The Korea Beef Exports Signal, Read as the 1-Destination Demand-Pull on Live Cattle

Why USDA Weekly Export Sales to South Korea for beef, z-scored on two years, catches the primary demand-pull transmission to CME Live Cattle via Korean galbi/chuck/clod consumer preference.

David Stendahl · Market Lab Analytics · October 31, 2026

What this signal is, with the limits stated upfront

South Korea is the largest buyer of US beef by export volume, ahead of Japan. Korean imports from the US averaged approximately 275,000 metric tons annually through the 2020-2024 window, representing roughly 25-30 percent of total US beef exports. Korean consumers have a strong preference for US-origin high-marbled short-ribs (galbi), chuck roll, and clod for the Korean barbecue consumer segment.

This signal pulls USDA Weekly Export Sales commitments to Korea for beef products, computes rolling 52-week cumulative sales, takes year-over-year percent change, z-scores on a 504-day (two-year) rolling window, and bounds with tanh. State thresholds plus or minus 0.2 (moderate) and plus or minus 0.5 (extreme). Weekly USDA release Thursday morning for prior week commitments.

Here is the honest finding. Daily Spearman IC against LC fwd60d is plus 0.051 at p-value 1.46e-6 across 8,989 trading days – significant. Non-overlapping (every-60-day) IC is plus 0.069 at p-value 0.40 across 150 independent samples – direction consistent, non-significant on the demanding test. Phase +1 (Strong Exports) delivers plus 3.84 percent per-day fwd60d, hit rate 79.4 percent – the HIGHEST hit rate in the LC demand-overlay stack. Edge above baseline: plus 2.82 pp.

This is a Grade B+ demand-pull signal. The 2019 pre-ASF Korea demand-pull (+28%) and 2020 pre-COVID deceleration (-34%) anchor the two tails. Phase +1 fires in only 9.1 percent of the sample but when it fires, forward LC direction is strongly positive at 79.4 percent hit rate.

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How the inputs compose

USDA Weekly Export Sales (WES) is published Thursday morning for prior-week commitments across all commodities and all destinations. Beef commitments to Korea are reported as net sales (new sales minus cancellations) in metric tons, with cumulative year-to-date and 52-week rolling totals.

The signal uses the 52-week rolling cumulative to smooth weekly volatility. The year-over-year percent change over 252 trading days isolates cyclical demand-pull shifts from secular trend volume. Z-score on 504-day (approximately two-year) rolling window normalizes for structural changes in US-Korea beef trade (post-2012 US-Korea Free Trade Agreement tariff phase-down, 2003-2008 BSE ban recovery).

The transmission path is direct and short:

1. Korea export commitment on USDA WES Thursday morning
2. US packer production commitment to export within 2-6 weeks
3. Cattle pulled from feedlot inventory to packer
4. Cash cattle market firms as supply tightens
5. CME Live Cattle forward curve firms

Korean preference for high-marbled galbi (short-ribs), chuck roll, and clod cuts creates a sticky demand pattern: Korean importers specifically request US-origin product rather than substituting from Australia or New Zealand. This stickiness is why the Phase +1 state has a 79.4 percent hit rate – when Korea demand fires, it transmits reliably.

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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, 8,989 trading days with observable fwd60d.

Phase plus 1 (Strong Exports, composite greater than plus 0.3) covers 819 trading days – 9.1 percent of the sample. Per-day mean fwd60d is plus 3.84 percent, hit rate 79.4 percent. Edge above baseline: plus 2.82 pp. This is the highest hit rate in the LC demand-overlay stack: Korea elevated → packer production tightens US feedlot inventory → cash cattle firms → forward LC firms. The transmission is reliable when Korea demand is elevated.

Phase 0 (Normal, composite between plus and minus 0.3) covers 6,727 trading days – 74.8 percent of the sample. Mean fwd60d is plus 0.71 percent, hit rate 54.0 percent. Edge below baseline: minus 0.31 pp. The majority of the sample is in this zone; the signal fires only occasionally into the directional tails.

Phase minus 1 (Weak Exports, composite less than minus 0.3) covers 1,443 trading days – 16.1 percent of the sample. Per-day mean fwd60d is plus 0.90 percent, hit rate 63.1 percent. Edge below baseline: minus 0.12 pp. The Weak Exports tail is NEAR baseline – weakening Korea demand on its own does not strongly bear LC forward prices.

The signal is asymmetric: strong directional edge on Phase +1 tail (biggest hit rate in LC stack), weak directional edge on Phase –1. The pattern reflects that strong Korean demand transmits reliably but weak Korean demand is often offset by other destinations or US supply dynamics.

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Three cases that frame how to read this signal

Case 1: September 2019. Pre-ASF Korea demand-pull.

Firing date: September 9, 2019 at composite plus 0.85. Forward 60-day LC return from entry: plus 27.97 percent (from 94.20 to 120.57 cents per pound).

Context: through 2019 USDA Korea WES commitments accelerated as the pre-ASF global protein rebalancing redirected demand toward US beef. Chinese pork shortages created substitution flows into protein imports from clean sources, with Korea among the beneficiaries of the broader Asia-Pacific beef demand surge. Live cattle were at 94.20 at the firing date. Over the next 60 trading days LC rallied 28 percent as the Korea demand tailwind combined with US-side pre-ASF supply tightening. 2019 Q3 is the canonical Korea demand-pull anchor.

Case 2: January 2020. Pre-COVID Korea export deceleration.

Firing date: January 9, 2020 at composite minus 0.60. Forward 60-day LC return from entry: minus 33.85 percent (from 126.73 to 83.84).

Context: USDA Korea WES commitments decelerated through Q4 2019 as Korean inventory built in anticipation of 2020 tariff schedule changes. Live cattle were at 126.73 at a cyclical high. Over the next 60 trading days LC crashed 34 percent through the pre-COVID high-supply environment and the COVID packer-closure shock. The 2020 Q1 case anchors the Weak Exports tail – note that the magnitude of the drawdown was driven more by COVID than by the Korea deceleration itself, consistent with the Phase –1 near-baseline historical edge.

Case 3: December 2024. Q4 Korea demand expansion.

Firing date: December 10, 2024 at composite near plus 0.75. Korea beef imports from the US expanded through 2024 Q3-Q4 as Korean economic recovery supported commitments. Forward LC prices firmed through Q4 2024 and Q1 2025 as the demand-pull transmitted. The 2024 Q4 window is a modern-era confirming anchor showing the pattern operates in recent macro conditions.

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How to use the signal today

As of October 30, 2026, the composite reads plus 0.427 – Strong Exports moderate-positive, 34 trading days running. USDA Korea beef export sales YoY is elevated vs the two-year baseline. CME Live Cattle trades in the $220-230 range through the firing.

The current reading is in the Phase +1 band (above +0.3) but in the Moderate POS sub-band (below +0.5 EXTREME threshold). Historical Phase +1 delivers +2.82 pp above baseline at 79.4 percent hit rate; the moderate sub-band typically delivers somewhat weaker edge than the extreme sub-band.

Pair with four confirming reads for direction:

- **LC-Corn Ratio Signal**. Feedlot producer-margin cycle driving cattle supply 6-12 months forward. The LC fundamental stack anchor on the supply side.
- **LC Beef Japan Exports Signal (Z6588)**. The sibling demand-pull signal for the 2 US beef destination. When Korea AND Japan both fire Strong Exports, the demand-pull is strongest.
- **LC CFTC Positioning Signal**. Commercial NET hedge regime read.

- **USDA Cattle-on-Feed monthly reports**. Direct US-supply confirmation.

For the current Strong Exports firing, the critical confirming inputs are LC-corn ratio direction and Japan export sales. If Japan also fires Strong Exports and LC-corn ratio is compressed, the demand-pull + supply-tightening alignment delivers the strongest forward setup.

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Methodology notes

Data source. USDA Weekly Export Sales (USDA_WES_WEEKLY) filtered to beef products with destination=Korea. Thursday morning release for prior-week commitments. Rolling 52-week cumulative sales.

Signal construction. YoY = 252-trading-day pct_change on the 52-week cumulative. 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 at composite above +0.3, phase −1 below −0.3.

Validation statistics. Daily Spearman IC against LC fwd60d is +0.051 at p-value 1.46e-6 (n = 8,989 trading days). Phase +1 state-conditional per-day mean fwd60d plus 3.84 percent, hit 79.4 percent (+2.82 pp above +1.02 percent baseline). Phase 0 mean fwd60d plus 0.71 percent, hit 54.0 percent. Phase −1 per-day mean fwd60d plus 0.90 percent, hit 63.1 percent (-0.12 pp below baseline, near-baseline).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.069 at p-value 0.40 across 150 independent observations – direction consistent with daily, non-significant on the demanding independence test.

Highest hit rate in demand-overlay stack. The Phase +1 hit rate of 79.4 percent is the highest among all demand-side overlays in the LC fundamental stack. Comparison: Japan Exports Z6588 Phase +1 hit 60.8%, Ground Beef Retail Z3517 Phase +1 hit 60.9%, Processed-Foods PPI Z3276 Phase +1 hit 56.3%. The Korea signal fires relatively rarely (9.1% of sample) but with the strongest directional reliability.

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What this signal does not cover

Three things the signal does NOT read, and one broader caveat.

First, the signal is specific to KOREA. It does not include other US beef export destinations: Japan (2), China/Hong Kong, Mexico, Canada, Taiwan. Each destination has its own demand-pull dynamics driven by local economic cycles, trade-policy shifts, and consumer-preference changes. For a complete demand-pull picture, pair with Z6588 Japan Exports signal.

Second, the signal does NOT read US domestic demand. BLS ground beef retail CPI (Z3517) covers the US consumer side. Korea export signal is complementary – when Korea demand firms AND US retail is firm, the demand side is coherently supportive.

Third, the signal has a specific transmission timing (2-6 weeks from commitment to packer production) that may not align with the 60-day forward horizon in all cases. Pre-committed export flows that

cancel can produce near-term supply overhang that temporarily disrupts the typical transmission. The Phase +1 79.4% hit rate reflects the base rate; approximately 1 in 5 Strong Exports firings delivers negative forward returns.

Broader caveat: this is Grade B+ demand-pull signal. Daily IC is significant; non-overlapping independence test is non-significant on 150 samples. The signal belongs in the LC stack as the primary demand-side leading edge, paired with the supply-side primaries (LC-corn ratio, cattle-on-feed) for direction 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: USDA Weekly Export Sales (USDA_WES_WEEKLY); CME Live Cattle back-adjusted continuous (LC20040BD). State-conditional statistics computed through 2026-10-30.