

# **Executive Summary**

## **Problem and aims**

In practice Managed Futures, also called Commodity Trading Advisors (CTAs), are generally used to optimize the risk and return profile of portfolios, since they have a low correlation to standard asset classes. The different CTA strategies are cyclical. There are times when certain approaches are more successful than others. A question in the asset management industry is whether it is possible to generate a value added by timing Managed Futures.<sup>1</sup> Main focus of this thesis is to provide an answer to this question. The primary research hypothesis is that CTAs might be predictable, as their returns show momentum and mean reverting patterns. A further aim is to analyze the dispersion / cyclicity of Managed Futures in terms of performance-/ risk, correlation and source of return. This shall also serve as a foundation of the predictability examination.

## **Method**

In view of the aims of this thesis, academic literature will be analyzed with focus on methods employed to examine the predictability of Managed Futures. The methods shall be used for an empirical analysis of a data sample of Managed Futures. The necessary computations will be done with Excel 2007 and MATLAB.

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<sup>1</sup> cf. statement of an interview partner

## Basics

Managed Futures are a certain class of Hedge Funds strategies. In contrast to other Hedge Funds, Managed Futures mainly use liquid derivative instruments like futures and options, which are traded on the exchange to implement their trades. Managed Futures can be differentiated along several dimensions such as decision making, decision basis and time horizon. The most important dimension seems to be the time horizon: Long term CTAs tend to hold trading positions up to several months. In contrast short term CTAs typically tend to hold positions for several hours up to several days.

Each CTA differs in its trading strategy which is mostly focused on analyzing past market data such as prices and market volumes with technical analysis. Key assumption of all strategies is that asset prices are trending and therefore predictable.

In academic literature there are different views on predictability of asset returns. One view is that financial information like the term spread or the dividend yield can be used to predict future asset returns. Therefore this might be also useful to predict future Managed Futures returns. This can be tested with a predictive regression: the change of past market information will be regressed on future returns of Managed Futures.

Another view is to examine whether an asset shows momentum and /or mean reverting patterns in order to assess if it is possible to predict its future price. The term momentum refers to the effect that an asset which outperformed its peers over a defined past period will have significantly higher returns than its peers for a short period in the future. Mean reversion describes that performance reverses in such way that the asset which outperformed its peers (underperformed) in the past will underperform (outperform) in the future.

There are several ways to test for mean reverting / momentum pattern. One approach is to use statistical tests such as the Augmented Dickey-Fuller and the Kwiatkowski / Phillips / Schmidt / Shin test. Both tests can be used to examine if a time series shows mean reverting patterns.

Secondly a Momentum approach can be employed: Funds will be assigned according their prior performance to “Winner” (past outperformer) and “Loser” (past underperformer) portfolios.

Finally, simple technical trading rules which are based on momentum and mean reverting effects can be applied as a test.

## **Results**

The usage of a predictive regression to time Managed Futures is ambiguous. A significant explanatory power was found only for few funds. For most funds the model failed to find evidence for predictability. Timing with such a model therefore seems not to be successful.

Subsequently Managed Futures were analyzed with the Augmented Dickey-Fuller and the Kwiatkowski / Phillips / Schmidt / Shin test. Both tests show evidence for stationary (mean-reverting) behavior for some CTAs. Interestingly, the evidence concentrates on long term CTAs. Overall the informative value of these tests for this sample is hard to assess: The small sample period is problematic for both tests. Due to this stationary behavior could be overstated but also understated.

The results of the Momentum approach show no evidence for momentum behavior of Managed Futures. Moreover past “Winners” seem to underperform, compared to past “Losers” and the “Index” portfolio. Therefore choosing by good past performance figures might be misleading. Instead the findings of this thesis suggest choosing Managed Futures counter-cyclically: 1. Choose the funds with the worst relative performance 2. Invest in the funds which suffered drawdowns. This is indicated by the good performance of past “Losers” and a technical trading rule which is based on mean reverting effects in contrast to the average.

The question remains whether these findings are reliable: They could be affected by the survivorship bias: Only funds, which had reported performance figures for the whole sample period, were examined. This might imply that past “Losers” have reversed because otherwise they would have been closed if their performance had persisted on a low level. Also it is hard to differentiate between random and mean reverting effects: The absence of momentum effects already implies that the performance has reversed.