

General Derivatives Knowledge Training

(Text Version)

Opening & Introduction to General Derivatives Knowledge Training

Welcome to the General Derivatives Knowledge Training on financial derivatives. This training aims to provide a general understanding of the intricate world of derivatives, a cornerstone of modern financial markets. As we navigate through this training, we'll delve into what derivatives are, how they differ from spot market products, their various types, their diverse applications, and the risks associated with them. Before investing in derivatives, you should consult your professional investment advisor for further information concerning the nature of each derivative.

Training Content

In this video training, we'll begin by setting a robust foundation with an "Introduction to Financial Derivatives", where we'll explore the basic principles and their role in today's financial markets.

Following that, we'll step into the second section, "Types of Derivatives". Here we will dive deep into various kinds of derivatives such as Options, Futures, Forwards, Swaps, and Structured Products. We'll learn about their characteristics, usage, and key differences.

In the third section, "Application of Derivatives", we'll explore the various ways derivatives are utilised in real-world finance. From hedging risk, providing leverage, to enhancing yield, and gaining access to various asset classes - we will study how derivatives can be effectively used to achieve diverse financial objectives.

Finally, we'll round off the training with the fourth section, "Key Risks Associated with Derivatives". While derivatives may potentially provide investors with higher investment returns than risk-free assets, such as time deposits, derivatives also carry significant risks. We will delve into the various types of risks, such as counterparty risk, investment risk, liquidity risk, and more, and how to effectively manage these risks.

Introduction to Derivatives

Now that we've set the stage for our journey through the world of financial derivatives, let's delve right into the first topic of our training - the "Introduction to Derivatives".

A derivative or a derivative contract is a bilateral contract the value of which is derived from the value of an underlying asset or assets at a future date. The underlying asset (often referred to as the "underlying" or "underlier") may comprise any of a number of assets. These underlying assets can be stocks, bonds, commodities, currencies, interest rates, or indices. There are several types of derivative contracts, including options, futures, forwards, and swaps, each serving different purposes within the realm of finance.

Spot market products differ from derivatives in terms of the transaction's timing and the pricing mechanism. The spot market, also known as the 'cash' or 'physical' market, involves immediate transactions, where securities or physical commodities are traded for immediate delivery and payment. Conversely, derivative contracts represent agreements to buy or sell an asset at a future date and an agreed-upon price.

A spot transaction's price reflects the current market value of the asset, whereas a derivative contract's price reflects the expected future price of the underlying asset. This makes them versatile tools for hedging, speculation, and providing leverage.

In a spot transaction, settlement typically occurs 'on the spot' or within one or two business days, where the buyer pays cash in exchange for the immediate delivery of the asset. On the other hand, settlement in derivative contracts may not involve any transfer of the underlying asset. Instead, it may entail the transfer of cash flows determined by the difference between the agreed price in the contract and the prevailing market price at the time of settlement.

To summarise, derivatives are financial instruments whose value is based on an underlying asset or index. They differ from spot market products in both the timing of transactions and pricing mechanisms. While many derivatives are settled based on the difference between the contract price and the market price at settlement time, others, like certain types of futures and options contracts, can be settled by delivering the underlying asset itself. Conversely, spot transactions involve immediate delivery and payment. Understanding these fundamental distinctions is crucial in navigating the complex landscape of financial derivatives.

This wraps up our introduction to derivatives, setting the foundation for further exploration into types of derivatives, their applications, and associated risks in the subsequent sections.

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Common Types of Derivatives

Options

We will first delve into options, a prevalent type of derivative contract. Options are a type of derivative contract that gives the buyer the right, but not the obligation, to buy (call option) or sell (put option) an underlying asset at a specified price (strike price) before or on a specific date (expiry date). The buyer pays a premium to the seller (also known as the writer) of the option for this right.

To illustrate, let's assume an investor believes that a particular company's stock price will rise, he can buy a call option on the stock with a strike price of \$50, and the expiry date is one month away. The investor pays a premium of \$2 for this option. If, at the expiry date, the stock's price has risen to \$60, the investor can exercise the option, buy the stock at the strike price of \$50, and immediately sell it at the current market or spot price of \$60, making a profit, which is the difference between the spot and strike prices minus the option premium. We say that the option is "**In-the-money**". If the stock's price stays below \$50, the investor can choose not to exercise the option, and the only loss will be the premium paid. In this case, we say the option is "**Out-of-the-money**".

Similarly, an investor that believes the company's stock price will decrease can buy a put option with a strike price of \$50. If the stock price drops to \$40 before the option expires, the investor can exercise the option, selling the stock at the higher strike price of \$50, potentially buying it back at the market price of \$40 and making a profit (minus the premium paid for the option).

On the other hand, an investor who sells or writes an option takes on the obligation to buy (in the case of a put option) or sell (in the case of a call option) the underlying asset if the buyer chooses to exercise the option. The seller receives the premium as compensation for this potential obligation.

"In-the-money" and "Out-of-the-money" are terms used to describe the relationship between an option's strike price and the market price of the underlying asset. An option is "In-the-money" when the strike price is below the market price for a call option, or above it for a put option, implying it has positive intrinsic value. The intrinsic value of an option is the amount by which an option is In-the-money, essentially quantifying the profit that could be made if the option were exercised immediately. An "Out-of-the-money" option, on the other hand, has a strike price that's unfavourable compared to the market price, resulting in no intrinsic value.

Options can be traded over-the-counter (or OTC), where they are privately negotiated between two parties, or on an exchange, where standardized contracts are traded openly and are subject to specific exchange regulation. Options can also come in two forms, American or European. An American option allows the holder to exercise the option to buy or sell an underlying asset at any time up to and including the expiration date, while a European option permits the holder to exercise the option only on the expiration date.

Options are used for various purposes, including hedging risk, speculating on price movements, and obtaining the right to buy or sell assets at prices that could be favourable in the future. For instance, an investor who owns shares of a company and is concerned about short-term downside risk might buy a put option to protect against a significant drop in the stock's price.

The price of an option, or its premium, is primarily determined by the price and volatility of the underlying asset, the option's strike price relative to the asset's price, and the time remaining until expiration. Additionally, interest rates and expected dividends can also influence an option's premium. Each of these factors interact in complex ways to ultimately determine the market price of an option. It is important to thoroughly understand these factors before using options as part of an investment strategy.

Futures

Now, let us discuss about Futures, another type of common derivative instruments. They represent the obligation to buy or sell a predefined amount of the underlying assets, such as stocks, commodities, currencies, at a predetermined price on a specific future date. When investor buys a futures contract, investor is holding a long position and has to buy the underlying assets on the final settlement date. On the other hand, investor can choose to hold a short position by selling a futures contract - this means that investor must sell the underlying assets according to the contract terms.

Common examples of futures contracts include commodity futures, such as oil, gold, or agricultural products, and financial futures, such as those based on interest rates, equity indices, or currencies.

Futures contracts can be listed or unlisted. A common example of a listed future contract on the Hong Kong Futures Exchange is the Hang Seng Index Future. These contracts are used by hedgers to manage price risk on an asset and by speculators to profit from anticipated price movements.

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For instance, an agricultural producer, such as a wheat farmer, might use wheat futures to lock in a certain price for selling their crop in the future. This mitigates the risk of price changes. Conversely, a bread manufacturing company might buy wheat futures to secure a known price for their wheat supply, thereby controlling their future production costs.

On the other hand, a speculator with no interest in owning the underlying asset might buy a futures contract if they anticipate that the price of the asset will increase. If they are correct, they can sell the contract for a profit before it expires.

Investors may want to note that futures contracts and options contracts exhibit different mechanisms when it comes to settling profits or losses. With futures contracts, they feature a process known as "marking to market," where the profit or loss is settled daily based on the daily price fluctuations in the market. This involves a cash flow adjustment to the holder's account every day until the contract expires or is closed out. On the other hand, options contracts have their profit or loss settled at specific times, typically at expiration, or upon certain occurrences, such as when the holder exercises the option. This results in less frequent cash flow adjustments compared to futures contracts.

It's crucial to note that futures contracts carry a high level of risk due to their leveraged nature and the uncertainty of future market conditions. Hence, they should be used judiciously and within the limits of one's risk tolerance and financial capacity.

Forwards

A forward contract is similar to a futures contract, but it is a private agreement between two parties and is not traded on an exchange. The terms of a forward contract can be customized to fit the parties' needs, making it more flexible but also more subject to counterparty risk. Most typical application by private investors are Forwards used in foreign exchange transactions. Examples include RMB non-deliverable forward (or commonly known as NDF) contract. RMB NDF is a notional forward transaction as there will be no physical settlement of principal. At maturity, the difference between the contracted forward rate and the fixing spot rate is settled in USD.

Swaps

Let us now move on to discuss about Swaps. Swaps are derivative instruments in which two parties agree to exchange sequences of cash flows over a specified period. These cash flows are calculated based on a predetermined notional principal amount, which is the base value upon which the cash flows are determined but is usually not exchanged between the parties.

There are several common types of swaps, each with different cash flows being exchanged. For instance, "interest rate swaps" are among the most prevalent types, in which one party agrees to pay a fixed interest rate on the notional amount, while the other party pays a floating rate, typically pegged to a benchmark like the London Interbank offered rate (commonly known as LIBOR), or the Hong Kong Interbank Offered Rate (commonly known as HIBOR). This arrangement can be beneficial for parties seeking to hedge against interest rate risk or to speculate on changes in interest rates.

"Cross Currency swaps" involve the exchange of cash flows in one currency for cash flows in another currency. It is useful for managing foreign exchange risk or for obtaining financing in a foreign currency.

Another common type is the "commodity swap", which is used to hedge against price changes in commodities like oil, gas, or precious metals. One party will pay a fixed price for a commodity, and the other party will pay a price that varies with the market rate of the commodity.

As an example, consider two companies, Company A with a floating rate loan, and Company B with a fixed rate loan. If Company A expects interest rates to rise and Company B expects them to fall, they could enter into an interest rate swap. Company A would agree to pay a fixed rate to Company B, and in return, Company B would pay a floating rate to Company A. This way, each company hedges its risk: Company A protects itself against rising rates, and Company B benefits if the rates fall. It's important to note that they're not lending each other money; they're merely agreeing to swap the interest payments on their respective loans.

Private investors may also utilise interest rate swaps as a hedge for their portfolio of e.g., fixed-coupon bonds, particularly when they anticipate an increase in interest rates, which could depreciate the value of their existing bonds.

Swaps are complex instruments that require careful risk management but can be effective tools for companies to manage various financial risks.

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Structured Products

Lastly, we will introduce a complex type of financial derivative known as Structured Products. Structured products are complex financial instruments typically issued by financial institutions. Structured product is an instrument embedded with derivative under which the return and method of settlement are determined by reference to the change in the value of one or more reference underlying, such as securities, commodity, or index, or the occurrence or non-occurrence of an event.

They are designed to facilitate highly customised risk-return objectives that can't be replicated with standard financial instruments, such as the outright purchase of equities or bonds. The construction of a structured product involves embedding options or other derivative instruments within a traditional product.

Structured product can be further divided into listed structured products, such as derivative warrants and Callable Bull/Bear Contracts (also called CBBCs) listed on the Hong Kong Stock Exchange, or unlisted structured products, such as Equity linked investment.

For example, a common structured product is the "principal-protected note". This instrument consists of a bond, which safeguards the principal, and an option, which provides exposure to a particular asset or index, thereby offering a higher potential return. If the underlying asset or index performs well, the investor benefits; if it performs poorly, the investor still receives their original investment back, thanks to the bond component. However, it's important to note that the principal protection is subject to the creditworthiness of the issuer.

Another popular structured product is an "equity-linked note", which provides returns linked to the performance of a single stock, a basket of stocks, or a stock index. These products might appeal to an investor looking for potentially higher returns than traditional investments, and who is willing to take on the additional risk of the equity market.

Structured products can offer customized exposure to various markets and asset classes. They can provide a range of investment outcomes tailored to specific market views and risk tolerance. However, due to their complex nature and the risks involved, including the risk of the issuer defaulting, they're typically recommended for sophisticated investors who fully understand the product's mechanics and associated risks.

Application of Derivatives

Let's now explore the various applications of derivatives in the financial markets. From speculation to hedging risk, these flexible financial instruments are widely used for a range of strategies.

Speculation

Derivatives are often used in speculation, as they allow investors to potentially earn high returns from a small initial investment. This is possible because derivatives often involve leverage, which can amplify gains. However, it's worth noting that while the potential for higher returns is greater, so too is the potential for loss.

Suppose an investor predicts that the price of a certain stock will rise. They could buy a call option for that stock. If the stock's price rises significantly, the investor could earn a substantial profit by exercising the option or selling it.

Access to Various Asset Classes

Derivatives can provide exposure to a variety of asset classes, including stocks, bonds, commodities, and currencies, that might otherwise be difficult or costly to access directly.

For instance, the "A-share" market in mainland China is a market that is restricted to foreign investors; however, synthetic ETFs allow investors to indirectly participate in the A-share market. Synthetic ETFs utilize derivatives in order to track (or replicate) the performance of a market index. Although investors cannot directly own "A" shares through Synthetic ETFs, the performance of "A" shares can be reflected through the Synthetic ETFs they hold.

Leverage

Derivatives can provide leverage, as they often require a smaller initial investment compared to the cost of the underlying asset, a concept often realized in margin trading. This enables investors to potentially realize larger profits (or losses) relative to their investment.

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For instance, in margin trading, a futures contract for a stock might require an "initial margin requirement" of say 10% of the contract's value. This means an investor can control a large amount of the stock for a fraction of the cost of buying the stock outright, demonstrating the power of leverage in derivatives trading. The investor is also required to fulfil the "maintenance margin requirement" which is the amount of money investor must have on deposit in their account to continue holding their futures contract position.

Long/ Short Exposures and Risk Hedging

Derivatives can be used to take both long and short positions on an asset, allowing investors to profit from both rising and falling markets. Furthermore, they are vital tools for hedging risk. Investors and companies can use derivatives to protect themselves against changes in asset prices, interest rates, or currency exchange rates.

Suppose a US company expects to receive payment in Euros in six months. The company could use a currency forward contract to lock in today's exchange rate, protecting itself from potential unfavourable changes in the exchange rate.

In summary, derivatives serve multiple purposes in the financial markets. They can be used for speculation, offering potentially higher returns, and provide access to various asset classes. Derivatives offer leverage, making it possible to control large amounts of an asset for a relatively small initial outlay. Additionally, they allow for both long and short market exposures and are valuable tools for hedging risk. As we navigate through the world of derivatives, it's crucial to understand these applications to make informed financial decisions.

Key Risks Associated with Derivatives

Now that we've explored the various applications of derivatives, it's important to understand the risks involved. Despite their potential benefits, derivatives can also expose investors and institutions to several risks.

Counterparty Risk

Counterparty risk, also known as credit risk, is the risk that one party in a derivatives contract will default on their contractual obligations.

Suppose you've entered into a swap agreement with another party. If that party goes bankrupt and fails to meet their obligations under the contract, you could suffer significant losses. This is counterparty risk.

Investment Risk

Investment risk involves the possibility of losing the capital invested due to adverse price movements of the underlying asset.

An investor who buys a call option on a stock is exposed to investment risk. If the stock's price falls below the option's strike price and stays there until the option expires, the investor would lose the premium paid for the option.

Early Redemption and Potential Capital Loss Risk

Some derivatives, like structured products, may come with the risk of early redemption by the issuer. Additionally, if the market moves against the investor's position, they may incur a significant capital loss.

Consider a structured product where the issuer has the right to redeem the product early under certain conditions. If interest rates fall and the issuer decides to redeem the product early, the investor may be returned their principal but lose out on potential future returns.

Liquidity Risk

There are other risks to consider when investing in derivatives. Liquidity risk is the risk of not being able to quickly buy or sell a derivative without causing a significant change in its price.

If an investor wants to sell a derivative but there are few buyers in the market, they may have to sell at a lower price than expected, potentially resulting in a loss. This illustrates liquidity risk.

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Interest Rate Risk

Interest rate risk involves the potential impact of changes in interest rates on the value of derivatives, particularly those with longer maturities.

A company that uses an interest rate swap to exchange variable rate payments for fixed rate payments takes on interest rate risk. If interest rates fall, the company could end up making higher payments than if they had stuck with the variable rate.

Leverage Risk

Leverage can amplify both profits and losses, thus introducing leverage risk. A small movement in the price of the underlying asset can result in substantial gains or losses due to leverage.

Suppose an investor uses leverage to buy more options contracts than they could afford outright. If the underlying asset's price moves against the investor's position, they may incur losses significantly greater than their initial investment.

Investors should also be aware of margining risk where a transaction is undertaken on a margin basis. The investor will be required to provide the broker with collateral in the form of cash, securities or other assets. The broker may at any time in its absolute discretion and without notice to the investor revise the margin requirements. If the margin deposited is considered by the broker to be insufficient, it may make a margin call, requesting the investor to deposit further collateral, otherwise the position will be closed out without further notification to the investor.

In conclusion, while derivatives can offer potential benefits such as enhanced returns, access to various asset classes, and hedging capabilities, they also carry significant risks. These include counterparty risk, investment risk, early redemption risk, liquidity risk, interest rate risk, and leverage risk. It is crucial for any market participant to fully understand and consider these risks before engaging in derivative transactions.

This concludes our discussion on the key risks associated with derivatives.

Conclusion

As we conclude our training on General Derivatives Knowledge Training, let's quickly recap. We've learned about **different types of derivatives**, their **varied applications** from speculation to risk hedging, and **key associated risks**, such as counterparty, investment, early redemption, liquidity, interest rate, and leverage risk. The world of derivatives offers many opportunities but also carries significant risks, so understanding these aspects is crucial.

Even if you fully understand the concepts mentioned in this training, it still does not mean you know everything about derivatives. Since derivatives have different kinds of characteristics, when you trade derivatives, do ask your investment advisor for detailed information about the derivatives and the risks involved.

Thank you for choosing VP Wealth Management (Hong Kong) Limited to start your learning journey in General Derivatives Knowledge Training.

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