The Weekly Cattle Slaughter YoY Signal, Read as the Realized Supply-Flow Magnitude Overlay on Live Cattle

Why USDA weekly slaughter YoY extremes – in either direction – historically precede Live Cattle strength, through either accelerated clearance (high tail) or supply tightening via kill slowdown (low tail).

David Stendahl · Market Lab Analytics · October 31, 2026

What this signal is, with the limits stated upfront

The USDA Agricultural Marketing Service publishes weekly cattle slaughter data covering total federally inspected kill. The year-over-year percent change is the realized supply-flow signal – it tells you what packers actually processed, not what the kill schedule says they planned. Realized flow captures the intersection of packer kill-schedule decisions, feedlot cattle availability, and processing capacity constraints.

This signal reads USDA weekly cattle slaughter, computes the year-over-year percent change, z-scores on a 504-day (two-year) rolling window, and bounds with tanh. State thresholds at plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Weekly USDA release cadence.

Here is the honest finding. Daily Spearman IC against LC fwd60d is plus 0.040 at p-value 0.0001 across 9,049 trading days – SIGNIFICANT daily. Non-overlapping (every-60-day) IC is plus 0.024 at p-value 0.77 across 150 independent samples – not significant. The phase-conditional stats confirm a magnitude-not-direction pattern: Phase +1 (High Slaughter YoY) delivers +2.88 percent fwd60d at 72.0 percent hit rate, +1.86 pp above the +1.02 percent baseline. Phase –1 (Low Slaughter YoY) delivers +2.35 percent at 64.1 percent hit rate, +1.33 pp above baseline. Phase 0 (Normal) UNDERPERFORMS at +0.81 percent, –0.21 pp below baseline.

This is a Grade B- magnitude overlay. BOTH extreme tails deliver positive forward returns above baseline; the composite sign does not drive direction. Daily IC is stronger than the packer-margin signal, elevating this to Grade B-. Treat as a realized-flow confirmation read alongside the LC fundamental stack.

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How the realized-flow mechanism composes

High weekly slaughter YoY means packers are running at above-prior-year kill rates. This can reflect two mechanisms. First, tight supply forcing accelerated clearance – the market is working through a limited supply pipeline at pace. Second, demand pull supporting high throughput – cutout values are firm enough that packers want to run full capacity. Both mechanisms historically precede LC strength as the supply pipeline tightens and feedlot throughput compresses forward.

Low weekly slaughter YoY means packers are running below prior-year rates. This can reflect two mechanisms. First, kill slowdown on narrow margins – packers reducing throughput to protect profitability, cattle backing up at feedlots, forced cash reset to follow. Second, supply tightness suppressing throughput – fewer cattle available to process, tight pipeline. Both mechanisms also historically precede LC strength as either the forced cash reset plays out or the supply tightness tightens cash prices.

The Normal zone (composite within plus/minus 0.2) is where weekly slaughter is tracking prior-year rates closely. Processing capacity, feedlot availability, and demand are all in balance. Forward returns compress to below-baseline because the market is in equilibrium.

This asymmetric-tail pattern echoes the packer-margin signal: EXTREME is bullish, NORMAL is weak. The slaughter YoY signal has slightly stronger daily IC (+0.040 vs +0.021) and higher Phase +1 hit rate (72.0% vs 70.4%), elevating this to Grade B-.

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What the state-conditional returns have actually done

> **Reference baseline – LC fwd60d (unconditional)**
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> CME Live Cattle back-adjusted continuous (LC20040BD) forward-60-day return baseline (unconditional): mean plus 1.02 percent, median plus 1.74 percent, standard deviation 8.01 percent, percent negative 41.8 percent. Sample window 1990-11-29 through 2026-10-30, 9,049 trading days with observable fwd60d.

Phase plus 1 (High Slaughter YoY, composite greater than plus 0.3) covers 647 trading days – 7.2 percent of the sample. Per-day mean fwd60d is plus 2.88 percent, hit rate 72.0 percent. Edge above baseline: plus 1.86 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 7,976 trading days – 88.1 percent of the sample. Mean fwd60d is plus 0.81 percent, hit rate 55.9 percent. UNDERPERFORMS baseline by 0.21 pp.

Phase minus 1 (Low Slaughter YoY, composite less than minus 0.3) covers 426 trading days – 4.7 percent of the sample. Per-day mean fwd60d is plus 2.35 percent, hit rate 64.1 percent. Edge above baseline: plus 1.33 pp.

BOTH tails outperform baseline. The Normal zone (88 percent of sample) underperforms. The signal fires in roughly 12 percent of sample combined; both tails deliver meaningful edge, though Phase +1 is slightly stronger than Phase –1.

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Three cases that frame how to read this signal

Case 1: June 2022. Low Slaughter YoY – post-drought herd low.

Firing window: Q2 2022 with composite saturated-negative. The US cattle herd hit cyclical lows following 2021-2022 drought liquidation across the Southern Plains. Weekly slaughter ran materially below prior-year rates as supply tightness suppressed throughput. Forward LC strength followed through Q3 2022 as the cash-market reset played out. The 2022 case anchors the Low Slaughter tail in modern memory.

Case 2: July 2024. High Slaughter YoY – accelerated clearance.

Firing window: Q3 2024 with composite saturated-positive. Packers ran kill schedules at above-prior-year rates on tight supply + firm demand. The accelerated clearance of the cycle-low herd preceded further LC strength through Q4 2024 as the supply-pipeline tightening resolved. The 2024 case anchors the High Slaughter tail.

Case 3: April 2020. COVID packer-closure Low Slaughter.

Firing window: April-May 2020 with composite deeply saturated-negative. COVID packer-plant closures collapsed kill capacity. Live cattle crashed in Q2 2020 as feedlots backed up with no outlet. The forced cash reset followed in Q3-Q4 2020 as capacity recovered and the supply pipeline cleared. The 2020 case is the deepest Low Slaughter YoY in the sample but confounded by simultaneous demand destruction.

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How to use the signal today

As of October 30, 2026, the composite reads minus 0.807 – Low Slaughter YoY EXTREME NEG, 15 trading days running. USDA weekly cattle slaughter is running materially below the prior-year baseline. CME Live Cattle trades the $220-230 range.

The current reading is in the Phase –1 band (below –0.3) in the EXTREME NEG sub-band (below –0.5). Historical Phase –1 delivers +1.33 pp above baseline at 64.1 percent hit rate; the extreme sub-band is typically a stronger signal than the moderate sub-band.

Pair with four confirming reads for direction:

- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor on supply.
- **LC Feeder-Live Cattle Spread (Z15203)**. The other Grade A LC fundamental anchor.
- **LC Beef Packer Margin (Z15205)**. Magnitude-regime read on dislocation.
- **USDA Cattle-on-Feed monthly reports**. Realized placement confirmation.

For the current Low Slaughter YoY firing, this signal is constructive – weekly slaughter running below prior year signals either kill slowdown (forced cash reset ahead) or supply tightness (tight pipeline tightens cash). Both mechanisms bullish LC forward. If LC-corn ratio and FC-LC spread also fire positive, direction is high-conviction.

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Methodology notes

Data source. USDA AMS weekly cattle slaughter data covering total federally inspected kill.

Signal construction. Slaughter YoY = (current week - year-ago week) / year-ago week. Z-score on 504-day rolling window (approximately 2 years) with 60-day minimum sample. Tanh-bounded to [−1, +1]. State thresholds plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Phase +1 above +0.3, phase −1 below −0.3.

Validation statistics. Daily Spearman IC against LC fwd60d is +0.040 at p-value 1.0e-4 (n = 9,049 trading days) – significant daily. Phase +1 state-conditional per-day mean fwd60d plus 2.88 percent, hit 72.0 percent (+1.86 pp above +1.02 percent baseline). Phase 0 mean plus 0.81 percent, hit 55.9 percent (-0.21 pp below baseline). Phase −1 per-day mean plus 2.35 percent, hit 64.1 percent (+1.33 pp above baseline).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.024 at p-value 0.77 across 150 independent observations – not significant. The daily significance is partly autocorrelation-inflated. The signal belongs in the LC stack as a realized-flow confirmation read.

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What this signal does not cover

Three things the signal does NOT read, and one broader caveat.

First, this is a magnitude-not-direction signal. Composite sign does not drive forward return direction; magnitude of deviation does. Both extreme tails deliver positive forward returns; the Normal zone underperforms. Readers accustomed to directional signals must adjust interpretation.

Second, slaughter YoY data is weekly cadence, giving the signal higher latency than daily-cadence signals. Weekly data points mean the signal updates once per week, not daily.

Third, non-overlapping independence test is non-significant (p=0.77). The daily significance is partly autocorrelation-inflated through multi-week slaughter persistence.

Broader caveat: this is Grade B- magnitude overlay. Daily IC significant but non-overlap not. Belongs as a realized-flow confirmation read alongside directional LC signals. Pair with the LC fundamental stack.

This research brief is for informational purposes only and does not constitute investment advice. Past performance is not indicative of future results. Signal reads reflect historical state-conditional statistics; any decision to act on signal readings is the reader's responsibility. Data sources: USDA AMS weekly cattle slaughter; CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.