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# Managed Futures and Interest Rates: A Thirty-Year Look Back Part II

*by Matt Osborne, Chief Investment Officer, Altegris | May 2019*

# How Do Managed Futures Strategies Perform When Interest Rates are Rising?



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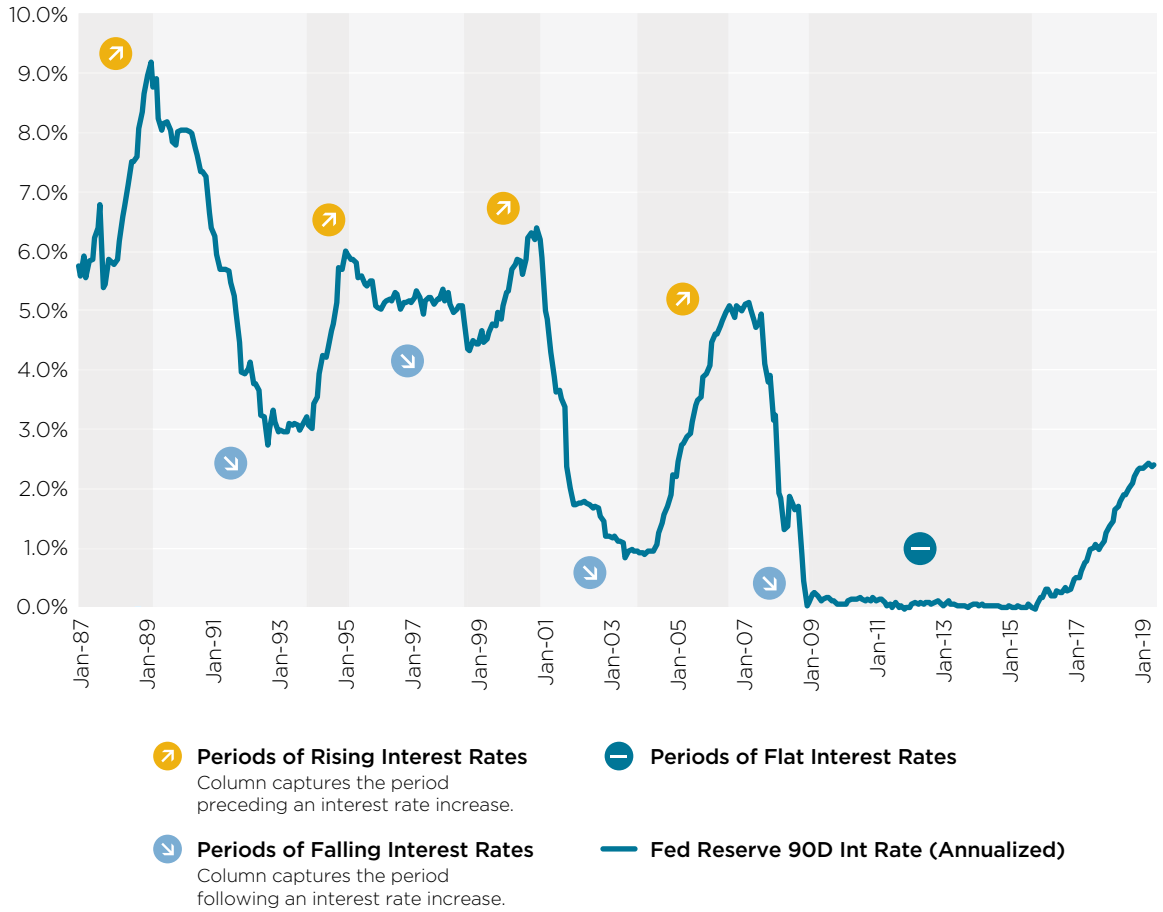
## Introduction and Background

In Part I of our two-part whitepaper series on managed futures and interest rates, we examined how managed futures as a category historically performed in various interest rate environments. The goal was to examine historical precedents for managed futures returns in rising interest rate environments. Moreover, we also reviewed how managed futures performed in both falling and flat interest rate environments.

Figure 1 provides the various interest rate environments that we've analyzed, dating back as far as 1987, in order to compare the performance of managed futures, equities, and fixed income.

Figure 1. **Rising and Falling Short-Term Interest Rates**

Various periods of rising and falling 90-day U.S. Treasury yields, as a proxy for interest rates.






Source: U.S. Federal Reserve.

With performance results for each environment in hand, we discussed the return drivers in each of the different environments, and detailed what drove outperformance or underperformance for different asset classes. Figure 2 shows the aggregated results of the different environments, which reveal that managed futures has historical tendencies to potentially provide strong positive performance in a rising interest rate environment.

Figure 2.

## Summary of Asset Class Performance During Various Interest Rate Environments

	Time Period (in months)	Managed Futures Barclays BTOP50 Index	Equities S&P 500 Total Return (TR) Index	Fixed Income Barclays U.S. Aggregate Bond Index
 <b>Rising Interest Rate Period</b>	98	9.1%	11.6%	4.0%
 <b>Falling Interest Rate Period</b>	158	11.3%	6.3%	9.3%
 <b>Flat Interest Rate Period</b>	78	1.0%	16.2%	4.4%

Source: Bloomberg and Altegris. See “Index Descriptions” at the end of the document for further detail.

This analysis, however, is incomplete as it is focused solely on returns—and one of managed futures’ most compelling characteristics is its diversifying power. In this paper, we examine how effective managed futures has been at offering diversification benefits in similar interest rate environments.

### Diversification: A Refresher

Diversification is the foundation of Modern Portfolio Theory, which states that a portfolio’s returns can be maximized for a given level of risk based on owning different assets. These different assets contribute to improving a portfolio’s overall risk and return, but only if they are not highly correlated. Investing in low correlated assets can potentially improve the returns of the aggregate portfolio, reduce the volatility of the aggregate portfolio, or both.

Although diversification has been shown exhaustively to work in concept, it can be difficult to follow through in practice—as the nature of low correlation means that not all parts of the portfolio will “work” at the same time (that is, generate positive returns). Thus, with the following analysis we hope to continue to strengthen the case for diversification in practice.


## Managed Futures and Rising Interest Rates

Our first analysis showed that managed futures performed positively in prior rising interest rate environments. Although equities outperformed the other two asset classes and posted low double-digit returns, managed futures held an admirable second place and returned high single-digit returns. However, now we will look at how including managed futures in one's portfolio would improve risk-adjusted returns: greater returns or less volatility. In this new test, we looked at three different scenarios:

- ① **A 60/40 portfolio** comprised of a 60% allocation to the S&P 500 and a 40% allocation to the Barclays Aggregate (for use as a base-case scenario).
- ② **A 10% allocation to managed futures**, using the BTOP50 Index, with a corresponding reduction in each existing asset allocation by 10%. In other words: 54% S&P 500, 36% Barclays Aggregate, and 10% BTOP50 Index or a 54/36/10 portfolio.
- ③ **A “Sharpe ratio maximization” scenario**, where the original 60/40 equities/fixed income ratio is kept constant relative to one another, and where we increased the allocation to managed futures until the most attractive ratio of return for risk (e.g., Sharpe) is achieved. (It's important to note that higher Sharpe ratios are typically associated with higher returns, lower risk, or both.)

Figure 3. **Rising Rate Environment**

Annualized return and risk statistics in a rising interest rate environment.  
January 31, 1987 to June 30, 2006

	①	②	③	
		<b>60% Equities/ 40% Fixed Income</b>	<b>10% BTOP50 Index Allocation</b> 54% Equities/ 36% Fixed Income/ 10% Managed Futures	<b>Maximize Sharpe Ratio with 60/40 + BTOP50 Index</b> 35% Equities (60%)/ 23.4% Fixed Income (40%)/ 41.6% Managed Futures
<b>Annualized Return</b>	<b>8.8%</b>	<b>8.9%</b>	<b>9.2%</b>	
<b>Annualized Volatility</b>	<b>9.3%</b>	<b>8.6%</b>	<b>7.7%</b>	
<b>Annual Sharpe Ratio</b> Rf=0.25%*	<b>0.92</b>	<b>1.01</b>	<b>1.17</b>	
<b>Worst Drawdown</b>	<b>-18.0%</b>	<b>-15.0%</b>	<b>-9.0%</b>	

**Summary of Results:**

- ① The 60/40 portfolio achieves a respectable result as a baseline.
- ② The 54/36/10 portfolio increased the annualized return, decreased volatility, and therefore improved the Sharpe ratio.
- ③ Maximizing the Sharpe ratio achieved even more attractive risk-adjusted returns, but at a substantial (and arguably unrealistic) allocation to managed futures.

\* RF is an acronym for risk-free rate of return.

Source: Bloomberg and Altegris. Hypothetical scenario for illustrative purposes only.

Past results are not indicative of future performance. INDEX DESCRIPTIONS: Equities: S&P500 TR Index; Fixed income: Barclays Aggregate Bond Index; Managed Futures: BTOP50 Index. See “Index Descriptions” at the end of the document for further detail.

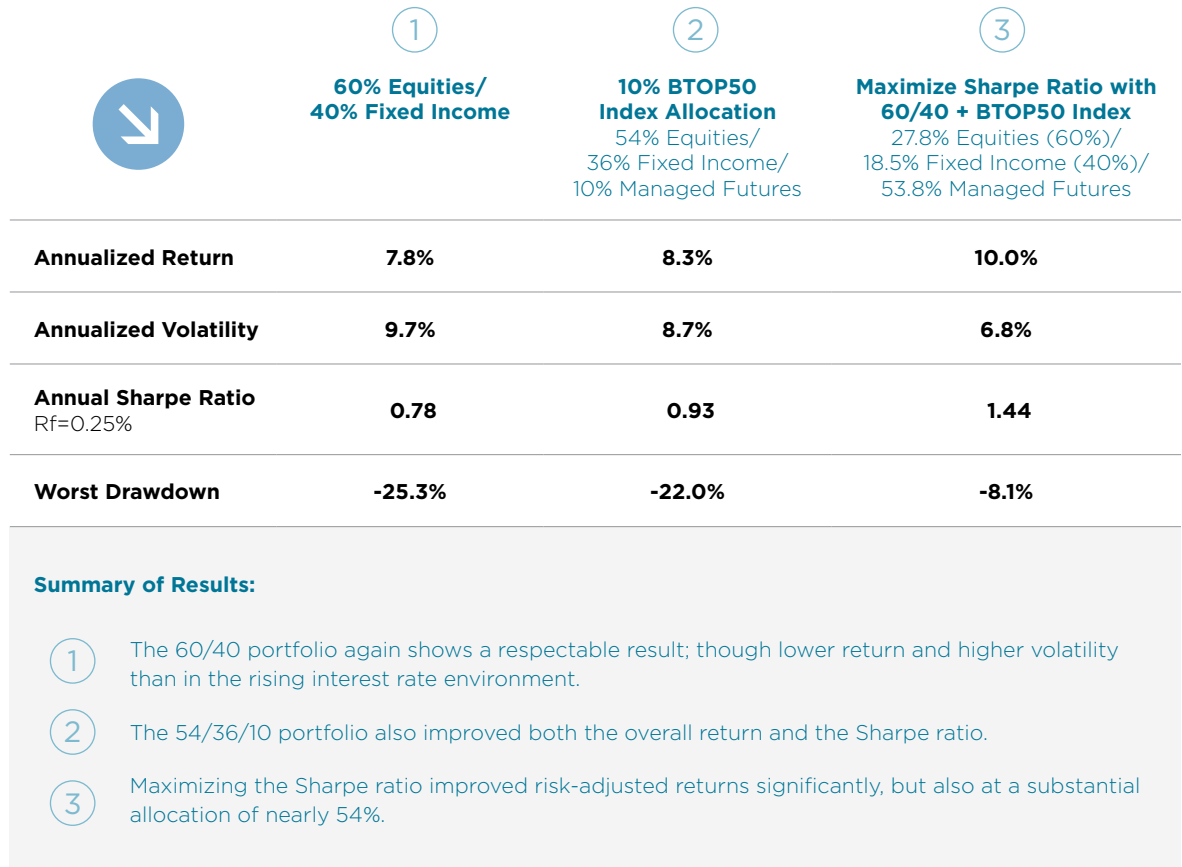
In a rising interest rate environment, allocations to managed futures have historically improved returns and reduced risk. Additionally, while larger allocations have been more favorable, a 42% managed futures allocation is unrealistic. However, we can conclude that allocations at or above 10% may be favorable over the long term.

**The Inverse: Managed Futures and Falling Interest Rates**

Previously we also looked at managed futures performance in falling interest rate environments, where managed futures outperformed both equities and bonds. This showed that returns were attractive on an absolute return basis, but again, what about on a risk-adjusted return basis? Thus, we completed the same analysis as in the prior rising rate environment.

Figure 4. **Falling Rate Environment**

Annualized return and risk statistics in a falling interest rate environment.  
 May 31, 1989 to December 31, 2008



Source: Bloomberg and Altegris. Hypothetical scenario for illustrative purposes only. Past results are not indicative of future performance. INDEX DESCRIPTIONS: Equities: S&P500 TR Index; Fixed income: Barclays Aggregate Bond Index; Managed Futures: BTOP50 Index. See “Index Descriptions” at the end of the document for further detail.

Combined with the prior analysis, one can conclude that allocations to managed futures are beneficial in both rising and falling interest rate environments, as they have historically improved returns and reduced risk. Although a 54% managed futures allocation is unrealistically high, the broader takeaway is that allocations at or above 10% may be favorable regardless of a falling or rising interest rate environment.

## The Catch: Managed Futures and Flat Interest Rates

Finally, we looked at the flat interest rate environment, which was the case immediately after the financial crisis and persisted for several years until 2015. Managed futures lagged considerably compared to both equities and fixed income. We nonetheless thought it was worthwhile to do the asset allocation exercise, as it is important to assess the impact of a managed futures allocation. Despite the underperformance, there is potential for improving risk-adjusted returns through the benefits of diversification.

Figure 5. **Flat Rate Environment**

Annualized return and risk statistics in a flat interest rate environment.  
January 31, 2009 to July 31, 2015

	①	②	③
	<b>60% Equities/ 40% Fixed Income</b>	<b>10% BTOP50 Index Allocation</b> 54% Equities/ 36% Fixed Income/ 10% Managed Futures	<b>Maximize Sharpe Ratio with 60/40 + BTOP50 Index</b> 60% Equities/ 40% Fixed Income/ 0% Managed Futures
<b>Annualized Return</b>	<b>11.6%</b>	<b>10.5%</b>	<b>11.6%</b>
<b>Annualized Volatility</b>	<b>8.7%</b>	<b>7.9%</b>	<b>8.7%</b>
<b>Annual Sharpe Ratio</b> Rf=0.25%	<b>1.31</b>	<b>1.30</b>	<b>1.31</b>
<b>Worst Drawdown</b>	<b>-11.6%</b>	<b>-10.0%</b>	<b>-11.6%</b>

### Summary of Results:

- ① The 60/40 portfolio achieved attractive absolute and risk-adjusted returns in a flat rate environment.
- ② By adding a 10% allocation, the lower returns provided by managed futures brought down the aggregate total returns, but also decreased volatility in a proportional manner. Therefore, the new portfolio has approximately the same Sharpe ratio and continued to offer diversification benefits.
- ③ Optimizing for Sharpe ratio recommends in principle a 0% allocation to managed futures.

Source: Bloomberg and Altegris. Hypothetical scenario for illustrative purposes only. Past results are not indicative of future performance. INDEX DESCRIPTIONS: Equities: S&P500 TR Index; Fixed income: Barclays Aggregate Bond Index; Managed Futures: BTOP50 Index. See "Index Descriptions" at the end of the document for further detail.



## Potential Drivers for Underperformance

There is no clear-cut cause as to why managed futures underperformed during this time. However there are several theories, given the macroeconomic backdrop. One of the more prevalent theories is grounded on this particular period overlapping with an extraordinary, possibly experimental, expansion of the balance sheets by central banks around the world.

These central banks, namely the U.S., European, U.K, and Japanese banks, purchased a variety of fixed income assets (both government and corporate) in the order of trillions of dollars with the explicit purpose of lowering longer-maturity interest rates (and hence borrowing costs). Some have argued that this may have had an unintended effect on equity returns in addition to targeting medium- and longer-dated fixed income yields.

We've also observed that other asset classes (specifically commodities and currencies) had weaker trends during this period. As such, in this unique environment, it has been challenging for trend managers to find diverse investment opportunities across all asset classes. Although equities clearly showed a persistent trend, managed futures managers prefer not to concentrate into a single asset class. Thus, they generally continued to have exposure across most asset classes, which were either trendless or faced multiple reversals throughout this entire period.

## The Current Environment: What's Changed from Previous Periods?

This brings us to where we are today: the current rate rising environment which formally started at the end of 2015. Although we've seen that managed futures has historically performed well in rising rate environments, we've been in a rising rate environment for several years and admittedly managed futures has struggled over that time frame.

What is different in the current period from the previous four? Which characteristics remain the same? Are the differences from previous environments significant enough to disregard any historical parallels, or are the similarities strong enough to continue drawing comparisons?

Let's first highlight the differences: as we discussed, there has been an unprecedented level of market intervention by the Fed, as well as by other major central banks. The biggest challenge is that we cannot accurately know what effect this massive purchasing experiment will have, and when the effect would fully bloom. Economists with the Atlanta Fed have suggested that quantitative easing (QE) was the equivalent economic impact of cutting rates below zero; specifically, they suggested QE were as if the Fed Funds rate were -3.0%. One could argue that this "shadow rate" delayed the impact of rate increases until well after 2015, as the Fed did not start shrinking its balance sheet (that is, quantitative tightening) until December 2017.

The final differentiator has been the current low cost of capital and the length of time of its availability. Despite the fact that rate rising started at the end of 2015, on a historical basis the current level is still quite low: it is currently at -2.4% for the three-month U.S. Treasury bill, whereas the average rate was 4.8% in the previous four rate rising environments we examined. Thus, on an absolute basis, the changes in rates may have arguably had a more muted impact than in previous periods.

Conversely, there are similarities that we can draw to previous rising rate periods that may also positively impact managed futures today. The most significant has been the economic growth environment—specifically, the late stage growth environment. Unfortunately, one parallel among the historical examples has been that these late-stage economic environments preceded recessions. Pertinent examples are the late 1980s prior to the recession of 1990-91, the tech bubble and subsequent crash, and the period leading up to the financial crisis. Of course, while we cannot know if a recession looms in the near future, the parallel between late economic cycles remains.

The second reason is the Federal Reserve's market actions to avoid economic overheating and avoid a recession. Although prior Fed actions only involved rate changes, the overarching objective remains the same. We have already seen the Fed backing off from its previously announced 2019 rate hikes after the market reacted negatively. Thus, the Fed has signaled that it is responsive to asset price changes and not just economic models and dot plots. Unfortunately, their track record is not good; of the last 14 significant rate hikes, nine have ended in economic recessions.<sup>1</sup>

## Where Will the Current Environment Lead?

Although currently paused, we cannot know if the current rising rate period is over with certainty until the Fed formally cuts rates. Theoretically, if it were over today (as of April 2019 month-end), a 60/40 equities and fixed income portfolio would have returned 8.1% per year, and managed futures would have returned -1.5% per year. This would mark the first rising rate period where managed futures have not performed positively.

However, this theoretical end of the rising rate environment (that is, a rate cut) would also likely be driven by significant factors—unfavorable economic developments, market downturns, and an overall recessionary-like environment. These types of environments are precisely where managed futures excel on both a relative and absolute basis, which reinforces the case for holding managed futures.

If the rising rate environment continues beyond today, we can likely say that the next ten years will not be like the previous ten, in terms of economic growth, equity performance, and low volatility levels. Consequently, investors will require a well-diversified portfolio more than ever, which further reinforces the case for allocating to the strategy.

Irrespective of what direction the current financial markets evolve to, both scenarios make the case for investors to hold or add to managed futures, as they have inarguably added substantial value in periods of economic uncertainty or contraction.

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Matt Osborne oversees the Altegris investment research, product structuring, and portfolio strategy teams.

With more than 30 years of finance, international business, and investment industry experience, Matt is responsible for investment product development and is co-portfolio manager of several award-winning alternative funds.

As a senior member of the Altegris Investment Committee, Matt is responsible for the qualification, approval, and ongoing review of all alternative strategies and managers.

Matt co-founded Altegris in 2002. Prior, Osborne was the director of research for the managed investments division of Man Financial, with responsibility for manager selection and research. Previously, Matt had a 12-year career with a prominent family investment office in his native New Zealand. In his role as senior investment manager, Osborne was responsible for formulating investment policies and implementing a global asset allocation program that focused on alternative investments, including hedge funds, managed futures, private equity, and real assets.

Osborne has significant trading expertise in equities, fixed income, foreign currencies, global futures, and options, among other securities. Matt currently holds FINRA Series 3, 7, 24, and 63 licenses.

## Sources

1. “Effective Federal Funds Rate” (<https://fred.stlouisfed.org/series/FEDFUNDS>).

## INDEX DESCRIPTIONS

It is not possible to invest directly in any index or benchmark. Indices and benchmarks do not reflect commissions or fees that might be charged to a similar investment product if actually acquired. Such commissions or fees are likely to materially affect the performance data presented by an index or benchmark.

The following indices have been used in the presentation for informational and illustrative purposes only.

**Equities (U.S. Stocks): S&P 500 Total Return Index.** The S&P 500 Total Return Index is the total return version of S&P 500 Index. The S&P 500 Index is unmanaged and is generally representative of certain portions of the U.S. equity markets. For the S&P 500 Total Return Index, dividends are reinvested on a daily basis and the base date for the index is January 4, 1988. All regular cash dividends are assumed reinvested in the S&P 500 Index on the ex-date. Special cash dividends trigger a price adjustment in the price return index.

**Fixed Income (U.S. Bonds): Barclays Capital U.S. Aggregate Bond Index.** The Barclays Capital U.S. Aggregate Bond Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis. These specific indices include the Government/Credit Index, Government Index, Treasury Index, Agency Index, and Credit Index.

**Managed Futures (Trend Following): BTOP50.** The BTOP50 Index seeks to replicate the overall composition of the managed futures industry with regard to trading style and overall market exposure. The BTOP50 employs a top-down approach in selecting its constituents. The largest investable trading advisor programs, as measured by assets under management, are selected for inclusion in the BTOP50. To be included in the BTOP50, the following criteria must be met: Program must be open for investment; Manager must be willing to provide daily returns for the index; Program must have at least two years of trading activity; Program’s advisor must have at least three years of operating history; and the BTOP50’s portfolio will be equally weighted among the selected programs at the beginning of each calendar year and will be rebalanced annually.

## GLOSSARY

The following terms below have been used in this paper for informational purposes only.

**Annualized return.** A geometric average of the excess amount (above or below the initial investment) earned by an investment, adjusted to a yearly basis.

**Annualized volatility.** A measure of dispersion of returns. Annualized volatility uses the standard deviation of monthly returns, adjusted to a yearly basis. Higher annualized volatility typically represents a higher risk profile.

**Sharpe ratio.** A ratio that calculated excess return per unit of risk. A higher Sharpe ratio is typically associated with returns generated with lower risk profiles.

**Worst drawdown.** A measure of the maximum historical loss if an investor were to subscribe at a peak and withdraw assets at the trough. Worst drawdown measures the largest drop in the index's cumulative return.

### Risks and Other Important Considerations

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