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The Oil Manual

How Fast Can Middle East Production Return?

We adjust our modelling assumptions for re-opening of the Strait as well as the path of production recovery. Our base case calls for a tight 3Q with further inventory draws ahead. Brent prices may have fallen but we stick to our 2Q/3Q Brent forecasts and raise our 4Q/1Q estimates modestly.

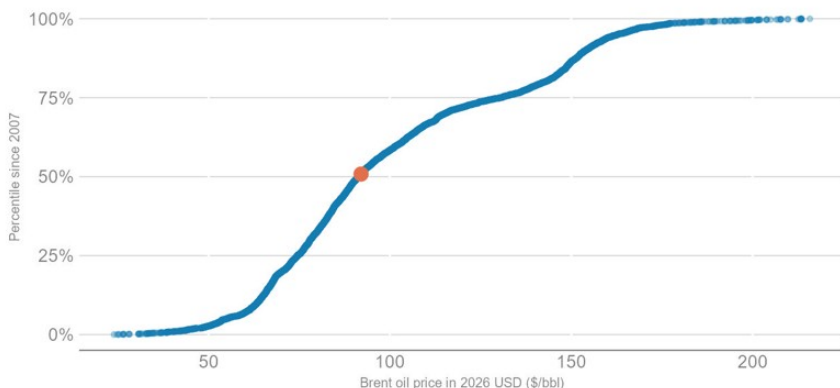
Key Takeaways

- We move our modelling assumption for inflection in Strait of Hormuz oil exports to late July, from end-May before
- In addition, we fine-tune our estimate for production recovery post-Hormuz opening slightly, from 70% recovery over 3 months, to 75% recover over 4 months
- Their combined effect is a Brent market that remains broadly as tight in 3Q as it was in 2Q with further inventory draws ahead
- Large US oil exports and low imports into China have shielded the rest of the oil market, but whether this can last throughout 3Q is uncertain
- Inflation-adjusted, Brent has fallen to its 20-year median, pricing in a clean and near-term recovery; from here, however, risks appears skewed to the upside

Exhibit 1: In inflation-adjusted terms, the current Brent price sits precisely at the 50th percentile of the price distribution over the last 20 years - the most-common price despite the most-unusual supply disruption

Inflation-adjusted Brent oil price

Expressed by their percentile since 2007



Source: Bloomberg, Morgan Stanley Research

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Exhibit 2 : We revise our Brent price forecasts for 4Q and 1Q27 modestly higher

Dated Brent price forecasts

(\$/bbl)	2Q26	3Q26	4Q26	1H27	2H27
New	110.0	100.0	95.0	85.0	80.0
Previous	110.0	100.0	90.0	80.0	80.0
Change	0.0	0.0	5.0	5.0	0.0

Source: Morgan Stanley Research

Previous research:

- [The Oil Manual: SPR Tracker: How Much Has Been Released? What's Next? \(28 May 2026\)](#)
- [The Oil Manual: Why is the Price of Oil Not Higher? \(11 May 2026\)](#)
- [The Oil Manual: US Gasoline: Tight Balance; Fair Value For Now \(4 May 2026\)](#)
- [The Oil Manual: Schrodinger's Strait \(27 Apr 2026\)](#)
- [The Oil Manual: Hormuz Closure – Six Weeks In: Where Do We Stand? \(13 Apr 2026\)](#)
- [The Oil Manual: 'Paper' vs 'Physical' Oil - A Short Primer \(7 Apr 2026\)](#)
- [The Oil Manual: Strait of Hormuz - Physical Air Pocket Arriving Now \(30 Mar 2026\)](#)
- [The Oil Manual: Strait of Hormuz: Air Pocket \(16 Mar 2026\)](#)

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- [The Oil Manual: Iran Scenarios - Updated \(2 Mar 2026\)](#)
- [The Oil Manual: Iran Scenarios \(23 Feb 2026\)](#)

How Fast Can Middle East Production Recover?

The puzzle, again

In recent days, the front-month Brent future has fallen to about \$92 a barrel. The most intriguing feature of that number is how unremarkable it is. Adjust the past twenty years of Brent prices for inflation, and today's level sits exactly at the **50th percentile** of the distribution — i.e. today's price is the historic median.

It is neither an exaggeration nor hyperbole that the current supply shock is the largest in history, and yet, it has produced a price that is, statistically, the most ordinary of the last two decades. It is barely above the ~\$80 'mode' of this historical distribution (i.e. the price that, in real terms, has occurred most frequently) toward which we eventually expect prices to converge once the disruption has cleared.

When we last wrote, in [Why is the Price of Oil Not Higher? \(11 May\)](#), we set out why prices had risen far less than the scale of the shock implied: the market entered the conflict with substantial buffers, it has persistently expected an imminent reopening of the Strait, and the US's high exports and China's low imports have shielded the rest of the oil market. Three weeks on, the question has, if anything, sharpened — because the price has not risen. It has fallen, from ~\$104 at the time of our last note to ~\$92 today.

More telling than the level is the **shape of the curve**, and how much further it has flattened since we published on 11 May. The front-week Brent CFD — the clearest read on prompt physical tightness — has more than halved over those three weeks, from \$5.7/bbl to \$2.6, while the M1–M2 spread has fallen from \$3.8/bbl to under \$1. In other words, since our last note the market has not merely remained sanguine about a resolution — it has grown *more* so, increasingly pricing a clean and near-term return of supply across the whole curve.

From current levels, we think that is too optimistic. We previously modelled the Strait to re-open from end-May onwards, but move this assumption to late June. On top of that, we allow for another few weeks for mine clearing, confidence building and other issues, putting the moment where exports start to inflect higher only by late July. As a result, the tightness ahead is likely deeper and more drawn-out than we initially expected, and also than the curve implies. On that timeframe, the mechanisms by which the oil market has absorbed the supply shock may become challenged.

On that basis we are holding our forecasts for Dated Brent at \$100 in 3Q but make modest upwards revisions for 4Q (from \$90 to \$95) and 1Q27 (from \$80 to \$85), still expecting convergence to \$80 thereafter. With spot at \$92, an unchanged near-term forecast is itself a constructive call: we cannot forecast the precise date of the Hormuz re-opening either, but from here, risks to oil prices have a positive skew, in our view.

The remainder of this note sets out the case. We explain why we now expect the Strait to reopen later than the market assumes; why the production recovery will be slow and backloaded, and the rationale for our recovery path; the buffers that have absorbed the shock and why they are now fraying.

Exhibit 3: Crude oil production from the Middle East remains under pressure...

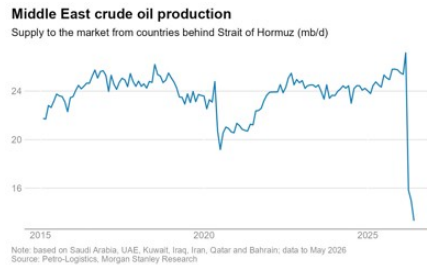


Exhibit 4: ...and the same is the case for exports from the region

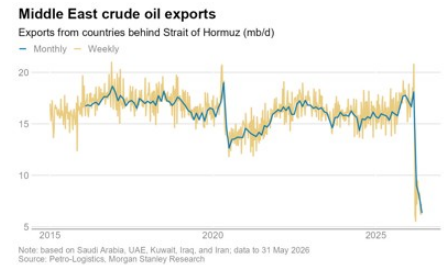
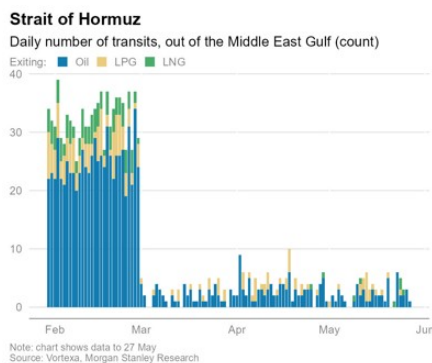


Exhibit 5: The number of daily tanker transits via the Strait remains a fractions of its historic level



Delaying our assumption for re-opening of the Strait

In our previous work we assumed the Strait of Hormuz would remain effectively closed through end-May, with flows beginning to recover from around 1 June. **We are pushing that assumption back: we now expect exports to begin recovering meaningfully only from the second half of July.**

Throughout this conflict the recovery has consistently been "weeks away", but those weeks have — equally consistently — failed to arrive. An early-April ceasefire announcement, the mid-April peace-talk headlines and the 4 May escort proposal each, at the moment of release, made an imminent reopening look plausible; each proved premature.

The last two weeks have shown the same dynamic: on 25 May newswires described a deal to reopen the Strait as "largely negotiated", and Brent fell about 4%; however, within 24 hours US forces had struck Iranian missile sites and Washington and Tehran were reported "still apart"; by 28 May the White House mentioned a "possible" — but unsigned — deal; and by 29 May the agreement was again "elusive". Over the same two weeks front-month Brent traded from \$112 to \$96, back to \$100, and down below \$92.

The delay in our modelling assumption from 'end May' to 'late July' splits in two parts: first, we recognise that at the time of writing there is no agreement or MOU yet between the US and Iran on peace negotiations. How much longer this takes is uncertain but for modelling purposes we assume a few more weeks. Second, we allow another few weeks for mine clearing and commercial confidence amongst ship owners to rebuild. That puts a meaningful pick-up in flows only from the second half of July. However, we would stress that this is the central case of an admittedly wide distribution.

After an agreement, several bottlenecks and obstacles need to be overcome

Data from Rystad Energy suggests that roughly 11 mb/d of Gulf crude remains offline — close to half the region's pre-conflict output. A crucial point, however, is that nearly all of this is because storage facilities have filled up, not destroyed capacity. The losses are concentrated in **Saudi Arabia (~3.8 mb/d), Iraq (~2.9) and Kuwait (~1.9)**, with the UAE (~1.2), Iran (~0.8) and Qatar (~0.6) making up the rest, according to Rystad. Restarting this production is not necessarily difficult, but it does take time. We highlight the following bottlenecks:

Exhibit 6: In a slow trickly, nearly 30% of the peak crude volume that was on tankers west-of-Hormuz has sailed out by now

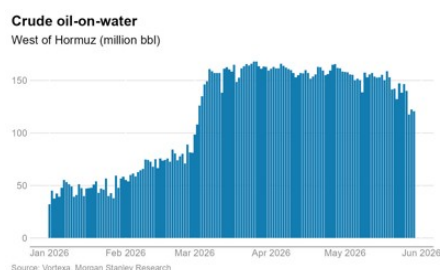
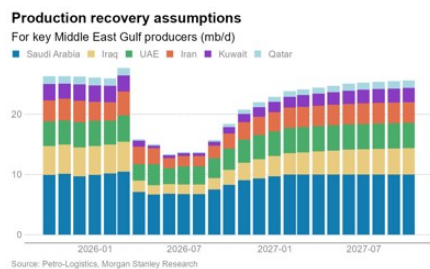


Exhibit 7: On our new assumption, the cumulative supply loss vs a flat pre-conflict production would be 2.6 bn bbl in 2026



1. Security, insurance and mine clearing: The first hurdle to overcome is for shipowners and insurance providers to regain confidence that the Strait is genuinely safe to navigate again. In itself, the announcement of a ceasefire extension is not necessarily sufficient for that. The market needs evidence that attacks, tolling, or interdictions will not resume. As part of this, the area needs to be cleared from sea mines. As long as sea mines are believed to be in place in the traditional shipping lanes, the capacity of the Strait is much reduced, even if it's technically 'open'. The time it takes for the area to be cleared for mines is uncertain but likely in the order of weeks to several months.

2. Tanker backlog and vessel misallocation: Then, tankers are in the wrong place. Over the last few months, idle ships that couldn't find work in the area, ballasted to the US Gulf, West Africa, Brazil, etc, often creating an oversupply there. On its 1Q26 earnings call, Aramco's CEO called this "*the biggest issue*", adding that "*even in the most optimistic scenario, the energy and commodity supply chains will need several months to return to their pre-conflict traffic, as vessels reroute or avoid being idle*". There are a number of 'empties' parked just outside the Gulf, so some initial cargoes could move quickly. However, a full and sustained restoration of tanker flows probably also needs a number of months.

3. Storage/ullage inside the Gulf: Oilfields cannot restart as long as export storage is full. This is especially important for countries without meaningful export capacity via pipelines, such as Iraq and Kuwait, whose seaborne exports have practically fallen to zero by now. For those, the number of empty tankers transiting into the Gulf is critical to the restart of oil production.

4. Field restarts: The difficulty of restarting fields depends on the length of the closure. Rystad estimates roughly 10,000 of the ~36,000 wells that were active before the closure across the six Gulf producers are currently offline. The number that struggles to return scales with shut-in duration, they argue: about 2,800 wells face restart constraints after a two-month shut-in, ~4,100 after four months and more than 5,000 after six, according to Rystad. Our own H2-July reopening assumption implies a shut-in of roughly 4½–5 months, which would put the relevant number of wells toward 4,000–5,000 wells.

The issue is that with injection halted, reservoir pressure often bleeds away; wellbores cool, precipitating wax and asphaltenes that plug tubing; corrosion and artificial-lift failures (ESP motors, gas-lift valves) set in after extended idle; and flowlines must be cleaned, integrity-tested and phased back into service.

These effects are largely reversible, but they cost time and money, and recovery is likely to be uneven across fields. Conventional, natural-drive fields restart with little more than wellbore clean-up, but some of the managed-pressure giants that depend on continuous water or gas injection (e.g. Kuwait's Burgan as well as the large offshore fields of Qatar, the UAE and Saudi Arabia) must rebuild pressure support before rates recover; and mature, high-water-cut systems (e.g. Iraq's Rumaila as well as some Iranian fields) are the most intervention-intensive and may be left shut in selectively. On a recent earnings call, Halliburton warned that "*the longer things are shut in, the more complex they are to bring back on.*"

5. Damaged infrastructure: Physical damage to infrastructure is concentrated downstream in refining as well as export/storage terminals, not crude oil production. According to Rystad data, 15 refineries were struck with aggregate capacity of 4.3 mb/d.

Of this total, ~2.5 mb/d is still disrupted. Repairing this likely takes 2–3 quarters, implying full normalisation by 1Q 2027 at the earliest. This is an obstacle to the recovery of refined product exports — still 5 mb/d of the pre-conflict 20 mb/d exports via the Strait of Hormuz — although it should not hold back the crude exports/production recovery.

6. Oilfield service, crews and rigs: Restarting requires people and kit. OFS companies demobilized staff, suspended travel and rerouted logistics during the conflict. Bringing back crews and equipment takes time. Expats have largely withdrawn from Kuwait and Iraq, which lean most heavily on international providers for drilling, completions and artificial lift.

Exhibit 8:

Indicative timeline for oil-flow recovery after a credible reopening of the Strait of Hormuz			
Phases are sequential but overlap; timing is indicative, measured from a credible reopening (Day 0), and slips if reopening is delayed.			
Phase	Likely timing	What has to happen	Main constraint
0. Political / security trigger	Day 0 to several days	Credible ceasefire, no-interference commitment, safe lanes, insurers willing to write war-risk cover	Credibility, insurance, mine risk
1. Initial maritime restart	Days to 2 weeks in best case; longer if convoyed	Allow already-laden tankers out, start controlled inbound ballast movements	Mine clearance, convoy limits, shipowner confidence
2. Shipping stabilization	~4-8 weeks	Clear stranded ships, restore normal loading windows, rebalance VLCC/product tanker positions	Tanker backlog, war-risk premiums, port readiness
3. Storage / ullage relief	Weeks 4-9	Empty onshore tanks and floating storage enough to let fields and refineries raise runs	Need empty tankers inside Gulf; full tanks constrain upstream
4. Field restart and production ramp	Months 2-4 for major recovery; longer for hard fields	Restart curtailed/shut-in wells, restore injection, workovers, safety checks, re-crew rigs	Shut-in duration, reservoir complexity, OFS availability
5. Export-flow normalization	Q4 2026 to Q1 2027	Restore grade mix, loading reliability, buyer confidence, destination flows	Heavy-grade losses, Iraq/Kuwait lag, tanker repositioning
6. Full market normalization	Q1/Q2 2027+, with LNG/refining possibly later	Repair damaged refining/LNG/petrochemical assets; rebuild strategic/commercial inventories	Infrastructure damage, inventory deficits, altered trade routes

Source: Morgan Stanley Research

Updated production forecasts shows continued deficit

Given these bottlenecks, we model a two-speed recovery: we estimate that production will rebound quicker in Saudi Arabia and the UAE, but take longer in Iraq, Kuwait and Qatar. The majority of production can come back within several months — we estimate 75% of lost supply to be back within 4 months after flows via the Strait resume. On our estimates, that would be by November. Thereafter, the recovery likely slows, with the remaining 25% taking until well into 2027.

This tightens our near-term balances significantly. Our previous assumption had export flows via the Strait resuming from late May/early June onwards. On that basis, our global liquids balance showed an implied balance of -0.3 mb/d during 3Q 2026. On our new assumptions, we now estimate a deficit of -4.5 mb/d in 3Q.

If correct, this may have important consequences. In a previous Oil Manual, we addressed the question why oil prices are not higher given the supply shock has been so severe. In summary, we highlighted four reasons:

1. **The oil market had large buffers at the start of the conflict:** The oil market was in surplus, inventories were elevated and oil-on-water was elevated
2. **Re-opening of the Strait has been 'around the corner' at any moment:** The front-month Brent future hedges exposure to the price of oil delivered the month-after-next, i.e. oil that is delivered, on average, 8 weeks into the future. At any point in the last three months, it seemed likely that the Strait would be open in 8 weeks.
3. **A very large increase in US net oil exports:** Across crude oil and refined products, seaborne net exports from the US have increased from ~5 to ~9 mb/d, significantly helped by a release from strategic reserves.
4. **An unusually large decline in net oil imports into China:** Seaborne net oil imports into China have fallen from ~13 mb/d this time last year, to just ~7.5 mb/d over the last 30 days.

Exhibit 9: Net seaborne oil exports from the US are still trending higher...

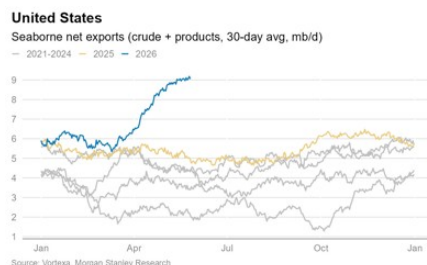
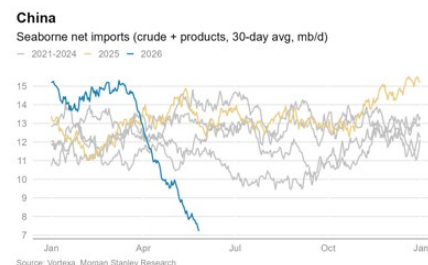
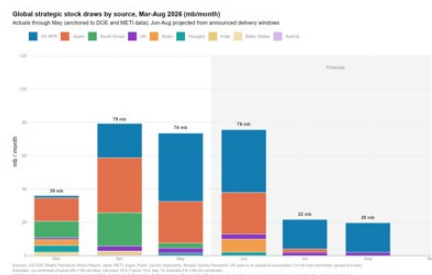


Exhibit 10: ...whilst net seaborne imports into China are still declining



In the **best-case scenario**, oil exports via the Strait resume soon, say in the next few weeks, and the production recovery in the region is rapid, quicker than we outlined above. In that case, the call on US exports can disappear and China can revert to its usual level of imports, and the oil market would still gradually loosen. The most-common inflation-adjusted oil price of the last 20 years is \$80/b, which we would see as an anchor in the oil market. In this scenario, Dated Brent could revert back to this price relatively swiftly.

Exhibit 11: On current trends, the global SPR release falls sharply in July



However, if our **base case** assumptions play out, the balance in the market looks different:

- First, in our recent note on global SPRs, we highlighted that on current schedules, SPR releases are set to decline from ~2.5 mb/d in April-to-June to just ~0.7 mb/d in July and August. If the Strait is not re-opened by the time of this 'SPR cliff', the market would likely tighten meaningfully.
- Second, oil inventories in the US have been falling significantly. Both diesel and gasoline inventories are already well below 5-year seasonal lows, and on current trajectory, are likely to test minimum operational requirements later this summer. At some point, US exports of crude and refined product may need to fall to better supply the domestic market. However, that would subsequently tighten oil markets elsewhere. If this point is reached before flows via Hormuz have restarted meaningfully, the Brent market would tighten again as well.

to forecast. However, the operational and logistical bottlenecks still only imply a gradual resumption of production, suggesting the oil market will remain in deficit for several months to come. Over that period, the mechanisms by which the market has absorbed the current shock may not sustain.

After 3Q, we model the market to return to balance in 4Q and still a modest surplus in 2027, albeit with structurally lower inventories. This combination likely prevents a 'blow out' in prices but should nevertheless be sufficient to drive Brent futures higher again from here. With that, we stick to our current Brent forecast for 2Q and 3Q, and add modestly to our 4Q and 1Q27 forecast — see [Exhibit 2](#).

Supply/demand balance

Exhibit 15:

<i>Total oil liquids</i>											<i>Change</i>		
	2025	1Q26	2Q26	3Q26	4Q26	2026	1Q27	2Q27	3Q27	4Q27	2027	'25-26	'26-27
Demand	104.9	104.6	101.0	103.8	105.5	103.7	104.9	105.3	106.6	107.5	106.1	- 1.2	2.3
OECD	45.9	45.7	44.7	45.9	45.8	45.5	45.3	45.5	46.2	46.1	45.8	- 0.3	0.2
Non-OECD	59.0	59.0	56.3	57.9	59.7	58.2	59.6	59.8	60.4	61.3	60.3	- 0.9	2.1
Non-OPEC supply	72.2	71.7	72.0	73.3	73.6	72.7	73.9	74.2	74.6	75.1	74.5	0.5	1.8
United States C+C	13.6	13.6	14.0	13.9	14.0	13.9	14.1	14.2	14.1	14.2	14.2	0.3	0.3
FSU C+C	10.3	10.0	10.0	10.3	10.3	10.2	10.3	10.2	10.2	10.2	10.2	- 0.1	0.1
Other	48.3	48.1	48.0	49.1	49.3	48.6	49.6	49.8	50.3	50.7	50.1	0.3	1.5
OPEC NGLs and condensate	5.5	5.2	3.7	4.7	5.1	4.7	5.2	5.2	5.2	5.2	5.2	- 0.9	0.5
Call on OPEC crude	27.2	27.7	25.4	25.8	26.8	26.4	25.8	25.9	26.8	27.2	26.4	- 0.8	0.0
OPEC crude	29.6	27.4	19.6	21.2	26.8	23.7	28.9	29.6	30.1	30.4	29.7	- 5.9	6.0
Implied balance	2.4	0.4	5.8	4.5	0.0	2.7	3.1	3.8	3.2	3.2	3.3	- 5.1	6.0
Misc to bal	- 1.2	- 0.9	3.3	1.8	- 0.0	1.0	- 1.3	- 1.5	- 1.3	- 1.3	- 1.4	2.2	- 2.4
Observed stock change	1.2	1.3	2.4	2.8	0.0	1.6	1.8	2.2	1.9	1.9	2.0	- 2.8	3.6
of which:													
SPR (IEA members)	0.0	0.1	2.0	1.0	-	0.8	0.5	0.5	0.5	0.5	0.5	- 0.8	1.3
China	0.3	0.6	0.0	-	-	0.1	0.3	0.3	0.3	0.3	0.3	- 0.2	0.2
Other non-OECD	0.1	0.2	-	-	-	0.1	0.3	0.3	0.3	0.3	0.3	- 0.1	0.2
Commercial OECD	0.1	0.1	0.2	1.8	0.0	0.4	0.7	1.1	0.8	0.8	0.9	- 0.6	1.3
Oil-on-water	0.6	1.9	0.6	-	-	0.6	-	-	-	-	-	- 1.2	0.6
<i>Crude + condensate only</i>											<i>Change</i>		
	2025	1Q26	2Q26	3Q26	4Q26	2026	1Q27	2Q27	3Q27	4Q27	2027	'25-26	'26-27
Runs	84.2	83.4	78.6	83.3	84.4	82.4	84.8	84.6	85.4	85.2	85.0	- 1.7	2.6
West of Suez	43.3	42.8	42.9	43.9	43.1	43.2	42.8	43.0	43.8	43.1	43.2	- 0.1	0.0
East of Suez	40.9	40.6	35.7	39.3	41.3	39.2	42.1	41.6	41.7	42.1	41.9	- 1.6	2.6
Direct use	0.9	0.7	0.9	0.9	0.6	0.8	0.6	0.8	0.9	0.6	0.7	- 0.1	0.1
Non-OPEC C+C supply	54.6	54.5	54.5	55.1	55.6	54.9	56.1	56.0	56.2	56.7	56.2	0.3	1.3
United States	13.6	13.6	14.0	13.9	14.0	13.9	14.1	14.2	14.1	14.2	14.2	0.3	0.3
Other	41.1	40.9	40.5	41.2	41.6	41.0	42.0	41.8	42.0	42.5	42.1	- 0.0	1.0
OPEC	31.6	29.2	20.9	22.8	28.5	25.4	30.6	31.4	31.8	32.1	31.5	- 6.3	6.1
Crude	29.6	27.4	19.6	21.2	26.8	23.7	28.9	29.6	30.1	30.4	29.7	- 5.9	6.0
Condensate	2.0	1.8	1.3	1.6	1.7	1.6	1.7	1.7	1.7	1.7	1.7	- 0.4	0.1
Implied stock change	1.2	0.5	4.2	6.2	0.8	2.9	1.3	2.0	1.6	3.0	2.0	- 4.2	4.9
<i>Dated Brent forecasts</i>													
Base	69.1	75.7	110	100	95	95	85	80	80	80	81		
Bull	69.1	75.7	150	150	150	150	150	150	150	150	150		
Bear	69.1	75.7	80	75	70	80	65	65	65	65	66		
<i>WTI</i>													
Base	64.7	71.4	102	94	90	90	80	75	75	75	76		
Bull	64.7	71.4	145	145	145	145	145	145	145	145	145		
Bear	64.7	71.4	76	71	66	76	61	61	61	61	62		

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

Key market indicators

Exhibit 16:

Global oil prices

Latest value as per 30 May 2026

Instrument	Change			Unit	Last 1m	1Y low	1Y range	1Y high	Rationale for including
	Latest	1 wk	4 wk						
Global benchmarks									
ICE Brent M1 future (Aug)	92.0	-11.5	-16.2	\$/bbl		58.9	—	118.3	Global crude benchmark; anchor for Atlantic pricing
NYMEX WTI M1 future (Jul)	87.4	-9.2	-14.5	\$/bbl		55.3	—	113.0	US marginal barrel; key global risk benchmark
Dubai M+2 swap	103.7	-0.3	-8.5	\$/bbl		58.2	—	169.8	Asia sour benchmark; core signal for Middle East flows
Term structure									
ICE Brent future M1-M2 (Aug/Sep)	0.93	-2.4	-5.3	\$/bbl		-0.39	—	14.38	Prompt tightness/storage signal in Brent complex
ICE Brent future M2-M3 (Sep/Oct)	2.0	-1.6	-3.0	\$/bbl		0.0	—	8.0	Cleaner structure signal when M1 rolls/noisy
NYMEX futures M1-M2 (Jul/Aug)	2.1	-1.4	-3.3	\$/bbl		0.0	—	13.9	US prompt balance signal; inventories & pipeline pull
NYMEX futures M2-M3 (Aug/Sep)	2.1	-1.4	-2.9	\$/bbl		0.0	—	8.6	Back-end prompt signal; reduces expiry distortion
Dubai swap M1-M2	3.1	-0.2	-2.0	\$/bbl		-0.1	—	14.2	Asia prompt balance; sour crude tightness indicator
Dubai swap M2-M3	1.6	-1.0	-3.3	\$/bbl		-0.1	—	6.1	Structure beyond front; filters front-month noise
North Sea									
Dated Brent	93.6	-13.7	-24.4	\$/bbl		60.2	—	144.4	Physical spot benchmark; sets Atlantic Basin crude value
Brent DFL (M1)	2.3	-1.4	-5.3	\$/bbl		-0.7	—	13.8	Bridge between Dated and futures; spot vs paper alignment
Brent CFD (Week 1)	2.6	-2.1	-11.5	\$/bbl		-1.2	—	43.9	Very prompt NS tightness; near-term cargo availability
Forties vs Dated Brent strip	1.8	-1.1	-4.8	\$/bbl		-1.1	—	21.2	Marginal sour North Sea grade; barometer for basin length
Ekofisk vs Dated Brent strip	3.8	-0.6	-2.5	\$/bbl		0.6	—	22.6	Sweet premium proxy; refinery demand for light/sweet yield
J. Sverdrup vs Dated Brent strip	2.1	-0.1	-0.4	\$/bbl		-2.9	—	16.7	Medium sour NS value; competes with ME grades
United States									
WTI Cushing M1 (cash)	87.4	-13.2	-14.6	\$/bbl		55.3	—	113.0	Physical WTI anchor at Cushing; pipeline hub clearing price
WTI Midland vs WTI Cushing	1.0	1.4	-2.1	\$/bbl		-0.3	—	4.5	Permian takeaway stress signal; pipes vs production growth
WTI MEH vs WTI Cushing	1.1	1.5	-3.1	\$/bbl		-0.3	—	7.8	Export outlet premium/discount; USGC pull vs inland
WCS Hardisty vs WTI Cushing CMA	-13.1	0.5	3.2	\$/bbl		-16.9	—	-8.8	Heavy-light & Canada logistics; refinery margin barometer
WTI-Brent spread	-4.7	2.2	6.9	\$/bbl		-17.0	—	0.5	Key east-west arb signal; drives US export economics
Middle East									
Brent-Dubai EFS (M1)	6.8	-3.9	-8.3	\$/bbl		-0.3	—	18.5	Atlantic vs Asia arb; key driver of Brent vs Dubai relative value
Cash Dubai premium	18.0	7.8	10.8	\$/bbl		-0.6	—	65.7	Spot tightness vs swaps; immediate OSP pressure signal
Oman vs Dubai (M1)	18.0	7.8	10.8	\$/bbl		-0.3	—	65.7	ME benchmark for China; complements Dubai for sour/light
Murban Quality Premium	0.00	0.0	0.0	\$/bbl		-34.54	—	1.11	Measures Murban's quality value vs Dubai benchmark
West Africa									
Kissanje vs Dated Brent strip	-3.0	-0.1	-3.1	\$/bbl		-4.9	—	10.1	China-bound WAF barrel; marginal Atlantic supply signal
Jubilee vs Dated Brent strip	-1.5	0.0	-2.5	\$/bbl		-2.7	—	10.0	Atlantic sweet clearing level; tracks China/Europe demand
Hungo vs Dated Brent strip	-4.6	-0.1	-4.4	\$/bbl		-6.2	—	11.3	Medium sweet WAF value; sensitive to China buying swings
Djeno vs Dated Brent strip	-6.6	0.2	-4.8	\$/bbl		-8.2	—	10.6	Sour WAF grade; key China-bound arb and freight sensitivity
Long-haul arbitrage grades									
WTI FOB USGC vs Dated Brent strip	-0.77	2.4	2.0	\$/bbl		-11.03	—	1.99	US export competitiveness vs Brent; arb opens/closes
Guyana Liza vs Dated Brent strip	-1.4	0.2	-3.2	\$/bbl		-3.9	—	8.3	Growth light sweet barrel; clears into China/Europe
Tupi (Brazil) vs Dated Brent strip	-1.4	-0.4	-0.1	\$/bbl		-10.6	—	9.4	Core Brazil export arb; long-haul pull indicator
CPC Blend vs Dated Brent strip	-8.7	-1.0	-3.8	\$/bbl		-10.4	—	0.0	Black Sea arb barrel; freight/geopolitics sensitive
Freight									
Platts Global VLCC TCE Index	274.4	-4.8	-10.7	k\$/day		18.1	—	519.1	Single global crude freight gauge; ton-mile weighted signal
Persian Gulf → China (VLCC)	75.0	-1.5	-3.1	\$/mt		9.5	—	124.1	Main ME→Asia flow cost; drives Dubai/Murban economics
US Gulf Coast → China (VLCC)	62.0	-0.7	4.6	\$/mt		21.9	—	108.5	Key cost for US exports; links WTI FOB to Asia clearing
West Africa → China (VLCC)	42.1	-2.5	-2.0	\$/mt		16.9	—	95.0	Cost for China-bound Atlantic grades; clears WAF differentials
Refined products									
Asian Naphtha crack vs Dubai	-11.1	-3.1	-18.8	\$/bbl		-11.1	—	27.4	Petchem demand gauge; Asia light-end support signal
USGC Gasoline crack vs WTI	31.8	-3.7	-7.3	\$/bbl		10.8	—	43.1	Gasoline margin driver; swing refining runs and crude demand
Spore Jet crack vs Dubai	37.1	-7.6	-26.1	\$/bbl		14.0	—	114.2	Asia travel demand proxy; middle distillate strength signal
ICE Gasoil crack vs Brent	44.4	-5.1	-10.7	\$/bbl		17.2	—	69.4	Global distillate benchmark margin; key crude demand driver
Spore 380 CST FO crack vs Dubai	7.6	1.8	8.0	\$/bbl		-9.5	—	14.0	Residual value signal; heavy sour crude support/drag

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

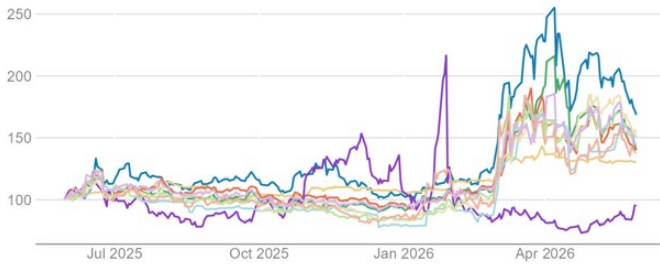
Prices

Exhibit 17:

Global energy prices compared

Index: 1 year ago = 100

ARA ULSD Dated Brent Henry Hub NYH RBOB TTF
 Coal Dubai JKM Singapore FO WTI



Source: Bloomberg, Platts, Morgan Stanley Research

Exhibit 18:

Benchmark crude oil prices

(\$/bbl)

Brent WTI Dubai



Source: Bloomberg, Platts, Morgan Stanley Research

Exhibit 19:

Calendar spreads Mo1 vs Mo2

(\$/bbl)

Brent WTI Dubai



Source: Bloomberg, Platts, Morgan Stanley Research

Exhibit 20:

Calendar spreads Mo2 vs Mo6

(\$/bbl)

Brent WTI Dubai



Source: Bloomberg, Platts, Morgan Stanley Research

Exhibit 21:

WTI/Brent spread

Mo1 (\$/bbl)



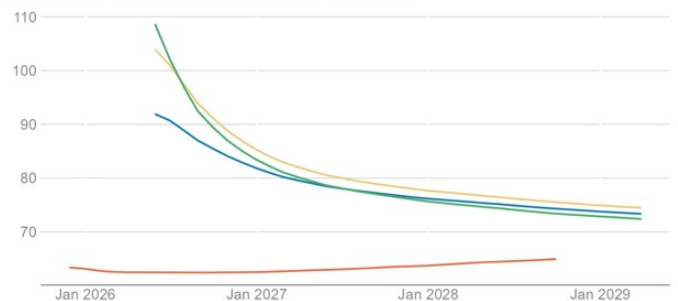
Source: Bloomberg, Morgan Stanley Research

Exhibit 22:

Brent futures

Forward curve on different dates (\$/bbl)

Current Last week Last month 6 Months ago

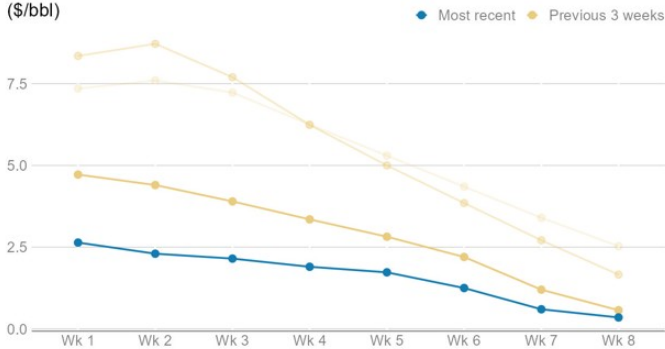


Source: Platts, Morgan Stanley Research

Exhibit 23:

Brent CFD curve

(\$/bbl)

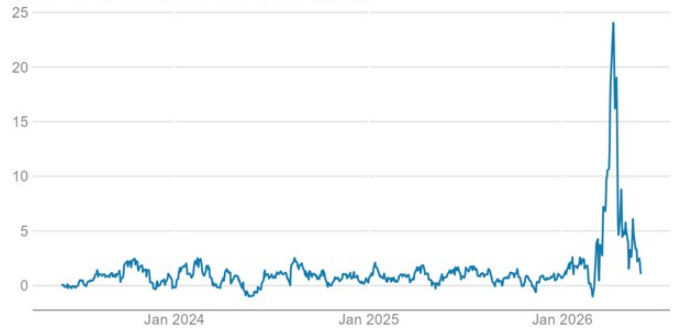


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 24:

CFD curve structure

Spread between week 2 and week 6 (\$/bbl)

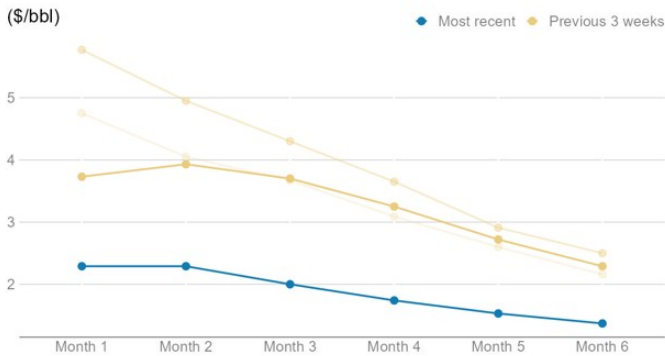


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 25:

Brent DFL curve

(\$/bbl)

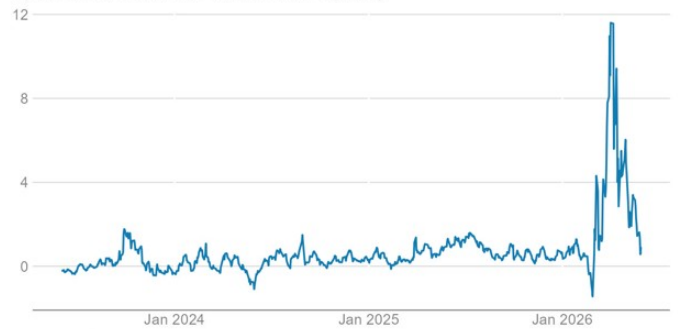


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 26:

DFL curve structure

Spread between month 1 and month 6 (\$/bbl)



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 27:

Cash Dubai premium

Platts Cash Dubai vs M2 Dubai swaps spread (\$/bbl)

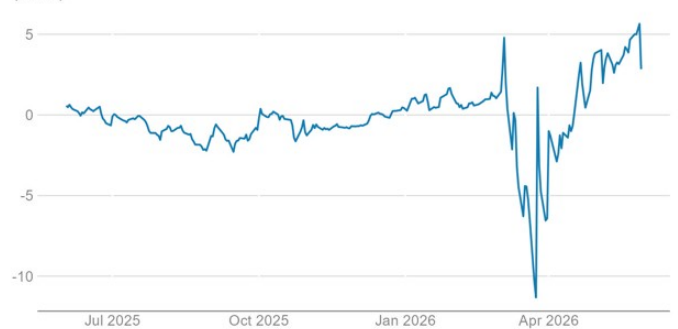


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 28:

Brent/Dubai spread

(\$/bbl)



Source: S&P Global Platts, Morgan Stanley Research

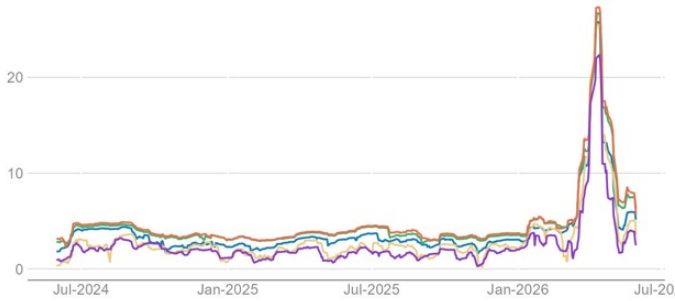
Differentials

Exhibit 29:

North sea

Differential to North Sea CIF Dated Brent strip (\$/bbl)

— Ekofisk — Forties — Oseberg — Troll — WTI Midland



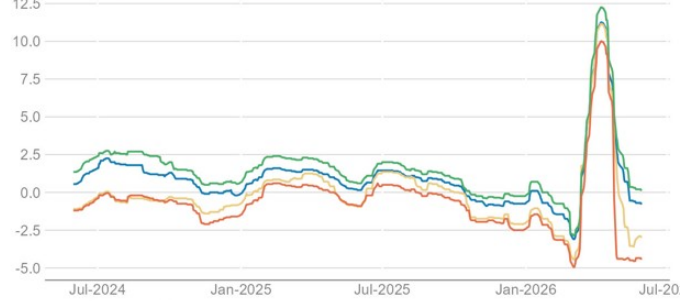
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 30:

Angola

Differential to Dated Brent strip (\$/bbl)

— Cabinda — Dalia — Girassol — Nemba



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 31:

Nigeria

Differential to Dated Brent strip (\$/bbl)

— Bonny Light — Brass River — Escravos — Qua Iboe



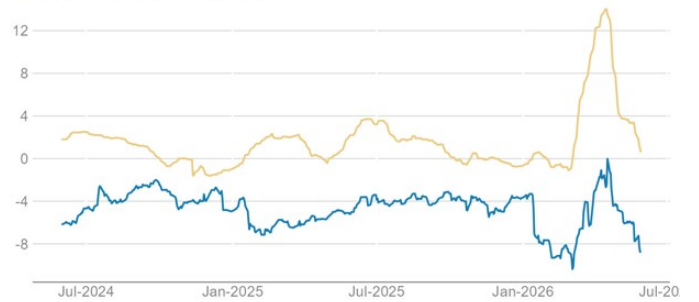
Source: S&P Global Platts, Morgan Stanley Research

Exhibit 32:

Kazakhstan

Differential to Dated Brent strip (\$/bbl)

— CPC Blend — KEBCO CIF R'dam



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 33:

Russia

Differential to Dated Brent strip (\$/bbl)

— ESPO FOB Kozmino — Urals DAP India



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 34:

Iran

Differential to Dated Brent strip (\$/bbl)

— Iranian Heavy — Iranian Light



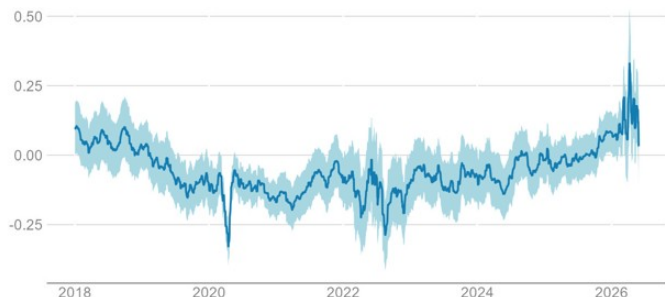
Source: S&P Global Platts, Morgan Stanley Research

Crude Quality

Exhibit 35:

Heavy vs Light

Premium/(discount) for every 1 degree increase in API Gravity (\$/bbl)

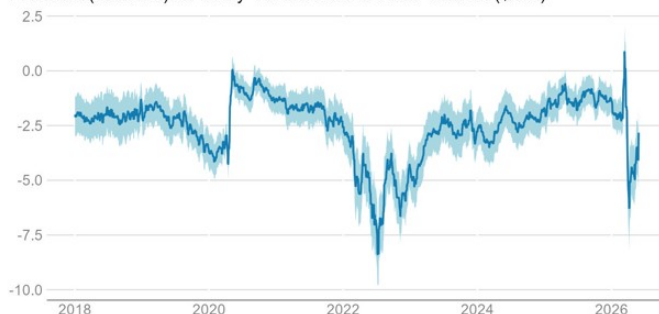


Note: analysis based on weekly regression across 95 seaborne crudes
Source: Platts, Morgan Stanley Research

Exhibit 36:

Sweet vs Sour

Premium/(discount) for every 1% increase in sulfur content (\$/bbl)

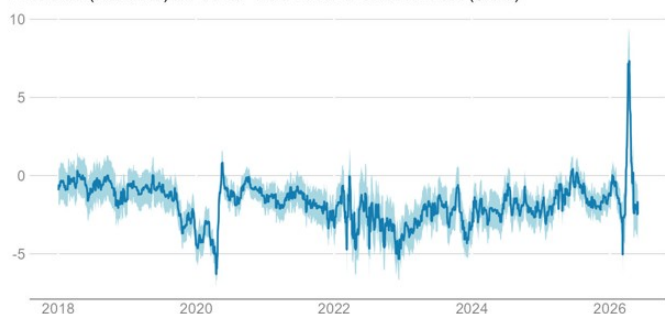


Note: analysis based on weekly regression across 95 seaborne crudes
Source: Platts, Morgan Stanley Research

Exhibit 37:

East vs West of Suez

Premium/(discount) for West- over East-of-Suez crudes (\$/bbl)

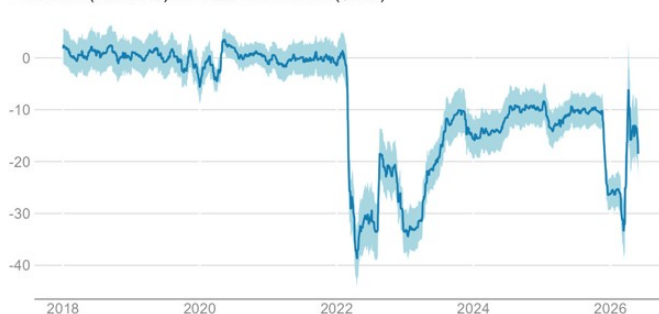


Note: analysis based on weekly regression across 95 seaborne crudes
Source: Platts, Morgan Stanley Research

Exhibit 38:

Russian vs non-Russian origin

Premium/(discount) for Russian crudes (\$/bbl)



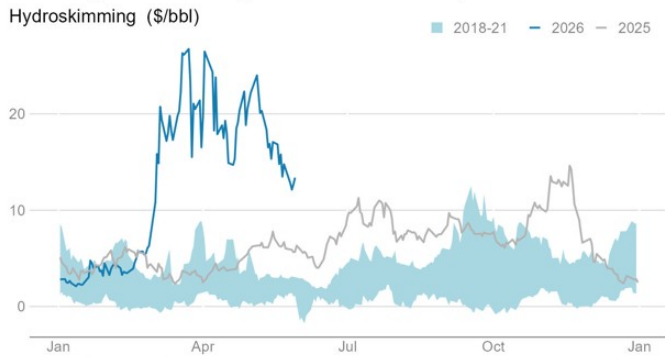
Note: analysis based on weekly regression across 95 seaborne crudes
Source: Platts, Morgan Stanley Research

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 from 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 39:

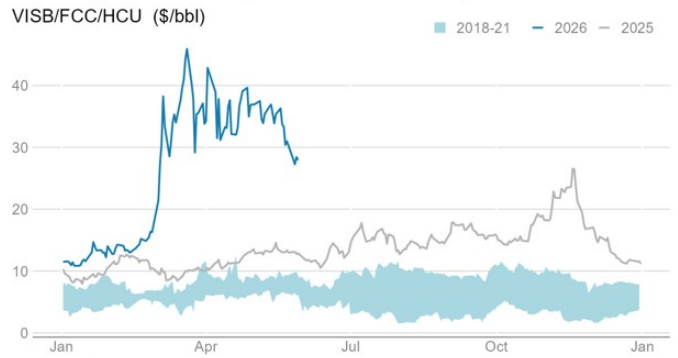
Cracking netback margin - Northwest Europe



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 40:

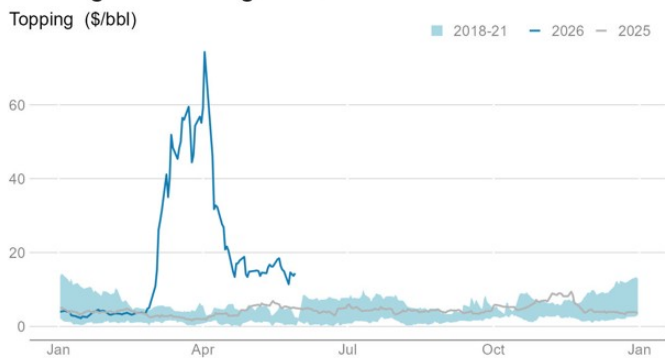
Cracking netback margin - Northwest Europe



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 41:

Cracking netback margin - Southeast Asia



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 42:

Cracking netback margin - Southeast Asia



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 43:

Cracking netback margin - Western Mediterranean



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 44:

Cracking netback margin - USGC



Source: S&P Global Platts, Morgan Stanley Research

Product Crack Spreads

Exhibit 45:

Refined product crack spreads

vs Dated Brent; basis: Antwerp-Rotterdam-Amsterdam (\$/bbl)

— Naphtha — Gasoline — Diesel — VLSFO — HSFO

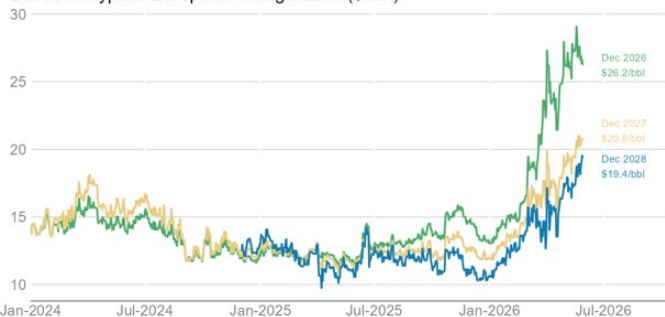


Source: Platts, Morgan Stanley

Exhibit 46:

Forward refining margins

Based on typical European configuration (\$/bbl)

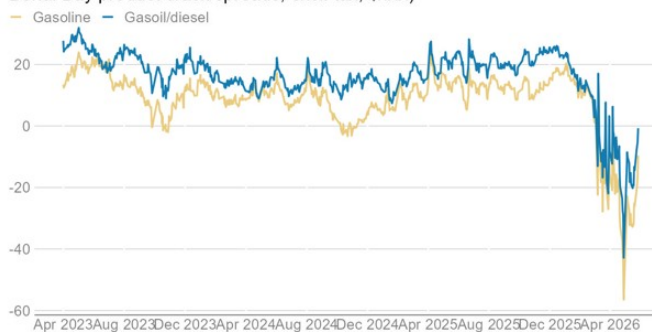


Note: Analysis assumes yields of 30% gasoline, 60% middle distillate, 5% naphtha and 5% HSFO
Source: Bloomberg, Morgan Stanley Research

Exhibit 47:

China

Bohai Bay product crack spreads, excl. tax, \$/bbl

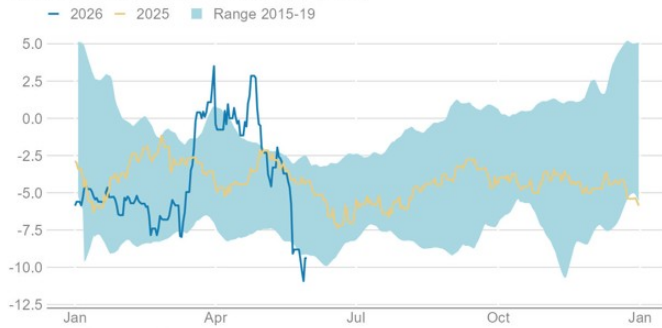


Source: Argus, Morgan Stanley Research

Exhibit 48:

Naphtha

Crack spread to Brent - NW Europe (\$/bbl)



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 49:

Gasoline

Crack spread to Brent - US Gulf Coast (\$/bbl)

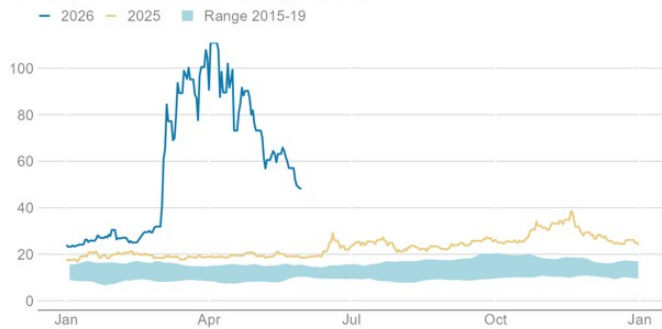


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 50:

Jet fuel

Crack spread to Brent - NW Europe (\$/bbl)

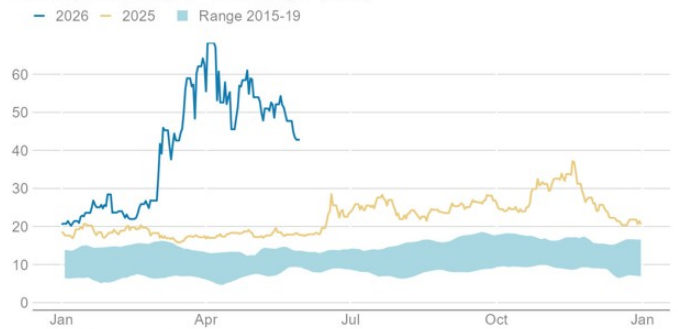


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 51:

Gasoil/diesel

Crack spread to Brent - NW Europe (\$/bbl)



Source: S&P Global Platts, Morgan Stanley Research

Exhibit 52:

Gasoil/diesel

Crack spread to Brent - Singapore (\$/bbl)

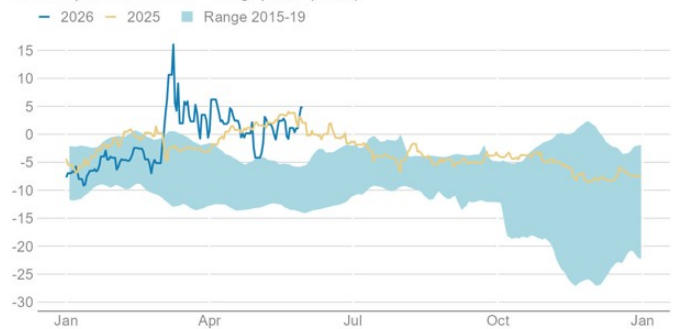


Source: S&P Global Platts, Morgan Stanley Research

Exhibit 53:

High-sulphur fuel oil

Crack spread to Brent - Singapore (\$/bbl)



Source: S&P Global Platts, Morgan Stanley Research

Refinery Outages

Exhibit 54:

Refinery outages

(mb/d)

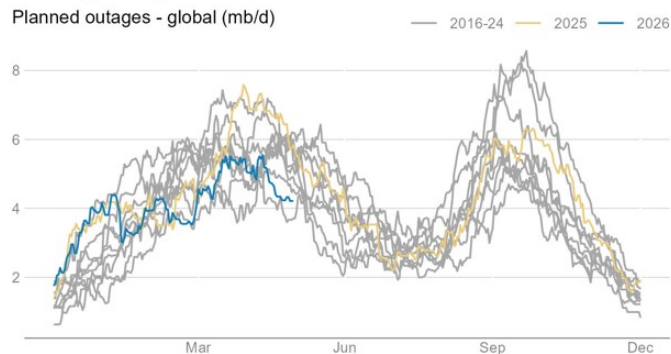
region	Actual												Known outlook			
	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sep 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Apr 2026	May 2026	Jun 2026	Jul 2026
Africa	0.53	0.57	0.51	0.47	0.44	0.47	0.28	0.26	0.23	0.41	0.54	0.21	0.13	0.06	0.10	0.12
Brazil	0.05	0.11	0.14	0.16	0.09	0.09	0.12	0.07	0.06	0.05	0.01	0.03	0.01	0.01	0.01	0.02
China	1.62	2.05	1.45	1.20	0.91	0.86	0.96	1.22	1.19	1.12	0.53	0.55	0.86	1.36	1.38	1.04
Europe	1.26	1.51	1.12	0.38	0.17	0.57	1.03	1.16	0.36	0.29	0.80	1.20	0.69	0.62	0.31	0.10
India	0.35	0.15	0.20	0.06	0.18	0.15	0.14	0.22	0.26	0.00	0.00	0.11	0.55	0.53	0.50	0.35
Japan	0.26	0.51	0.73	0.52	0.35	0.42	0.46	0.42	0.10	0.13	0.15	0.15	0.33	0.30	0.45	0.47
Korea	0.00	0.11	0.11	0.00	0.00	0.00	0.17	0.17	0.17	0.00	0.24	0.38	0.52	0.36	0.29	0.00
Middle East	0.26	0.44	0.28	0.00	0.00	0.06	0.68	1.11	0.46	0.30	0.37	1.39	1.67	1.31	0.66	0.02
Other	1.61	2.22	1.32	1.18	1.02	1.18	1.36	0.74	0.54	0.76	1.11	1.69	2.43	2.26	1.16	0.66
Russia	0.59	0.60	0.72	0.92	1.48	2.05	2.21	1.98	1.50	0.72	0.78	0.98	2.00	2.26	0.88	0.39
Taiwan	0.00	0.00	0.00	0.00	0.00	0.24	0.24	0.24	0.31	0.15	0.00	0.18	0.18	0.00	0.10	0.10
US	1.67	0.66	0.24	0.23	0.22	0.77	1.41	0.64	0.10	0.76	1.17	0.86	1.03	0.41	0.13	0.13
World	8.17	8.86	6.78	5.10	4.81	6.69	8.96	8.13	4.83	4.58	5.50	7.62	10.28	9.47	5.60	3.15

Source: IIR, Morgan Stanley Research

Exhibit 55:

Refinery outages

Planned outages - global (mb/d)

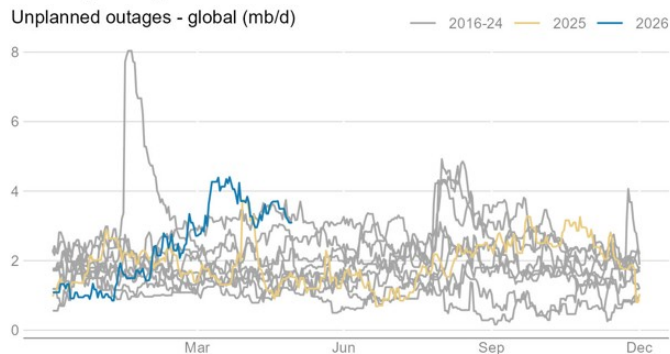


Source: IIR, Morgan Stanley Research

Exhibit 56:

Refinery outages

Unplanned outages - global (mb/d)



Source: IIR, Morgan Stanley Research

Inventories

Exhibit 57:

Observable crude oil inventories

(million bbl)

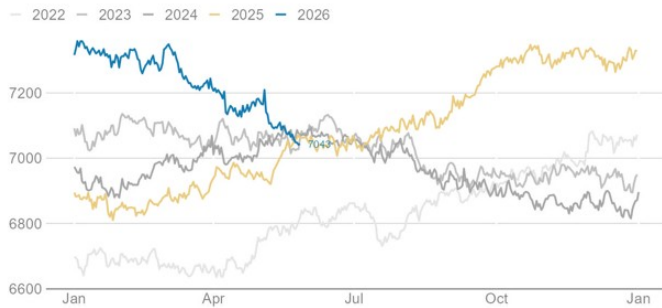
	Level		Average daily change					
	Current	-4 wks	-13 wks	-26 wks	Apr	Mar	Feb	
Commercial								
United States	440.8	-0.68	0.04	0.08	-0.08	0.73	0.72	
Japan	57.7	0.25	-0.06	-0.03	-0.15	-0.39	0.17	
ARA region	48.2	-0.10	0.07	-0.03	-0.19	0.33	0.03	
Other OECD	540.4	-0.25	-0.10	-0.29	-0.42	-0.25	0.47	
China	1,108.7	-0.93	0.29	0.52	0.58	1.26	0.68	
Other non-OECD	1,141.3	0.35	-0.12	0.05	-0.67	0.32	-0.08	
Floating storage	79.4	-2.06	-0.37	-0.32	-0.19	1.24	-0.55	
Oil-in-transit	1,091.7	0.52	-0.82	-0.71	0.81	-3.67	0.42	
Sub-total	—	4,508.1	-2.9	-1.1	-0.7	-0.3	-0.4	1.9
SPR								
United States	365.1	-1.17	-0.55	-0.25	-0.57	-0.01	0.01	
Japan	265.8	0.15	0.08	0.05	-0.04	-0.02	0.00	
ARA region	1.0	0.00	0.00	0.00	0.00	0.00	0.00	
Other OECD	257.0	0.00	0.01	0.00	0.00	0.03	-0.01	
China	191.9	0.04	0.04	0.00	0.07	-0.07	0.02	
Sub-total	—	1,080.9	-1.0	-0.4	-0.2	-0.5	-0.1	0.0
Total	—	5,589.0	-3.9	-1.5	-0.9	-0.8	-0.5	1.9

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

Exhibit 61:

Observable crude oil and oil products inventories

In commercial storage only (mln bbl)

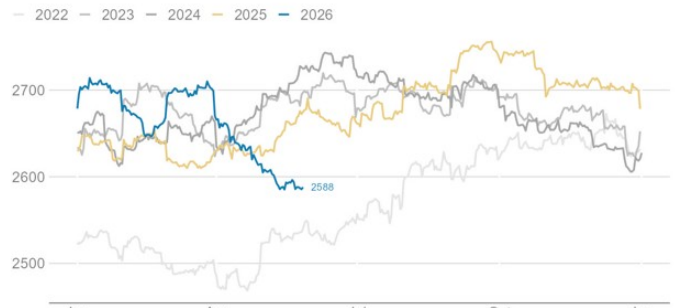


Note: inventories on land, at sea and in-transit, not including SPR in OECD countries
Source: IEA, EIA/DOE, PJK, IE, Genscape, PAJ, Platts, Vortexa, Morgan Stanley Research

Exhibit 62:

OECD commercial oil inventories

Total oil, on land only (mln bbl)



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

Exhibit 63:

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 64:

Observable refined oil products inventories, on-land only

(mln bbl)

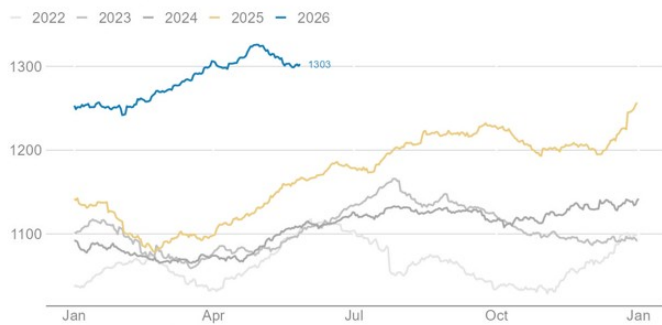


Source: IEA, EIA/DOE, PJK, IE, PAJ, Platts, Morgan Stanley Research

Exhibit 65:

Observable crude oil inventories in China

On land (mln bbl)

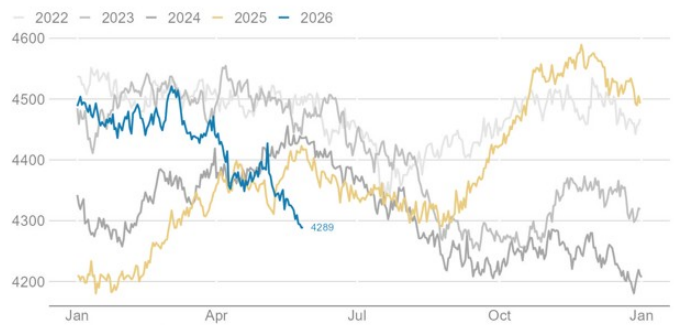


Source: Vortexa, Morgan Stanley Research

Exhibit 66:

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 67:

OPEC 9+3

Seaborne exports of crude oil and oil products (mb/d)

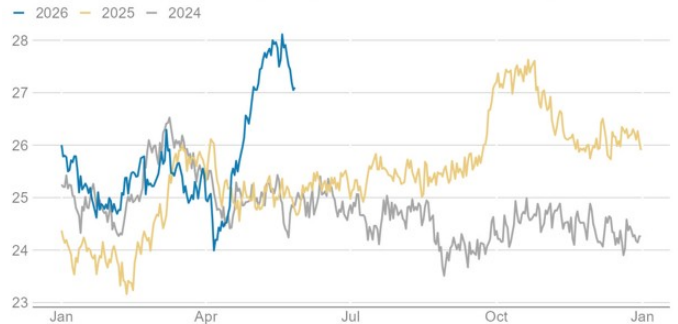


Source: Vortexa, Morgan Stanley Research

Exhibit 68:

Non-OPEC

Seaborne exports of crude oil (30-day mov. avg; excl. intra-country flows; mb/d)



Source: Vortexa, Morgan Stanley Research

Exhibit 69:

Saudi Arabia

Seaborne crude oil exports (mb/d)

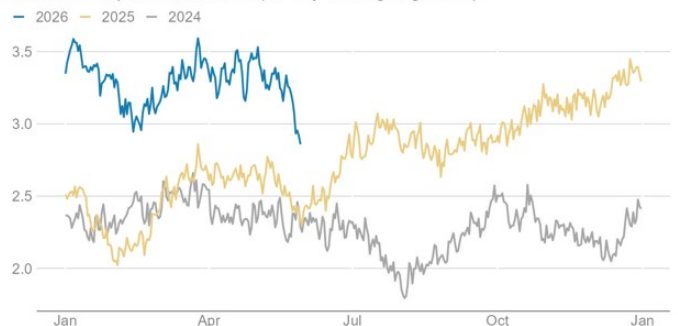


Source: Vortexa, Morgan Stanley Research

Exhibit 70:

Brazil and Guyana

Seaborne exports of crude oil (30-day moving avg; mb/d)



Source: Vortexa, Morgan Stanley Research

Exhibit 71:

Russia

Seaborne crude oil exports (mb/d)

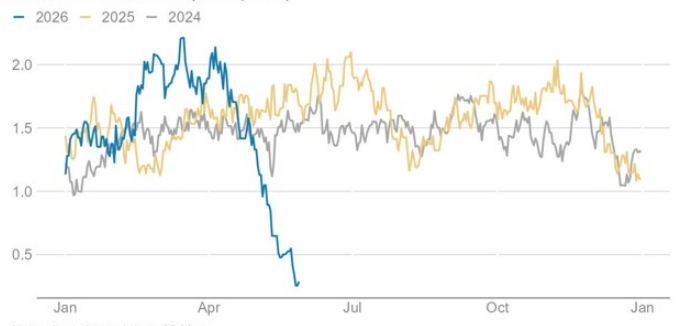


Source: Vortexa, Morgan Stanley Research

Exhibit 72:

Iran

Seaborne crude oil exports (mb/d)



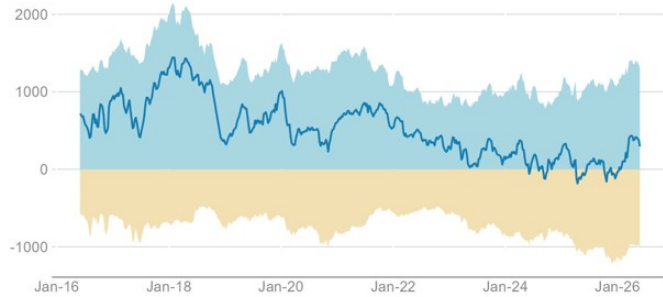
Note: chart shows data to 28 May
Source: Vortexa, Morgan Stanley Research

Positioning

Exhibit 73:

Total oil

COT report - Managed money and Other reportables (number of contracts)

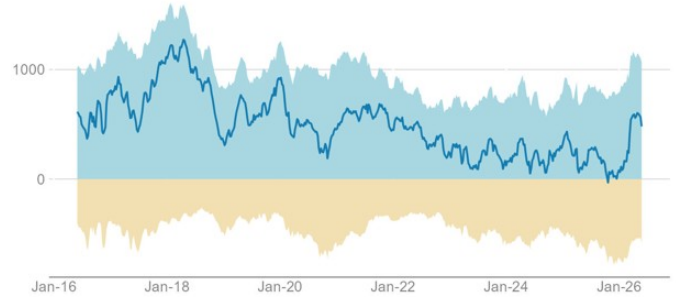


Note: light blue = long positions, yellow = short position, dark blue = net position
Source: CFTC, Morgan Stanley Research

Exhibit 74:

Brent and WTI

COT report - Managed money and Other reportables (number of contracts)

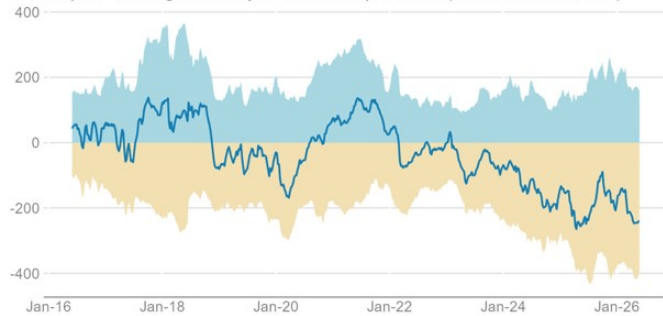


Note: light blue = long positions, yellow = short position, dark blue = net position
Source: CFTC, Morgan Stanley Research

Exhibit 75:

Gasoil and Heating Oil

COT report - Managed money and Other reportables (number of contracts)

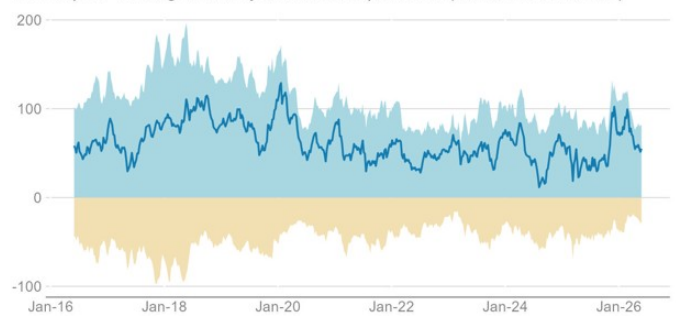


Note: light blue = long positions, yellow = short position, dark blue = net position
Source: CFTC, Morgan Stanley Research

Exhibit 76:

Gasoline - NY Harbour RBOB

COT report - Managed money and Other reportables (number of contracts)



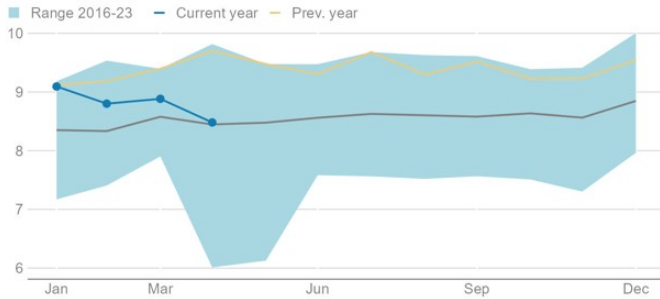
Note: light blue = long positions, yellow = short position, dark blue = net position
Source: CFTC, Morgan Stanley Research

Other Selected Charts

Exhibit 77:

Motor fuel imports

Top 100 ports (mb/d)

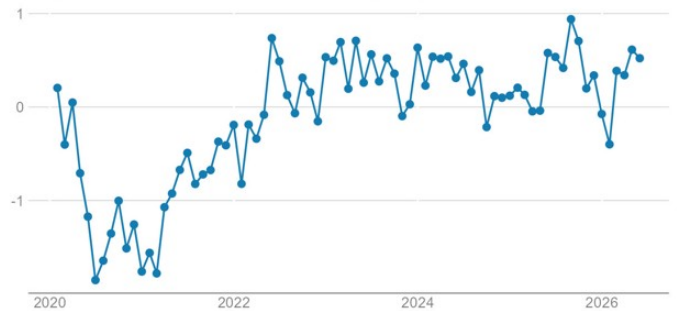


Note: analysis based on the 100 largest ports where imports are >90% of total flow, excluding large trading ports like Singapore, Rotterdam, etc
Source: Vortexa, Morgan Stanley Research

Exhibit 78:

Seaborne crude oil arrivals - Europe

Change vs seasonal average from 2016-23 (mb/d)

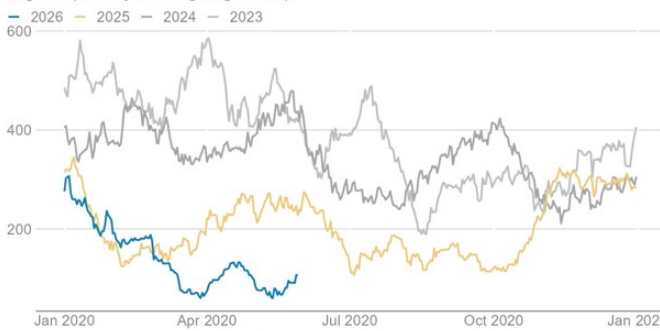


Note: analysis based on EU + Norway + UK
Source: Vortexa, Morgan Stanley Research

Exhibit 79:

Clean products net imports

Nigeria (30-day moving avg; mb/d)

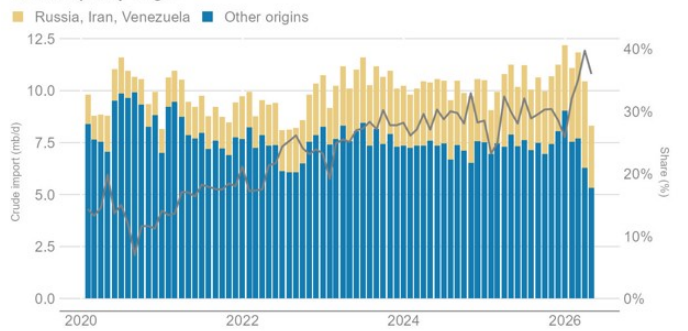


Source: Vortexa, Morgan Stanley Research

Exhibit 80:

Crude oil imports

China, split by origin

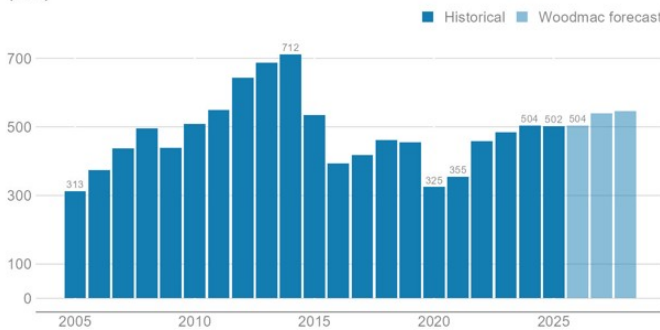


Source: Vortexa, Morgan Stanley Research

Exhibit 81:

Global oil & gas capex (by Woodmac)

(\$bn)

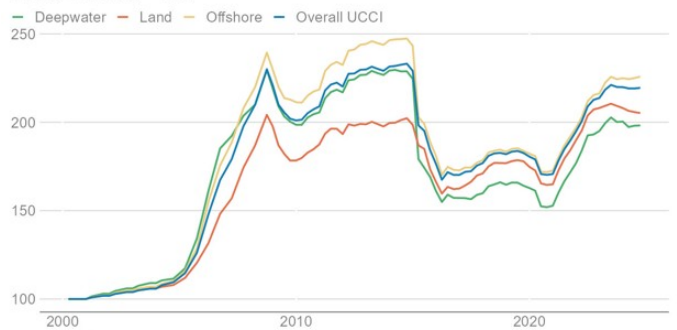


Source: Wood Mackenzie, Morgan Stanley Research

Exhibit 82:

Upstream capital cost

Index: 1Q 2000 = 100



Source: S&P Global, Morgan Stanley Research

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(as of May 31, 2026)

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Stock Rating Category	Coverage Universe		Investment Banking Clients (IBC)			Other Material Investment Services Clients (MISC)	
	Count	% of Total	Count	% of Total IBC	% of Rating Category	Count	% of Total Other MISC
Overweight/Buy	1542	42%	465	51%	30%	707	43%
Equal-weight/Hold	1571	43%	369	40%	23%	723	44%
Not-Rated/Hold	3	0%	0	0%	0%	1	0%
Underweight/Sell	551	15%	86	9%	16%	201	12%
Total	3,667		920			1632	

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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