Overview

This article compares the performance of risk- and trend-driven investment approaches in a Global Tactical Asset Allocation (GTAA) long-only portfolio. In this Practical Applications report, the authors recommend mixing a trend-driven strategy with a risk-driven strategy to take advantage of both worlds and boost the risk/return profile of an institutional portfolio.

Practical Applications

- A trend-driven approach reduces drawdowns by about 30%, on average, relative to a risk-driven strategy. These lower drawdowns mean that trend-driven strategies outperform during financial meltdowns.

- Risk-parity strategies are well diversified and offer better resilience to Black Swan events because such events are not foreshadowed by trends. Trend strategies are more vulnerable to these types of unpredictable events.

- Trend strategies are less dependent on the asset selection bias than risk-balanced allocations, because they can dynamically adjust the exposure to every asset. Risk-parity strategies, however, are always exposed to all assets.

- Trend strategies suffer in trendless environments. They often lead to highly concentrated allocations and small diversification. Risk-parity methods do not suffer from similar biases.

Practical Applications Report

Combining risk-based and trend-driven GTAA strategies helps institutional investors protect their portfolios against sustained bearish dynamics like those during the 2008 financial crisis, reports Benoit Guilleminot, Director of Research and Innovation at Riskelia, a Paris-based GTAA fund.

“Our main message to investors is that trend-driven asset allocation strategies can help protect them against drawdowns,” says Guilleminot. “They should be thinking about this as a dynamic form of risk management.”
**Key Definitions**

**Risk-driven asset allocation**
Improved diversification achieved by an active control of a strategy’s risk repartition and evolution over time. A popular form of the risk-driven/risk parity strategy is the Equal Risk Contribution (ERC).

**Equal Risk Contribution (ERC)**
An ERC portfolio holds all securities in the chosen universe at weights intended to result in all constituents contributing the same amount of risk to the overall risk of the portfolio. It is sometimes referred to as the semi-native de-concentration strategy.


**Trend-driven asset allocation**
Spurting trends and cutting exposure to assets that are falling in price.

**Global Tactical Asset Allocation (GTAA)**
Investing in securities around the world and altering the allocation as markets change.

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**LIMITING LOSSES**

Traditionally, investors have focused on risk-driven strategies that seek performance and protection through diversification. A popular form of the risk-driven strategy is risk parity, which builds a portfolio with equal risk contributions from each individual asset in the portfolio.

While this strategy offers protection against unexpected events such as the September 11, 2001, terrorist attacks in New York or the Fukushima nuclear catastrophe in March 2011, it does not perform well in controlling drawdowns when different asset classes drop simultaneously, for example during a financial crisis such as the one in 2008, Guilleminot warns.

Trending strategies, which can cut the exposure to assets when a trend becomes negative, gave investors the best protection from falling asset values in 2008, because that financial crisis was well predicted by trending signals, he explains.

"Investors have to face two main types of risk: the risk of extraordinary events and the risk of negative spirals (drawdowns)," he adds. "They can combine risk-based strategies and trending strategies to improve the risk–return characteristics of their portfolios."

**SPOTTING TRENDS**

Riskelia, an investment advisor to institutional investors and the manager of a Luxembourg-based GTAA fund, uses a proprietary, computer-driven investment model called Radar to capture trends, bubbles and risk appetites in stock, bond, interest rate and commodity markets.


**HIGHER SHARPE, LOWER DRAWDOWNS**

The authors found that a trend-driven approach increases the Sharpe ratio (a measure of risk-adjusted returns) by 20% and reduces drawdowns by about 30%, on average, compared with a risk-driven strategy.

They also discovered that trend-driven strategies outperform precisely during periods when risk-driven strategies suffer the most, such as during the 2008 global financial crisis, when stock and commodity markets fell.

In these crisis periods, equal risk allocation is not successful in preventing significant portfolio losses. That's because risk-parity strategies maintain a positive exposure to all assets in the universe, including the ones falling massively in value.
When the proportion of falling assets in a portfolio gets too large, any remaining safe-haven assets cannot fully compensate and the portfolio suffers significant drawdown, says Guillemot.

In contrast, trend-driven strategies can limit losses by shifting from risky assets to safe haven bonds ahead of stock market crashes. When the dynamics of risky assets deteriorate, trend-based strategies reduce their weight in the allocation and keep focusing on rising assets. In such periods they clearly outperform risk-balanced allocations.

**SHIFTING TACTICS**

Investors should shift toward trend-based strategies in downward markets, Guillemot suggests. “This strategy protects investors in bear markets by telling them where to cut exposure,” he says. “It allows them to switch off the strategy that is not working.”

For example, in 2001 and again in 2008, when both commodity and equity markets fell at the same time, trend-driven strategies outperformed the markets and risk-driven strategies suffered the most. The European debt crisis of 2011 is another episode where the trend strategy led to better capital protection than the risk-based strategy, Guillemot says.

In bullish stock markets, it becomes more interesting to favor a risk-based allocation that focuses on diversification, adds Guillemot. “The relative weight of a trend-driven strategy should be increased during a major crisis, but when there is no real crisis investors should keep more diversification with a risk-driven strategy.”

**BENCHMARKING AND Hedging**

Combining risk-based and trend-driven GTAA strategies also helps investors avoid some of the big bets away from benchmarks that a trend-driven strategy alone would produce (by allowing null exposures or high concentration), Guillemot advises. Furthermore, institutional investors can use a risk-parity allocation to hedge their liability and use a tactical trend-based layout to produce additional alpha by cutting bad trends or overweighting solid dynamics.

Riskelias has researched the specific weight investors should give to risk- and trend-driven asset allocation depending on the market cycle, but Guillemot declines to reveal their approach: “We have found a nice way to combine the two strategies, but we are not willing to publish it yet. We have to keep an edge,” he says.

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Benoit is in charge of the R&D team at Riskella. The team constantly develops and enhances the indicators and algorithms used at the firm. He joined the research team after completing his PhD in mathematical finance at the University of London in 2010. He also received an MSc in computer science and software engineering from the University of Technology of Compiegne and holds a AM in applied mathematics (image processing, classification and machine learning) from Ecole Normale Superieure de Cachan (2006).

Benoit is involved in a variety of research projects, notably in the areas of allocation methods, trends and bubble detection, pattern recognition, cross-asset dependencies, hedge-fund replication and dynamic clustering of assets (among other machine-learning problems related to finance).

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Jean-Jacques is Co-Founder and CEO of Riskella, a management firm specializing in the detection and analysis of market behavioral mechanisms. Before founding Riskella, Jean-Jacques was a global macro fund manager with 10 years of extensive experience in asset management.

He launched a managed futures fund for the investment management company matrix Asset Management, achieving outstanding returns while trading currencies, interest rates, equities and commodities. Jean-Jacques also created various cutting-edge trading models on currencies and interest rates. He started his career as a risk manager at Amundi, responsible for supervision of structured products and guaranteed portfolio insurance funds. Jean-Jacques graduated from the engineering school Ecole Centrale Paris, and he is a CFA Charterholder.

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Following his graduation from Ecole Polytechnique, Steve pursued an MA in finance from Paris VI. His PhD in finance from the Université Paris-Dauphine was supported by GDI Guez and dealt with energy price modeling and dynamic commodity portfolio optimization. Before founding Riskella, Steve was a consultant in quantitative portfolio management and risk management for energy companies and hedge funds.