The C Corn World Ending Stocks YoY Signal, Grade B+ Global Balance Lens

Why USDA FAS PSD world corn ending stocks year-over-year trend, sign-inverted so tightening reads as positive, is a Grade B+ fundamental global supply-balance signal on CBOT Corn forward returns with asymmetric directional structure.

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The signal and why it matters today

The USDA Foreign Agricultural Service publishes monthly Production, Supply, and Distribution (PSD) tables aggregating world corn ending stocks across all producing countries. When world ending stocks contract year-over-year, global corn balance tightens – supply is running short of demand, buyers compete for scarce physical inventory, and futures firm.

When stocks expand YoY, global balance loosens – supply outruns demand, inventories build, and futures soften. The YoY trend of world ending stocks is the single cleanest fundamental read on global corn supply/demand balance.

This signal reads USDA FAS PSD monthly world corn ending stocks (aggregating all producer countries), computes the YoY percent change, z-scores on 1260-day rolling window with 252-day minimum sample, sign-INVERTS the result (so TIGHTENING STOCKS reads as POSITIVE composite = bullish corn), and bounds with tanh.

Daily Spearman IC against CBOT Corn fwd60d is plus 0.099 at p-value 1.2e-11 across 4,712 trading days (2007-11 onward) – strongly significant daily. Non-overlapping (every-60-day) IC is plus 0.200 at p-value 0.077 across 79 independent samples – same sign and strong magnitude but just above the strict 0.05 bar.

Phase stats are cleanly monotone with wide spread: Phase +1 (Tight Stocks) delivers plus 1.76 percent fwd60d, plus 0.99 pp above the plus 0.77 percent baseline. Phase –1 (Loose Stocks) delivers minus 2.28 percent, minus 3.05 pp below baseline. 4.04 pp directional spread – the asymmetry shows loose-stocks firing is a sharper bearish signal than tight-stocks is bullish.

Current reading: Tight Stocks moderate at composite plus 0.335, 54 trading days running. World corn ending stocks have tightened year-over-year per the latest USDA FAS PSD release. Modest bullish-C lean.

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How the global balance mechanism composes

USDA FAS publishes the PSD tables monthly as the single cleanest aggregated reading of global corn supply and demand. The accounting identity: World ending stocks = beginning stocks + production + imports minus total use minus exports. Aggregated across all producer countries, the series captures the full global balance.

The YoY trend captures the PACE of balance change, which is what forward prices actually track. A world ending stocks number that is 10 percent lower than one year ago is a bullish signal regardless of absolute stock level. The YoY framing normalizes for secular growth in global consumption.

The sign-inversion is the key design choice. Raw YoY stocks go NEGATIVE when stocks tighten (bullish for corn). The signal INVERTS so tight stocks read as positive composite – aligning with the "positive = bullish" convention across the Market Lab signal library.

Tight Stocks (positive composite, Phase +1) means world ending stocks are contracting year-over-year. Historically coincides with major supply shocks: 2010-13 compound drought years, 2022 Russia-Ukraine conflict + SA drought.

Historical pattern: Phase +1 delivers plus 0.99 pp above baseline.

Loose Stocks (negative composite, Phase –1) means world ending stocks are expanding year-over-year. Historically coincides with: 2017-18 US + SA record production years, 2016 bumper global crops.

Historical pattern: Phase –1 delivers minus 3.05 pp below baseline. The asymmetric phase edges are a key feature – loose-stocks firing is the SHARPER bearish signal; tight-stocks firing is a more modest bullish signal.

Normal regime (Phase 0) is the equilibrium zone – stocks moving sideways year-over-year.

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What the state-conditional returns have actually done

> **Reference baseline – C fwd60d (unconditional)**
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> CBOT Corn back-adjusted continuous forward-60-day return baseline over the live-signal window: mean plus 0.77 percent, median plus 1.20 percent, standard deviation 10.6 percent. Sample window 2007-11-16 through 2026-10-30, 4,712 trading days with observable fwd60d.

Per-day sampling (used for daily Spearman IC):

Phase plus 1 (Tight Stocks, composite greater than plus 0.3) covers 2,017 trading days – 42.8 percent of the sample. Per-day mean fwd60d plus 1.76 percent. OUTPERFORMS baseline by plus 0.99 pp.

Phase 0 (Normal) covers 2,042 trading days – 43.3 percent of the sample. Per-day mean fwd60d plus 0.77 percent (near baseline).

Phase minus 1 (Loose Stocks, composite less than minus 0.3) covers 653 trading days – 13.9 percent of the sample. Per-day mean fwd60d minus 2.28 percent. UNDERPERFORMS baseline by minus 3.05 pp.

Clean monotone directional pattern. 4.04 pp directional spread. Asymmetric structure: Phase –1 edge much sharper than Phase +1 edge. The signal is primarily a BEARISH early-warning indicator – loose-stocks regime signals supply overhang clearly; tight-stocks provides modest directional edge.

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Three cases that frame how to read this signal

Case 1: 2012-13 Tight Stocks extreme – post-2012 US drought impact on world.

Firing period: Q3 2012 through 2013 at composite near plus 0.75. Context: The 2012 US drought cut world ending stocks YoY materially. The compound US drought + SA drought years following drove sustained Tight Stocks regime. CBOT Corn rallied to historic highs above $8/bu. Canonical Tight Stocks anchor.

Case 2: 2017-18 Loose Stocks extreme – global surplus.

Firing period: Q3 2017 through 2018 at composite near minus 0.80. Context: World ending stocks expanded materially YoY as South American and US production both hit records. The compound record-production years drove sustained Loose Stocks regime. CBOT Corn moved sideways to down through 2018. Canonical Loose Stocks anchor.

Case 3: Current – Tight Stocks moderate.

Firing date: Mid-August 2026 at composite plus 0.335, 54 trading days running. World corn ending stocks have tightened year-over-year per the latest USDA FAS PSD release. CBOT Corn trades the $440-455 cents per bushel range. Modest bullish-C lean.

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How to use the signal today

As of November 1, 2026, the composite reads plus 0.335 – Tight Stocks moderate firing, 54 trading days running. World corn ending stocks have tightened year-over-year per the latest USDA FAS PSD release. CBOT Corn trades the $440-455 cents per bushel range. Modest bullish-C lean.

Historical Phase +1 delivers plus 0.99 pp above baseline (modest bullish). Pay close attention to the November WASDE release and subsequent PSD updates – a continuation of tightening would amplify the signal; a reversal to Normal would weaken the bullish lean.

Pair with four confirming reads for direction:

- **C Corn Weather Drought Composite Signal**. US observed weather (Grade A companion ship).
- **C Corn La Nina / PDO Amplifier Signal**. Climate-pattern lead (Grade A companion ship).
- **C Corn Return Skewness Mean-Reversion Signal**. Price statistics (Grade A companion ship).
- **CFTC Managed-Money Net Positioning Signal**. Positioning extremes.

The World Ending Stocks signal is the fundamental supply-balance layer; the pairing signals cover weather / climate / technical / positioning. When all four align on direction, corn conviction is high.

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Methodology notes

Data source. USDA FAS PSD (Production, Supply, Distribution) monthly world corn ending stocks aggregate across all producer countries, published around the 10th of each month for the prior marketing year balance.

Signal construction. 12-month YoY percent change on monthly world ending stocks. Z-scored on 1260-day rolling window with 252-day minimum sample. Sign-INVERTED (tight stocks = positive composite = bullish corn). Bounded with tanh. Monthly values reindex to daily with forward-fill. 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. Target: CBOT Corn back-adjusted continuous.

Validation statistics. Daily Spearman IC against C fwd60d is plus 0.099 at p-value 1.2e-11 across 4,712 observations – strongly significant daily. Phase +1 (Tight Stocks) per-day mean fwd60d plus 1.76 percent (plus 0.99 pp above plus 0.77 percent baseline). Phase 0 (Normal) mean plus 0.77 percent (near baseline). Phase −1 (Loose Stocks) per-day mean minus 2.28 percent (minus 3.05 pp below baseline). 4.04 pp directional spread. Asymmetric structure: Phase −1 edge much sharper than Phase +1 edge.

Independence test. Non-overlapping (every-60d) sampling yields Spearman rho plus 0.200 at p-value 0.077 across 79 independent observations – SAME SIGN and strong magnitude but just above the strict 0.05 bar. Grade B+ reflects daily strong + non-overlap marginal same-sign.

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What this signal does not cover

First, non-overlap rho MARGINAL at p-value 0.077 (same sign and strong magnitude but just above the strict 0.05 bar).

Second, monthly PSD release cadence with approximately 10-day publication lag means slow signal updates.

Third, PSD in-estate historical data starts 2007-11. 19-year sample, which is shorter than the 36-year samples for the companion weather and climate signals.

Fourth, asymmetric phase edges (Phase −1 much sharper than Phase +1) suggest the signal is primarily a BEARISH early-warning indicator – loose-stocks regime signals supply overhang clearly, while tight-stocks regime provides more modest directional edge.

Broader caveat: Grade B+ fundamental global supply-balance signal with marginal non-overlap. Pair with weather, climate, technical, and positioning signals for stacked 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 Foreign Agricultural Service Production Supply Distribution monthly world corn ending stocks; CBOT Corn back-adjusted continuous target. State-conditional statistics computed through 2026-10-30.