The Frack-tured Cartel:

How Shale's elasticity broke OPEC's grip on oil markets

In decades past, when oil projects took years to come online, OPEC quotas could set price: **cuts** could support prices for years; OPEC production **increases** could trigger multi-year downturns. Today, many investors and oil experts still cling to an outdated belief that cycles start and stop at OPEC's command.

With Shale providing a global-scale supply response within months, OPEC is not just ineffective – it can be counterproductive. If Shale can respond in months, then OPEC cuts do not sustain high prices – they incentivize Shale production. Similarly, OPEC increases depress prices in the short-term- but within months, Shale declines can precede the next upcycle.

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In 2017, Recurrent published *The Impact of US Shale – Changing the Shape of Energy Cycles.* In our report, we explained that OPEC's relevance would decline as Shale reached a size where it can balance global oil markets within 12-18 months based on price signals alone. We forecasted that oil cycles would become lower-amplitude and shorter-cycle as Shale's market-based scalpel replaced the sledgehammer of OPEC policy.

Since 2017, North American Shale has grown to over 10 million barrels daily. Shale's natural decline can now reduce production by more than 1 million barrels within 12 months when prices fall, while high prices can incentivize over 1 million barrels of growth within a similar timeframe. **Shale has arrived as the only world-scale, elastic source of price-dependent oil supply.**

Our report's conclusions were wide-ranging: oil prices would move into a tighter range, as supply adjusts to price in near-real-time. This was a drastic departure from the inelastic "pre-Shale" market, where inelastic conventional supply took years to react, creating "supercycles" where price would stay high (or low) for years.

COVID and geopolitical disruptions caused many to ignore these conclusions and assume that events had overwhelmed Shale's ability to react. In fact, these disruptions offered further strong evidence for our rangebound, Shale-dominated framework. COVID cut demand by an unprecedented amount, but real WTI oil prices fell below $50 for only 8 months. The Ukraine War, plus two Saudi cuts, pushed oil above $100 for only 6 months. In the volatile 126 months since the end of 2014, WTI 12-month futures have spent only 5 months outside of a $50-to-$100 range.

What can energy investors take away from this unheralded shift in oil markets?

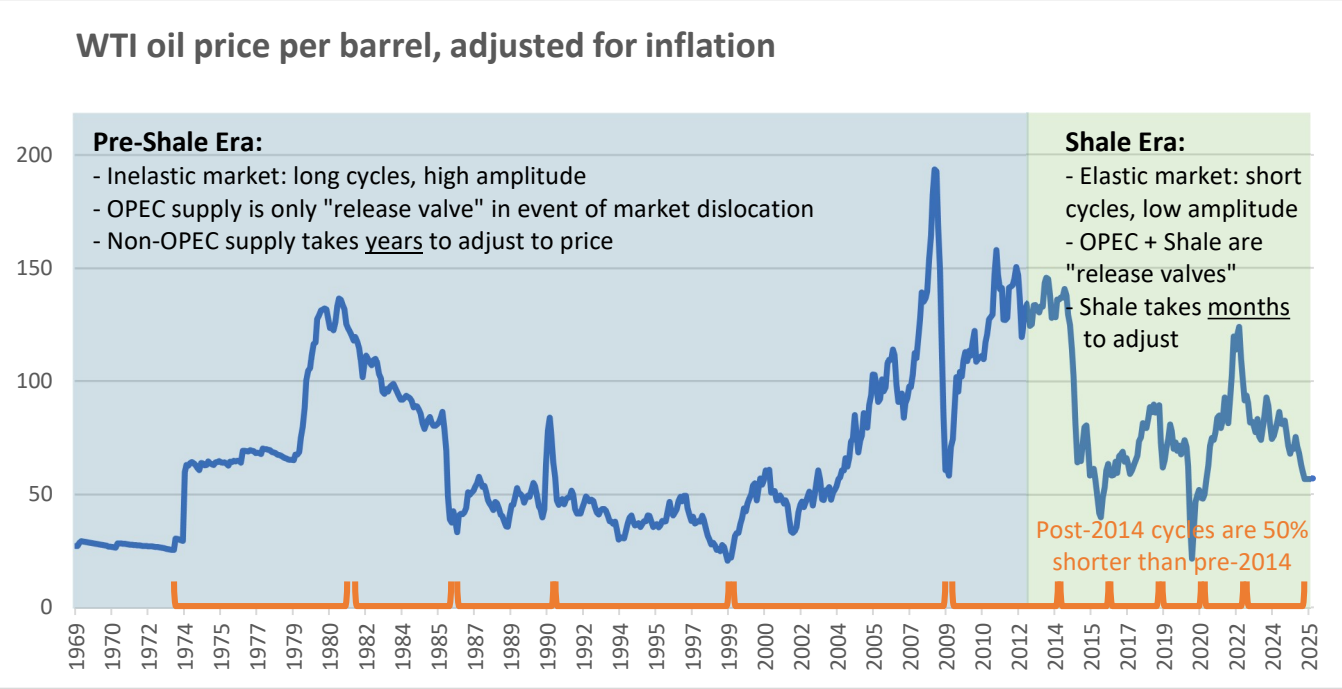
First, Shale economics have established themselves as the oil market price-setter. It does not matter if Shale is growing or shrinking – Shale sets price due to its unique elasticity. Cycle lengths reflect Shale capital cycles. Price range is set by Shale's production response. The "oil might never recover" crowd of 2020 and the "oil will never go below $100" crowd of 2022 reflect an outdated inelastic framework out of sync with today's elastic market.

Second, OPEC cuts are only effective when alternative supply is unavailable. Before Shale, cuts could remain effective for years, reflecting the cycle times of large-scale conventional oilfields. Today, cuts are only effective until Shale responds – typically 12 to 18 months. Since OPEC policy cannot be sustained or used to hold prices stable for years at a time, Investors using OPEC-centric analysis are susceptible to transferring value to investors who understand the new oil market paradigm.

Examining the shift from an inelastic, OPEC-dominated market to a market defined by the elastic, short-cycle economics of Shale oil supply

Before Shale oil supply grew to global significance, "typical" oil projects took roughly a decade to develop and decades to produce, leaving markets vulnerable to shortages and price spikes for years at a time. When those same oil markets finally tipped into oversupply, conventional oil reservoirs would produce **inelastically** for years, causing multiyear gluts that caused prices to fall, crushing profitability and choking off funding for future projects.

Shale has become a "world scale" source of **elastic** oil supply, with the ability to organically grow or shrink by more than 1 million barrels per day (>1mmbpd) within 12 months. As a result, the oil market has become less extreme – with milder highs and lows, and shorter trough-to-peak cycle times than was historically the case.

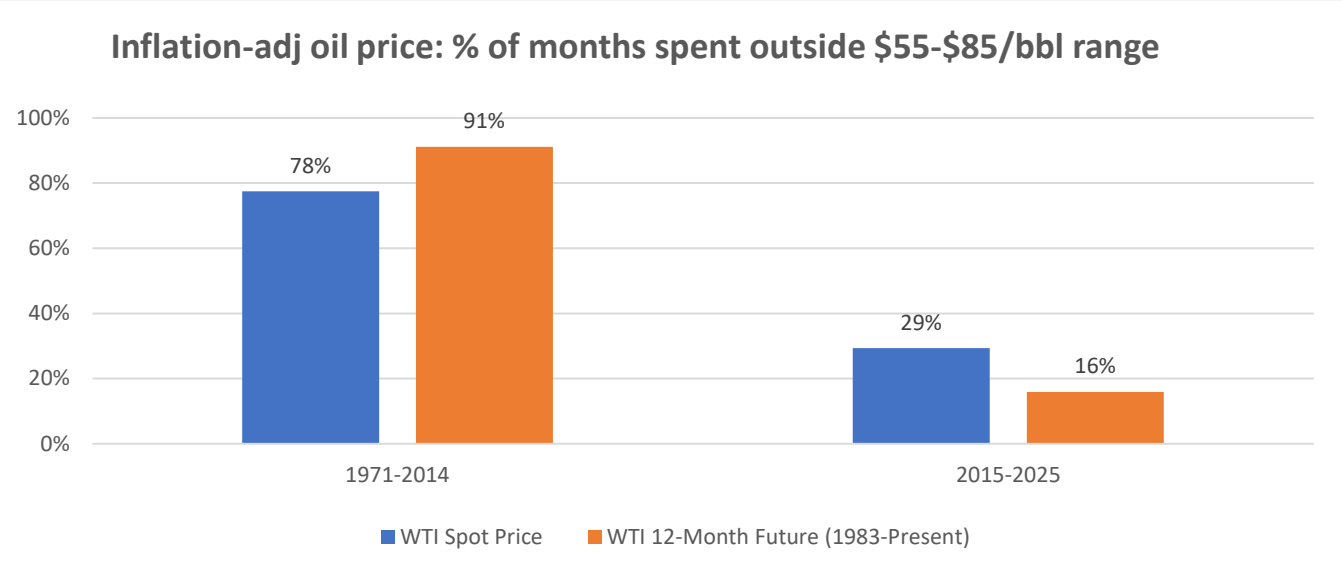


Source: Bureau of Labor Statistics (BLS), World Bank, Energy Information Agency (EIA), St. Louis Federal Reserve (FRED), Bloomberg, Recurrent research.

	Supply Response	Cycle Duration	Cycle Amplitude
Pre-Shale Era (1973-2014) Examples / Evidence:	**Inelastic** OPEC manages market with 2-3 interventions/ decade	**5-10 years** (1973-1982, 1982-1987, 1987-1990, 1990-1999, 1999-2008, 2009-14)	**High amplitude** Oil trades outside of the $40-90/bbl range >50% of the time
Shale Era (2014-Present) Examples / Evidence:	**Elastic** OPEC intervenes frequently, with decreasing efficacy	**2-3 years** (2014-16, 2016-18, 2018-2020, 2020-2022, 2022-24)	**Low amplitude** Oil trades inside of the $40-90/bbl range >80% of the time

"2014-15 crash, COVID, Russia-Ukraine, trade war, frequent OPEC interventions… oil has never been more volatile" – but is that claim true?

We made a claim in 2017 that Shale would usher in a shorter-cycle oil market with lower price amplitude (higher lows and lower highs). We expect that many would push back on the notion that oil markets have "moderated" since 2017. Citing the 2014-15 price crash triggered by OPEC, the 2017-18 rally triggered by a reversal of OPEC policy, the 2020 COVID crash, the post-war spike in 2022, OPEC cuts in 2022-24 followed by the April 2025 announced unwind of cuts and the Trump Administration's "Liberation Day" tariff announcement – many energy observers would probably scoff at our notion that Shale has ushered in a **calmer, more rational** oil market. But it has.



Source: Bureau of Labor Statistics (BLS), World Bank, Energy Information Agency (EIA), St. Louis Federal Reserve (FRED), Bloomberg, Recurrent research.

Oil market behavior in the face of unprecedented demand destruction during COVID and historic geopolitical disruption actually **supports** our claim. The oil market of the last decade has become less prone to bouts of extreme pricing, despite macroeconomic dislocations.

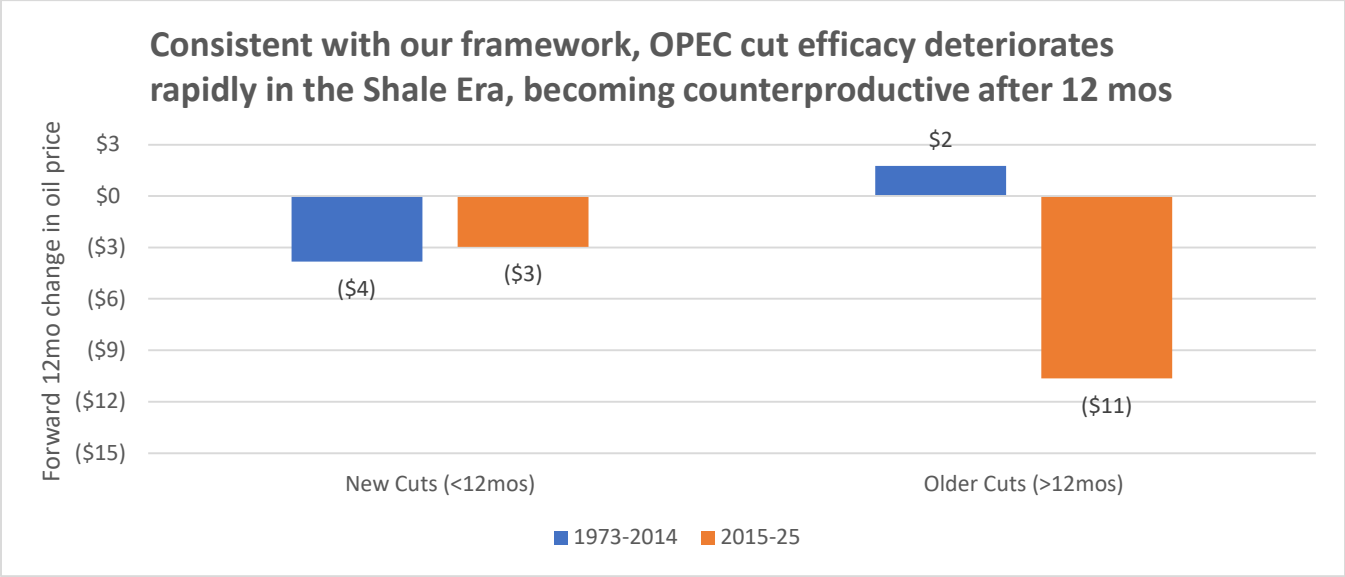
From 1973 to 2014, oil prices were above $85 or below $55 – i.e. at extreme levels – **78% of the time.** Since 2014, oil has only fallen outside of this trading range for **29% of the time**. The 12-month futures contract for WTI – a contract that tends to look past near-term disruptions to the supply/demand balance 12 months from now – has been especially stable, spending only 16% of the time outside of the $55 to $85 band. This further bolsters our argument that the market is highly confident in Shale's ability to respond within 12 months.

So the reality has been that Shale's rise has enabled a tighter, more rangebound market, and the time elapsed from peak to trough has shortened by ~50%.

Cuts are only effective in an inelastic market – if Shale takes 12 months to respond, cuts are only effective if unwound in <12 months

Production cuts are only effective in an inelastic market – i.e., if there are no alternatives waiting to backfill the cut production. Even before the advent of short-cycle Shale oil, OPEC cuts eventually lost efficacy when alternatives emerged. For example, in the early 1980s, a wide array of long-cycle projects approved during the rising prices of the 1970s came online. With new production surging in the North Sea, Alaska, Mexico, Siberia and Canada, OPEC's cuts lost their efficacy as even inelastic production eventually becomes elastic.

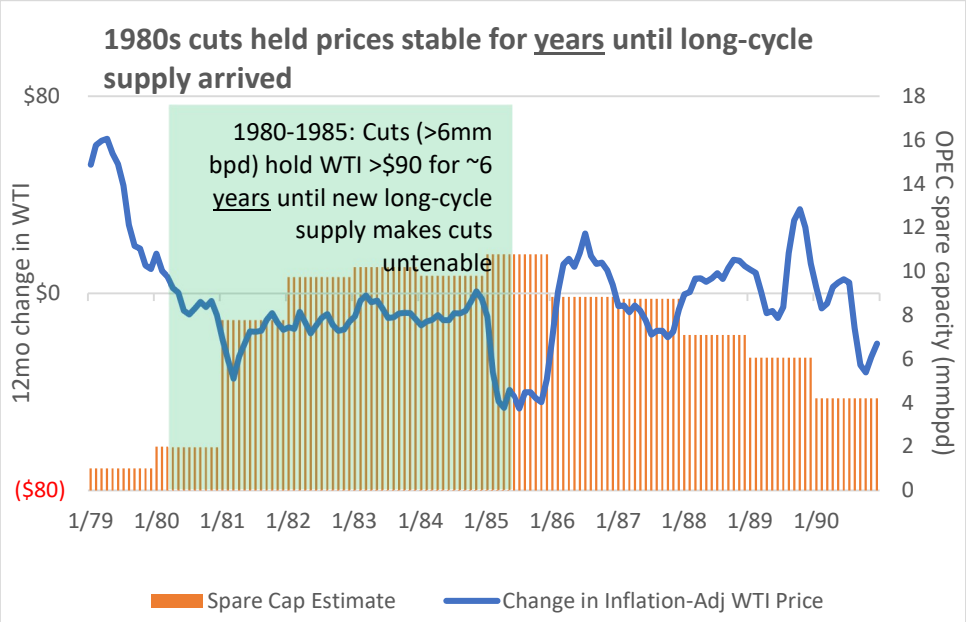
One important consequence of this new market dynamic, where cycles are defined by 1) full-cycle Shale economics and 2) the time required for Shale to meaningfully adjust production, is that OPEC cuts are now only efficacious until Shale has the ability to respond. To the extent that OPEC cuts persist beyond an approximate 12-month window, OPEC runs the risk of policy that is ineffective at best (withholding low-cost barrels that Shale produces at higher cost) and counterproductive at worst (as Shale overproduces into a market with existing spare capacity). Accordingly, our framework would suggest that cuts beyond 12 months are likely to undermine future prices. As we can see below, our expectation has been borne out by market reality over the last 10 years.

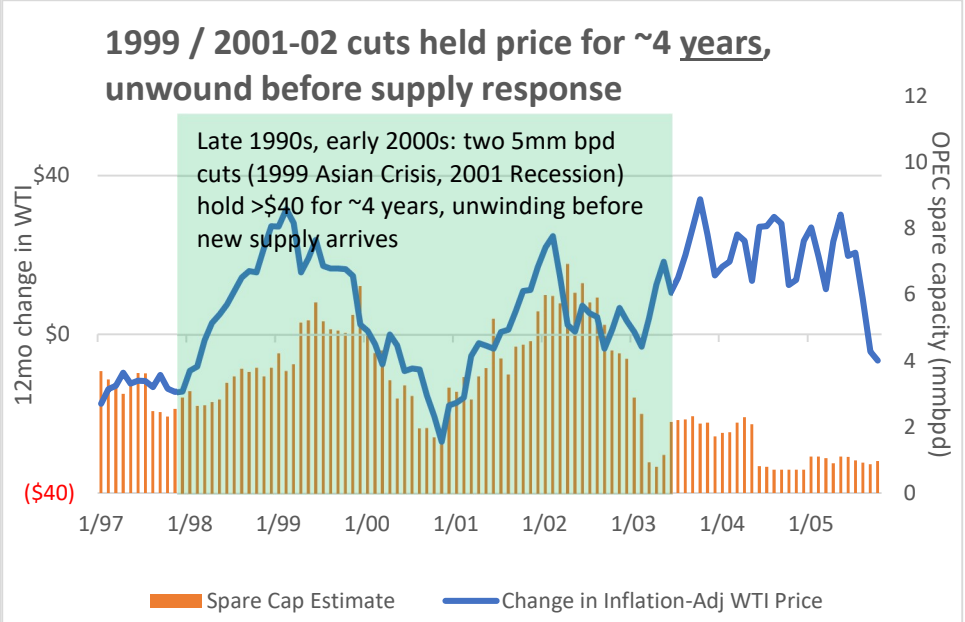


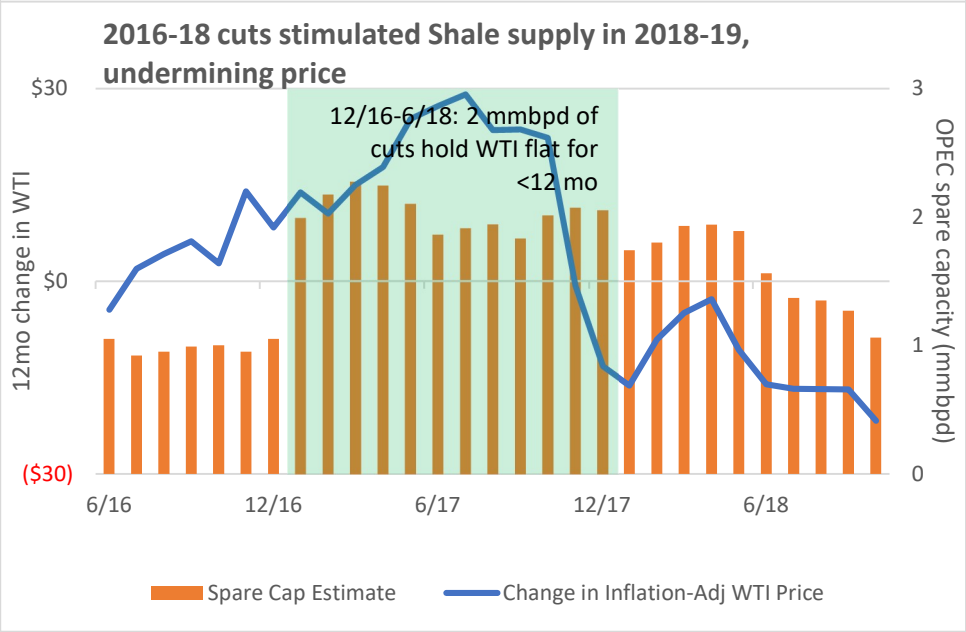
Source: Bureau of Labor Statistics (BLS), World Bank, Energy Information Agency (EIA), St. Louis Federal Reserve (FRED), Bloomberg, Recurrent research.

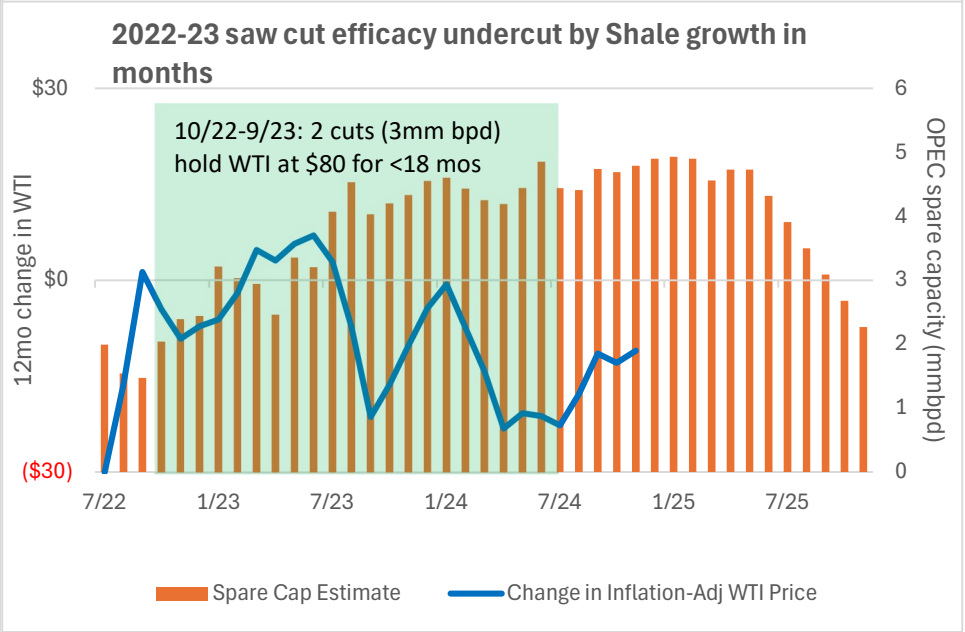
Typically, OPEC cuts are enacted during periods of macroeconomic and oil price weakness. Accordingly, it is not surprising to see that the first 12 months of OPEC cuts has historically coincided with falling prices (shown in blue above). However, for cuts longer than 12 months (shown in orange), we see a significant change in oil price response. Before Shale, a cut in place beyond 12 months would eventually tighten the market and lift prices, on average. Since 2014, we have seen that cuts beyond 12 months have actually led to **weaker** prices, as the Shale production response fills the hole left by OPEC cuts, and then the market has to contend with increased Shale production and the eventual unwind of OPEC cuts.

On the following page, we offer several case studies to illustrate this point in greater detail.









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Moving on from an OPEC-centric, inelastic understanding of the oil market

Before we talk about how investors should incorporate our findings in their investment approach, it is important to highlight how prominent OPEC-centric thinking remains in the energy investment sphere. The notion that OPEC and Saudi policies are the primary drivers of oil price – and therefore energy investment performance – remains central to many energy investment philosophies.

Below, we have a smattering of respected oil analyst and investor quotes from 2022 and 2023 (all sourced from Bloomberg, WSJ and X.com), when oil was near $100, suggesting that OPEC was unlikely to allow an oil price decline below $90 or even $100 for the foreseeable future, implying that $90 was the new "floor price":

That's it's it, folks! The $90 is defended! Now go fishing!
#Oil **#OPEC** #OOTT #COM #EFT #Russia #SaudiArabia

What does today's historic **OPEC**+ cut, in the face of still falling inventories that sit at multi-year lows mean to me? Price matters. Politics matter. The **OPEC** "put" is in play at $90+. Time for the market to start underwriting that level now???

Today's Take: Saudi Arabia Wants $100 Oil

For long, Saudi Arabia pretended it didn't target oil prices. The job of OPEC+ was all about matching supply with demand. Focus on fundamentals, and le prices to the market, it used to say.

On Monday, in an unusual intervention, Saudi Energy Minister Prince A bin Salman indicated he didn't like the yo-yo pricing he saw in the oil market.

CHART OF THE DAY: **OPEC** is cutting oil production to defend much higher prices than ever before. The chart below, from @GoldmanSachs, shows the (nominal) price of Brent crude the Friday before any output cut announcement (collective or voluntary) #OOTT

As oil prices sagged below $90 in 2022-23, the OPEC-centric voices did not surrender: prices softened, but OPEC still exercised control. According to this logic, OPEC would not allow price to drop below $80, due to Saudi's fiscal needs. Shale was exhausted/irrelevant – cuts could persist without fear of Shale's response.

The twilight of US shale (plateau vs. decline dependent on price) will have a profound impact on the oil market:
- ⬆ strategic value of long-life reserve assets
- ⬆ influence/power of **OPEC**
- ⬆ oil AND natural gas price
- ☠ of US "energy independence"

Saudi officials and other people familiar with Saudi oil policy say Riyadh is under pressure to maintain higher oil prices with its budget requiring an estimated $81 a barrel—about $5 more than current levels. The kingdom needs to pay for massive development projects at home, some of which are so big that the Saudis s. These include a Red Sea resort the size of Belgium with hovering above the water and a $500 billion futuristic, lesert that is 33 times bigger than New York City.

leveraged to stunning effect. We believe this pattern is about to repeat. ***This letter's "Hubbert Peak" section*** lays out the forces driving the current slowdown in shale production, which has accounted for 90% of non-OPEC supply growth over the past decade and a half. Just as in 2003, OPEC stands poised to reassert its dominance—and, just as before, they are likely to wield their power with precision.

As OPEC's support of high prices buckled in late 2024 and 2025, many of the same voices who believed in $90 "floors" in 2022 – suggesting we were at the cusp of a 2003-style bull market – shifted to musings of $40 oil and parallels to a 1997-style bear market. The ability to believe in a long-term bull market and then shift to belief in a long-term bear market is explained by an abiding belief in inelasticity: when oil was >$100, only OPEC could sink it. These analysts now see a "lower for longer" market with oil below $60/bbl, with nothing but OPEC to save it. Perhaps the image of Muppets waving a white flag – excerpted from an analyst note – summarizes the state of the OPEC-centric analytical framework better than we could.

(Bloomberg Opinion) -- After relentlessly pursuing $100-a-barrel oil, the OPEC+ cartel has all but thrown in the towel. Whether the U-turn is a tactical retreat, or a strategic shift, is still unclear. But for now its impact would be the same: Oil prices would be somewhat lower and global inflation would ease.

I think the last opec plus policy moves busts all the myths and mysteries around the "red line" when it comes to price. All those headlines about Saudi Arabia and others "targeting" a certain price don't hold. Yes there are breakeven points for all budgets, but that doesn't mean a price is being targeted, that approach simply doesn't work. #OOTT

It's going to get even uglier. Hello $50s WTI (or worse) Absolutely no room for incremental barrels at a price in the $60s. Doesn't matter why they are doing it, **OPEC** is doing it.

If it sounds familiar, it's just coincidence. I'm not talking about last week, but rather 1997, when an OPEC meeting in the Indonesian capital of Jakarta hiked output just as the Asian financial crisis was gaining momentum (and the week

It is clear that energy investors need to abandon the linear thinking that stems from this OPEC-centric framework – but how?

"A lot of success in life and business comes from knowing what you want to avoid." – Charlie Munger

The legendary investor's words underline a powerful investing truth: compared to finding the right answer, it is often easier to avoid wrong answers. Still, avoiding wrong answers can yield powerful results.

Let's apply this to our oil market analysis: yes, our understanding of lower-amplitude and shorter-duration oil cycles does not help us with precisely predicting the oil price 12 or 24 months from now. However, it can help us to spend less time on extreme price scenarios that reflect an inelastic market that no longer exists, and avoid the pro-cyclical decision-making that often comes from relying on supportive OPEC policy.

Below, we offer a side-by-side comparison of the beliefs of the OPEC-centric framework, which we believe is outmoded and no longer maps to the reality of today's oil market, and our Shale-centric framework, which we think offers a better conceptual "roadmap" for energy investing today. We offer a concise summary of what each side "believes" and the commensurate investor behavior that stems from those beliefs.

	OPEC-Centric Framework (1973-2014)	Shale-Centric Framework (since 2015)
Higher bound for oil prices	***Belief:*** *OPEC members' fiscal needs require oil prices in excess of $80 or even $90. Given OPEC's dominant market share and lack of supply alternatives, OPEC policy can support oil price for years.* ***Investor behavior:*** *OPEC's support means oil can be "higher for longer." Investors can value companies based on cash flows generated by $80, $90, or $100 prices...* ***almost any upside case is possible if OPEC policy remains supportive.***	***Belief:*** *OPEC cannot guarantee sustained high prices given Shale's elasticity. Oil's higher bound is reached when Shale is incentivized to grow. In 2022-23, despite disruptions of the RUS-UKR War and 2 surprise OPEC cuts, WTI futures were over $100 for only 1 month as Shale responded.* ***Investor behavior:*** *investors should tune out OPEC noise and avoid investments implying sustained >$80 pricing, no matter how daunting near-term disruptions appear. OPEC cuts should be met with caution, since cuts incentivize next 12-18 month production growth.*
Lower bound for oil prices	***Belief:*** *intra-OPEC feuds or OPEC's overestimation of global economic growth can cause OPEC to suddenly unwind cuts. If OPEC unwinds cuts, oil price can crash into the $40s and stay there.* ***Investor behavior:*** *little opportunity when OPEC policy is bearish.* ***Downturns can persist for years... until OPEC policy changes.***	***Belief:*** *OPEC has repeatedly hiked production at inopportune times, adding 6mmbpd well before COVID recovery was complete. Despite this, real oil price has fallen below $50 for only 8 mos since 2014, and WTI futures have fallen below $50 for a grand total of 4 months since 2014.* ***Investor behavior:*** *again, investors should tune out OPEC. Shale supply cuts occur quickly below ~$60 in today's prices. OPEC increases can disincentivize Shale production, supporting price into the future.*
Efficacy of OPEC Cuts and impact on cycles	***Belief:*** *Open-ended cuts can be effective indefinitely. If OPEC / Saudi "will and intent" to support prices remains intact, OPEC can hold price high for years.* ***Investor behavior:*** *investment approach should become more aggressive when cuts are announced and aggressiveness should be maintained as long as OPEC "body language" and "messaging" remains constructive; after all, OPEC has created 10 year bull markets before.*	***Belief:*** *OPEC cuts will not be effective beyond the 12-18 mos required for Shale to respond to prices. Ultimately, OPEC should get out of the intervention business entirely, leaving this role to elastic Shale production, although this may not happen given political considerations.* ***Investor Behavior:*** *short cycles are the rule, and OPEC will be obliged to adjust any cut within 12-18 mos, regardless of messaging. OPEC cuts may provide short-term "pop" opportunities to exit marginal oil assets. OPEC unwinding all cuts can be bullish as it discourages Shale growth and removes the "OPEC policy overhang".*

Our new framework moves us decisively away from the procyclical, OPEC-centric framework of the past. It does not offer a crystal ball for oil price, but by recognizing Shale's cycle-defining attributes, we believe it can help us make sounder, more cyclically-appropriate energy investment decisions into the future.