



Borrowing from Peter to Pay Paul

We like to understand the markets we trade. That may seem obvious, but if you are a trend-follower, it is not necessarily a requirement. Indeed, differentiating between markets can be harmful and can lead to overfitting. Abstraction is a way for quants to view the same phenomenon in commodities, bonds, equities and FX. [Through the juxtaposition of multiple images](#), the noise fades and a clear image appears.

But that image tells only part of the story. Trend has two aspects: a behavioral aspect, which is both universal and difficult to anticipate, and a fundamental aspect, which is rooted in economic theory and the market's prevailing fundamentals. When supply and demand fail to meet at the current price, a new price equilibrium must be reached. Supply & demand (in)elasticity determines how much work price needs to do. Changes in supply & demand determine how long a price will oscillate before reaching a new equilibrium.

Physical grounding does not tell us when a supply or demand shock will occur. A trend-following strategy cannot predict wars, hurricanes, droughts, or events like COVID. Yet, by looking through to the underlying market, we can evaluate how likely it is to trend when a supply (or demand) shock does arrive.

Nowhere is this more apparent than in commodities. So today, following my [TTU Podcast](#), I would like to discuss commodity spreads, and I will be using the US oil market to demonstrate why it is important to understand the underlying markets, even if you are a quant.

Supply and Demand in the US Oil Market

We start by examining how weekly crude oil flows balance supply & demand:

Table 1: US Weekly crude oil balance¹ (source: DoE via Bloomberg, as of August 2026)

BALANCING THE CRUDE BOOK (AUG 2026)	BLOOMBERG	KB/D
Production	DOETCRUD Index	+13,687
Imports	DOEISPR Index	+6,068
Transfers to crude oil supply	DOETTRCO Index	+501
Adjustment	DOESUNCR Index	+114
Refinery runs ²	DOEPCRIN Index	-16,489
Exports	DOEBCEXP Index	-4,175
Change in commercial stocks	DOESCRUD Index	-6
Change in SPR stocks	DOESSPR Index	-287

Every week, oil is produced domestically as well as imported from other countries. It is then used by refineries (to produce distillates) and is exported. Any outstanding amount goes into (or supplied from) either the commercial stocks or the Strategic Petroleum Reserve (SPR).

Inventories and Calendar Spreads

In Economics 101, we have supply and demand matching exactly. But in real life, short-term imbalances exist and can be managed through inventories. We can divide these into commercial stocks as well as strategic inventories.

¹ See [Table Definitions, Sources, and Explanatory Notes](#) for full definitions. Ignore Transfers/Adjustments

² Not relevant today, but we note that these 16m barrels are then converted by refineries into approx. 5m barrels of distillates. The relationship between crude and its products or more generally how supply chains affect cross-asset trends will be a subject of another blog.

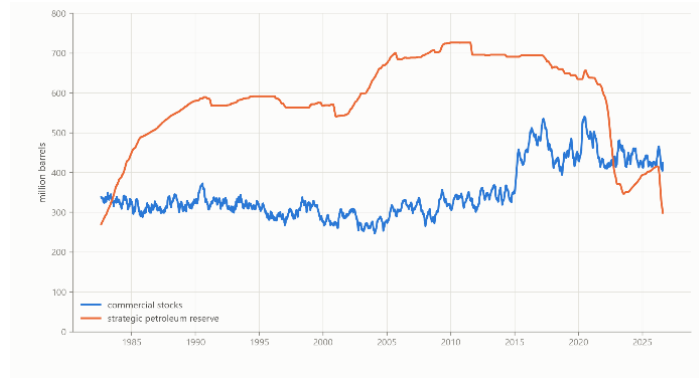


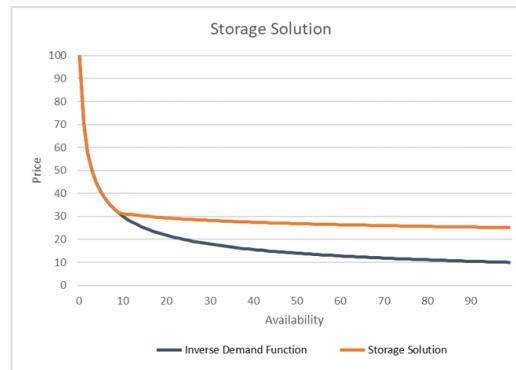
Figure 1: Commercial stocks and Strategic Petroleum Reserves 1985 to August 2026. SPR releases have supported supply during recent conflicts, leaving reserves near early-1980s lows while commercial stocks remain broadly stable. Date: as of August 2026

During normal market operations, commercial storage tank farms are sufficient to manage imbalances³. So how do we understand inventories within the context of supply and demand?

A Stylized Model of the Oil Squeeze

In his [A Stylized Model of the Oil Squeeze by Ilia Bouchouev :: SSRN](#) paper, Ilia Bouchouev explains how storage affects supply & demand. Traditionally, we can think of price elasticity in two regimes: While storage is available, price rises are constrained. Once we run out storage, inelastic commodities will experience sharp price rises.

³ During an energy crisis (such as Ukraine in 2022 and Iran/Hormuz in 2026), the SPR is released to supplement constrained supply



Source: Pentathlon Investments.

Figure 2: While there are stocks available, price is only slowly affected by increased demand, inventories stepping in to meet it. But once stocks are constrained, we see a phase-transition to price needing to rise substantially (for inelastic markets) to rebalance supply & demand. Date: as of August 2026

Example: Hormuz Crisis

We can use the Iran/US crisis as a great example of how the theory plays out in practice.

There is a great 2024 IMF paper I would recommend about the calibration of price elasticity for commodities. [The Power of Prices: How Fast Do Commodity Markets Adjust to Shocks?](#) In it the authors estimate Oil inelasticity for both Demand and Supply at a factor of just under 0.15: A 10% price rise, will see production increase of only 1.5% and demand decreasing by roughly 1.5%.

We started the Hormuz crisis with just under 100mb/d balancing supply & demand at \$66 per barrel. Since 20mb/d go through Hormuz daily, if we lose 10mb/d we would need roughly a 33% price rise (from \$66 to \$88) which will get us a 5% decrease in demand and a 5% increase in supply, making up the 10mb/d we lost. If we lose all 20mb/d, the model predicts WTI will need to reprice to \$110 to rebalance⁴.

⁴ In reality, price inelasticity is convex so the model will expect WTI to rise above \$110 if all 20mb/d through Hormuz are lost.

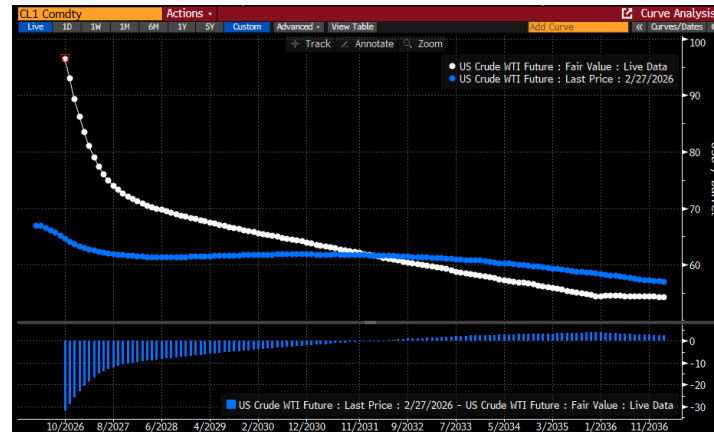
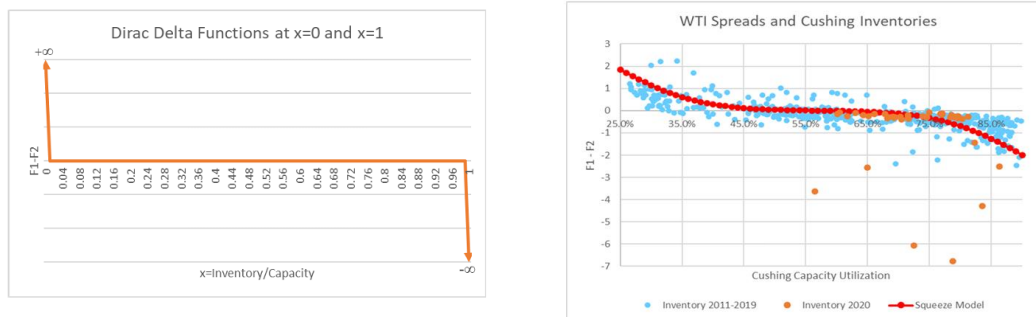


Figure 3: The WTI curve, a day before Hormuz (Feb 2026, blue) and currently (September 2026, white). The front of the curve moved from \$66 to \$96 Source: Bloomberg. Date: as of August 2026

It is remarkable that this back-of-the-envelope estimate matches the order of magnitude of moves we saw, front WTI currently trading at \$90-\$95.

Modelling Spreads Directly

Ilia points out that for inelastic oil, with the storage model above, we would expect oil prices to have a right-skew, with higher volatility when price is high. In fact, as oil prices drop, oil becomes *more* volatile, not less: oil has negative skew! He uses this argument to counter traditional storage modelling and argues that rather than using supply and demand modelling we can fit spreads better as a direct function of capacity utilization. His squeeze model is a remarkably clever model, and it can be calibrated to fit the data well.



Source: EIA, CME, Pentathlon Investments. In this calibration, the following parameters were used $T-t = \frac{1}{12}$, $\sigma = 0.4$, $k = 1$, $x_{min} = 0.15$, $x_{max} = 1.0$, $\bar{x} = 0.6$.

Figure 4: The paper models spreads as a function of capacity utilization (rhs, data fitted to 2024) as an expected value of an option with an extreme payoff when inventories are empty or full

Spread Elasticity

I would argue though that it is not necessary to abandon supply & demand. It is just important to realize that we must think of *spread* elasticity.

In normal circumstances, tank farms are much more dynamic and price elastic but tank farms care less about the *outright* price of oil, more about the *spread*.

Unlike genuine supply/demand changes, tank farms borrow from Peter to pay Paul: If the market is in contango (this month’s oil is cheaper than later maturity’s oil), they may buy this month’s oversupply of oil, only to sell it at next month’s price for a profit. For them, it is the price differential (the roll yield) that matters.

Understanding commercial tank farms’ spread elasticity is key. If there is more and more surplus supply, as storage tanks fill, tank farms become increasingly reluctant to store additional capacity: tank farms become *spread inelastic*. Similarly, if we are running out of stocks, tank farms become increasingly reluctant to release the remaining stocks!

This is very akin to Ilia’s model, except we do not model the spreads, but we model spread inelasticity, the *gradient* of the above function and that spikes as we approach both storage boundaries.

To gauge tank farms’ elasticity, we fit the change of spread prices to a weekly change in commercial Cushing stocks (a higher gradient indicates price inelasticity). What is interesting is what happens when we divide the dataset based on the current level of capacity utilization. The drift is monotonic: the lower inventory levels are, the more we expect the front contract to drift up. The inelasticity follows a slightly different story: the more extreme (either too full or too empty) the storage situation is, the more inelastic commercial tank farms become.

Table 2: Spread inelasticity⁵ and drift⁶ at different inventory levels, Cushing. Highest inelasticity are at the both extremes, when current utilization is either very high or very low. (Source: DOE and GQ analysis,. Date: as of August 2026)

Quartile	utilization (%)	drift	Inelasticity
Q1	22.5 to 41.2	2.8c	5.0c
Q2	41.2 to 62.8	1.5c	2.6c
Q3	62.8 to 79.0	-0.4c	-0.6c
Q4	79.0 to 84.1	-3.4c	5.1c

⁵ Inelasticity is measured as weekly spread price (in \$ cents) per a 1% change in utilization

⁶ Drift is measured as weekly price change (in \$ cents)

The Physical and the Financial

The dynamics above describe physical players offering storage (in exchange to curve contango) on one side, and misbalanced producers and consumers (such as refineries) on the demand side. But there are other participants trading spreads: CTAs, Macro funds, Long-only players. You may think USO US (the largest oil ETF) long-only holders do not trade spreads but they do: At every roll. All financial players must trade spreads, closing the front contract and re-opening their position at the back.

Financial players trade spreads largely near expiry and they are extremely price-insensitive: they just want to close their positions!

What is the size of the financial players? Even excluding CTAs and macro traders, Long-only passive commodities market has grown over the years: From \$50bn in early 2000 to around \$400bn. Most of it is in Gold⁷ and precious metals, but we estimate⁸ current WTI long-only exposure at above \$5bn or ~50m barrels, mostly at the most liquid front contract.

Set against the physical system, that does not sound like much. US commercial crude working storage is around 600m barrels, of which Cushing — the delivery point for WTI — is about 80m. Usually most of the roll is handled via precisely the physical players stepping in through a net contango (usually) pressure on the curve. But during a crisis, *and* near expiry, *and* if capacity is constrained, we see strong roll pressure and negative skew. This is indeed what we saw during Covid and April 2020, when the front WTI contract traded below zero.

What Does It Mean to Trend Followers?

Rolls are important when it comes to assessing liquidity. If you are trading liquid commodities you can usually ignore roll issues but for more alternative commodities, it's not only daily volumes that are important, it's roll liquidity that is crucial: you do not want to take a position in a market where you will be long/short squeezed.

As for trend-following spreads themselves. It's great to see that the risk factors affecting spreads are different to the underlying oil, with low correlation, that we love dearly. However, before you embark on a spread-trading strategy you need to be aware:

⁷ [Commodity Investing: How Fund Structure Shapes Returns | The Specialist's Desk](#)

⁸ Using long bias in net non-commercial COT reports, as well as oil-specific (USO, CRUD, USOI, DBO and OILK) and broad-commodity ETFs (PDBC, CMOD, HGER, BCI, and FTGC) NAV. Source: Bloomberg, CFTC, GQ Analysis, as of September 2026

- During most of the month, you will be trading with the physical players and the underlying process is about mismatch between production and demand and you should be aware of storage capacity and current utilization levels
- During the roll period, you are trading with the financial players. Very different dynamics and you may suffer negative skew due to roll-congestion⁹

Stacking the Odds

When all is said and done, we do not really know which assets will be trending year over year. With that said, there may be opportunities to improve the odds ever so slightly in your favour. If we put the effort into understanding the underlying price dynamics and the physical nature of the markets, we may be able to identify variables that increase the propensity of trend and doing so thoughtfully is what distinguishes one CTA from another.

⁹ See [Limits to Arbitrage and Commodity Index Investment: Front-Running the Goldman Roll by Yiqun Mou :: SSRN](#)

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