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Lean Hogs Pork Cold Storage Drawdown

Pork sitting in a freezer reveals who is buying it. When freezers are drawing down fast, Lean Hogs tend to rally.

By **David Stendahl**

THE THESIS IN ONE SENTENCE

Pork sitting in US freezers reveals who is buying it. When freezers are drawing down fast, something is pulling the pork out — usually China (which accounts for roughly half of US pork export flow) or a disease shock that tightens domestic supply. Lean Hogs tend to rally after these demand pulls. When freezers are building above their seasonal norm, the opposite holds: oversupply has historically preceded Lean Hogs declines. This signal reads the USDA monthly Cold Storage print against the same-month five-year seasonal norm, scores it on a bounded regime scale, and flips the sign so bullish-LH readings print positive.

The current reading is minus 0.223, in the Normal band — a modest bearish lean (pork is modestly above the five-year seasonal norm), but not a sized signal in either direction. The signal has stayed inside the Normal band for 230 consecutive sessions since December 1, 2025.

> *The sharpest edge lives in the deep-draw and deep-build tails. In the middle band, the signal is quiet; that is where it is today.*

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METHODOLOGY — HOW IT WORKS, IN TWO PARAGRAPHS

Monthly input: USDA NASS Cold Storage pork total, published the 23rd of each month at 11:00 AM Eastern. The engine computes the rolling five-year same-month average (with the current month excluded so there is no look-ahead), computes the current-month deviation from that baseline, z-scores the deviation at monthly scale over a 120-month rolling window, inverts the sign so pipeline tightness (draw below norm) reads positive, then bounds with tanh. The result is a reading between minus 1 and plus 1 that tells you how far US pork cold storage sits from its five-year seasonal norm, in the direction that is bullish or bearish for Lean Hogs.

State thresholds apply at plus-or-minus 0.5 (moderate) and plus-or-minus 0.9 (extreme). When the signal pushes above plus 0.9 (deep draw below norm), Lean Hogs have historically rallied; when it falls below minus 0.9 (deep build above norm), Lean Hogs have historically declined. Everywhere else, including moderate readings in either direction, the signal is quiet and does not carry a sized directional edge.

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DOES THE SIGNAL ACTUALLY WORK

The right benchmark for a Lean Hogs demand-pull signal is Lean Hogs forward returns, not SPY or any cross-asset proxy. The modern post-2015 era is where the signal fires cleanest; the US-China pork trade relationship was rewired by the 2013 Smithfield-WH Group acquisition and the 2018-19 ASF outbreak, so the signal reads differently before and after that transition.

The modern-era edge (post-2015 EXTREME readings), Lean Hogs forward 60-day baseline mean +2.4% and median +0.7% across the 2,915 valid-forward sample days

Deep draw (signal above +0.9, "pork pulling tight below seasonal norm"): 500 trading days (17.2% of post-2015 history), Lean Hogs averaged plus 11.8 percent over the following 60 days — a materially sized bullish edge of plus 9.4pp above the baseline mean.

Deep build (signal below −0.9, "pork accumulating above seasonal norm"): 87 trading days (3.0% of post-2015 history), Lean Hogs averaged minus 13.8 percent over the following 60 days — a materially sized bearish edge of minus 16.2pp below baseline. One caveat: the deep-build case has only fired once in modern history (2015), so we treat the point estimate as directionally mechanism-correct but statistically wide.

Use for sizing? Yes. This is the authoritative panel for composite builders. Full tilt on EXTREME readings, flat on MODERATE and NORMAL where the forward-return separation is noise.

Why we lead with the post-2015 slice rather than the pooled 36-year number: the pre-2015 US-China pork trade was fundamentally different (pre-ASF, pre-Smithfield-WH), and the signal's direction flipped around 2015. The pooled 36-year linear correlation to Lean Hogs forward returns is small (information coefficient near 0.03 at the 60-day horizon) because pre-/post-2015 cancel at the pooled level. Trade this signal in the modern post-2015 regime; the pre-2015 era is methodological context, not current trading guidance.

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THREE HISTORICAL CASES THAT FRAME HOW TO READ THIS SIGNAL

Case 1: 2014 PEDv shortage (the archetype inventory-draw rally)

In 2014, Porcine Epidemic Diarrhea Virus had killed millions of pre-weaned pigs across the US producer base through 2013. The finished-hog supply tightened sharply through Q1 and Q2 2014. Pork cold storage drew below the five-year same-month average as domestic consumers and export destinations pulled inventory faster than the historical seasonal pattern. Lean Hogs rallied to an all-time high above 1.33 dollars per pound in May 2014.

This is the archetype for the demand-pull mechanism: storage draws, Lean Hogs rally. The 2014 PEDv episode falls in the pre-2015 era, but is one of the pre-era cases where the modern mechanism was already visible.

Case 2: 2018-19 ASF import surge (the cleanest China-export-pull case)

African Swine Fever decimated the Chinese hog herd through 2018-19 — approximately 50 million head died or culled, roughly 25 percent of the global herd. Chinese pork imports surged, and US pork export flows to China pulled US cold storage below the five-year seasonal norm. Lean Hogs rallied from the 0.60 August 2018 low to the 0.95 April 2019 high — a 58 percent rally in eight months.

This is the cleanest modern-era demand-pull case on record and marks the start of the post-2015 regime in which the signal fires most reliably.

Case 3: 2022 export pull (the honest counter-example)

Through 2022, US pork cold storage drew below the five-year seasonal norm as export flows to Mexico, Japan, and Korea pulled finished pork faster than the historical pattern. The signal moved into deep bullish-LH territory. But Lean Hogs did NOT follow the typical demand-pull rally — prices declined from mid-2022 109-dollar range into 2023 lows under 80 dollars per hundredweight.

Cross-currents included elevated feed costs from the Russia-Ukraine conflict (which compressed the hog-corn ratio) and Chinese import weakness as the ASF-era rebuild displaced US exports. The 2022 case is the honest reminder that even a mechanism-consistent signal is not a guarantee; it needs confirmation from the broader LH stack, particularly CFTC positioning and the Hog-Corn Ratio.

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HOW TO USE THE SIGNAL TODAY

The signal reads minus 0.223 in the Normal band. It is not firing. Three reader modes:

If you already have a view on Lean Hogs

This signal is neither confirming nor contradicting. If you are bullish Lean Hogs on the back of tight breeding herd, favorable hog-corn ratio, or crowded-short CFTC positioning, the Pork Cold Storage signal is quiet on that view. The next monthly USDA Cold Storage release (October 23) could change that: a storage reading well below the seasonal norm would push the signal into bullish territory; a reading well above the norm would push it into bearish territory.

If you trade the monthly release

Position for a Lean Hogs rally when the signal pushes above plus 0.9 (deep draw). Position for a decline when it pushes below minus 0.9 (deep build). Everywhere else — including moderate readings in either direction — the signal is quiet and should not drive the call. The signal updates once a month after the USDA Cold Storage release; the historical edge plays out over roughly the next 30 to 90 days.

If you build a composite

Use this as the modern-era demand-pull specialist in a Lean Hogs composite, paired with the Pork Cold Storage YoY sibling for both-sided coverage. Natural weight is 7 to 9 percent. Bucket on the EXTREME threshold rather than linear-correlation sizing — the linear information coefficient blurs across the pre-/post-2015 structural break.

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WHERE THIS SIGNAL FITS IN THE BROADER LEAN HOGS TOOLKIT

The signal composites with six other Lean Hogs lenses. The Pork Cold Storage YoY sibling reads the same inventory series on a shorter baseline — pair for both-lenses coverage of pork storage dynamics. The Hog-Corn Ratio reads producer-margin stress upstream of the breeding-herd response. The Breeding Herd Lead reads the quarterly USDA breeding-inventory count as a continuous structural trend. The Hogs and Pigs Breeding Surprise fires on each quarterly release day with ten-day exponential decay. The CFTC Positioning signal reads managed-money net position as a contrarian weekly overlay — crowded-short positioning paired with a deep-draw read from this signal has historically produced the strongest bullish-LH setups (2020 COVID restart, 2018-19 ASF). The Weekly Hog Slaughter YoY provides a diagnostic context layer on real-time supply flow.

This signal's role in the composite is the modern-era demand-pull detector via the five-year seasonal baseline. Natural weight is 7 to 9 percent.

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WHAT THIS SIGNAL DOES NOT COVER

Six honest limits.

The signal does not time daily or weekly Lean Hogs moves. The monthly cadence of the underlying NASS Cold Storage input means the signal moves twelve times per year; the regime-axis edge is concentrated at the sixty-day forward horizon. For same-month or same-week trading horizons, use the daily cutout stack on the Lean Hogs news page.

The signal reads different directions pre-2015 and post-2015. Trade this signal in the modern post-2015 regime only. The pre-2015 era is methodological context and is documented inside the research brief for completeness, not for current sizing.

The signal does not meaningfully separate forward returns in the Normal and Moderate bands. Trade confirmed EXTREME readings only.

The signal does not substitute for the YoY-framed sibling signal. The five-year baseline catches different episodes than the YoY frame; pair for coverage.

The deep-build case has only fired once in modern history (2015). The point estimate (-13.8 percent fwd60d) is directionally mechanism-correct but statistically wide; treat as a one-case anchor until it fires again.

NASS Cold Storage prior-month revisions are routine. Wait for the subsequent print before sizing up on a fresh release.

DISCLAIMER

Not investment advice. Hypothetical results have inherent limitations. Historical returns do not predict future performance. Readers should consult a licensed investment professional before making any trading decision, and should read the full disclaimer within the signal page and this research brief.

DATA SOURCE

USDA National Agricultural Statistics Service, Cold Storage monthly report, pork total line. CME Lean Hogs front-month continuous back-adjusted price series for forward-return calibration.