The Feeder-Live Cattle Spread Signal, Read as the Direct Feedlot Replacement-Cost Pressure on Live Cattle

Why the CME Feeder Cattle minus Live Cattle front-month spread, z-scored on two years, catches direct feedlot replacement-cost pressure transmitting to CME Live Cattle forward returns via placement-decision dynamics.

David Stendahl · Market Lab Analytics · October 31, 2026

What this signal is, with the limits stated upfront

A cattle feedlot buys feeder calves at approximately 700 pounds and feeds them corn-based rations to a 1,400-pound finished weight for sale. The economics are set by two market prices: CME Feeder Cattle front-month (the cost of replacement calves) and CME Live Cattle front-month (the sale price of finished animals). The spread FC minus LC – always positive because feeders trade at a premium to live cattle on a per-pound basis – is the direct read on feedlot replacement-cost pressure.

This signal reads the FC minus LC front-month spread daily, z-scores on a 504-day (two-year) rolling window with 60-day minimum sample, and bounds with tanh. State thresholds at plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Daily update as both futures front-month closes release.

Here is the honest finding. This is a Grade A signal that passes both the daily and the demanding non-overlapping independence tests. Daily Spearman IC against LC fwd60d is plus 0.276 at p-value 1.79e-156 across 8,989 trading days – one of the strongest IC values in the LC signal library. Non-overlapping (every-60-day) IC is plus 0.278 at p-value 0.0006 across 150 independent samples – statistically significant. Phase +1 (Wide Spread) delivers +2.87 percent fwd60d at 67.7 percent hit rate, +1.85 pp above the +1.02 percent baseline. Phase –1 (Narrow Spread) delivers –2.29 percent at 40.9 percent hit rate, –3.31 pp below baseline – the strongest bearish-tail edge in the LC library.

The LC signal library has only two Grade A signals: this (Feeder-LC Spread) and Z15201 LC-Corn Ratio. Both pass the demanding non-overlap independence test. Together they form the fundamental anchor pair of the LC stack. The 2003 post-BSE (+39%) and 2020 pre-COVID (-34%) anchors validate both tails.

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How the inputs compose

CME Feeder Cattle front-month tracks the market price of 700-800 pound replacement calves. CME Live Cattle front-month tracks the market price of 1,250-1,500 pound finished cattle. The spread FC minus LC is a derived series that captures the feedlot business-model margin pressure in one number.

Why always positive? Feeders trade at a premium per pound because they are LIGHTER (lower cash price per head but higher price per pound). The spread magnitude varies – historically ranging from approximately 10 cents per pound in soft-margin environments to 60+ cents per pound in high-replacement-cost environments. The z-score on 504-day rolling window normalizes for secular shifts in both markets' absolute price levels.

The transmission mechanism is direct and well-understood by cattle industry professionals:

1. Wide FC-LC spread → expensive replacement calves relative to finished-cattle price
2. Feedlot new-placement margins compress
3. Feeders slow their placement pace (reduce calves purchased, slow onboarding to feedlot)
4. 6-12 months later the finished-cattle pipeline tightens
5. LC forward prices firm as pipeline tightening transmits

Mirror at Narrow Spread tail: feeders cheap relative to live cattle → placement expansion → 6-12 months later pipeline fills → LC forward softens.

The engine z-scores on 504-day (two-year) rolling window with 60-day minimum sample. Tanh-bounded to [−1, +1]. State machine maps composite to five bands at plus-or-minus 0.5 and plus-or-minus 0.2 thresholds. Phase +1 fires above +0.3; phase −1 below −0.3.

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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, 8,989 trading days with observable fwd60d.

Phase plus 1 (Wide Spread, composite greater than plus 0.3) covers 4,434 trading days – 49.3 percent of the sample. Per-day mean fwd60d is plus 2.87 percent, hit rate 67.7 percent. Edge above baseline: plus 1.85 pp. The replacement-cost pressure transmits consistently.

Phase 0 (Normal, composite between plus and minus 0.3) covers 1,479 trading days – 16.4 percent of the sample. Mean fwd60d is plus 2.36 percent, hit rate 63.2 percent. Edge above baseline: plus 1.34 pp. Even the middle band is above baseline, reflecting the general LC bullish trend over the sample window.

Phase minus 1 (Narrow Spread, composite less than minus 0.3) covers 3,076 trading days – 34.2 percent of the sample. Per-day mean fwd60d is minus 2.29 percent, hit rate 40.9 percent. Edge below baseline: −3.31 pp. This is the STRONGEST bearish-tail edge in the LC signal library. Narrow spread signals placement expansion, pipeline filling, forward supply pressure.

The asymmetry between tails is informative: Wide Spread delivers +1.85 pp above baseline; Narrow Spread delivers −3.31 pp below baseline. The bearish-side signal is substantially stronger than the bullish-side signal in absolute terms. This reflects that pipeline fills (bearish-forward) are more easily initiated than pipeline tightening (bullish-forward requires sustained margin pressure over multiple quarters).

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Three cases that frame how to read this signal

Case 1: July 2003. Post-BSE Wide Spread recovery, biggest in-sample win.

Firing date: July 22, 2003 at composite plus 0.71. Forward 60-day LC return from entry: plus 38.71 percent (from 74.20 to 102.95 cents per pound).

Context: through the post-BSE recovery of 2003, CME Feeder Cattle premium expanded as feedlot demand recovered while finished-cattle supply remained constrained. The FC-LC spread widened to 2-year z-score extremes. Live cattle were at 74.20 cents per pound at the firing date. Over the next 60 trading days LC rallied 39 percent to 102.95 as the replacement-cost margin pressure transmitted to forward supply tightening via placement slowdown. 2003 Q3 is the archetype Wide Spread anchor and the biggest in-sample reward.

Case 2: January 2020. Pre-COVID Narrow Spread crash.

Firing date: January 9, 2020 at composite minus 0.74. Forward 60-day LC return from entry: minus 33.85 percent (from 126.73 to 83.84).

Context: through Q4 2019 the CME FC-LC spread compressed as feedlot placement expansion from the post-drought herd rebuild phase filled the finished-cattle pipeline. Live cattle were at 126.73 at a cyclical high. Over the next 60 trading days LC crashed 34 percent as the placement wave + pre-COVID high-supply environment + COVID packer-closure shock combined. The 2020 Q1 case anchors the Narrow Spread tail with the pipeline-fill-into-shock scenario.

Case 3: January 2015. Narrow Spread cycle-top.

Firing date: January 2015 at composite near minus 0.70. Context: CME FC-LC spread compressed through 2014 as placement expansion from the post-2011-drought herd rebuild drove up finished-cattle inventory. Live cattle were at a cyclical high around 160 cents per pound reflecting the multi-year post-drought price run. Over the next 60 trading days LC fell 15 percent through the broader commodity disinflation + supply build. The 2015 Q1 case documents the Narrow Spread pattern operating in a non-shock environment – supply dynamics alone drove the drawdown.

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How to use the signal today

As of October 30, 2026, the composite reads plus 0.632 – Wide Spread extreme-positive, 44 trading days running since August 31, 2026. CME FC-LC spread has run well above the 2-year baseline through Q3-Q4 2026 as feeder cattle premium expanded on tight calf supply and strong feedlot demand. CME Live Cattle trades the $220-230 range through the firing.

The current reading is in the strong EXTREME_POS sub-band (above +0.5). Historical Phase +1 delivers +1.85 pp above baseline at 67.7 percent hit rate; the EXTREME_POS sub-band specifically delivers slightly stronger edge. The 2003 Q3 analog delivered +39 percent over 60 days from the same composite range.

Pair with four confirming reads for direction:

- **LC-Corn Ratio Signal (Z15201)**. The OTHER Grade A LC signal — feed-cost feedlot-margin primary driver. Both anchor signals passing non-overlap independence tests. When replacement-cost (this signal) + feed-cost (Z15201) stacking fires together, the LC bull setup is strongest.
- **LC CFTC Positioning Signal (Z15206)**. Commercial NET hedge regime read. Smart-money positioning confirmation.
- **LC Beef Korea Exports (Z6587) and Japan Exports (Z6588)**. Demand-pull leading edges.
- **USDA Cattle-on-Feed monthly reports**. Direct placement-and-marketings data to confirm the forward-supply trajectory this signal is predicting.

For the current Wide Spread firing, the critical confirming inputs are the LC-corn ratio direction and cattle-on-feed placements. If LC-corn ratio is also compressed (signaling simultaneous feed-cost margin pressure) AND cattle-on-feed shows slowing placements, the full Grade A bull stacking is in play and the 2003-magnitude forward window is the applicable precedent.

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Methodology notes

Data source. CME Feeder Cattle front-month (CSI FC_0_L1ND) and CME Live Cattle front-month (CSI LC_0_L1ND) daily traded closes. Both are nearby traded prices, not back-adjusted continuous. Target column for forward-return calculation: CME Live Cattle back-adjusted continuous (LC20040BD).

Signal construction. Spread = FC_close - LC_close. 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 at composite above +0.3, phase −1 below −0.3.

Validation statistics. Daily Spearman IC against LC fwd60d is +0.276 at p-value 1.79e-156 (n = 8,989 trading days) – one of the strongest IC values in the LC library. Phase +1 state-conditional per-day mean fwd60d +2.87 percent, hit 67.7 percent (+1.85 pp above +1.02 percent baseline). Phase 0 mean fwd60d +2.36 percent, hit 63.2 percent. Phase −1 per-day mean fwd60d minus 2.29 percent, hit 40.9 percent (-3.31 pp below baseline – strongest bearish-tail in LC library).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.278 at p-value 0.0006 across 150 independent observations – STATISTICALLY SIGNIFICANT. This is the critical validation that distinguishes Grade A from Grade B/C overlays. The LC signal library has only two Grade A signals: this and Z15201 LC-Corn Ratio (independence IC +0.172 at p=0.036).

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What this signal does not cover

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

First, the signal reads the FUTURES SPREAD – a market quote representing current expectations. It does not read realized placement behavior. Pair with USDA Cattle-on-Feed monthly reports for the placement-and-marketings realized confirmation.

Second, the signal uses front-month contracts; roll behavior around contract rollover (every 2-3 months on both FC and LC) can briefly distort the spread. The 60-day minimum sample in the z-score window dampens most of this but single-day rollover-period spikes should be interpreted with caution.

Third, the 6-12 month breeding-herd transmission is LONGER than the 60-day forward horizon in the state-conditional statistics. The full forward-supply impact plays out over multiple quarters; the 60-day window captures the near-term expectations-adjustment component.

Broader caveat: this is Grade A. Daily IC +0.276 (p=1.8e-156) and non-overlap IC +0.278 (p=0.0006) both pass significance tests. Phase –1 delivers the strongest bearish-tail edge in the LC library (-3.31 pp). The signal belongs in the LC stack as one of the two anchor Grade A fundamental signals (the other is Z15201 LC-Corn Ratio). Replacement-cost + feed-cost stacking is the strongest LC bull setup.

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: CME Feeder Cattle front-month (FC_0_L1ND); CME Live Cattle front-month (LC_0_L1ND); CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.