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Lean Hogs Canadian Feeder Pig Imports

Pigs crossing the US-Canada border today are the US pork supply story for next spring. The number tells you something about Lean Hogs five to six months out.

By **David Stendahl · Market Lab Analytics**

THE THESIS IN ONE SENTENCE

Every year, roughly five to six million weanling pigs are trucked out of Manitoba down into Iowa and Minnesota finishing yards. A farmer in Winnipeg breeds the sow; the piglets are weaned at three weeks and crossed into the US where corn is cheaper, where they spend the next five to six months growing to market weight. Then they walk into a Smithfield or Tyson packing plant and become US pork supply.

That means the trucks crossing the border this month are not today's Lean Hogs supply — they are the supply story for next spring. If Canadian producers slow their shipments now because sow numbers are falling or because US finishing margins look poor, you will see tighter US pork five to six months from now, and Lean Hogs futures tend to rally into that tightness. If shipments accelerate, the opposite happens.

The current reading is minus 0.04. Canadian flows are tracking right on the five-year average, so this signal has nothing to tell you right now beyond "supply pipeline looks normal."

> *This is a listen-mode signal most of the time. It earns its 20 percent weight inside the LH Supply Census Composite*

> *when the data breaks out of normal — not when it sits inside it.*

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METHODOLOGY — THE ENGINE, IN TWO PARAGRAPHS

Data source: USDA Economic Research Service monthly "US Swine Imports from Canada" dataset, which captures live feeder pig movements across the northern border. We pull the monthly head count, compute the year-over-year percentage change, then z-score that change over a trailing 5-year window to put the series on a consistent scale regardless of absolute flow levels.

Finally we multiply by minus one (sign flip) so that a decline in imports reads positive, aligning the signal's sign convention with Lean Hogs' expected direction. Score is bounded by a tanh transform on the raw z to prevent single-month outliers from dominating. Series updates on roughly the third week of each month, following USDA's publication cadence. State thresholds apply at plus-or-minus 0.2 (moderate) and plus-or-minus 0.5 (extreme).

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DOES THE SIGNAL ACTUALLY WORK — THE HONEST GRADE

Three Truthsayer grades.

PRED equals B-minus. Linear information coefficient of plus 0.073 at the 20-day forward horizon, statistically significant across the full sample but with a small effect size. On any single month the signal explains a modest fraction of forward Lean Hogs movement — it is real, but small. For scale, the baseline Lean Hogs 60-day forward return across the 3,470-month sample has a mean of plus 1.60 percent and a median of plus 0.23 percent; the signal's standalone edge is small enough that even on its best days it moves the needle only a fraction of a percent above that baseline.

REGIME equals F. When we partition readings into tails versus body of the distribution, forward returns in the tails do not separate meaningfully from forward returns in the middle. That is the costliest grade on this signal — it means the "when it is extreme, it works especially well" story we would hope for is not strongly supported by history. Over the full sample, both the collapsing-imports bucket and the surging-imports bucket deliver forward 60-day Lean Hogs returns within a percentage point of the normal-band mean.

STAB equals C. Coefficient sign and magnitude hold across time slices, but the signal has long stretches near zero (like today) where it contributes little.

Net implication for sizing: cap at 20 percent weight inside the LH Supply Census Composite, never trade standalone, do not pyramid on this signal in isolation. The composite — not this component — is what you would act on, and only when the composite as a whole is giving a sized read.

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THREE HISTORICAL CASES THAT FRAME HOW TO READ THIS SIGNAL — ONE WIN, TWO COUNTER-EXAMPLES

Case 1: December 2025 to March 2026 — the clean modern-regime win

Through late 2025, Canadian feeder pig imports fell year-over-year on a mix of continued PRRS recovery and shifted shipping economics. The signal entered a collapsing-imports run that extended from mid-December 2025 to mid-March 2026 — 62 trading days at a positive reading. Lean Hogs forward 60-day return from the state-entry date was plus 8.25 percent, with the extended 120-day window capturing the full biological-pipeline response.

This is the clean modern-regime case: a sustained collapse in Canadian flows translated to a tightened US supply picture five to six months later and a materially positive Lean Hogs move. It is the only case in the modern sample where the signal fires on its own narrative without a dominant external shock, and it is the kind of setup we weight the signal for inside the composite.

Case 2: November 2020 — the COVID counter-example

The pandemic plant shutdowns at JBS, Smithfield, and Tyson in Q2 2020 transiently reduced US finishing demand. Canadian producers slowed shipments through late 2020, and the signal moved to mildly positive readings during November 2020. But Lean Hogs futures FELL 10.3 percent over the next 60 trading days as the US packer-closure dynamic and backed-up hog inventory dominated the near-term price response.

This is the honest counter-example — a signal reading that would have put a retail reader on the wrong side of Lean Hogs for the following quarter if traded in isolation. The mechanism (reduced inbound flow) was real but the causal chain assumed by the signal (Canadian flow collapse → tight US supply) was overridden by a dominant ex-

ternal shock (US plant closures and parallel packer-closure hog backup). This case is why Rachel's framing in the yaml body — "the signal is NOT contradicting your view today" and "trade the composite, not this component" — matters so much to a retail reader during macro-crisis regimes.

Case 3: May 2024 — the PRRS-mechanism-adjacent case

Porcine Reproductive and Respiratory Syndrome (PRRS) outbreaks in Manitoba sow herds through Q1-Q2 2024 reduced piglet numbers available for export. Canadian weanling shipments slowed. The signal moved to mildly positive readings in May 2024. Lean Hogs forward 60-day return from these readings was plus 3.39 percent — directionally correct but modest.

This case fits the "border-closure limitation" bucket called out in the honest limits section. The disruption was real and mechanism-relevant, but the signal's 5-year z-score baseline was partially compromised by the ongoing recovery pattern, and the fwd60d edge was not materially larger than the baseline Lean Hogs forward return of plus 1.60 percent mean / plus 0.23 percent median. A reader following Rachel's "20 percent weight, never standalone" rule inside the composite would have captured this move without pyramiding on this signal in isolation.

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HOW TO USE THE SIGNAL TODAY

The signal reads minus 0.04. It is in the Normal band. It is in listen-mode, not act-mode. Two reader modes:

If you already have a view on Lean Hogs

This signal is NOT contradicting your view today. Reading is essentially flat, so Canadian border traffic is not telling you to lean bullish or bearish on Lean Hogs five to six months out. Whatever view you brought to the market from basis, hog-corn margin, or heat stress — this signal is sitting on the sidelines and letting those other factors drive. If any of them is pulling you long or short, size on them, not on this.

If you want to actually act on this signal

Not standalone. This signal lives inside the LH Supply Census Composite at 20 percent weight. The composite — not this signal — is what you would consider acting on, and only when the composite as a whole is giving a sized read. Today's minus 0.04 reading contributes almost zero to the composite's blended score, which is the correct behavior: when there is no information from the Canadian pipeline, the com-

posite leans on the other three inputs. Watch for the next USDA ERS monthly release — a sharp drop or jump is what moves this signal out of neutral.

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WHERE THIS SIGNAL FITS IN THE BROADER LEAN HOGS TOOLKIT

The Canadian feeder-pig signal is the leading-pipeline input in the LH Supply Census Composite, weighted at 20 percent. Composite partners: Lean Hogs front-second basis (45 percent, the anchor), hog-corn ratio (25 percent, feed-margin lens), and NC heat stress (10 percent, weather-shock overlay). The four axes are orthogonal by design — basis reads price discovery, hog-corn reads producer economics, heat stress reads a seasonal supply shock, and Canadian flows read the long-horizon supply pipeline.

This signal's role is to pull on the time horizon the other three miss. The basis signal is instantaneous. The hog-corn signal is daily to monthly. The heat-stress signal is weather-driven. Canadian imports lead by five to six months via the biological pipeline. That diversification is what earns the 20 percent weight even with a B-minus/F/C standalone grade.

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WHAT THIS SIGNAL DOES NOT COVER

Six honest limits.

The signal updates once a month on a three-week lag. Daily chart movement between USDA releases reflects stale information. Do not read day-to-day drift as the signal firing.

The regime grade is F. Extreme readings do not deliver materially better forward returns than middle-of-band readings. The signal's standalone usefulness in its tails is weaker than the overall information coefficient suggests.

The effect size is small. Linear IC of plus 0.073 is statistically real but modest. This signal is a 20 percent composite member, not a standalone trading edge.

Policy breaks. Any US-Canada trade policy shock, border inspection regime change, or disease-related border closure (ASF, PRRS, FMD) can disrupt the physical flow in ways that make the recent five-year z-score window a poor baseline for several months.

Co-movement with other composite members. During pork-cycle expansions and contractions, this signal can briefly track in the same direction as the basis or hog-corn margin members, reducing composite diversification exactly when a reader might assume more inputs equal more independent evidence.

No intra-month warning. Because the data is monthly and lagged, the signal cannot warn you about a border-closure event or a sudden producer-shipping-decision shift until the following month's USDA release, which can be up to seven weeks after the physical event occurred.

Pre-2013 data is sparse. The USDA ERS Canadian swine import series is thin before 2013, with the signal engine emitting raw-z values near zero on roughly 62 percent of pre-2013 rows. All back-test numbers in this brief are computed on the real-signal window starting March 2013 (N equals 3,422 observations). The pre-2013 period is NOT included in the baseline Lean Hogs forward-return calculations shown above; readers interested in the long-sample baseline should note that the pre-2013 median Lean Hogs 60-day forward return is slightly different from the modern-era number (approximately plus 0.23 percent modern-era median versus closer to minus 0.26 percent on the pre-2013 subset).

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 Economic Research Service "US Swine Imports from Canada" monthly dataset. CME Lean Hogs first-nearby back-adjusted continuous for forward-return calibration.