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RESEARCH PAPER

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Regime-Based ETF Allocation with Systematic Trend Control

An academically grounded framework for rule-based capital market navigation

Strategy Lines: MightyMarkets Plus & MightyGlobal Plus

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Abstract

Markets do not move in straight lines — they breathe, stumble, sprint and rest. Anyone managing capital over the long term faces a fundamental choice: passively accept the ups and downs of markets, or attempt to systematically identify structural phase transitions and react accordingly. The present paper analyses a rule-based approach of the second category.

The Mighty-Strategy model combines global ETF diversification with an asymmetric trend-control mechanism. At its core is the idea that exiting falling markets should be more defensively calibrated than re-entering rising ones — a logic grounded in the differing speeds of bear and bull markets. The model is implemented in two strategy lines: MightyMarkets Plus, an unlevered variant focused on drawdown reduction, and MightyGlobal Plus, which additionally deploys a 2x leveraged ETF on the MSCI World as a trend accelerator.

This paper describes the market architecture of the core portfolio, the exit and re-entry logic, the theoretical foundation through academic research on trend-following strategies and factor premia, a comparative analysis of the two strategy lines, and a regime analysis of historical crisis scenarios. The aspiration is not to present a perfect crystal ball but a transparent, auditable rule set that can offer structural advantages in specific market phases — and whose limitations are stated just as clearly as its strengths.

1. Research Background: Why Rule-Based Allocation?

The history of capital markets can be read as a succession of regimes. There are phases of near-uninterrupted growth — think of the years 2012 to 2019 — followed by collapses that destroy months or years of capital within a few weeks, as in March 2020. In between lie sideways phases where the market appears to drift aimlessly and neither bull nor bear gains the upper hand.

Classic index strategies — such as a passive investment in an MSCI World ETF — accept all of these phases equally. The investor absorbs every drawdown in full and in return participates in the long-term market risk premium without transaction costs and without the risk of timing errors. This strategy has much to recommend it, particularly for investors with a time horizon of 20 years or more and the psychological resilience to sit through a 50 per cent loss.

Yet not every investor has that time horizon or that nerve. And this is precisely where regime-based models come in. They attempt to identify transitions between market phases and adjust allocation accordingly. The Mighty-Strategy belongs to this family of approaches.

1.1 The Academic Foundation of Trend Following

The idea that prices move in trends is one of the oldest principles of technical analysis. Yet it is only in recent decades that academic research has systematically investigated this observation. The results are remarkably consistent: trend-following strategies deliver risk-adjusted returns over long

periods that are comparable to or superior to passive strategies — though not at all times and not in every market environment.

Jeremy Siegel, Professor at the Wharton School, tested a 200-day signal on the Dow Jones Industrial Average over the period from 1886 to 2012, using a 1 per cent band to reduce false signals. His findings showed that the timing strategy was able to avoid the largest short-term crashes in history — including Black Tuesday 1929 and Black Monday 1987 — and delivered an annualised return of 9.7 per cent, compared with 9.4 per cent for buy-and-hold. The outperformance sounds modest, but it obscures the real advantage: dramatically lower drawdowns.

*Source: Siegel, J. (2014), *Stocks for the Long Run, 5th edition*; Carlson, B. (2018), *A Wealth of Common Sense*.*

A comprehensive study in *Quantitative Finance* (2020) compared the two most popular trend-following rules — momentum and moving average — from a theoretical perspective. The authors found that moving-average rules exhibit more robust forecast accuracy for future trend direction than pure momentum signals. At the same time, they found that the similarity between the two approaches increases with the strength of the trend.

Source: Quantitative Finance, 2020, "Trend following with momentum versus moving averages: a tale of differences."

Paul Tudor Jones, one of the best-known trend-following investors, put the philosophy succinctly: the 200-day moving average is above all an instrument of defence. One is unlikely to suffer a catastrophic drawdown, but one will frequently be stopped out. This is the central tension of every trend-following strategy: protection in crisis periods versus costs in trendless phases.

2. Market Architecture of the Core Portfolio

The centrepiece of both Mighty strategy lines is a globally diversified core portfolio that accounts for 70 per cent of the total investment. It consists of seven equally weighted segments, representing a deliberate departure from the market-capitalisation-weighted logic of an MSCI World.

2.1 The Seven Segments in Detail

The segment structure comprises the S&P 500 (US large caps), the Russell 2000 (US small caps), the STOXX Europe 600 (European broad market), European small caps, emerging-market large caps, emerging-market small caps, and the Nasdaq-100 (technology-heavy, US-dominated). This composition is by no means random but follows a clear factor-based logic.

2.2 Academic Foundation: Why These Segments?

Size Factor (Small-Cap Premium): The observation that small companies generate higher long-term returns than large ones is one of the longest-documented anomalies in financial-market research. Rolf Banz first identified the size effect in 1981, and Fama and French incorporated it into their influential three-factor model in 1993 as the SMB factor (Small Minus Big). The model explains over

90 per cent of the return variance of diversified portfolios — significantly more than the approximately 70 per cent explained by the classical CAPM.

Sources: Banz, R. (1981), "The Relationship Between Return and Market Value of Common Stocks"; Fama, E. & French, K. (1993), "Common Risk Factors in the Returns on Stocks and Bonds."

However, the small-cap premium is not a foregone conclusion. The SMB factor performed superbly until the early 1980s but then stagnated over extended periods. More recent research suggests that the premium may be driven primarily by acquisition activity involving smaller companies. For the Mighty-Strategy approach, this means that the integration of small caps via the Russell 2000, European small caps and emerging-market small caps diversifies the sources of the size premium across regions, thereby reducing the risk that it fails to materialise in any single region.

Source: Morningstar Research (2024), "What Happened to the Size Premium?"; Berenberg Asset Management, "Small Caps, Big Returns."

Emerging-Markets Premium: Emerging-market equities offer an additional risk premium derived from higher political and currency-related uncertainty. The Fama-French research has shown that local factors in emerging markets often exhibit different patterns from those in developed markets: the value factor retains its explanatory power, while the market-capitalisation-based size effect displays different characteristics. The dual emerging-market allocation (large and small caps) makes it possible to capture both dimensions.

Technology Focus via the Nasdaq-100: The Nasdaq-100 introduces an additional growth element into the portfolio. Historically, technology-heavy indices display higher volatility but also greater trend persistence. This is particularly relevant for a trend-controlled model: the more pronounced the trend, the better the moving-average mechanism works.

2.3 Equal Weighting vs. Market Capitalisation

A passive MSCI World investor is effectively approximately 70 per cent invested in US equities, with virtually no small-cap exposure. The equal weighting of the seven segments in the Mighty core portfolio results in a deliberate overweight of Europe, emerging markets and small companies. This is an active decision based on the expectation that factor premia are compensated over the long run, even if they may be absent over shorter periods.

One further point is crucial: the entire core portfolio can be moved fully into cash. This is not a static allocation but a dynamic system in which each segment can independently rotate into the money market as soon as its trend signal requires it.

3. The Operational Rule Set: Asymmetric Trend Mechanism

The rule-based control mechanism is the heart of the Mighty-Strategy and what distinguishes it from a static factor allocation. The mechanism is built on two moving averages with deliberately different parameters for exit and entry.

3.1 Exit Rule: The 200-Day Line as a Defensive Wall

An ETF is liquidated when two consecutive closing prices fall below the 200-day moving average. The requirement for two consecutive closing prices is not a cosmetic addition but a statistically meaningful measure to reduce false signals. Backtests on the S&P 500 show that the use of a confirmation day can reduce the false-signal rate by a significant number of percentage points. The literature frequently recommends a confirmation period of three to five days; the Mighty-Strategy opts for two days as a middle ground between signal reduction and response speed.

Cf. LuxAlgo Research (2025): A 5-day confirmation period reduced false signals in the Russell 2000 by approximately 20 per cent.

The 200-day moving average is by far the most widely observed long-term trend marker in capital markets. It corresponds approximately to the number of trading days in a year and is regarded by institutional investors worldwide as the dividing line between bull and bear markets. Historical data on the S&P 500 since 1928 show a clear pattern: in phases above the 200-day average, the mean return was higher and volatility lower than in phases below it. Equities were above this line for approximately two-thirds of the time.

Source: Carlson, B. (2018), A Wealth of Common Sense, based on S&P 500 data since 1928.

3.2 Re-Entry Rule: The 38-Day Line as an Accelerator

An ETF is reallocated when a valid 200-day exit has previously occurred and two consecutive closing prices subsequently rise above the 38-day moving average.

This asymmetric mechanism — slower exit (200 days), faster re-entry (38 days) — is the key architectural element of the model. It rests on an empirically well-documented observation: bear markets typically develop more slowly than the subsequent recovery phases. The long-term average therefore reliably signals the onset of a structural downtrend, while a shorter-term average responds earlier to an upward trend reversal.

The choice of 38 days for the re-entry is noteworthy because it falls just below the commonly used 50-day moving average. This can be interpreted as a deliberate strategy to avoid crowding effects: when millions of market participants are watching the 50-day average, a slightly different parameter can provide an information advantage. The academic literature discusses this effect under the heading of "crowded trades" — the finding that widely followed signals can lose effectiveness when too many market participants react to them simultaneously.

Cf. Quantified Strategies (2025): The use of a moving average close to 200 days but with a slight deviation (e.g. 182 or 213 days) can help to avoid crowding.

3.3 The Logic of the Asymmetry

Why not simply use the same average for both entry and exit? The answer lies in the differing nature of downward and upward phases. During the 2008 financial crisis, the bear market lasted over 16 months from peak to trough — a slow, accelerating descent. The subsequent recovery, however, set

in with a momentum that a slow moving average would not have confirmed until months later. A symmetric system (e.g. 200 out, 200 in) would have signalled the re-entry in spring 2009 with a considerable delay. The asymmetric mechanism thus enables a defensive exit and a more aggressive re-entry — a design principle that reflects the different speed profiles of fear and greed in markets.

4. Two Strategy Lines: Markets Plus vs. Global Plus

The Mighty-Strategy is offered in two variants that differ in one decisive respect: the use of leverage. This differentiation makes it possible to serve different risk profiles and investment objectives without altering the core mechanism of the model.

4.1 MightyMarkets Plus: The Conservative World Strategy

MightyMarkets Plus is the unlevered variant. It allocates 70 per cent to the core portfolio and up to 30 per cent to thematic ETF allocations, with no single theme exceeding 10 per cent. The maximum market exposure is 100 per cent — there is no leverage, no derivatives, no structural borrowing.

The character of this strategy is moderately offensive. It positions itself as an alternative to classic buy-and-hold on the MSCI World, with the aspiration of avoiding the major drawdowns without relinquishing long-term participation in rising markets. In strong trending bull markets it will trail the MSCI World slightly, since the trend-control mechanism occasionally results in temporary cash positions. Its value-added materialises primarily in periods of crisis.

4.2 MightyGlobal Plus: The Dynamic World Strategy with Trend Accelerator

MightyGlobal Plus retains the same core structure but adds a tactical component: a 2x leveraged ETF on the MSCI World as a trend accelerator. The 30 per cent tactical allocation is split here between this leveraged instrument and thematic positions. Effective market exposure can therefore fluctuate between 0 per cent (full cash position) and approximately 110 to 120 per cent.

This is a fundamentally different risk philosophy. The deployment of a leveraged ETF within a trend-controlled system is, however, less risky than it appears at first glance — and this is precisely where one of the model's most interesting insights lies.

4.3 Why Leverage Can Work in a Trend Model

Leveraged ETFs enjoy a dubious reputation in the financial world. The prevailing wisdom holds that they are unsuitable for buy-and-hold because the so-called volatility drag — erosion through daily rebalancing — erodes returns over time. This assessment is not wrong, but it is incomplete.

A recent study by Hsieh, Chang and Chen (2025) shows that the performance of leveraged ETFs depends fundamentally on the autocorrelation of returns. In markets with positive autocorrelation — i.e. trending markets — leveraged ETFs can even exceed their target multipliers. In mean-

reverting or trendless markets, by contrast, they suffer disproportionately.

Source: Hsieh, C.-H., Chang, J.-R. & Chen, H.H. (2025), "Compounding Effects in Leveraged ETFs: Beyond the Volatility Drag Paradigm", arXiv:2504.20116.

This is precisely where the circle closes: a trend-control system that allocates the leveraged ETF only during confirmed uptrends and liquidates it in trendless or falling markets specifically circumvents the weakness of leveraged products. Volatility drag arises primarily in sideways phases with high volatility — and these are precisely the phases that the 200-day exit rule largely avoids. It is, so to speak, like driving a sports car only on the motorway and leaving it in the garage for city traffic.

Nevertheless, an elevated risk remains: during the transition between trend and non-trend — precisely when the signal has not yet triggered — the leveraged ETF can produce disproportionate losses. MightyGlobal Plus is therefore expressly intended for investors who consciously accept this additional volatility.

4.4 Comparison of the Strategy Lines at a Glance

Feature	MightyMarkets Plus	MightyGlobal Plus
Core Portfolio	70 %	70 %
Tactical Component	Up to 30 % thematic	Up to 30 % (leverage + thematic)
Use of Leverage	No	Yes (2x MSCI World)
Min. Market Exposure	0 %	0 %
Max. Market Exposure	100 %	approx. 110–120 %
Risk Profile	Moderately offensive	Offensive
Primary Alpha Source	Drawdown avoidance	Drawdown avoidance + trend accel.
Target Group	Long-term investors, moderate risk tolerance	Experienced investors, high risk tolerance
Max. Single Theme	10 %	10 %

5. Regime Analysis: Three Historical Stress Tests

Every model must be measured against reality. The following analysis examines three fundamentally different market phases and assesses how the Mighty-Strategy mechanism would have performed in each.

5.1 Financial Crisis 2008: The Reference Case for Trend Following

The global financial crisis is the textbook case for the strengths of a trend-based system. The downturn developed over months, with a long, sustained breach of the 200-day line. The model's

effect would have been impressive: an early exit, a dramatically reduced drawdown, and a structural outperformance versus buy-and-hold. Siegel's research confirms that the 200-day signal would have protected investors from the bulk of losses during the financial crisis.

For MightyGlobal Plus, the advantage would have been doubly effective: not only would the exit rule have liquidated the leveraged ETF in time (thereby avoiding the disproportionate losses of a 2x product in a bear market), but the earlier re-entry via the 38-day line would have enabled leveraged participation in the subsequent recovery. The trend-controlled leveraging would have largely circumvented volatility drag, since the sideways phase at the bottom would have been bypassed.

5.2 Sideways Phase 2015–2016: The Stress Test for False Signals

The phase from mid-2015 to early 2017 was characterised by high volatility without a clear trend — the most unfavourable environment for any trend-based system. The market oscillated around the 200-day line, which could have produced multiple exit and re-entry signals that proved in hindsight to be false signals.

The result would have been a temporary underperformance relative to buy-and-hold — an unavoidable characteristic of every trend-following strategy. The backtesting literature on 200-day strategies consistently confirms this observation: in the absence of a bear market, the frequent false signals (so-called "whipsaws") become the dominant cost factor.

Cf. Quantified Strategies (2025): "Without a significant bear market, the 200-day moving average may not work optimally, since it primarily adds value by keeping investors out of bear markets."

For MightyGlobal Plus, the costs in this phase would have been higher than for MightyMarkets Plus, since the leveraged ETF additionally suffers from volatility drag in trendless markets.

This underscores why the choice between the two strategy lines is not trivial and must depend on the individual investor's risk profile.

5.3 COVID Crash 2020: The Challenge of the V-Shaped Collapse

The COVID crash in March 2020 represents the most demanding test case. It combined an extremely rapid, deep collapse with a V-shaped recovery — the precise scenario in which trend-following systems typically perform neutrally or slightly negatively.

The exit via the 200-day line might have been triggered with a delay, since the crash unfolded so rapidly that the two-day confirmation would only have taken effect after a significant loss. At the same time, the faster 38-day re-entry rule would have enabled an accelerated re-entry — earlier, on balance, than a symmetric 200/200 system.

The net effect would presumably have been approximately neutral: a degree of protection on the downside, offset by a slightly delayed re-entry. This is an important point for expectations: the Mighty-Strategy is not an all-weather system. It is optimised for slow bear markets, not for flash crashes.

Regime	Market Behaviour	Model Effect	Advantage vs. Buy-and-Hold
Financial Crisis 2008	Long downtrend	Early exit, low drawdown	Strongly positive
Sideways 2015–16	High volatility, no trend	Multiple false signals	Slightly negative
COVID 2020	V-shaped crash	Delayed exit, fast re-entry	Neutral

6. Risk and Exposure Profile

The risk characteristics of both strategy lines are deliberately constructed to be asymmetric. The primary objective is not the maximisation of returns but the reduction of extreme drawdowns while maintaining participation in structural uptrends. This philosophy accepts temporary underperformance in sideways phases as the price of protection in periods of crisis.

The exposure spectrum ranges from 0 per cent (full cash position, when all seven segments plus the tactical component simultaneously fall below their respective trend lines) to 100 per cent for MightyMarkets Plus and approximately 120 per cent for MightyGlobal Plus. In practice, the full cash position will be a rare extreme scenario, typically occurring only in deep, broad-based bear markets such as 2008 or in the spring of 2020.

7. Expected Performance Characteristics and Alpha Sources

The model's value-added derives from four identifiable sources, which materialise to different degrees in different market phases.

First: Avoidance of structural bear markets. This is by far the most important alpha source. In a world where severe bear markets occur every seven to ten years, the avoidance of a single 40 per cent drawdown alone can dramatically improve the long-term compound-interest effect. An investor who did not lose 50 per cent in 2008 did not subsequently need a 100 per cent gain to regain the starting point.

Second: Small-cap premium. The systematic overweight of small companies across three regions (US, Europe, emerging markets) targets the risk premium documented since Banz (1981). Even though the SMB factor has performed less consistently in recent years, the theoretical and empirical basis for a long-term premium remains intact — particularly when the size premium is globally diversified.

Third: Emerging-markets premium. The allocation to emerging markets provides access to higher growth rates and an additional risk premium arising from political, regulatory and currency-related uncertainties.

Fourth (Global Plus only): Trend acceleration. The leveraged ETF can generate an additional return component in stable uptrends. As the research by Hsieh et al. (2025) shows, leveraged ETFs can even exceed their target multipliers in trending markets with positive autocorrelation.

The crucial point for setting the right expectations: this outperformance occurs cyclically, not constantly. In long, calm bull markets, the model will tend to trail the MSCI World slightly. Its value-added unfolds in the years when it matters most — in the years of the major setbacks.

8. Model Limitations: What the Strategy Cannot Do

No strategy is free of weaknesses, and transparency about one's own limitations is a hallmark of a serious investment approach. The Mighty-Strategy has four clearly identifiable structural weaknesses.

False signals in trendless markets: When the market oscillates around its moving averages for an extended period without forming a clear trend, the model produces costly false signals. Each exit and re-entry incurs transaction costs and realises potential losses that can add up to a palpable underperformance. This is the "whipsaw tax" that every trend follower pays.

Latency in V-shaped crashes: A rapid, deep collapse followed by an equally rapid recovery — as in March 2020 — is the scenario in which the model mechanism delivers the least value-added. The exit comes too late, the re-entry too early or too late, and the net effect is at best neutral. Trend following is an instrument for slow crises, not for blitzkriegs.

Volatility drag in leveraged products (Global Plus only): Although trend control substantially reduces volatility drag, it does not eliminate it entirely. During transitional phases — when the trend turns but the signal has not yet triggered — the leveraged ETF can produce disproportionate losses. The SEC and numerous academic studies also point out that leveraged ETFs carry higher costs and higher turnover than their unlevered counterparts.

Cf. Kanuri, S. & Malm, J. (2025), "An Update on Risk/Return Analysis of US-Based Equity Leveraged and Inverse ETFs", Journal of Beta Investment Strategies.

Discipline-dependence of implementation: A rule-based system works only if the rules are followed with discipline. In practice, this is the greatest challenge: humans tend to exit too early in panic and to ignore the exit signal in euphoria. The Mighty-Strategy requires mechanical discipline — a quality that is simple in theory but extraordinarily difficult to maintain in practice.

9. Conclusion

The Mighty-Strategy presents a thoughtful approach to regime-based capital-market navigation. Its core strength lies in the asymmetric trend mechanism — the combination of a defensive, long-term

exit signal and a more aggressive, short-term re-entry signal — grounded in the empirically documented observation that bear and bull markets exhibit different speed profiles.

MightyMarkets Plus offers a solid, unlevered alternative to passive buy-and-hold that generates its value-added primarily through drawdown reduction in periods of crisis. MightyGlobal Plus extends this approach with a leveraged trend-acceleration component that — supported by current academic research — can generate additional returns in trending markets, but also carries an elevated risk profile. Long-term outperformance relative to the MSCI World is possible but neither guaranteed nor linear. It materialises cyclically, in the years when it matters most — and it requires the willingness to occasionally lag the market in good years. Investors who accept this asynchrony and bring the discipline to follow a rule-based system will find in the Mighty-Strategy a transparent, academically grounded tool for navigating different market regimes.

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