Stock Market Investing Guided by Risk Management:

A Context-Dependent Dynamic Asset Allocation Framework and Four-Year Live Trading Evidence

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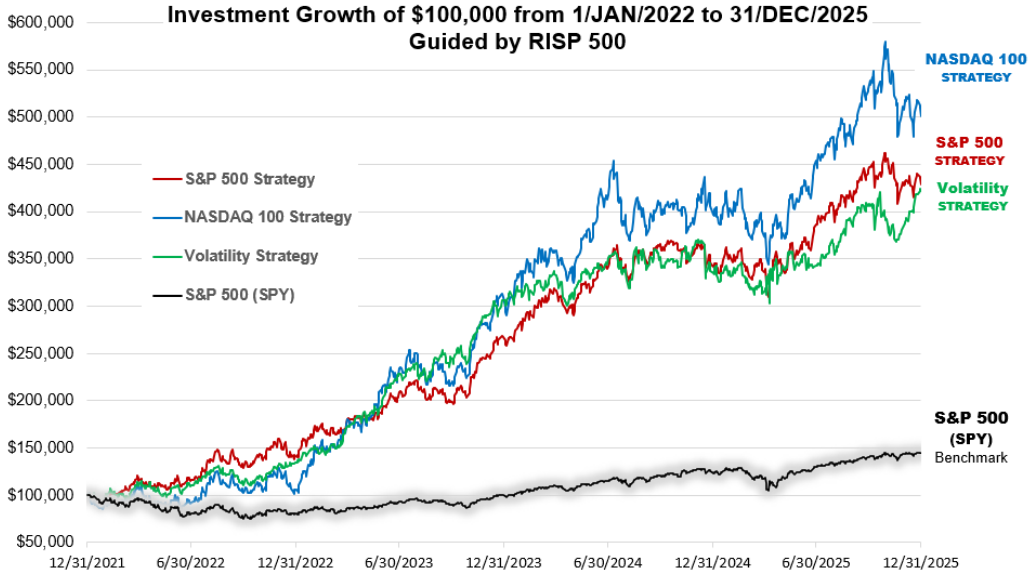
ABSTRACT

This paper introduces Stock Market Investing Guided by Risk Management (SMIGRM), a tactical investment framework in which real-time risk quantification—rather than return forecasting or targeting—serves as the primary driver of asset allocation decisions. At its core is the RISP 500™ (Risk Index for the S&P 500), a proprietary composite indicator that synthesizes more than fifteen variables spanning the volatility complex, fixed income markets, macroeconomic leading indicators, and monetary policy expectations into a single daily risk score expressed as a historical percentile rank. When the RISP 500™ percentile rank exceeds a user-defined Risk Percentile Threshold (RPT), portfolios rotate to safer assets; when it falls below, exposure to risk assets is restored or increased. This mechanism—termed Context-Dependent Dynamic Asset Allocation—replaces the static allocation paradigm with a probabilistic, risk-state-driven approach grounded in three pillars: Statistical Edge, Asymmetrical Payoff, and the Law of Large Numbers.

We report four years of live, publicly verified trading results across three three-level rotation strategies (January 1, 2022 – December 31, 2025), encompassing both a severe bear market (2022) and sustained bull market conditions (2023–2025). Using a $100,000 initial investment per strategy and a corrected performance accounting methodology, the S&P 500 Strategy (SSO/SPY/GLD) returned +328.73% cumulatively (CAGR ~42.8%) against +43.57% for a buy-and-hold of SPY (CAGR ~9.5%), with a maximum drawdown of −15.97% versus −25.36% for the benchmark and a Return over Maximum Drawdown (RoMaD) of 20.9x versus 1.8x. Results are consistent across the Nasdaq 100 Strategy (+401.00%, RoMaD 16.9x) and the Volatility Strategy (+321.70%, RoMaD 17.4x). The paper also discusses the structural vulnerability of all data-based tactical systems to whipsaw market regimes, presents the 2026 Iran War episode as a live case study, and outlines a research agenda—including a forthcoming companion paper—aimed at developing early-stage whipsaw detection to further strengthen the framework. This paper is the first in the SMIGRM Research Series. Paper No. 2, currently in preparation, will report the conclusions of the whipsaw detection study outlined in Section 6.3.

Comparative Performance 01/01/2022 – 12/31/2025	S&P 500 (Holding SPY passively)	Strategy guided by RISP 500 SPY/SSO/GLD (ST-6)
Cumulative Return	**+43.57%**	**+328.73%**
CAGR	**~ 9.5%**	**~ 42.8%**
Maximum Drawdown	**−25.36%**	**−15.97%**
Return over Maximum Drawdown	**1.8x**	**20.9x**



Keywords: tactical asset allocation, risk management, market timing, dynamic asset allocation, volatility indicators, drawdown, return-to-risk ratio, SMIGRM, RISP 500, ETF rotation strategies

1. Introduction

Every practitioner in wealth management is familiar with the paradox at the heart of the profession: clients simultaneously demand wealth preservation and high returns. This is not merely an unreasonable expectation—it reflects a genuine gap in the investment industry's toolkit. Modern Portfolio Theory, developed by Markowitz (1952) and extended through decades of academic and practitioner research, has provided the dominant framework: diversification, static asset allocation, and the Efficient Frontier. Yet the real-world performance record of these tools reveals persistent shortcomings, particularly in periods of elevated and changing market volatility.

Three structural problems afflict the current paradigm. First, the 60/40 stock-bond portfolio—the industry's most widely recommended solution to the preservation-return trade-off—rests on an assumption of low or negative stock-bond correlation that breaks down precisely when it is most needed, as dramatically demonstrated in 2022 when both equities and fixed income suffered simultaneous double-digit losses. Second, passive buy-and-hold investing, increasingly popular as a response to active management's underperformance, still exposes investors to systematic market risk 100% of the time, rendering their portfolios structurally vulnerable to drawdowns of 30–60% during bear markets, with recovery cycles that can span years or even decades. Third, and most fundamentally, conventional risk management tools—Value at Risk, stop-losses, beta-based hedging—are reactive by design. They help investors manage exposures they have already taken; they do not help investors decide whether to take those exposures in the first place or help them move to safety early enough.

This paper presents a different paradigm. Stock Market Investing Guided by Risk Management (SMIGRM) repositions risk quantification from a secondary constraint to the primary navigational instrument of investment decision-making. Rather than asking "what return can I expect?" and then managing the resulting risk, SMIGRM asks "what does the current risk environment tell us about win-loss probabilities?" and deploys capital only when probabilities are favorable. The operational mechanism is Context-Dependent Dynamic Asset Allocation: rotating across a pre-defined set of assets in response to real-time signals from a composite risk indicator, the RISP 500™.

The RISP 500™ (Risk Index for the S&P 500) is a proprietary composite indicator that aggregates more than fifteen variables—drawn from the volatility derivatives complex, bond markets, macroeconomic leading indicators, and Federal Reserve policy expectations—into a single daily score expressed as a percentile rank relative to its own history since 2008. A user-defined Risk Percentile Threshold (RPT) then determines when portfolios shift between risk assets and safe assets, with the threshold calibrated to the individual investor's own risk tolerance.

The contribution of this paper is empirical as much as conceptual. Beginning January 1, 2022, we launched live trading of eight strategies guided by the RISP 500™, publishing daily performance results on public social media platforms with date-stamped posts to create an auditable, real-time record. This paper focuses on the four-year period January 1, 2022 through

December 31, 2025, a period that includes a severe bear market, two bull market years, and a more complex mixed environment—an unusually complete stress test for any investment methodology. All three of the three-level strategies tested produced cumulative returns exceeding 300%, with maximum drawdowns materially below the benchmark, and RoMaD ratios between 10 and 20 times superior to buy-and-hold SPY.

The remainder of the paper is organized as follows. Section 2 develops the theoretical framework underpinning SMIGRM. Section 3 describes the RISP 500™ indicator and its operational mechanics. Section 4 details the strategy design and implementation. Section 5 presents the four-year live trading results. Section 6 addresses limitations, including an extended discussion of the whipsaw problem—the structural vulnerability of all signal-based tactical systems—and an outline of forthcoming research to solve the problem. Section 7 concludes.

2. Theoretical Framework

2.1 The Risk-Return Duality and the Case for Return-to-Risk Optimization

The foundational principle of finance is that returns are compensation for risk taken. No risk, no reward; higher risk increases the probability—but not the certainty—of lower returns. This duality is so well understood that it has become almost invisible in practice: portfolio managers focus overwhelmingly on return potential while treating risk as a secondary consideration to be managed after the fact. No wonder risk management is often a middle or back-office function.

The consequences of this asymmetry are severe. Most investors and advisors do not formally quantify the risk they are accepting before making investment decisions; they select assets based on expected return and then apply risk management tools reactively to limit damage once losses materialize. This approach is particularly dangerous because the relationship between risk and return is not linear—a portfolio that earns 10% per year on average but experiences a 50% drawdown requires a subsequent 100% gain just to return to breakeven, and the time cost of that recovery permanently destroys compounding advantage.

SMIGRM proposes a reorientation: the primary optimization target should be the Return over Maximum Drawdown (RoMaD), not raw returns or even the widely-used Sharpe ratio. The real pain isn't volatility but losses. RoMaD directly captures the asymmetry of investment outcomes—it penalizes deep drawdowns that require disproportionate recoveries, and it rewards the preservation of capital that enables continued compounding. Maximizing RoMaD requires simultaneously managing both the numerator (returns) and the denominator (maximum drawdowns), which in turn requires knowing when risks are worth taking.

2.2 The Failure of Static Asset Allocation

The dominant industry response to the preservation-return paradox has been static asset allocation—predetermining a fixed mix of asset classes, most commonly stocks and bonds, and

maintaining that mix through all market environments. The logic is elegant: if stock and bond returns are negatively or weakly correlated, losses in one asset class will be offset by gains in the other, smoothing the portfolio's return path without sacrificing too much upside.

This logic has three fundamental weaknesses. First, the correlation assumption is empirically unstable. The stock-bond correlation is not a constant; it varies with the macroeconomic regime—specifically with the level and direction of inflation and real interest rates. In disinflationary environments, the correlation tends to be negative (as experienced during most of the 1990s through 2010s); in inflationary environments, it turns positive, as both asset classes are adversely affected by rising rates. The 2022 episode—in which both SPY and the aggregate bond index lost more than 15%—was not an anomaly but a recurrence of a well-documented pattern.

Second, static allocation permanently sacrifices returns for safety. A portfolio that is always 40% in bonds will always earn less during bull markets than a portfolio that is 100% in equities during those same periods. This is not a temporary cost paid for protection; it is a permanent drag on compound growth embedded in the strategy's structure.

Third, and most critically, Modern Portfolio Theory (MPT) does nothing about systematic risk—it only mitigates idiosyncratic risk through diversification. An investor holding a diversified equity portfolio has eliminated company-specific risk but remains fully exposed to market-wide drawdowns. There is no correlation-based solution to systematic risk because in a true systemic event, correlations converge toward one. The 2008 Global Financial Crisis—in which nearly all risk assets declined simultaneously—demonstrated this convergence conclusively.

2.3 Context-Dependent Dynamic Asset Allocation

The alternative proposed by SMIGRM is to make asset allocation conditional on the prevailing risk environment rather than fixed in advance. The intuition is straightforward: in a low-risk environment, the expected return of risk assets is high relative to safe assets, and the probability of a significant drawdown is low; full deployment in risk assets is rational. In a high-risk environment, the probability distribution of outcomes shifts adversely; reducing or eliminating exposure to risk assets and rotating to safe assets preserves capital and avoids the deep drawdowns that are so costly to recover from.

This approach rests on three principles. The first is the Risk Aversion Principle: rising market risk causes investors to seek safety, which mechanically depresses risky asset prices and elevates safe asset prices. This is not merely a correlation observation but a causal relationship—risk drives behavior, which drives prices. The second is the Risk-Reward Principle: the expected return of any risky investment is only attractive when properly compensating for the risk taken. When risk is elevated, the expected reward per unit of risk deteriorates; when risk is low, it improves. The third is the Probabilistic View of Markets: asset prices do not follow deterministic trajectories predictable by fundamental or technical analysis alone; they evolve probabilistically,

and the task of the investor is to identify environments in which the probability distribution of outcomes is favorably skewed, then act consistently on that assessment.

These three principles converge on a practical conclusion: a system that can reliably distinguish high-risk from low-risk environments—and that executes asset rotation accordingly—should, over time, produce returns that are superior to a static diversified portfolio or a permahold of the SPY, while limiting the deep drawdowns that destroy long-run compounding. The key word is "reliably": the signal must be sufficiently accurate and timely to generate a statistical edge that, compounded over many observations, produces the asymmetric outcomes that characterize successful casino-like operations. Similar to investing, a casino operates in a highly probabilistic environment. To ensure the house always wins, the casino employs the Formula for Success in Probabilistic Environments—explained below.

2.4 The Formula for Success in Probabilistic Environments: Statistical Edge, Asymmetrical Payoff, and the Law of Large Numbers

SMIGRM's probabilistic framework can be distilled into three mutually reinforcing elements that together create the conditions for consistent long-run outperformance.

A Statistical Edge means that investment decisions are made only when the objective assessment of market conditions indicates that the probability of a favorable outcome meaningfully exceeds the probability of an unfavorable one. This is not about forecasting with certainty—an impossible standard—but about identifying environments where the odds tilt in the investor's favor, much as a poker player seeks to enter pots when pot odds and hand strength align favorably. The RISP 500™ provides this edge by quantifying market risk in real time: when its percentile rank is low (risk is relatively benign), the odds favor holding risk assets; when it is high (risk is elevated), the odds favor rotating to safety.

An Asymmetrical Payoff structure ensures that when the system is wrong—as any probabilistic system will be at times—losses are bounded, while when it is right, gains are not artificially capped. SMIGRM achieves this through its early-warning character: rotating to safe assets before a drawdown deepens limits losses, while holding risk assets through favorable conditions allows full participation in bull market returns. The system is explicitly designed to limit the downside of being wrong while preserving the upside of being right.

The Law of Large Numbers ensures that the edge and the payoff structure compound into superior results over time. A small consistent edge, applied repeatedly across many investment cycles, converges to the expected outcome. This is the same principle that makes casinos reliably profitable despite individual game randomness. SMIGRM's low-turnover design—averaging roughly one rotation every two weeks—creates a sufficient number of independent observations over a multi-year horizon for the statistical advantage to manifest.

3. The RISP 500™ Risk Indicator

3.1 Design Philosophy and Motivation

Existing risk tools available to practitioners—Value at Risk, volatility measures, technical indicators, fundamental analysis—share a common limitation: they are backward-looking or, at best, contemporaneous. They describe risk that has already materialized or is currently embedded in prices; they do not identify elevated risk before it translates into price declines. This reactive character is precisely the deficiency that makes them insufficient as the basis for proactive allocation decisions. Practitioners on the battlefields long enough know this fact very well.

The RISP 500™ was designed to overcome this limitation by exploiting a largely underutilized information channel: the volatility derivatives markets. Options and futures on volatility indices encode the forward-looking risk assessments of the most sophisticated participants in financial markets—volatility dealers who price and hedge the insurance that large institutional investors purchase against market downturns. Because these dealers are in the business of buying and selling risk, they are acutely sensitive to changes in the risk environment, often ahead of the broader market. The pricing dynamics of their instruments—implied volatilities, VIX term structures, roll yields, contango-backwardation conditions, volatility risk premium—carry information about market stress that predates its reflection in equity prices.

The RISP 500™ aggregates this forward-looking information, together with signals from fixed income markets and macroeconomic indicators, into a single composite risk score. Critically, the indicator is expressed not in its raw value—which varies across market regimes—but as a percentile rank relative to its own historical distribution since April 2008. This normalization allows investors to answer the question that matters: "Is today's risk environment high or low relative to all the risk environments we have observed over the past 15+ years?" A percentile rank of 80, for example, means that today's composite risk level exceeds 80% of all daily observations in that history—a materially elevated reading that warrants defensive positioning.

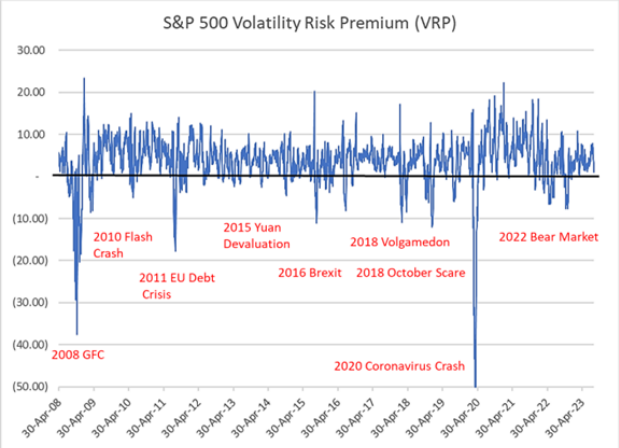
3.2 Input Variables

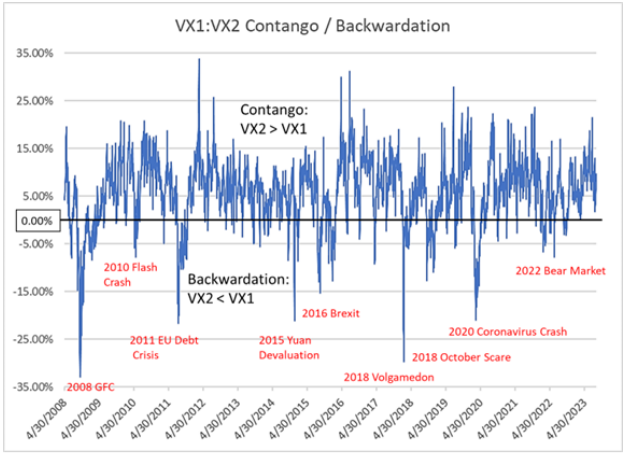
The RISP 500™ is computed from more than fifteen variables spanning four market domains. The specific weights and aggregation methodology are proprietary; the variables themselves are disclosed here to allow readers to assess the indicator's breadth and conceptual coherence.

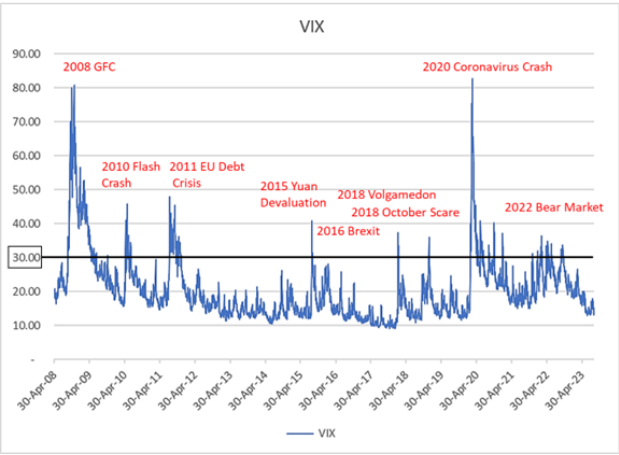
From the volatility complex, the indicator incorporates:

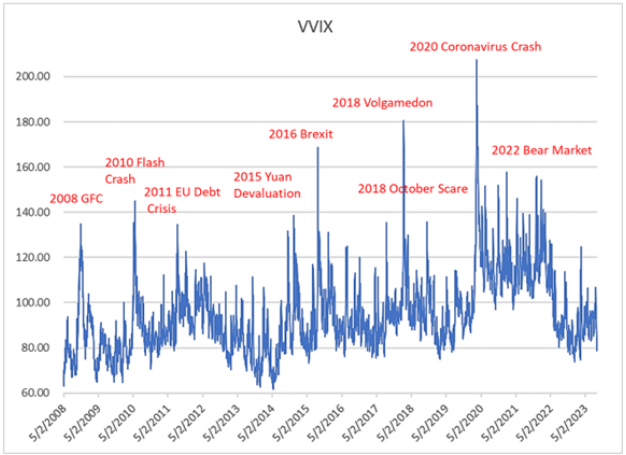
- Volatility Risk Premium (VRP): the spread between implied volatility (as reflected in VIX) and realized volatility of the S&P 500. VRP is positive in normal conditions but turns negative during stress, when actual volatility outpaces the market's forward-looking expectations—a reliable signal of deteriorating conditions.
- VIX (CBOE Volatility Index): the market-consensus 30-day forward implied volatility of S&P 500 options, widely interpreted as the market's "fear gauge."

- VIX Cash Term Structure: the slope of implied volatility across maturities from 9 days to 1 year. An upward-sloping structure (contango) reflects calm conditions; an inverted structure (backwardation) signals acute near-term stress.
- VIX Futures Term Structure: similar to the cash term structure but derived from tradeable VIX futures contracts, providing additional information about market participants' forward volatility expectations across future expiration dates.
- Roll Yield: the gain or loss arising from rolling VIX futures forward as they approach expiration. Positive in contango (indicating market stability) and negative in backwardation (indicating elevated risk).
- VVIX (Volatility of VIX): the expected volatility of the VIX itself. High VVIX values indicate that the fear gauge itself is unusually uncertain—an additional layer of risk signaling that often precedes sharp market dislocations.









From fixed income markets:

- MOVE Index: the bond market's equivalent of the VIX, measuring expected volatility in U.S. Treasury bonds. Spikes in the MOVE Index frequently precede equity market stress, reflecting investor uncertainty about the macroeconomic and monetary policy outlook.
- Yield Curve Inversions: specifically the spread between 10-year and 2-year Treasury yields. Persistent inversions have historically preceded recessions and are incorporated as a medium-to-long-term risk signal.
- Equity Risk Premium (ERP): the excess return investors demand for holding equities over risk-free bonds. A narrowing or negative ERP signals that equities are relatively expensive given prevailing risks, reducing the prospective compensation for taking equity risk.

From macroeconomic and monetary policy indicators:

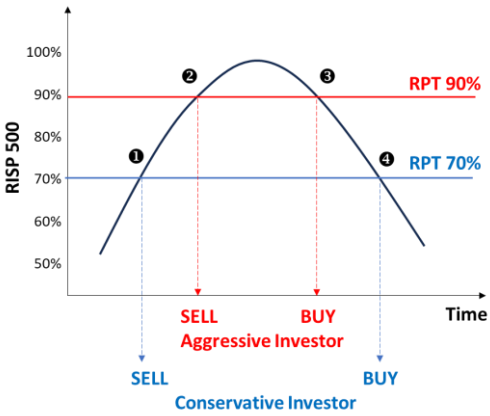
- Leading Economic Indicators (LEI): the Conference Board's composite index of forward-looking economic variables including unemployment claims, building permits, and equity prices. Sustained LEI deterioration historically precedes economic downturns and equity market declines.
- Federal Reserve Rate Hike/Cut Probabilities: derived from Fed Funds futures prices, these probabilities capture the market's real-time assessment of the monetary policy outlook, which has a first-order effect on equity valuation and risk appetite.

Each variable contributes independently to the composite score, and the indicator is calibrated and recalibrated over time as market regimes evolve. Variables may be added, reweighted, or removed as their predictive characteristics change—a feature that distinguishes the RISP 500™ from static rule-based systems.

3.3 The Percentile Rank and Risk Percentile Threshold (RPT)

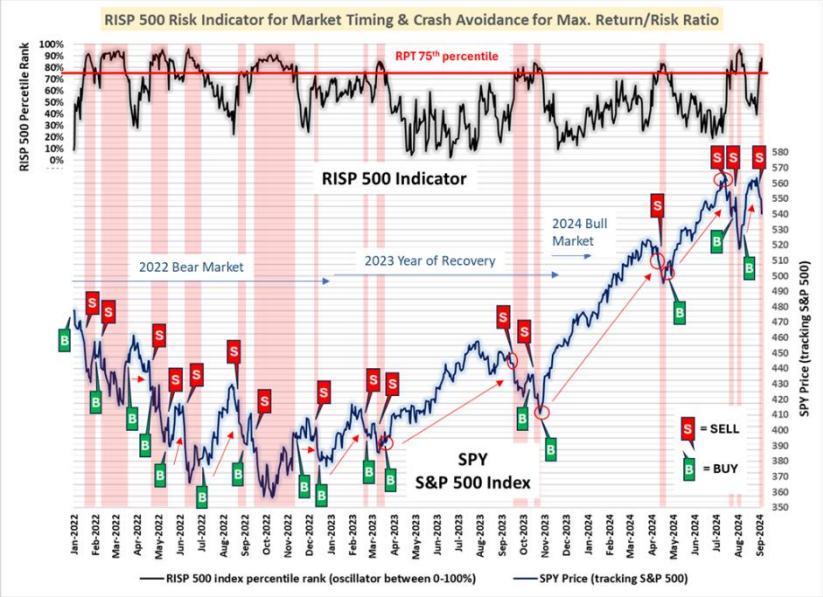
The daily RISP 500™ composite score is converted to a percentile rank—ranging from 0% (lowest risk ever observed) to 100% (highest risk ever observed) relative to the full history of daily readings since April 2008. This normalization serves two purposes: it makes the signal interpretable across different market regimes (a raw VIX of 20 means something very different in 2013 than in 2020), and it provides a natural basis for calibrating investor-specific risk thresholds.

The Risk Percentile Threshold (RPT) is the critical decision boundary. When the RISP 500™ percentile rank falls below the RPT, the system is in "Risk ON" mode—portfolios hold or add risk assets. When the rank exceeds the RPT, the system shifts to "Risk OFF" or an intermediate defensive posture—portfolios rotate toward safer assets. In a two-level strategy, there is a single RPT separating one risky asset from one safe asset. In the three-level strategies tested in this paper, two thresholds (RPT-1 and RPT-2) define three risk states: aggressive, neutral, and defensive.



Conservative investors may set lower RPTs (e.g., 65–70%), rotating to safety earlier as risk builds. Aggressive investors may set higher RPTs (e.g., 85–95%), maintaining risk exposure longer to capture additional return during periods of elevated but not extreme risk. The strategies in this paper used RPT-1 = 70% and RPT-2 = 90% for the S&P 500 and Nasdaq three risk level strategies, and RPT-1 = 75% and RPT-2 = 96% for the Volatility three risk level strategy—calibrated against 15 years of backtested data.

An important operational characteristic of this system is its low turnover. Because the RISP 500™ changes gradually rather than spiking and reversing randomly, threshold crossings tend to occur infrequently—averaging approximately one rotation every two weeks across the strategies tested. Most trading days require no action. This low-frequency character minimizes transaction costs and behavioral friction while preserving the strategic advantage of the signal.



Here is an illustration of the SMIGRM mechanism. On the top chart, RISP 500™ with RPT at 75% for a 2-level strategy based on the S&P 500 (SPY). Every time the RISP 500™ indicator crossed above 75%, the investor derisked by selling the SPY moving to Cash (Risk Off). As soon as the RISP 500™ indicator crossed below 75%, the investor bought back SPY (Risk On).

NOTE: For the purpose of this paper and live experimentation, we are reading the risk embedded in the U.S. stock market represented by the S&P 500 once a day between the trading hours of 10:30 am and 11:30 am Eastern Standard Time and publishing the RISP 500™ risk indicator (as the percentile rank) to our base of subscribers. The performance results posted on social media daily after the close for transparency purposes (the platforms' date/time stamp of each post makes this a live track record) as well as shown in this paper are based on the daily risk reading. However, there is nothing that precludes us from using the RISP 500™ risk indicator continuously intraday in real-time and even in the pre-market and after-market hours. We know that the Real-Time All-the-Time RISP 500™ can produce even more impressive results, but this is material for a separate paper.

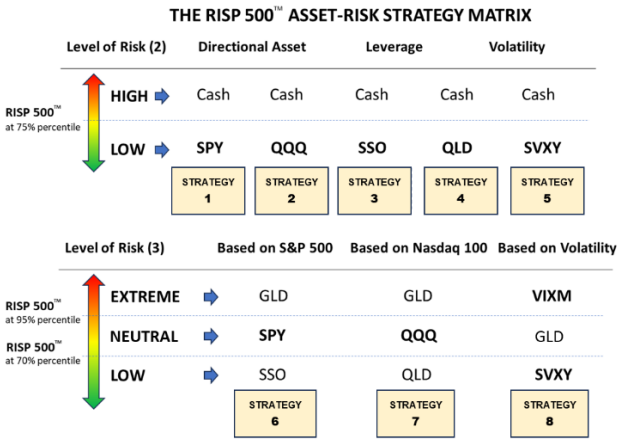
4. Strategy Design and Implementation

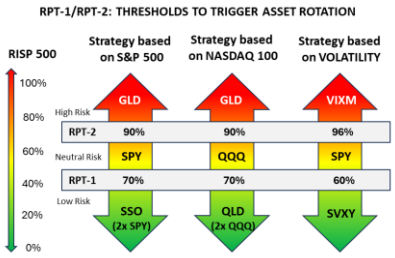
4.1 Asset Universe and Strategy Architecture

Eight strategies were launched simultaneously on January 1, 2022, following a 15-year backtesting and parameter calibration period (2008–2021). They were organized in two tiers.

The first tier comprised five two-level strategies, each rotating between a single risk asset and cash: ST-1 (SPY or Cash), ST-2 (QQQ or Cash), ST-3 (SSO or Cash), ST-4 (QLD or Cash), and ST-5 (SVXY or Cash). These strategies used a single RPT of 75% to switch between the two states.

The second tier comprised three three-level strategies, each rotating across three assets governed by two RPT thresholds: ST-6 (SSO/SPY/GLD), ST-7 (QLD/QQQ/GLD), and ST-8 (SVXY/SPY/VIXM). In the three-level design, the portfolio holds the aggressive risk asset below RPT-1, the moderate risk asset between RPT-1 and RPT-2, and the safe asset above RPT-2.





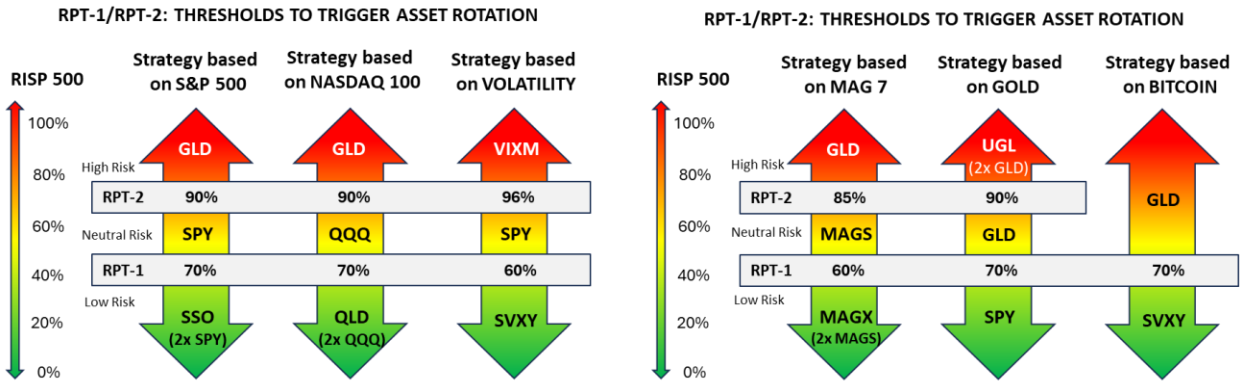
This paper reports results for all five two-level strategies (in summary) and focuses analytical attention on the three three-level strategies, which more fully embody the SMIGRM philosophy of granular, state-dependent allocation. The ETF selection reflected practical considerations: liquidity, accessibility to retail and institutional investors, low expense ratios, and sufficient price history for backtesting.

As of January 2, 2026, daily public publication of the five two-level strategies was discontinued in favor of the three-level strategies and a new set of thematic strategies (Magnificent-7, Gold, and Bitcoin). This decision reflected the judgment that three-level strategies offer superior risk management granularity and that the expanded strategy set better serves the framework's

educational and research objectives. The author continues to hold positions in the two-level strategies personally.

4.2 Execution Protocol and Transparency

4.3 Reference to Backtesting



Prior to live trading, all eight strategies were backtested over the period April 2008 through December 2021—a 15-year window anchored to the Global Financial Crisis, chosen to include the most severe stress conditions in the available data. Backtesting served two purposes: parameter calibration (determining RPT levels that optimized the risk-return profile across multiple market regimes) and directional validation (confirming that the RISP 500™ signal produced superior outcomes to passive benchmarks across bull, bear, and mixed environments). Backtested results have been nothing short of impressive (after extensive calibration and model refinement) and they are directionally consistent with live results but are not the primary evidentiary basis of this paper. The four-year live record is a much stronger track record and is presented as the definitive test of the framework.

5. Results: Four Years of Live Trading (January 1, 2022 – December 31, 2025)

5.1 Market Context of the Test Period

The four-year live trading period provided an unusually complete stress test for any investment methodology, combining a severe bear market, two years of strong bull market conditions, and a more complex mixed environment.

2022 was the defining test year. The S&P 500 declined 19.5% (SPY: −19.48%), its worst year since 2008, driven by the Federal Reserve's most aggressive rate-hiking cycle in four decades. Critically, the bond market declined simultaneously, delivering double-digit losses to balanced portfolios and directly refuting the correlation assumptions underlying conventional static allocation. For SMIGRM, this was precisely the environment the system was designed to

navigate—an environment in which the RISP 500™ elevated readings should have prompted defensive rotation before the deepest losses materialized.

2023 brought a strong recovery, with SPY returning +24.29%, driven by resilient corporate earnings and growing enthusiasm for artificial intelligence. This year tested the system's ability to re-enter risk assets promptly as conditions normalized, avoiding the behavioral trap of remaining defensively positioned well into a bull market.

2024 continued the bull market with SPY returning +23.30%, albeit with higher policy uncertainty and episodes of volatility. This year tested the consistency of the signal across a broadly favorable but occasionally turbulent environment.

2025 brought a more mixed picture, with SPY returning +16.35% against a backdrop of elevated geopolitical risk and macroeconomic uncertainty. Strategy-level performance remained strong relative to the benchmark across all three three-level strategies.

5.2 Primary Results: S&P 500 Strategy (ST-6: SSO/SPY/GLD)

Table 1 presents the annual and cumulative performance of the S&P 500 Strategy versus the SPY benchmark.

Year	SPY Return	S&P 500 Strategy Return	Gain vs. SPY	Cumulative Strategy ST-6	Cumulative SPY
2022	**−19.48%**	**+41.67%**	+61.15 pp	+41.67%	−19.48%
2023	+24.29%	**+88.52%**	+64.23 pp	+167.27%	+0.07%
2024	+23.30%	+27.80%	+4.50 pp	+241.60%	+23.40%
2025	+16.35%	+25.60%	+9.25 pp	**+328.73%**	+43.57%
4-Year CAGR	~9.5%	**~42.8%**	~33.3 pp	**$428,729**	$143,574

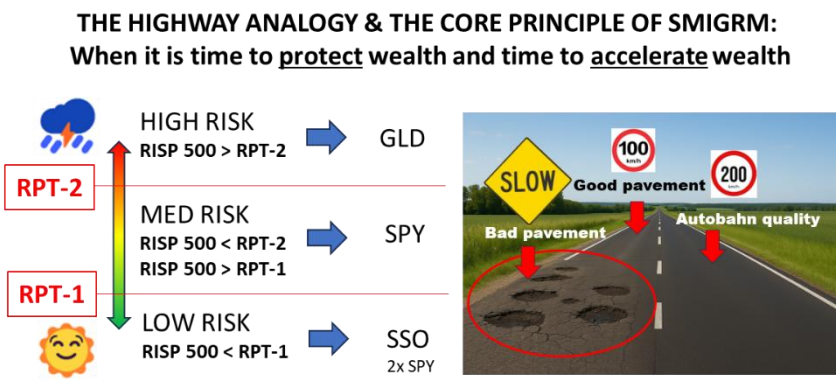
Table 1: S&P 500 Strategy (SSO/SPY/GLD) vs. SPY Benchmark — Annual and Cumulative Returns, January 1, 2022 – December 31, 2025. Initial investment: $100,000. Strategy used RPT-1 = 70%, RPT-2 = 90%.

The results are striking across every dimension. In 2022—the year that most devastated conventional portfolios—the strategy returned +41.67% while SPY declined 19.48%, a differential of more than 61 percentage points. This 2022 outperformance is the most important single data point in the record: it demonstrates that the RISP 500™ signal identified rising risk sufficiently early to rotate defensively before the deepest losses occurred, and that the strategy participated meaningfully in the early recovery within the same calendar year.

Over the full four years, the S&P 500 Strategy turned $100,000 into $428,729—nearly a 4.3x multiple—while a passive SPY investor turned $100,000 into $143,574. The strategy's maximum drawdown over the period was −15.97%, materially lower than SPY's −25.36%, despite achieving dramatically higher returns. The resulting RoMaD of 20.9x versus SPY's 1.8x is not a

marginal improvement; it represents a fundamentally different risk-return profile—one that achieves the goal this framework was designed to address: wealth preservation with high returns.

Why SMIGRM has achieved such results: An easy way to interpret this is the "Highway Analogy" – On a road trip, you may encounter all kinds of pavement quality. Some will require slower speeds (unless you want to waste more time fixing your car's suspension) but a high quality pavement (Autobahn quality) allows you to safely speed up. Same with SMIGRM: the RISP 500™ will distinguish moments to be defensive to protect wealth from moments to safely accelerate wealth.

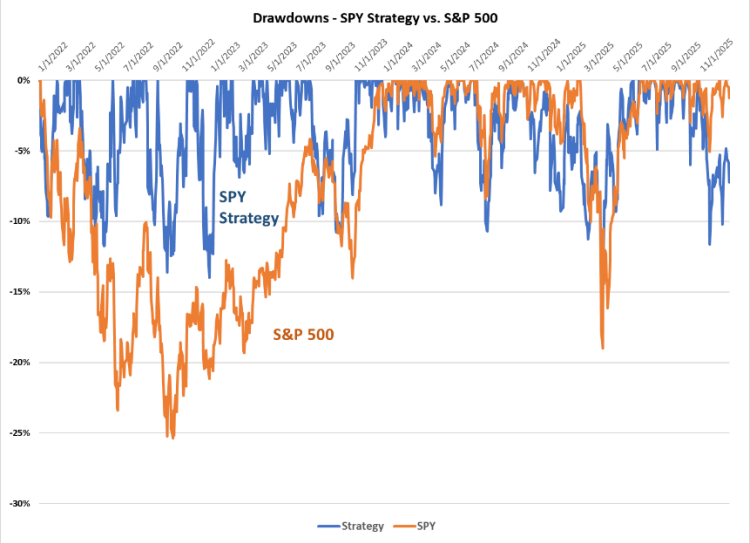


5.3 Secondary Results: Nasdaq 100 and Volatility Strategies

Table 2 presents summary results for all three three-level strategies and all five two-level strategies, alongside the SPY benchmark, for the full four-year period.

Strategy	Cumulative Return	4-Yr CAGR	Max Drawdown	RoMaD	$100k Grew To
ST-6: S&P 500 Strategy (SSO/SPY/GLD)	**+328.73%**	~42.8%	−15.97%	**20.9x**	$428,729
ST-7: Nasdaq 100 Strategy (QLD/QQQ/GLD)	**+401.00%**	~48.5%	−24.23%	**16.9x**	$500,999
ST-8: Volatility Strategy (SVXY/SPY/VIXM)	**+321.70%**	~41.5%	−18.36%	**17.4x**	$421,702
Two-Level Strategies (Summary)					
ST-1: SPY or Cash	+55.81%	~11.6%	−8.72%	6.4x	$155,810
ST-2: QQQ or Cash	+77.84%	~15.6%	−14.52%	5.4x	$177,840
ST-3: SSO or Cash	+121.19%	~21.7%	−18.58%	6.5x	$221,190
ST-4: QLD or Cash	+183.33%	~29.4%	−31.70%	5.8x	$283,330
ST-5: SVXY or Cash	+207.66%	~31.4%	−21.16%	9.8x	$307,660
SPY (Buy & Hold Benchmark)	+43.57%	~9.5%	−25.36%	1.8x	$143,574

Table 2: Complete Performance Summary — All Eight SMIGRM Strategies vs. SPY Benchmark, January 1, 2022 – December 31, 2025. Initial investment: $100,000. Three-level strategy results use corrected P/L methodology (adopted January 2026). Two-level strategy results as originally reported. RoMaD = Return over Maximum Drawdown.



Several observations are warranted. First, the three-level strategies substantially outperformed their two-level counterparts using the same underlying risk assets, confirming that granular risk segmentation adds meaningful value. The S&P 500 three-level strategy (+328.73%) materially outperformed the equivalent two-level strategy (+55.81%), though both significantly exceeded the benchmark. This reflects the three-level design's ability to maintain partial market exposure during intermediate-risk environments rather than switching entirely to cash.

Second, and most importantly, all eight strategies—across different asset classes, leverage levels, and strategy architectures—delivered positive cumulative returns substantially in excess of the benchmark over the same four-year period. This consistency across strategies argues against the results being attributable to luck or the peculiarities of any single asset's behavior. The RISP 500™ risk indicator appears to provide a genuine and generalizable edge.

Third, the maximum drawdowns of all strategies were lower than the benchmark's −25.36%, despite several strategies using leveraged ETFs (SSO, QLD) that amplify underlying volatility. This is the empirical demonstration of SMIGRM's central claim: that intelligent risk-guided rotation can achieve lower drawdowns than passive holding of the same underlying assets, precisely because it rotates to safer assets before the deepest losses materialize.

5.4 Key Analytical Observations

The 2022 bear market year deserves particular emphasis. In that year, the S&P 500 Strategy returned +41.67% while SPY lost 19.48%—a 61-percentage-point differential in a single calendar year. This outcome reflects the RISP 500™ successfully signaling defensive rotation into GLD and SPY (from SSO) ahead of the deepest phases of the bear market, then re-entering more aggressively as risk conditions normalized. The cumulative effect of avoiding the 2022 bear market was dramatic: the strategy entered 2023 at a level roughly 150% above where the SPY benchmark ended 2022, giving SMIGRM investors a compounding advantage from which the benchmark never fully recovered within the test period.

The low-turnover character of the strategies warrants explicit note. The S&P 500 Strategy executed approximately 26–29 rotations per year—roughly one trade every two weeks—across the test period, totaling 131 cycles over four years. This level of trading activity is well within the

operational capacity of most retail and institutional investors and generates minimal transaction cost drag even at standard ETF bid-ask spreads.

TRADING FREQUENCY: NUMBER OF TRADES PER YEAR

Year		Strategy 1 SPY / Cash	Strategy 2 QQQ / Cash	Strategy 3 SSO / Cash	Strategy 4 QLD / Cash	Strategy 5 SVXY / Cash	Strategy 6 SSO / SPY / GLD	Strategy 7 QLD / QQQ / GLD	Strategy 8 VIXM / SPY / SVXY
	RPT >	75%	75%	75%	75%	75%	70%/90%	70%/90%	70%/96%
2022	LT	18	17	15	16	14	53	53	29
2023	LT	9	8	8	8	8	22	22	16
2024	LT	10	10	10	10	10	27	27	21
2025	LT	14	13	13	13	11	29	29	29
Average Per Year		13	12	12	12	11	33	33	24
Average Per Month		1.1	1.0	1.0	1.0	0.9	2.7	2.7	2.0

The performance calculation correction adopted in January 2026 is also worth documenting transparently. The original formula for three-level strategies understated performance. This formula aimed at avoiding the idle cash problem. Since the yardstick has always been the S&P 500 index, we wanted a fair comparison because a strategy that rotates assets at different price levels (e.g., SPY at 600s, SSO at 60s, and GLD at 400s), there will be cash left at each rotation idle earning 0% return. By comparing a strategy with idle cash with a simple buy & hold of another asset (e.g., SPY) wouldn't be fair. This problem affected only 3-level strategies. The 2-level strategies where cash is the safe asset in the rotation were not affected. However, over time, we realized that:

- The no-idle cash formula was distorting results (under-reporting real performance);
- The idle cash problem proved to be negligible.

Therefore, we decided to revise the daily return calculation formula that is much simpler and straightforward during rotations:

- Utilize all cash available from the sale of the rotating-from asset to buy the rotating-to asset. Any remainder cash will remain idle and uninvested.
- Calculate the daily return based on total amount of the portfolio (asset + cash).

The corrected formula actually revealed that the three-level strategies performed even better than originally reported and posted on social media. For transparency, we made the blotter and performance spreadsheet available to all our subscribers. The corrected figures used in this paper reflect the true investment experience.

6. Limitations and Future Research

6.1 Known Limitations

This paper's results, while striking, should be interpreted with several important caveats.

The four-year live trading record, though it spans a complete bear-bull cycle, remains a relatively short period. Four years is a meaningful sample for a strategy that generates 26–53 rotation events per year—yielding 100 to 200 independent decision-outcome observations—but it cannot capture the full range of market environments that may be encountered over longer horizons, including prolonged secular bear markets, stagflationary decades, or structural changes in the volatility complex.

The RISP 500™ is a proprietary indicator. Results presented in this paper are not independently replicable without access to the daily risk indicator readings and the calculations processed by the algorithm, which means this work does not meet the full standard of academic replicability. The authors address this limitation through the transparency of the public daily posting record and the availability of the complete trading blotter to subscribers.

The RPT parameters were calibrated on backtested data. While every effort was made to avoid overfitting—testing multiple RPT levels across multiple strategy configurations across 15 years of data—the possibility of in-sample optimization cannot be fully excluded. The live trading record provides out-of-sample validation. The RPTs chosen by each investor may vary given his or her own risk tolerance. Therefore, it's very plausible that investors will have different results given their personal choices. Besides, we execute trades right after the RISP 500™ is calculated and published. Investors may delay reading the email, execute the trade later with different intraday prices, and some have even reported forgetting to read the email in some critical days.

Finally, the strategy's results depend on the continued relevance of the RISP 500™'s input variables as leading indicators of market risk. Market microstructure evolves over time, and variables that have historically carried predictive information may lose that signal as market participants adapt. The indicator's recalibration mechanism—adding, removing, or reweighting variables as market regimes change—is a partial mitigation but not a guarantee.

6.2 The Whipsaw Problem: A 2026 Live Case Study

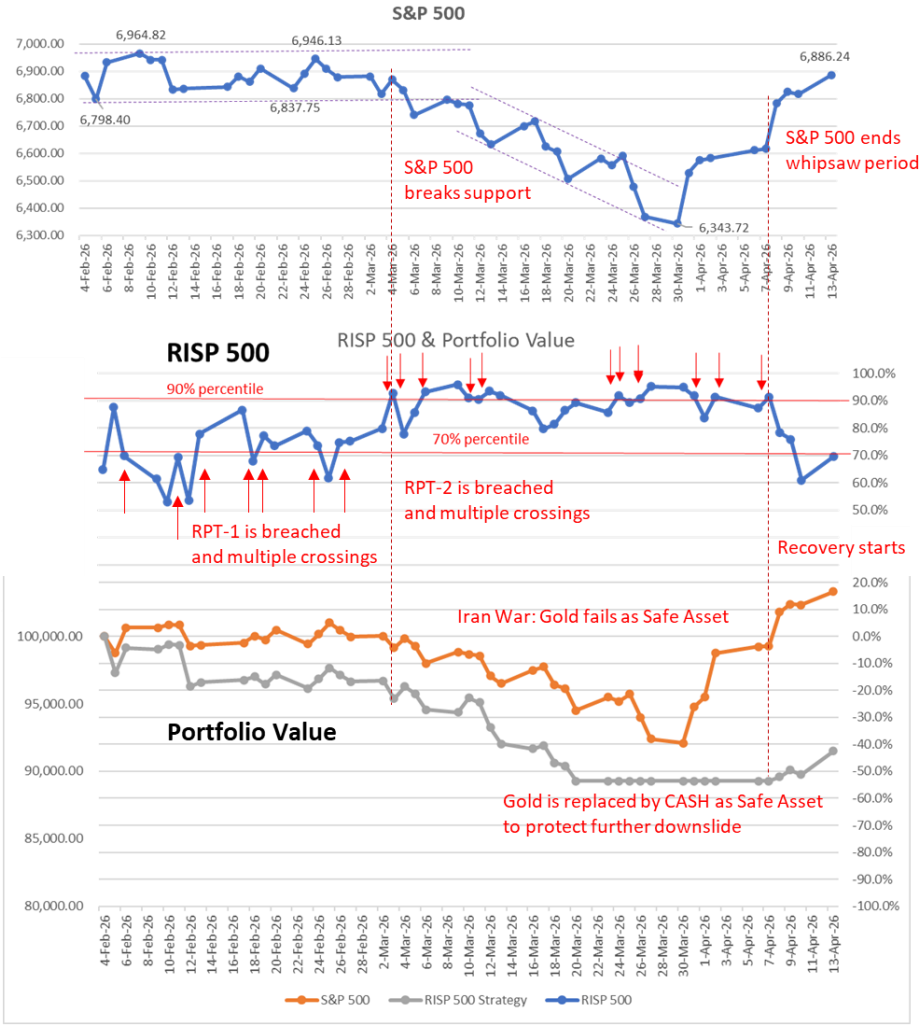
Every investment or trading system ever created has a Achilles Heel. The most significant structural vulnerability of SMIGRM—and of all tactical, signal-based investment systems—is the whipsaw: a market regime characterized by directionless, oscillating price action in which the market repeatedly crosses the system's signal thresholds (RPTs) without establishing a sustained trend in either direction. Whipsaw conditions cause tactical systems to sell near local lows (when risk signals elevate) and buy back near local highs (when risk signals normalize), gradually eroding performance through a series of individually small but cumulatively material losses.

It is important to contextualize this vulnerability. Tactical trend-following systems perform best precisely when they are most valuable to investors: during sustained bull and bear markets, including sudden crashes. It is during these extended directional moves that SMIGRM delivers its strongest outperformance—remaining in risk assets through multi-year bull markets while rotating to safety before and during bear markets, as the 2022–2025 live record demonstrates. The whipsaw is, in this sense, the price paid for a system designed to excel in the conditions that most damage

conventional investors. Since whipsaw regimes are normally temporary and don't occur very frequently, this trade-off is well understood and accepted in the trend-following literature and is not unique to SMIGRM.

SPY price action
Early 2026

Nevertheless, the whipsaw problem is real, and the period beginning in January 2026 provided a live laboratory for studying it under acute conditions. Beginning approximately January 13, 2026, and extending through April 14, 2026, the RISP 500™ began oscillating repeatedly across both RPT-1 and RPT-2 thresholds while the S&P 500 and Nasdaq 100 indices moved sideways and rangebound without establishing a directional trend. This pattern is a hallmark of a whipsaw regime: the risk indicator generates frequent rotation signals, each individually appearing justified, but the market fails to follow through in the direction implied by the signal before reversing.



This episode was unusual in its intensity—the most severe whipsaw encountered since live trading began in January 2022—and was compounded by a simultaneous breakdown in the reliability of Gold as a safe asset. The onset of geopolitical conflict in the Middle East (the Iran War) elevated Gold's correlation with equity markets, reducing its effectiveness as a defensive rotation asset at precisely the moment when defensive rotation was most frequent. The gold ETF GLD price has dropped steeper than the SPY, further compounding losses. The combination of whipsaw-induced trading friction and safe-asset failure created a period of material performance drag across all three three-level strategies.

Two adaptive responses were implemented in real time, demonstrating a key feature of the SMIGRM framework: parameter flexibility. First, Gold was replaced by Cash as the safe asset in the rotation, eliminating exposure to the correlation breakdown. Second, RPT-1 for the Volatility Strategy (ST-8) was lowered from 75% to 60% to reduce rotation frequency under elevated whipsaw conditions.

This episode, while painful in the short term, served as an invaluable research opportunity. The fact that the whipsaw emerged during an exogenous geopolitical shock—rather than through gradual market drift—highlights a specific challenge: the early identification of whipsaw regime formation before small losses have already accumulated. The ability to detect the early stages of a whipsaw regime, and to adjust execution accordingly, represents the most important near-term research priority for SMIGRM.

The good news is that strategy performance recovered very quickly (in just a month) and meaningfully once the whipsaw regime normalized following April 14, 2026, with the Nasdaq 100 Strategy regaining a +10% advantage over the S&P 500 Benchmark within just a month. The S&P 500 Strategy is now just about 1% behind the S&P 500 Benchmark and should also start beating it in a matter of days, if current trends holds. Long-term performance (4+ years) is still stellar massively outperforming the S&P 500 Benchmark. Here is an update as of May 14, 2026:

2026 YTD Return Ranking

Asset/Strategy	YTD Return
NASDAQ 100 Strategy	19.37%
S&P 500 Index (SPY)	9.72%
S&P 500 Strategy	8.50%
MAGNIFICENT-7 Strategy	4.23%
GOLD Strategy	2.18%
VOLATILITY Strategy	-16.86%
BITCOIN Strategy	-19.18%

Published every day after the close
P/L Calculation: $100k initial investment
DD: Drawdowns; RoMAD: Ret overMax DD

2022 to Date Performance Ranking Live since 1/Jan/2022

Asset/Strategy	Cumulative Return	CAGR	Max DD	RoMaD
NASDAQ 100 Strategy	498.02%	49.73%	-25.69%	19.4x
S&P 500 Strategy	365.17%	41.48%	-16.97%	21.5x
VOLATILITY Strategy	250.59%	32.73%	-21.59%	11.6x
S&P 500 Index (SPY)	57.52%	10.80%	-25.36%	2.3x

NOTE: MAG-7, GOLD, BITCOIN Strategies - Official track record starts on 1/1/2026 (left table)

Initial Investment of $100,000 since 1/1/2022

Asset/Strategy	Amount Today ($)	Growth
NASDAQ 100 Strategy	$ 598,022.44	6.0x
S&P 500 Strategy	$ 465,170.48	4.7x
VOLATILITY Strategy	$ 350,585.89	3.5x
S&P 500 Index (SPY)	$ 157,522.74	1.6x

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6.3 Future Research: Whipsaw Detection and the Second Paper

A formal study is now underway to evaluate a combination of several candidate indicators for early whipsaw regime detection. The research question is whether any measurable market characteristic reliably signals the transition from a trending to a choppy, directionless environment early enough to allow pre-emptive parameter adjustment. Several indicators are under evaluation:

- Kaufman Efficiency Ratio: measures the directional efficiency of price movement relative to total path traveled; values approaching zero indicate highly chaotic, directionless markets.
- Average Directional Index (ADX): a classic technical measure of trend strength; sustained low ADX values are associated with range-bound, whipsaw-prone markets.
- Moving Average Crossover Failure Rate: the frequency with which moving average crossover signals are reversed within a short window; elevated failure rates signal whipsaw conditions.
- Hurst Exponent: a measure of long-range dependence and fractal dimension in time series; values near 0.5 indicate random walk behavior (consistent with whipsaw), while values above 0.5 indicate trending behavior.
- VVIX Persistence: sustained elevated readings of the Volatility of VIX may signal regime instability that precedes whipsaw conditions in the underlying market. During the recent whipsaw episode from January 13 to April 14, 2026, VVIX has stayed above 97.64%. The long-term average of VVIX is 94.6%.

The objective is not to eliminate whipsaw losses—no tactical system can fully achieve this without forgoing the trend-following advantages that produce the strategy's primary outperformance—but to develop a regime-detection overlay that modulates RPT levels or execution frequency when whipsaw conditions are identified early, thereby limiting the damage without permanently compromising the system's core edge.

A companion paper reporting the conclusions of this study, including backtested and prospective results of the most promising whipsaw-detection approaches, is in preparation. The two papers together will constitute a more complete treatment of the SMIGRM framework and its evolution in response to live market experience.

7. Conclusion

The central argument of this paper is that risk management deserves a more central role in investment decision-making than the conventional paradigm assigns to it. Traditional approaches treat risk as a constraint to be managed after assets have been selected; SMIGRM treats risk measurement as the primary input that determines whether and how capital should be deployed. The evidence presented here—four years of live, publicly verified trading results across eight strategies and multiple asset classes—suggests that this reorientation produces outcomes that are materially superior by every conventional performance metric.

The S&P 500 Strategy (SSO/SPY/GLD), the most conservative of the three-level strategies tested, returned +328.73% cumulatively over the four-year period (January 1, 2022 – December 31, 2025) against +43.57% for buy-and-hold SPY, while maintaining a maximum drawdown of −15.97% versus −25.36% for the benchmark—despite using a leveraged ETF as its primary risk-on asset. The resulting RoMaD of 20.9x versus 1.8x for the benchmark captures the framework's core achievement: the simultaneous delivery of wealth preservation and high returns, traditionally presented as an irresolvable trade-off. Results are consistent and directionally replicated across the Nasdaq 100 Strategy, the Volatility Strategy, and all five two-level strategies.

Several features of these results deserve emphasis. The 2022 bear market year—the most severe test of the framework's crash-protection claims—produced the largest absolute outperformance: +41.67% for the S&P 500 Strategy while SPY declined 19.48%. This is not a back-tested simulation; it is a real-time record of capital deployed and returns earned, with daily performance posted publicly and independently time-stamped on social media platforms. The subsequent bull market years (2023–2025) confirmed that the system re-entered risk assets sufficiently promptly to participate meaningfully in the recovery, avoiding the behavioral trap of permanent defensiveness that often afflicts risk-averse investors who exit markets during downturns.

The paper's transparent treatment of the whipsaw problem—SMIGRM's primary structural vulnerability and a challenge shared by all tactical signal-based systems—is intended to contribute to a more honest and productive discourse about the real limitations of active risk management. Whipsaw regimes are relatively infrequent, but they are not negligible; the 2026 Iran War episode demonstrated their capacity to cause meaningful performance drag even in a well-designed system. The framework's parameter flexibility—the ability to adjust RPT levels and substitute safe assets in real time—provides a partial mitigation, but a more robust early-warning capability for whipsaw detection is needed and is actively being developed.

The broader implication of this work extends beyond any specific indicator or strategy. The binary debate between active and passive investing has dominated investment practice and academic discussion for decades. SMIGRM offers a third path: not stock selection, not static index exposure, but dynamic, risk-state-driven allocation that is systematic enough to avoid behavioral biases yet adaptive enough to respond to changing market conditions. As the structural conditions that supported passive investing over the past four decades—secular decline in interest rates, expanding valuation multiples, low geopolitical volatility—continue to erode, frameworks that can navigate elevated and shifting risk environments with discipline may prove increasingly valuable.

Future work will extend this research in several directions: the companion paper on whipsaw detection, expansion of the strategy universe to include non-U.S. equity markets, and deeper investigation of the statistical properties of the RISP 500™ risk indicator across multiple economic regimes. The authors welcome collaboration with academic researchers and institutional practitioners interested in building on this foundation.

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Appendix: Notes on Data, Methodology, and Transparency

A.1 Performance Data

All performance data reported in this paper is drawn directly from the live trading record maintained by the author and published daily on Facebook (www.facebook.com/RISP500) and X (www.x.com/RISP500) beginning January 1, 2022. Platform timestamps on each post provide

independent verification of the date and time of each performance disclosure. The complete trading blotter, including daily positions, asset prices, rotation events, and P/L calculations, is contained in the RISP 500 Performance Tables spreadsheet distributed to subscribers of the RISP 500™ service.

A.2 Performance Calculation Methodology (Corrected)

Effective January 23, 2026, the performance calculation methodology for three-level strategies (ST-6, ST-7, ST-8) was corrected. The original methodology contained an accounting error that understated true performance by wrongly adjusting the number of shares of the target asset to reflect the full cash proceeds from the sale of the source asset during rotation events. The corrected methodology assumes: (1) all sale proceeds are fully reinvested in the purchased asset; (2) any residual cash from rounding is retained uninvested; (3) daily returns are calculated on the full portfolio value (asset + cash); and (4) returns are compounded daily. The correction resulted in upward revisions to all three three-level strategy results as compared with previously published figures. Two-level strategy figures were not affected. For total transparency, the RISP 500 Performance Tables spreadsheet with all formulas were distributed to subscribers of the RISP 500™ service so the calculations could be independently verified by all the users themselves.

A.3 RISP 500™ Variable Disclosure

The following variables are incorporated in the RISP 500™ composite indicator. Weights, functional forms, and aggregation methodology are proprietary and not disclosed: Volatility Risk Premium (VRP), VIX (CBOE Volatility Index), VIX Cash Term Structure (VIX9D, VIX3M, VIX6M, VIX1Y ratios), VIX Futures Term Structure (contango/backwardation), Roll Yield, VVIX (Volatility of VIX), MOVE Index (bond market volatility), Yield Curve Inversions (10Y-2Y Treasury spread), Equity Risk Premium (ERP), Leading Economic Indicators (LEI), Federal Reserve Rate Hike/Cut Probabilities (derived from Fed Funds futures). More than fifteen variables are incorporated in total; additional variables beyond those listed are not disclosed.