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What is a Derivative?

By Investopedia

Derivatives - What is a Derivative?
The financial instruments we've considered so far - stocks, bonds, commodities and currencies - are generally referred to as cash instruments (or sometimes, primary instruments). The value of cash instruments is determined directly by markets. By contrast, a derivative derives its value from the value of some other financial asset or variable. For example, a stock option is a derivative that derives its value from the value of a stock. An interest rate swap is a derivative because it derives its value from an interest rate index. The asset from which a derivative derives its value is referred to as the underlying asset. The price of a derivative rises and falls in accordance with the value of the underlying asset. Derivatives are designed to offer a return that mirrors the payoff offered by the instruments on which they are based.

By way of example, a few standard derivatives are listed below. The most commonly-traded derivatives - forwards, futures, options and swaps - will be described in greater detail.

Asian Option - Also called an average option, this is an option that is linked to the average value of an underlying asset on a specific set of dates during the life of the option.

Basket Option - An option with a payoff that is linked to a portfolio or "basket" of assets such as the Fortune 500.

An **interest-rate cap** is an option that protects the holder from rises in short-term interest rates by making a payment to the holder when an underlying interest rate index exceeds a specified strike or cap rate.

A credit derivative is an OTC derivative designed to transfer credit risk from one party to another. By synthetically creating or eliminating credit exposures, they allow institutions to more effectively manage credit risks. Credit derivatives take many forms. Three basic structures include: credit default, total return and credit linked swaps.

A swaption is an OTC option on a swap. Usually, the underlying swap is a vanilla interest rate swap. Unless stated otherwise, that is how we will use the term in this article. However, the term "swaption" might be used to refer to an option on any type of swap.

There is also a somewhat arbitrary distinction between vanilla and exotic derivatives. The former tend to be simple and more common, the latter more complicated and specialized. There is no definitive rule for distinguishing one from the other, so the distinction is mostly a matter of custom.

Derivatives are further distinguished from cash instruments in that they are *contracts* between two or more parties. (Note that the major exceptions to this are warrants and convertible bonds which are, in fact, assets).These contracts are promises to convey ownership of an asset rather than the asset itself. Like other contracts, derivatives represent an agreement between two parties; the terms of the agreement are highly flexible and the contract has a fixed beginning and ending date.

Investors use derivatives to capture profits resulting from price variations in the underlying investment.Because of this, derivatives are often referred to as leveraged investments. Of course, whenever leverage is employed the results, both positive and negative, can be greatly magnified

Derivatives are generally used to hedge risk, but can also be used for speculative purposes. For example, an Asian investor who uses U.S. dollars to buy shares in a U.S. company (traded on a U.S. exchange) would be exposed to exchange-rate risk when she sells the shares and converts dollars back to her home currency. To hedge this risk, the investor could purchase derivatives - currency futures - to lock in a favorable exchange rate.

Despite the risks, derivatives are also attractive to investors because they trade for a fraction of the price of the underlying asset, enabling investors to control more of an asset for less money.

Because derivatives are contracts, just about anything can be used as an underlying asset. There are even derivatives based on weather data, such as the amount of rain or the number of sunny days in a particular region.

Options are the most commonly traded type of derivative. An options contract gives the owner the right to buy or sell an asset at a set price on or before a given date. Other products include futures contracts, forward contracts, warrants and swap contracts. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes.

Key points to remember:

- Derivatives are contracts between buyers and sellers.
- They are referred to as "wasting" assets because they have a defined and limited life with a set initiation and expiration date. The value of a derivative decreases as it gets closer to the expiration date.
- Generally, payoff is determined or made at the expiration date, although this is not true in all cases.
- Sometimes no money is exchanged at the beginning of the contract.
- Cash or spot price is the price an investor would have to pay for immediate purchase.

We will elaborate on these bullet points as the lessons progress.

Exchange-traded vs. over-the-counter derivatives

Like their underlying cash instruments, some derivatives are traded on established exchanges (the New York Stock Exchange, the French CAC or the Chicago Board of Trade). These are referred to as exchange-traded derivatives and, generally, they have highly standardized terms and features. The advantage of exchange-traded derivatives is that regulated exchanges provide clearing and regulatory safeguards to investors.

Many other derivative instruments, including forwards, swaps and exotic derivatives, are traded outside of the formal, established exchanges. These are over-the-counter or OTC-traded derivatives. They can be created by any two counterparties with highly flexible terms and a nearly infinite number of underlying assets or asset combinations. In the OTC derivatives market, large financial institutions serve as derivatives dealers, customizing derivatives for the specific needs of clients.