

# ADDING ALTERNATIVES

## Understanding Non-Correlated Strategies

Non-correlated strategies can play a critical role in mitigating portfolio risk and enhancing overall returns because market returns have historically had no effect on a non-correlated strategy's returns. In contrast, an inversely correlated strategy's returns have been the opposite of market returns. Too often, investors do not fully understand the concept of non-correlation and instead expect inversely correlated results. This is problematic because it may lead to investors selling out at the worst possible time rather than staying the course, which could lead to significantly better investment results.

We believe that managed futures strategies are among the most compelling non-correlated strategies. In addition to outperforming the S&P 500 Index, managed futures have demonstrated a superior drawdown profile. Because of the uncorrelated nature, managed futures offer the potential for positive returns during both up and down markets, including periods of equity market volatility.

### A Non-Correlated Strategy: Historical Correlation and Corresponding Growth of \$10,000

Based on monthly return data for Barclay CTA Index (Managed Futures) and S&P 500 Price Index from January 1980 to September 2018. Source: Bloomberg LP.



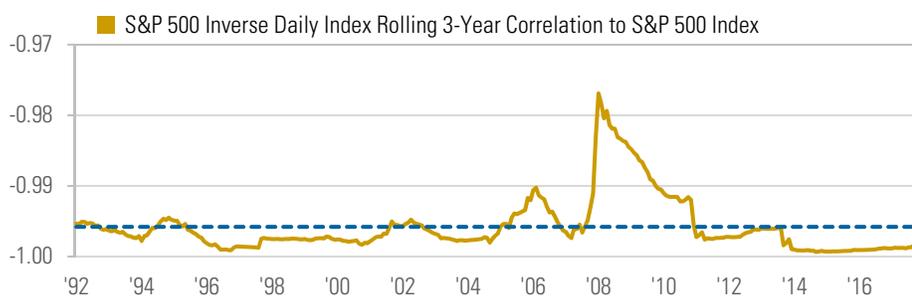
	Correlation	%
High	0.7 to 1.0	0%
Moderate	0.1 to 0.7	33%
None	-0.1 to 0.1	28%
Moderate Negative	-0.7 to -0.1	39%
Highly Negative	-1.0 to -0.7	0%
<b>Average</b>	<b>-0.011</b>	



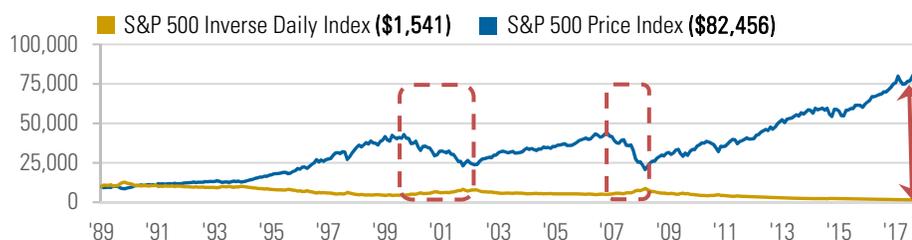
**Non-Correlated Example:**  
Overall outperformance and positive returns during periods of equity market turmoil.

### An Inversely Correlated Strategy: Historical Correlation and Corresponding Growth of \$10,000

Based on monthly return data for S&P 500 Inverse Daily Index and S&P 500 Price Index from December 1989\* to September 2018. Source: Bloomberg LP.



	Correlation	%
High	0.7 to 1.0	0%
Moderate	0.1 to 0.7	0%
None	-0.1 to 0.1	0%
Moderate Negative	-0.7 to -0.1	0%
Highly Negative	-1.0 to -0.7	100%
<b>Average</b>	<b>-0.996</b>	



**Inversely Correlated Example:**  
Positive performance during periods of equity market turmoil but long-term value destruction.

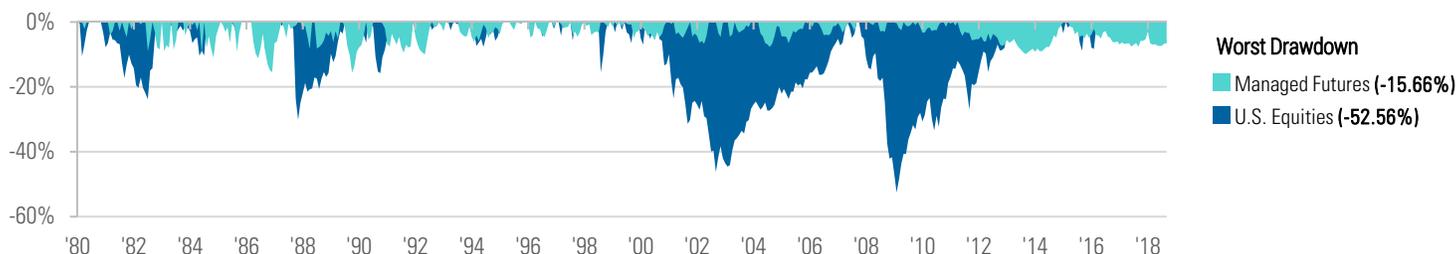
\* Data for S&P 500 Inverse Daily Index not available prior to 1989. S&P 500 Price Index used as comparison due to methodology of S&P 500 Inverse Daily Index.

Alternative investments may not be suitable for all investors and an investment in alternative funds is suitable only for investors who can bear the risks associated with the illiquidity of the fund's shares and should be viewed as a long-term investment.

Despite the likelihood of positive returns on down market days, inversely correlated strategies are probably a poor fit in many portfolios due to long-term value deterioration.

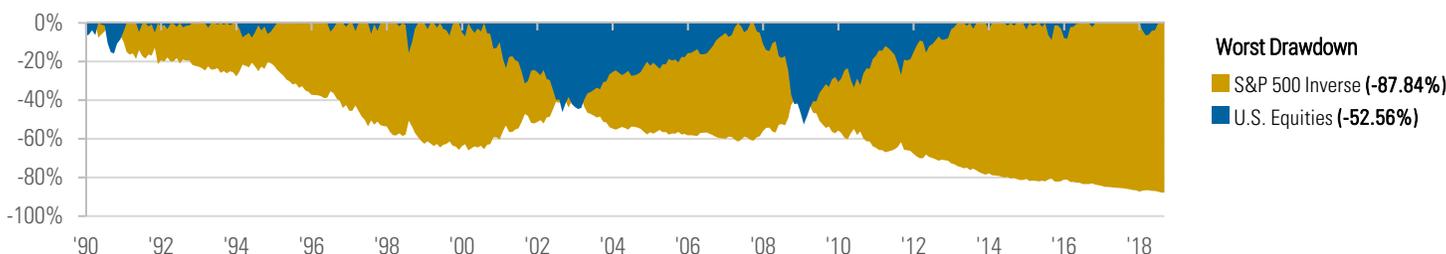
### A Better Drawdown Profile: Historical Drawdowns for Managed Futures and U.S. Equities

Based on monthly return data for Barclay CTA Index (Managed Futures) and S&P 500 Price Index from January 1980 to September 2018. Source: Bloomberg LP.



### An Unfavorable Drawdown Profile: Historical Drawdowns for Inversely Correlated Strategy and U.S. Equities

Based on monthly return data for S&P 500 Inverse Daily Index and S&P 500 Price Index from December 1989 to September 2018. Source: Bloomberg LP.

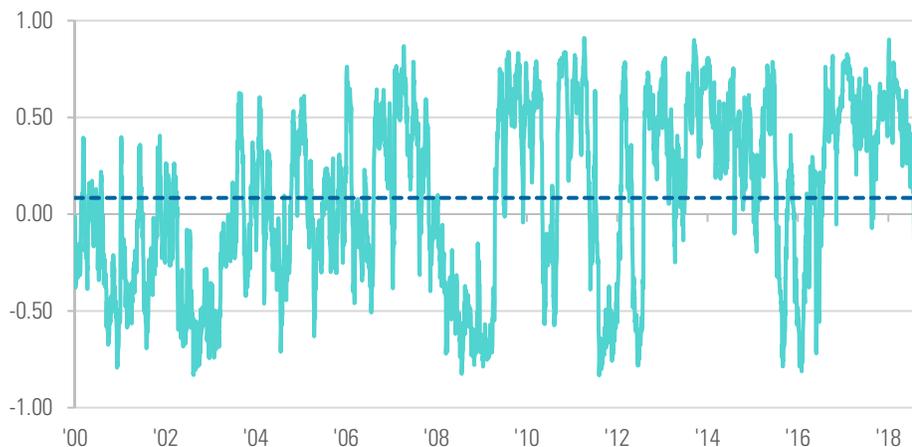


## Proper Timeframe is the Key to Evaluating Correlation

Using too short of a timeframe can be a costly mistake when it comes to evaluating a strategy's correlation. Consider the daily performance of managed futures versus the S&P 500. Using only a rolling one month timeframe, the correlation historically appears to be moderately high to high a majority of the time while highly negatively correlated 4% of the time. This noise may make it difficult for investors to understand how the strategy might correlate over the long run. As the timeframe is expanded to one year and three years, the noisiness disappears and the analyses reveal that managed futures have historically behaved in a non-correlated manner, with 43% of rolling three year periods showing no correlation.

### Rolling One Month Correlation of Managed Futures to U.S. Equities

Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 12/31/1999 (01/31/2000 start date in chart) to 09/28/2018. Source: Bloomberg LP.

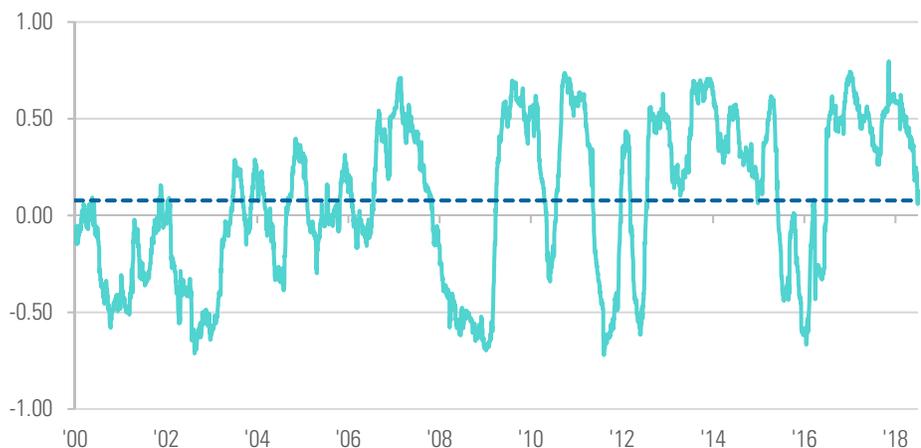


	Correlation	%
High	0.7 to 1.0	7%
Moderate	0.1 to 0.7	44%
None	-0.1 to 0.1	12%
Moderate Negative	-0.7 to -0.1	33%
Highly Negative	-1.0 to -0.7	4%
<b>Average</b>	<b>0.084</b>	

**Past performance is no guarantee of future results.** The referenced indices are shown for general market comparisons and are not meant to represent any fund. Investors cannot directly invest in an index; unmanaged index returns do not reflect any fees, expenses or sales charges.

### Rolling Three Month Correlation of Managed Futures to U.S. Equities

Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 12/31/1999 (03/31/2000 start date in chart) to 09/28/2018. Source: Bloomberg LP.



	Correlation	%
High	0.7 to 1.0	1%
Moderate	0.1 to 0.7	49%
None	-0.1 to 0.1	17%
Moderate Negative	-0.7 to -0.1	33%
Highly Negative	-1.0 to -0.7	0%
<b>Average</b>	<b>0.078</b>	

### Rolling One Year Correlation of Managed Futures to U.S. Equities

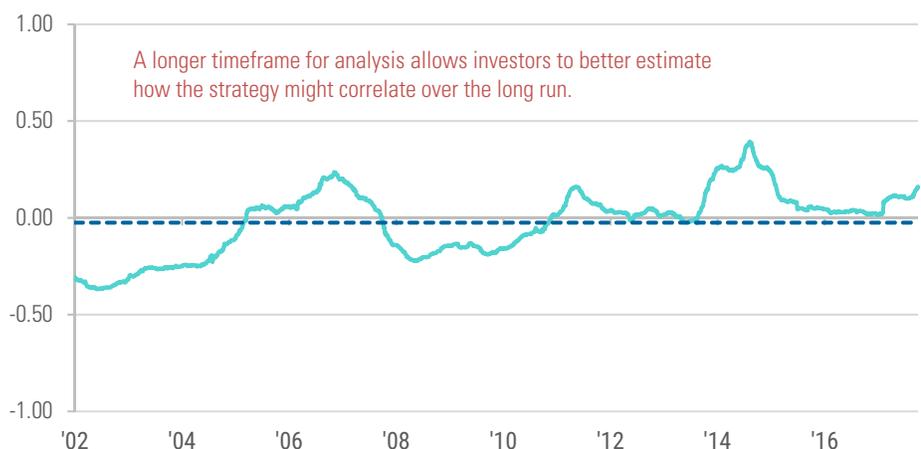
Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 12/31/1999 (12/29/2000 start date in chart) to 09/28/2018. Source: Bloomberg LP.



	Correlation	%
High	0.7 to 1.0	0%
Moderate	0.1 to 0.7	39%
None	-0.1 to 0.1	25%
Moderate Negative	-0.7 to -0.1	36%
Highly Negative	-1.0 to -0.7	0%
<b>Average</b>	<b>0.034</b>	

### Rolling Three Year Correlation of Managed Futures to U.S. Equities

Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 12/31/1999 (12/31/2002 start date in chart) to 09/28/2018. Source: Bloomberg LP.



	Correlation	%
High	0.7 to 1.0	0%
Moderate	0.1 to 0.7	22%
None	-0.1 to 0.1	43%
Moderate Negative	-0.7 to -0.1	35%
Highly Negative	-1.0 to -0.7	0%
<b>Average</b>	<b>-0.025</b>	

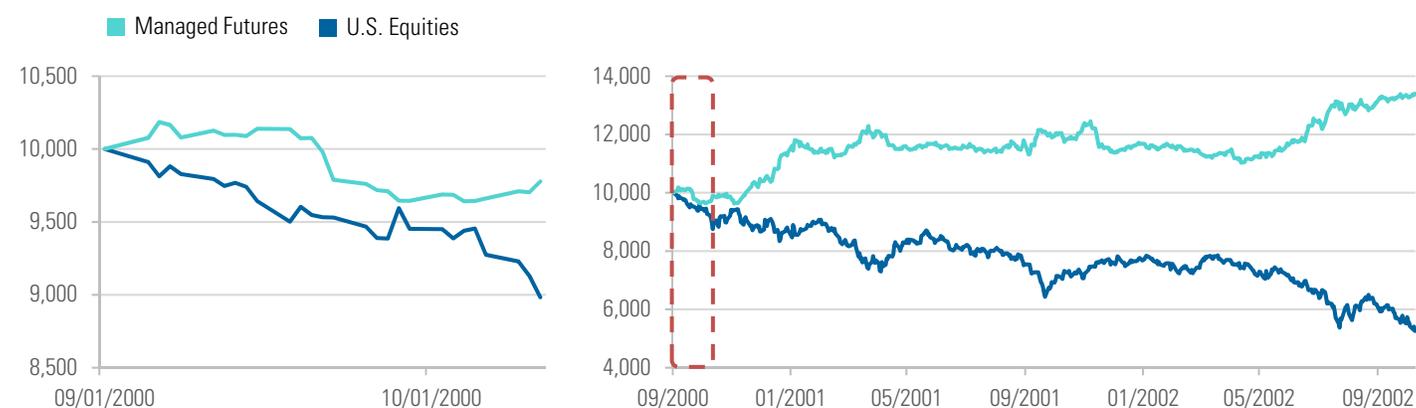
**Past performance is no guarantee of future results.** The referenced indices are shown for general market comparisons and are not meant to represent any fund. Investors cannot directly invest in an index; unmanaged index returns do not reflect any fees, expenses or sales charges. Please note that investing in derivatives (which include options, futures and other transactions) may give rise to leverage risk (which can increase volatility), and can have a significant impact on performance.

Not only does analyzing correlation with only a short timeframe introduce noise, it may lead to investors making costly mistakes if they act on that analysis at the wrong time.

When market conditions deteriorate, emotions may begin to dominate rational decision-making for investors. Rather than relying on longer-term data and an understanding of expected risk and return, investors may notice short-term deviations and act at the worst possible time. Consider two examples, one from 2000 during the bursting of the tech bubble and one in 2007 preceding the financial crisis. In both cases, as equity markets began to show signs of weakness, managed futures also underperformed over a short time period. Recall that non-correlated strategies may be up, flat, or even down when the market is down. An investor that forgets this and instead assumes correlation from limited data may be more likely to sell out of the strategy at the worst possible time, right before it could have provided years of outperformance versus equities.

### Hypothetical Example of an Investor Selling out of a Non-Correlated Strategy Too Early in 2000

Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 09/01/2000 to 10/09/2002. Source: Bloomberg LP.

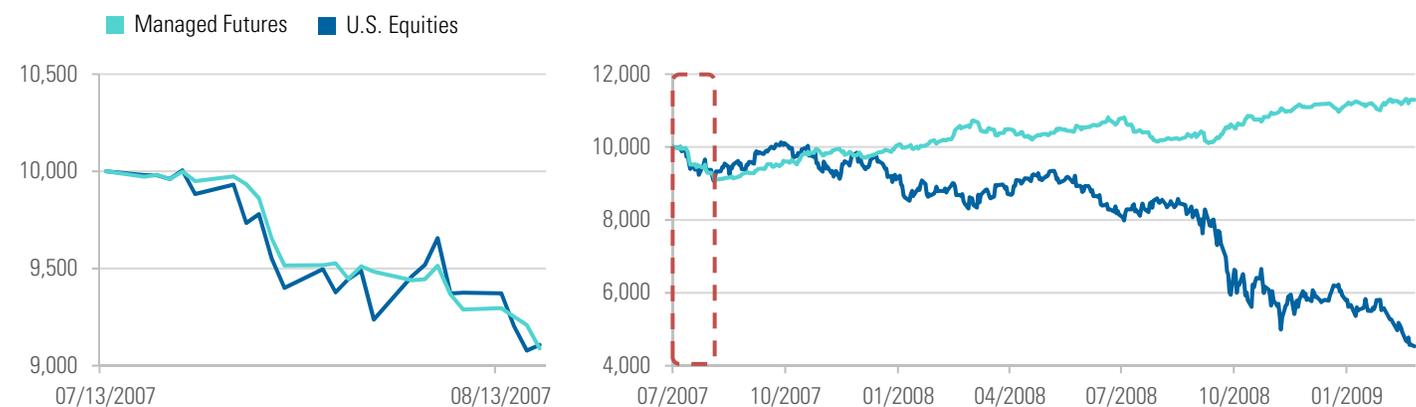


	09/01/2000 - 10/11/2000	09/01/2000 - 10/09/2002
U.S. Equities	-10.17%	-47.41%
Managed Futures	-2.22%	+33.97%

An investor that had \$10,000 in managed futures on 09/01/2000 and then sold on 10/11/2000 because managed futures were also down would have missed out on \$3,619 in future gains by 10/09/2002. Had that investor rotated into U.S. equities, the total opportunity cost would have been \$7,343 on the initial \$10,000.

### Hypothetical Example of an Investor Selling out of a Non-Correlated Strategy Too Early in 2007

Based on daily return data for SG CTA Index (Managed Futures) and S&P 500 TR Index (U.S. Equities) from 07/13/2007 to 03/09/2009. Source: Bloomberg LP.



	07/13/2007 - 08/16/2007	07/13/2007 - 03/09/2009
U.S. Equities	-8.93%	-54.68%
Managed Futures	-9.11%	+12.98%

An investor that had \$10,000 in managed futures on 07/13/2007 and then sold on 08/16/2007 because managed futures underperformed would have missed out on \$2,210 in future gains by 03/09/2009. Had that investor rotated into U.S. equities, the total opportunity cost would have been \$6,785 on the initial \$10,000.

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# A Better Approach: Integrating Managed Futures Exposure

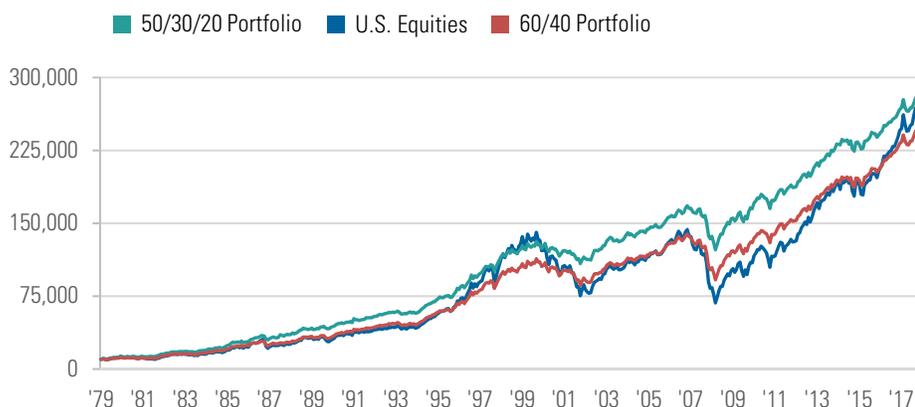
## WHY MANAGED FUTURES?

- ✓ A long history of delivering attractive risk-adjusted returns
- ✓ Uncorrelated to most major asset classes
- ✓ Opportunity to decrease overall portfolio volatility
- ✓ History of positive returns in up and down markets
- ✓ Potential for globally diversified exposure in a single investment vehicle
- ✓ Highly regulated and supervised industry and markets

Managed futures products usually implement trading methods that involve going long or short in futures and commodities diversified across global futures markets (e.g., diversified by trading strategy, geography, and asset class) based on market trends, momentum, systematic mean-reversion and/or other futures strategies. By allocating to managed futures in a portfolio, investors can potentially improve their overall returns while lowering risk and reducing the impact of drawdowns.

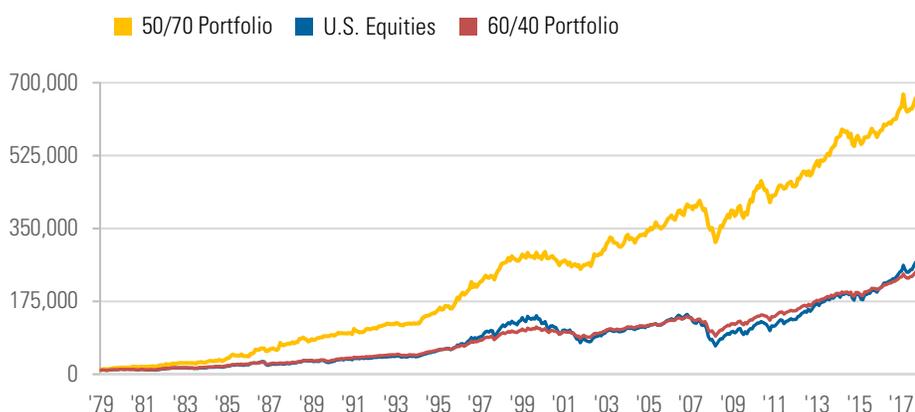
A common challenge for investors is integrating managed futures into their overall model and sticking with it over time. One approach is to set a target managed futures allocation amount and always maintain that allocation. Another approach is to allocate to strategies that already integrate managed futures. The benefit of this approach is that with the embedded leverage of managed futures, investors can get increased overall exposure which would have improved their overall return profile while maintaining the same level of risk-adjusted returns that they would have received from simply adding a managed futures allocation.

## Integrating with a Dedicated 20% Allocation to Managed Futures: Growth of \$10,000 and Worst Drawdown



	Growth of \$10,000	Worst Drawdown
50/30/20	\$279,041	-26.83%
U.S. Equities	\$269,963	-52.56%
60/40	\$245,000	-33.85%

## Integrating with a Strategy that Already Combines Equities and Managed Futures: Growth of \$10,000 and Worst Drawdown



	Growth of \$10,000	Worst Drawdown
50/70	\$664,131	-23.95%
U.S. Equities	\$269,963	-52.56%
60/40	\$245,000	-33.85%

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Based on monthly return data for S&P 500 Price Index (U.S. Equities), 60% U.S. Equities/40% Bloomberg Barclays US Aggregate Bond Total Return Index (Bonds) (60/40 Portfolio, rebalanced monthly), 50% U.S. Equities/30% Bonds/20% BarclayHedge CTA Index (Managed Futures) (50/30/20 Portfolio, rebalanced monthly), and 50% U.S. Equities/70% Managed Futures (50/70 Portfolio, rebalanced monthly, includes embedded leverage from Managed Futures) from January 1989 to September 2018. Source: Bloomberg LP.

## GLOSSARY OF TERMS

**BarclayHedge CTA Index:** A leading industry benchmark of representative performance of commodity trading advisors. The Index is equally weighted and rebalanced at the beginning of each year. The index only publishes monthly returns.

**Bloomberg Barclays US Aggregate Bond Index:** A broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market.

**Correlation:** A statistical measure of how two securities move in relation to each other.

**Drawdown:** A measure of the peak to valley loss of an investment for a stated time period. An investment does not recover from a drawdown until it surpasses the previous peak.

**S&P 500 Index:** A market capitalization-weighted index that is used to represent the U.S. large-cap stock market. The **Price Index** does not include the impact of reinvested dividends. The **Total Return (TR)** Index reflects the effects of dividend reinvestment. Total Return Index data is not available prior to 1988. Any analysis period beginning prior to 1988 uses the Price Index.

**S&P 500 Inverse Daily Index:** Provides inverse (positive or negative) returns of the S&P 500 Index by taking a short position in the index.

**SG CTA Index:** An equal-weighted index that calculates the daily rate of return for a pool of CTAs selected from the larger managers that are open to new investment. SG CTA Index used in analysis when daily returns required.

**Standard Deviation:** A statistical measure of how consistent returns are over time; a higher standard deviation indicates historically more volatility.

## IMPORTANT RISK DISCLOSURES

As with any investment strategy, there is no guarantee that an asset class will continue to perform similarly in the future. Investment markets are unpredictable and there will be certain market conditions where a strategy will not meet its investment objective and will lose money. Returns will vary and you could lose money investing in managed futures and those losses could be significant. Please note that investing in derivatives (which include options, futures and other transactions) may give rise to leverage risk (which can increase volatility), and can have a significant impact on performance. Investing in the commodities markets may subject managed futures to greater volatility than investments in traditional securities. Using derivatives like futures and options to increase long and short exposure creates leverage, which can magnify potential for gain or loss and, therefore, amplify the effects of market volatility.

Investors should carefully consider the investment objectives, risks, charges and expenses of the Catalyst Funds. This and other important information about the Fund is contained in the prospectus, which can be obtained by calling 866-447-4228 or at [www.CatalystMF.com](http://www.CatalystMF.com). The prospectus should be read carefully before investing. The Catalyst Funds are distributed by Northern Lights Distributors, LLC, member FINRA/SIPC. Catalyst Capital Advisors LLC is not affiliated with Northern Lights Distributors, LLC.

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## ABOUT CATALYST FUNDS

Catalyst Funds is a distinct alternative manager. Since our founding in 2006, we understood that the market did not need another traditional family of mutual funds. We strive to provide innovative strategies to support financial advisors and their clients in meeting the challenges of an ever-changing global market environment.

Catalyst offers a broad range of distinct, “intelligent alternative” funds. Our specialized strategies seek to address the needs of investors, including generating alpha, reducing volatility, limiting tail risk, mitigating interest rate risk and generating income. We strive to be “ahead of the curve” in exploiting emerging areas of opportunity to assist our clients in achieving their long-term investment goals.

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