



G&T TRADER

# Beginner's Guide to Futures

Chapters 1.1 - 1.4

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## Futures

### Chapter 1.1 / Introduction

#### Introduction

Welcome to this Academy introduction to futures course. In this course, we will focus on what futures contracts are, their characteristics, their risks and benefits, and how you can use them in your trading.

After completing the course you should be able to:

- Define what futures contracts are'
- Understand how margin and settlement works'
- Understand the two sides of trading futures (long and short); and
- Create rules for tackling the futures market.

As an investor, you have taken an important step to educate yourself in products beyond the traditional investment vehicles of stocks and bonds. Whether you are searching for other opportunities in the market place, or you simply want become more knowledgeable about the universe of futures, you may discover that different markets are correlated with each other. For instance, if stocks rally, the bond market may sell off since investors are looking for bigger returns on their money. If money moves into stocks, that money needs to come out from somewhere. Often funds from more 'conservative' investments such as bonds, money markets or simple cash will find their way into other, higher-yielding investments likes stocks. The opposite is also true. Funds will flow back into conservative investments at times of uncertainty.

Entering the futures market will give you the larger picture of how financial markets work, what makes them work, and how you can create a plan to trade around that knowledge. The 'buzz" around commodities is present in the newspapers and on the TV and it surrounds us in almost every aspect of our lives. Think about the gold in your jewellery, the wheat in your flour, the coffee that you drink every day, or the petrol in your car. All of these items are considered commodities and they are available for trading in the form of a futures contract.

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## What is a futures contract?

The simple definition of futures contract is that it is an agreement between a buyer and a seller. The buyer has the obligation to buy either a commodity or a financial instrument by a specific date at a specific price. On the other hand, the seller is obliged to sell the specified commodity or financial instrument by the specific date. The specific date is referred to as the expiration date.

The term 'futures' is a reference to the fact the delivery of the contract will take place in the future. The organised trading of these instruments started in the mid 1800s when businessmen set up forums to buy and sell agricultural products such as corn, wheat, meat and so on. Today, the trading of futures contracts takes place on exchanges around the world. Among the largest exchanges are the Chicago Mercantile Exchange, the Chicago Board of Trade, the New York Mercantile Exchange and the Intercontinental Commodity Exchange.

On these exchanges, traders will find:

- Financial instruments such bonds, currencies and interest rates;
- Agricultural commodities (livestock, grains, dairy);
- Metals (gold, copper and others);
- Energy (coal, oil, gas, electricity etc.);
- Equity indices (US and International); and
- Options on futures contracts.

## Terminology and characteristics

### Contract

A contract is an agreement between a buyer and a seller that provides for the delivery of either a commodity or a financial instrument at a specific time in the future. For example, the E-mini S&P 500 futures contracts are for delivery in March.

### Delivery Date

This term refers to the final date by which the underlying commodity must be delivered as defined in the contract.

### Expiration Date

This is the day after which the futures contract is no longer valid and is replaced by a contract with another expiration. Different contracts will follow different expirations. Gold, for instance, has monthly expirations while futures on stock indices like S&P 500 have quarterly expirations.

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Gold (GC)

<b>TRADABLE CONTRACTS</b>	<b>FIRST NOTICE</b>	<b>EXPIRY DATE</b>
GCG5	30-Jan-2015	25-Feb-2015
GCG6	29-Jan-2016	25-Feb-2016
GCJ5	31-Mar-2015	28-Apr-2015
GCJ6	31-Mar-2016	27-Apr-2016
GCM5	29-Jun-2015	26-Jun-2015
GCM6	31-May-2016	28-Jun-2016
GCV5	30-Sep-2015	28-Oct-2015
GCZ5	30-Nov-2015	29-Dec-2015

If you were reading this in December and you were considering trading futures on gold, you would probably choose a February expiration date. This is because February would be the nearest month. The closer the expiration month, the more interest there is in the contracts. The interest is created from the fact the contracts that are due to expire in the closest months are typically cheaper than those that are further out.

### First Notice Date

This is the date after which the buyer of the contract will be required to take possession of the underlying commodity. Precious metals, such as gold, will have a first notice date that is usually three weeks before the expiration date (indicated on the graph above). Meanwhile, currency futures will usually have a first notice date and an expiration date on the same date.

It is important to note that most traders will not take possession of the underlying instrument. In fact, the majority of market participants will close their contracts before the first notice date and certainly before the actual expiration. Can you imagine having 1,000 barrels of crude oil delivered to your house? Not everyone has the financial muscle and the storage for the commodity.

Traders who want to stay in their contract have the ability to 'roll out' or sell the existing expiration and simultaneously buy another one. For instance, a trader who has a position in a January wheat contract will sell or close the January position and, at the same time, buy a contract with a March expiration.



### Premium

The cost of owning a contract is referred to as the premium. While the buyer pays the premium for owning the contract, the seller receives the premium since he takes on the obligation to deliver the underlying instrument. It must be noted that the premium of a contract is slightly above the spot price of the underlying instrument. For example, if the spot price for EUR/USD is 1.2503 the futures contract for March 2015 could show 1.2514. The difference of 11 points is the premium. The premium decays over time until it reaches zero at expiration.

### Long versus short

When you purchase a futures contract, you are the owner of that contract or you are 'long'. Being long simply means that you own something. When you sell a contract, however, it means that you are 'short' or you don't own that contract. The objective in being short is that you believe prices will decline, so you would sell the contract at a higher price and buy it back at a lower price. This will result in a profit.

### Offset

When you offset a position in the futures market, you are taking the opposite steps to those that you have already taken in order to close that position. For example, if you are short on March 2015 sugar contracts, you would offset or close the position by buying the same contracts back. Offsetting is the most common method of meeting the obligations of a futures contract.

### Quotation

Before you start trading futures, you need to understand how prices work. By understanding how prices work, you will be able to calculate how much you stand to make as a profit or potentially lose from the trade.

Besides the size of the contract (5,000 bushels in one corn contract or 100 troy ounces in gold) you will need to know the tick size or minimum fluctuation amount. Conveniently, many brokers will provide you with this information.

#### Corn Futures

CONTRACT SIZE	5,000 Bushels	MINIMUM TRADE	1
EXCHANGE	CBOT	TRADING HOURS	Show Schedule
TICK SIZE	0.25	TICK VALUE	12.5
INITIAL MARGIN	1,100	MAINT. MARGIN	1,000
EXCHANGE FEE	USD 1.96	MIN. COMMISSION	USD 10
ORDER TYPES	Market, Limit		



### Chart above is Corn Futures

The tick size simply refers to the smallest increment that a contract can trade. In the above example, corn trades in a tick size of 0.25 or  $\frac{1}{4}$  of a cent. By multiplying the minimum size fluctuation by the size of the contract, you will obtain the value of the minimum price fluctuation, which in this case is \$12.50.

Therefore, for one full penny of movement in corn prices, you would be making \$50. If you were long on March 2015 corn futures, and the price went up by 1 penny to \$4.01, you would make \$50. Conversely, a drop by 1 penny to \$3.99 would result in you losing \$50.

### Summary

Futures are contracts and trade on exchanges around the world. Being listed on exchanges increases their liquidity and transparency. The buyer of the futures contract has the obligation to take possession of the underlying commodity, index or financial instrument. The seller has the obligation to deliver it. The agreement stipulates that the exchange between the buyer and the seller will take place at expiration. To avoid taking delivery of the underlying asset, traders close their contracts before the expiration and thus offset their initial position. For a long position, one must sell the contract in order to close it. Meanwhile, for a short position, traders will buy the same position in the market in order to close it.

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## Futures

### Chapter 1.2 / Standardisation, Margin & Settlement

#### Standardisation

Let's recall one more time the definition of a futures contract: a futures contract is a legally binding agreement between a buyer and a seller. They agree to exchange an underlying commodity or a financial instrument at a specific time and at a specific price. The agreed price (the futures price) is agreed upon on the day of the trade in the marketplace.

Exchanges, such as the Chicago Mercantile Exchange (CME), play an important role in supporting and ensuring efficiencies in trading futures instruments. As an intermediary, the exchange will provide clearing services, risk-management tools, liquidity and standardisation of the futures contracts.

A contract is said to be standardised because it specifies the quantity, quality and delivery date. According to the CME, one contract of corn represents 5,000 bushels of a specific type and quality of corn. A EURUSD contract would have a size of 125,000 euros.

Tick sizes or the minimum price change are also specified. One tick of the E-mini S&P 500 is equivalent to \$12.50. Gold will have a tick size of \$0.1 per ounce and so forth.

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PRODUCT SYMBOL	GC
VEN UE	CME Globex, CME ClearPort, Open Outcry (New York)
CONTRACT SIZE	100 troy ounces
PRICE QUOTATION	U.S. Dollars & Cents per troy ounce
MINIMUM FLUCTUATION	\$0.10 per troy ounce
TERMINATION OF TRADING	Trading terminates on the 3rd last business day of the delivery month

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Specifications of futures contracts can be found on the website of the exchange or your broker may post them. Other rules that are set by the exchanges are 'price limits.' For example, the daily price movement of orange juice futures cannot exceed more than \$0.05 per pound or \$750 per contract. (The size of the latter contract is 15,000 pounds.) Price fluctuations of more than 5 cents can lead to suspension of trading. This limitation aims to keep the market flow orderly regardless of whether traders have credible or incorrect news.

In addition to providing uniformity and efficiency in trading futures contracts, the exchange acts as an intermediary in its attempts to limit the risk of defaults by both buyers and sellers. In this regard, the exchange will require each party to put down a 'good faith' deposit called a 'performance bond'. The deposit is also known as margin.

## Margin

Trading on margin simply means that you can open a position in the futures market without having to put up the full amount of cash that the contract is worth. Trading on margin allows you to magnify your profits when your position moves in your direction. At the same time, if the market goes against you, you can lose more than the amount that you have borrowed.

As futures are standardised instruments, futures exchanges set the margin requirements for trading futures contracts. If you buy stocks on margin, a broker may charge you interest, but futures traders are not charged interest to have margin. Generally, investors will need to put up anywhere between 2%-12% of the value of the futures contract. For instance, to open one crude oil contract, an investor would need to put up \$3,740.

### Let's walk through an example of how margin works.

The margin requirement for a 5,000-ounce silver contract for March delivery is set at \$7,150. At \$16 per ounce, the contract is worth \$80,000 ( $\$16 \text{ per ounce} \times 5,000 \text{ ounces}$ ). If the price of silver went up by 10% to \$17.60, the above contract would be worth \$88,000. This would be a profit of \$8,000 or over 100% return. Margin can be very powerful, if it works your way. But if the price of silver moved down 10%, you could be down \$8,000.

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Profits or losses from positions are posted to your account daily. This activity is referred to as marked to market. The profits are available in your account on the following day for trading or to be withdrawn.

If you sustained losses, and you didn't have sufficient equity or cash in your account, you could be in a margin call situation. Then your account could show a deficit. For this reason, successful traders always use risk-control measures such as stop-loss orders or keeping a sufficient amount of cash as a cushion. You can also consider liquidating the position should the market move against you.

Aside from the initial margin that is required to open a futures contract, there is also something known as the maintenance margin. The latter is the amount that you need in order to have the position in your account. Typically, the maintenance margin will be about 70%-80% of the initial margin. For the silver contract, that amount would be set at \$6,500, which is less than the initial margin of \$7,150. You must be able to meet the maintenance margin at all times.

While futures contracts require much less margin than stocks or other instruments, investors need to exercise a greater degree of caution when trading these leveraged products. Traders who overleverage themselves can lose money very quickly by trading futures. Using risk management techniques such as stop-loss orders and position sizing (having a strategy with regard to how much money want to commit) can ensure that you have the ability to sustain normal market fluctuations without being forced out of a trade.

### **Settlement of futures**

By its definition, settlement is the process of completing or settling the futures contract, typically at the expiry date or after a contract has been closed. At that time, the final price of the contract is determined. The two types of settlements in futures are physical delivery and cash-settled contracts.

Although rare, some market participants will choose to take physical delivery of the underlying asset, such as agricultural commodities, foreign exchange or bonds. The rules for such deliveries are outlined by the exchange on which the contract is listed. During the delivery month, a seller of a contract may elect to make delivery of the underlying asset. The exchange will then assign the delivery to a party that has a long position in the same contract.

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When a cash-settled contract, such as a contract on equity indices, is settled and the final valuation is determined, investors will be able to realise profits or losses from the underlying contract. For instance, if you sold an E-Mini S&P 500 expiring on March 15 at \$1,990.75 and settlement was today at \$2,040, you would realise a loss of \$2,500 (50 points x \$50). Since the futures market is a 'zero-sum' game, one investor's gain is another one's loss; the buyer of the above contract will register the gain of \$2,500.

## Summary

Exchanges and clearing houses take on the important role of acting as facilitators and intermediaries by ensuring efficiency in the futures marketplace. Standardisation of a futures contract brings uniformity and guarantees characteristics such as the underlying asset, delivery month, quantity and the quality of that contract. This makes futures contracts highly desirable instruments for investors looking for a 'seamless' way to trade in the marketplace.

All traders must post initial margin with their broker in order to be able to open a futures contract. Moreover, if traders sustain a loss, they may receive a margin call and may be required to add additional money to their accounts in order to meet the required margin level. Be aware that margin is a 'double-edge' sword and it works both ways. You can benefit from it, if the price moves in your direction, or you can suffer big losses, if the market moves against your position.

Most investors will choose to offset their futures positions to avoid physical settlement, and therefore they will elect cash settlement. Very few will remain through expiry date to take possession or deliver a commodity or currency.

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## Stock Options Chapter 1.3 / Anatomy of a long Futures Contract trade

Now that you have become more familiar with what futures are, we can take a step into a hypothetical trade example of a long futures trade. A trade will normally consist of several steps. Let's walk through these:

### Step 1

The first step in the process is to select which category of futures you will trade. The decision may be straightforward for investors who are familiar with other markets, such as foreign exchange or bonds, while for other investors it may take a little more time to investigate. Let assume that you have dealt with stocks in the past and that you are familiar with different stock indices. One such equity index could be the US S&P 500. You should note that you could trade the E-mini S&P as opposed to the larger contracts. For the E-mini, the contract value is one-fifth of the larger contract. The tick size is .25 or \$12.50 versus .10 or \$25.

### Step 2

You may start with studying the price of the contract and determining the general direction or trend.





For the purposes of this hypothetical trade, we will make the following assumptions:

- We will buy the futures contract at a price of \$2,058.
- The price of the contract will reach \$2,100 and we will exit.
- The low point at which we will set a stop-loss order and exit will be \$2,025.

The contract size for the e-Mini S&P 500 is \$102,900 ( $\$50 \times \$2,058$ ) and we will be required to deposit a margin of \$5,060. It's important to indicate that investors with accounts that are not adequately funded should think twice about opening futures positions. Some traders argue that it is necessary to have an account with minimum of \$20,000 in it, others argue higher. Take time to investigate if how much you can trade in the futures market based on your own circumstances.

### Step 3

The selection of the expiry month should be fairly simple since the contract follows a cycle of March, June, September and December. With the leading month of December due to expire at the time of this writing, we would select March 2015 with a limit order of \$2,058.

### Step 4

Before the trade is executed, we will run the hypothetical return on investment (ROI) and potential loss. If the contract trades at our target level of \$2,100, this would be a gain of 42 points or \$2,100. Conversely, should we see the price of the underlying index decline to our exit levels of \$2,025, this would be a loss of 33 points or \$1,650 per contract.

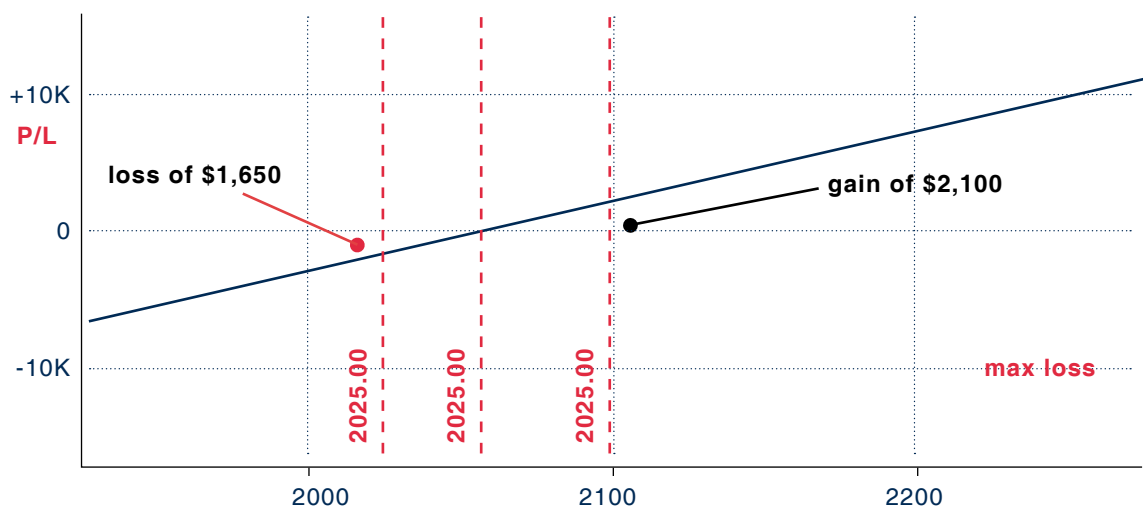




Chart above - profit / loss on e-Mini 500 - Source TOS

In theory, there is no limit as to how much profit a long futures contract can gain since the price can go up to infinity. In the example above, however, we are looking to take a small profit while limiting the loss as well. Setting price points at which to get out of the market can help investors to limit their risk exposure. Should the underlying asset fall dramatically, investors could experience unlimited losses.

### Summary

As we discussed in the previous chapter, futures contracts are standardised, which makes them very liquid instruments. Many traders like the broad spectrum of underlying instruments that the futures market offers and the leverage that they have. With a long futures contract, investors typically put up a small amount of money – 2%-12% of the notional value – in the form of a margin. This allows them to have greater leverage.

It is important, however, to have a properly funded account and to always set aside some cash as a cushion. The extra cash in the account could help you to sustain the volatility in the market and meet margin calls, if they occur, without being forced out of your position.





## Stock Options

### Chapter 1.4 / Why Trade Futures?

If you are looking to become rich quickly, futures trading is perhaps not the right choice for you. Investors who enter the futures market driven by emotions rather than discipline tend to learn the hard way about how volatile this market can be. Instead, you should take a look at the big picture of the market and how it fits into your personal goals and objectives. Learn the fundamentals, select and practise trading a few contracts, and then go into futures trading prepared.

Suppose you want to learn more about what drives energy and how is that impacting your stock portfolio, particularly your shares in British Petroleum. Or you find out that bond yields and commodity prices tend to move in the same direction. John Murphy, in his book *Intermarket Technical Analysis*, argues that there is a strong correlation between commodities, bonds and stocks. For instance, commodity prices could tell us which way inflation is headed, which could influence bond prices and interest rates. We certainly do not need to become analysts, but taking the time to learn about stocks, bonds and futures will make us more complete and balanced as a trader.

There are two main participants in the futures market: hedgers and speculators. Hedging is like insurance; it is nice to have it when you need it, but costly if you don't. Most often hedgers are producers of commodities, such as corn farmers or oil companies. They are looking to protect themselves against the uncertainty caused by the movement in the future prices of their products.

For instance, a corn farmer who feels uncertain about what the price of corn is likely to be at harvest time may sell futures contracts in corn. If the price of corn goes down at harvest time, the farmer would have to take a loss on his produce. By selling futures contracts on corn, however, he has locked in a specific price at which he can sell that commodity. Financial institutions such as banks and insurance companies are also active in hedging with futures.

Speculators, on the other hand, enter the futures market primarily to speculate on the prices of different commodities. These market participants are not looking to take delivery of the actual commodity. Rather, they are looking to make a cash profit. So if they expect a given commodity to rise in price, they would purchase a futures contract. Alternatively, if they expect a given commodity to go down in price, they would look to sell a futures contract.

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The above participants, together with professional traders, hedge funds and private investors, make up the bulk of the futures ecosystem.

So why trade the market? We will narrow it down to the following reasons: tremendous liquidity, extended hours of trading, much bigger leverage than stocks, and the ability to diversify one's portfolio and hedging. These are just the four main reasons, but there are many more.

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