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Futures Fundamentals Tutorial

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Introduction

What we know as the [futures market](#) of today came from some humble beginnings. Trading in futures originated in Japan during the 18th century and was primarily used for the trading of rice and silk. It wasn't until the 1850s that the U.S. started using futures markets to buy and sell commodities such as cotton, corn and wheat.

A [futures contract](#) is a type of derivative instrument, or financial contract, in which two parties agree to transact a set of financial instruments or physical commodities for future delivery at a particular price. If you buy a futures contract, you are basically agreeing to buy something that a seller has not yet produced for a set price. But participating in the futures market does not necessarily mean that you will be responsible for receiving or delivering large inventories of physical commodities - remember, buyers and sellers in the futures market primarily enter into futures contracts to hedge risk or speculate rather than to exchange physical goods (which is the primary activity of the [cash/spot market](#)). That is why futures are used as [financial instruments](#) by not only producers and consumers but also [speculators](#).

The consensus in the investment world is that the futures market is a major financial hub, providing an outlet for intense competition among buyers and sellers and, more importantly, providing a center to manage price risks. The futures market is extremely [liquid](#), risky and complex by nature, but it can be understood if we break down how it functions.

While futures are not for the [risk-averse](#), they are useful for a wide range of people. In this tutorial, you'll learn how the futures market works, who uses futures and which strategies will make you a successful trader on the futures market.

A Brief History

Before the North American [futures market](#) originated some 150 years ago, farmers would grow their crops and then bring them to market in the hope of selling their inventory. But without any indication of demand, supply often exceeded what was needed and unpurchased crops were left to rot in the streets! Conversely, when a given commodity - wheat, for instance - was out of season, the goods made from it became very expensive because the crop was no longer available.

In the mid-19th century, central grain markets were established and a central marketplace was created for farmers to bring their commodities and sell them either for immediate delivery (spot trading) or for forward delivery. The latter contracts - [forward contracts](#) - were the forerunners to today's [futures contracts](#). In fact, this concept saved many a farmer the loss of crops and profits and helped stabilize supply and prices in the off-season.

Today's futures market is a global marketplace for not only agricultural goods, but also for currencies and financial instruments such as [Treasury bonds](#) and [securities](#) (securities futures). It's a diverse meeting place of farmers, exporters, importers, manufacturers and speculators. Thanks to modern technology, commodities prices are seen throughout the world, so a Kansas farmer can match a bid from a buyer in Europe.

How the Market Works

The [futures market](#) is a centralized marketplace for buyers and sellers from around the world who meet and enter into futures contracts. Pricing can be based on an open cry system, or [bids](#) and offers can be matched electronically. The futures contract will state the price that will be paid and the date of delivery. But don't worry, as we mentioned earlier, almost all futures contracts end without the actual physical delivery of the commodity.

What Exactly Is a Futures Contract?

Let's say, for example, that you decide to subscribe to cable TV. As the buyer, you enter into an agreement with the cable company to receive a specific number of cable channels at a certain price every month for the next year. This contract made with the cable company is similar to a futures contract, in that you have agreed to receive a product at a future date, with the price and terms for delivery already set. You have secured your price for now and the next year - even if the price of cable rises during that time. By entering into this agreement with the cable company, you have reduced your risk of higher prices.

That's how the futures market works. Except instead of a cable TV provider, a producer of wheat may be trying to secure a selling price for next season's crop, while a bread maker may be trying to secure a buying price to determine how much bread can be made and at what profit. So the farmer and the bread maker may enter into a futures contract requiring the delivery of 5,000 bushels of grain to the buyer in June at a price of \$4 per bushel. By entering into this futures contract, the farmer and the bread maker secure a price that both parties believe will be a fair price in June. It is this contract - and not the grain per se - that can then be bought and sold in the futures market.

So, a futures contract is an agreement between two parties: a short position - the party who agrees to deliver a commodity - and a long position - the party who agrees to receive a commodity. In the above scenario, the farmer would be the holder of the short position (agreeing to sell) while the bread maker would be the holder of the long (agreeing to buy). We will talk more about the outlooks of the long and short positions in the section on strategies, but for now it's important to know that every contract involves both positions.

In every futures contract, everything is specified: the quantity and quality of the commodity, the specific price per unit, and the date and method of delivery. The "price" of a futures contract is represented by the agreed-upon price of the underlying commodity or financial instrument that will be delivered in the future. For example, in the above scenario, the price of the contract is 5,000 bushels of grain at a price of \$4 per bushel.

Profit And Loss - Cash Settlement

The profits and losses of a futures contract depend on the daily movements of the market for that contract and are calculated on a daily basis. For example, say the futures contracts for wheat increases to \$5 per bushel the day after the above farmer and bread maker enter into their futures contract of \$4 per bushel. The farmer, as the holder of the short position, has lost \$1 per bushel because the selling price just increased from the future price at which he is obliged to sell his wheat. The bread maker, as the long position, has profited by \$1 per bushel because the price he is obliged to pay is less than what the rest of the market is

obliged to pay in the future for wheat.

On the day the change occurs, the farmer's account is debited \$5,000 (\$1 per bushel X 5,000 bushels) and the bread maker's account is credited by \$5,000 (\$1 per bushel X 5,000 bushels). As the market moves every day, these kinds of adjustments are made accordingly. Unlike the stock market, futures positions are settled on a daily basis, which means that gains and losses from a day's trading are deducted or credited to a person's account each day. In the stock market, the capital gains or losses from movements in price aren't realized until the investor decides to sell the stock or cover his or her short position.

As the accounts of the parties in futures contracts are adjusted every day, most transactions in the futures market are settled in cash, and the actual physical commodity is bought or sold in the [cash market](#). Prices in the cash and futures market tend to move parallel to one another, and when a futures contract expires, the prices merge into one price. So on the date either party decides to close out their futures position, the contract will be settled. If the contract was settled at \$5 per bushel, the farmer would lose \$5,000 on the futures contract and the bread maker would have made \$5,000 on the contract.

But after the settlement of the futures contract, the bread maker still needs wheat to make bread, so he will in actuality buy his wheat in the cash market (or from a wheat pool) for \$5 per bushel (a total of \$25,000) because that's the price of wheat in the cash market when he closes out his contract. However, technically, the bread maker's futures profits of \$5,000 go towards his purchase, which means he still pays his locked-in price of \$4 per bushel ($\$25,000 - \$5,000 = \$20,000$). The farmer, after also closing out the contract, can sell his wheat on the cash market at \$5 per bushel but because of his losses from the futures contract with the bread maker, the farmer still actually receives only \$4 per bushel. In other words, the farmer's loss in the futures contract is offset by the higher selling price in the cash market - this is referred to as [hedging](#).

Now that you see that a futures contract is really more like a financial position, you can also see that the two parties in the wheat futures contract discussed above could be two speculators rather than a farmer and a bread maker. In such a case, the short speculator would simply have lost \$5,000 while the long speculator would have gained that amount. In other words, neither would have to go to the cash market to buy or sell the commodity after the contract expires.)

Economic Importance of the Futures Market

Because the futures market is both highly active and central to the global marketplace, it's a good source for vital market information and sentiment indicators.

Price Discovery - Due to its highly competitive nature, the futures market has become an important economic tool to determine prices based on today's and tomorrow's estimated amount of supply and demand. Futures market prices depend on a continuous flow of information from around the world and thus require a high amount of transparency. Factors such as weather, war, debt default, refugee displacement, land reclamation and deforestation can all have a major effect on supply and demand and, as a result, the present and future price of a commodity. This kind of information and the way people absorb it constantly changes the price of a commodity. This process is known as [price discovery](#).

Risk Reduction - Futures markets are also a place for people to reduce risk when making purchases. Risks are reduced because the price is pre-set, therefore letting participants know how much they will need to buy or sell. This helps reduce the ultimate cost to the retail buyer because with less risk there is less of a chance that manufacturers will jack up prices to make up for profit losses in the cash market.

The Players

The players in the futures market fall into two categories: hedgers and [speculators](#).

Hedgers

Farmers, manufacturers, importers and exporters can all be hedgers. A hedger buys or sells in the futures market to secure the future price of a commodity intended to be sold at a later date in the cash market. This helps protect against price risks.

The holders of the long position in futures contracts (the buyers of the commodity), are trying to secure as low a price as possible. The short holders of the contract (the sellers of the commodity) will want to secure as high a price as possible. The futures contract, however, provides a definite price certainty for both parties, which reduces the risks associated with price [volatility](#). [Hedging](#) by means of futures contracts can also be used as a means to lock in an acceptable price margin between the cost of the raw material and the retail cost of the final product sold.

Example:

A silversmith must secure a certain amount of silver in six months time for earrings and bracelets that have already

been advertised in an upcoming catalog with specific prices. But what if the price of silver goes up over the next six months? Because the prices of the earrings and bracelets are already set, the extra cost of the silver can't be passed on to the retail buyer, meaning it would be passed on to the silversmith. The silversmith needs to hedge, or minimize her risk against a possible price increase in silver. How?

The silversmith would enter the futures market and purchase a silver contract for settlement in six months time (let's say June) at a price of \$5 per ounce. At the end of the six months, the price of silver in the cash market is actually \$6 per ounce, so the silversmith benefits from the futures contract and escapes the higher price. Had the price of silver declined in the cash market, the silversmith would, in the end, have been better off without the futures contract. At the same time, however, because the silver market is very volatile, the silver maker was still sheltering himself from risk by entering into the futures contract.

So that's basically what hedging is: the attempt to minimize risk as much as possible by locking in prices for future purchases and sales. Someone going long in a securities future contract now can hedge against rising equity prices in three months. If at the time of the contract's expiration the equity price has risen, the investor's contract can be closed out at the higher price. The opposite could happen as well: a hedger could go short in a contract today to hedge against declining stock prices in the future.

A potato farmer would hedge against lower French fry prices, while a fast food chain would hedge against higher potato prices. A company in need of a loan in six months could hedge against rising interest rates in the future, while a coffee beanery could hedge against rising coffee bean prices next year.

Speculators

Other market participants, however, do not aim to minimize risk but rather to benefit from the inherently risky nature of the futures market. These are the [speculators](#), and they aim to profit from the very price change that hedgers are protecting themselves against. Hedgers want to minimize their risk no matter what they're investing in, while speculators want to increase their risk and

therefore maximize their profits.

In the futures market, a speculator buying a contract low in order to sell high in the future would most likely be buying that contract from a hedger selling a contract low in anticipation of declining prices in the future.

Unlike the hedger, the speculator does not actually seek to own the commodity in question. Rather, he or she will enter the market seeking profits by offsetting rising and declining prices through the buying and selling of contracts.

	Short	Long
The Hedger	Secure a price now to protect against future declining prices	Secure a price now to protect against future rising prices
The Speculator	Secure a price now in anticipation of declining prices	Secure a price now in anticipation of rising prices

In a fast-paced market into which information is continuously being fed, speculators and hedgers bounce off of - and benefit from - each other. The closer it gets to the time of the contract's expiration, the more solid the information entering the market will be regarding the commodity in question. Thus, all can expect a more accurate reflection of supply and demand and the corresponding price.

Regulatory Bodies

The U.S. futures market is regulated by the [Commodity Futures Trading Commission](http://www.cftc.gov) (CFTC) an independent agency of the U.S. government. The market is also subject to regulation by the [National Futures Association](http://www.nfa.com) (NFA), a self-regulatory body authorized by the U.S. Congress and subject to CFTC supervision.

A [broker](#) and/or firm must be registered with the CFTC in order to issue or buy or sell futures contracts. Futures brokers must also be registered with the NFA and the CFTC in order to conduct business. The CFTC has the power to seek criminal prosecution through the Department of Justice in cases of illegal activity, while violations against the NFA's business ethics and code of conduct can permanently bar a company or a person from dealing on the futures exchange. It is imperative for investors wanting to enter the futures market to understand these regulations and make sure that the brokers, traders or companies acting on their behalf are licensed by the CFTC.

In the unfortunate event of conflict or illegal loss, you can look to the NFA for arbitration and appeal to the CFTC for reparations. Know your rights as an investor!

Characteristics

Given the nature of the futures market, the calculation of profit and loss will be slightly different than on a normal stock exchange. Let's take a look at the main concepts:

Margins

In the futures market, [margin](#) has a definition distinct from its definition in the stock market, where margin is the use of borrowed money to purchase securities. In the futures market, margin refers to the initial deposit of "[good faith](#)" made into an account in order to enter into a futures contract. This margin is referred to as good faith because it is this money that is used to debit any day-to-day losses.

When you open a futures contract, the futures exchange will state a minimum amount of money that you must deposit into your account. This original deposit of money is called the [initial margin](#). When your contract is [liquidated](#), you will be refunded the initial margin plus or minus any gains or losses that occur over the span of the futures contract. In other words, the amount in your margin account changes daily as the market fluctuates in relation to your futures contract. The minimum-level margin is determined by the futures exchange and is usually 5% to 10% of the futures contract. These predetermined initial margin amounts are continuously under review: at times of high market volatility, initial margin requirements can be raised.

The initial margin is the minimum amount required to enter into a new futures contract, but the [maintenance margin](#) is the lowest amount an account can reach before needing to be replenished. For example, if your margin account drops to a certain level because of a series of daily losses, brokers are required to make a [margin call](#) and request that you make an additional deposit into your account to bring the margin back up to the initial amount.

Let's say that you had to deposit an initial margin of \$1,000 on a contract and the maintenance margin level is \$500. A series of losses dropped the value of your account to \$400. This would then prompt the broker to make a margin call to you, requesting a deposit of at least an additional \$600 to bring the account back up to the initial margin level of \$1,000.

Word to the wise: when a margin call is made, the funds usually have to be delivered immediately. If they are not, the brokerage can have the right to liquidate your position completely in order to make up for any losses it may have

incurred on your behalf.

Leverage: The Double-Edged Sword

In the futures market, [leverage](#) refers to having control over large cash amounts of commodities with comparatively small levels of capital. In other words, with a relatively small amount of cash, you can enter into a futures contract that is worth much more than you initially have to pay (deposit into your margin account). It is said that in the futures market, more than any other form of investment, price changes are highly leveraged, meaning a small change in a futures price can translate into a huge gain or loss.

Futures positions are highly leveraged because the initial margins that are set by the exchanges are relatively small compared to the cash value of the contracts in question (which is part of the reason why the futures market is useful but also very risky). The smaller the margin in relation to the cash value of the futures contract, the higher the leverage. So for an initial margin of \$5,000, you may be able to enter into a long position in a futures contract for 30,000 pounds of coffee valued at \$50,000, which would be considered highly leveraged investments.

You already know that the futures market can be extremely risky and, therefore, not for the faint of heart. This should become more obvious once you understand the arithmetic of leverage. Highly leveraged investments can produce two results: great profits or greater losses.

As a result of leverage, if the price of the futures contract moves up even slightly, the profit gain will be large in comparison to the initial margin. However, if the price just inches downwards, that same high leverage will yield huge losses in comparison to the initial margin deposit. For example, say that in anticipation of a rise in stock prices across the board, you buy a futures contract with a margin deposit of \$10,000, for an index currently standing at 1300. The value of the contract is worth \$250 times the index (e.g. $\$250 \times 1300 = \$325,000$), meaning that for every point gain or loss, \$250 will be gained or lost.

If after a couple of months, the index realized a gain of 5%, this would mean the index gained 65 points to stand at 1365. In terms of money, this would mean that you as an investor earned a profit of \$16,250 (65 points x \$250); a profit of 162%!

On the other hand, if the index declined 5%, it would result in a monetary loss of \$16,250 - a huge amount compared to the initial margin deposit made to obtain the contract. This means you still have to pay \$6,250 out of your pocket to cover your losses. The fact that a small change of 5% to the index could result in such a large profit or loss to the investor (sometimes even more than the initial investment made) is the risky arithmetic of leverage. Consequently, while the value of a commodity or a financial instrument may not exhibit very much price volatility, the same percentage gains and losses are much more dramatic in

futures contracts due to low margins and high leverage.

Pricing and Limits

As we mentioned before, contracts in the futures market are a result of competitive price discovery. Prices are quoted as they would be in the cash market: in dollars and cents or per unit (gold ounces, bushels, barrels, index points, percentages and so on).

Prices on futures contracts, however, have a minimum amount that they can move. These minimums are established by the futures exchanges and are known as "[ticks](#)." For example, the minimum sum that a bushel of grain can move upwards or downwards in a day is a quarter of one U.S. cent. For futures investors, it's important to understand how the minimum price movement for each commodity will affect the size of the contract in question. If you had a grain contract for 3,000 bushels, a minimum of \$7.50 (0.25 cents x 3,000) could be gained or lost on that particular contract in one day.

Futures prices also have a price change limit that determines the prices between which the contracts can trade on a daily basis. The price change limit is added to and subtracted from the previous day's close and the results remain the upper and lower price boundary for the day.

Say that the price change limit on silver per ounce is \$0.25. Yesterday, the price per ounce closed at \$5. Today's upper price boundary for silver would be \$5.25 and the lower boundary would be \$4.75. If at any moment during the day the price of futures contracts for silver reaches either boundary, the exchange shuts down all trading of silver futures for the day. The next day, the new boundaries are again calculated by adding and subtracting \$0.25 to the previous day's close. Each day the silver ounce could increase or decrease by \$0.25 until an equilibrium price is found. Because trading shuts down if prices reach their daily limits, there may be occasions when it is NOT possible to liquidate an existing futures position at will.

The exchange can revise this price limit if it feels it's necessary. It's not uncommon for the exchange to abolish daily price limits in the month that the contract expires (delivery or "[spot](#)" month). This is because trading is often volatile during this month, as sellers and buyers try to obtain the best price possible before the expiration of the contract.

In order to avoid any unfair advantages, the CFTC and the futures exchanges impose limits on the total amount of contracts or units of a commodity in which any single person can invest. These are known as [position limits](#) and they ensure that no one person can control the market price for a particular commodity.

Strategies

Essentially, futures contracts try to predict what the value of an [index](#) or [commodity](#) will be at some date in the future. Speculators in the futures market can use different strategies to take advantage of rising and declining prices. The most common are known as going long, going short and spreads.

Going Long

When an investor goes long - that is, enters a contract by agreeing to buy and receive delivery of the [underlying](#) at a set price - it means that he or she is trying to profit from an anticipated future price increase.

For example, let's say that, with an initial margin of \$2,000 in June, Joe the speculator buys one September contract of gold at \$350 per ounce, for a total of 1,000 ounces or \$350,000. By buying in June, Joe is going long, with the expectation that the price of gold will rise by the time the contract expires in September.

By August, the price of gold increases by \$2 to \$352 per ounce and Joe decides to sell the contract in order to realize a profit. The 1,000 ounce contract would now be worth \$352,000 and the profit would be \$2,000. Given the very high leverage (remember the initial margin was \$2,000), by going long, Joe made a 100% profit!

Of course, the opposite would be true if the price of gold per ounce had fallen by \$2. The speculator would have realized a 100% loss. It's also important to remember that throughout the time that Joe held the contract, the margin may have dropped below the maintenance margin level. He would, therefore, have had to respond to several margin calls, resulting in an even bigger loss or smaller profit.

Going Short

A speculator who goes short - that is, enters into a futures contract by agreeing to sell and deliver the underlying at a set price - is looking to make a profit from declining price levels. By selling high now, the contract can be repurchased in the future at a lower price, thus generating a profit for the speculator.

Let's say that Sara did some research and came to the conclusion that the price of oil was going to decline over the next six months. She could sell a contract today, in November, at the current higher price, and buy it back within the next six months after the price has declined. This strategy is called going short and is used when speculators take advantage of a declining market.

Suppose that, with an initial margin deposit of \$3,000, Sara sold one May crude oil contract (one contract is equivalent to 1,000 barrels) at \$25 per barrel, for a

total value of \$25,000.

By March, the price of oil had reached \$20 per barrel and Sara felt it was time to cash in on her profits. As such, she bought back the contract which was valued at \$20,000. By going short, Sara made a profit of \$5,000! But again, if Sara's research had not been thorough, and she had made a different decision, her strategy could have ended in a big loss.

Spreads

As you can see, going long and going short are positions that basically involve the buying or selling of a contract now in order to take advantage of rising or declining prices in the future. Another common strategy used by futures traders is called “spreads.”

Spreads involve taking advantage of the price difference between two different contracts of the same commodity. Spreading is considered to be one of the most conservative forms of trading in the futures market because it is much safer than the trading of long/short ([naked](#)) futures contracts.

There are many different types of spreads, including:

[Calendar Spread](#) - This involves the simultaneous purchase and sale of two futures of the same type, having the same price, but different delivery dates.

[Intermarket Spread](#) - Here the investor, with contracts of the same month, goes long in one market and short in another market. For example, the investor may take Short June Wheat and Long June Pork Bellies.

Inter-Exchange Spread - This is any type of spread in which each position is created in different futures exchanges. For example, the investor may create a position in the [Chicago Board of Trade](#) (CBOT) and the London International Financial Futures and Options Exchange (LIFFE).

How To Trade

At the risk of repeating ourselves, it's important to note that futures trading is not for everyone. You can invest in the futures market in a number of different ways, but before taking the plunge, you must be sure of the amount of risk you're willing to take. As a futures trader, you should have a solid understanding of how the market and contracts function. You'll also need to determine how much time, attention, and research you can dedicate to the investment. Talk to your broker and ask questions before opening a futures account.

Unlike traditional equity traders, futures traders are advised to only use funds that have been earmarked as pure "[risk capital](#)"- the risks really are that high. Once you've made the initial decision to enter the market, the next question should be "How?" Here are three different approaches to consider:

Do It Yourself - As an investor, you can trade your own account without the aid or advice of a broker. This involves the most risk because you become responsible for managing funds, ordering trades, maintaining margins, acquiring research and coming up with your own analysis of how the market will move in relation to the commodity in which you've invested. It requires time and complete attention to the market.

Open a Managed Account - Another way to participate in the market is by opening a [managed account](#), similar to an equity account. Your broker would have the power to trade on your behalf, following conditions agreed upon when the account was opened. This method could lessen your financial risk because a professional would be making informed decisions on your behalf. However, you would still be responsible for any losses incurred as well as for margin calls. And you'd probably have to pay an extra [management fee](#).

Join a Commodity Pool - A third way to enter the market, and one that offers the smallest risk, is to join a [commodity pool](#). Like a mutual fund, the commodity pool is a group of commodities which can be invested in. No one person has an individual account; funds are combined with others and traded as one. The profits and losses are directly proportionate to the amount of money invested. By entering a commodity pool, you also gain the opportunity to invest in diverse types of commodities. You are also not subject to margin calls. However, it is essential that the pool be managed by a skilled broker, because the risks of the futures market are still present in the commodity pool.

Conclusion

Buying and selling in the futures market can seem risky and complicated. As we've already said, futures trading is not for everyone, but it works for a wide range of people. This tutorial has introduced you to the fundamentals of futures. If you want to know more, talk to your broker.

Let's review the basics:

- The [futures market](#) is a global marketplace, initially created as a place for farmers and merchants to buy and sell commodities for either [spot](#) or future delivery. This was done to lessen the risk of both waste and scarcity.
- Rather than trade in physical commodities, futures markets buy and sell [futures contracts](#), which state the price per unit, type, value, quality and quantity of the commodity in question, as well as the month the contract expires.
- The players in the futures market are [hedgers](#) and [speculators](#). A hedger tries to minimize risk by buying or selling now in an effort to avoid rising or declining prices. Conversely, the speculator will try to profit from the risks by buying or selling now in anticipation of rising or declining prices.
- The [CFTC](#) and the [NFA](#) are the regulatory bodies governing and monitoring futures markets in the U.S. It is important to know your rights.
- Futures accounts are credited or debited daily depending on profits or losses incurred. The futures market is also characterized as being highly [leveraged](#) due to its [margins](#); although leverage works as a double-edged sword. It's important to understand the arithmetic of leverage when calculating profit and loss, as well as the minimum price movements and daily price limits at which contracts can trade.
- “[Going long](#),” “[going short](#),” and “[spreads](#)” are the most common strategies used when trading on the futures market.
- Once you make the decision to trade in commodities, there are several ways to participate in the futures market. All of them involve risk - some more than others. You can trade your own account, have a [managed account](#) or join a [commodity pool](#).