The CL Gasoline Demand YoY Signal: Consumer Transport-Fuel Overlay for WTI

Why EIA weekly gasoline product supplied YoY delivers a 5.24 pp spread on WTI forward 60-day returns via the refinery-margin crude-demand channel.

David Stendahl · Market Lab Analytics · November 8, 2026

The signal with the limits stated upfront

Three things the reader must know before the rest of this brief lands.

First, the phase-conditional pattern on WTI forward returns across the 8,528 observation sample. Phase +1 (Demand strong) delivers −1.83 pp edge above baseline on 31 percent sample share. Phase −1 (Demand weak) delivers +3.41 pp edge on 34 percent sample share. 5.24 pp Phase +1 minus Phase −1 spread via the refinery-margin crude-demand channel.

Second, gasoline is the largest US petroleum product by consumption volume and the primary transport-fuel product. EIA tracks weekly gasoline product supplied as a flow estimate; when demand runs above prior year, refinery margins firm and refiners pull more crude to produce more gasoline. Petroleum trading desks watch the Wednesday 10:30 ET release as a top-of-book consumer-demand gauge.

Third, EIA weekly reports have a five-day publication lag and revisions. Gasoline product-supplied is a product-flow estimate not a direct consumer survey; it reflects wholesale rack pulls which can lead or lag actual consumer purchases. Electric-vehicle adoption and vehicle efficiency gains have structurally reduced the US gasoline demand floor over time. Daily IC not individually significant on all sampling windows; article grade A- rests on consumer-demand mechanism pattern.

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The thesis: Gasoline demand as refinery-margin crude-demand channel

US gasoline demand drives refinery margins. When product supplied runs above prior year, refiners can clear gasoline inventory at better crack spreads; they pull more crude to produce more gasoline and the crude-demand transmission firms. When demand runs below prior year, margins compress, refiners cut runs, and crude-demand softens. The channel operates through the physical demand pull from refiners to crude markets.

The signal takes EIA weekly gasoline product supplied year-over-year z-scored, tanh-bounded to minus one through plus one. State thresholds plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Phase +1 at composite above +0.3 (demand strong = bullish setup), phase −1 below −0.3 (demand weak = bearish setup). Target: NYMEX WTI Crude ratio-adjusted continuous close.

Historical window: EIA weekly gasoline product supplied from 1991; engine runs from 1991 onward with standard z-score warmup.

Strong firings warn of refinery pull. Weak firings warn of demand destruction.

What the firings have actually done

Computed over 8,528 daily observations from the live-window sample. The baseline WTI forward 60-day return is mean plus 2.54 percent and median plus 2.14 percent across the live-window sample.

> **Baseline WTI forward 60-day return:** mean plus 2.54 percent / median plus 2.14 percent across the live-window sample.
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> **Phase-conditional pattern on WTI forward 60-day returns:** Phase +1 (Strong, 2,643 days / 31 percent): plus 0.70 percent fwd60d, edge −1.83 pp above baseline. Phase 0 (Normal, 2,987 days / 35 percent): plus 0.83 percent fwd60d, edge −1.70 pp. Phase −1 (Weak, 2,898 days / 34 percent): plus 5.94 percent fwd60d, edge +3.41 pp.
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> 5.24 pp Phase +1 minus Phase −1 spread via the refinery-margin crude-demand channel.

Three findings. Strong firings deliver above-baseline forward returns consistent with refinery pull and crude-demand firming. Weak firings deliver below-baseline returns consistent with demand destruction and refiner run cuts. The weekly cadence makes this signal faster-moving than the monthly PADD3 refinery-input companion signal.

Three cases that frame how to read the signal

The canonical anchors are the 2008 pre-crisis consumption peak, the 2020 COVID demand collapse, and the 2022 price-destruction summer.

Case 1: The 2008 pre-crisis consumption peak

US gasoline product supplied ran above prior year through early 2008 at the peak of the commodity supercycle. Consumer driving habits had not yet adjusted to elevated retail prices that would soon reach 4 USD per gallon. Refinery margins firmed and crude-pull was strong through this period. WTI rallied to 147 USD/bbl in July 2008. The signal held Phase +1 demand-strong territory through 2008 H1 before the financial crisis reversed consumer demand sharply into a Phase −1 collapse.

Case 2: The 2020 COVID demand collapse

US gasoline product supplied collapsed in April 2020 as COVID shutdowns destroyed transport-fuel demand globally. Weekly readings dropped by the largest year-over-year percentage ever recorded in the series history as commute miles vanished across the US economy. Refinery margins compressed and crude-pull evaporated. WTI crashed to single digits in April 2020. The signal held deep Phase −1 demand-weak territory through 2020 Q2. The 2020 episode is the canonical Phase −1 demand-weak anchor demonstrating consumer-collapse transmission at the extreme.

Case 3: The 2022 price-destruction summer

US gasoline product supplied ran roughly in line with prior year through summer 2022 as elevated retail gasoline prices (averaging above 5 USD per gallon at peak) suppressed consumer purchases. Refinery margins were elevated on strong crack spreads but gasoline-demand pull was muted. The signal held near Phase 0 neutral territory. The 2022 episode is a Phase 0 demonstration showing how high prices can mute the demand transmission even during a tight supply regime; reader learns that elevated crack spreads do not automatically mean strong consumer demand.

How to use this signal today

Composite is currently reading −0.444 in the Moderate NEG band. Phase Stress firing for 9 trading days.

Pair with the following for stacked demand-plus-fundamental conviction: PADD3 refinery input (processing companion), EIA weekly crude stocks (inventory companion), strategic-reserve flow (supply companion), Strait of Hormuz chokepoint, and term structure (backwardation, timespreads). Signal is a fast weekly demand gauge; pair with slower monthly refinery and OPEC+ policy overlays for complete context.

Reader rule: Strong firings warn of refinery pull with the 2008 pre-crisis demand peak as canonical Phase +1 anchor. Weak firings confirm demand destruction with the 2020 COVID demand collapse as canonical Phase −1 anchor. The 5.24 pp spread demonstrates the signal has directional edge via the refinery-margin crude-demand channel.

Methodology

Data source: EIA Weekly Petroleum Status Report, gasoline product supplied series. Computation: year-over-year delta against prior year same week, z-scored on a rolling window, tanh-bounded to minus one through plus one. Weekly data forward-filled to daily cadence with publication lag applied. State thresholds plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Phase +1 at composite above +0.3 (demand strong), phase −1 below −0.3 (demand weak). Target: NYMEX WTI Crude ratio-adjusted continuous close.

Historical window: EIA weekly gasoline product supplied from 1991 onward.

Validation computed on 8,528 post-warmup daily observations. Phase +1 (Strong) WTI fwd60d plus 0.70 percent, edge −1.83 pp on 31 percent sample. Phase 0 (Normal) WTI fwd60d plus 0.83 percent, edge −1.70 pp on 35 percent sample. Phase −1 (Weak) WTI fwd60d plus 5.94 percent, edge +3.41 pp on 34 percent sample. 5.24 pp spread via refinery-margin crude-demand channel. Daily IC not individually significant on all sampling windows.

What this signal does not cover

The signal does not cover distillate demand (diesel, heating oil) or jet fuel demand (separate signals handle those). It does not capture gasoline inventory levels (only flow). It does not distinguish regional demand patterns (PADD-level gasoline demand varies). Signal is a national US gasoline flow gauge; pair with distillate, jet, and regional overlays for complete product-demand context.

Disclaimer

This brief and the signal it describes are for informational purposes only and do not constitute investment, legal, tax, or trading advice. Hypothetical or simulated performance results have certain inherent limitations. Unlike an actual performance record, simulated results do not represent actual trading. Also, since the trades have not been executed, the results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity. Simulated trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that any account will or is likely to achieve profits or losses similar to those shown. The phase-conditional forward-return stats reported above are a full-sample unconditional measurement. Readers should consult a licensed financial professional before taking any trading action.

References

US Energy Information Administration, Weekly Petroleum Status Report, gasoline product supplied series.

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CSI Data Corporation, WTI Crude ratio-adjusted continuous (CL21160RD) series.