The Cattle on Feed Total YoY Signal, Stock-Level Supply Overlay on Live Cattle

Why USDA NASS Cattle on Feed total inventory YoY captures the STOCK position of the finishing pipeline – distinct from placements (entry flow) and marketings (exit flow). Grade C+ with asymmetric bearish-tail dominance.

David Stendahl · Market Lab Analytics · November 1, 2026

What this signal is, with the limits stated upfront

USDA NASS reports monthly Cattle on Feed (COF) total inventory – the stock of cattle currently in feedlots. This is DIFFERENT from placements (flow entering feedlots) and marketings (flow leaving feedlots). Total on-feed inventory captures the STOCK position of the finishing pipeline at any point in time.

Three cattle-pipeline signals complement each other:

- **Placements (Z3264)**: FLOW entering feedlots. 4-6 month lead.
- **Marketings (Z4726)**: FLOW leaving feedlots. Finishing-end exit.
- **COF Total (this signal)**: STOCK level in feedlots at any point in time.

This signal reads NASS COF total inventory YoY, SIGN-FLIPS so smaller herd reads positive composite (tight supply = bullish-LC), z-scores on a 504-day 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). Monthly USDA release.

Daily Spearman IC against LC fwd60d is plus 0.054 at p-value 2.5e-7 across 9,049 trading days – significant daily. Non-overlapping (every-60-day) IC is plus 0.015 at p-value 0.86 – not significant. Phase +1 (Small Herd) delivers +1.70 percent fwd60d at 60 percent hit rate, +0.68 pp above the +1.02 percent baseline. Phase −1 (Large Herd) delivers minus 1.63 percent fwd60d at 46 percent hit rate, −2.65 pp below baseline. Phase 0 (Normal) delivers +1.09 percent – essentially baseline.

This is a Grade C+ stock-level supply signal. Phase −1 (Large Herd) bearish tail is DOMINANT with −2.65 pp spread. Phase 0 covers 91 percent of sample – the signal is DORMANT most of the time, firing only at structural inventory extremes.

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How the stock-level mechanism composes

Monthly COF total inventory counts cattle currently in feedlots – the stock position of the finishing pipeline. Readers watching inventory data care about this because stock levels DIRECTLY proxy forward slaughter supply over the next 3-6 months, independent of continued placement-flow and marketing-flow dynamics.

Small on-feed herd (positive composite) means the finishing pipeline stock is thin. Over the next 3-6 months, slaughter supply will be tight regardless of ongoing flows. Historically bullish-LC forward.

Large on-feed herd (negative composite) means the finishing pipeline is loaded. Over the next 3-6 months, slaughter supply will be plentiful. Historically bearish-LC forward – and the bearish tail is stronger than the bullish tail (-2.65 pp vs +0.68 pp spread).

The Normal regime (Phase 0) dominates 91 percent of the sample because stock levels change slowly. The signal is DORMANT most of the time – actionable firings require sustained inventory divergence from the 2-year baseline. Historical firings cluster around major cycle events: post-drought herd lows (Small Herd), pre-crisis inventory peaks (Large Herd).

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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.

Phase plus 1 (Small Herd, composite greater than plus 0.3) covers 504 trading days – 5.6 percent of the sample. Per-day mean fwd60d is plus 1.70 percent, hit rate 60 percent. Edge above baseline: plus 0.68 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 8,211 trading days – 90.7 percent of the sample. Mean fwd60d is plus 1.09 percent, hit rate 58 percent. Essentially baseline.

Phase minus 1 (Large Herd, composite less than minus 0.3) covers 334 trading days – 3.7 percent of the sample. Per-day mean fwd60d is minus 1.63 percent, hit rate 46 percent. Edge below baseline: minus 2.65 pp.

Asymmetric tail dominance – the Large Herd bearish tail is nearly 4x stronger than the Small Herd bullish tail. Combined with the 91 percent Phase 0 dominance, the signal fires rarely but delivers meaningful edge when it does.

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Three cases that frame how to read this signal

Case 1: December 2022. Small Herd – post-drought cycle low.

Firing date: December 6, 2022 at composite plus 1.0. Forward 60-day LC return: plus 9.60 percent (from $151.55 to $166.10).

Context: COF total inventory had collapsed following the 2021-2022 drought liquidation. Breeding herd and feedlot inventory both hit multi-year lows. Live cattle were at $152. Forward LC rallied 10 percent as the thin finishing pipeline tightened cash. Canonical Small Herd anchor.

Case 2: December 2003. Large Herd – pre-BSE pipeline peak.

Firing date: December 2, 2003 at composite minus 1.0. Forward 60-day LC return: minus 21.87 percent (from $99.58 to $77.80).

Context: COF total inventory peaked in late 2003 as the pre-BSE pipeline loaded on firm placement cycles. Live cattle were at $100. Forward LC fell 22 percent as the loaded pipeline compounded with the December 2003 BSE discovery. Canonical Large Herd anchor.

Case 3: December 2014. Small Herd – 2014 post-drought low.

Firing window: Q4 2014 at composite near +0.90. COF total inventory reached multi-year lows following 2011-2012 drought liquidation. Live cattle rallied through the window as the thin pipeline persisted. Modern-era Small Herd anchor.

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How to use the signal today

As of November 1, 2026, the composite reads plus 0.157 – Normal regime, 30 trading days running. COF total inventory is tracking the 2-year baseline closely. CME Live Cattle trades the $220-230 range.

The signal is DORMANT in the Normal band. Normal regime delivers near-baseline (+0.07 pp above) historically. Watch for transition to Phase +1 (Small Herd, bullish) or Phase –1 (Large Herd, bearish) for an actionable stock-level read.

Pair with four confirming reads:

- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor.
- **LC Placements YoY (Z3264)**. Pipeline ENTRY flow (complement).
- **LC Marketings Signal (Z4726)**. Pipeline EXIT flow (complement).
- **LC Cattle Inventory Semi-Annual (Z15208)**. Longest-lead structural supply (18-30mo lead).

COF total is the stock-level complement to the flow signals – answers “how much is in the finishing pipeline right now?” rather than “how fast is cattle entering/leaving?”

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Methodology notes

Data source. USDA NASS monthly Cattle on Feed total inventory series.

Signal construction. Composite = COF total inventory YoY percent change, SIGN-FLIPPED so smaller herd reads positive 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 +0.054 at p = 2.5e-7 (n = 9,049). Phase +1 (Small Herd) state-conditional per-day mean fwd60d plus 1.70 percent (+0.68 pp above baseline).

Phase −1 (Large Herd) per-day mean minus 1.63 percent (-2.65 pp below baseline). 3.3 pp directional spread with asymmetric bearish-tail dominance.

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.015 at p-value 0.86 – not significant. Daily significance partly reflects multi-month inventory persistence.

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What this signal does not cover

First, Phase 0 (Normal) dominates 91 percent of sample. The signal is DORMANT most of the time, firing only at structural inventory extremes.

Second, non-overlap test is not significant. The daily significance is partly autocorrelation-inflated through multi-month inventory persistence.

Third, monthly cadence slows signal updates. Composite reflects month-end-ago data until next report.

Broader caveat: Grade C+ stock-level supply signal with asymmetric bearish-tail dominance. The signal is dormant most of the time but delivers meaningful edge when it fires. Belongs alongside the flow signals (placements Z3264, marketings Z4726) and structural supply (inventory Z15208) for the full pipeline picture.

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 NASS monthly Cattle on Feed total inventory; CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.