The FC LC/FC Ratio Signal, Grade B+ Directional Read with Truth-Inverse Polarity

Why the CME Live Cattle to Feeder Cattle price ratio z-scored on one year is a Grade B+ directional signal with independent-sample confirmation – and why the empirical direction is the mirror of the a-priori economic intuition.

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The signal and why it matters today

CME Live Cattle divided by CME Feeder Cattle reads the relative pricing between finished and feeder cattle. The ratio compresses when feedlot producer margins come under pressure, meaning feeders are expensive relative to finished cattle. It expands when finished cattle trade firm relative to feeders. Historically the a-priori economic logic is: low LC/FC equals margin stress equals placement cuts equals bullish FC sixty to ninety days forward.

This signal z-scores the LC/FC ratio on a 252-day rolling window, clips to [−3, +3] standard deviations, and bounds with tanh. The engine declares TRUTH-INVERSE polarity explicitly: positive composite (high LC/FC) is empirically bullish FC forward, not negative composite as the a-priori economic logic would suggest.

Daily Spearman IC against FC fwd60d is plus 0.166 at p-value less than 1e-55 across 8,989 trading days. Non-overlapping (every-60-day) IC is plus 0.203 at p-value 0.013 across 150 independent samples – INDEPENDENTLY SIGNIFICANT. The non-overlap test is what separates Grade B+ from autocorrelation-inflated candidates.

Phase +1 (High LC/FC) delivers +3.24 percent fwd60d (+2.03 pp above baseline, hit 63 percent). Phase −1 (Low LC/FC) delivers +0.11 percent (near-neutral, −1.10 pp vs baseline, hit 50 percent). Phase 0 delivers +0.04 percent. The signal has ONE actionable band: Phase +1 bullish. Phase −1 is DORMANT despite the a-priori intuition that it should be bullish.

Current reading: Low LC/FC extreme-negative firing at composite minus 0.995 (saturated-negative), 36 trading days running. The LC/FC ratio is deeply compressed – feeders are expensive relative to finished cattle. Historical Phase −1 delivers near-neutral fwd60d. The signal is DORMANT as a directional read.

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How the LC/FC ratio mechanism composes

LC/FC captures the relationship between finished cattle (what the packer pays) and feeder cattle (what the feedlot buys). The ratio moves with the cycle.

High LC/FC (positive composite, Phase +1) means finished cattle are trading firm relative to feeders. This regime historically coincides with:

- Herd expansion phases where firm packer demand pulls LC higher ahead of FC
- Modern-era beef demand strength (export surge, firm domestic retail)
- Finished-cattle supply tightness that outpaces feeder cattle tightness

Historical pattern: Phase +1 delivers +2.03 pp above baseline, 63 percent hit rate.

Low LC/FC (negative composite, Phase −1) means feeders are expensive relative to finished cattle. The a-priori economic logic says this signals feedlot margin stress, which should trigger placement cuts and bullish FC forward on scarcity. Empirically Phase −1 is DORMANT with near-neutral fwd60d. The feedlot-margin-stress-to-placement-cut linkage shows up weakly in the 60-day forward window.

Historical pattern: Phase −1 delivers near-neutral (-1.10 pp vs baseline, 50 percent hit rate).

Normal regime (Phase 0) is the equilibrium zone where the ratio sits near its 1-year mean. Historical pattern: near-neutral.

The truth-inverse polarity is the signal's defining feature. Traders new to this signal should read the EMPIRICAL direction (high LC/FC = bullish FC) and ignore the economic intuition (low LC/FC = bullish FC) which does not match the historical data.

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What the state-conditional returns have actually done

> **Reference baseline – FC fwd60d (unconditional)**
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> CME Feeder Cattle back-adjusted continuous (FC_110ARD) forward-60-day return baseline (unconditional): mean plus 1.20 percent, median plus 1.60 percent, standard deviation 7.8 percent, percent negative 42 percent. Sample window 1990-11-29 through 2026-10-30, 8,989 trading days with observable fwd60d.

Phase plus 1 (High LC/FC, composite greater than plus 0.3) covers 3,183 trading days – 35.4 percent of the sample. Per-day mean fwd60d is plus 3.24 percent, hit rate 63 percent. OUTPERFORMS baseline by plus 2.03 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 1,538 trading days – 17.1 percent of the sample. Per-day mean fwd60d is plus 0.04 percent, hit rate 52 percent. Near baseline (minus 1.16 pp).

Phase minus 1 (Low LC/FC, composite less than minus 0.3) covers 4,268 trading days – 47.5 percent of the sample. Per-day mean fwd60d is plus 0.11 percent, hit rate 50 percent. Near-neutral / DORMANT (minus 1.10 pp vs baseline).

Asymmetric directional pattern: Phase +1 strongly bullish, Phase −1 dormant, Phase 0 near-neutral. The actionable band is Phase +1 only. Current reading is Phase −1 (DORMANT).

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Three cases that frame how to read this signal

Case 1: Q1 2004. High LC/FC – post-BSE finished-cattle firmness.

Context: US beef herd rebuild phase following the pre-BSE expansion. Firm cash cattle demand pulled LC prices up relative to FC through Q1 2004. Composite ran +0.80 to +0.95. Forward FC rallied through Q2 2004 as the finished-cattle firmness carried into feeder demand. Canonical High LC/FC bullish-FC anchor.

Case 2: September 2015. Low LC/FC – 2015 cycle-peak feeder prices.

Firing date: September 23, 2015 at composite minus 0.99. Forward 60-day FC return: minus 26.00 percent.

Context: Feeder cattle at cycle-high $195 compressed the LC/FC ratio to saturated-negative. A-priori economic logic would call for bullish FC on feedlot margin stress triggering placement cuts. Empirically FC fell 26 percent fwd60d as the broader cycle resolution overrode the feedlot-margin-stress logic. This case documents the TRUTH-INVERSE polarity: Low LC/FC does NOT reliably predict bullish FC despite the economic intuition. Dormant / counter-economic anchor.

Case 3: Q1 2023. High LC/FC – 2023 LC rally with firm FC-feeder demand.

Context: LC rallied firmly ahead of FC in Q1 2023 as beef demand firmness and cycle-trough herd dynamics pulled finished-cattle prices higher. Composite ran +0.60 to +0.90. Feeder cattle rallied through Q2 2023 to $240+. Modern-era High LC/FC bullish-FC anchor documenting the empirical direction in a cycle-trough regime.

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How to use the signal today

As of November 1, 2026, the composite reads minus 0.995 – Low LC/FC saturated-negative firing, 36 trading days running. The LC/FC ratio is deeply compressed. CME Feeder Cattle trades the 330 to 340 dollar range.

The signal is DORMANT in the current Phase −1 band. Historical Phase −1 delivers near-neutral fwd60d (minus 1.10 pp vs baseline, 50 percent hit rate). The actionable band is Phase +1 (High LC/FC) which delivers plus 2.03 pp above baseline. Watch for transition to Phase +1 for an actionable bullish-FC read.

Pair with four confirming reads for direction:

- **FC US Herd Inventory Signal (Z6637)**. Strongest-IC structural supply anchor. Currently Normal (dormant). When Z6637 transitions to Phase +1 or −1, direction becomes high-conviction.
- **FC Term Structure Curve Signal (Z3302)**. Market consensus on forward FC supply. Grade A with independent-sample confirmation.
- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor (feedlot producer margin).
- **LC Feeder-Live Cattle Spread Signal (Z15203)**. FC-LC spread (percent difference) – Grade A LC anchor.

LC/FC is a RATIO READ, not a structural supply or margin read. Treat as directional-lean only when Phase +1 fires. In the current Phase −1 dormant band, direction is unclear. Pair with FC US

Herd Inventory and FC Term Structure for stacked confirmation when any of them transitions out of dormant.

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Methodology notes

Data source. CME Live Cattle (LC) and CME Feeder Cattle (FC) back-adjusted continuous closes from continuous data provider. LC_110ARD and FC_110ARD.

Signal construction. Composite = (LC / FC) z-scored on 252-day (one-year) rolling window with 63-day minimum sample. Clipped to [−3, +3] standard deviations. 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. Target: CME Feeder Cattle back-adjusted continuous (FC_110ARD).

Validation statistics. Daily Spearman IC against FC fwd60d is plus 0.166 at p-value less than 1e-55 across 8,989 observations – strongly significant daily. Phase +1 per-day mean fwd60d plus 3.24 percent (plus 2.03 pp above plus 1.20 percent baseline, hit 63 percent). Phase 0 mean plus 0.04 percent (near baseline, minus 1.16 pp). Phase −1 per-day mean plus 0.11 percent (near-neutral, minus 1.10 pp vs baseline, hit 50 percent).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC plus 0.203 at p-value 0.013 across 150 independent observations – INDEPENDENTLY SIGNIFICANT. Dual-sampling confirmation (daily IC AND non-overlap IC both significant same-sign) is the defining Grade B+ property.

Truth-inverse polarity. Engine declares positive composite (high LC/FC) = bullish FC forward, which is the OPPOSITE of the a-priori economic logic (low LC/FC = feedlot margin stress = placement cuts = bullish FC). The empirical direction is validated by both daily and non-overlap IC.

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What this signal does not cover

First, the truth-inverse polarity is counter-intuitive. Traders new to this signal must read the empirical direction and ignore the a-priori economic logic. The signal does NOT work the direction the economic textbook predicts.

Second, Phase −1 (Low LC/FC) is DORMANT – near-neutral fwd60d despite deep saturation. Treat as directional-lean only in Phase +1. The current Phase −1 reading is dormant and does NOT provide an actionable directional lean.

Third, LC/FC can be distorted by COT positioning shocks, feeder-cattle roll windows, or exogenous demand shocks. Pair with FC Term Structure Curve (Z3302) for market-consensus direction and FC US Herd Inventory (Z6637) for structural supply direction.

Broader caveat: Grade B+ directional ratio signal with independent-sample confirmation on the Phase +1 bullish band. The signal provides a directional lean on FC positioning when Phase +1 fires. Pair with FC US Herd Inventory, FC Term Structure Curve, LC-Corn Ratio, and the LC fundamental stack for stacked confirmation on direction and conviction.

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 Live Cattle and CME Feeder Cattle back-adjusted continuous closes from continuous data provider. State-conditional statistics computed through 2026-10-30.