

Fact Sheet: Derivatives

Investor Benefits

- ▶ Derivatives provide exposure to different asset classes.
- ▶ Derivatives can enhance or reduce risk.
- ▶ May be easier to trade than the underlying asset on the contract.
- ▶ Portfolio statistics that include derivatives present a more robust picture of exposure and risk.

Derivatives are financial contracts between two parties where the return depends on the performance of a specific underlying asset. Four common types of derivative contracts are futures, forwards, options, and swaps, and these can be based on assets like stocks, bonds, commodities, indexes, or foreign currencies.

Many investment portfolios use these contracts to obtain exposure to asset classes, to manage risk, or to act on a view about the economy. This fact sheet describes some of the ways that portfolios use these contracts, and how Morningstar accounts for these positions in our statistics.

An investment portfolio can be either the buyer (long position) or the seller (short position) on a contract. Some contracts and positions provide protection and help funds reduce risk, while others are speculative and may enhance risk. Still other contracts provide exposure that is very similar to buying the asset itself. Derivatives also have a natural leveraging effect, because the portfolio can obtain a large amount of exposure for a small upfront cost.

Derivative Strategies

A simple investment strategy is to use futures as a substitute for the underlying asset, for example, buying a futures contract on a stock index instead of buying all the stocks. Generally, the return for the futures contract will be very similar to the return for the index. A manager might use this strategy to quickly turn a cash position into a stock-like position. Bond funds regularly use futures to manage their duration.

A more complicated strategy using futures might be a bet on the shape of the yield curve, which is a representation of bond yields with various times to maturity. The manager could buy short-term bond futures and sell long-term bond futures if he thought that the yield curve might steepen.

Forwards are commonly used to manage and hedge a global fund's currency exposure. The gains and losses on these contracts offset currency-related fluctuations in the value of the fund's assets. For example, if a portfolio is denominated in dollars but owns stocks denominated in euros, the manager might sell forward euro contracts. These contracts would profit if the euro weakens relative to the dollar, thereby offsetting the losses in the stocks' value. Currency derivatives can also be used purely for speculation.

Options can be used to hedge a sensitive position, for example, buying a put on a stock in the portfolio to protect against price declines. Options can also be used for speculation, for example, selling calls or puts to get the extra income, while hoping that the asset price doesn't move in an unfavorable direction.

A common swap position is a fixed-for-floating swap, where the portfolio receives a fixed payment (like a bond coupon), in return for paying an amount based on a floating interest rate. A defensive swap strategy is to purchase a credit default swap on a bond already held in the portfolio. This involves regular premium payments to the counterparty, but it insures against any losses that might occur if that bond issuer were to default.

Types of Derivatives

Futures: An exchange-traded obligation to buy or sell an asset at an agreed-upon price at a specific future date. The value of the contract changes as the price of the underlying asset changes, and most contracts are settled in cash, rather than in the physical exchange of goods at contract expiration.

Forwards: A privately-negotiated obligation to buy or sell an asset, usually a foreign currency, at a specific price in the future. The contract size and expiration date can be customized for the portfolio's specific needs.

Options: Contracts which grant the buyer the opportunity, but not the obligation, to buy (for a call option) or sell (for a put option) a specific asset at a specific price. Option buyers have an upfront cost for a potential future benefit (they'll only exercise the option if they can profit), whereas option sellers have an upfront benefit (the proceeds from the option) and a potential future cost (the obligation to sell or buy the asset at that price).

Swaps: Privately-negotiated contracts that allow two parties to trade different types of payments for a specific length of time. The payments can be based on a fixed interest rate, a floating interest rate, or the performance of a currency, a bond, or a stock index.

Fact Sheet: Derivatives

A speculative strategy is to sell a credit default swap if the price for protection on that specific issuer seems too high, relative to the risk that they might actually default.

Investor Benefits and Risks

Investors will benefit if the derivatives strategy is more efficient than buying or selling the underlying asset outright, due to current market prices, transaction costs, taxes, or the structural advantages of these contracts. Some derivatives offer the benefit of insurance-like protection against losses. And, managers that sell derivatives and manage their risk well might be able to provide additional income for investors.

Derivatives also carry certain risks—both the risks associated with the underlying asset and additional risks unique to each type of contract. One risk is that the performance of the derivative will diverge from the performance of the underlying asset. The process of arbitrage usually prevents this, although there may be short-term market conditions when the asset and the derivative behave differently. Additionally, privately negotiated derivatives have risks related to the counterparty's ability to settle gains and losses.

Methodology

Morningstar analyzes the types of derivatives present when we receive monthly or quarterly complete holdings files for an investment portfolio. After identifying the contract and the position (long or short), Morningstar incorporates the exposures from that contract into the appropriate portfolio statistics. Most derivatives are modeled and valued as some combination of the underlying asset and cash.

For example, a long futures contract on a stock index contributes to long stock exposure and short cash exposure in the asset allocation breakdown. Morningstar will also include the characteristics of that stock index in other stock statistics for the portfolio, such as sector breakdown, regional breakdown, average P/E ratio, etc.

Another example is a fixed-for-floating swap, which can be broken down into a bond position and a cash position. Receiving fixed payments and paying floating is akin to receiving long bond exposure (regular fixed coupon payments) and short cash exposure (paying interest on a floating-rate loan). Buying a credit default swap reduces the portfolio's bond exposure because it eliminates credit risk on a bond.

When and Where

Derivatives have been around for decades, but they are becoming increasingly prevalent in investment portfolios. Morningstar began incorporating derivatives into detailed portfolio statistics (for current and historical portfolios) in early September 2007. These statistics are available on morningstar.com.

Example

This is the asset allocation for a synthetic index fund. The fund gets all of its stock exposure from futures contracts on the stock index, rather than buying individual stocks. The futures contracts provide long stock exposure worth 95% of assets and short cash exposure of -95%. Because the futures do not require a lot of money upfront, the fund invests the remaining cash on hand in bonds to earn extra income. The negative cash position represents the liabilities for the futures contracts, and these are fully funded by the combination of bond and cash assets.

