

The Contango Difference

Using Hedging Transactions to Manage Investment Risks

The fundamental risks in an investment portfolio should be addressed by managing not just the portfolio's assets, but also its structure.

Astute investors choose assets for their portfolios to optimize the likelihood of achieving the results they seek within tolerable fluctuations.

Fluctuations in cash flow from the portfolio, as well as the value of the portfolio itself, depend not only on the volatility of the cash flow and the value of the portfolio's components but also on the extent to which these flows and values rise and fall together (the *correlation*).

Diversification, that is, the use of uncorrelated assets in a portfolio, helps stabilize volatility by selecting assets that do not all move together or to the same degree. By forecasting their movement, quantitative modeling makes it possible to manage portfolio risk within reasonably predictable bounds.

However, in some situations, overlaying the portfolio with specific hedging transactions may be economically attractive. Three such situations are most common:

Hedging typically refers to the practice of minimizing the risk of financial loss from an adverse price change by taking a position in a futures market opposite to a position held in the cash market.

- Offsetting the impact of a concentrated portfolio position that cannot or should not be sold and diversified.
- Separating out certain risks to more “cleanly” take others.
- Making temporary overall adjustments to a portfolio without making excessive trades.

Hedge transactions can *reduce* but cannot *eliminate* the likelihood of substantial loss. Here we provide an overview of several hedging techniques. Whether the use of these techniques is appropriate for you should be carefully evaluated in light of your investment objectives and the composition of your portfolio.

Concentrated Positions

Concentrated positions are investments in single securities so large that they unbalance the overall portfolio. Selling a concentrated position and diversifying provides the investor with the prospect of obtaining an equivalent or better expected return while reducing the likelihood of unanticipated value fluctuations. If sale is not practical, hedging may work.

Concentrated positions may arise in a number of ways, including:

- The sale of a private company to a public company. The seller is typically paid in stock that cannot be sold for a certain period of time (“restricted stock”). The individual may face further restrictions on his or her ability to pledge the restricted stock to get a loan or to buy options against the stock.
- Senior executives of public companies are often paid in restricted stock. Companies typically frown on their executives pledging stock or selling puts against it, as the markets may interpret these actions as reflecting less-than-complete faith in the company’s future on the part of its senior management.
- A family may wish to hold on to a concentrated position in a public company because it gives the family voting power. This, however, has the same economic risk consequence: a lot of net worth tied up in one security.

*A **put** is an option contract that gives the holder the right to sell the underlying security at a specified price for a fixed period of time.*

Depending on the nature of the restrictions on the stock, the risk of concentration can be controlled in one of three ways.

- Buying or Selling Puts, Calls and Collars

*A **call** is an option contract that gives the holder the right to purchase the underlying security at a specified price for a fixed period of time.*

These are explicit options contracts that place floors, ceilings or both on the value of a position. Buying a put option at a specific price (the “strike price”) allows the buyer to “put” his restricted stock to the seller of the option if the price of the underlying stock falls to the strike level. Selling a call option allows the buyer of the option to claim or “call” the stock from the seller if the price rises to the strike price.

A **collar** is an option strategy in which a call with a strike price greater than the price of the underlying security (an "out-of-the-money call") is sold and an in-the-money put (where the strike price is again above the price of the underlying security) is purchased.

A **costless collar** consists of a long call and a short put. Both are out-of-the-money and are for the same expiration. Strike prices are chosen so that the cost of purchasing the call is offset by the income from selling the put.

A **synthetic hedge** is a combination of securities that has a high positive correlation with a given security and is used to offset risk related to that security.

▪ Costless Collar

In a "costless collar," the put and call strike prices are selected such that the money received from the sale of the call option pays for the purchase of the put and leaves the restricted holder with no cash outflow, while constraining the stockholder's exposure to both advances and declines in the price of the

restricted stock. Although options transactions can control value fluctuations, depending on the terms of the transaction, they may pose a number of potential problems, including:

- They may deprive the restricted stockholder of dividends.
- The stockholder may be required to surrender the stock if the option is triggered, resulting in unplanned tax consequences.
- The surrender of restricted stock may be disallowed or undesirable.

▪ Swapping Stock Proceeds for Proceeds of Another Portfolio

In this "total return" swap, the stockholder exchanges the interest payments and any capital gains or losses from the stock for the proceeds of another portfolio. The tax consequences depend on the structure of the individual transaction. At the end of the day, the stockholder retains ownership of the restricted stock, but effectively sheds the economic consequences of ownership.

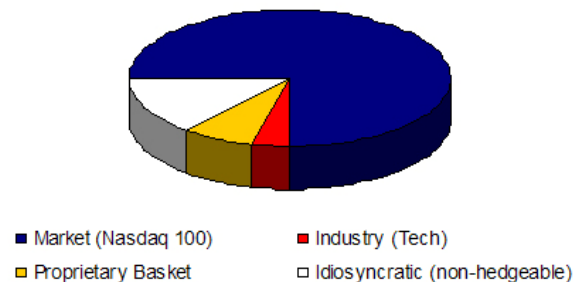
▪ Synthetically Hedging Economic Risk

Where pledging stock or writing options is not possible, creating a synthetic hedge portfolio to offset significant risk may be an option. A synthetic hedge attempts to manage risk through a position in a security whose price movement is highly correlated with the restricted stock. The synthetic hedge should have sufficient trading volume so that the stockholder can, on an ongoing basis, open new positions on futures contracts with high positive correlations to the restricted stock.

Like all hedges, synthetic hedges help *reduce* but *cannot eliminate* the likelihood of substantial loss. The reasons are simple.

The movement in a stock's value can be viewed as the impact of overall market movements plus movements specific to the industry in question plus movements specific to the company in question. Market and industry movements can be offset through a synthetic hedge, but without the ability to short the specific stock or write options on it, offsetting movements specific to the company itself is not possible.

Analysis of Public Company Risk



Each of these approaches has costs and risks (which are distinct from those of the underlying portfolio holding) that must be balanced against the benefits accrued.

In the case of options writing and synthetic hedging, *the costs are certain while the benefits are the reduced likelihood of unfortunate events*. In the case of a swap, the hedger exchanges the risks and returns of one portfolio for the risks and returns of another.

Risk Separation

Investment strategies commonly have themes based on some underlying economic analysis. For example, an investor who believes that small-capitalization companies drive growth around the world may choose to devote a certain part of his portfolio to such companies. Or the investor might wish to invest in Asian growth companies or global natural resource companies.

Common to each of these strategies is that their potential returns and risks are driven not only by the theme but by the dollar's relationship to the currency of the country in which the investment is located. Both futures transactions and options transactions in the currency markets can be used to separate the impact of exchange-rate movements from the impact of the

Average annual Euro to US dollar conversion:

2000 1.085
 2001 1.117
 2002 1.061
 2003 0.885

underlying theme on a given portfolio. Because the futures and options markets for currencies are large and liquid, the costs of these transactions are relatively modest when measured as a percentage of portfolio value.

These calculations should be made even if no hedge is bought. To continue our example, a US investor who bought a European small-cap fund in 2000 and held it through 2003 would have seen its value rise, but almost entirely because the dollar tumbled against the euro. A smarter and cleaner investment – and one that would not have allowed the manager of that European small-cap fund to take credit for the results – would have been simply to short the dollar against the euro.

Risk-separation analyses allow an investor to understand the sources of return and risk in a portfolio – and to manage them.

Temporary Adjustments

Laddering is a strategy in which a bond portfolio is constructed such that maturities are staggered over time.

Pre-refunding takes place when a bond is issued to pay off another before its maturity or call date. Such events can sometimes be anticipated, particularly during periods when interest rates are declining.

All hedging transactions run for a finite time and then must be rolled over, at new terms and with more costs. They are suitable for temporary or periodic risk management when adjusting the underlying investment portfolio would be either too costly or too difficult.

When value-added strategies such as bond laddering or anticipated pre-refunding are used, a portfolio may contain many individual securities. In such cases, managing fluctuations in capital value by repositioning the portfolio's duration in anticipation of yield-curve changes may be prudent. But repositioning by trading all or most of the individual bonds is not only time-consuming and costly, it may also harm the value-added strategies being employed.

An investor who is confident of the nature of the yield-curve shift can use interest-rate futures to offset the *aggregate* impact of that shift on the portfolio's value. In effect, the portfolio stays as it is, a futures transaction is added and the payoff from the futures transaction offsets all or most of the change in the portfolio's value.

This logic also can be applied to the anticipated costs of re-funding real estate positions or even to the capitalization rate at which real estate is valued.

In every case, the effectiveness of a hedge transaction can be assessed only by using a quantitative model of the impact of likely yield-curve changes on the portfolio.

- For a bond portfolio, this entails looking at the duration of each security and considering how that duration itself might be affected by the yield-curve movement. For example, when interest rates fall, mortgages are refinanced and so the duration of mortgage-related bond issues can shorten significantly as issuers call their bonds ahead of schedule. When rates rise, the opposite can happen, as issuers choose not to call their debt.

- In 2002-2004, as portfolio assets were shifted from stocks to real estate, the combined impact of falling interest rates and a declining stock market caused real estate capitalization rates to respond more dramatically than did interest rates themselves.

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