



CHIEF INVESTMENT QUARTERLY

You Can't Hedge, but You Can Diversify

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We all want to sleep well. We all want the perfect investment – the one that offsets equity market losses but still makes money in the long-run. We can't have it. We can't really hedge.

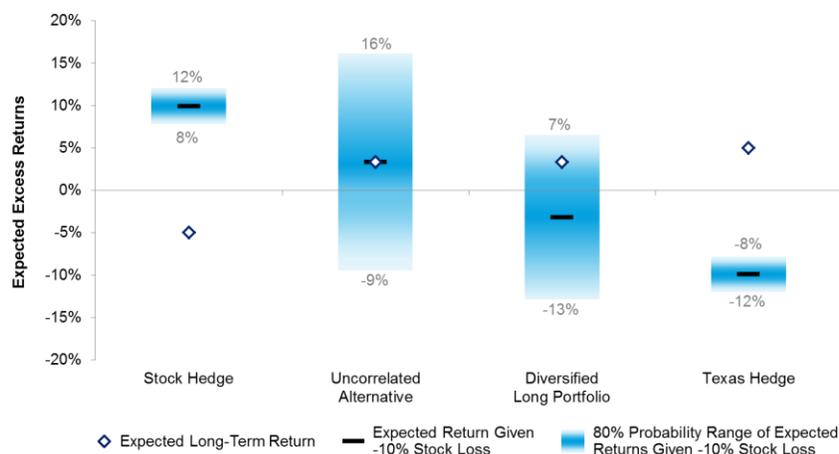
We can't hedge because it's too expensive. Hedging is a bet against risk taking, and while not all risk taking is profitable, betting against the risks you want to take almost certainly isn't. Hedging stock market risk, for example, means pretty much one thing—selling stocks—with all the negative expected return that brings.¹

The critical difference between hedges and diversifiers is their correlation to what you already own. To hedge, you need a highly negative correlation. To diversify, you merely need a correlation that isn't highly positive. Practically speaking it's pretty difficult to hedge without outright shorting the thing you are trying to hedge, or something very similar to it. For example, if you want to hedge MSCI World exposure, you might be able to do a reasonably good job of it by selling S&P 500 futures, but once your hedge gets too "creative," eventually you may end up pretty disappointed.

While it's true that an investment can be a little negatively correlated to bad markets and still maintain a positive long-term expected return, that little bit of negative correlation only can provide great diversification, not a hedge.

When markets are down, what's different between a hedge and a diversifier? In the graph below, we show what might happen to four hypothetical portfolios (a stock hedge; an uncorrelated alternative strategy; a diversified long-only portfolio; and, a "Texas hedge") when stocks are down 10% in a year versus cash.

Hypothetical Expected Outcomes When Stocks Are Down by 10% Versus Cash



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The first column is the “stock hedge,” which is assumed to have a -0.99 correlation to the underlying portfolio and typical stock market volatility (about 15%²). Note the expected excess return for this hedge is negative (the -5% diamond), as we should expect if we are short something that makes money in the long-term. Now, given the -10% excess return on stocks, what is the range of outcomes for the hedged position? With a correlation of -0.99, we expect an excess return of about +10%, with some small variation. We show the middle 80% of the range of that variation (+8% to +12%) with the blue-boxes.³ So even with a highly negative correlation, there is still a range around the return of the hedge, even though the return is still highly likely to be positive. This behaves like we expect a hedge to behave; it’s very likely to do well when the thing we are hedging does badly. But recall one important fact – the long-term expected return of this asset is negative.

The next bar represents an uncorrelated alternative investment with the same risk-adjusted excess return as the stock market but with slightly lower risk (about 10%). Knowing how the stock market performs tells us nothing about the return of the uncorrelated alternative.⁴ That’s a pretty good thing; we still expect the alternative investment will make money on average, and it might even do well in this particular period. But notice the middle 80% of the expected outcomes is still large (-9% to +16%) and includes the possibility of negative returns that are similar in size to the poorly performing stock market. While this is still a great thing to hold (it helps us create a portfolio that may improve the odds of meeting our objectives), it isn’t a hedge. It might well go up, but it’s not going to go up because stocks went down.

Next, we examine another realistic investment, a diversifier that is positively correlated to the stock market, possibly because it includes some of the same assets (see Diversified Long Portfolio in the figure). A good example could be a risk parity portfolio. Here, with the stock market down 10%, this portfolio (which we are assuming to have a +0.65 correlation to stocks) is expected to have a small loss. The diversified portfolio might make money, or it might even do worse than the stock market, but it still provides an important long-term benefit. It’s better than just owning more stocks in this hypothetical bad year since it’s still likely to outperform (even though outperforming might mean losing money) and on average it makes money. Nevertheless, it is most definitely not a hedge.

Finally, we come to the Texas hedge (the last bar in the figure). We sometimes call it “private equity”, but to be fair, it also describes the subset of hedge funds that have a lot of net market exposure.⁵ It’s called the Texas hedge because it’s akin to a rancher buying cattle futures to “hedge” the herd; it is highly positively correlated to the underlying portfolio. If you want to hedge your risk by doubling up on it, then the Texas hedge is for you. No doubt it can provide some excitement and add to returns (if everything works out well), but it’s obviously not a hedge and isn’t even a diversifier.

Through these examples, we’ve tried to show that for the long-term, we can usefully diversify, but when the market is down, “diversifiers” won’t always help. If we want that guarantee, we have to hedge and pay for it with lower return expectations. Few investors can afford that; they can’t really hedge.

[1] Hedging unwanted risks is a different matter and is often useful in investment strategies that seek certain risks and want to avoid others.

[2] Source: AQR. The average annualized volatility for developed market stocks for the last 40 years.

[3] Note that had the correlation of the hedge been -1, then we know exactly what it would have done – it would be up 10% with no variation around that.

[4] Quick aside: There are lots of diversifiers that are uncorrelated on average, but don’t stay uncorrelated in periods of stock market stress. Strategies that get more correlated as markets fall, like short-volatility, would be expected to underperform their long-term return target, while other strategies can become less correlated, like trend following, and would be expected to outperform. For the purposes of this stylized example we assume our diversifier’s correlation remains fixed, but it is important to be cognizant that correlations aren’t always static.

[5] See “Do Hedge Funds Hedge?” Cliff Asness, Robert Krail, John M. Liew, September 1, 2001.

Disclaimers

Selected Strategy Assumptions:

	Long Stock	Stock Hedge	Uncorrelated Alternative	Diversified Long Portfolio	Texas Hedge
Excess Return	5.0%	-5.0%	3.3%	3.3%	5.0%
Volatility	15.0%	15.0%	10.0%	10.0%	15.0%
Correlation to Stocks		-0.99	0.00	0.65	0.99

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