The GDELT Russia-Tone Composite, And Why the Gold Edge Reversed on the A-Priori

Why the GDELT Russia country-tone z-score, read as a geopolitical regime lens, has delivered its strongest conditional edge on SPY not gold, and the twist that the engine's sign-flip construction did not produce the a-priori safe-haven gold signal.

David Stendahl · Market Lab Analytics · November 6, 2026

What this signal is

Every war starts with a tone shift in the news coverage. GDELT, a monitoring project that processes thousands of global news sources daily, measures that tone systematically. For Russia specifically, the mean sentiment across all Russia-tagged event coverage sits around minus 5 to minus 10 on a scale from minus 100 to plus 100 during quiet periods.

On the day Russia annexed Crimea in February 2014, it dipped to minus 20. On February 25, 2022, the day after the full-scale invasion of Ukraine, it collapsed deeper still.

This signal reads the Russia country-tone, applies a 504-day rolling z-score with 126-day minimum population, inverts the sign so negative tone becomes positive composite, and tanh-bounds the output between minus one and plus one. When the composite climbs, Russia-related news tone is deeply negative (stress regime). When it falls, Russia-related news tone has entered a relief phase.

On February 25, 2022, the composite hit near-saturation at plus 0.9896. Gold had spiked to 2,050 dollars on the invasion day. Gold forward 60 days: minus 2.11 percent. Gold forward 126 days: minus 8.38 percent as the Fed hiked aggressively and the dollar strengthened to its multi-decade high. On February 19, 2015, in the Minsk II aftermath, the composite fired at the stress ceiling again. Gold rallied modestly through Q2 2015 before correcting as the Fed signaled rate hikes. On February 19, 2025, during Ukraine-ceasefire negotiations, the composite hit its opposite tail at minus 0.9966, one of the deepest Russia-tone relief prints in the sample. Gold rallied plus 73.02 percent over the next 252 days.

Here is the twist. The engine's a-priori read is that Russia stress equals flight-to-safety equals bullish gold. The sign-flip construction was intended to deliver a positive bullish-gold signal in stress regimes. The 13-year parquet votes a different story at the 60-day horizon: Spearman rank correlation on gold forward returns is minus 0.1416, directionally opposite the a-priori safe-haven read. What the data does vote for is a SPY-conditional pattern where both tails outperform baseline, with the Russia-relief tail (phase minus one) delivering the strongest conditional SPY forward returns in the sample at HAC

t plus 5.95. Read on for the three signature cases, the state-conditional evidence, and the four caveats that mark the limits of the lens.

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How the inputs compose

The source is the GDELT 1.0 Events daily country-aggregate for Russia (FIPS code RS), which rolls up mean tone (approximately minus 100 to plus 100 scale), event count, mean Goldstein score (minus 10 to plus 10 cooperation-conflict), conflict event share, and protest event count across all articles tagged to Russia each day. The engine takes mean tone, applies a 504-day rolling z-score with 126-day minimum population, inverts the sign so negative tone becomes positive composite, and tanh-bounds the output between minus one and plus one.

The regime state machine maps the composite to three bands at the plus-or-minus 0.3 threshold. Russia Stress above plus 0.3 (1,520 trading days, 30.3 percent of the sample). Baseline between minus 0.3 and plus 0.3 (2,400 trading days, 47.9 percent). Russia Relief below minus 0.3 (1,034 trading days, 20.6 percent). The three-way integer state code (plus one, zero, minus one) tracks these bands for downstream playbook consumption.

The engine computes four confirming features alongside the primary composite. Five-day velocity, which captures whether the regime is accelerating or stabilizing. Volatility regime, computed as the ratio of 20-day to 252-day composite standard deviation. 63-day rolling correlation between the composite and gold daily returns. And 63-day lag-1 autocorrelation. Half-life of regime persistence implied by the autocorrelation is approximately 90 trading days.

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Three cases that frame how to read this signal

Case 1: February 2015. Minsk II aftermath. Modest gold response, sustained Russia-stress regime.

Firing date: composite reached the saturated Russia-stress ceiling on February 19, 2015. Composite reading: plus 1.0000. February 2015 was the Minsk II ceasefire negotiations period, plus the ongoing Donbas conflict. Russia tone remained deeply negative across sustained conflict coverage. Gold had rallied in Q1 2015 but corrected through mid-2015 as the Fed signaled rate hikes. SPY continued to grind higher through the 2015 bull-market phase before the August 2015 China-devaluation correction. Gold ended the year lower than at the February 2015 stress print.

The 2015 case is instructive on the limited gold edge. The Russia-stress regime was in place for most of 2014-2015, yet gold corrected approximately 20 percent from the November 2014 to July 2015 period. The signal fires on sustained Russia-tone stress but does not translate into a bullish-gold forward pattern because real-rates (DGS10, DFII10) and dollar (DXY) channels have dominated.

Case 2: February 2022. Ukraine invasion. Gold spikes intraday then corrects minus 8 percent over 126 days.

Firing date: composite reached near-saturation at plus 0.9896 on February 25, 2022, the day after the February 24 Russian full-scale invasion of Ukraine. Russia tone collapsed on invasion coverage to

the deepest print in the available sample. Gold had spiked to 2,050 dollars on invasion day. Forward 60-day gold return: minus 2.11 percent. Forward 126-day gold: minus 8.38 percent. Forward 252-day gold: minus 3.83 percent. SPY forward 60 days: minus 9.33 percent (Q1-Q2 2022 broad correction). SPY forward 126 days: minus 7.41 percent. SPY forward 252 days: minus 9.48 percent.

The 2022 case is the canonical Russia-stress event in the sample. Despite the a-priori "stress bullish gold" intuition, gold corrected over 60-126 days as the Fed hiked 425 basis points through calendar 2022 and the dollar strengthened to the mid-November 2022 DXY peak near 115. The lesson is that geopolitical-stress regimes do not automatically translate to bullish gold at the 60-day horizon; the Fed and dollar channels dominated through 2022-2023 before the 2024 reflation.

Case 3: February 2025. Russia-tone relief. Gold runs plus 73 percent over 252 days.

Firing date: composite reached minus 0.9966 on February 19, 2025, one of the deepest Russia-tone relief prints in the sample. The context was Ukraine-ceasefire negotiations and Russia-US rapprochement signals through early 2025. Russia tone recovered from the sustained-stress regime of 2022-2024. Gold forward 60 days: plus 9.96 percent. Gold forward 126 days: plus 13.85 percent. Gold forward 252 days: plus 73.02 percent. SPY forward 60 days: minus 3.67 percent (February-March 2025 drawdown). SPY forward 252 days: plus 12.48 percent (eventual 2025 recovery).

The 2025 case shows the Russia Relief state's strong gold-forward signature. Russia-relief regimes have historically coincided with sustained gold rallies as the geopolitical safety premium unwound into monetary-demand channels (central-bank buying, ETF demand resumption, real-rates path). The signal does not time the exact gold peak but marks the regime where sustained gold rallies have historically run through. On the forward-SPY lens, the Russia Relief state is the strongest conditional-return state in the sample at HAC t plus 5.95.

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What the state-conditional returns have actually done

The SPY forward-60-day return baseline (unconditional) is mean plus 2.36 percent, median plus 3.45 percent. Standard deviation 7.57 percent. Percent negative 28.0 percent. State-conditional means below are expressed as edges relative to this baseline.

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> **Reference baseline (4,954 SPY-aligned trading days from November 2006 through October 2026)**
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> SPY forward 60-day return baseline (unconditional): mean plus 2.36 percent, median plus 3.45 percent. Standard deviation 7.57 percent. Percent negative 28.0 percent. The engine data covers 5,014 trading days total;

effective GDELT Russia coverage from April 2013. Phase 0 source: signal history parquet joined with SPY end-of-day closes (NYSE Arca).

The signal's Russia Stress state (phase plus one), 1,520 trading days, delivered a mean fwd 60-day SPY return of plus 2.61 percent. That is plus 0.25 percentage points above baseline. The HAC Newey-West t-statistic (lag 60) for this state is plus 3.17, significant at the 1 percent threshold. Percent positive forward 60d was 70.8 percent. The 2015 Minsk II case and the 2016 US election interference regime supply the strongest within-state examples.

The Baseline state (composite between minus 0.3 and plus 0.3), 2,400 trading days, delivered mean plus 1.72 percent. That is minus 0.64 percentage points below baseline. HAC t is plus 1.60, not significant at the 5 percent threshold. Interpretation: flat Russia-tone regimes underperform the unconditional mean because the strong forward-return days are concentrated in the stress and relief tails.

The Russia Relief state (phase minus one), 1,034 trading days, delivered mean plus 3.48 percent. That is plus 1.12 percentage points above baseline. HAC t is plus 5.95, strongly significant at the 1 percent threshold. Percent positive forward 60d was 83.8 percent, well above the baseline. The 2025 Ukraine-ceasefire-era is the canonical relief case.

The spread between the Russia Relief and Russia Stress forward returns is plus 0.87 percentage points at 60 days, with both tails outperforming the Baseline. The Spearman information coefficient of the composite against SPY 60-day forward returns is minus 0.0308 across 4,954 observations (small negative). Against gold 60-day forward returns, the Spearman IC is minus 0.1416 across 4,954 observations. The negative sign on gold is directionally opposite the a-priori safe-haven read; the signal does not deliver a positive bullish-gold edge at the 60-day horizon.

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How to use the signal today

This is a long-horizon regime lens. Readers should not treat today's reading as a this-week trade thesis.

Three best uses.

First, as a regime identifier for geopolitical-episode state. Russia Stress has historically marked the acute phase of a Russia-related geopolitical episode (Crimea 2014, Minsk II 2015, US election interference 2016, Novichok 2018, Ukraine 2022). Readers tracking geopolitical risk can read sustained Russia-stress as a confirming signal that the Russia-coverage environment is in acute-episode territory. Russia Relief has marked the clearing of an episode via diplomatic resolution (Helsinki 2018, early-2025 ceasefire negotiations).

Second, as a confirming lens for playbooks that read gold through a geopolitical channel. The Gold Template Mechanism combines this signal with funding-stress and real-rates lenses into one weighted composite. When this signal fires elevated and the funding-stress signal is also elevated, the setup is the acute-phase of a geopolitical shock transmitting through the US dollar liquidity system (as happened in February-March 2022).

Third, as a divergence check against positioning. When Russia-tone is firing elevated and gold speculator positioning is already stretched long, the signal provides a check on whether the geopolitical regime is confirming the speculative bid or whether the paper market is running ahead of the actual Russia-coverage state.

For allocators considering gold exposure specifically, this signal does not deliver a measurable gold-forward edge (gold IC minus 0.14). The composite should be combined with real-rates and funding-stress signals that have measurable gold-forward edges. For allocators considering SPY exposure, the Russia Relief state is strongly positive on a HAC-adjusted statistical basis (plus 3.48 percent fwd 60d versus plus 2.36 percent unconditional baseline, HAC t plus 5.95).

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Methodology notes

The signal's historical Spearman information coefficient against gold (GLD) forward 60-day returns is minus 0.1416 across 4,954 observations. The sign is negative, directionally opposite the a-priori "stress equals bullish gold" read baked into the engine's sign-flip construction. Against SPY forward 60-day returns is minus 0.0308 across 4,954 observations (small negative).

State-conditional HAC Newey-West t-statistics (lag 60): Russia Stress plus 3.17 (significant at 1 percent), Baseline plus 1.60 (not significant at 5 percent), Russia Relief plus 5.95 (strongly significant at 1 percent). The 504-day rolling z-score construction produces mild autocorrelation in the composite, which is why the Newey-West correction at lag 60 is used.

The engine's polarity annotation reads: "Low GDELT-RS tone (stress) equals bullish GLD after sign-flip." The empirical direction does not confirm this on gold forward returns. The composite is useful as a regime lens on geopolitical state and as a SPY-forward signal (both tails outperform baseline), but it is not a reliable bullish-gold forward signal at the 60-day horizon.

Three signature episodes anchor the Russia Stress calibration: the February 2015 Minsk II aftermath (gold corrected through 2015 despite sustained Russia-stress regime), the February 2022 Ukraine invasion (gold spiked intraday then corrected minus 8.38 percent over 126 days as Fed and dollar channels dominated), and the February 2025 Russia-tone relief trough on the opposite tail (gold fwd 252d plus 73.02 percent).

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What this signal does not cover

Four caveats on the signal's reach, each stated plainly.

First, the effective GDELT Russia coverage begins April 2013. The engine parquet carries zero (template default) for approximately 1,600 trading days before this (November 2006 through March 2013). The 504-day rolling z-score with 126-day minimum population means meaningful signal production starts approximately mid-2014. The effective in-sample calibration window is roughly 12 years. The pre-GDELT era (Soviet dissolution through the early 2000s Russia-oil-oligarch era) is not covered.

Second, the signal does not deliver a positive bullish-gold edge at the 60-day horizon despite the engine's sign-flip construction. Spearman IC against gold forward 60-day returns is minus 0.14, direc-

tionally opposite the a-priori. The 2022 Ukraine invasion is the canonical counter-case: gold spiked intraday but corrected minus 8 percent over 126 days as the Fed and dollar channels dominated. The 2015 Minsk II case is a parallel counter-example: sustained Russia-stress regime through 2014-2015 preceded gold's correction from 1,350 to 1,050 dollars. Readers using this signal for a gold trade should combine it with real-rates and funding-stress signals that have measurable gold-forward edges.

Third, country-tone is noisy at the short horizon. Single-week news shocks can move the composite meaningfully even when the 504-day z-score smooths most of the day-to-day volatility. Short-horizon moves in the composite are not reliable regime signals; the regime signal is the sustained-direction read over 60-plus trading days. Readers should not interpret a 5-day composite swing as a trade trigger.

Fourth, the signal is a regime lens, not a tactical trigger. Half-life of regime persistence implied by autocorrelation is approximately 90 trading days, roughly aligned with the median stress-state run length. Readers should not use the signal as a day-trading trigger or short-horizon stop-loss input. The signal also does not disentangle the source of the Russia-stress regime (Ukraine conflict versus US-election interference versus Novichok-type cases versus diplomatic incidents); the composite reads the aggregate tone and does not differentiate the policy-mechanism in play.

Not investment advice. The analysis in this brief is informational and educational. Signal readings, historical case figures, and empirical statistics are derived from publicly available data (GDELT 1.0 Events operated by the GDELT Project (Georgetown University), NYSE Arca end-of-day closes for GLD and SPY, COMEX back-adjusted continuous gold prices) and are provided without warranty. Hypothetical performance results have inherent limitations. Readers should consult their own financial advisor before making any investment decision. (c) 2026 David Stendahl.