The Choice-Select Spread Signal, Read as the Beef-Grade Demand Preference on Live Cattle

Why the USDA Choice minus Select boxed-beef cutout spread, z-scored on two years, catches beef-grade demand preference transmitting to CME Live Cattle through packer bid dynamics.

David Stendahl · Market Lab Analytics · October 31, 2026

What this signal is, with the limits stated upfront

USDA grades beef quality into Prime, Choice, Select, and lower categories based on marbling (intramuscular fat) and maturity. Choice and Select together account for the vast majority of fed-cattle production. Choice is higher-marbled; Select is leaner. Retail and foodservice buyers pay a premium for Choice product, and the Choice-Select spread is published daily by USDA AMS in the boxed-beef cutout report.

This signal reads the daily Choice-Select spread, z-scores on a 504-day (two-year) rolling window, and bounds with tanh. State thresholds at plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Daily USDA release cadence.

Here is the honest finding. Daily Spearman IC against LC fwd60d is plus 0.033 at p-value 0.002 across 9,241 trading days – MARGINALLY significant. Non-overlapping (every-60-day) IC is plus 0.017 at p-value 0.83 across 155 independent samples – not significant. Phase +1 (Wide Spread) delivers +1.82 percent fwd60d at 62.8 percent hit rate, +0.80 pp above the +1.02 percent baseline. Phase –1 (Narrow Spread) delivers +0.19 percent at 62.3 percent hit rate, –0.83 pp below baseline.

This is a Grade C+ demand-grade overlay — the weakest-IC member of the LC fundamental stack. The 2019 pre-ASF Wide Spread (+28%) and 2020 pre-COVID Narrow Spread (-34%) anchors validate both tails. Treat as demand-grade coloration overlay, not a standalone directional driver.

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How the inputs compose

USDA AMS publishes the daily boxed-beef cutout report with values for Choice and Select grades per hundredweight. The Choice-Select spread magnitude varies with:

1. Seasonal demand (holiday foodservice spikes Choice premium)
2. Consumer discretionary spending (strong consumer = Choice preference)
3. Herd grading mix (post-drought herds often produce lower-marbled cattle, compressing spread)

4. Packer margin dynamics (tight packer margins can force concessions on Choice premium)

The signal computes the spread as Choice minus Select cutout, z-scores on 504-day rolling window with 60-day minimum sample, and bounds with tanh. State machine: phase +1 above +0.3, phase −1 below −0.3, phase 0 middle.

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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, 9,241 trading days with observable fwd60d.

Phase plus 1 (Wide Choice-Select, composite greater than plus 0.3) covers 1,204 trading days – 13.0 percent of the sample. Per-day mean fwd60d is plus 1.82 percent, hit rate 62.8 percent. Edge above baseline: plus 0.80 pp.

Phase 0 (Normal, composite between plus and minus 0.3) covers 6,869 trading days – 74.3 percent of the sample. Mean fwd60d is plus 1.00 percent, hit rate 56.1 percent. At baseline.

Phase minus 1 (Narrow Choice-Select, composite less than minus 0.3) covers 1,168 trading days – 12.6 percent of the sample. Per-day mean fwd60d is plus 0.19 percent, hit rate 62.3 percent. Edge below baseline: −0.83 pp.

Both tails are symmetric in magnitude (+0.80 vs −0.83 pp) with similar hit rates (62.8% vs 62.3%). The signal fires in roughly 25% of the sample combined, with modest but consistent directional edge.

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Three cases that frame how to read this signal

Case 1: September 2019. Pre-ASF Wide Choice-Select demand-pull.

Firing date: September 9, 2019 at composite plus 0.95. Forward 60-day LC return: plus 27.97 percent (from 94.20 to 120.57 cents per pound).

Context: through the pre-ASF global protein rebalancing of 2019, consumer and foodservice demand for higher-grade beef firmed as the broader cattle rally pulled through all grades. The Choice-Select spread widened to a 2-year z-score extreme. Live cattle were at 94.20. Over the next 60 trading days LC rallied 28 percent as the demand-grade pass-through combined with pre-ASF export tailwind and tight supply.

Case 2: January 2020. Pre-COVID Narrow Choice-Select crash.

Firing date: January 9, 2020 at composite minus 0.93. Forward 60-day LC return: minus 33.85 percent (from 126.73 to 83.84).

Context: through Q4 2019 the Choice-Select spread compressed as the high-supply environment depressed Choice premium. Live cattle were at 126.73 at a cyclical high. Over the next 60 trading days

LC crashed 34 percent through the COVID packer-closure shock. The 2020 Q1 case anchors the Narrow Spread tail.

Case 3: October 2017. Q4 Choice-Select expansion.

Firing date: October 15, 2017 at composite near plus 0.70. The Choice-Select spread widened through Q4 as holiday foodservice demand supported Choice-grade premium. Live cattle traded in the $120-125 range. Forward LC firmed through Q4 2017 and Q1 2018 as the demand-grade pattern transmitted. The 2017 case documents the signal operating in a non-shock macro environment.

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How to use the signal today

As of October 30, 2026, the composite reads plus 0.449 – Wide Choice-Select moderate-positive, 2 trading days running. USDA Choice-Select spread has firmed above the 2-year baseline. CME Live Cattle trades the $220-230 range.

The current reading is in the Phase +1 band (above +0.3) in the Moderate POS sub-band (below +0.5 EXTREME threshold). Historical Phase +1 delivers +0.80 pp above baseline at 62.8 percent hit rate; the moderate sub-band is slightly weaker than the extreme sub-band but directionally consistent.

Pair with four confirming reads for direction:

- **LC-Corn Ratio Signal (Z15201)**. Grade A LC fundamental anchor on supply.
- **LC Feeder-Live Cattle Spread (Z15203)**. The other Grade A LC fundamental anchor.
- **LC Beef Korea Exports (Z6587) and Japan Exports (Z6588)**. Demand-pull leading edges.
- **USDA Cattle-on-Feed monthly reports**. Realized placement confirmation.

For the current Wide Spread firing, this signal is modestly constructive but not a direction driver on its own. If LC-corn ratio and FC-LC spread also fire positive, the Grade A stacking makes direction high-conviction. Choice-Select is a demand-grade overlay in that stack.

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Methodology notes

Data source. USDA AMS boxed-beef cutout daily report (LM_XB459 equivalent), Choice and Select cutout values per hundredweight.

Signal construction. Spread = Choice_cutout - Select_cutout. 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 above +0.3, phase –1 below –0.3.

Validation statistics. Daily Spearman IC against LC fwd60d is +0.033 at p-value 1.74e-3 (n = 9,241 trading days) – marginally significant. Phase +1 state-conditional per-day mean fwd60d plus 1.82 percent, hit 62.8 percent (+0.80 pp above +1.02 percent baseline). Phase 0 mean plus 1.00 percent, hit 56.1 percent. Phase –1 per-day mean plus 0.19 percent, hit 62.3 percent (-0.83 pp below baseline).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.017 at p-value 0.83 across 155 independent observations – not significant. The daily significance is partly autocorre-

lation-inflated. The signal belongs in the LC stack as a demand-grade overlay rather than a standalone driver.

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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 market-reported cutout values which can be noisy on a daily basis. Short-term fluctuations in Choice vs Select daily quotes do not necessarily reflect persistent demand regime changes.

Second, grade-preference shifts can reflect short-term seasonal patterns (holiday steak demand, grilling season) rather than persistent demand regime change. The 2-year z-score window dampens most seasonal noise, but seasonal pattern effects remain.

Third, non-overlapping independence test is non-significant (p=0.83). The daily significance is partly autocorrelation-inflated through multi-day spread persistence.

Broader caveat: this is Grade C+ demand-grade overlay. The weakest-IC member of the LC fundamental stack. Belongs as a demand-grade coloration overlay complementing the supply-side primaries (LC-corn ratio, FC-LC spread). Pair with the LC fundamental stack; do not trade standalone.

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 AMS boxed-beef cutout daily; CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.