The Peer-Complex Co-Movement Signal, Systematic Common-Factor Overlay on Live Cattle

Why peer-complex 20-day return weighted by rolling 63-day R-squared of LC regressed on peers catches common-factor regime dynamics – Grade C+ systematic signal distinct from LC-specific fundamentals.

David Stendahl · Market Lab Analytics · November 1, 2026

What this signal is, with the limits stated upfront

Live Cattle is not an isolated market – it co-moves with other meats (Feeder Cattle, Lean Hogs) and with the feed complex (Corn). This co-movement varies over time. During common-factor regimes, LC moves tightly with the peer complex. During idiosyncratic regimes, LC moves on its own fundamentals.

This signal reads the peer-composite 20-day return (other meats + corn), weighted by the rolling 63-day R-squared of LC regressed on the peer composite, z-scored and bounded with tanh. When common-factor share is HIGH (R-squared high), the peer composite move is AMPLIFIED as the signal: LC is likely to follow. When common-factor share is LOW, the peer signal is dampened and LC trades on its own drivers. State thresholds at plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Daily release cadence.

Daily Spearman IC against LC fwd60d is plus 0.045 at p-value 1.8e-5 across 9,049 trading days – significant daily. Non-overlapping (every-60-day) IC is plus 0.022 at p-value 0.79 – not significant. Phase +1 (Peer-Composite Bull Regime) delivers +1.50 percent fwd60d at 60 percent hit rate, +0.48 pp above the +1.02 percent baseline. Phase −1 (Peer-Composite Bear Regime) delivers +0.41 percent fwd60d at 55 percent hit rate, −0.61 pp below baseline. Phase 0 (Normal) delivers +1.23 percent.

This is a Grade C+ systematic common-factor overlay. The directional edge is modest (1 pp spread between tails) but the regime read is informative – the signal tells you when LC is likely to follow the peer complex vs when it will trade on its own.

• • •

How the common-factor mechanism composes

LC-to-peer R-squared varies over time. During crises, macro shocks, and broad agricultural cycles, the common-factor share is elevated and LC co-moves tightly with the peer basket. During LC-specific supply/demand news (BSE, drought-driven herd events, cattle-cycle inflections), the idiosyncratic share dominates and LC trades on its own fundamentals.

The signal computes two components: (1) peer-composite 20-day return as the directional driver, (2) rolling 63-day R-squared of LC regressed on peer composite as the amplifier. When R-squared is high, a peer-composite bull move amplifies into a strong positive composite. When R-squared is low, the same peer move produces a dampened signal.

Phase +1 (positive composite) means peer complex is rising AND common-factor regime is active – LC should follow. Phase –1 (negative composite) means peer complex is falling AND common-factor regime is active – LC should follow lower.

This signal is DISTINCT from all LC fundamentals:

- Supply signals (inventory, placements, slaughter) read economic structure.
- Demand signals (DXY, exports, cold storage) read consumption drivers.
- Z32645 reads CROSS-MARKET LINKAGES – when LC is in common-factor regime with the broader complex.

• • •

What the state-conditional returns have actually done

> **Reference baseline – LC fwd60d (unconditional)**
>
> 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.

Phase plus 1 (Peer-Composite Bull Regime, composite greater than plus 0.3) covers 3,406 trading days – 37.6 percent of the sample. Per-day mean fwd60d is plus 1.50 percent, hit rate 60 percent. Edge above baseline: plus 0.48 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 2,191 trading days – 24.2 percent of the sample. Mean fwd60d is plus 1.23 percent, hit rate 58 percent. Near baseline.

Phase minus 1 (Peer-Composite Bear Regime, composite less than minus 0.3) covers 3,452 trading days – 38.1 percent of the sample. Per-day mean fwd60d is plus 0.41 percent, hit rate 55 percent. Edge below baseline: minus 0.61 pp.

Modest directional edge. 1 pp spread between tails. Both tails heavily sampled.

• • •

Three cases that frame how to read this signal

Case 1: June 2006. Peer Bull Regime – 2006 complex rally.

Firing date: June 12, 2006 at composite plus 0.85. Forward 60-day LC return: plus 20.70 percent (from $78.25 to $94.45).

Context: the meat/feed complex rallied broadly through Q2-Q3 2006 with LC-to-peer R-squared elevated. Live cattle were at $78. Forward LC rallied 21 percent as the common-factor regime amplified the peer-basket move. Canonical Peer Bull anchor.

Case 2: January 2020. Peer Bear Regime – pre-COVID complex drop.

Firing date: January 30, 2020 at composite minus 0.97. Forward 60-day LC return: minus 30.36 percent (from $121.78 to $84.80).

Context: the meat/feed complex sold off broadly in late January 2020 with LC-to-peer R-squared elevated. Live cattle were at $122. Forward LC fell 30 percent as COVID compounded the common-factor drawdown. Canonical Peer Bear anchor.

Case 3: October 2008. Peer Bear Regime – financial crisis complex drop.

Firing window: Q4 2008 at composite below –0.80. The meat/feed complex dropped broadly in the financial crisis. LC-to-peer R-squared elevated as common-factor stress dominated. Forward LC softened through Q4 2008 as the cross-market cascade persisted.

• • •

How to use the signal today

As of November 1, 2026, the composite reads minus 0.923 – Peer-Composite Bear Regime EXTREME NEG, 40 trading days running. Other meats and corn are trending down and LC-to-peer R-squared is elevated – LC is in common-factor regime with the bear peer basket. CME Live Cattle trades the $220-230 range.

Current reading is in the Phase –1 band deeply (below –0.5 EXTREME NEG threshold). Historical Phase –1 delivers –0.61 pp below baseline at 55 percent hit rate – modest headwind read.

Pair with four confirming reads:

- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor.
- **LC Lean Hogs Substitution (Z3277)**. Livestock-cycle co-movement with LH (peer-complex member).
- **LC Feeder-Live Cattle Spread (Z15203)**. FC-LC spread (peer-complex member).
- **LC Term Structure Curve (Z3260)**. Strongest-IC directional signal.

Peer-complex is a systematic cross-market overlay. Pair with LC-specific fundamentals for stacked confirmation.

• • •

Methodology notes

Data source. CME Feeder Cattle, CBOT Corn, CME Lean Hogs continuous back-adjusted prices (peer basket).

Signal construction. Peer-composite 20-day return weighted by rolling 63-day R-squared of LC regressed on the peer composite. Z-score on 504-day rolling window 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 +0.045 at p = 1.8e-5 (n = 9,049). Phase +1 state-conditional per-day mean fwd60d plus 1.50 percent (+0.48 pp above baseline). Phase −1 per-day mean plus 0.41 percent (-0.61 pp below baseline). 1 pp directional spread.

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.022 at p-value 0.79 – not significant. The daily significance is partly autocorrelation-inflated through multi-week common-factor regime persistence.

• • •

What this signal does not cover

First, non-overlap test is not significant. The directional edge is modest and partly autocorrelation-inflated.

Second, peer-complex composition (FC, Corn, LH) is fixed. Shifts in cross-market linkages (e.g., chicken emerging as a stronger substitute) can change signal interpretation over time.

Third, R-squared weighting introduces parameter sensitivity (63-day window). Longer or shorter windows would give different regime indicators.

Broader caveat: Grade C+ systematic common-factor overlay. The signal reads WHEN LC is in common-factor regime with the broader complex vs WHEN it trades on its own fundamentals. Use as context for interpreting fundamental signals.

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, CBOT Corn, CME Lean Hogs continuous; CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.