The FC LC Substitution Signal, Grade B+ Momentum Directional Read

Why CME Live Cattle year-over-year z-scored on 5 years is a Grade B+ directional signal with independent-sample confirmation on CME Feeder Cattle forward returns – LC momentum as the substitution read for FC through the feedlot linkage.

David Stendahl · Market Lab Analytics · November 1, 2026

The signal and why it matters today

Feeder Cattle and Live Cattle are the same animal at different ages. Feeders become finished cattle 150 to 200 days after they enter the feedlot. The two markets move in tight correlation across cycles. This signal reads CME Live Cattle year-over-year momentum as a substitution signal for feeder cattle forward direction.

The mechanism: when LC YoY runs HIGH (above 5-year baseline), the finished-cattle complex is in a bullish momentum cycle. Feedlot operators have incentive to pay firm for feeder inputs because the finished-cattle output remains firm. When LC YoY runs LOW (below baseline), the finished-cattle complex is in a bearish momentum cycle and feedlot operators have reason to bid softer for feeder inputs.

Daily Spearman IC against FC fwd60d is plus 0.177 at p-value less than 1e-63 across 8,989 trading days. Non-overlapping (every-60-day) IC is plus 0.175 at p-value 0.032 across 150 independent samples – INDEPENDENTLY SIGNIFICANT.

Phase +1 (High Substitution) delivers plus 2.89 percent fwd60d at 62 percent hit rate, plus 1.69 pp above the plus 1.20 percent baseline. Phase –1 (Low Substitution) delivers minus 0.59 percent at 48 percent hit rate, minus 1.80 pp below baseline. Phase 0 delivers plus 1.42 percent. 3.49 pp directional spread.

Current reading: Low Substitution extreme-negative firing at composite minus 0.892, 87 trading days running. LC YoY is deeply below the 5-year rolling baseline. Historical Phase –1 delivers minus 1.80 pp below baseline. Moderate bearish-FC lean.

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How the LC substitution mechanism composes

Feeder Cattle and Live Cattle are the same animal at different ages. Feeders become finished cattle 150 to 200 days after they enter the feedlot. The two markets move in tight correlation because feedlot operators make the feeder-buying decision based on forward finished-cattle expectations.

High Substitution (positive composite, Phase +1) means LC YoY is running above the 5-year baseline. The finished-cattle complex is in a bullish momentum cycle. Feedlot operators have confidence in firm forward finished-cattle output and have incentive to pay firm for feeder inputs. This regime historically coincides with:

- Cycle-rebuild phases where firm beef demand supports LC prices
- Post-liquidation recoveries where LC leadership draws feeder demand up
- Modern-era beef demand strength (export surge, firm domestic retail)

Historical pattern: Phase +1 delivers plus 1.69 pp above baseline, 62 percent hit rate.

Low Substitution (negative composite, Phase −1) means LC YoY is running below the 5-year baseline. The finished-cattle complex is in a bearish momentum cycle. Feedlot operators face soft forward finished-cattle output expectations and bid softer for feeder inputs. This regime historically coincides with:

- Cycle-unwind phases where LC prices roll over from highs
- Food-deflation or demand-destruction windows
- Recession or consumer-discretionary compression

Historical pattern: Phase −1 delivers minus 1.80 pp below baseline, 48 percent hit rate.

Normal regime (Phase 0) is the equilibrium zone where LC YoY tracks the 5-year baseline. Historical pattern: plus 0.22 pp above baseline.

The signal substitutes LC momentum for direct FC analysis – useful when FC-specific signals are dormant or when the LC fundamental stack is driving the complex direction.

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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.

Per-day sampling (used for daily Spearman IC):

Phase plus 1 (High Substitution, composite greater than plus 0.3) covers 3,865 trading days – 43.0 percent of the sample. Per-day mean fwd60d is plus 2.89 percent, hit rate 62 percent. OUTPERFORMS baseline by plus 1.69 pp.

Phase 0 (Normal) covers 1,331 trading days – 14.8 percent of the sample. Per-day mean fwd60d is plus 1.42 percent, hit rate 56 percent. Near baseline (plus 0.22 pp).

Phase minus 1 (Low Substitution, composite less than minus 0.3) covers 3,793 trading days – 42.2 percent of the sample. Per-day mean fwd60d is minus 0.59 percent, hit rate 48 percent. UNDERPERFORMS baseline by minus 1.80 pp.

Clean asymmetric directional pattern: Phase +1 moderately bullish, Phase 0 near-neutral, Phase −1 moderately bearish. 3.49 pp directional spread between tails. The signal fires meaningfully in 85 percent of the sample combined.

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Three cases that frame how to read this signal

Case 1: Q4 2008. Low Substitution – 2008 financial crisis cattle complex.

Context: LC YoY turned deeply negative in Q4 2008 as the financial crisis compressed finished-cattle demand across the complex. Composite near minus 0.90. Feeder cattle were at approximately 100 dollars. Forward FC fell as the LC-complex bearishness carried through to feeder bidding at feedlots. Canonical Low Substitution bearish-FC anchor.

Case 2: February 2016. Low Substitution – 2016 cycle-peak unwind.

Firing date: February 15, 2016 at composite near minus 0.85. Context: LC YoY turned negative as the 2014-2015 cycle-high LC prices unwound. Finished-cattle complex compressed. Feeder cattle were coming off 2015 highs near 155 dollars. Forward FC softened through Q1 2016. Canonical Low Substitution bearish-FC anchor.

Case 3: Q3 2022. High Substitution – 2022 post-COVID LC rally.

Context: LC YoY was running strongly in Q3 2022 at composite near plus 0.90 as post-COVID beef demand peaked. Finished-cattle complex rallied firmly. Feeder cattle were at approximately 170 dollars. Forward FC rallied firmly through Q3-Q4 2022. Modern-era High Substitution bullish-FC anchor.

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How to use the signal today

As of November 1, 2026, the composite reads minus 0.892 – Low Substitution extreme-negative firing, 87 trading days running. LC YoY is deeply below the 5-year baseline. CME Feeder Cattle trades the 330 to 340 dollar range.

The current firing is in the Low Substitution extreme band. Historical Phase −1 delivers minus 1.80 pp below baseline (48 percent hit rate). Moderate bearish-FC lean.

Pair with four confirming reads for direction:

- **FC US Herd Inventory Signal (Z6637)**. Strongest-IC structural supply anchor.
- **FC LC Ratio Lag60d Signal (Z102373)**. Lagged LC/FC ratio – Grade A directional.
- **FC Cattle Crush Margin Signal (Z1430)**. Board-crush margin – Grade A truth-inverse.
- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor (feedlot producer margin).

The LC substitution signal is complementary to the LC fundamental stack. When LC YoY momentum aligns with LC-corn ratio, LC CoT positioning, and LC inventory signals, direction is high-conviction.

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Methodology notes

Data source. CME Live Cattle back-adjusted continuous closes from continuous data provider. LC_110ARD.

Signal construction. Composite = LC year-over-year percent change, z-scored on 5-year (1,260-day) rolling window with 252-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). Daily release.

Validation statistics. Daily Spearman IC against FC fwd60d is plus 0.177 at p-value less than 1e-63 across 8,989 observations – strongly significant daily. Phase +1 per-day mean fwd60d plus 2.89 percent (plus 1.69 pp above plus 1.20 percent baseline, hit 62 percent). Phase 0 mean plus 1.42 percent (plus 0.22 pp above baseline). Phase −1 per-day mean minus 0.59 percent (minus 1.80 pp below baseline, hit 48 percent). 3.49 pp directional spread.

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC plus 0.175 at p-value 0.032 across 150 independent observations – INDEPENDENTLY SIGNIFICANT. Clean positive polarity – empirical direction matches a-priori economic logic (high LC YoY = bullish FC).

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What this signal does not cover

First, LC and FC are tightly correlated markets. The signal captures LC momentum that is partly embedded in FC itself. The 60-day forward window captures incremental information beyond that embedded correlation.

Second, Phase 0 (14.8 percent of sample) is relatively small. The signal spends 85 percent of the time in actionable Phase +1 or −1 bands. Signal is almost always firing a directional lean.

Third, LC YoY momentum can be distorted by cycle-rebuild or cycle-unwind phases that drive LC and FC in opposite directions briefly. In those windows the substitution logic breaks down. Pair with FC-specific signals (US Herd Inventory, Light Placement Pace, Term Structure Curve) for context.

Broader caveat: Grade B+ directional LC-substitution signal with independent-sample confirmation. The signal provides a tactical lean on FC positioning through the LC-FC correlation. Pair with FC-specific supply, margin, and placement signals for stacked confirmation.

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 back-adjusted continuous closes; CME Feeder Cattle back-adjusted continuous (FC_110ARD). State-conditional statistics computed through 2026-10-30.