Gold and the Total Portfolio:
The Oldest Asset in the New Investment Regime

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Gresham Investment Management LLC

AION Research LLC

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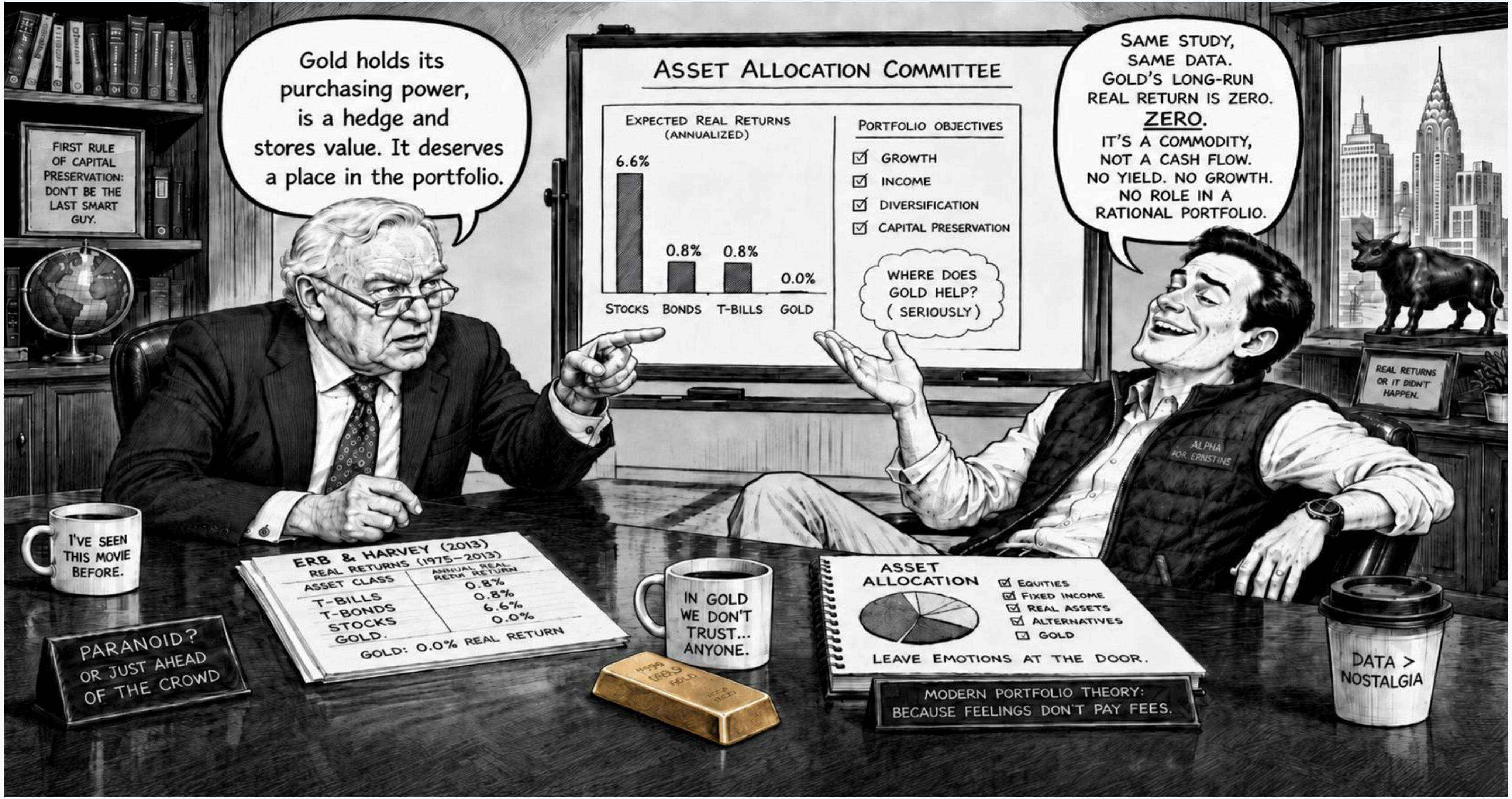
Gold: The Oldest Asset In a New Regime

01

Setting the Scene

Psychological Challenges, Objections, and Past Performance

The Psychological Challenge: Feelings Run Hot About Gold



Source: AI-generated image. Concept and prompt by C.R. Howell, 2026. Aion Research LLC

Competing Assets: Comparative Total Returns & Correlations

Annualized Equivalent Return by Asset Class: 10 years

	Nasdaq	S&P 500	BCOMGC	MSCI EAFE	U.S. High Yield	U.S. Corporate	T-Bills	U.S. Treasuries
Nominal	22.06%	15.65%	13.04%	9.28%	5.88%	2.81%	2.32%	1.05%
Real	18.14%	11.93%	9.41%	9.29%	2.47%	-0.51%	-0.98%	-2.21%
Volatility	22.14%	17.78%	16.21%	5.76%	4.86%	5.84%	0.17%	4.92%
Sharpe	0.89	0.75	0.66	0.47	0.73	0.08	0.00	-0.26

10 Years, Weekly Returns

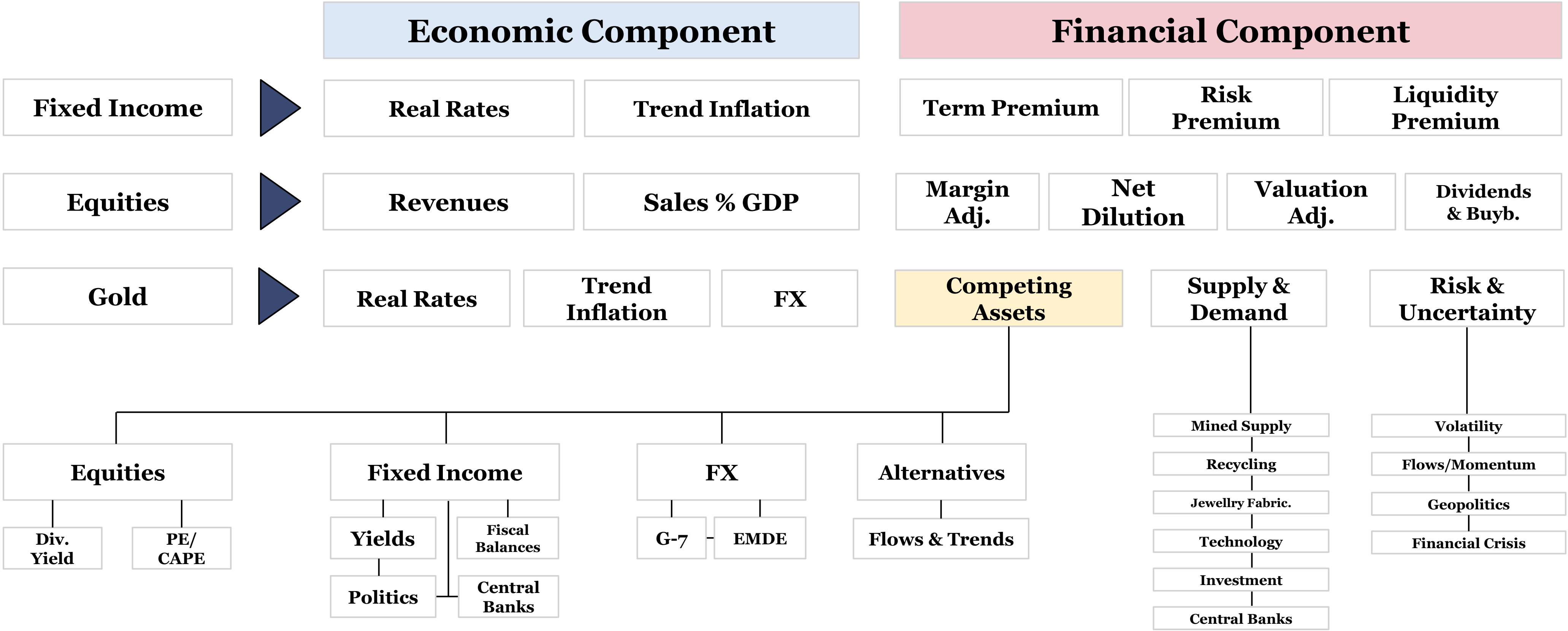
	BCOM Gold	S&P 500	NASDAQ	MSCI EAFE	High Yield	Corporates	Treasuries
BCOM Gold	1.00	0.11	0.11	0.34	0.16	0.14	0.13
S&P 500	0.11	1.00	0.96	0.25	0.65	0.20	-0.02
NASDAQ	0.11	0.96	1.00	0.21	0.59	0.16	-0.05
MSCI EAFE	0.34	0.25	0.21	1.00	0.55	0.25	0.13
High Yield	0.16	0.65	0.59	0.55	1.00	0.52	0.29
Corporates	0.14	0.20	0.16	0.25	0.52	1.00	0.94
Treasuries	0.13	-0.02	-0.05	0.13	0.29	0.94	1.00

Sources: Bloomberg, AION Research LLC

Tickers: Bloomberg Gold – BCOMGCTR, Nasdaq – XNDX, S&P500 – SPXT, High Yield - LF98TRUU, Corporate – LUACTRUU, EAFE – NDDUEAFE, UST- LUATTRUU, T-Bills – LD12TRUU. Returns were generated using the COMP<GO> function and the date ranges 05/31/2016 to 05/29/2026 on a daily time periodicity. Annualized realized volatility and Sharpe Ratios were calculated by AION using daily returns for same date ranges. The correlation matrix was generated using CORR<GO> from 5/31/2016 to 05/30/2026.

Whether SAA or TPA: Data is Not the Problem

Components of Asset Class Returns



Source: Adapted by Gresham Investment Management from original work by J.P. Morgan, Morgan Stanley, and the World Gold Council.

02

Asking the Right Questions

Surveying the Literature About the Oldest Asset of All

Asking the Right Questions: What Does the Literature Say?

Arguments by Alan Greenspan in *Gold and Economic Freedom* (1966)

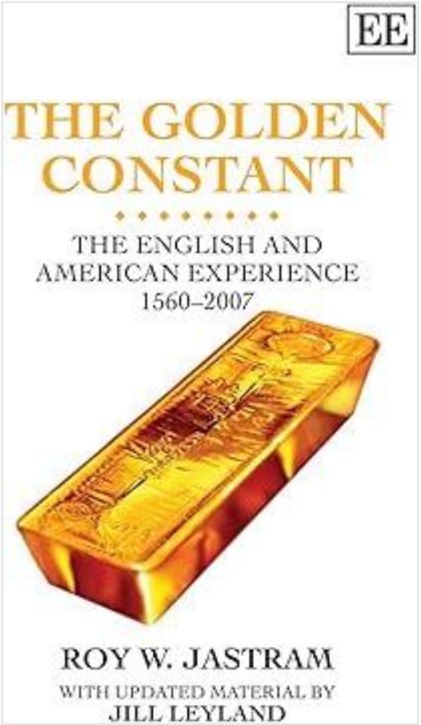
1. Gold is a restraint on government power.
2. Deficit spending and fiat money are mutually reinforcing.
3. Inflation is confiscation, a hidden tax, and a political choice.
4. The gold standard protects property rights.
5. Fractional reserve banking creates distortions in the economy.
6. The state's opposition to gold tells you everything you need to know about government aims.

Source: Greenspan, A. (1966) "Gold and Economic Freedom," in Rand, A. (1967) ed., *Capitalism: The Unknown Ideal*. New York: New American Library/Signet.

Asking the Right Questions: What Does the Literature Say?

Conclusions of Roy Jastram & Jill Leyland in *The Golden Constant* (1977 & 2009)

1. Gold is a long-run store of value (the "golden constant") but not necessarily a stable short-term asset.
2. In monetary regimes, gold fell in inflationary periods and rose in deflationary ones. After 1971, this relationship flipped.
3. Gold tends to fall in real terms when confidence and disinflation combine, such as during the "Great Moderation" (1984-2007).
4. The evidence is strong across multiple economies and through time that fears of monetary dislocation and systemic stress create a bid for gold: 1971-1981 and 2008 onwards.



Source: Jastram, R. (1977) *The Golden Constant: The English and American Experience 1560-2007*. Reprint with updated material by Jill Leyland, Northampton: Edward Elgar, 2009.

Asking the Right Questions: What Does the Literature Say?

Conclusions of Dirk Baur & Brian Lucey
Is Gold a Hedge or a Safe Haven? An Analysis of Stocks, Bonds and Gold. (2009)

1. Over long periods, gold is generally uncorrelated with equity markets (a hedge) and provides diversification benefits in a strategic portfolio during a crash (a safe haven).

2. The correlation between gold and stocks is dynamic: it is slightly negative in normal times and highly negative during crises.
3. Gold is a safe haven from stocks, but not from bonds in any of the markets studied.

4. Gold's safe-haven effect is short-lived. The strongest diversification benefits accrue to those who have positions before the onset of a crisis.

Source: Baur, Dirk G. and Lucey, Brian M., Is Gold a Hedge or a Safe Haven? an Analysis of Stocks, Bonds and Gold (February 1, 2009). Available at SSRN: https://ssrn.com/abstract=952289 or http://dx.doi.org/10.2139/ssrn.952289.

Asking the Right Questions: What Does the Literature Say?

Conclusions of Claude Erb & Campbell Harvey (2013-2025)

1. Gold is a long-run store of value (Jastram's "golden constant") but that *also* implies the long-run real return is approximately zero.

2. Gold earns its place in a portfolio as a diversifier and crisis hedge: its 10-year rolling correlation with S&P500 is -2.5% and it is very reliable hedge against equity drawdowns. (Sample: 11 drawdowns).

3. Why is gold so expensive today?
    i. ETFs have likely caused a permanent upward shift in the price;
    ii. The weaponization of the U.S. dollar;
    iii. The long-running trend of central bank accumulation;
    iv. Possible reclassification as a Tier 1 HQLA under Basel III.

Source: Erb, Claude B. and Harvey, Campbell R.(2025) *Understanding Gold*. December 10th. Available at SSRN: https://ssrn.com/abstract=5525138

03

Can Regimes Solve the Evidence Problem?

Gold’s Performance Record is Deeply Problematic (or Not)

The Evidence Problem: A Methodological Conundrum

What's the optimal way to present gold's historical returns for TPA?

Calendar Periods	Regime Analysis
Familiar	Grounded in explicit assumptions
Starting point is arbitrary	Starting point driven by conditions
"Here's what happened."	"Here's a framework for why it happened."
Time windows can be moved	Frameworks can be challenged

Your speaker owes you a framework and not a calendar.

Source: AION Research LLC.

The Evidence Problem: The Methodological Chain

The Building Blocks

1. **The Data & Sample:** Monthly data begins in January 1975 giving a total of 616 observations. The sample uses 580 monthly observations between January 1978, to April 2026.

2. **The Return Measure:** BCOMGC Excess Return Index, deflated by US CPI, rolling 36-month annualized — stripping out both collateral yield and inflation to show what an investible gold position would actually have contributed in real terms.

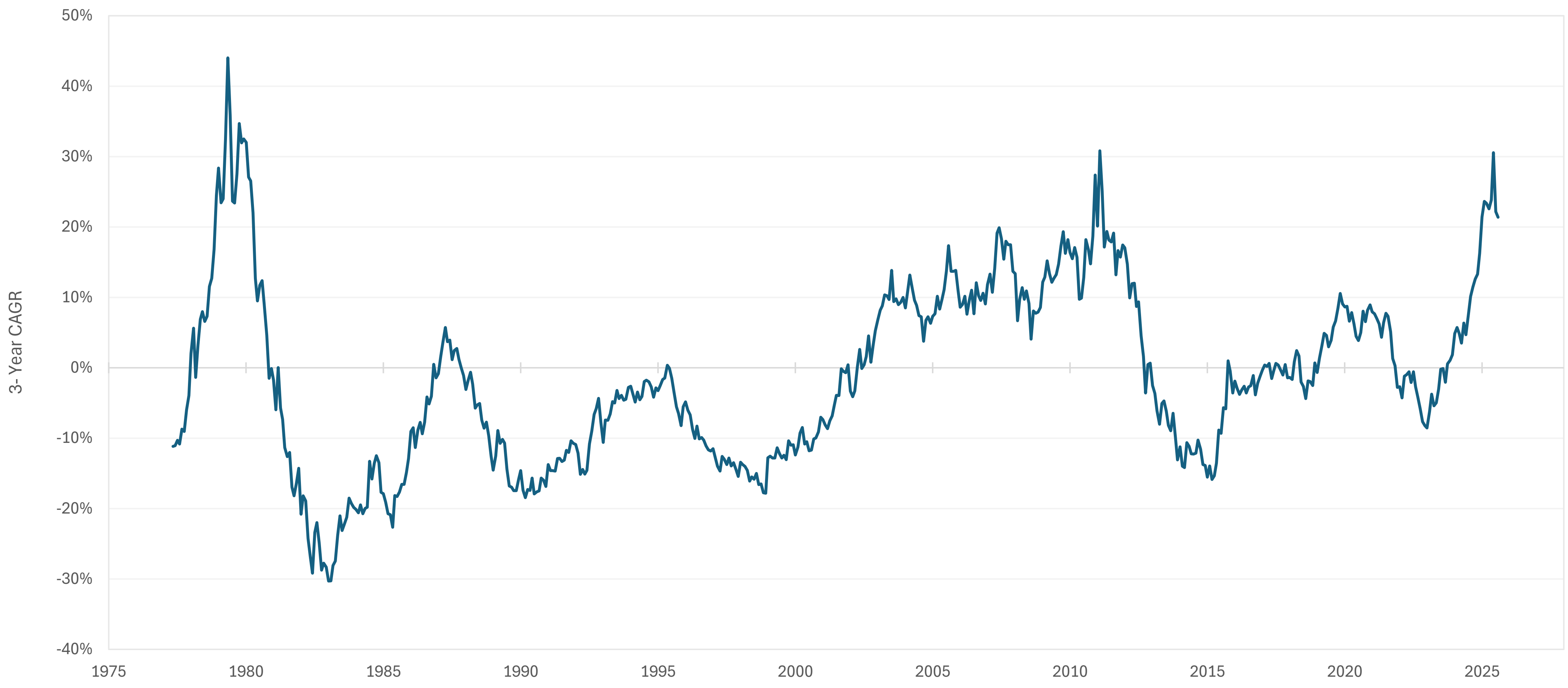
3. **The Volatility Measure:** 6-month EMA of 90-day realized volatility of the BCOMGC.

4. **The Regime Classification:** There are four raw regimes (Low, Normal, High, Extreme), with High and Extreme combined into Elevated for the final analysis due to the small sample size in Extreme. There is a minimum 20-day dwell period to prevent flickering. Out of sample expanding-window percentile cutoffs are deployed with a 3-year burn-in starting May 1975. This means that regimes are classified only using information available at the time with no hindsight bias.

Source: AION Research LLC.

The Evidence Problem: Gold's Real Returns, 1975-2026

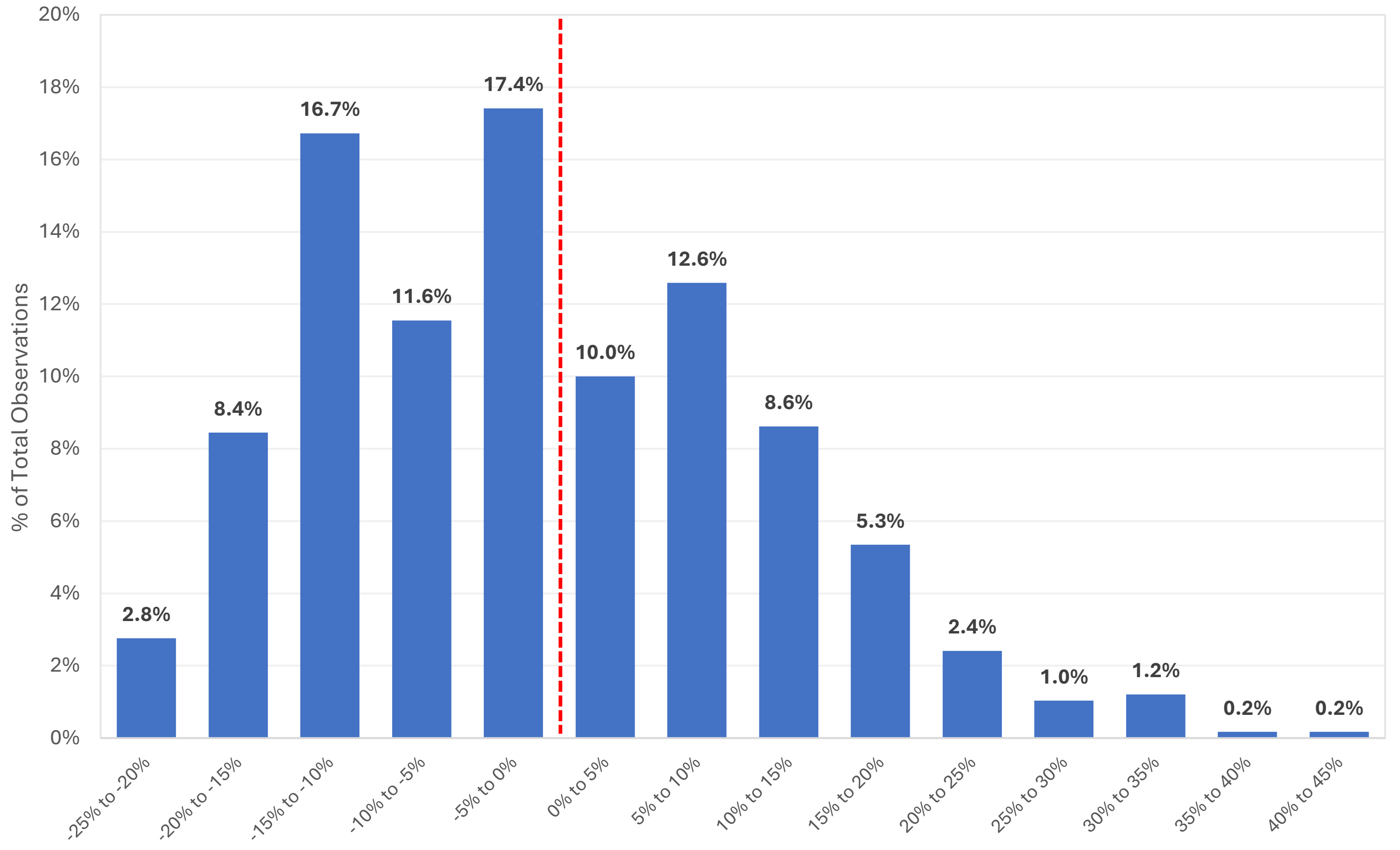
BCOMGC Rolling 3-Year Annualized Real Rate of Return



Sources: Bloomberg, AION Research LLC. Data window from January 1975 to April 2026.

The Evidence Problem: Gold's Real Returns, 1975-2026

Distribution of the Rolling 3-Year Annualized Rate of Real Return of the BCOMGC



Interpretation

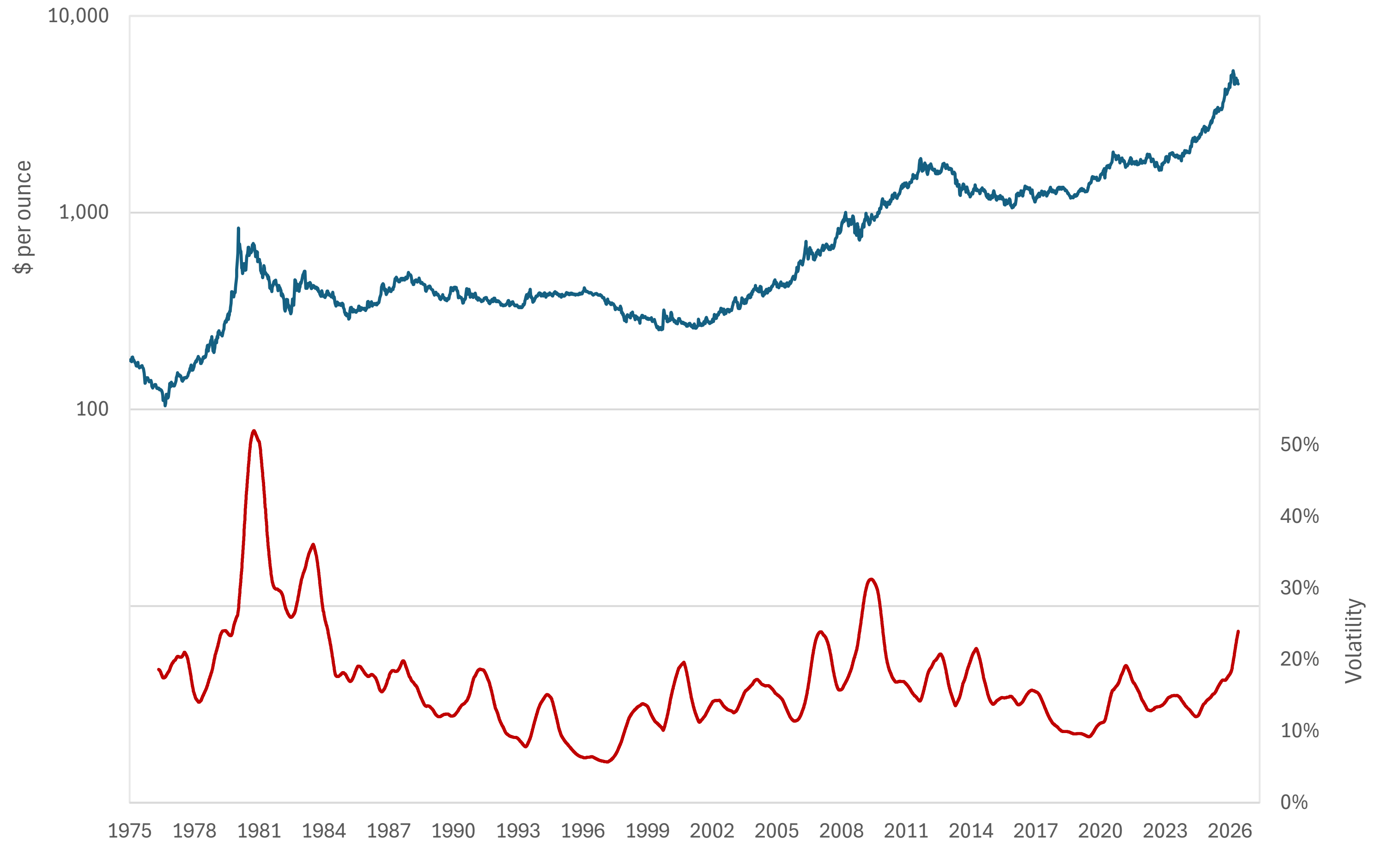
Statistic	Real	Nominal
Count	580	580
Mean	-1.3%	2.3%
Median	-2.5%	0.4%
Std Dev	12.7%	13.6%
5th Percentile	-19.3%	-16.2%
95th Percentile	19.9%	25.2%

- Over a 50-year time horizon, given that the mean and median real returns are negative in the distribution, it's reasonable to claim that the returns are not compelling.
- But it's also true that returns aren't randomly distributed: they tend to trend and cluster. Remember Benoit Mandelbrot's Rule II: Trouble runs in streaks.
- So, what's going on?

Sources: Bloomberg, AION Research LLC. Data window from January 1975 to April 2026.

The Evidence Problem: Gold's Real Returns, 1975-2026

Gold Price and Trailing 1-Year Average of Annualized 90-day Volatility: 1976–2026



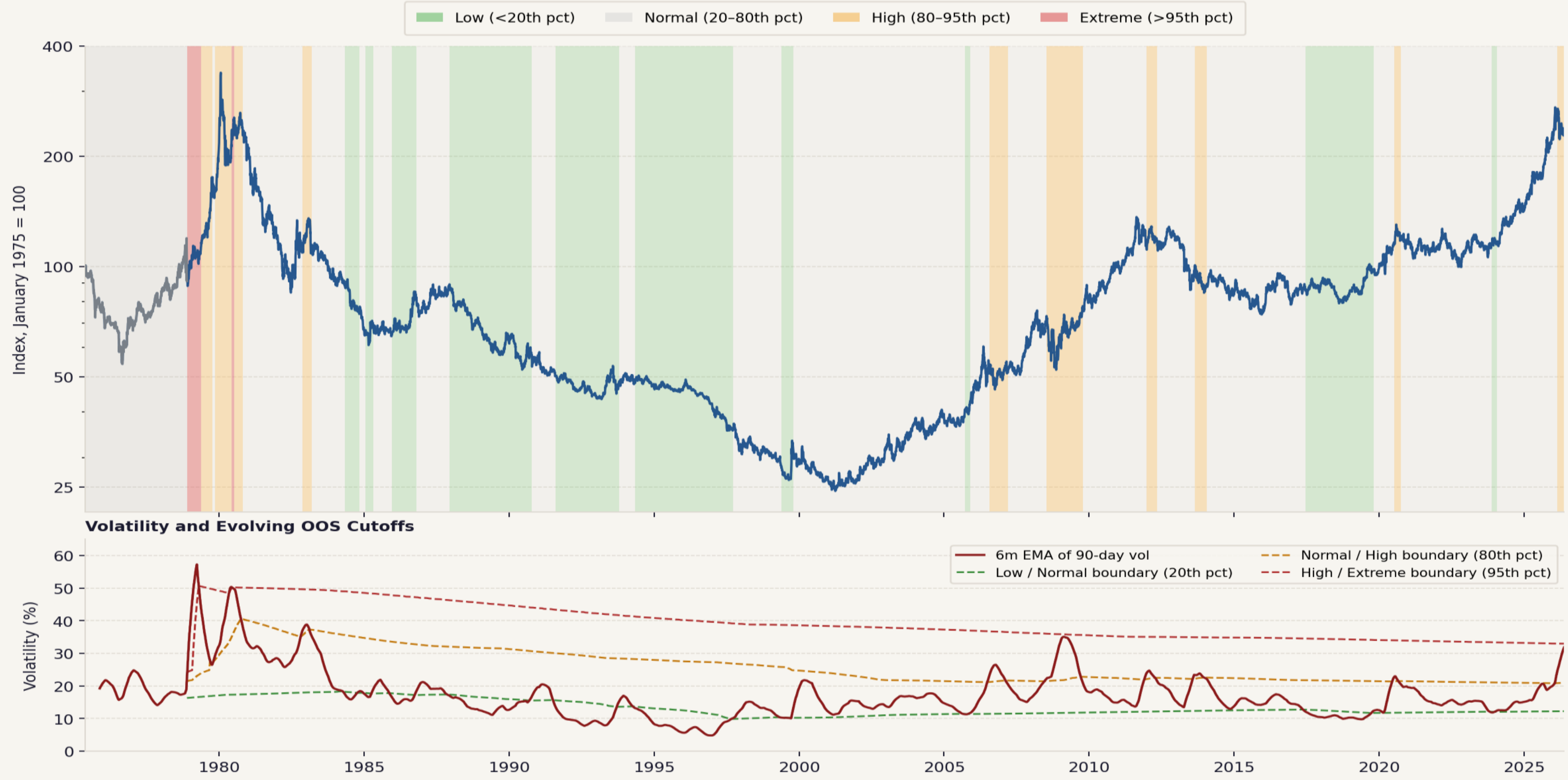
Interpretation

- Historically, gold's volatility has risen sharply during upside momentum phases, when monetary fear and trend-following flows reinforce one another.
- The recent expansion in vol has been huge. 90-day realized volatility reached 36% at the end of April, the highest reading since 2008 and well above the six-year peak of 22.9% set in June 2020. The 10-year average sits at 14.6%.
- Today's move has similar volatility characteristics, but without an obvious crisis catalyst.

Sources: Bloomberg, AION Research LLC Data window from January 1975 to April 2026 Note: Trailing 1-Year Average of 90-day Volatility is defined as the trailing 252-day simple moving average of the 90-day annualized realized volatility.

The Evidence Problem: Gold's Real Returns, 1975-2026

Rolling 3-Year Ann. Rate of Real Return With Volatility Regime Overlay

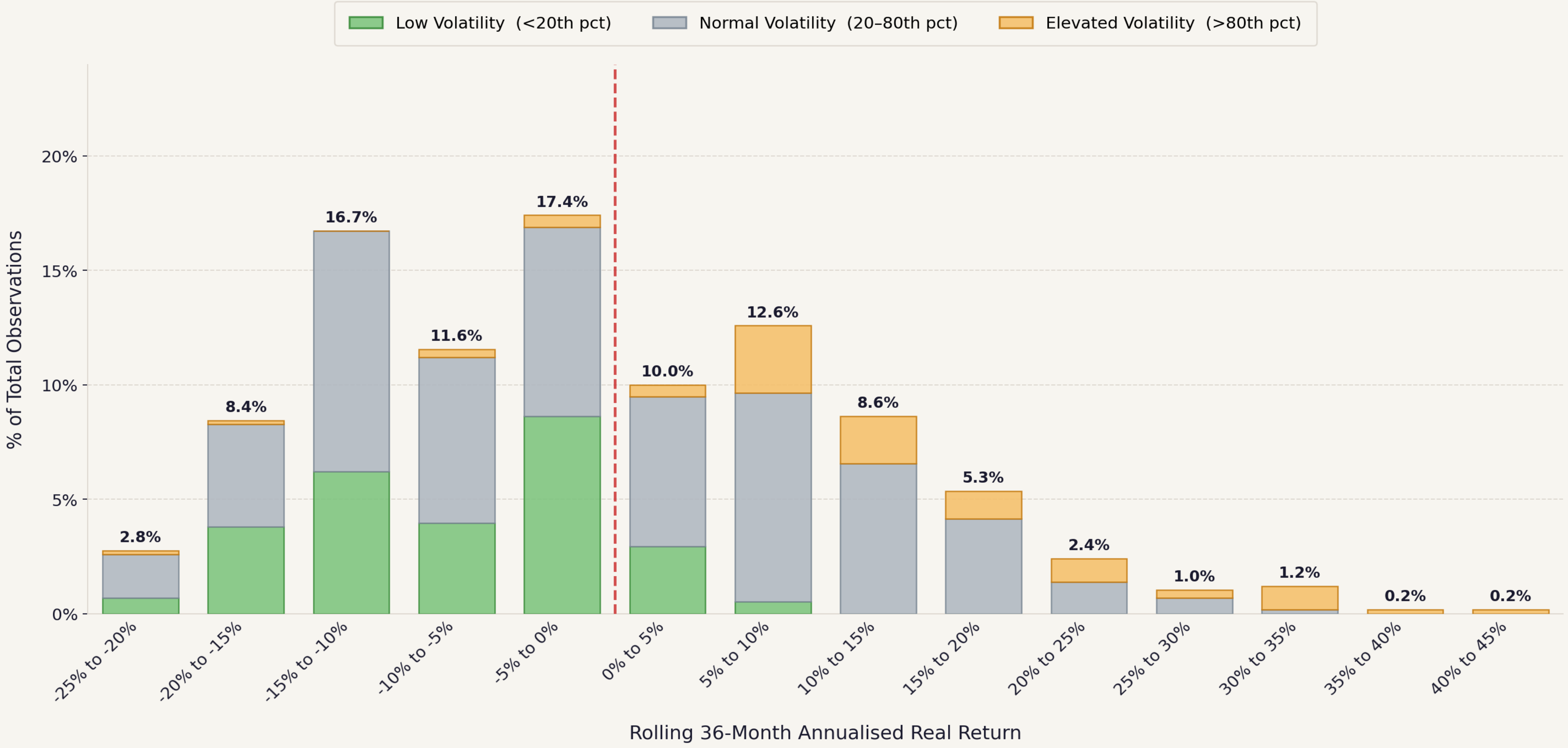


Sources: Bloomberg, AION Research LLC. OOS expanding-window percentile cutoffs with 3-year burn-in from May 1975. Regime classification uses 6-month EMA of 90-day realized volatility.

Sources: Bloomberg, AION Research LLC. Data window from January 1975 to April 2026.

The Evidence: Gold is not a Return Asset But a Regime One

BCOM GC Distribution of the Rolling 3-Year Annualized Rate of Real Return With Volatility Regimes

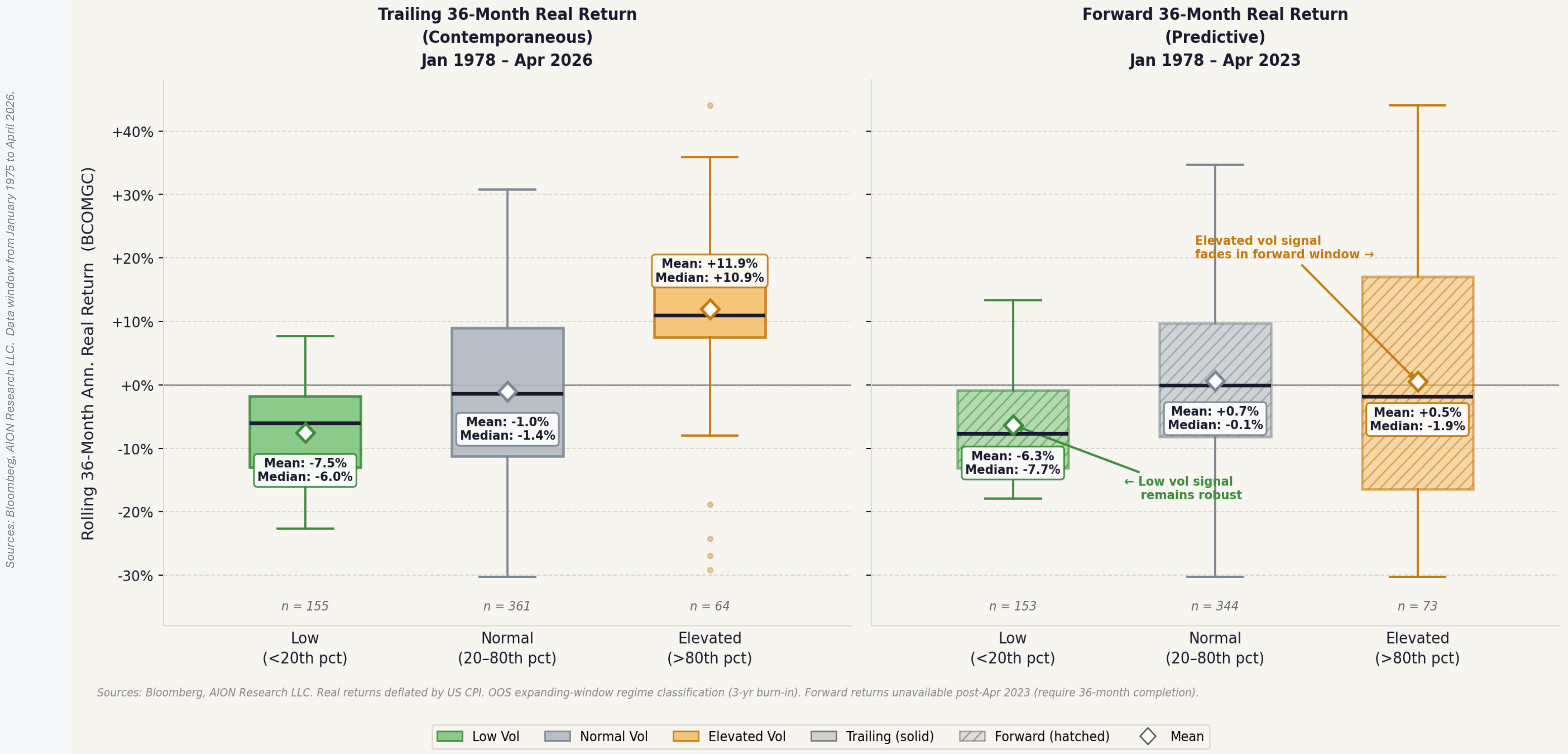


Sources: Bloomberg, AION Research LLC. Data window January 1975 to April 2026. OOS expanding-window regime (3-yr burn-in); pre-burn-in observations assigned using in-sample classification (all Normal).

Sources: Bloomberg, AION Research LLC. Data window from January 1975 to April 2026.

The Evidence: Gold is not a Return Asset But a Regime One

BCOM Trailing vs. Forward Real Returns by Volatility Regime



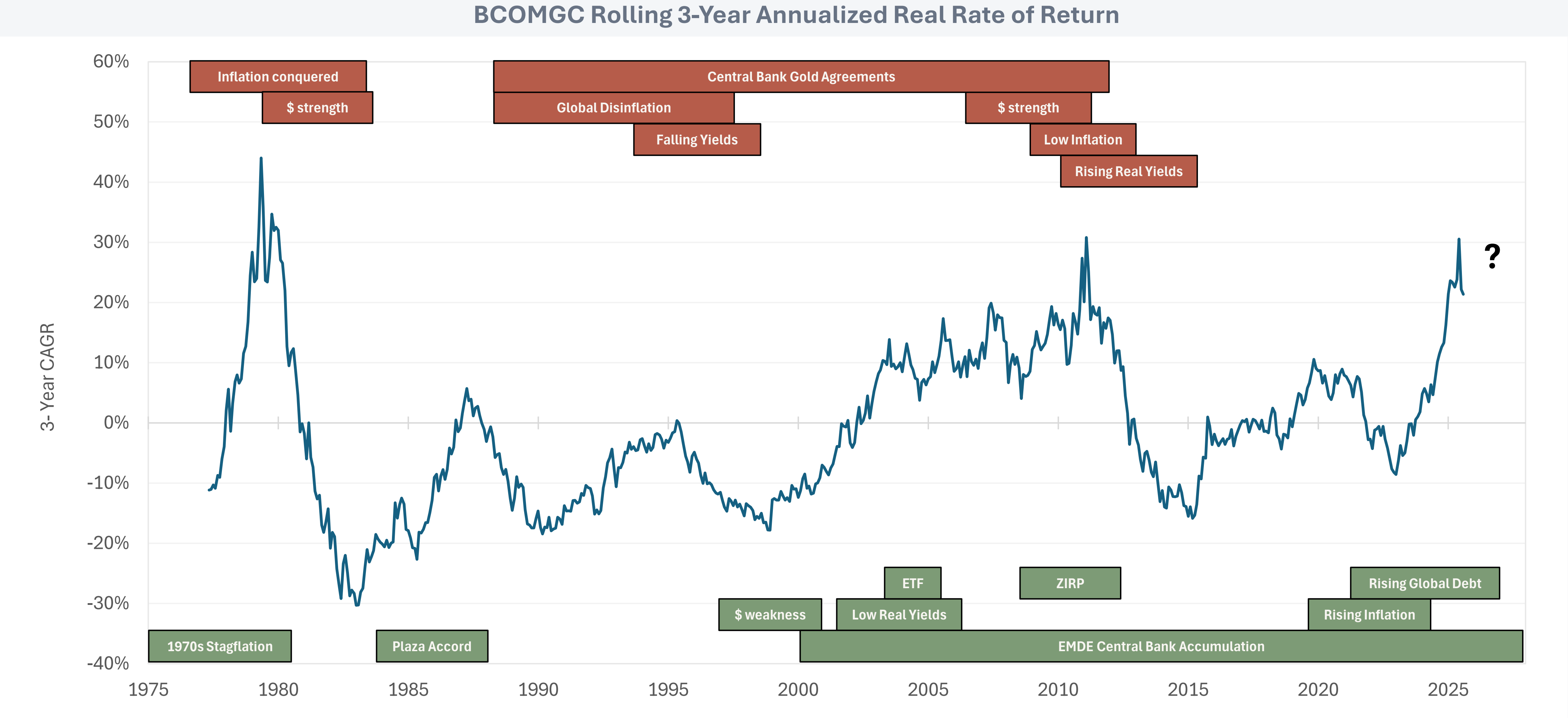
Sources: Bloomberg, AION Research LLC. Real returns deflated by US CPI. OOS expanding-window regime classification (3-yr burn-in). Forward returns unavailable post-Apr 2023 (require 36-month completion).

04

The Evidence for the New Regime

Data-Driven Conclusions About Where We’re Headed

Evidence For a New Regime: The Macroeconomic Lens



Sources: Bloomberg, AION Research LLC. Data window from January 1975 to April 2026.

Evidence For a New Regime: The Macroeconomic Lens

Selected Macroeconomic Statistics for the G20

				As % of Gross Domestic Product			
	Economy	**GDP Trn $**	**% Global GDP**	**Fiscal Balance**	**Current Account**	**Gross Govt. Debt**	**Non-Financial Debt**
1	United States	30,615.74	26.1%	(7.4)	(4.0)	125.1	246.9
2	China	19,398.58	16.6%	(8.6)	3.3	96.3	293.8
3	Germany	5,013.57	4.3%	(2.5)	5.4	64.4	197.4
4	Japan	4,279.83	3.7%	(1.3)	3.9	229.6	377.4
5	India	4,125.21	3.5%	(7.1)	(1.0)	81.4	175.4
6	United Kingdom	3,958.78	3.4%	(4.3)	(3.1)	103.4	219.2
7	France	3,361.56	2.9%	(5.4)	(0.1)	116.5	324.2
8	Italy	2,543.68	2.2%	(3.3)	1.0	136.8	234
9	Russian Federation	2,540.66	2.2%	(2.7)	1.7	23.1	120.1
10	Canada	2,283.60	1.9%	(2.2)	(1.4)	113.9	308.8
11	Brazil	2,256.91	1.9%	(8.4)	(2.5)	91.4	180.6
12	Mexico	2,031.00	1.7%	(4.3)	0.2	58.9	85.7
13	South Korea	1,936.62	1.7%	(1.5)	4.8	53.4	248.3
14	Spain	1,891.37	1.6%	(2.7)	2.7	100.4	224
15	Australia	1,829.51	1.6%	(2.7)	(1.9)	51.0	225.6
16	Indonesia	1,550.24	1.3%	(2.8)	(1.0)	40.8	79.2
17	Türkiye	1,565.47	1.3%	(3.7)	(1.4)	24.3	72.3
18	Netherlands	1,320.64	1.1%	(2.1)	9.5	44.0	303.2
19	Saudi Arabia	1,268.54	1.1%	(3.7)	(2.1)	29.2	105.1
20	Switzerland	1,002.67	0.9%	0.3	7.0	36.9	276.5
	World	**117,165.39**	**100.0%**	**-**	**-**	**328.0***	**235.0**

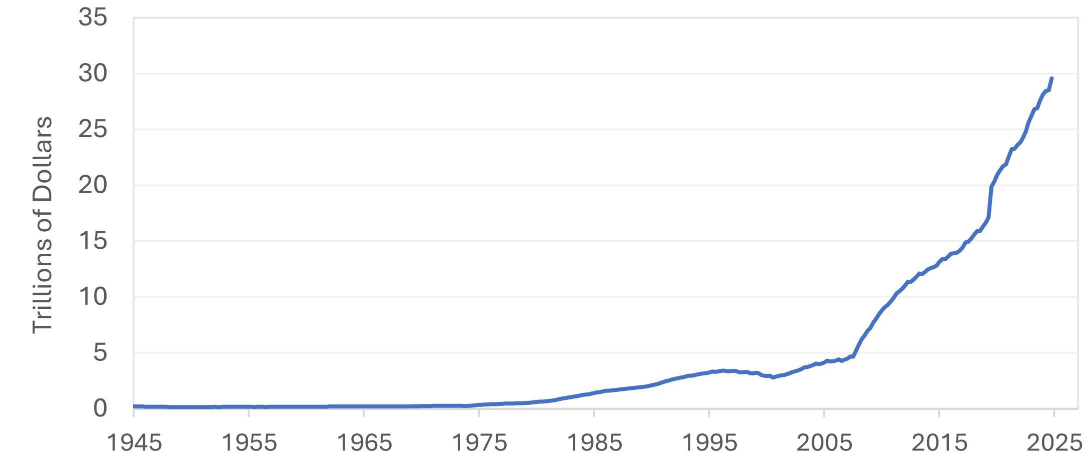
Sources: International Monetary Fund, Bank for International Settlements, Institute of International Finance. * World Gross Government Debt is the aggregation of public, private, household and financial sectors.

Interpretation

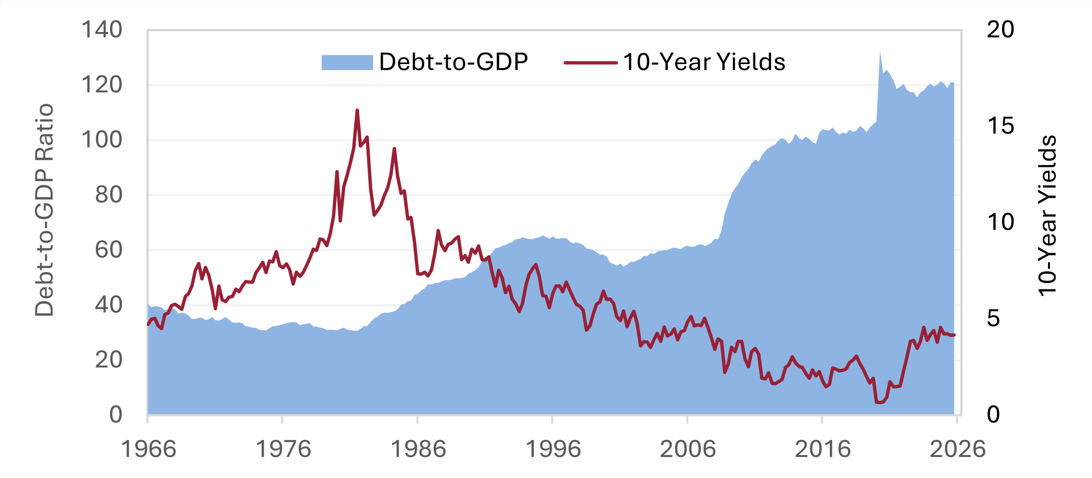
- The twenty largest economies in the world account for almost 81% of total global GDP. Nineteen of them are running fiscal deficits, with five—who between them account for 51% of global GDP—running a deficit greater than 5% of their GDP.
- Seven economies have gross government debt-to-GDP ratios above 100%, and eight economies have current account deficits signaling reliance on foreign capital inflows, i.e. foreign capital is financing the domestic economy.

Evidence For a New Regime: The Macroeconomic Lens

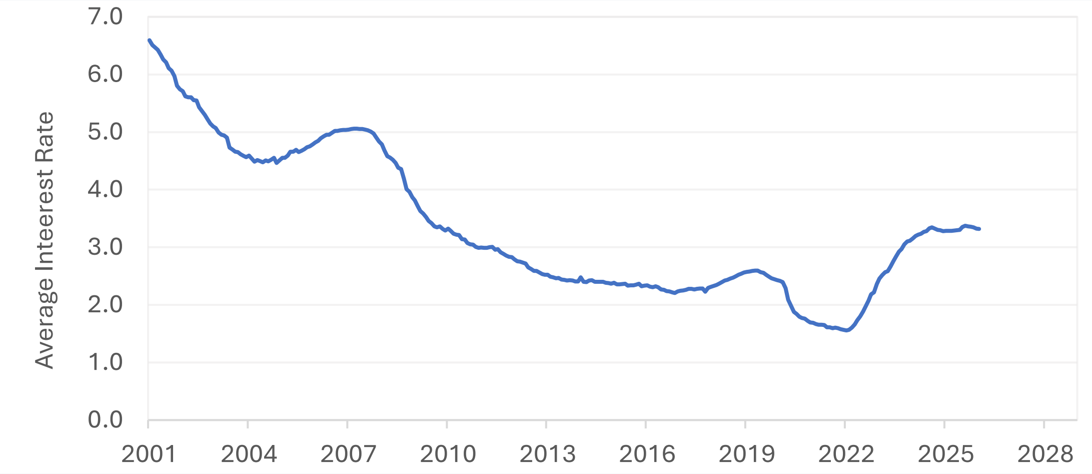
Federal Government Treasury Securities, Liability Outstanding



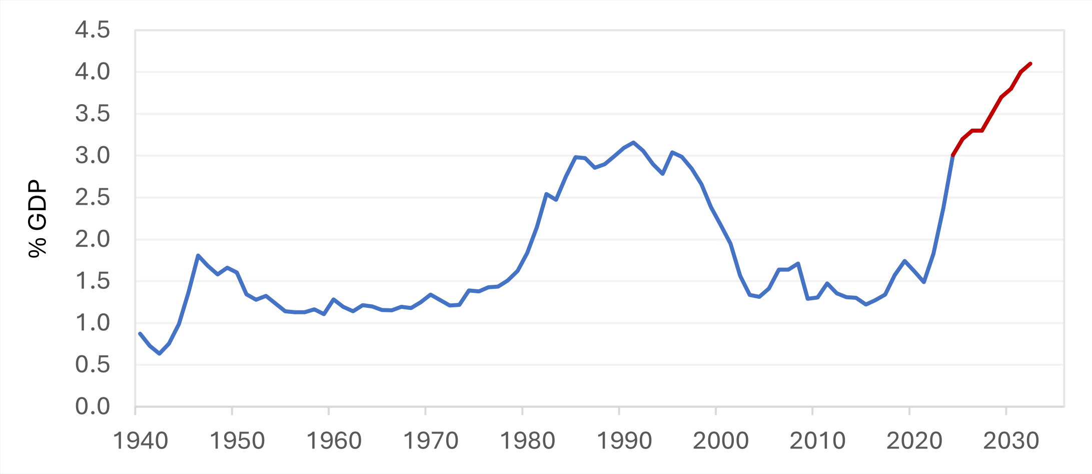
10-Year Yields vs. United States Debt-to-GDP Ratio



Average Interest Rate on the U.S. Total Interest-Bearing Debt



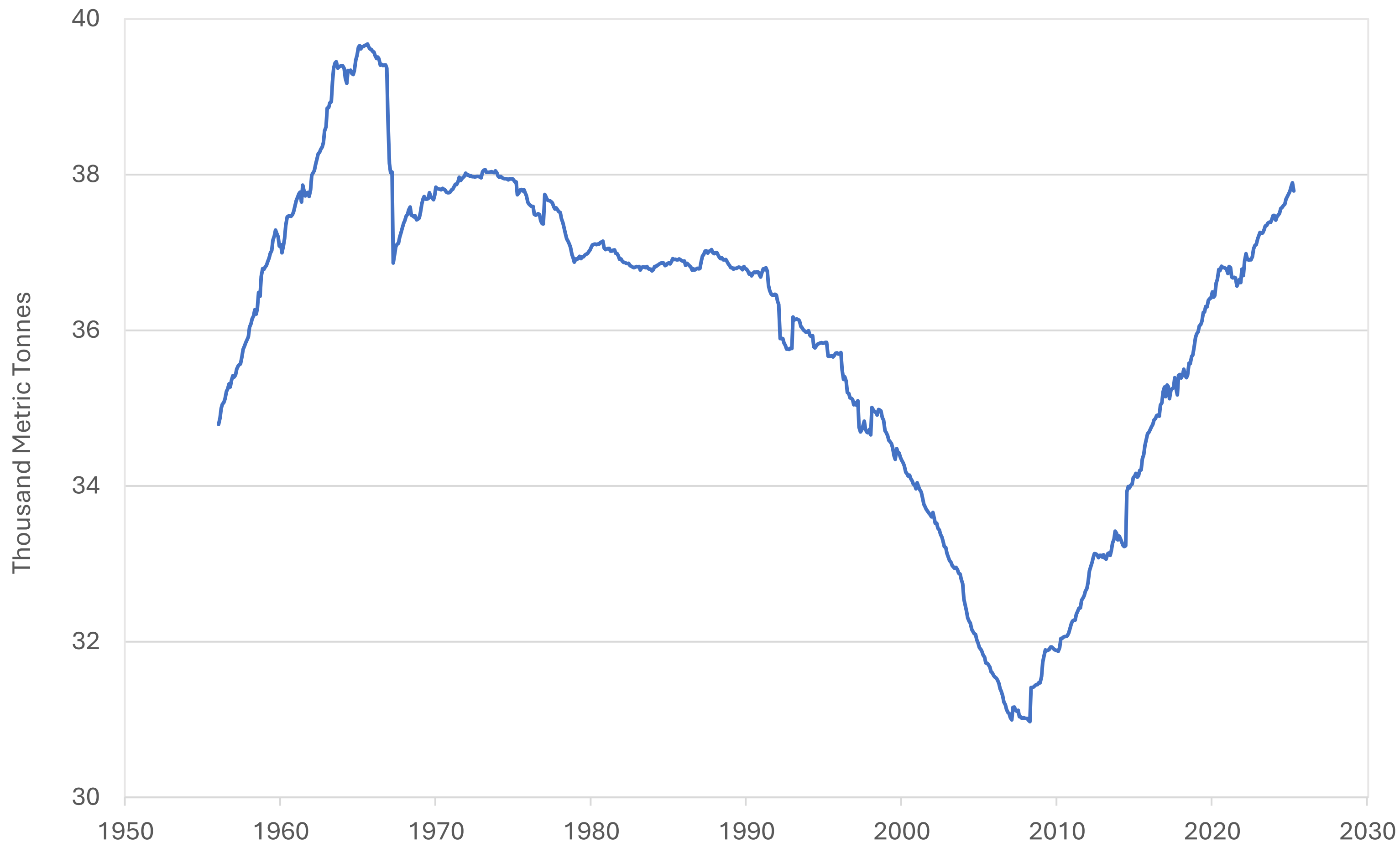
Federal Outlays: Interest as % of GDP



Sources: Bloomberg, AION Research LLC. Board of Governors of the Federal Reserve System, Bloomberg, U.S. Office of Management and Budget, Congressional Budget Office, U.S. Treasury, Gresham Investment Mgt

Evidence For a New Regime: The Macroeconomic Lens

Total Reported Official Gold Reserves



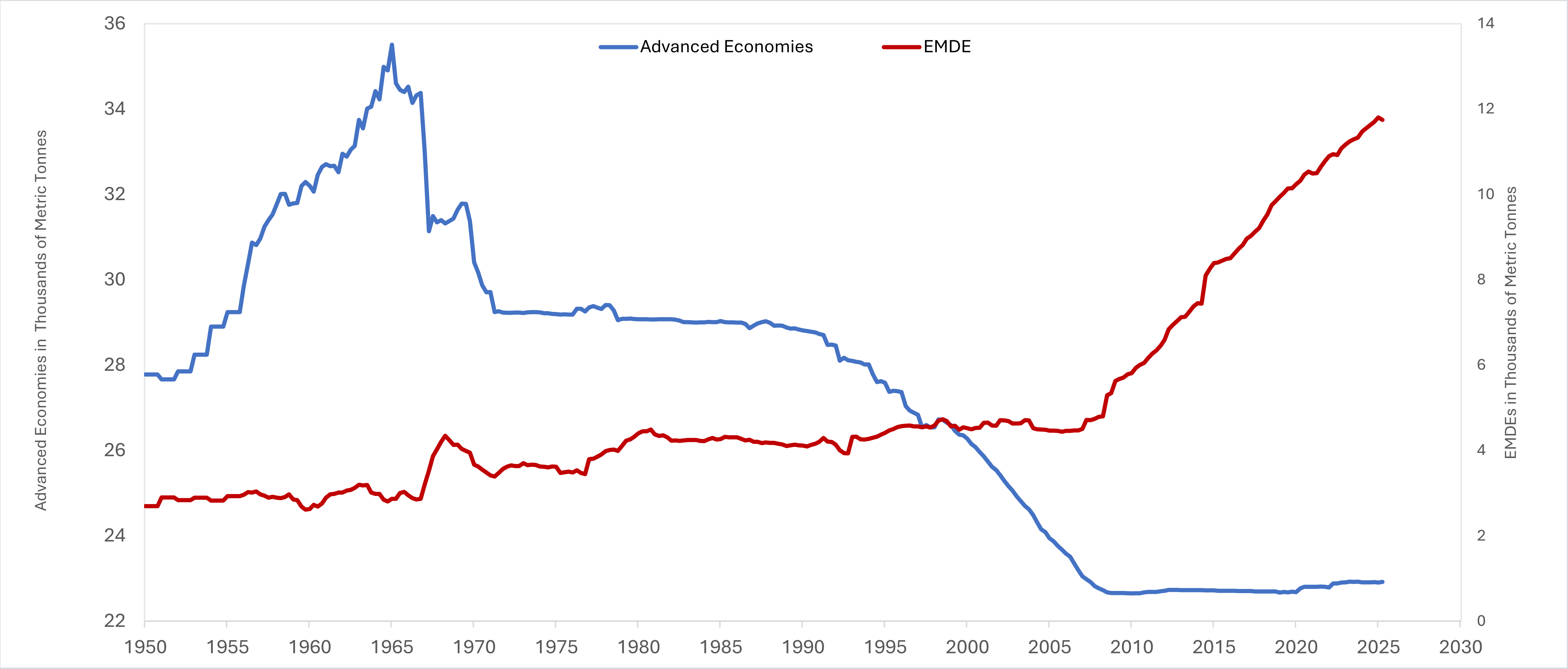
Source: International Monetary Fund

Interpretation

- Perhaps the most surprising element of the multi-decade bull market in gold is the (almost) complete lack of participation by institutional investors. The rationale is hard to discern, but it may center on gold's incongruity with the principles of strategic asset allocation categories.
- Central banks accumulated an average of 440 tonnes of gold per year for 17 consecutive years (2009-2025 inclusive) and have shown no signs of being either sensitive to price or inclined to be sellers. The recent exception of Turkey's sale of 52 tonnes in March 2026 was a decision made to increase liquidity and support the lira rather than an expression of a view on gold.

Evidence For a New Regime: The Macroeconomic Lens

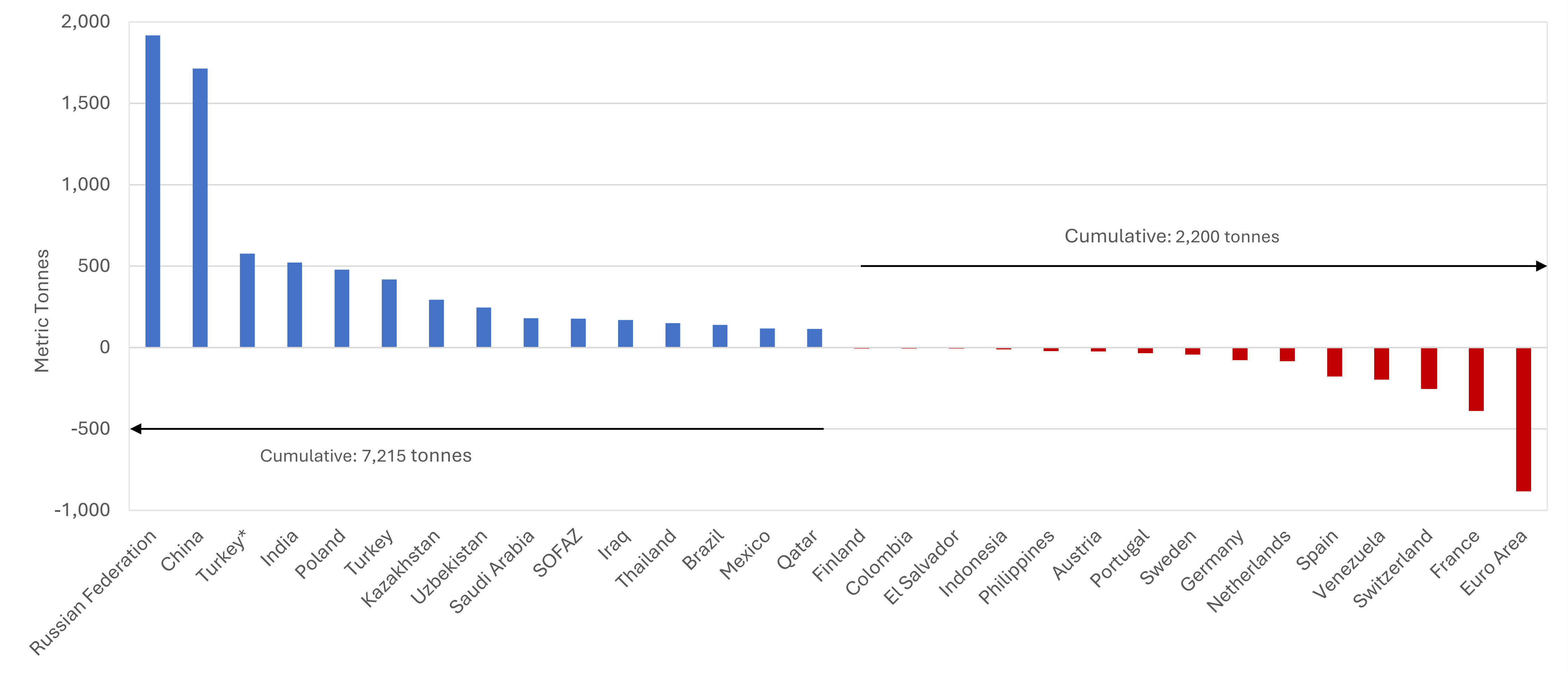
Gold Accumulation in EMDE National Reserves Enters Its 18th Year



Source: International Monetary Fund

Evidence For a New Regime: The Macroeconomic Lens

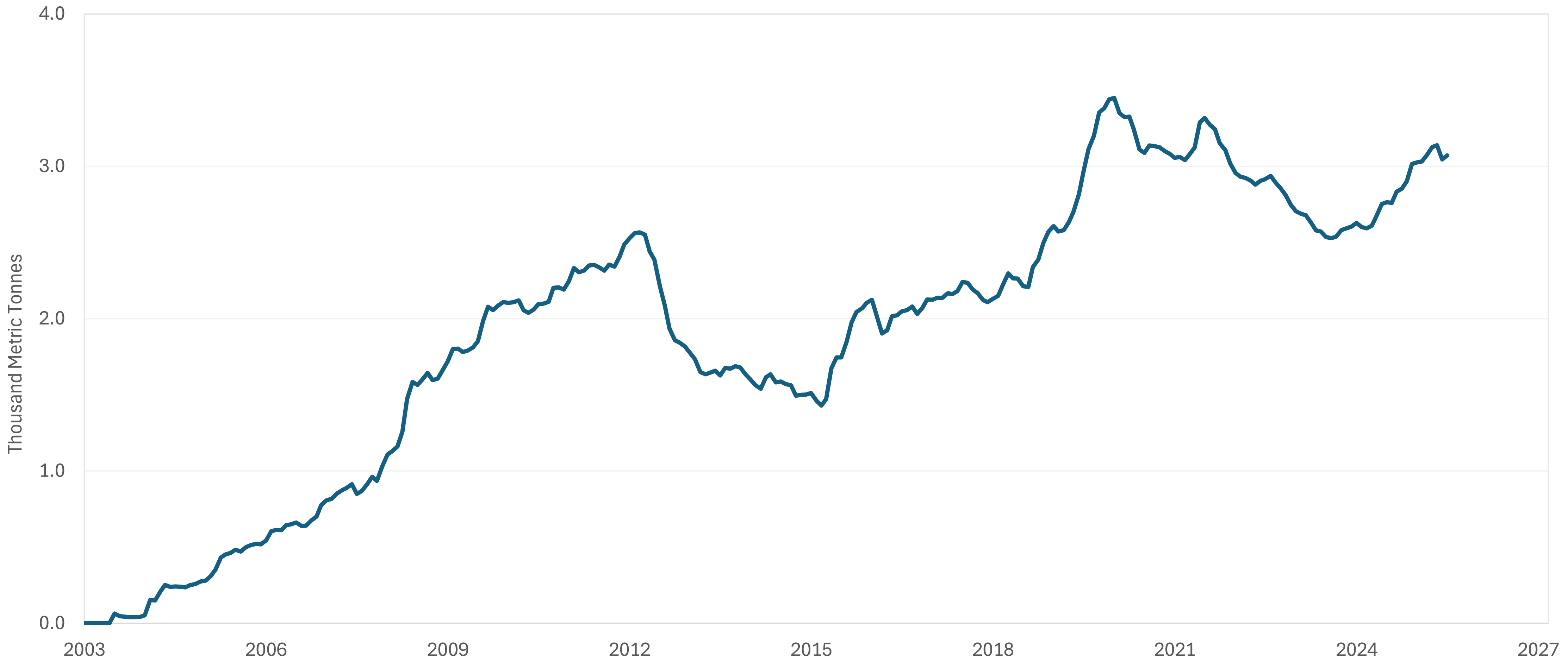
Officially Reported Transactions for Selected Central Banks from 2002 to Q3 2026



Source: International Monetary Fund   Turkey* WGC-adjusted series: central bank + Treasury gold, including commercial-sector gold related to ROM, collateral, deposits, and swaps.

Evidence For a New Regime: The Macroeconomic Lens

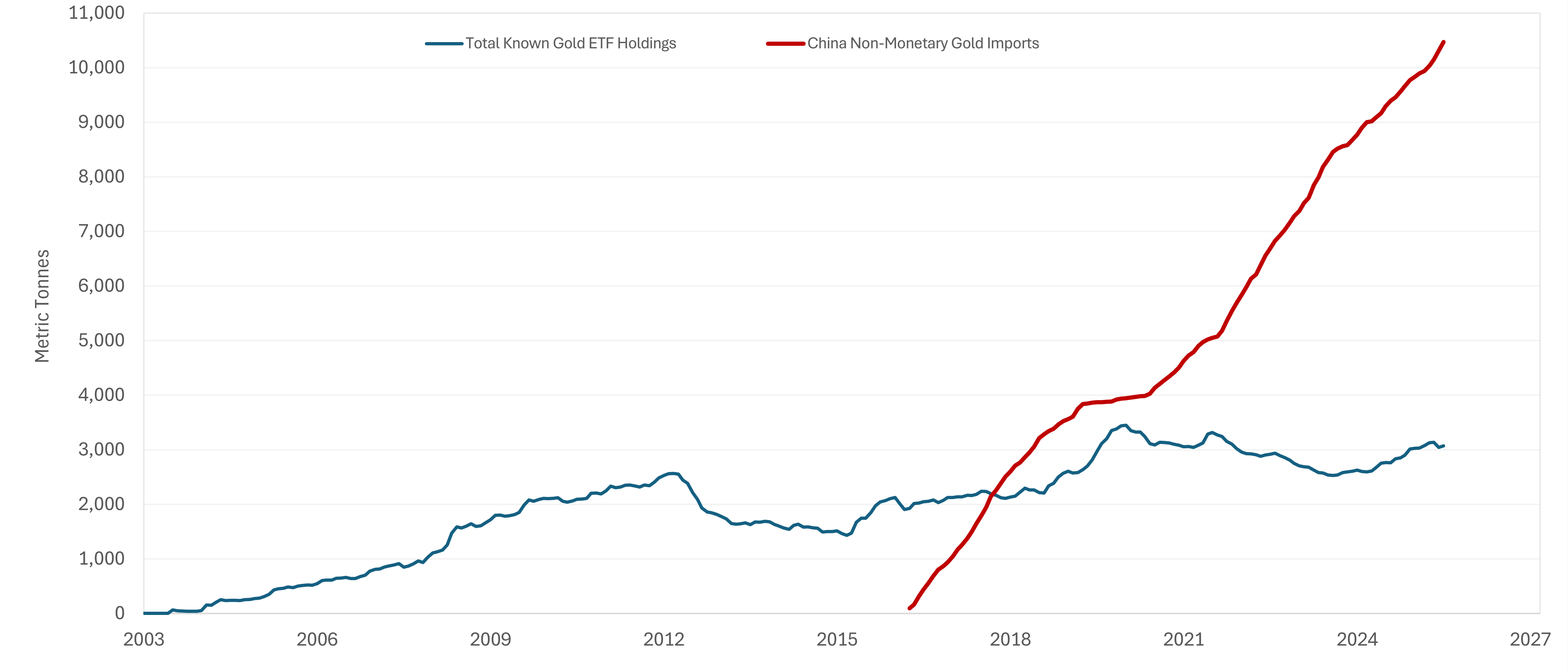
Total Known ETF Holdings of Gold



Source: Bloomberg

Evidence For a New Regime: The Macroeconomic Lens

Total Known ETF Holdings of Gold vs. China's Cumulative Non-Monetary Gold Imports



Source: Bloomberg, China Customs General Administration

Concluding Thoughts: Building Blocks for a New Perspective

1. **The Track Record is Clear:** The outperformance of investible gold vehicles relative to traditional financial asset classes or SAA buckets across varying time horizons, and most especially bonds, in nominal and real terms has been historic. For those who choose TPA and deploy gold the opportunity is enormous.

2. **The Academic Literature is Clear:** There is a substantial body of academic literature that supports gold's inclusion in portfolios that needs to be included in any argument about its utility in an asset allocation.

3. **The (Steelman) Data is Clear:** Gold's 50-year real return record is superficially unappealing, but returns are not randomly distributed: they cluster in ways that correspond to identifiable regimes—volatility is a good example. Gold earns its allocation by its low correlation with other assets when the portfolio needs it most—identify the right regime and the returns will come.

4. **The Regime is Clear:** Global debt, fiscal dynamics, inflation, geopolitical fractures, and EMDE accumulation of gold mean that the outlook for global bond markets is extremely negative for the foreseeable future. The probability of a huge structure shift within the global monetary system in the next decade is extremely high and gold is one asset that may help inoculate portfolios from the chaos.

Source: AION Research LLC.

Questions & Discussion

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Prepared by AION Research LLC