AN INTRODUCTION TO PORTFOLIO HEDGING

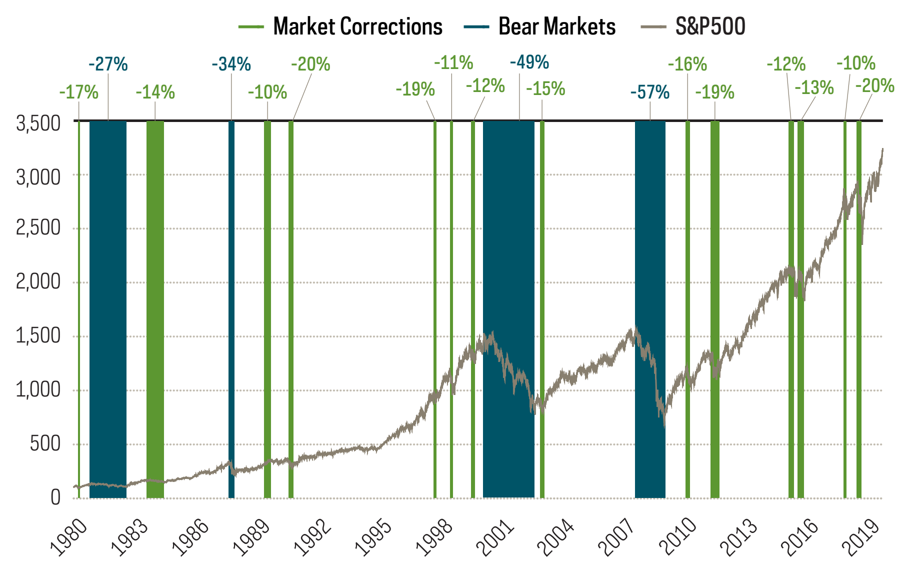
Investing involves risk. Market downturns will happen. Having a sound investment strategy can help smooth out the turbulence in your portfolio, and save you from getting caught up in the herd mentality of selling low into a down market. Here we discuss hedging your portfolio with inverse exposure.

Recent Downturns in the U.S. Equity Market

Since 1980, there have been numerous market corrections (defined as a drop of 10% or more), lasting an average of 88 days. There have also been four bear markets (declines of 20% or more), with an average duration of 542 days—nearly a year and a half. In the 1980s, we had the Latin American debt crisis and the stock market crash of 1987. While there weren't any bear markets in the 1990s, we had the technology bubble and the real estate bubble and financial crisis in the 2000s.

In late 2018, the equity market battled a correction that nearly entered bear market territory as it digested Fed rate hikes, trade tensions between the U.S. and China and renewed volatility.

S&P 500 Price Levels from 1980–2019



Source: Bloomberg.

As we enter a new decade following the longest expansion in U.S. economic history, there are reasons to be optimistic about continued growth, but investors may also want to prepare for a downturn.

Portfolio Hedging

A hedge, in its simplest form, is an investment intended to move in the opposite direction of an asset in your portfolio that you consider to be at risk. A hedge provides inverse exposure. If the at-risk investment should decline in value, the hedge is designed to increase in value and offset potential losses in your portfolio.

Hedging is a flexible strategy. You can apply it broadly in an effort to help minimize loss across entire asset classes in your portfolio, to help shield your equity, fixed income, commodity or even currency allocations. Or you can hedge narrowly to help shield individual sectors or even specific stocks. There are a number of hedging strategies available, and the best one for you will depend on your specific needs, goals and tolerance for risk.

Used strategically, portfolio hedging can become part of your long-term investment strategy. Deployed tactically, a hedge can be applied and removed as needed, without disturbing your core strategy or long-term goals, to help provide short-term shelter from adverse market events. Hedging your portfolio can provide you with an alternative to selling in a down market, realizing investment losses and potentially generating significant redemption fees, transaction costs and tax consequences. Of course, hedging strategies have unique risks, costs and consequences of their own (e.g., fund management fees, rebalancing costs, taxable events). It's important that you fully understand the strategy you plan to use and read the prospectuses for any investments you intend to use as a hedge.

Hedging with Inverse Exposure

Short Selling	• Short selling involves borrowing securities from a lender, typically for a small fee, with the intent to sell them at market value and then buy them back at a lower cost to return to the lender (known as covering the short). • Used as a hedge, if the securities fall in value between their sale and re-purchase, the profit offsets losses in a declining investment.
Buying Put Options	• A put option is a contract between two parties in which the buyer of the put has the right (but not the obligation) to sell a security at an agreed-upon price to the seller of the put, regardless of its market price. • Used as a hedge, if the value of the security falls below the specified price (known as the strike price), the owner of the put can sell the security for a profit and offset losses in the original position in the security.
Selling Futures Contracts	• A futures contract is an agreement, facilitated through a futures exchange, to buy or sell an asset at a predetermined price on a predetermined date in the future (the expiration date). • Used as a hedge, selling a futures contract allows investors to offset the risk of a decline in the price of an asset.
Using Inverse ETFs	• Inverse ETFs are designed to move in the opposite direction of a benchmark or index, by the inverse (-1x) or by multiples of the inverse (-2x or -3x). • Used as a hedge, if an investment based on an index declines 1% on a given day, for example, a -1x inverse ETF is designed to rise by 1% that day (before fees and expenses), thereby offsetting the loss.

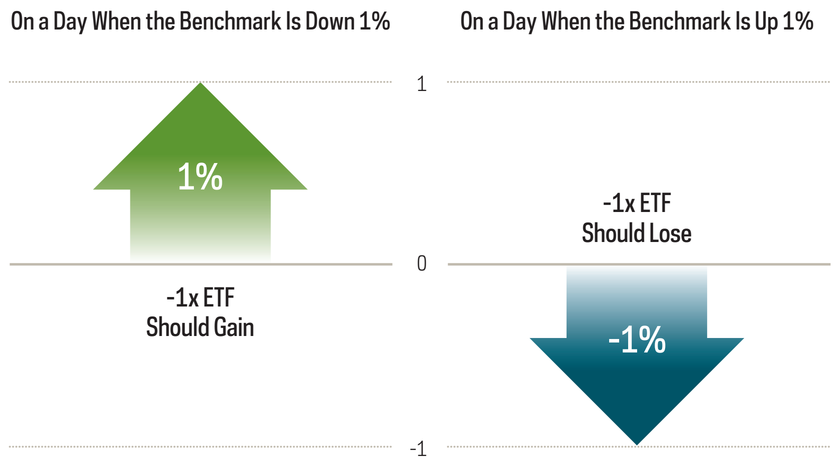
Pros and Cons of Different Hedging Strategies

While short selling, buying put options and selling futures contracts are widely used hedging techniques, they are quite sophisticated and have drawbacks that may place them beyond the reach of many investors. All three may involve the need for margin accounts, and they generally require special brokerage approval that not all investors can qualify for. They also have strict collateral and other requirements that may necessitate sizable cash reserves. Further, these strategies can come with substantial costs and risks. Possibly the most significant drawback of short selling and selling futures is that an investor can lose more than invested. In fact, the potential for loss is unlimited—you can lose everything you invested and more.

ETF investors, on the other hand, aren't required to set up a special account or meet any collateral requirements. Additionally, you can't lose more than the value of your ETF investment. And, since there are inverse index funds ranging from those based on asset classes down to ones based on smaller segments of the financial markets, a wide array of investments can be hedged this way. There are, of course, disadvantages and risks with inverse ETFs too, and you should carefully read the prospectus for any ETF you are considering for a more complete description.

A Closer Look at Inverse ETFs

The concept behind inverse ETFs is not difficult to understand, so let's see how they work in general. Take, for example, an inverse S&P 500 ETF designed to move directly opposite the market (-1x to the S&P 500) on a daily basis. If the S&P 500 declines 1% on a given day, a -1x inverse S&P 500 ETF is designed to rise by 1% that day (before fees and expenses). Of course, one of the risks is that the opposite can be true. If the S&P 500 should gain 1%, a -1x S&P 500 ETF would lose 1%. If you have a greater risk tolerance, or if you're interested in using less capital when hedging an investment, you can magnify these effects, up and down, by using an inverse ETF with a multiple of -2x or -3x the exposure.



For illustrative purposes only.

One-Day Investment Objectives

Conventional index funds are designed to match the performance of an underlying index over any time period. Most inverse ETFs, however, are designed to meet an investment objective, or multiple, for a single day only. This is to ensure that no matter when you invest, an inverse ETF can be expected to deliver its stated multiple for that day.

Without this one-day objective, gains and losses might result in compounded returns, which could cause the ETF's exposure to its benchmark to float unpredictably. To maintain their investment objectives, inverse ETFs rebalance their exposure to their underlying benchmarks each day by trimming or adding to their positions.

Holding Inverse ETFs for Longer than One Day

As a result of daily fund rebalancing, if you hold an inverse ETF for longer than a day, to maintain a hedge position, for example, it's unlikely you will continue to receive the ETF's inverse multiple times the benchmark's returns. As long as you hold the ETF, compounding can cause your exposure to the underlying benchmark to continue to deviate from the ETF's stated objective. In trending periods, compounding can enhance returns, but in volatile periods, compounding may hurt returns. Generally speaking, the greater the multiple or more volatile an ETF's benchmark, the more pronounced the effects can be.

Rebalancing Strategies for Using Inverse Funds Longer-Term

As we mentioned earlier, rebalancing involves periodically increasing or decreasing an investment in a fund, in this case an inverse ETF, to realign its value to the position originally intended. This process may involve fees and tax consequences. Prudent portfolio managers do much the same thing to manage portfolio weights. They will sell positions when weights get too high and buy positions when weights get too low in order to maintain their weighting targets.

There are two common rebalancing strategies: trigger-based and calendar-based. In a trigger-based approach, you would rebalance anytime the difference between the desired hedge exposure and the ETF's current value reaches a predetermined amount or percentage. How often you need to rebalance a trigger-based hedge can depend on several factors:

- ETF Multiple: The greater the ETF multiple, the more frequently you will need to rebalance. A -1x hedge will generally require less rebalancing than a -3x hedge.
- Volatility: An inverse ETF with a more volatile underlying index may require more frequent rebalancing.
- Percentage Trigger: In general, a larger percentage trigger will require less rebalancing than a smaller one (though the trades themselves may be larger).

If you are hedging over a significantly longer term, you might prefer a calendar-based technique. In that case, you would rebalance at set time intervals—weekly, monthly, quarterly, etc.—regardless of the difference in exposure between the investment being shielded and the hedge.

To reiterate, compounding and whether the market is trending or volatile can cause returns for a -1x ETF to float from its daily objective. Rebalancing can reduce the negative effects of compounding on performance, but it may reduce the positive effects as well. Before implementing a rebalancing strategy, you should evaluate its potential benefits against likely transaction costs and tax consequences, as well as the possibility of sacrificing positive returns. When using any rebalancing strategy, monitor the position as frequently as daily, no matter how often you intend to rebalance.

Inverse investing is not for everyone. Inverse ETFs are generally riskier than ETFs without inverse exposure. Before investing, read each fund's prospectus to fully understand all the risks and benefits. For a prospectus and other information, visit ProShares.com.

Want to Learn More?

- In The Significance of Portfolio Hedging, we talk about the inevitability of market downturns and ways to help dampen their effects.
- In The Efficacy of Hedging with Inverse ETFs, we provide concrete examples across multiple asset classes to show you how effectively inverse ETFs can mitigate the effects of market downturns.
- In Strategies for Hedging Your Portfolio, we discuss hedging with inverse exposure, in particular, with inverse ETFs. So do they work?
- For more resources visit https://www.proshares.com/resources/education.html