

2015
INSIGHTS

The Long and Short of Hedged Equity Investing

Managing Equity Risk

HIGHLIGHTS

With global equity markets nearing all-time highs, investors' desires for continued returns are tempered by fears of a major correction.

Are there ways to enjoy the potential long-term benefits of equities while seeking to mitigate, at least partially, their risk characteristics?

Since academic research taught us how to analyze risk and return and the potential benefits of diversification more than half a century ago, equities have been a core asset class in most investors' portfolios.

Broadly speaking, allocations to equities (including private equity¹, equity-linked derivatives², etc.) usually tend to cluster between 30% and 60%, although numbers as wide-ranging as 10% or 80% do exist. By all indications, sizable allocations to equities are likely to continue into the foreseeable future.

Historically, most academics and practitioners have supported the theory that equities, in the long run, tend to earn attractive returns. But portfolio theory cautions us that returns should be viewed in conjunction with risk, and equities have also been the dominant source of risk in investor portfolios. Below, we take a closer look at the history of the returns and risks of US equities, represented by the S&P 500[®] Total Return Index.

EQUITY RETURNS MAY BE HELPFUL, YET HAZARDOUS TO YOUR FINANCIAL HEALTH

Historically, US equities, as an asset class, have yielded the long-term returns shown below.

^{1,2,3} Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.

TABLE 1

S&P 500[®] Total Return analysis for various lookbacks (Ending 12/2014)

| LOOKBACK (YEARS) | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annualized Rate of Return (AROR) | 15.5% | 7.7% | 4.2% | 9.8% | 9.6% | 11.3% | 11.8% | 12.2% | 10.5% | 9.9% |
| Annualized Standard Deviation (ASTDEV) ³ | 13.0% | 14.7% | 15.3% | 15.1% | 14.6% | 15.2% | 15.2% | 15.1% | 15.4% | 15.1% |
| AROR/ASTDEV | 1.19 | 0.52 | 0.28 | 0.65 | 0.66 | 0.75 | 0.78 | 0.81 | 0.68 | 0.66 |

Source: Equinox Funds and Bloomberg, LP. See page 9 for S&P 500[®] Index definition. Asset classes have different investment objectives, costs and expenses, liquidity profiles, safety, guarantees/insurance, volatility, and tax advantages/disadvantages. The performance of any index presented does not represent the performance of any particular product. The performance of the indices noted above does not include fund expenses, such as service fees, sponsor fees, fund organizational operating fees, and the fund operating expenses, etc. Investors are not able to invest directly in the above index.

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As of 12/31/2013, an investor who had bought and held on to US equities 25 to 50 years ago would have earned an annualized rate of return (“AROR”) between 10.2% and 11.8%. Attractive as these returns seem, they entailed taking on added risk: their annualized standard deviation, depending on the holding period, was between 16.8% and 18.5%. Nonetheless, the “reward to risk” ratio, measured as the AROR divided by the annualized standard deviation, ranged from 0.55 to 0.71, which represents quite a compelling proposition. All these results, admittedly, do have the benefit of hindsight.

The oft-cited caveat that “past performance is not indicative of future results” becomes painfully obvious when we look at the last 20 years. The AROR now fluctuates between 4.6% and 17.7%, the annualized standard deviation between 11.5% and 19.5%, and the reward/risk ratio between 0.24 and 1.54, all of which are much wider ranges than the 25 to 50 year results.

A look at the table below, where we show the returns over a number of five year time windows, explains this volatility⁴. Two out of the most recent four periods show negative returns, accompanied by standard deviations in excess of 20%. These represent the bursting of the dot-com bubble and the financial crisis of 2007-2008.

⁴⁻⁶ Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.

TABLE 2

S&P 500® Total Return analysis for various five-year windows

| TIME WINDOWS | 2010-2014 | 2005-2009 | 2000-2004 | 1995-1999 | 1990-1994 | 1985-1989 | 1980-1984 | 1975-1979 | 1970-1974 | 1965-1969 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Annualized Rate of Return (AROR) | 15.5% | 0.4% | -2.3% | 28.5% | 8.7% | 20.4% | 14.8% | 14.8% | -2.4% | 5.0% |
| Annualized Standard Deviation (ASTDEV) | 13.0% | 16.0% | 16.3% | 14.0% | 12.5% | 17.7% | 15.1% | 14.6% | 17.1% | 11.9% |
| AROR/ASTDEV | 1.19 | 0.03 | -0.14 | 2.04 | 0.69 | 1.15 | 0.98 | 1.01 | -0.14 | 0.42 |

Source: Equinox Funds and Bloomberg, LP

Thus, recent history shows that the timing of an investor’s entry and exit can cause realized returns to vary significantly, even when measured over a five-year window. Significantly longer periods would tend to mitigate this risk to some extent, as shown in the table on page 1.

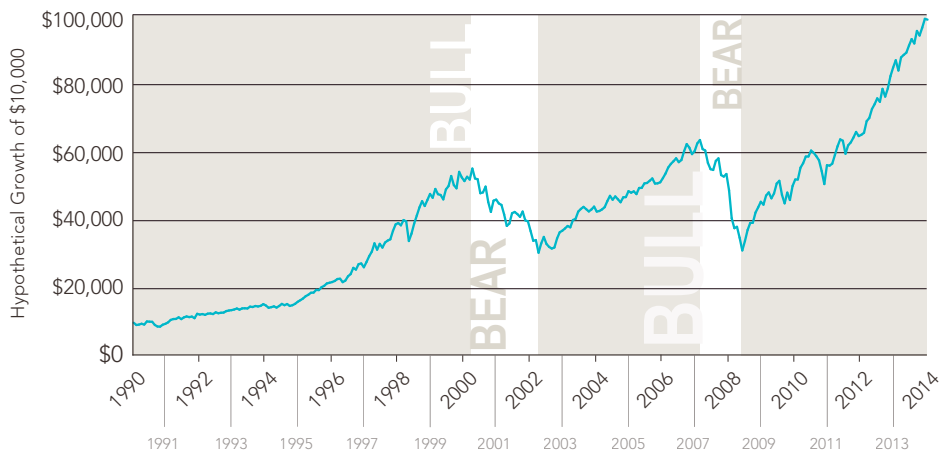
Equities as an asset class display other characteristics that are not entirely captured when standard deviation is used as the measure of risk. The graph on page 3 shows that equities suffered two peak-to-trough drawdowns⁵ of around 50% during the last 15 years. The pain that accompanies a 50% loss can be put in perspective by pointing out that a return of 100% would be necessary just to bring the portfolio value back to even. Proponents of equities point out that this has indeed happened since January 2009. Detractors counter that investors who reduced equity allocations at or near the bottom may not have increased them in time to benefit from the rally. Attempting to predict the future direction of the market, or “market timing”⁶, can be extremely difficult to implement successfully.

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Significantly longer periods would tend to mitigate this risk to some extent, as shown in the first table on page 1.

FIGURE 1

S&P 500® Total Return Index (1/1/1990 - 12/31/2014)



Source: Equinox Funds and Bloomberg, LP

Another characteristic of equity returns is their “negative skew:”⁷ the probability, albeit small, that negative returns (corrections) can be more severe than a normal (or bell-shaped) distribution would predict. Last but not least, large equity market corrections often tend to be accompanied by an increase in volatility, as seen from the 1999-2003 and 2004-2008 windows in the chart on page 2. This can compound investors’ distress during these trying times.

The question naturally arises: are there ways to continue to enjoy the potential long-term benefits of equities while seeking to mitigate, at least partially, their risk characteristics? This may be of particular relevance today with global equity markets nearing all-time highs, investors’ desires for continued returns is tempered by fears of a major correction.

MR. JONES AND HIS HEDGED FUND

The realization that equity markets are risky, but that this risk can attempt to be managed or “hedged” dates back to 1949, when Alfred Winslow Jones launched what is widely held to be the first hedge fund. Interestingly, Jones referred to his fund as a “hedged” fund (not a “hedge fund”) because he believed that being hedged was its most important identifying characteristic.⁸

Jones did not believe that anyone, even with the help of technical analysis, could consistently predict the direction of the equity market. In other words, he did not believe in tactical market timing. This led him to think about ways in which

⁷⁻⁸ Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.

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⁹⁻²² *Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.*

a fund could remain invested in equities while reducing its exposure to swings in the market. His key insight was that a manager could combine buying (undervalued) stocks with selling short⁹ other (overvalued) stocks. In terms of modern portfolio theory, Jones's idea sought to manage the "beta"¹⁰ (or market risk) of the portfolio while simultaneously seeking to add "alpha"¹¹ (or outperformance) through both long and short stock picking.

Today, investors can seek to hedge equity risk by buying index put options¹² (or other similar risk hedging tools), which were not available in Jones's day. However, this can prove expensive in the long run: put options tend to cost more precisely when they are most needed. The premiums needed to buy and maintain a hedge using put options also tend to detract from the portfolio's returns over time.

Strategies similar to Jones's have been employed quite extensively for many years by "long/short equity"¹³ hedge funds. Let us explore how these long/short strategies seek to add value, and evaluate their pros and cons.

THE LONG AND SHORT OF LONG/SHORT AND LONG-ONLY EQUITY STRATEGIES

Fundamentally based equity managers seek to be long (to buy) stocks that they believe may generate attractive performance. Long/short equity managers also seek to sell short stocks that they expect may decline based on valuation or other factors. Active stock selection is the primary tool by which both long-only and long/short equity managers seek to add alpha. Strategy inputs outside of fundamental stock analysis¹⁴ can incorporate macro sentiment¹⁵, sector analysis¹⁶, and market technicals¹⁷. Additionally, quantitative strategies¹⁸ can incorporate techniques such as factor analysis¹⁹ and mean reversion²⁰ techniques in an effort to seek alpha.

Most long/short equity strategies tend to have a "long bias."²¹ In other words, the value of their long equity holdings is generally greater than the value of their short holdings, reflecting the assumption that equity markets will go up in the long run. Generally, by varying their "net" (long minus short) exposure or bias over time, managers try to time the market: to have higher net long exposure during a bull market, and to reduce net exposure during a bear market, thereby seeking to add performance relative to the overall market return over an economic cycle.

While long-only equity managers (stock-pickers) also seek to add alpha by using similar techniques, by virtue of their inability to go short, they are restricted to adjusting their long exposure vis-à-vis their cash holdings. Long-only strategies tend to be more widely available in investor-friendly regulated structures such as mutual funds; by contrast, it is generally difficult to embed long/short equity strategies into a mutual fund structure without modifying them in order to comply with various securities regulations set forth in the Investment Company Act of 1940.²²

SELLING SHORT INDIVIDUAL STOCKS

As mentioned earlier, a short sale is generally motivated by the belief that a security's price will decline, enabling it to be bought back at a lower price to make a profit. In general, although it is difficult to separate the alpha added by long/short equity

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managers into long-side alpha and short-side alpha, there appear to be active managers who have been able to add alpha on the short side. However, anecdotal evidence suggests that many equity analysts and stock-pickers may be better at picking long stocks rather than shorts.

Selling short individual stocks involves the services of a broker or prime broker to locate or borrow shares of the stock from an existing holder. Often, a stock borrow fee needs to be paid in order to short stocks that are difficult to borrow, and these tend to be the stocks that are overvalued in the market's consensus view. Eventually, the short seller must "close" (or cover) the short position by buying back shares in the open market and returning them to the broker. If the price drops, the seller can buy back the stock at the lower price and make a profit on the difference. On the flip side, the price of the stock may rise, forcing the seller to buy it back at a higher price, and ultimately lose money. Shorting dividend-paying stocks also obligates the short seller to reimburse the lender for the cash dividends paid, which may have both cash flow and tax implications.

Furthermore, the ability to short individual stocks may be restricted in a 1940 Act regulated structure. The "130/30" funds that had gained popularity for a while represented the upper limit on shorting in a mutual fund: stocks valued up to 30% of the fund's NAV could be sold short, and the proceeds of the short sale could be used to increase long positions up to 130%. This meant that the beta of a 130/30 fund could generally be reduced to no lower than 0.70 or 70%.

DYNAMIC HEDGED EQUITY: A DIFFERENT APPROACH

Since the extent of shorting permitted in a mutual fund is constrained, does this mean that these investors cannot hope to achieve their objective of potentially hedging equity exposure? And even if shorting were not restricted, how might one address Alfred Jones's concerns about the difficulties of reliably timing the market? An equity portfolio that is "over-hedged" (i.e., underexposed to the market) during a bull market would tend to underperform. Conversely, if it were "under-hedged" during a bear market, it might not provide adequate downside protection.

An alternative method of potentially hedging the market risk of an equity portfolio is through the use of dynamic, systematic²³ programs. These types of trading programs use trend-following techniques²⁴ to take long or short futures positions²⁵, seeking to profit from both upward and downward price trends. They are model-based²⁶, which tends to insulate trading decisions from emotion or sentiment, and they seek to exploit price patterns and trends that stem from the alternating "fear and greed" psychology typically displayed by investors.

Based on signals from these models, hedging positions would be established, not just in equity index futures, but in a wide range of liquid global financial futures markets that are trending and are also negatively correlated²⁷ to equity markets. The potential benefits of these types of dynamic hedging strategies include:

- *Investors seeking alpha could use these types of hedging strategies as an overlay with a long-only portfolio, as most stock-pickers have historically shown some ability to add alpha on the long side.*

²³⁻²⁶ *Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.*

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²⁷⁻³² Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.

- *Short positions in futures markets are potentially easier and less expensive to establish than shorting individual stocks. It is also possible to manage portfolio beta exposures over a wider range compared to structures such as 130/30 funds, which are limited in the extent to which they can go short.*
- *These types of hedging strategies seek to be completely systematic and model-driven rather than discretionary²⁸.*
- *The hedge seeks to be “dynamic”: the size of the hedge depends on the prevailing trend in equity markets.*
- *The hedge can potentially add alpha by taking positions in trending markets other than the market whose risk is being hedged (viz., US equities).*

Note that the use of futures contracts to establish short positions means that there is no borrowing of securities involved, and that short positions can be rolled over relatively easily prior to their expiration.

The dynamic aspect of such a hedging program has potential appeal. The hedge, when models signal that equity markets are in an up-trend, seeks to “step out of the way” in an effort to capture upside return; conversely, when equity markets are trending down, the hedge potentially tends to get heavier, seeking to mitigate the increasing downside risk. By taking positions in global equity markets, the hedge also seeks to take advantage of the empirical evidence that global equity markets tend to be positively correlated. Thus, a short position in the Nikkei Index²⁹, for example, may have the ability to provide a hedge during a correction in US equities.

The use of financial futures markets other than equities—short-term interest rates, bonds, and currencies—extends the potential advantage mentioned above. If, for example, models indicate that the Japanese Yen³⁰ is in an upward trend, and also that it has been negatively correlated to US equities in the recent past, then a long position in Yen has the potential to hedge US equity market risk (lower the portfolio’s beta) while simultaneously offering the potential to enhance return (add alpha). Contrast this with a short position in S&P 500 index[®] futures, which can hedge beta—in fact, more directly—but cannot provide any incremental alpha, since the return on the short position would offset the return on the US equity portfolio being hedged.

An additional potential benefit of these types of strategies is that they have historically tended to perform well during the volatility expansion that often accompanies stock market corrections: the performance of systematic, trend-following strategies during 2008 is a noteworthy example of this phenomenon. The returns generated by these types of programs have historically also tended to display positive skew. Their use can therefore potentially mitigate the negative skew of unhedged equity returns.

Needless to say, no hedging technique is without its costs and disadvantages. Dynamic futures-based hedging strategies as described above may introduce a fair amount of tracking error³¹ due to their use of multiple hedging markets. There is also the risk that historical correlation patterns between equities and other markets could change abruptly, resulting in an incorrect hedge. Trend-following and momentum³²

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models may be slow to pick up sharp reversals in trends, and may not work as they are intended to even when markets are trending favorably.

CONCLUSION

As an asset class, equities have provided attractive returns over long holding periods. However equities, in the shorter run, have exposed investors to added risks: volatility, negative skew, sharp reversals, and corrections that are often accompanied by volatility expansion. Attempting to manage equity risk could potentially yield higher risk-adjusted returns. Most traditional techniques for attempting to manage these risks tend to have these disadvantages: put options can be expensive; tactical market timing (particularly when it is discretionary) is difficult and unreliable.

Long/short equity strategies, which have been extensively used by hedge funds, seek to mitigate downside risk while also seeking to improve returns. However, while the costs associated with selling individual stocks short and the 1940 Act rules that govern shorting may restrict certain long/short equity strategies from being efficiently executed in a mutual fund, the regulatory structure increasingly preferred by many investors.

By virtue of their systematic nature, dynamic equity hedging strategies seek to remove discretion and emotion from trading decisions. They utilize momentum and trend-following techniques that we believe have historically tended to work well during the volatility expansion that accompanies market corrections, and that have tended to generate positively skewed returns. They use global equity index futures, thereby providing a diverse set of markets whose momentum can be utilized to potentially hedge US equity risk. They also seek to use financial futures other than equities, which have historically shown negative correlations to US equities and are also signaled to be trending. These positions potentially provide an incremental source of "alpha" that would not be available if, for example, only S&P 500® or NASDAQ futures were being used to hedge US equities. Against these potential benefits, one must, of course, weigh the costs and potential disadvantages of this type of hedge as discussed earlier.

For more information, please contact your Investment Professional or visit equinoxfunds.com.

³¹⁻³² *Footnotes, and Definitions of Terms and Indices can be found on pages 8-9.*

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APPENDIX

END NOTES/DEFINITIONS

¹*Private equity is an asset class consisting of equity securities and debt in operating companies that are not publicly traded on a stock exchange.*

²*Equity-linked derivatives are instruments with underlying assets based on equity securities. An equity derivative's value will fluctuate with changes in its underlying asset's equity, which is usually measured by share price.*

³*Standard deviation measures the degree of variation of monthly returns around the mean (average) return. The higher the volatility of the investment returns, the higher the annualized standard deviation will be.*

⁴*Volatility is a measure of fluctuation in the value of an asset or investment. Lower volatility improves the stability and lowers the risk of an investment portfolio.*

⁵*Drawdown is a position or portfolio is in a drawdown when it incurs a loss relative to its all-time high profit or return. For example, a portfolio that starts off at \$100 today is worth \$100 tomorrow, and worth \$99 the day after is in a 10% drawdown, because it is down \$11 from the high of \$100.*

⁶*Market timing is the act of attempting to predict the future direction of the market, typically through the use of technical indicators or economic data.*

⁷*Skew describes the asymmetry from the normal distribution in a set of statistical data. Skew can come in the form of "negative skewness" or "positive skewness", depending on whether data points are skewed to the left (negative skew) or to the right (positive skew) of the data average.*

⁸*Today, the term hedge fund is generally a structural description of a lightly-regulated investment partnership, usually with a performance-based incentive fee, which may or may not do any of the actual type of hedging that Jones employed.*

⁹*Short selling is the sale of a security that isn't owned by the seller, rather, it is borrowed, and promised to be delivered in the future.*

¹⁰*Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. A beta of 1 indicates that the security's price will move with the market. A beta of less than 1 means that the security will be less volatile than the market. A beta of greater than 1 indicates that the security's price will be more volatile than the market. For example, if a stock's beta is 1.2, it's theoretically 20% more volatile than the market.*

¹¹*Alpha is a measure of performance on a risk-adjusted basis. Alpha takes the volatility (price risk) of a fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark index is a fund's alpha.*

¹²*Index put options give the owner the right, but not the obligation, to sell upon exercise the value of the underlying index at the stated exercise (strike) price before the option expires.*

¹³*Long/short equity investment strategies involve buying long equities that are expected to increase in value and selling short equities that are expected to decrease in value.*

¹⁴*Fundamental analysis (also known as Discretionary Analysis) is the study of basic, underlying factors that will affect the supply and demand of an investment. With respect to commodity futures, fundamental analysis may look at crop reports, weather patterns, economic reports and other fundamental data to determine whether to buy or sell the futures contract.*

¹⁵*Macro sentiment refers to views of the broad and general aspects of an economy and the relationship between the income and investments of a country as a whole.*

¹⁶*Sector analysis is a review and assessment of the current condition and future prospects of a given sector of the economy. Sector analysis serves to provide an investor with an idea of how well a given group of companies are expected to perform as a whole.*

¹⁷*Market technical analysis is the academic study of historical chart patterns and market trends based on publicly traded stocks.*

¹⁸*Quantitative strategies (also known as Systematic) employ computer-driven, mathematical models to identify when to buy or sell an instrument according to rules determined before a trade is made, generally with little or no human intervention once a mathematical formula has been entered.*

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APPENDIX CONTINUED

¹⁹**Factor analysis** aggregates markets into statistical factors using correlation information to create weighted indices of markets.

²⁰**Mean reversion** investment models assume that prices will eventually return to a long-term average level.

²¹This paper discusses only “long-short long-bias” strategies rather than market-neutral.

²²**Investment Company Act of 1940** - Created in 1940 through an act of Congress, this piece of legislation clearly defines the responsibilities and limitations placed on fund companies that offer investment products to the public.

²³**Systematic** – see definition of “Quantitative strategies” above, footnote 18.

²⁴**Trend-Following strategies** seek to capitalize on momentum or price trends across global asset classes by taking either long or short positions as a trend is underway. Price trends are created when investors are slow to act on new information or sell prematurely and hold on to losing investments to long. Price trends continue when investors continue to buy and investment that is going up in price or sell an investment that is going down in price.

²⁵**Financial futures** are futures contracts on financial instruments, such as currencies, treasury bonds, equity indices. Futures Contract is a standardized contract between two parties to buy or sell a specified asset of standardized quantity and quality for a price agreed upon today (the futures price or strike price) with delivery and payment occurring at a specified date, the delivery date.

²⁶**Models (financial)** are investment trading and risk reduction strategies developed through the application of statistical, data mining, optimization, and simulation techniques.

²⁷**Correlation coefficient** is a statistical measure of how two investments move in relation to each other. A correlation of +1.0 implies that as one investment moves, either up or down, the other investment will move lockstep, in the same direction. A correlation of -1.0 means that if one investment moves in either direction the other investment will move in the opposite direction. A correlation of 0 indicates that the movements of the investments have no correlation; they are completely random.

²⁸**Discretionary** – see definition of “Fundamental analysis” on page 8, footnote 14.

²⁹**Nikkei Index** is a stock market index for the Tokyo Stock Exchange (TSE). Please see Index Descriptions for further description.

³⁰**Japanese Yen** is the official currency of Japan.

³¹**Tracking error** is a divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark.

³²**Momentum** refers to the rate of acceleration of a security's price or volume. The idea of momentum in securities is that their price is more likely to keep moving in the same direction than to change directions. In technical analysis, momentum is considered a signal and is used to help identify trends.

INDEX DESCRIPTIONS

S&P 500® Total Return Index is widely regarded as the best single gauge of the US equities market. This world-renowned Index includes 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large cap segment of the market, with approximately 75% coverage of US equities, it is also an ideal proxy for the total market. Total return provides investors with price-plus-gross cash dividend return. Gross cash dividends are applied on the ex-date of the dividend.
Source: standardandpoors.com.

Nikkei Index is short for Japan's Nikkei 225 Stock Average, the leading and most-respected index of Japanese stocks. It is a price-weighted index comprised of Japan's top 225 blue-chip companies on the Tokyo Stock Exchange. The Nikkei is equivalent to the Dow Jones Industrial Average Index in the US. In fact, it was called the Nikkei Dow Jones Stock Average from 1975 to 1985.

The purchase of a managed futures investment involves a high degree of risk.

Specifically, you should be aware that, in addition to normal investment risks, managed futures investments entail certain risks, including, in all or some cases:

- Managed futures often engage in leveraging and other speculative investment practices that may increase the risk of investment loss.
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- Managed futures are not required to provide periodic pricing or valuation information to investors.
- Managed futures may involve complex tax structures and delays in distributing important tax information.
- Managed futures are not subject to the same regulatory requirements as mutual funds.
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