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Interest rates go up: a threat or an opportunity for Commodity Trading Advisor (CTA) strategies?

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About the authors

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Steeve oversees CANDRIAM's systematic and global macro funds. He started his career in 1997 within the private client group of Merrill Lynch before moving to Refco Securities as in the equity derivative division in 1999. After joining CANDRIAM as a Systematic Fund Manager in 2001, he conducted extensive research on trading systems and systematic portfolio allocation. In 2007, he became Head of Systematic Funds, and became one of the first portfolio managers to diversify from the traditional trend following, by mixing trend following, pattern recognition and counter trend models. His team was among the first in the industry to offer an CTA UCITS fund. Steeve holds a Masters with honors from the Ecole Supérieure de Gestion-Finance in Paris.

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Senior Systematic Fund Manager

Johann has been a systematic fund manager at CANDRIAM since 2013.
He began his career as a statistical arbitrage analyst at HSBC in 2005, joining CANDRIAM a year later as a quantitative alternative management analyst. He took up his current role in 2013.
He has Master's degrees in mathematics from the University of Dijon in France and in financial engineering from the University of Evry in France.

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After several decades of riding a government bonds bull market, investors are now looking for alternative drivers of return. Commodity Trading Advisor (CTA) strategies, with their ability to make gains in rising, as well as falling markets, have historically been able to improve risk-adjusted returns when introduced to a balanced portfolio. However, a question that investors can legitimately ask today is how are CTAs impacted by rising interest rates?

CTAs' lowly correlated/uncorrelated performance is based on sources of return different to the main asset classes. They are trend-following strategies, that aim to improve the risk/return characteristics of diversified portfolios in both bull and bear markets.

They track a range of momentum indicators, such as price moving average, use price channel breakout models, and sometimes mobilise other tools when markets lack momentum. To capitalise on a certain market trend, CTAs can take long and short positions across asset classes.

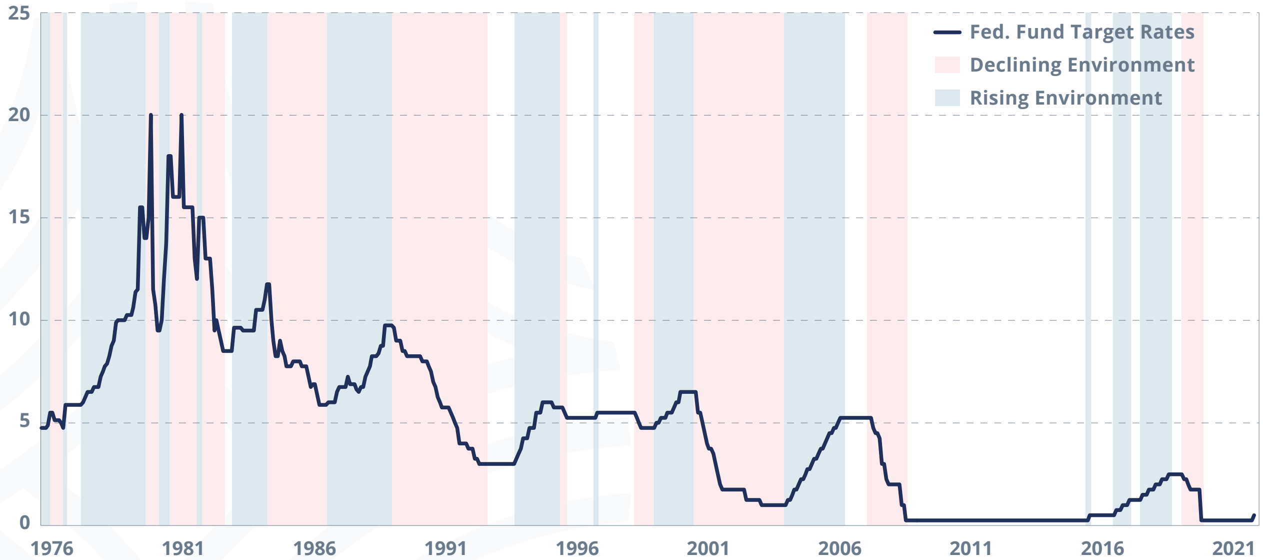
Which interest rate environment works best for CTAs?

To answer this question, we decided to keep it simple by looking at the performance of CTAs over periods of rising, falling and stable interest rates.

For this, we used the Barclay CTA Index[1] to represent the performance of CTAs alongside the Federal Funds Target Rates.

From 1971 to date, we identified periods when the Fed Funds Target Rates were below and above their 6-month average. When the latest conditions were not met, we considered the current rates environment as constant. From the inception of the Barclay CTA Index in 1980, we observed 154 months when interest rates were rising, 174 months when they were falling and 179 months when interest rates remained constant. (see Figure 1).

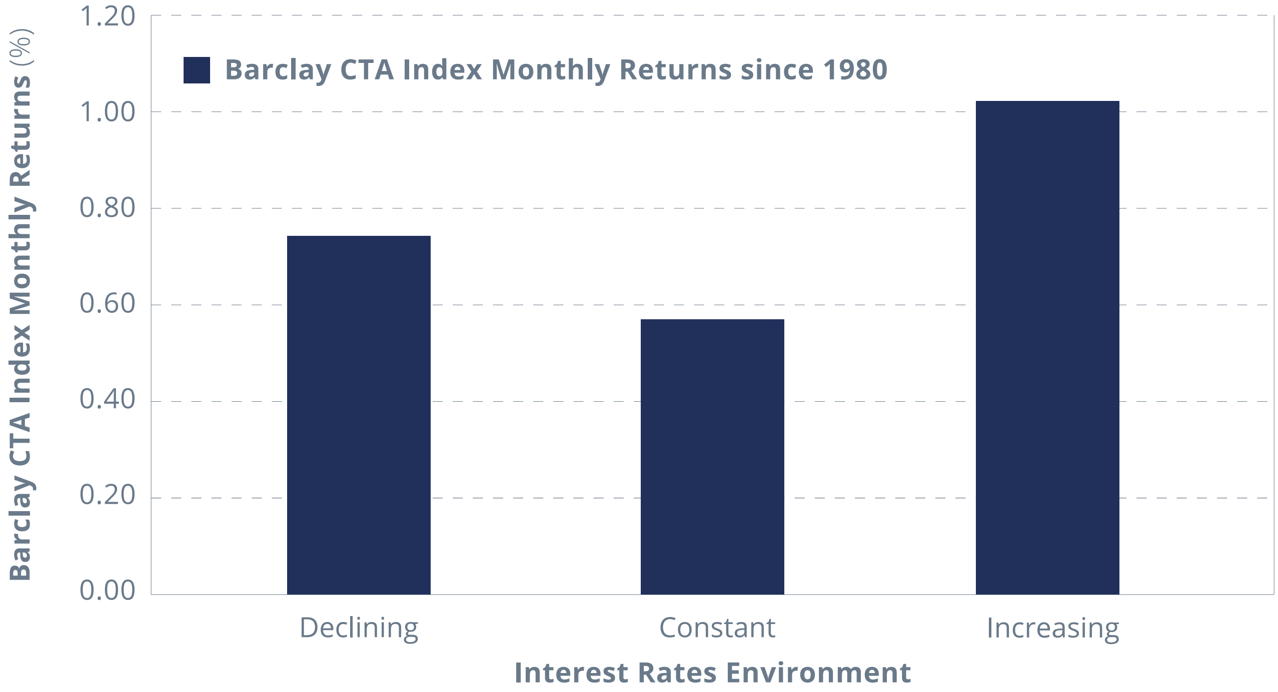
Figure 1 : Period of rising and declining interest rate environments from Jan 1971 and May 2022



Source: Barclay CTA Index©, Candriam as at May 2022. Past performance is not a guide to future performance.

[1] © BarclayHedge, Ltd. All rights reserved. Past performance is not necessarily indicative of future trading results. It represents speculative investments and involve a high degree of risk. An investor could lose all or a substantial portion of his or her investment.

Figure 2 : Performance of the Barclay CTA Index since 1980 based on different interest rate environments



Source: Barclay CTA Index, Candriam as at Apr 2022. Past performance is not a guide to future performance.

In addition to the risk of capital loss as with all investments, CTAs also carry the model risk and leverage risk, and can also be generally exposed to the changes in market direction and major market moves. In addition, CTAs are exposed to the risk of the asset classes in which they invest, as well as the currency, derivative, arbitrage, volatility and emerging markets risks.

Taking the CTA returns data from Figure 1, we arrived at the average returns for each of the three types of interest rate environments that we defined for the purposes of this article. CTA returns are positive in each of them (see Figure 2). As expected, performance is stronger when there is a movement in interest rates, either up or down.

However, surprisingly, out of the two scenarios, CTAs performed better when interest rates were going up, even after taking into consideration the cost of short positions[2] on bonds (cost of carry).

[2] Bond prices fall when interest rates rise.

How about the inflation-ridden 1970s?

Considering the high levels of inflation investors are having to deal with today, we wondered how CTAs would have performed during the unusually large and quick increase of interest rates in the late 1970s.

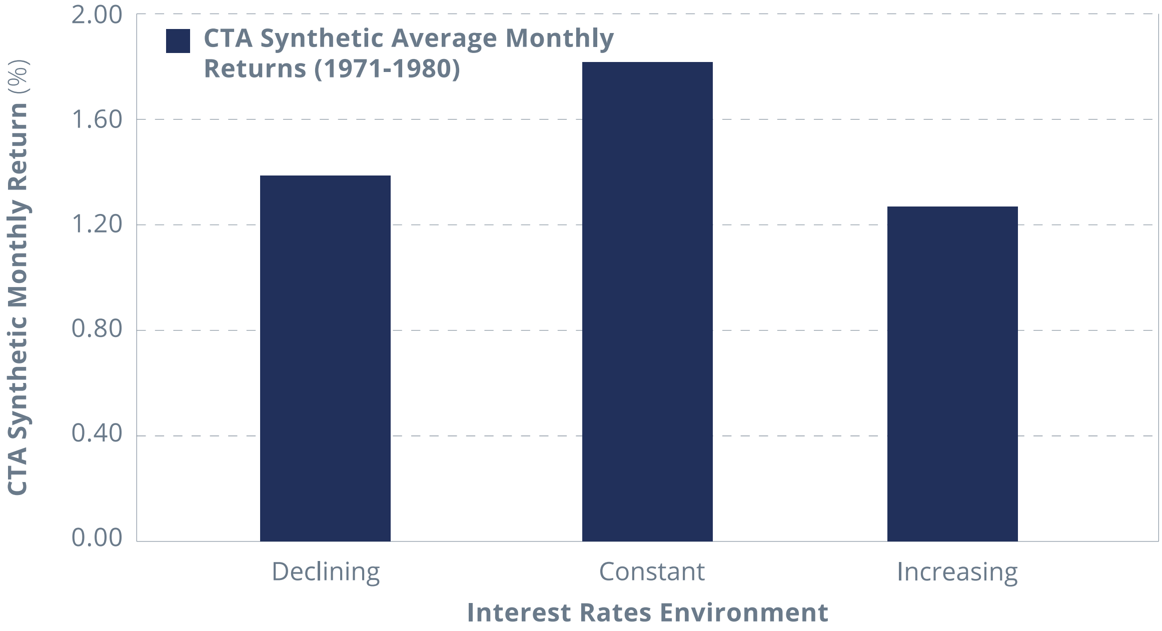
To represent the CTA market, we build a synthetic CTA strategy from over 40 futures contracts (see Appendix for further details), based on simple moving average models over different time horizons. We equally weighted the risk between positions and targeted the volatility level of 15%. To ensure that our synthetic CTA can be used as a fair representation of the broader CTA market, we calculated our sample strategy's correlation with the Barclay CTA Index since its inception and it came at a meaningful level of over 0.7.

As we have done before, we assessed our synthetic CTA's average monthly returns for each of our three types of interest rate environments (Declining, Constant and Increasing) between 1971-1980.

In this example, we identified 64 monthly periods of rising rates, 33 of decreasing rates, and 12 monthly periods when interest rates remained constant. Once again, the 'average monthly performance of our CTA is positive in all of the three rate environments.

> **"Our findings point to CTAs benefitting in the past from market trends generated by sharp increases in interest rates.**

Figure 3: Performance of synthetic CTA strategy, based on different interest rate environments



Source: Barclay CTA Index©, Candriam as at Apr 2022

So what is the answer?

We asked if rising interest rates present a threat or an opportunity to CTA strategies.

Our findings point to CTAs benefitting in the past from market trends generated by sharp increases in interest rates.

Clearly, this has vindicated CTA's *raison d'être* as market trend captors, which benefit from strong directions across different types of assets. Naturally, significant changes in interest rates create powerful market moves, creating a favourable market environment for CTAs.

However, as always, let's not forget that the value of investments will fluctuate, which will cause prices to fall as well as rise and you may not get back the original amount you invested. Past performance is not a guide to future performance.

Appendix

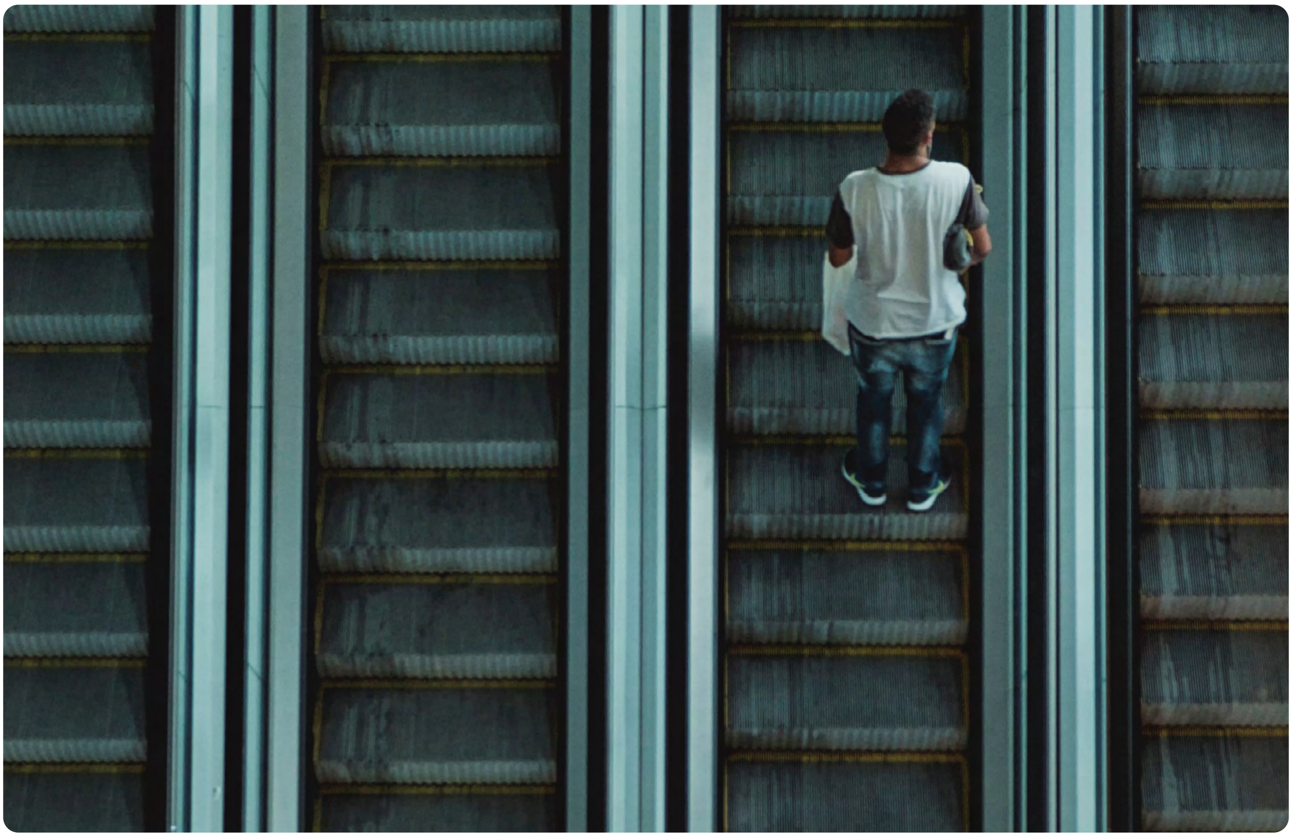
Contracts Lists

So as to have more history, Futures contract could have been completed by raw Indices.

Indices	Currencies	Bonds	Energy	Agricultures	Metals
CAC 40	AUD (vs USD)	Bobl	Brent	Com	Aluminium
Dax	GBP (vs USD)	Bund	Crude Oil	Cotton	Copper
Dow Jones	CAD (vs USD)	EuroBTP	Heating Oil	Live Cattle	Gold
Eurostoxx	EURO (vs USD)	EuroOAT	Natural Gas	Soybean	Silver
FTSE	JPY (vs USD)	TBond	RBOB	Sugar	Zinc
HangSeng	NZD (vs USD)	TNote10Y		Wheat	
Nasdaq	Peso (vs USD)	TNote5Y			
NIKKEI	CHF (vs USD)	JGB			
Russel	ZAR (vs USD)	Korean3Y			
S&P500	JPY (vs USD)				
SPI 200					
Topix					

Indices Description

BarclayHedge CTA Index (Source: Bloomberg)
The Barclay CTA Index provides a benchmark of representative performance of commodity trading advisors (CTAs). In order to qualify for inclusion in the Index, a CTA must have four years of prior performance history. When a CTA already in the Index introduces an additional program, this additional program is added to the Index after its second year. In order to limit potential upward bias, only CTAs with at least four years of performance history are included in the Index and the performance history begins with year five, ignoring the first four years of performance. In 1999, 319 CTA programs were included in the calculation of the Barclay CTA Index. The index is unweighted and rebalanced at the beginning of each year.



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