OIL ANALYST

Supply Adaptation Meets Global Restocking Demand

Daan Struyven
+1(212)357-4172 |
daan.struyven@gs.com
Goldman Sachs & Co. LLC

Yulia Zhestkova Grigsby
+1(646)446-3905 |
yulia.grigsby@gs.com
Goldman Sachs & Co. LLC

Filippo Cuscito
+44(20)7051-9073 |
filippo.cuscito@gs.com
Goldman Sachs International

Alexandra Paulus
+1(212)902-7111 |
alexandra.paulus@gs.com
Goldman Sachs & Co. LLC

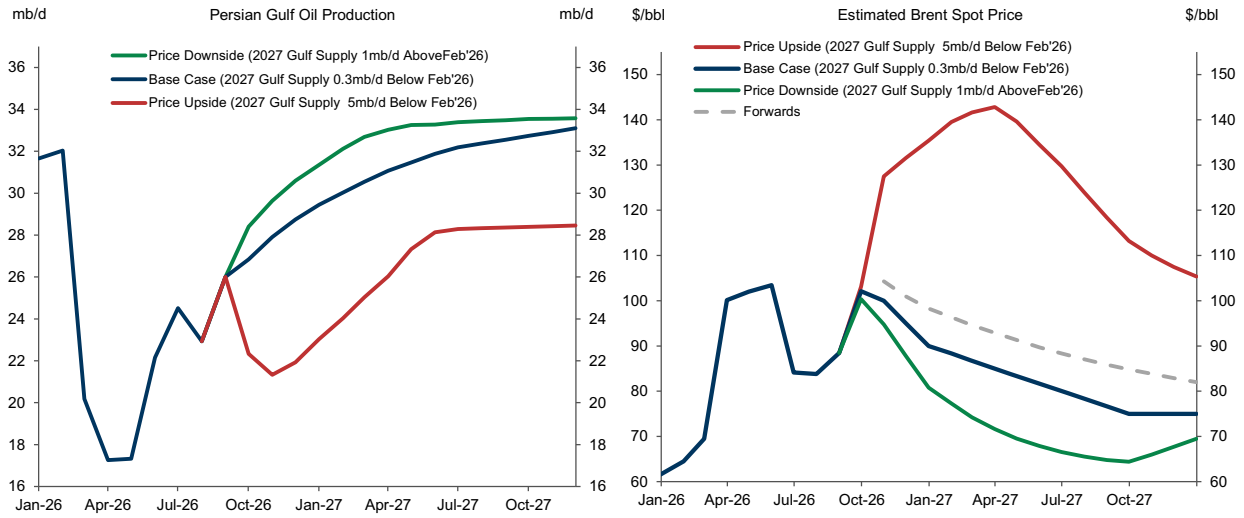
- We maintain our base case that continued adaptation of Mideast supply will eventually reduce crude oil prices, while potential renewed escalation still poses significant net upside risk. We nudge up our Brent Dec26 price forecast to $90/bbl (vs. $85 prior) because ongoing downside risks to supply likely slow the moderation in the timespreads risk premium—which we estimate at just over $20 today. Our 2027 average Brent forecast of $80 is unchanged and balances downward price pressure from faster-than-expected adaptation in Gulf supply against a slower moderation in the risk premium.
- We forecast WTI prices, which are unusually low vs. Brent because of high US-Europe shipping costs, to average $81 in Dec26 and $73 in 2027.
- **Why prices remain high.** We estimate that Persian Gulf oil exports, including estimated dark exports, have recently recovered to their 2025 average and that the global market was roughly balanced in September. Prices remain high because downside risks to supply, low stocks, and the high sensitivity of interest rates to oil prices are driving strong oil demand for physical restocking and financial hedging.
- **More supply adaptation.** Following September's upside surprise, we nudge up our base case production path for Persian Gulf producers.
- **Incorporating global restocking demand.** We estimate the fair value of oil prices relative to long-dated prices (timespreads) using both OECD commercial stocks and now also other global landed stocks, which have become predictive of prices. Incorporating low global inventories outside OECD commercial storage raises our September spot Brent spot fair value by $6 to $80, supporting restocking demand.
- **Net upside price risks.** Risks to our price forecast remain significantly tilted to the upside on net, especially near-term.
  - **Price upside scenario:** Brent might average around $125/bbl in 2027 if 2027 average Gulf output remains 5mb/d below Feb26 levels, versus 0.3mb/d below in our base case. Damage to oil infrastructure, intensified shipping attacks, and a more persistent risk premium are the most likely potential triggers of price upside.
  - **Price downside scenario:** Brent might decline into the $60s in 2027 if 2027 average Gulf output rises 1mb/d above Feb26 levels. A faster

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recovery in Mideast output and/or a faster erosion of the risk premium are the most likely potential triggers of price downside.

- **Recommendations**. For investors seeking to hedge upside risk to oil prices, we still recommend long summer2027 European gasoline positions. We recommend that oil producers hedge oil price downside with put spreads, which also leave exposure to price upside.

Exhibit 1: Downside Risk to Gulf Supply Means Net Upside Risk to Our $80 Brent 2027 Average Forecast



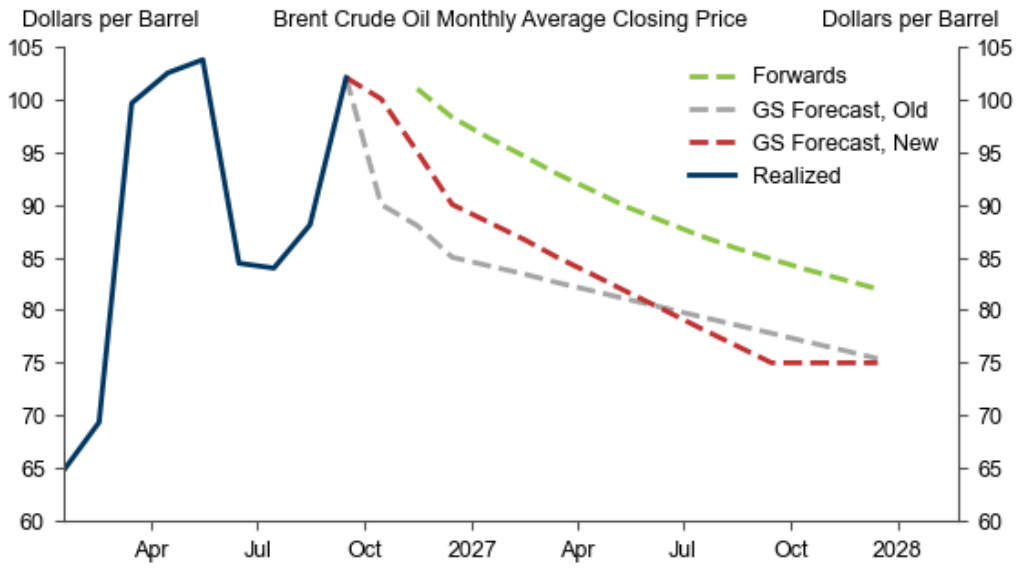
Source: Goldman Sachs Global Investment Research

Supply Adaptation Meets Global Restocking Demand

We maintain our base case that continued adaptation of Mideast supply will eventually reduce crude oil prices (Exhibit 2), while potential renewed escalation still poses significant net upside risk.

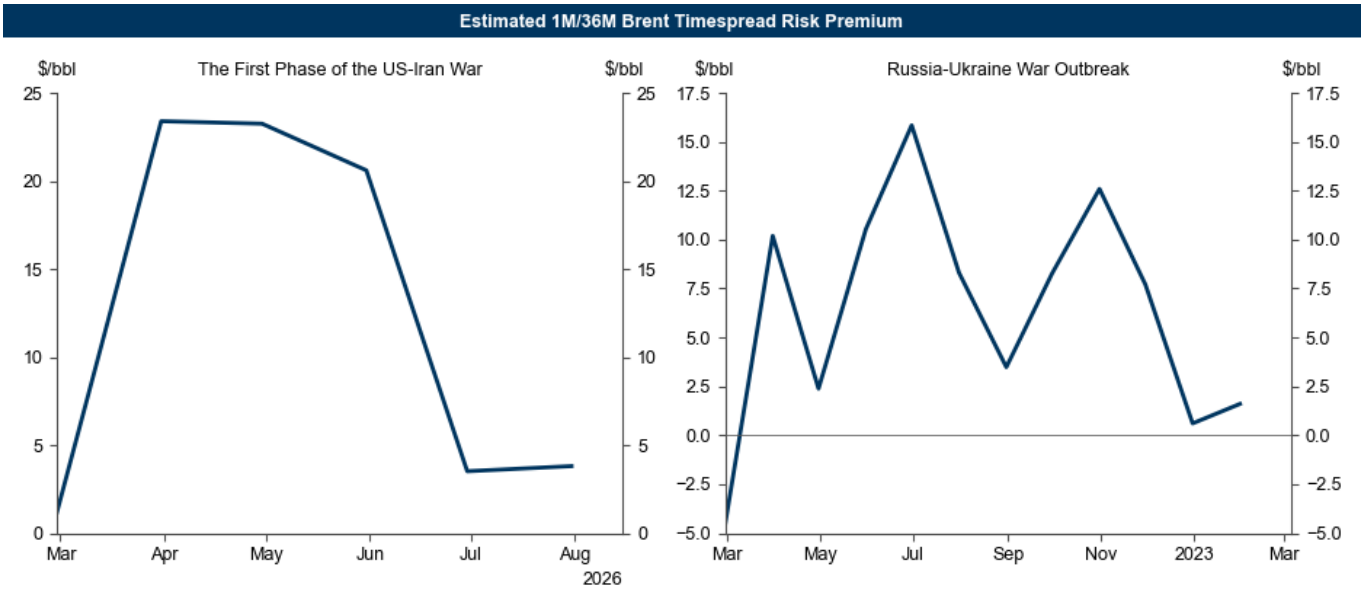
We nudge up our Brent Dec26 price forecast to $90 (vs. $85 prior) because ongoing downside risks to supply likely slow the moderation in the near-record timespreads risk premium—which we estimate at just over $20 today. While ongoing Mideast supply adaptation is likely to moderate the risk premium, this moderation is likely to be slower than in June 2026—when the estimated risk premium dropped by $17 following the MOU announcement—because our base case, unlike market consensus in June 2026, doesn't assume a quick and sustained diplomatic resolution of the US-Iran conflict. The risk premium also took about three quarters to come down sharply in 2022 after Russia's invasion of Ukraine until the market had sufficient evidence that Russian oil production was unlikely to plummet at all (Exhibit 3).

Exhibit 2: We Nudge Up Our Dec26 Brent Forecast to $90 (vs. $85 Prior) and Still Forecast Brent to Average $80 in 2027



Source: ICE, Goldman Sachs Global Investment Research

Exhibit 3: A High Risk Premium Can Normalize Quickly or Remain Persistent for Quarter, Depending on Market Perception of Downside Risks to Supply



Source: Goldman Sachs Global Investment Research

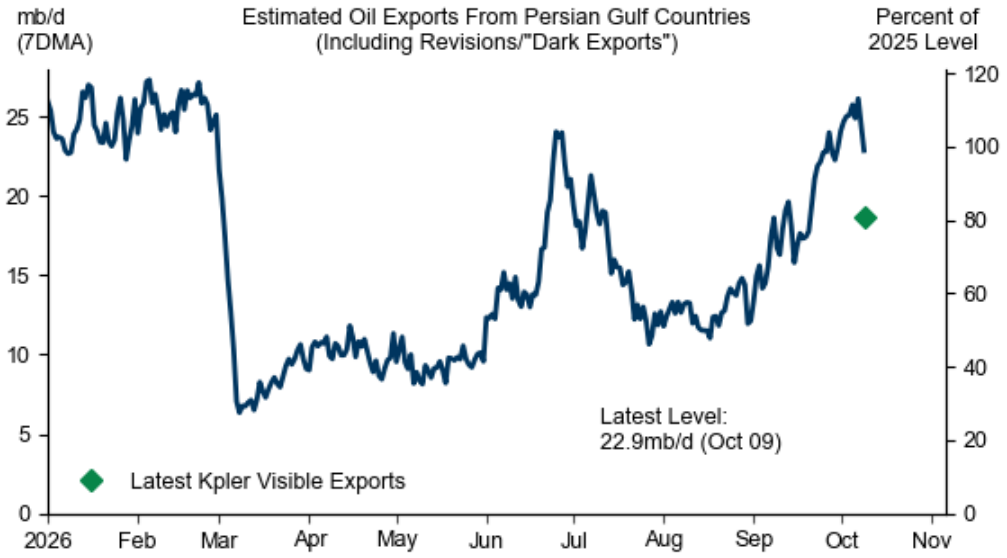
Our 2027 average Brent price forecast of $80 is unchanged, reflecting two offsetting revisions to our prior forecast.

First, faster-than-expected adaptation in Gulf supply creates downward price pressure. We estimate that Persian Gulf oil exports, including 4mb/d of estimated dark exports, have recovered to around their 2025 average since late September (Exhibit 4). Many other estimates of Persian Gulf exports are likely understated because they don't include estimated revisions, even though these revisions have kept occurring so far (Exhibit 5).

Second, a slower moderation in the timespreads risk premium causes some upward price pressure vs. our prior forecast.[1]

[1] The switch to our updated pricing framework has mixed effects on our fair value estimates across the forecast horizon. While incorporating strong demand to rebuild global stocks from near record-lows raises our fair value estimates in 2026, it creates some modest downside pressure on our fair value estimates in late 2027, because our base case assumes significant builds, especially outside OECD commercial storage.

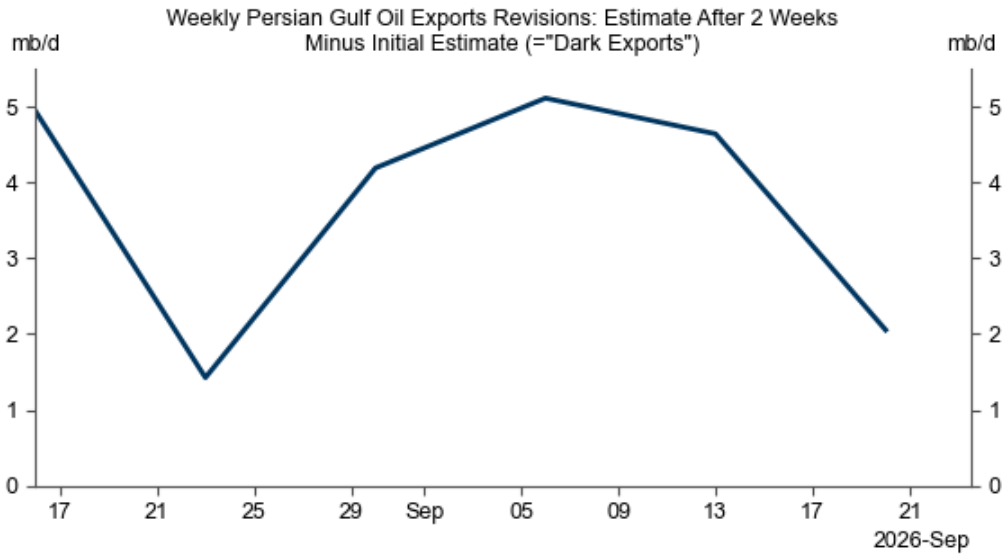
Exhibit 4: We Estimate That Persian Gulf Oil Exports, Including Estimated "Dark Exports", Have Recovered to 22-23mb/d Over the Last Two Weeks, Broadly in Line With Their 2025 Average



We consider crude, condensate, refined products, and LPG exports from Saudi Arabia, UAE, Iran, Iraq, Qatar, and Kuwait.

Source: Kpler, Goldman Sachs Global Investment Research

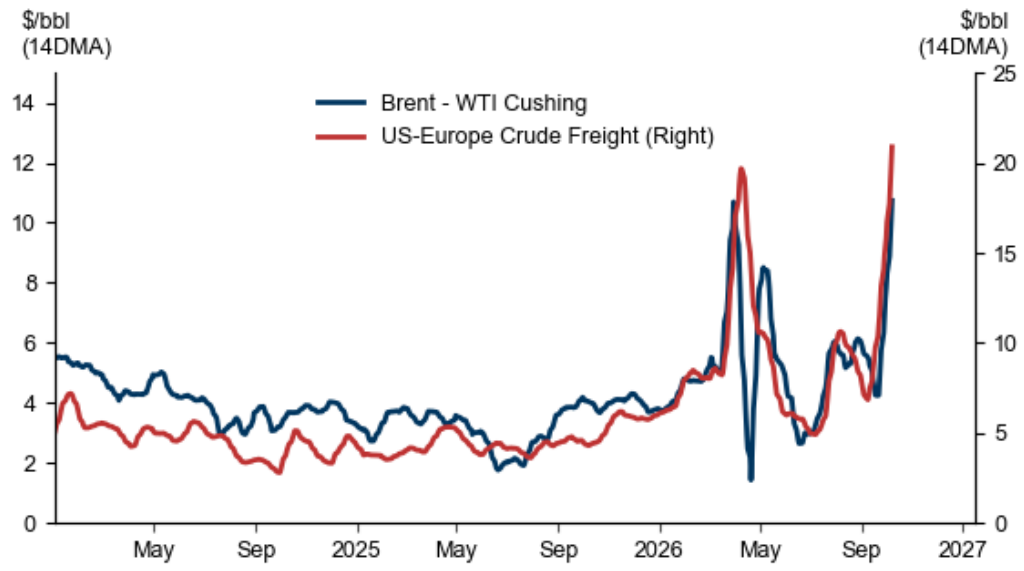
Exhibit 5: Persian Gulf Oil Exports Have Recently Been Revised Higher by 4mb/d on Average Two Weeks After the Initial Estimate



Source: Kpler, Goldman Sachs Global Investment Research

We forecast WTI prices to average $81 (vs. $80 prior) in Dec26 and $73 (vs. $75 prior) in 2027. The WTI price forecast revisions are slightly positive in the near-term because we assume that the timespreads risk premium will moderate only gradually, outweighing a wider Brent-WTI differential. In contrast, the WTI forecast revision is slightly negative for the 2027 average because ongoing tightness in oil tanker markets and unusually high US vs. Europe crude freight rates (Exhibit 6) are likely to keep the Brent-WTI differential wider for longer.

Exhibit 6: Higher US-Europe Crude Freight Rates Imply a Wider Brent-WTI Price Differential

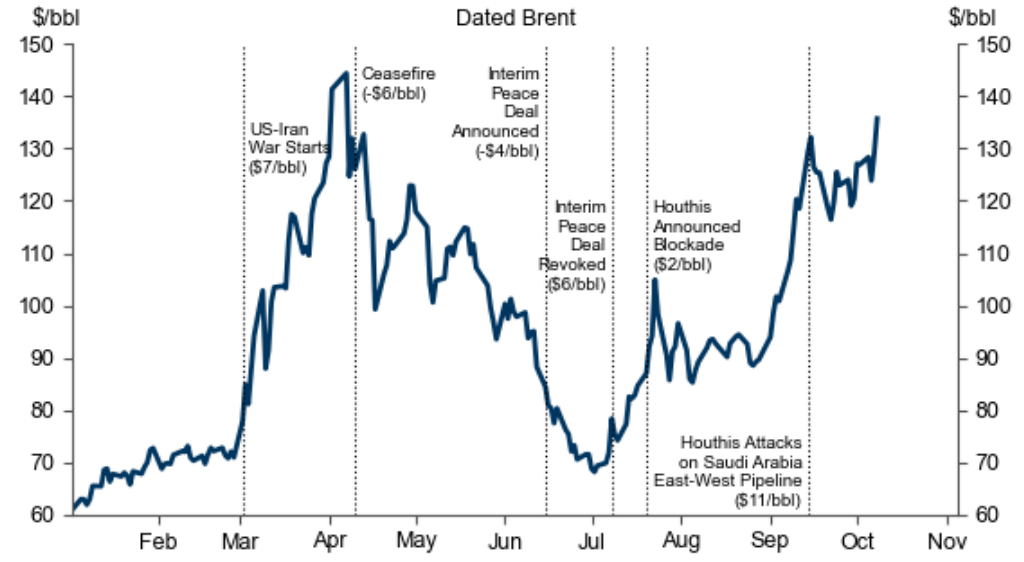


Source: Bloomberg, Platts, Goldman Sachs Global Investment Research

Why Prices Remain High

If Mideast exports have recovered, why do futures—and especially physical benchmarks such as dated Brent, now above $130/bbl—remain so high?

Exhibit 7: The Physical Dated Brent Price Remains Very High



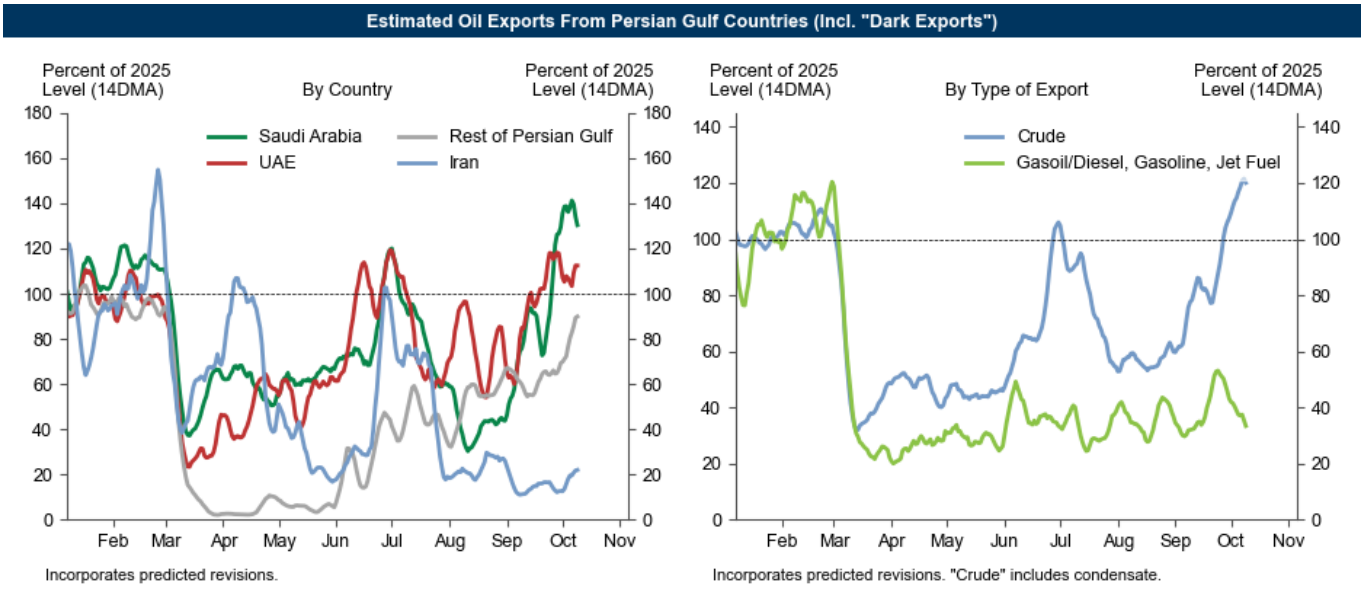
We show in parenthesis the daily change in the Dated price at the close of the announcement's trading day.

Source: Platts, Goldman Sachs Global Investment Research

Physical prices remain elevated because escalation threatens supply while near-record-low global inventories fuel strong restocking demand. Some market participants believe that high Saudi and UAE exports, combined with no measured seaborne crude exports from Iran (Exhibit 8, left), increase the risk that Iran targets oil infrastructure, including ports, export terminals, pipelines, and oilfields. Some market participants see a significant probability of the US resuming military action, of

subsequent escalation and ultimately of damage to regional oil infrastructure, potentially after the US midterms.

Exhibit 8: Estimated Oil Exports Are High for Saudi Arabia and the UAE But Low for Iran



Left: includes exports of crude, refined products, and LPG. Right: includes exports from Saudi Arabia, UAE, Iran, Iraq, Qatar, and Kuwait.

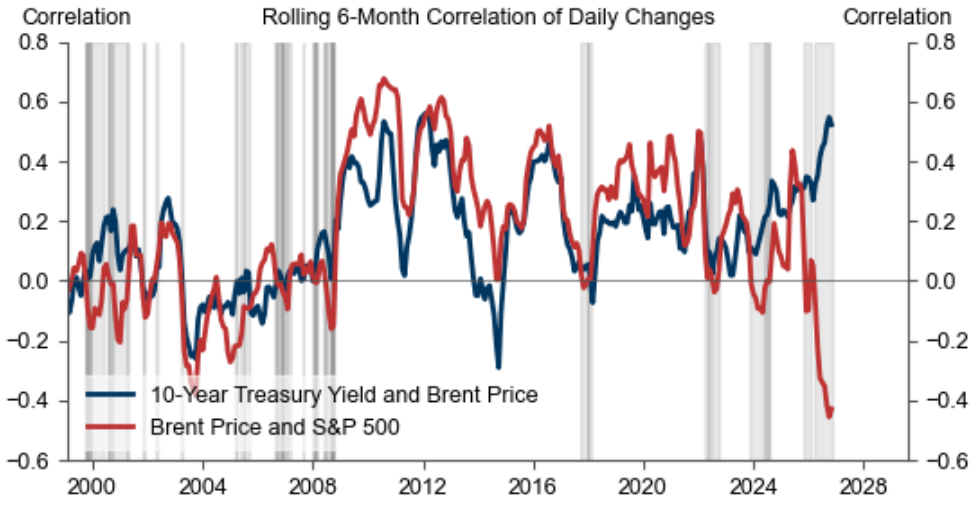
Source: Kpler, Goldman Sachs Global Investment Research

Supply expectations and disruption fears also influence physical prices. Dated Brent jumped more than $10 in one day after the East-West pipeline shut down, suggesting that physical buyers, including refiners, bid up available barrels as the risk of severe supply losses increased (Exhibit 7). Higher transportation and insurance costs are passing through to refined product prices, while it's more complex for crude prices.[2]

The recent sensitivity of global equities—and especially bonds—to oil prices (Exhibit 9) is supporting financial demand for oil as a portfolio hedge. At his September press conference, Fed Chairman Warsh cited high oil product prices, particularly crack spreads (refined product margins), as a key driver of higher Treasury yields and consumer prices.

[2] Because Brent is typically quoted free-on-board (fob) as opposed to cost, insurance and freight (cif) included, there is no mechanical pass-through from higher freight rates to fob Brent prices. That said, as Brent competes somewhat with grades imported from the rest of the world to serve European refiners, higher freight costs might put some upward price pressure on Brent prices while putting some downward price pressure on fob prices of barrels imported from elsewhere, as they become less competitive for European refiners who have to pay higher transportation costs.

Exhibit 9: Oil Supply Disruptions Tend to Weigh on Bond and Equity Prices by Raising Inflation and Treasury Yields, Which Can Increase Demand for Oil as a Portfolio Hedge



Shaded area indicated periods with negative correlation between oil prices and equities and positive correlation between yields and oil prices, indicating oil-supply shock driven inflation fears.

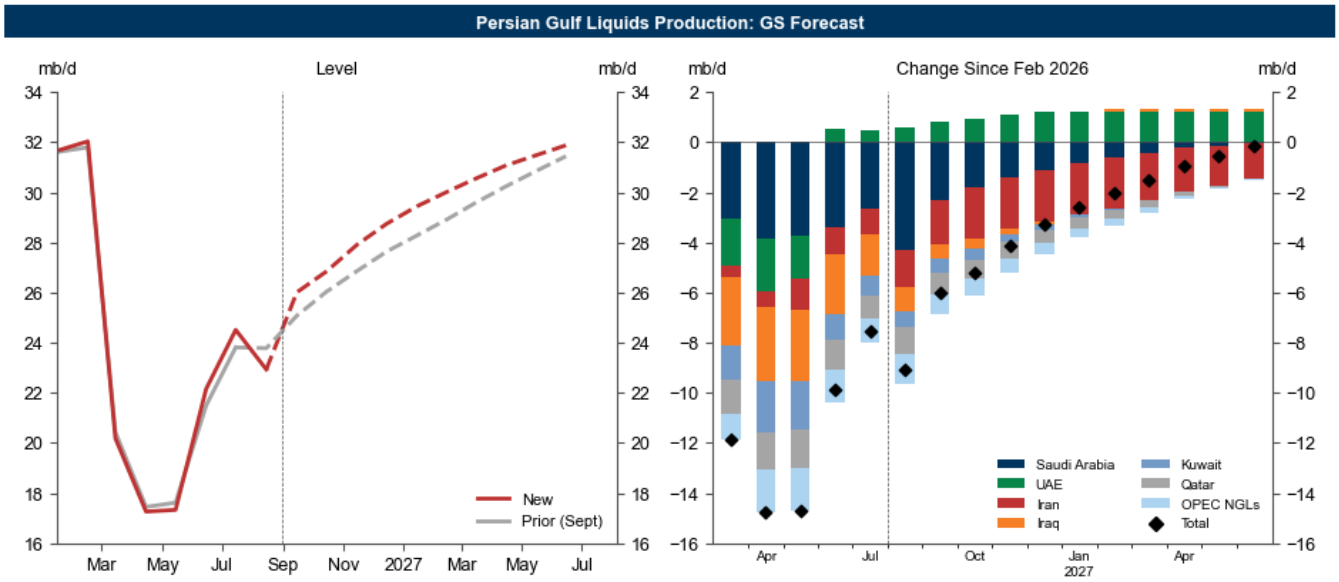
Source: ICE, Bloomberg, Goldman Sachs Global Investment Research

More Supply Adaptation

While Persian Gulf oil exports have largely normalized, regional oil production remains well below pre-war levels. We estimate that Persian Gulf liquids output recovered from 14.8mb/d below February 2026 levels in April to roughly 6mb/d below in September. Given September's upside surprise, we modestly raise our base-case production path for Persian Gulf producers (Exhibit 10).

We assume Mideast output returns gradually to pre-war levels by 2027H2 before overshooting as the UAE and Saudi Arabia deploy spare capacity. Although Gulf output is likely to be less smooth than our stylized base case, we expect it to trend higher as continued adaptation and added transportation resources—especially pipelines and a larger tanker fleet—support further gains.

Exhibit 10: Given the Strength in Estimated Gulf Oil Exports, We Nudge Up Our Path for Persian Gulf Oil Production



Source: OPEC Secondary Sources, Goldman Sachs Global Investment Research

A September increase in tankers willing to exit the Gulf supported the recovery in oil production and exports of previously produced crude. We attribute the rise in Gulf exports mainly to greater adaptation and higher risk tolerance among producers and specialized shippers despite persistent shipping risks, supported by strong economic and national incentives and US military protection for transits.

Market participants are debating Iran's tolerance of recent oil export trends and the likelihood of escalation.

Some believe recent export trends are unacceptable to Iran and that its difficulty curbing ex-Iran Gulf exports through tanker strikes raises the risk that Iran or the Houthis focus on assets further upstream and target oil infrastructure, including ports, export terminals, pipelines, and oilfields.

Others see three reasons Iran may not escalate despite the recent export trends and exports mix. First, Iran may not have to undertake additional action because US refined product prices remain high, reflecting a high crude risk premium, high shipping costs, and high net margins for refined products. Second, the status quo may remain manageable given the regime's history of patience and a high pain threshold, especially

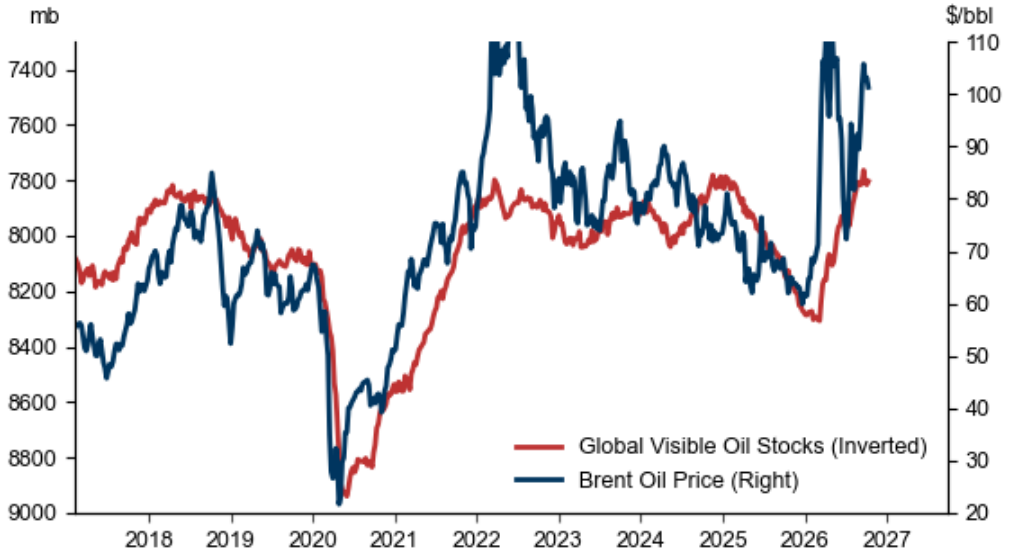
given that restricted Gulf access may be partly made up for by parallel trade and liquidity networks through Caspian ports and (costlier but viable) northern and eastern routes. Third, Iran may seek to avoid US retaliation that may target Iran's own energy infrastructure.

Incorporating Global Restocking Demand With Our Updated Framework

We continue to estimate the fair value of spot Brent as the sum of two components: (a) the fair value of long dates prices (e.g. three-year futures), based on marginal production costs and spare capacity and (b) the fair value of spot prices relative to long-dated prices—measured by 1M–36M timespreads—based on interest rates and oil inventories.

We now incorporate global landed stocks outside OECD commercial storage, which have recently gained some predictive power for prices (Exhibit 11). OECD commercial stocks remained remarkably stable in 2025-2026, but prices fell in 2025 as ex-OECD commercial stocks built significantly. By contrast, prices have surged this year while ex-OECD commercial inventories have dropped (Exhibit 12).

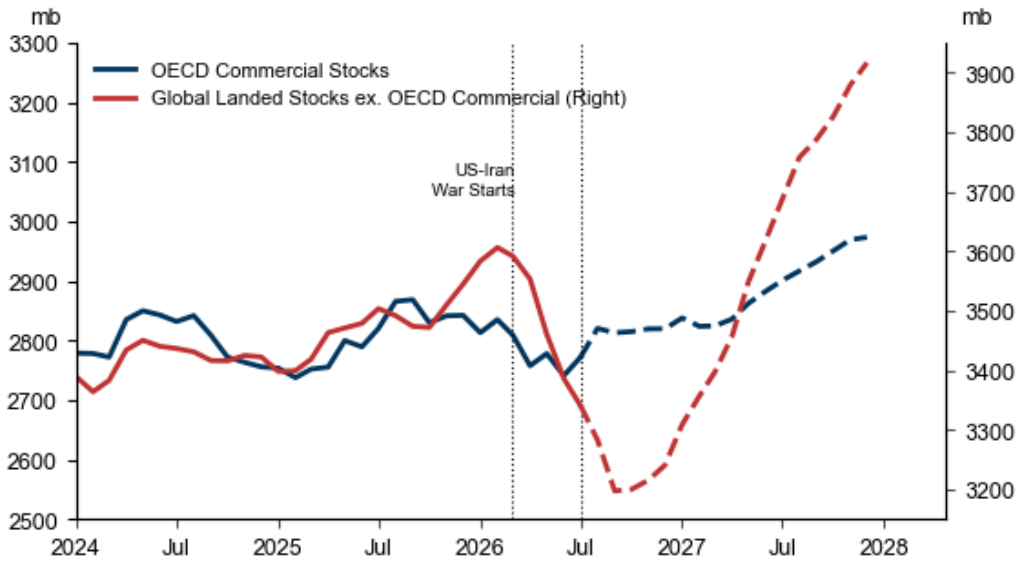
Exhibit 11: Oil Prices Fell in 2025 as Global Visible Oil Inventories Built, But Jumped as Inventories Dropped in 2026



Source: ICE, IEA, Kpler, DOE, Euroilstocks, ARA PJK, Haver, Refinitiv Eikon, Goldman Sachs Global Investment Research

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Exhibit 12: Stable OECD Commercial Stocks in 2025-2026



Source: IEA, Kpler, DOE, Euroilstock, ARA PJK, Haver, Refinitiv Eikon, Goldman Sachs Global Investment Research

Including low global inventories outside OECD commercial stocks raises our September spot Brent fair-value estimate by $6 to $80. Along with downside risks to supply from escalation, low global stocks (incorporated in our updated fair value estimate) drive strong restocking demand.[3] Even so, spot Brent still embeds a risk premium of just over $20/bbl, reflecting the substantial downside risks to supply and inventories from further escalation.

Our Base Case Is That the Market Shifts to a Surplus

The key driver of our base case that crude prices eventually moderate is the expectation that the global liquids market shifts to a surplus from 2026Q4 onwards through end-2027 for three reasons:

- The market was nearly balanced in September
- Adaptation of Persian Gulf supply is likely to continue (although uncertainty remains very high)
- The Hormuz shock is likely to continue to weigh somewhat on global demand

Reason 1: The Market Was Nearly Balanced in September

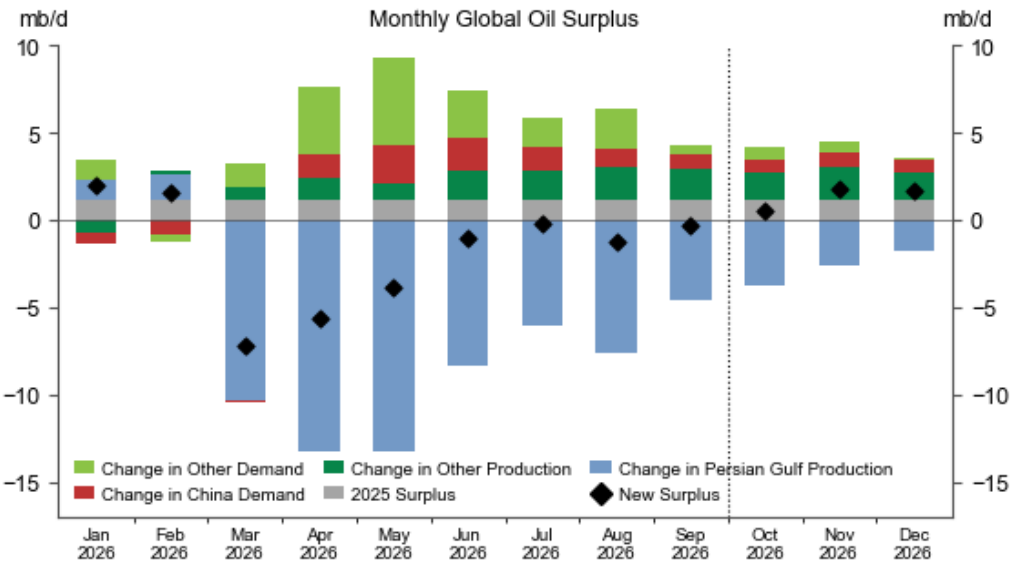
We estimate that the global liquids market was nearly balanced in September with a modest 0.3mb/d deficit, much smaller than the 7.2mb/d deficit in March (Exhibit 13).[4] This near-balance roughly balances the tightening effect from a 4.6mb/d estimated decline in Persian Gulf production (vs. 2025 average) with the easing effects of i) a 1.2mb/d 2025 surplus, ii) a 1.8mb/d rise in non Gulf production (vs. 2025 average), and

[3] This $80 estimate is the sum of our $76 fair value estimate of Brent 36M futures and a $4 fair value estimate for 1M-36M Brent timespreads. The $76 36M futures fair value estimate incorporates a $9 lasting structural security premium we implemented at the start of the war. The intuiton is that structurally higher disruption risk requires higher long-dated prices to encourage marginal supply and surpluses in no-disruption periods.

[4] Our view that the market was not in a large deficit in September is consistent with the 0.5mb/d *rise* in global visible stocks in September.

iii) a 1.3mb/d decline in global oil demand (vs. 2025 average).

Exhibit 13: We Estimate That The Market Was Nearly Balanced in September



Source: Goldman Sachs Global Investment Research

Reason 2: Adaptation of Persian Gulf Supply is Likely to Continue (Although Uncertainty Remains Very High)

Although the recovery of Gulf output is likely to be less smooth than our stylized base case (Exhibit 10), we expect it to trend higher as continued adaptation and added transportation resources—especially pipelines and a larger tanker fleet—support further gains.

Reason 3: The Hormuz Shock Is Likely to Continue to Weigh Somewhat on Global Demand

Global oil demand in 2026Q3 remained quite weak, down 3.3mb/d year-over-year, with much of the weakness concentrated in China, the Mideast, and OECD Asia (Exhibit 14).

We estimate that global oil demand in 2026Q3 remained nearly 4mb/d below its counterfactual path assuming no Hormuz shock. We assume that about 80% of this gap between actual global demand and its no Hormuz counterfactual ("demand scarring") unwinds by 2027Q4, narrowing to 0.7mb/d, as the availability and affordability of refined oil products gradually improves. This forecast that oil demand largely recovers is directionally consistent with the demand recovery from prior negative oil supply shocks in 2011 and 2022, and our view that the weakness in China petchem oil demand is largely unsustainable.

The 0.7mb/d predicted[5] hit from the Hormuz shock to global oil demand in 2027Q4 reflects our finding that the shock has accelerated behavioral changes, especially in terms of 1) the usage of existing electric vehicles and trucks in China instead of oil-based equivalents, and 2) EV sales.

[5] The 0.7mb/d predicted Hormuz hit to global oil demand in 2027Q4 is estimated at the predicted 0.9mb/d rise in oil demand vs. 2025Q4 minus the 1.6mb/d counterfactual trend growth assuming 0.8mb/d annualized global trend demand growth.

Exhibit 14: Global Oil Demand in 2026Q3 Remained Quite Weak, Down 3.3mb/d Year-Over-Year, With Much of the Weakness Concentrated in China, the Mideast, and OECD Asia

Global Oil Demand: Change Since Same Quarter in 2025						
	26Q2 vs. 25Q2		26Q3 vs. 25Q3		27Q4 vs. 25Q4	
	mb/d	%	mb/d	%	mb/d	%
World	**-5.5**	**-5**	**-3.3**	**-3**	**+0.9**	**+1**
China	-1.8	-11	-1.2	-7	-0.8	-5
Non-OECD ex China Asia Pacific	-1.0	-6	-0.2	-2	+1.0	+7
Mideast	-0.8	-9	-0.7	-7	+0.4	+4
OECD Asia	-0.8	-11	-0.4	-6	-0.1	-1
OECD Europe	-0.6	-4	-0.1	-1	-0.3	-2
Other	-0.4	-2	-0.4	-2	+0.8	+3
US	-0.2	-1	-0.3	-1	+0.0	+0

Source: Goldman Sachs Global Investment Research

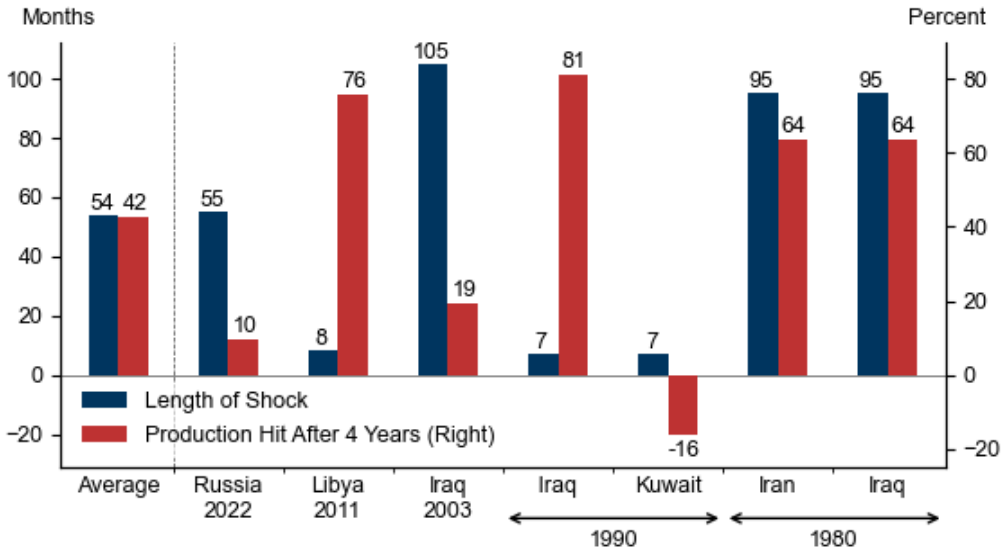
Net Upside Price Risks

The risks to our price forecast remain significantly tilted to the upside on net, especially in the near-term.

Damage to oil infrastructure, intensified shipping attacks, and a more persistent risk premium are the most likely potential triggers of potential price upside. Our review of the five prior largest oil supply shocks of the past 50 years shows that, on average (Exhibit 15):

1. Shocks are often long-lasting, averaging 4.5 years
2. Oil production in the affected region tends to be 42% weaker than the pre-shock level, on average, 4 years after the shock, often reflecting damage to oil infrastructure (e.g. oil export terminals), and especially low investment given lingering physical risks and/or lost foreign expertise following sanctions or regime change.

Exhibit 15: Looking at the Prior Largest Supply Shocks of the Past 50 Years, We Estimate an Average Hit to Production of 42% After 4 Years



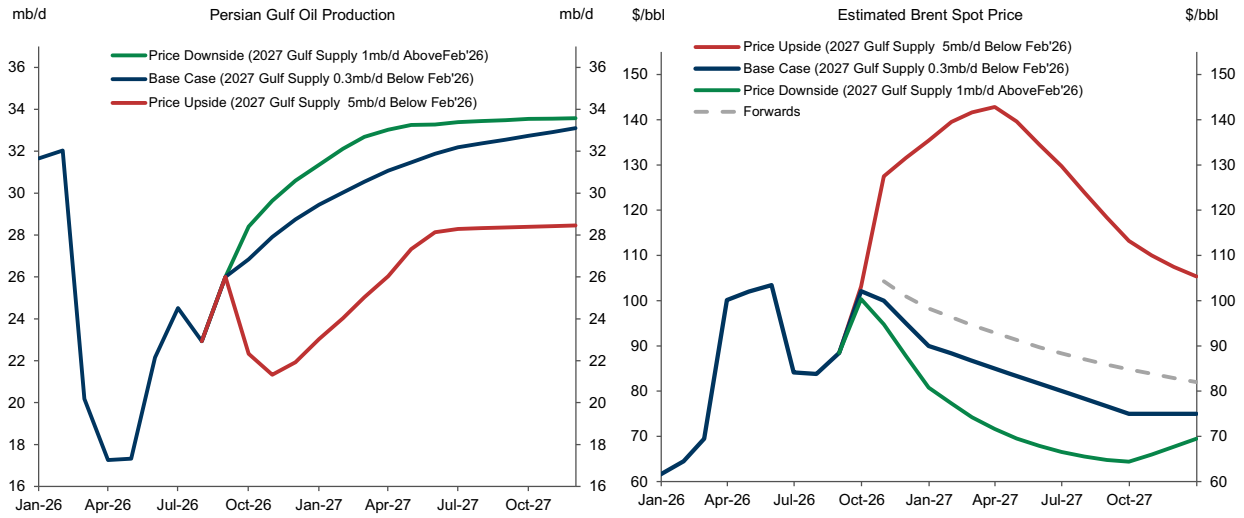
Source: EIA, IEA, Goldman Sachs Global Investment Research

A faster recovery in Mideast supply and/or a faster erosion of the risk premium, for instance if a sustainable diplomatic solution were to be found, are the most likely potential triggers of potential price downside.

We illustrate the net upside risks to our price forecast with two scenarios (Exhibit 16):

- **Price upside scenario:** Brent might average around $125/bbl in 2027 if 2027 average Gulf output remains 5mb/d below Feb26 levels, versus 0.3mb/d below in our base case.
- **Price downside scenario:** Brent might decline into the $60s in 2027 if 2027 average Gulf output rises 1mb/d above Feb26 levels.

Exhibit 16: Downside Risk to Gulf Supply Means Net Upside Risk to Our $80 Brent 2027 Average Forecast



Source: Goldman Sachs Global Investment Research

Recommendations to Investors and Oil Producers

Investors

For investors seeking to hedge geopolitical upside risks to oil prices and downside risks to equity and bond portfolios, we:

- *Continue to recommend long summer European gasoline (EBOB Jun27)* because refiners' switching output from gasoline to diesel is rapidly tightening gasoline markets, where less elevated price levels than for diesel leave room for sharp price upside if the Mideast and Russia-Ukraine conflicts continued to constrain structurally constrained refining output for longer or if more energy infrastructure were to be damaged.
- *Recommend any upside crude exposure via call options rather than outright crude futures length* because call skew looks relatively inexpensive compared to the spring of 2026, potentially reflecting strong hedge fund demand for puts.

Crude Oil Producers

We recommend that crude oil producers hedge oil price downside with put spreads (i.e. buy a put with a higher strike price and sell a put with a lower strike price) because:

- *Our base case is below the forwards.* Our base case for a surplus in 2027, reflecting remarkable supply adaptation, likely eventually significantly higher UAE production after its exit from OPEC exit, and potential demand scarring (especially in China), suggest that oil prices may eventually decline meaningfully, especially if a sustainable diplomatic solution were to be eventually found.
- *Put spreads leave exposure to price upside.* Potential damage to oil infrastructure creates significant upside risk to our price forecast, which crude producers might want to retain.
- *Selling far out-of-the money puts cheapens the downside protection.* The remarkable price elasticity of China crude imports, the low starting point of global stocks, and only modest global recession risk suggest that extreme crude price downside is not that likely.