The Japan Beef Exports Signal, Read as the Near-Term Demand-Pull Leading Edge on Live Cattle

Why USDA Weekly Export Sales to Japan for beef, z-scored on two years, catches the near-term demand-pull transmission to CME Live Cattle via direct packer production commitments.

David Stendahl · Market Lab Analytics · October 31, 2026

What this signal is, with the limits stated upfront

Japan is the second-largest buyer of US beef by export volume, trailing only South Korea. Japanese imports from the US averaged approximately 230,000 metric tons annually through the 2020-2024 window, representing roughly 20-25 percent of total US beef exports. Japanese consumers have a strong preference for US-origin high-marbled beef, particularly short-plate and chuck roll cuts for the yakiniku and shabu-shabu segments.

This signal pulls USDA Weekly Export Sales commitments to Japan 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 0.059 at p-value 2.54e-8 across 8,989 trading days – significant. Non-overlapping (every-60-day) IC is plus 0.131 at p-value 0.11 across 150 independent samples – borderline, CLOSEST to clearing the 0.05 threshold among the demand-side overlays (vs ground beef retail p=0.44, processed foods PPI p=0.88). Direction consistent and strong. Phase +1 (Strong Exports) delivers +2.01 percent per-day fwd60d, hit 60.8 percent, +0.99 pp above the +1.02 percent baseline. Phase –1 (Weak Exports) delivers +0.57 percent, –0.45 pp below baseline.

This is a Grade B+ demand-pull signal and the best demand-side overlay in the LC fundamental stack by independence-test standards. The 2019 pre-ASF Japan demand-pull (+28%) and 2020 pre-COVID deceleration (-34%) anchor the two tails.

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How the inputs compose

USDA Weekly Export Sales (WES) is the standard tracking release for US agricultural exports. Published Thursday morning for prior-week commitments across all commodities and all destinations. Beef commitments to Japan 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 while retaining responsiveness. 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-Japan beef trade (post-2019 US-Japan Trade Agreement tariff cuts, 2003-2005 BSE ban recovery).

The transmission path is direct and short:

1. Japan 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

The identifiable timing (Japan commitment → packer production in 2-6 weeks) is a key feature. Most demand-side signals have longer and more diffuse transmission; the Japan export signal has specific procurement timing that transmits cleanly to the forward curve.

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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 862 trading days – 9.6 percent of the sample. Per-day mean fwd60d is plus 2.01 percent, hit rate 60.8 percent. Edge above baseline: plus 0.99 pp. The transmission works: elevated Japan export commitments → packer production tightens US feedlot inventory → cash cattle firms → forward LC firms.

Phase 0 (Normal, composite between plus and minus 0.3) covers 6,401 trading days – 71.2 percent of the sample. Mean fwd60d is plus 1.09 percent, hit rate 55.6 percent. Edge above baseline: plus 0.07 pp – essentially at baseline. 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 1,726 trading days – 19.2 percent of the sample. Per-day mean fwd60d is plus 0.57 percent, hit rate 51.2 percent. Edge below baseline: minus 0.45 pp. Mirror mechanism: Japan deceleration → reduced forward packer commitments → feedlot inventory builds → cash softens → LC forward softens.

The Phase +1 tail is relatively rare (9.6%) but delivers meaningful edge when firing. The signal is a confirming overlay rather than a frequent-firing driver.

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Three cases that frame how to read this signal

Case 1: September 2019. Pre-ASF Japan demand-pull, biggest in-sample win.

Firing date: September 9, 2019 at composite plus 0.90. Forward 60-day LC return from entry: plus 27.97 percent (from 94.20 to 120.57 cents per pound).

Context: through 2019 USDA Japan WES commitments accelerated as the pre-ASF global protein rebalancing redirected demand toward US beef. Live cattle were at 94.20 at the firing date. Over the next 60 trading days LC rallied 28 percent as the demand-side tailwind combined with US-side pre-ASF supply tightening. 2019 Q3 is the canonical Japan demand-pull anchor and the biggest in-sample win.

Case 2: January 2020. Pre-COVID Japan export deceleration, opposite tail anchor.

Firing date: January 9, 2020 at composite minus 0.70. Forward 60-day LC return from entry: minus 33.85 percent (from 126.73 to 83.84).

Context: USDA Japan WES commitments decelerated through Q4 2019 as Japan buyers waited for the January 2020 US-Japan Trade Agreement tariff cuts (buyers delayed purchases to benefit from lower duties). Live cattle were at 126.73 at a cyclical high. Over the next 60 trading days LC crashed 34 percent as the pre-COVID high-supply environment and COVID packer-closure shock hit the market with weakened demand-side support. The 2020 Q1 case anchors the Weak Exports tail.

Case 3: October 2017. Japan demand expansion.

Firing date: October 15, 2017 at composite plus 0.80. Japan beef imports from the US expanded materially through 2017 as the 2016 trade thaw and favorable yen-dollar dynamics supported commitments. Forward LC prices firmed through the Q4 2017 window. The 2017 Q3 case is a secondary Strong Exports anchor documenting that the pattern operates across multiple macro regimes.

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How to use the signal today

As of October 30, 2026, the composite reads plus 0.108 – Normal band, 34 trading days running. USDA Weekly Export Sales to Japan for beef is tracking near the two-year baseline. No strong demand-pull signal firing. CME Live Cattle trades in the $220-230 range.

The current reading is well below the phase +1 threshold of +0.3. Historical Phase +1 delivers +0.99 pp above baseline; the current Normal reading does not deliver that edge. Monitor Thursday WES releases for Japan sales acceleration into the Strong Exports 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 CFTC Positioning Signal**. Commercial NET hedge regime read.

- **FAO Cereal Price YoY Signal**. Global grain-stress feed-cost transmission overlay on the supply side.
- **USDA Cattle-on-Feed monthly reports**. Direct US-supply confirmation.

For the current Normal reading, this signal is NOT a direction driver. The signal matters when it fires into the Strong Exports band – watch for Thursday WES releases for Japan sales acceleration.

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Methodology notes

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

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 +0.059 at p-value 2.54e-8 (n = 8,989 trading days). Phase +1 state-conditional per-day mean fwd60d plus 2.01 percent, hit 60.8 percent (+0.99 pp above +1.02 percent baseline). Phase 0 mean fwd60d plus 1.09 percent, hit 55.6 percent. Phase −1 per-day mean fwd60d plus 0.57 percent, hit 51.2 percent (-0.45 pp below baseline).

Independence test. Non-overlapping (every-60d) sampling yields Spearman IC +0.131 at p-value 0.11 across 150 independent observations – borderline, closest to clearing the 0.05 threshold among all demand-side overlays in the LC stack (vs ground beef retail p=0.44, processed foods PPI p=0.88).

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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 JAPAN. It does not include other US beef export destinations: South Korea (1 buyer, 25% of exports), 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. A Japan-specific signal is a partial view of the global demand-pull space.

Second, the signal does NOT read US domestic demand. BLS ground beef retail CPI (Z3517) and processed-foods PPI (Z3276) cover the domestic consumer side. Japan export signal is complementary – when Japan 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.

Broader caveat: this is Grade B+ demand-pull signal. Daily IC is significant; non-overlapping independence test is borderline (p=0.11, closest to clearing threshold in the demand-overlay stack). The

signal belongs in the LC stack as the near-term 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.