PA Russia Geopolitical Risk

Russia = 40% world palladium via Nornickel. Sanctions + 2022 Ukraine invasion drove PA to record highs. AS_IS . Russia stress = bullish PA via supply risk.

David Stendahl · Market Lab Analytics · November 6, 2026

What this signal is

Russia = 40% world palladium via Nornickel. Sanctions + 2022 Ukraine invasion drove PA to record highs. AS_IS . Russia stress = bullish PA via supply risk.

The composite is bounded between minus one and plus one through tanh. On 2020-05-04 it reached its series maximum plus 0.976 and on 2022-02-02 its series minimum minus 1.000.

Today the composite reads near +0.49. See live page for current state.

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How the inputs compose

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The engine also computes four confirming features: five-day velocity, 60-day volatility regime, 60-day correlation with palladium returns, 63-day lag-1 autocorrelation.

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What the state-conditional returns have actually done

The palladium forward-60-day return baseline (unconditional) is mean plus 3.12 percent, median plus 2.74 percent.

> **Reference baseline (8,960 palladium-aligned forward-60-day windows over the live engine window)**
>
> Palladium forward-60-day return baseline: mean plus 3.12 percent, median plus 2.74 percent. Phase 0 source: Z4601 engine parquet joined with NYMEX palladium back-adjusted continuous closes.

Elevated Russia GPR (Phase +1), 4,285 trading days, returned on average plus 2.48 percent.

Normal (Phase +0), 2,230 trading days, returned on average plus 0.04 percent.

Calm Russia GPR (Phase −1), 2,446 trading days, returned on average plus 0.72 percent.

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Three cases that frame how to read the signal

Case 1: 2020-05 composite series maximum

On 2020-05-04 the composite reached its series maximum plus 0.976. Palladium subsequent 60-day behavior aligned with the elevated russia gpr regime pattern.

Case 2: 2022-02 composite series minimum

On 2022-02-02 the composite reached its series minimum minus 1.000. Palladium subsequent 60-day behavior aligned with the calm russia gpr regime pattern.

Case 3: March 2020 COVID shock window

The March 2020 COVID liquidity shock drove violent regime shifts across palladium drivers. The composite oscillated as the underlying mechanism repriced.

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How to use the signal today

This is a regime detector on a 60-day forward horizon.

Three best uses. First, as a regime filter for palladium exposure (Phase +1 equals elevated russia gpr). Second, as a cross-check against positioning and price-momentum signals. Third, as a transition-window warning, pairing with price-based signals for conviction.

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Methodology notes

Russia = 40% world palladium via Nornickel. Sanctions + 2022 Ukraine invasion drove PA to record highs. AS_IS . Russia stress = bullish PA via supply risk.

The 1990 start reflects the earliest reliable source coverage.

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What this signal does not cover

Four caveats. The signal is a regime detector, not a timing signal. State-conditional means hold on average, not for every individual window. Regime persistence varies with macroeconomic backdrop. Individual windows can run much longer or shorter than mean sample. State-conditional edges are backward-looking empirical averages. Future regimes may differ. The baseline is NYMEX palladium back-adjusted continuous (PA_1240BD).

Not investment advice. Signal readings and empirical statistics are derived from publicly available data sources. (c) 2026 David Stendahl.