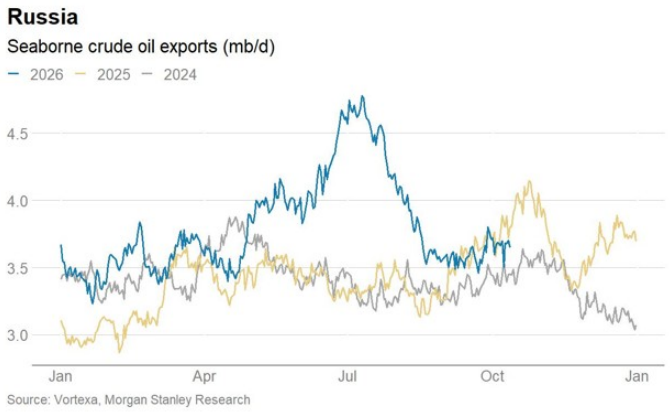
Source: Vortexa, Morgan Stanley Research

Exhibit 72:



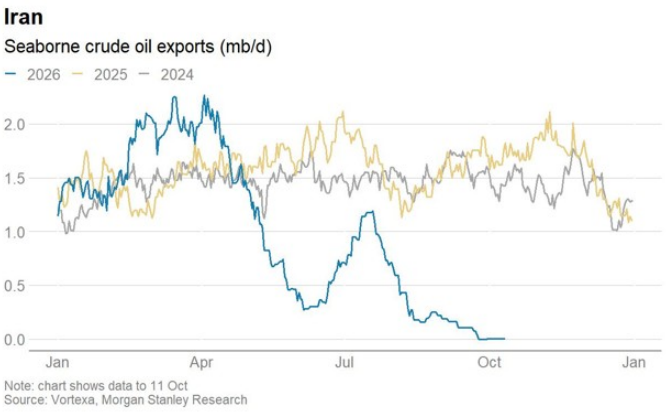
Source: Vortexa, Morgan Stanley Research

Exhibit 73:



Source: Vortexa, Morgan Stanley Research

Exhibit 74:



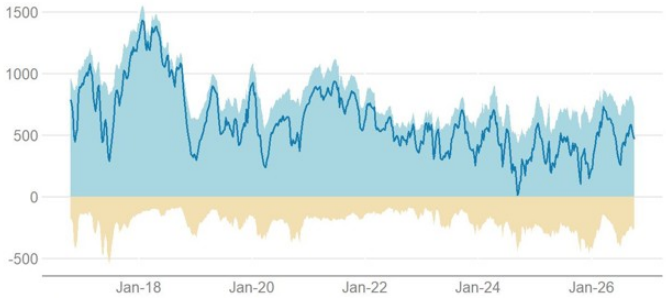
Note: chart shows data to 11 Oct
Source: Vortexa, Morgan Stanley Research

Positioning

Exhibit 75:

Total oil

COT report - Managed money only (million barrels)

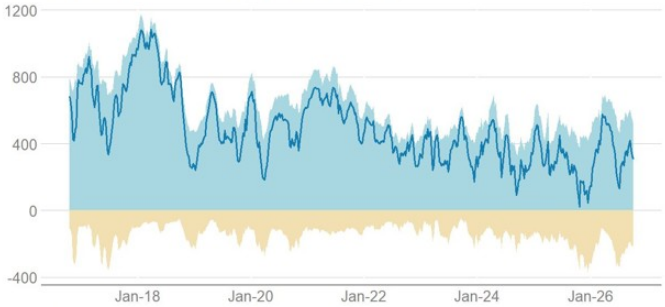


Note: light blue = long positions, yellow = short positions, dark blue = net position
Source: CFTC, ICE, Morgan Stanley Research

Exhibit 76:

Brent and WTI

COT report - Managed money only (million barrels)

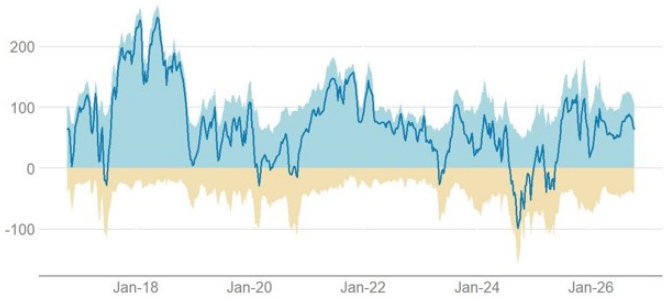


Note: light blue = long positions, yellow = short positions, dark blue = net position
Source: CFTC, ICE, Morgan Stanley Research

Exhibit 77:

Gasoil and Heating Oil

COT report - Managed money only (million barrels)

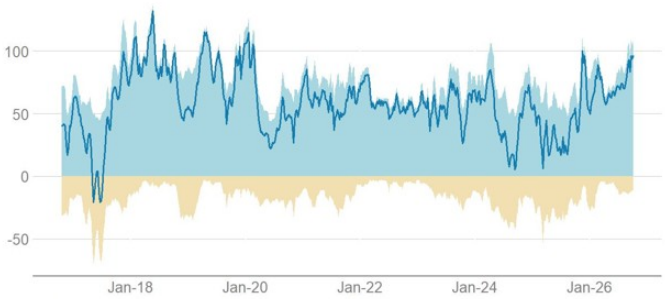


Note: light blue = long positions, yellow = short positions, dark blue = net position
Source: CFTC, ICE, Morgan Stanley Research

Exhibit 78:

Gasoline - NY Harbour RBOB

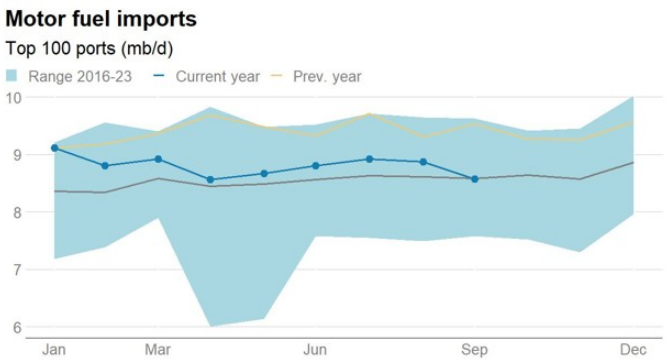
COT report - Managed money only (million barrels)



Note: light blue = long positions, yellow = short positions, dark blue = net position
Source: CFTC, Morgan Stanley Research

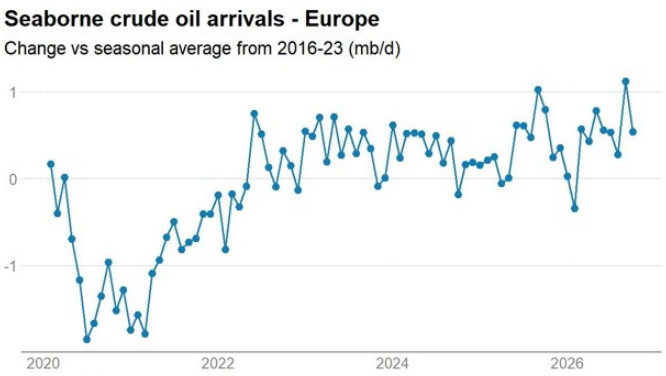
Other Selected Charts

Exhibit 79:



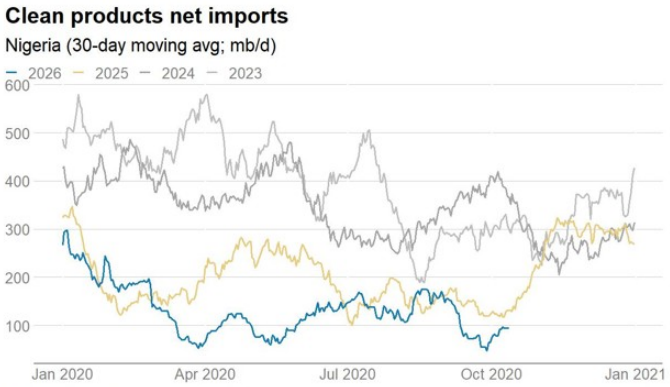
Note: analysis based on the 100 largest ports where imports are >90% of total flow, excluding large trading ports like Singapore, Rotterdam, etc
Source: Vortexa, Morgan Stanley Research

Exhibit 80:



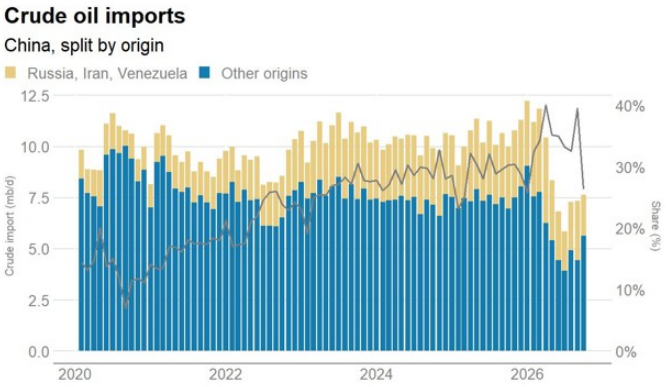
Note: analysis based on EU + Norway + UK
Source: Vortexa, Morgan Stanley Research

Exhibit 81:



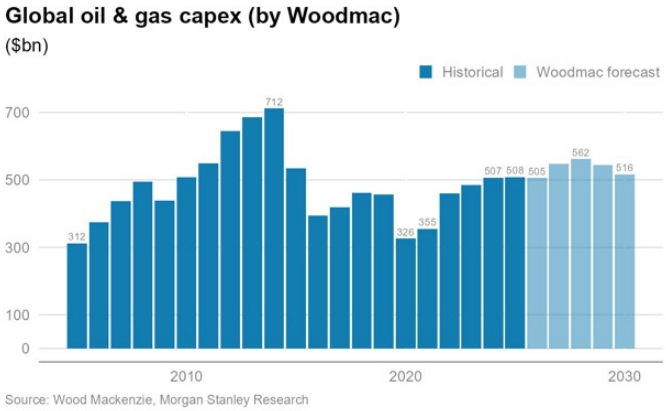
Source: Vortexa, Morgan Stanley Research

Exhibit 82:



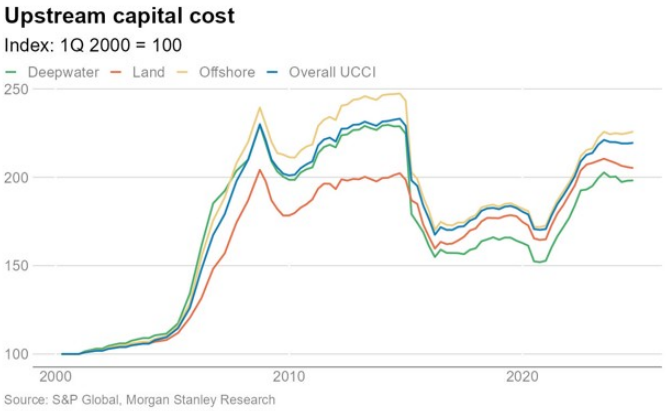
Source: Vortexa, Morgan Stanley Research

Exhibit 83:



Source: Wood Mackenzie, Morgan Stanley Research

Exhibit 84:



Source: S&P Global, Morgan Stanley Research

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Global Stock Ratings Distribution

(as of September 30, 2026)

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	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1599	43%	455	48%	28%	783	44%
Equal-weight/Hold	1563	42%	394	42%	25%	763	43%
Not-Rated/Hold	2	0%	1	0%	50%	1	0%
Underweight/Sell	570	15%	96	10%	17%	227	13%
Total	3,734		946			1774	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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Overweight (O or Over) - The stock's total return is expected to exceed the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis over the next 12-18 months.
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Not-Rated (NR) - Currently the analyst does not have adequate conviction about the stock's total return relative to the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U or Under) - The stock's total return is expected to be below the total return of the relevant country MSCI Index or the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.
Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.
Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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