Morgan Stanley

INVESTMENT MANAGEMENT

Managed Futures—Beyond Trend Following

SOLUTIONS & MULTI-ASSET | MANAGED FUTURES | INVESTMENT INSIGHT | 2018

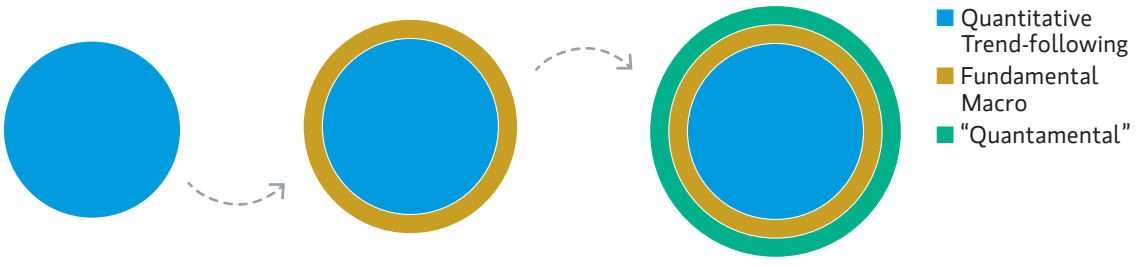
Throughout its more than 30-year history, the managed futures industry has been primarily associated with quantitative trend-following strategies. These are systematic rules-based strategies that seek to identify trends in prices, establishing long or short positions accordingly. More recently, evolution in technology, data and markets has spawned a sophisticated new breed of managers who employ systematic, rules-based trading strategies that focus on ***quantitative*** analysis of ***fundamental***, non-price data. These systematic macro strategies are not trend-following and are often called ***"quantamental."***

In this paper, we'll make the case that quantamental and trend-following strategies are complementary to one another and that a well-balanced, long-term allocation to managed futures should include both.

AUTHORS

CERES MANAGED FUTURES TEAM

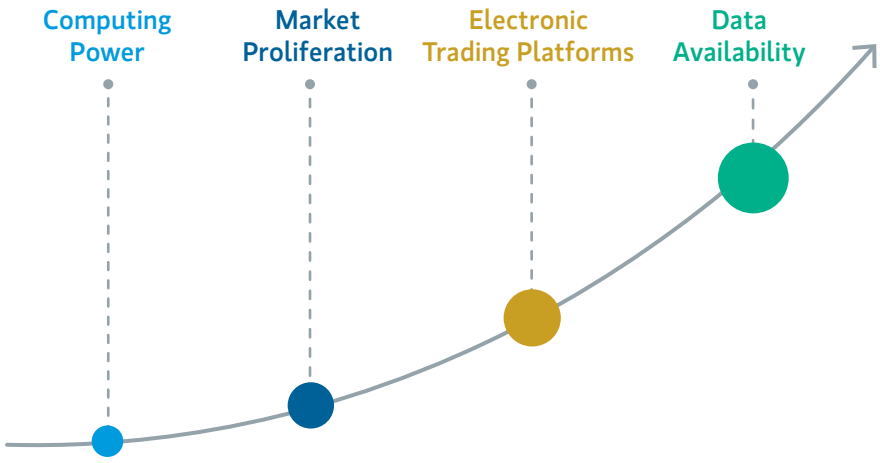
DISPLAY 1
Managed Futures Over Time



Evolution in Managed Futures Strategies

The managed futures universe has expanded rapidly in recent years, mirroring ongoing trends in technology, data and the markets *(Display 2)*.

DISPLAY 2
The Evolution in Managed Futures Strategies



Computing Power

Enhanced computing power is at the core of this evolution. Futures and forwards markets are attractive to systematic trading managers because they are easy to trade.[1] The ability to transact long or short positions with equal ease coupled with the liquidity and transparent pricing of these markets allows futures managers to test new rules-based investment strategies readily. Increased speed of computers, artificial intelligence, machine learning and application of engineering principles that are widely used in such areas as driverless cars all portend further research and development in systematic trading of futures.

Market Proliferation

The composition of the futures markets has evolved as well, reflecting growth and demand in the underlying cash marketplace. For example, frozen orange juice futures were at one time a very liquid market. As consumers' tastes changed, so did the demand for frozen orange juice. Today, the contract trades with relatively small volume.[2] At the other end of the spectrum, VIX futures did not exist before 2004, and today they are a broadly traded and liquid market.[3] Looking ahead, certain emerging markets' futures markets are available today primarily for users in their local markets only, but we expect that one day they will be available for global traders. This dynamic way that futures markets evolve ensures that futures managers will have access to the markets most relevant to the global economy.

Electronic Trading Platforms

US futures markets began in the 1800's with traders communicating their orders to one another on a trading floor. This continued well into the 2000's; in fact, the Chicago Board of Trade's physical exchange didn't close its doors until the end of 2016. Some physical exchanges still do exist, but the majority of the volume in futures trading today is transacted via electronic exchanges. The adoption of electronic trading platforms has dramatically reduced costs while increasing trading volume and liquidity in the futures markets.[4]

Data Availability

The first data inputs broadly available for systematic analysis were closing prices. Today, minute-to-minute tick data and volume and open interest data can serve as model inputs. Increasingly, broader, more readily available fundamental data, such as macroeconomic statistics, supply/demand data, inventory data, trade flow data, weather data and interest rate differentials allow for development of a wider number of unique and independent data inputs.

Advancements in electronic gathering of data, methods of storage and speed of transmission all combine to ensure that data attainment remains a precious differentiator among managers. Some managers are even creating "new" and proprietary sources of data.

For example, today's satellites can track ships at sea; road traffic can be scrutinized; and receipts for purchases can be obtained on a routine basis. Taken together, these represent new, real-time sources of data that can help determine inventory levels. These new data sets can be fed into rules-based models that are seeking to identify value in prices and inefficiencies in asset pricing relationships.

[1] Forward contracts are different than futures structurally, but share many of the traits of futures which make them conducive to systematic trading.
[2] "Orange Juice Futures Leave Sour Taste for Investors", *Financial Times* (February 8, 2017)
[3] Wikipedia
[4] Source: CME Group: https://www.cmegroup.com/company/history/timeline-of-achievements.html

Beyond Trend-Following

Trend-following models are predominately based on the momentum of price. If an expected trend pattern does not materialize, positions must be reduced or even eliminated. The trend-following adage is to "cut losers and let winners run". *Display 3* illustrates a classic trend-following model with buy and sell signals.

In the paragraphs that follow, we present a few of the ***non-trend*** factors on which quantamental strategies focus. Actual implementation by a manager would be more complex than these simplistic descriptions.

INTRA-FUTURES MARKETS: CARRY/ROLL YIELD

A roll yield strategy is based on a cost of carry factor that is specific to futures markets, particularly commodity futures. Futures contracts trade in a series of expiration dates. The spot, or immediate cash price, differs from the nearest-term futures contract, which in turn differs from later-dated contracts. The difference between spot and future prices includes the cost of carry. Cost of carry is calculated based on interest costs related to financing the purchase, as well as storing and insuring the underlying asset. These costs interact with supply/demand pricing pressures and result in either a contango (upward sloping) or backwardation (downward sloping) curve. Long/short commodity managers will integrate curve slope into their trading strategies.

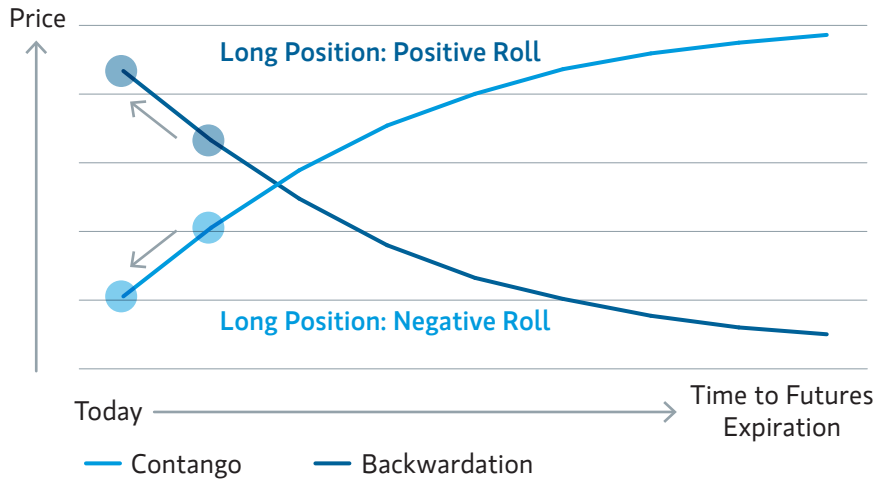
As seen in *Display 4*, a long commodity position in a backwardated contract may allow a manager to benefit from positive roll yield; a long position "rolls up" the futures curve as it nears the higher spot price. Conversely, a long commodity position in a contango market will experience a negative roll yield; it would roll "down the curve" and lose value as time passes. A short position may fare better in a contango market.

We observe that a roll yield strategy is based on a factor that is driven by market behavior less related to price trends. As such, it could be a diversifying strategy to trend-following.

DISPLAY 3
Classic Trend-Following Schematic

The chart is provided for illustrative purposes only and is not meant to depict any specific investment.

DISPLAY 4
Intra-Futures Market Carry/Roll Yield



The chart is provided for illustrative purposes only and is not meant to depict any specific investment.

INTRA-FUTURES MARKETS: RELATIVE VALUE

Certain commodity complexes, such as soybeans, soy oil and soy meal, are related to each other by nature of their processing. The cost of this processing can be calculated and a "normal" spread can be observed. From the producer's point of view, the spread represents the profit they would like to make. If this spread becomes distorted from a calculated norm, a trader can place a trade with the expectation that the spread will revert to the norm and generate a positive return over time.

Spread trading involves risks, as neither reversion to the norm nor its timing is a

certainty. However, one can observe that this type of trading is very different from trend trading.

VALUE-SEEKING: MACRO

By harnessing computing power and new sources of data, quantamental managers can study and identify a large universe of possible inputs. Further, by systemizing their processes, they can take positions in a large number of markets.

For example, GPS-based transportation activity analysis or electricity usage statistics may provide timely information on the level of a country's economic activity. A value-focused systematic macro manager may consider this information when establishing a long futures position in the equity index of a country with a robust macroeconomic outlook and a short position in the equity index of a country with relatively poor macro metrics.

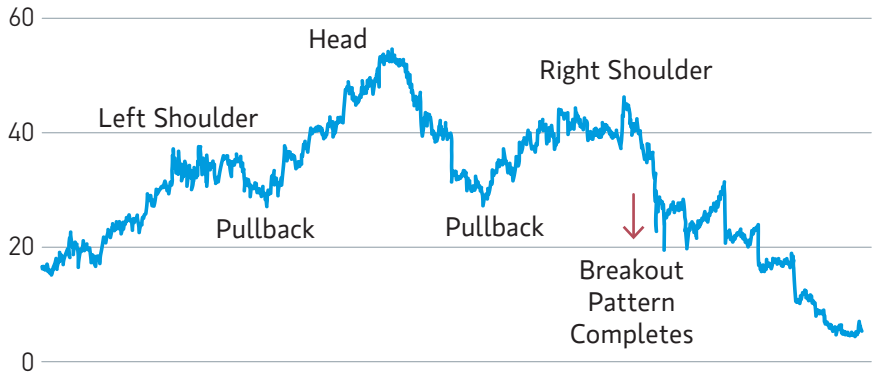
These sources of data offer quantitative macro traders new inputs and new trading rationales that differ from trend following and offer diversified exposures in futures trading.

PATTERN RECOGNITION

This category applies broadly to identifying price patterns that have been observed historically and have frequently been followed by a specific price move. Pattern recognition is related to trend following in that it relies solely on price as an input. However, the entry and exit timing of such a trade may differ from trend-following, thus offering a differentiated style.

Such patterns are frequently given names that reflect their appearance in charts. For example, one such pattern is referred to as a "head and shoulders" pattern, which may suggest when an existing trend is reversing. In *Display 5* above you can observe such a formation. A pattern recognition trader would view this formation as portending a lower future price.

DISPLAY 5
Pattern Recognition Example



The chart is provided for illustrative purposes only and is not meant to depict any specific investment.

For years, traders relied on the visual identification of such simplistic patterns. Computational power today allows for the research and identification of new patterns and subsequent trading action. Pattern recognition is a category where machine learning and artificial intelligence are being widely applied.[5]

Conclusion

The managed futures industry has evolved from trend-following into a diversified set of quantitative trading strategies that benefit from proliferating data availability and ever-increasing computing power. Trend following and quantamental strategies are complementary to one another and tend to operate differently in different types of market conditions.

As with any strategy seeking to capture a market inefficiency, decay of the inefficiency due to an influx of capital is a real danger. The consistency of the strategy's alpha is highly dependent on ongoing research and efficient execution. This fact, along with the fact that the systems required for success can be very sophisticated, argue for partnering with a professional team when seeking to invest in these managers.

Trend following remains at the heart of managed futures. Indeed, this trend element is what lends to the convexity of futures returns that have been historically associated with sustained downward movement in equity markets. Yet, quantamental styles may prove to be diversifying during the periods in which trend factors are out of favor. Investors who are comfortable with the risks of managed futures could be well-served by including allocations to each in a well-diversified portfolio.

[5] Anzai, Y. (1992) *Pattern Recognition and Machine Learning*. Morgan Kaufman.

Risk Considerations

Diversification does not eliminate the risk of loss.

Managed futures investments should be considered as part of a diversified investment portfolio. Morgan Stanley Investment Management considers managed futures investments suitable solely for the risk capital portion of such a portfolio. If a managed futures fund does not perform in a manner that has a low correlation to the performance of traditional financial markets or does not perform successfully, investors will obtain no diversification benefits by investing in such fund, and there is no guarantee that a managed futures investment will provide such benefits.

- Investments in futures, forwards, and options on futures and forwards trading is speculative and volatile and an investor could lose all or a substantial part of his or her investment. Key risks to consider when investing in managed futures strategies include the following: Strategies generally employ substantial leverage in their trading which accentuates the trading profit and trading loss;
- Strategies may trade on non-U.S. exchanges and in the over-the-counter market which may not be subject to regulation by the Commodity Futures Trading Commission;
  - Liquidity is restricted; there may be no secondary market for units in managed futures strategies and such units may be subject to restrictions on transfer;
  - Fees and expenses can be substantial and will reduce trading profits and investment returns;
  - Trading advisors may receive quarterly or annual incentive fees, without regard to the overall performance of any of the funds; and
  - Profits earned by managed futures funds will be taxable to an investor even though distributions will not be paid to investors.

DEFINITIONS

Backwardation: Backwardation exists when the futures price is below the expected future spot price for a particular commodity.

Contango: Contango exists when the futures price of a commodity is above the expected spot price.

IMPORTANT INFORMATION

The views and opinions are those of Morgan Stanley Investment Management as of the date of publication and are subject to change at any time due to market or economic conditions and may not necessarily come to pass. Furthermore, the views will not be updated or otherwise revised to reflect information that subsequently becomes available or circumstances existing, or changes occurring, after the date of publication. The views expressed do not reflect the opinions of all portfolio managers at Morgan Stanley Investment Management (MSIM) or the views of the firm as a whole, and may not be reflected in all the strategies and products that the MSIM offers.

Forecasts and/or estimates provided herein are subject to change and may not actually come to pass. Information regarding expected market returns and market outlooks is based on the research, analysis and opinions of MSIM. These conclusions are speculative in nature, may not come to pass and are not intended to predict the future performance of any specific Morgan Stanley Investment Management product.

Certain information herein is based on data obtained from third party sources believed to be reliable. However, we have not verified this information, and we make no representations whatsoever as to its accuracy or completeness.

This material is a general communication, which is not impartial and all information provided has been prepared solely for informational and educational purposes and does not constitute an offer or a recommendation to buy or sell any particular security or to adopt any specific investment strategy. The information herein has not been based on a consideration of any individual investor circumstances and is not investment advice, nor should it be construed in any way as tax, accounting, legal or regulatory advice. To that end, investors should seek independent legal and financial advice, including advice as to tax consequences, before making any investment decision.

Investing involves risks including the possible loss of principal. Any person subscribing for a managed futures investment must be able to bear the risks involved and must meet the specific suitability requirements relating to such investment. Such suitability requirements may vary depending on the nature of the offered investment. An offer or solicitation with respect to any managed futures investment may only be made pursuant to a current prospectus and/or offering document. This presentation is for informational purposes only.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

This communication is not a product of Morgan Stanley's Research Department and should not be regarded as a research recommendation. The information contained herein has not been prepared in accordance with legal requirements designed to promote the independence of investment research and is not subject to any prohibition on dealing ahead of the dissemination of investment research.

NOT FDIC INSURED | OFFER NO BANK GUARANTEE | MAY LOSE VALUE | NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY | NOT A DEPOSIT

Morgan Stanley Investment Management is the asset management division of Morgan Stanley.

Explore our site at **www.morganstanley.com/im**

CRC 2229665 Exp. 8/1/2019 9353893_KC_0918
US