

# A Trader's Guide to Futures

Thought Leadership with a Global Perspective



*How the world advances*

## TABLE OF CONTENTS

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### SECTION 1

***What Are Futures? 4***

### SECTION 2

***Who Trades Futures? 6***

### SECTION 3

***Why Trade Futures? 9***

### SECTION 4

***How Does a Trade Work? 13***

### SECTION 5

***How Do I Get Started? 24***


### SECTION 6

***Futures Quiz 30***

## INTRODUCTION

# A Trader's Guide to Futures

CME Group offers the widest range of tradable products available anywhere — all on a single platform: interest rates, stock indexes, currencies, agriculture, energy, metals (industrial and precious) and alternative investment products, such as weather and real estate. In more than 150 countries, our centralized global exchange delivers transparent pricing and equal access virtually around the clock. With the backing of CME Clearing, the leading derivatives clearing facility in the world, the financial integrity of our markets is unsurpassed.

A close-up photograph of a person's hand in a dark suit jacket, gesturing with fingers spread. The background is a blurred office setting with other people seated at tables. The lighting is soft and professional.

→ ***This is your introductory guide to trading futures. If you're a trader who is interested in branching out from equities or cash FX into futures, this guide will provide a great starting point. If you already know something about futures trading, you can jump to any chapter for a review or to the back of the booklet and test your knowledge in our Futures Quiz.***

## SECTION 1

# What Are Futures?

In the United States, trading futures began in the mid-19th century with the establishment of central grain markets where farmers could sell their products either for immediate delivery, also called the spot or cash market, or for forward delivery. These forward contracts were private contracts between buyers and sellers and became the forerunner of today's exchange-traded futures contracts.

Both forward contracts and futures contracts are legal agreements to buy or sell an asset on a specific date or during a specific month. Where forward contracts are negotiated directly between a buyer and a seller and settlement terms may vary from contract to contract, a futures contract is facilitated through a futures exchange and is standardized according to quality, quantity, delivery time and place. The only remaining variable is price, which is discovered through an auction-like process that occurs on the Exchange trading floor or via CME Globex, CME Group's electronic trading platform.



Although trading began with floor trading of traditional agricultural commodities such as grains and livestock, exchange-traded futures have expanded to include metals, energy, currencies, equity indexes and interest rate products, all of which are also traded electronically.



## ! DEFINITION

### FUTURES

Standardized contracts for the purchase and sale of financial instruments or physical commodities for future delivery on a regulated commodity futures exchange.

### FORWARD CONTRACT

A private, cash-market agreement between a buyer and seller for the future delivery of a commodity, at an agreed upon price. In contrast to futures contracts, forward contracts are not standardized and are non-transferable.

### SPOT MARKET

A market where cash transactions for the physical or actual commodity occur.

### CME GLOBEX

The first global electronic trading system for futures and options has evolved to become the world's premier marketplace for derivatives trading. With continual enhancements, the platform has effectively enabled CME Group, already known for innovation, to transform itself into a leading high-tech, global financial derivatives exchange.

## Who Trades Futures?

Conventionally, traders are divided into two main categories, hedgers and speculators. Hedgers use the futures market to manage price risk. Speculators on the other hand accept that risk in an attempt to profit from favorable price movement. While futures help hedgers manage their exposure to price risk, the market would not be possible without the participation of speculators. They provide the bulk of market liquidity, which allows the hedger to enter and exit the market in an efficient manner. Speculators may be full-time professional traders or individuals who occasionally trade. Some hold positions for months, while others rarely hold onto a trade more than a few seconds. Regardless of their approach, each market participant plays an important role in making the futures market an efficient place to conduct business. The following pages will provide brief profiles of the most common types of market participants.

**“When we started 21 years ago, the trading was self-contained. Over the last 15 years, it’s broadened so much with electronic trading that people now have access to these markets from any place in the world. It’s been interesting to see how the markets have grown and matured because of that.”**

— Jim Iuroio BROKER

# What Types of Traders are There?

## Hedgers

Hedgers have a position in the underlying commodity. They use futures to reduce or limit the risk associated with an adverse price change. Producers, such as farmers, often sell futures on the crops they raise to hedge against a drop in commodity prices. This makes it easier for producers to do long-term planning. Similarly, consumers such as food processing plants often buy futures to secure their input costs. This allows them to base their business planning on a fixed cost for core ingredients, such as corn and wheat. Other examples include: airlines hedging fuel costs or jewelry manufacturers hedging the cost of gold and silver. This makes it easier for these companies to manage price risk and stabilize the cost passed on to the end-user.

## Individual Traders

Many speculators are individuals trading their own funds. Traditionally, individual traders have been characterized as individuals wishing to express their opinion about, or gain financial advantage from, the direction of a particular market. Electronic trading has helped to level the playing field for the individual trader by improving access to price and trade information. The speed and ease of trade execution, combined with the application of modern risk management, give the individual trader access to markets and strategies that were once reserved for institutions.

## Portfolio Managers

A portfolio or investment manager is responsible for investing or hedging the assets of a mutual fund, exchange-traded fund or closed-end fund. The portfolio manager implements the fund's investment strategy and manages the day-to-day trading. Futures markets are often used to increase or decrease the overall market exposure of a portfolio without disrupting the delicate balance of investments that may have taken a significant effort to build.

### PRODUCERS

Hedge against a drop  
in commodity prices.



### CONSUMERS

Hedge against a rally  
in commodity prices.



## Proprietary Trading Firms

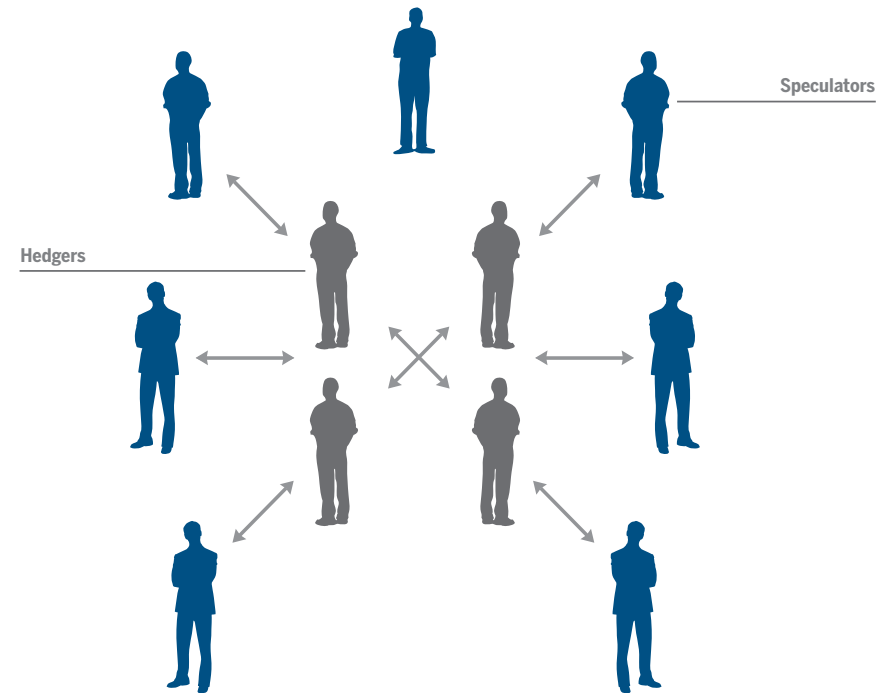
Proprietary trading firms, also known as prop shops, profit as a direct result of their traders' activity in the marketplace. These firms supply their traders with the education and capital required to execute a large number of trades per day. By using the capital resources of the prop shop, traders gain access to more leverage than they would if they were trading on their own account. They also gain access to the type of research and strategies developed by larger institutions.

## Hedge Funds

A hedge fund is a managed portfolio of investments that uses advanced investment strategies to maximize returns, either in an absolute sense or relative to a specified market benchmark. The name hedge fund is mostly historical, as the first hedge funds tried to hedge against the risk of a bear market by shorting the market. Today, hedge funds use hundreds of different strategies in an effort to maximize returns. The diverse and highly liquid futures marketplace offers hedge funds the ability to execute large transactions and either increase or decrease the market exposure of their portfolio.

## Market Makers

Market makers are trading firms that have contractually agreed to provide liquidity to the markets, continually providing both bids (an expression to buy) and offers (an expression to sell), usually in exchange for a reduction in trading fees. Increasingly important are electronic market makers who as a group, provide much of the market liquidity that allows large transactions to take place without effecting a substantial change in price. Market makers often profit from capturing the spread, the small difference between the bid and offer prices over a large number of transactions, or by trading related futures markets that they view as being priced to provide opportunity.



### ! DEFINITION

#### LIQUID

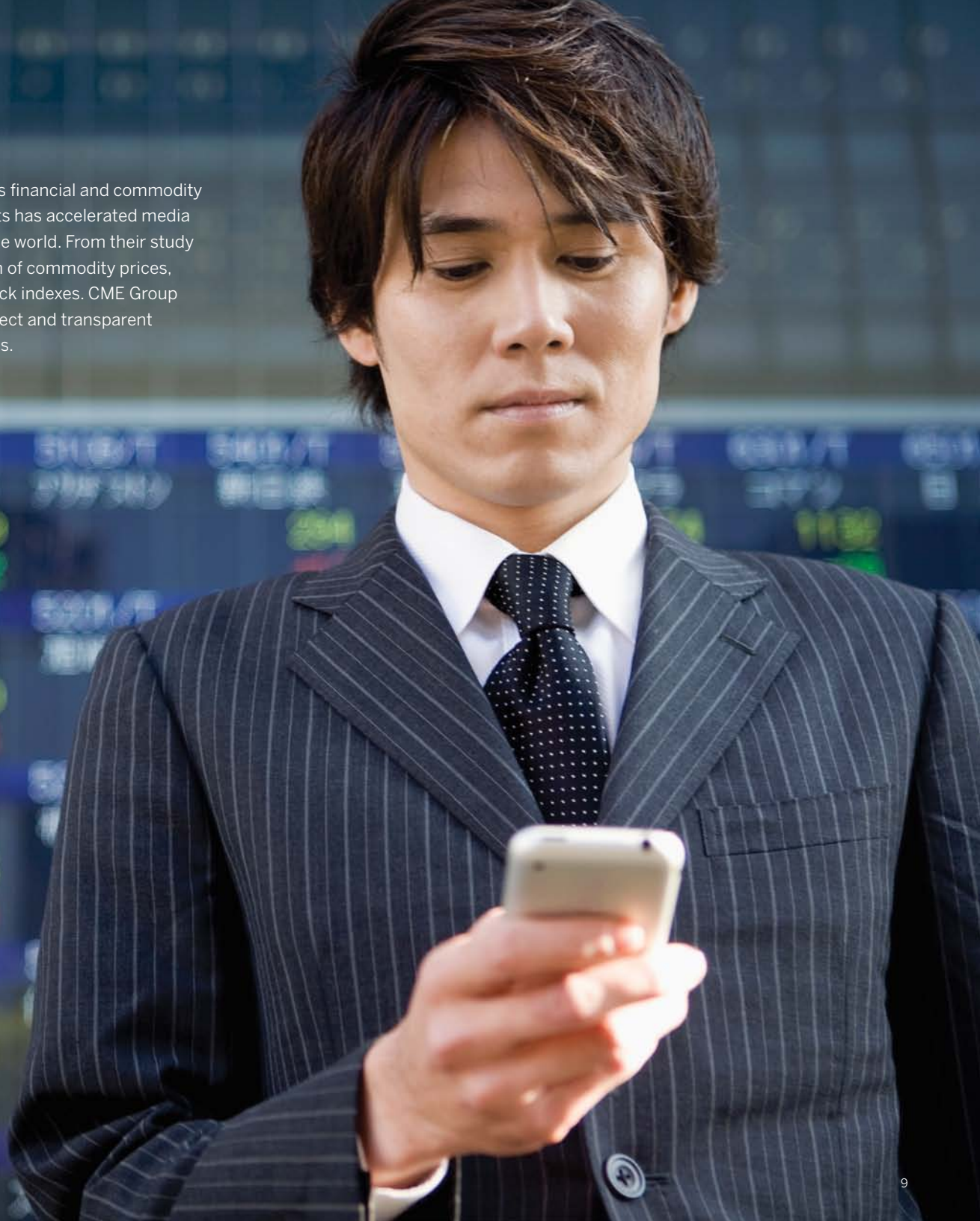
A characteristic of a security or commodity market with enough volume and open interest (positions) to allow for entry and exit at a fair and efficient price. Market participants are inclined to seek out liquid investments so that their trading activity will not influence the market price.



SECTION 3

## Why Trade Futures?

Futures provide a fast and cost-effective way for you to access financial and commodity markets around the clock. Increased interest in global markets has accelerated media attention and attracted the interest of traders from around the world. From their study of the markets, traders develop a perspective on the direction of commodity prices, energy prices, metal prices, currencies, interest rates and stock indexes. CME Group offers products across all major asset classes giving you a direct and transparent method to act on your insight and participate in market trends.



# What Makes Futures Trading Different?

## Leverage

Leverage on futures contracts is created through the use of performance bonds, often referred to as margin. This is an amount of money deposited by both the buyer and seller of a futures contract and the seller of an option contract to ensure their performance of the contract terms. The performance bond may represent only a fraction of the total value of the contract, often 3 to 12%, making futures a highly leveraged trading vehicle. Therefore, futures contracts represent a large contract value that can be controlled with a relatively small amount of capital. This provides the trader with greater flexibility and capital efficiency. **This increased leverage, however, can also pose additional risk that requires a well thought out risk management plan that addresses the amount of leverage used.**

### What do we mean by “leveraged”?

The E-mini S&P 500 Stock Index futures contract could have a value of \$67,500, but you would be able to buy or sell this contract by posting a performance bond of about \$6,000, which is only 9% of the contract value.

The ability to leverage may remind you of buying stocks on margin. However, in equity markets, buying on margin means you borrow money to make the purchase. In the futures markets, your performance bond is not partial payment for the product. It is good-faith money you post to ensure you are able to meet the day-to-day obligations of holding that position. Both buyers and sellers in futures post performance bonds. Positions are then marked-to-market on a twice daily basis, where profits are credited and losses are debited from your account.

### DEFINITION

#### PERFORMANCE BOND

The minimum amount of funds that must be deposited by a customer with his broker, by a broker with a clearing member or by a clearing member with the Clearing House.

## Maximizing Capital Efficiency

The leverage available in futures trading allows you to utilize your capital more efficiently. For example, if you have \$200,000 and you want to speculate on the direction of the S&P 500, for the purposes of this illustration, you have three choices:

- » **Buy \$200,000 of stock using all available capital.** This can be done by purchasing an Exchange-Traded Fund (ETF), which for this example would be SPY. SPY seeks to replicate, net of expenses, the S&P 500 Index. It is regulated as, and trades in, equity (stock) like shares. Your exposure would be \$200,000 worth of SPY shares.
- » **Buy the same stock (ETF-SPY) on margin, taking advantage of the 2:1 leverage in equities.** This allows you to control the same portfolio of stocks (ETF-SPY) by utilizing \$100,000 of available capital.
- » **Buy futures on margin, taking advantage of the approximately 10:1 leverage available with E-mini S&P 500 contracts.** This allows you to control the same portfolio of stocks by leveraging \$20,000 of available capital. The three E-mini S&P 500 contracts represent approximately the same \$200,000 of exposure of the S&P 500 index stocks.

In each case, you have exposure to the same type of market risks and opportunities, but in the final example, you gain the same amount of market exposure while tying up significantly less of your available capital. Please note the figures above represent margin and performance bond amounts that are subject to change.

## Regulation

Futures markets are regulated by the U.S. Commodity Futures Trading Commission (CFTC), an independent government agency formed in 1974 to foster open, competitive and financially sound futures and options markets, and to protect market users and the public from any fraud, manipulation or abusive practices.

## Tax Advantages

Trading futures may offer specific tax advantages compared to other instruments such as stocks. Be sure to discuss your particular tax obligation with your tax advisor.

# What Differentiates CME Group Futures Markets?

## Portfolio Diversification

CME Group futures products allow you to more easily diversify your portfolio. CME Group offers futures products from all major assets classes, including foreign currencies such as the European euro, the British pound and the Japanese yen, Stock Index Products like the S&P 500, NASDAQ-100 and Dow Jones Industrial Average, interest rate and treasury products, commodities including grains and oil seeds, energy such as crude oil, natural gas, gasoline and ethanol, metals including gold and silver, and weather and housing indexes.

**When equity and bond markets are volatile, professionals may be more likely to hedge their stock and bond portfolios using equity index and interest rate futures. In addition, they may diversify their assets through commodity and currency futures because of their low correlation to investments in stocks and bonds.**

## Liquidity

The established futures markets offered by CME Group are highly liquid. By providing electronic access to a broad spectrum of products on a single platform, our markets attract a wide range of participants who transact millions of contracts on a daily basis. This volume makes it easier for traders to execute orders of any size quickly and efficiently, without effecting a substantial change in price.

## Transparency

CME Group provides a centralized marketplace where all prices are known to everyone. Trading is open, fair and anonymous. Comprehensive price and transaction data is distributed in real time, providing a clear or transparent view of the market to all participants.

## Electronic Access Around the Clock

CME Group provides customers around the world with the ability to navigate economic uncertainty, manage risk and leverage financial opportunity virtually 24 hours a day. Available from Sunday evening through late Friday afternoon, the CME Globex electronic trading platform connects customers in more than 150 countries who can react to change as it happens.

## Segregated Accounts

Funds used to trade futures are held in a segregated account. That means that your money is not pooled with other customers' money or with the firm's money. It is held independently. Consequently, if your broker were to experience any kind of financial difficulty, it would not affect your personal account. This is not the case in the over-the-counter (OTC) market, where funds are often commingled.



### DEFINITION

#### VOLATILITY

A measurement of the change in price over a given time period.

## Financial Safeguards

CME Clearing, which is owned by CME Group, provides industry-leading financial integrity that is the standard for making markets more efficient. CME Clearing is responsible for settling trading accounts, clearing trades, collecting and maintaining performance bond funds, regulating delivery, facilitating the option exercise process and reporting trade data.

The presence of a central counterparty like CME Clearing is an important advantage compared to such over-the-counter markets as the spot or cash Forex market. Over-the-counter transactions are made between two private parties with no central clearing counterparty to extend credit or assure performance of the agreement (as shown in the Bilateral Model to the right). This leaves participants at risk for a potential default of the other party, which translates into increased capital requirements, credit inefficiencies and higher overall credit risk.



### DEFINITION

#### CME CLEARING

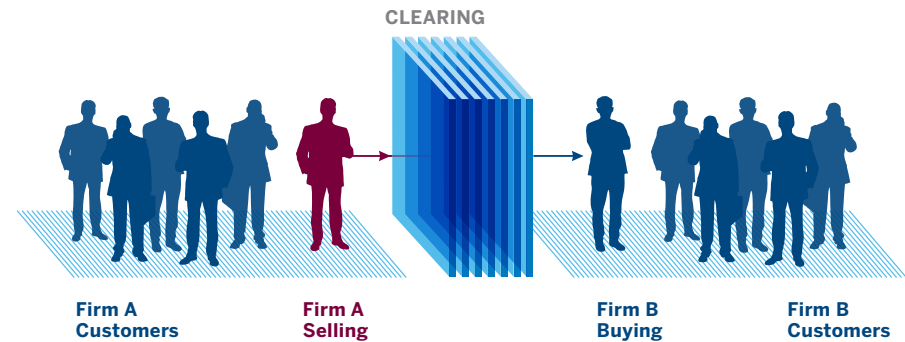
The division of CME Group that confirms, clears and settles all CME Group trades. CME Clearing also collects and maintains performance bond funds, regulates delivery, facilitates the option exercise process and reports trading data.

#### OVER-THE-COUNTER (OTC)

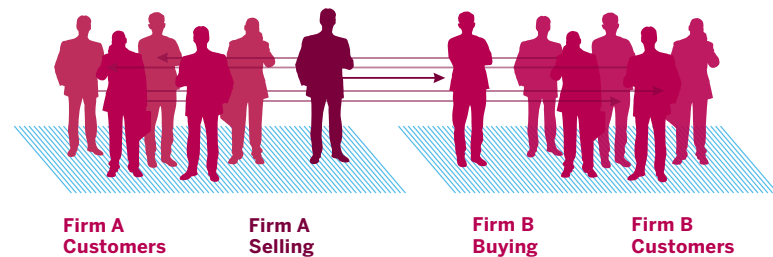
A market in which custom-tailored contracts are bought and sold between counterparties and are not exchange-traded.

By serving as the counterparty to every transaction, CME Clearing becomes the buyer to every seller and the seller to every buyer, substantially reducing the financial performance risk of each market participant's position in CME Group products. Further, by marking positions to market twice each day, CME Clearing helps to eliminate the accumulation of losses or debt. This helps individual customers manage their risk and also helps contain risk for the market as a whole.

#### CENTRAL COUNTERPARTY CLEARING MODEL



#### BILATERAL MODEL



In its more than 100-year history, there has never been a failure by a clearing member to meet a performance bond call or its delivery obligations, nor has there been a failure of a clearing member firm resulting in a loss of customer funds. This system has been remarkably successful in periods of market volatility and economic uncertainty, and it continues to be an important customer benefit in derivatives markets.

## SECTION 4

# How Does a Trade Work?

Before we go through specific examples, there are some key terms and concepts you need to understand.

### Contract Size

By definition, each futures contract has a standardized size that does not change. For example, one contract of corn represents 5,000 bushels of a very specific type and quality of corn. If you are trading British pound futures, the contract size is always 62,500 British pounds. The E-mini S&P 500 futures contract size is always \$50 times the price of S&P 500 index. Specifications for all products traded through CME Group can be found at [cmegroup.com](http://cmegroup.com).

### Contract Value

Contract value, also known as a contract's notional value, is calculated by multiplying the size of the contract by the current price. For example, the E-mini S&P 500 contract is \$50 times the price of the index. If the index is trading at \$1,425, the value of one E-mini contract would be \$71,250.

### Tick Size

The minimum price change in a futures or options contract is measured in ticks. A tick is the smallest amount that the price of a particular contract can fluctuate. Tick size varies from contract to contract. A tick in the E-mini S&P 500 futures contract is equal to one-quarter of an index point. Since an index point is valued at \$50 in the E-mini, one tick is equivalent to \$12.50.

## Price Limits

Some futures markets impose limits on daily price fluctuations. A price limit is the maximum amount the price of a contract can move in one day based on the previous day's settlement price. These limits are set by the Exchange and help to regulate dramatic price swings. When a futures contract settles at its limit bid or offer, the limit may be expanded to facilitate transactions on the next trading day. This may help futures prices return to a level reflective of the current market environment.

## Mark-to-Market

Futures contracts follow a practice known as mark-to-market. At the end of each trading day, the Exchange sets a settlement price based on the day's closing price range for each contract. Each trading account is credited or debited based on that day's profits or losses and checked to ensure that the trading account maintains the appropriate margin for all open positions. As described in the "Why Trade Futures?" section on page 9, your position in the market is secured by a performance bond. A performance bond is an amount of money that must be deposited with your broker to open or maintain a position in a futures account. This good-faith money helps to ensure that all market participants are able to meet their obligations. It helps maintain confidence in the financial integrity of the Exchange as a whole. The practice of marking accounts to market helps ensure that your account maintains sufficient capital to meet margin requirements on a daily basis.

## Margin Call

If you add to a position or sustain a loss and your account no longer meets the performance requirements, you will receive a margin or a performance bond call from your broker. The margin call will require that you either add money to the account or reduce your positions until the minimum performance bond requirements are satisfied. Brokerage firms may suspend trading privileges or close accounts that are unable to meet their minimum performance bond requirements.

Mark-to-market is an important safety measure that provides additional protection for you and your brokerage firm. Combined with other financial safeguards, mark-to-market is a major benefit of doing business on a regulated exchange.

## Real-World Examples

### Example 1: Commercial Traders

The following are a few hypothetical scenarios of how institutional market participants use futures to hedge market risk.

### Hedging Corn Prices

Corn farmers, like other producers, are at risk from changing prices. If a harvest is good and demand is low, corn will be abundant and prices may fall. If a harvest is poor and demand is high, prices may rise. To hedge against falling prices, corn producers may turn to the futures markets. In effect, they use futures contracts to hedge the sale price of their crops. Producers may hedge all or part of their crop depending on their market outlook. Producers are in effect long the actual, or cash commodity. So to hedge their risks, they attempt to take an equal but opposite short position in the futures market.

#### **By selling futures, producers are able to transfer some of their risk to another market participant.**

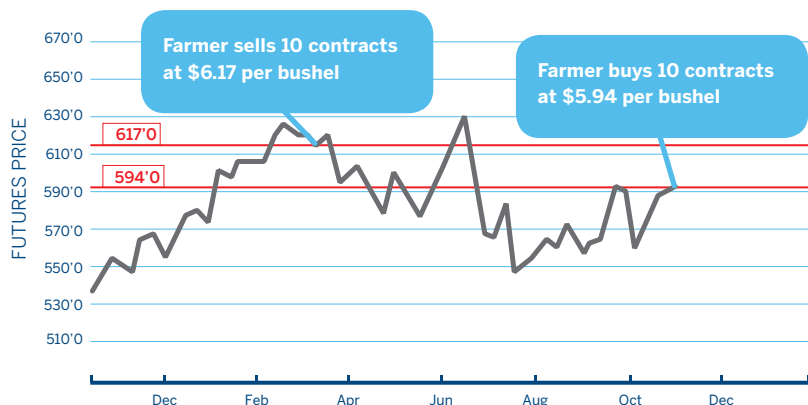
The price of the December corn futures contract reflects the expected price of corn at harvest, as well as the risk associated with the volatility of the underlying commodity. As harvest approaches, if the futures price of corn rises, one would expect corn prices to rise in value also. Similarly, if the price of corn futures falls, one would expect the cash prices to fall.

#### **So how does this help the farmer?**

The farmer sells corn futures to hedge the risk of owning or being long the cash commodity. If corn prices fall, the farmer will be able to buy back the futures at a lower price. This profit will make up for some of the losses the farmer will incur when he sells the corn at harvest. That risk is transferred to the person who buys the futures.

Let's imagine that it's March 1. A farmer, who is expecting a crop of 100,000 bushels in November, decides to hedge 50% of the crop, or 50,000 bushels. By hedging just 50% of his crop, the farmer is limiting, not eliminating, his exposure to price movement.

A single futures contract in corn represents 5,000 bushels (127 metric tons). So the farmer will have to sell 10 contracts to hedge 50,000 bushels. On March 1, corn futures traded at \$6.17 per bushel. From March 1 until harvest on November 1, the price of corn fell by \$0.23 per bushel. The farmer can now buy 10 contracts at \$5.94 per bushel, offsetting the 10 contracts he sold at \$6.17 per bushel. The 10 futures contracts generated \$11,500 in addition to the \$5.94 per bushel the farmer will receive in the cash market.



Refer to [cmegroup.com](http://cmegroup.com) for current contract specifications and price information.

**If the farmer had hedged 100% of the crop, he would have offset the price decline entirely. However, he also would have given up the opportunity to profit from a possible rise in corn prices.**

Cash	Initial Value of Crop 03/01	Cash Received 11/01	Loss
100,000 Bushels	\$617,000 at \$6.17/Bushel	\$594,000 at \$5.94/Bushel	-\$23,000

Futures Position	Initial Value of Futures	Current Price of Futures	Profit
50,000 Bushels	\$308,500 at \$6.17/Bushel	\$297,000 at \$5.94/Bushel	\$11,500

**Who would have wanted to buy these contracts?**

This example began with the farmer selling 10 corn futures contracts in March, well before the harvest. Any number of market participants would have been willing to take the other side of this transaction. They include food processing companies attempting to hedge their input costs, commodity fund managers looking at the price relationship between various grain products, energy companies looking to secure an ample supply of corn for ethanol production and speculators who wish to express and profit from their opinion on the direction of the market. Each of these groups provides different insights into the industry and plays an integral role in discovering a fair price.

**! DEFINITION**

**PRICE LIMIT**

The maximum daily price fluctuations on a futures contract during any one session, as determined by the Exchange.

**SHORT**

One who initially sells either a futures or options contract. Opposite of a long position.

## Hedging Currency Risk

Large commercial enterprises regularly use futures to manage risk, reduce costs and leverage working capital. Let's imagine that on September 1, a U.S. company agreed to buy heavy equipment from a German manufacturer. According to the terms of the agreement, payment of €1 million (euros) was due upon delivery, December 1. Between September 1 and December 1, the price of the euro in relation to the U.S. dollar will fluctuate. What if the value of the euro were to rise? How would this effect the cost of the machinery? More importantly, how would it effect the overall profitability of the deal? As you can see in the example below, the value of the euro did rise significantly from 1.3600 to 1.4610, which in turn would raise the cost to the U.S. company by more than \$100,000.



Refer to [cmegroup.com](http://cmegroup.com) for current contract specifications and price information.

<p><b>\$1,360,000</b></p> <p>Cost of 1,000,000 € in U.S. dollars on Sept 1.</p>	<p><b>\$1,461,000</b></p> <p>Cost of 1,000,000 € in U.S. dollars on Dec 1.</p>
---------------------------------------------------------------------------------	--------------------------------------------------------------------------------

To protect themselves from this risk, the company could have:

### **Bought the euros they needed for this purchase on September 1.**

This would have eliminated any currency risk. However, it would have also tied up a large amount of the company's working capital, \$1.36 million for three months assuming that the exchange rate at that date was \$1.36 per euro.

### **Or, hedge their exposure to rising prices by purchasing futures contracts.**

Buying futures contracts, known as going long, is a typical strategy used by companies that regularly buy foreign currency, financial assets, such as stocks and bonds, or physical commodities.

In this example, the U.S. company chose to protect itself in September by purchasing eight Euro FX futures contracts. Each contract represents an underlying (dollar) value of €125,000 (euros). So eight contracts would represent €1 million (euros). This amount would completely offset the currency risk associated with the increasing purchase price of the equipment if the value of the euro went up during this period.

**A qualified hedger with a futures account is only required to put up a percentage of the full contract value (a performance bond) to buy or sell the futures contract.**

<p><b>Euro FX Futures</b></p> <p>€ 125,000 per contract x 8 contracts = € 1,000,000</p>	<p><b>Performance Bond</b></p> <p>\$5,000 per contract x 8 contracts = \$40,000</p>
-------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------



Cash	Cost of Currency, Sept 1	Cost of Currency, Dec 1	Profit/Loss
	\$1,360,000	\$1,461,000	-\$101,000

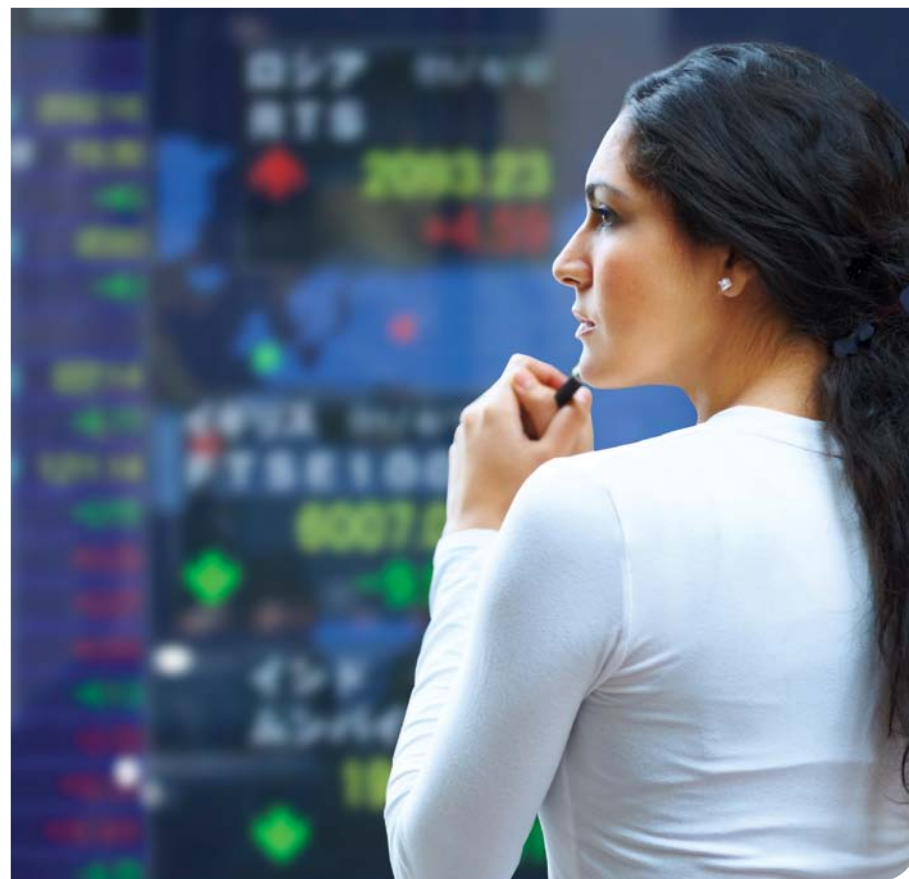
Futures Position	Price of Futures, Sept 1	Price of Futures, Dec 1	Profit/Loss x 8 Contracts
Long 8	\$1.3610	\$1.4611	\$101,000
		Net Profit/Loss	-0-

In this case on this date, the U.S. company would be required to deposit about \$5,000 per contract, or \$40,000 to hedge the currency risk associated with this deal. Keep in mind the amount of the required performance bond is subject to change based on market conditions. Because the price of the euro rose, the company had to pay more to purchase €1 million (euros) on December 1. However, this increase in cost was offset by the profits realized from being long the futures contracts. By hedging with futures, the U.S. company locked in the price it paid for euros and fixed the ultimate cost of the equipment. Keep in mind if during this period the dollar strengthened compared to the euro, the futures position would have sustained a loss, but the cost in dollars of the equipment would have declined as well.

**If the U.S. company was buying euro currency futures, who was selling them?**

Any number of market participants might have taken the other side of this trade: a company hedging against a possible decline in the value of the euro, a speculator looking to take advantage of an opportunity, or a European company buying products in the United States. Similar transactions happen hundreds of thousands of times every day.

The open and transparent marketplace provided by CME Group has become the primary source of price discovery for markets including grains, energy, metal, currencies, equity indexes and interest rates. The dramatic trade volume in these markets allows hedgers to reduce risk and speculators to pursue opportunities in an extremely liquid marketplace.



**“  
Being in control of your own destiny is what trading is all about.  
It’s a constant battle, not with the market, but with your inner self  
— the struggle to not let your emotions dictate your decisions.  
Ultimately, those decisions influence how well you’re doing, and you  
are fully responsible for both the highs and lows.”**

— Kevin Ferry INDEPENDENT TRADER

### Example 2: Individual Traders

For a more detailed look at how futures trading works, let's follow the experience of Jack, an individual who actively trades stocks and futures, in addition to managing longer-term investments. The example is fictitious, but true-to-life for many of today's active investors.

It is important to first note that in futures trading, it is just as easy to initiate a trade from the short side by selling a contract as it is from the long side. Traders with a bullish opinion of the market start their trades by buying futures contracts, while bearish traders start by selling futures contracts.

### Market Opinion

Jack has formulated an opinion on the short-term direction of the stock market. He feels that stocks are poised to rally and sees leadership coming out of the large cap stocks. The E-mini S&P 500 futures contract, one of a family of equity index products from CME Group, gives individual traders like Jack a simple, highly liquid and relatively inexpensive way to place trades based on the direction of the overall index.

Trading E-mini futures makes sense to Jack. Instead of having to research the relative value of a number of large cap stocks, he is able to trade a single contract that

represents the value of the entire index. Jack can trade the E-mini S&P 500 contract electronically almost 24 hours a day during the business week. Jack anticipates a rally in the S&P 500 futures price, so he is looking to buy, or go long, the contract.

Once Jack is ready, he will place his trade using an online trading application (also called a front-end) supplied by his broker. This trading application connects directly to CME Group's centralized matching engine, the CME Globex electronic trading platform, via his brokerage firm. In addition to providing Jack with order execution, the front-end application allows Jack to see the 10 bids and offers closest to the last trade price and other trade information in real time. The CME Globex platform provides all market participants, large and small, with the same prices and trade information. This gives Jack confidence that he is competing on a level playing field.

At each price level, aggressive buyers are able to buy at the best offered price and motivated sellers are able to sell at the best bid price. These trades are electronically matched, cleared and reported to customers anywhere in the world. In an instant, Jack receives a trade confirmation and is able to begin monitoring his position.

### ! DEFINITION

#### FRONT-END

Online software that provides access to exchange products and an order entry environment for your trading.



## Order Entry Screen

Let's take a closer look at the trade Jack placed. Pictured on the right is a generic order entry screen, similar to several popular applications. Actual order entry screens vary somewhat by front-end software vendor and broker.

**A** This field identifies the name of the futures contract you are viewing.

This will populate the order entry screen with the appropriate price information. Each futures contract has a unique symbol that differentiates it from all other products. The product code also identifies the expiration by month and year. For a list of all product codes, visit [cmegroup.com/product-codes-listing](http://cmegroup.com/product-codes-listing).

**B** Use this field to specify the number of contracts you want to buy or sell.

## Specify the Type of Order

The simplest and most common type is the market order. When you place a market order, you agree to either buy or sell at the best available price. Your objective is to have the order executed as quickly as possible. In other words, with a market order you often do not specify a price. The only information you need to provide is **1) the name of the contract you want to trade, 2) the number of contracts you want to trade and 3) whether you are buying or selling**. Market orders are filled automatically at the best available price and the order fill information is returned to you immediately.

**C** This column shows the price and the number of contracts that potential buyers are actively bidding on. Notice that only the 10 best bid price levels are shown.

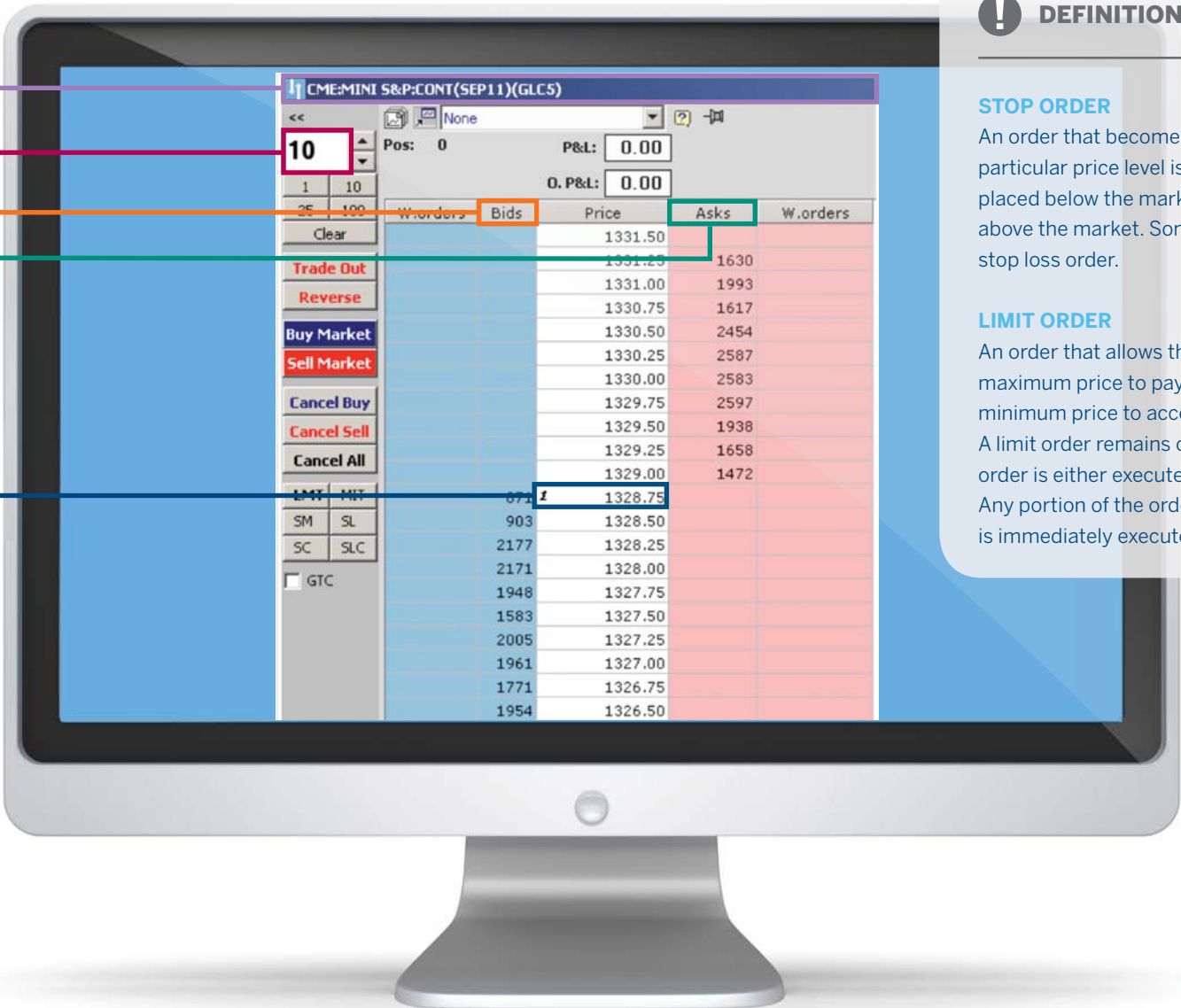
A stop order is an order to buy if the market rises to or above a specified price (the stop price), or to sell if the market falls to or below a specified price. When the market reaches the stop price, your order is executed as a market order, which means it will be filled immediately at the best available price. Stop orders are often used as part of a risk or money management strategy to protect gains or limit losses. For example, a trader who is long a particular market might place a sell stop below the current market level. Then, if the market moves lower and reaches the stop price, the trader's order will be triggered and the position will be offset, limiting further losses.

Limit orders are conditional upon the price you specify in advance. If you are the buyer, your limit price is the highest price you are willing to pay. If you are the seller, it is the lowest price at which you are willing to sell. The advantage of a limit order is that you are able to dictate the price you will get if the order is executed. However, unlike a market order, placing a limit order does not guarantee that you will receive a fill. If the market does not reach your limit price, or if trading volume is low at your price level, your order may remain unfilled. Only the 10 best offer or ask price levels are shown. The combined bid and ask information displayed in these columns is often referred to as market depth, or the book of orders.

**D** This column shows the number of contracts traders are actively offering to sell at the given price listed to the left.

**E** This field shows the price of the last completed trade.

- A
- B
- C
- D
- E



**! DEFINITION**

**STOP ORDER**

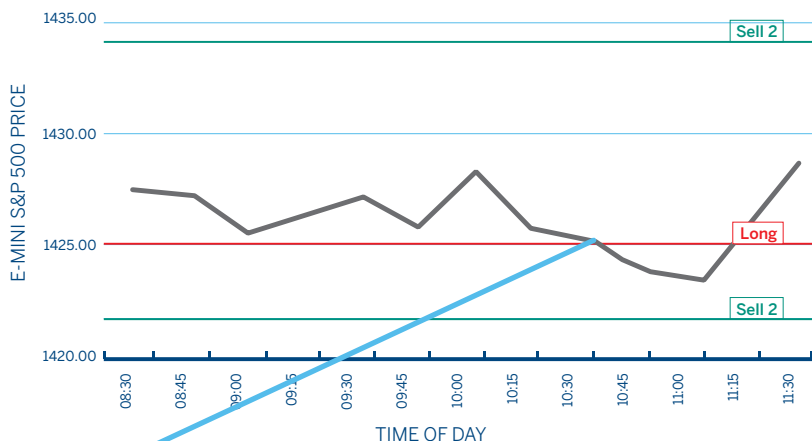
An order that becomes a market order when a particular price level is reached. A sell stop is placed below the market; a buy stop is placed above the market. Sometimes referred to as stop loss order.

**LIMIT ORDER**

An order that allows the buyer to define the maximum price to pay and the seller the minimum price to accept (the limit price). A limit order remains on the book until the order is either executed, canceled or expires. Any portion of the order that can be matched is immediately executed.

## Price Movement

Jack has purchased two E-mini S&P 500 contracts. He will now monitor his position as well as the fluctuations of the market. In addition to this, Jack will place a limit order above the market to take profits if the market moves higher and a stop loss below the market should it move against him.



Jack purchases 2 contracts at \$1,425 and places a Limit Sell order above the market and a Sell Stop order below the market at his predetermined profit and loss levels.

Refer to [cmegroup.com](http://cmegroup.com) for current contract specifications and price information.

Jack is now monitoring his position and observing the fluctuations of the market. Prices change constantly in response to factors ranging from the weather to social and political change. Economic reports and monetary policy decisions can also have a dramatic effect on price. Futures markets are continually attempting to determine price through a process similar to that of an auction house, except the process is a two-way live auction. This is referred to as price discovery. Prices that are too low may stimulate buying, which raises the price. Prices that are too high may stimulate selling, which drives the price lower.

## Exiting the Market

Jack entered the market on the buy side, speculating that the S&P 500 futures price would move higher. He has three choices for exiting the market:

### 1. Offset Position

Offsetting his position is the simplest and most common option for Jack. He entered the market by buying two E-mini S&P 500 futures contracts, so he can offset his position by selling two contracts. If he had entered the market by selling two contracts, he would offset the sale by purchasing two. To limit the risk of holding a position overnight, many individual traders exit all positions and go home flat (no position) at the end of every trading day.

### 2. Roll Position

All futures contracts have a specified date on which they expire. Longer-term traders who do not want to give up their market exposure when the current contract expires can transfer or roll the position to the new contract month. In our case study, if Jack wanted to stay long in the E-mini S&P 500 contract as the December expiration approached, he could simultaneously sell the December contract and buy the following March contract. In this way, Jack would offset his position in the December contract at the instant that he takes an equivalent long position in the March contract. To put it another way, he would effectively roll his long position from the December contract to the March contract.

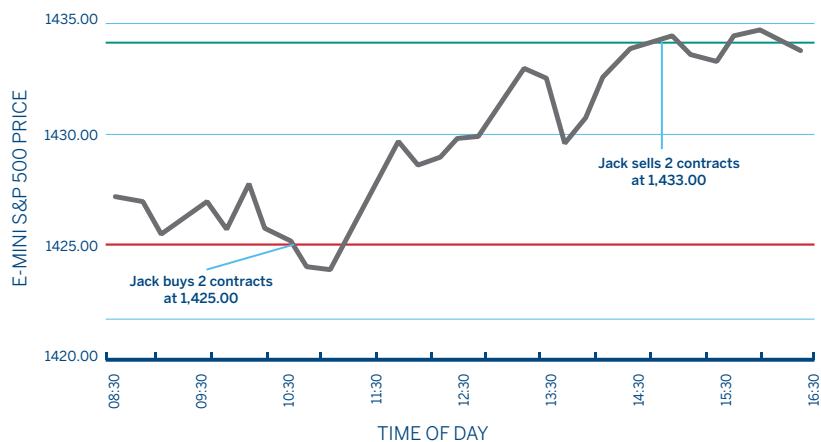
### 3. Hold Contract to Expiry

All futures contracts have an expiration date. One of Jack's options is to hold his contracts until they expire. However, doing so would have certain implications. Some contracts call for the physical delivery to an approved warehouse of the underlying commodity or financial instrument. Others, like the E-mini S&P 500, simply call for cash settlement. Every futures contract specifies the last day of trading before the expiry date. Investors need to pay attention to this date because as the date approaches, liquidity will slowly decrease as traders begin to roll their positions to the next available contract month.

In the case of the E-mini S&P 500, trading terminates at 8:30 a.m. Central time on the third Friday of the contract month. Most of the liquidity, however, will have already rolled to the next contract month by the previous Friday.

## Calculating Profit and Loss

As a day trader, Jack's goal is to finish the day with a positive profit and loss, or P&L statement. Consequently, he decides to offset his position by selling two contracts. If the E-mini S&P 500 contract has risen 8 points since the time of his purchase, how will this affect his account balance? The E-mini S&P 500 contract has risen 8 points, or 32 ticks. Since one tick is equivalent to \$12.50, each contract Jack holds has increased in value by \$400. Jack holds two contracts, so the total effect on his daily P&L will be +\$800. Until Jack exits the position, every tick up or down represents a change of \$12.50 in the value of one contract. Since Jack was long two contracts, his trade was twice as profitable, but if he had been short those two contracts, he would have lost \$800.



Refer to [cmegroup.com](http://cmegroup.com) for current contract specifications and price information.

### E-mini S&P 500 Contract

- Change in price = 8 points or 32 ticks (1 point = 4 ticks)
- Value of 1 tick: \$12.50
- Change in P&L:  $32 \times \$12.50 = \$400$  per contract
- Jack's initial position: 2 contracts
- Total change:  $\$400 \times 2 = \$800$



## How Do I Get Started?

Once you are ready to start trading futures, it is good to first take the following steps on your path to successful trading:

### Begin with Simulated Trading

Before you begin trading, it is important to become familiar with the markets you plan to trade. A simulated trading account will allow you to place trades, cancel orders and gain valuable experience while implementing the concepts discussed in this resource.

### Pick Two or Three Markets to Follow and Experiment with Various Trading Plans

An electronic trading simulator will help to replicate real-world trading conditions. It is a good way to become familiar with price quotations, market terminology and the general behavior of a particular market. To get started using trading simulators, visit [cmegroup.com/tradesim](http://cmegroup.com/tradesim). Trading simulators are also offered by a number of brokerage firms.





## Pick the Right Contracts

There are many futures contracts to choose from. Which ones might be right for you? Markets have individual personalities and are as diverse as the people who trade them. Keep the following important characteristics in mind when choosing a market to trade:

### Volatility

Certain futures contracts regularly experience a wider daily trading range than others and are therefore considered to be more volatile. This volatility is an important variable in determining risk and/or profit opportunity. For example, soybeans have traditionally had a larger daily price range than oats. Some traders prefer the more volatile contracts because the potential for profit can be greater, while the transactional cost of trading remains essentially the same. Other traders, however, find that the least volatile contracts are better suited to their particular strategies because higher volatility means the potential for loss can also be greater.

### Liquidity

When you are getting started, be sure to select products that are known to be highly liquid. Trading in active markets where there is enough volume for you to enter and exit your orders without substantially affecting price will help to ensure that you can exit a position just as easily as you enter it. To quickly gauge the liquidity of a market, traders may look at **1) the distance between the best bid and ask prices (also known as the bid-offer spread), 2) the number of orders resting in the market at each bid and offer level and 3) the frequency with which trades take place.**

Liquidity can also be described in terms of volume and open interest. Each unit of volume represents a complete transaction. When one trader buys a contract and another trader sells the same contract, that transaction is recorded as one contract traded. Open interest refers to the total number of futures that have not been offset or fulfilled by delivery. Open interest is calculated by counting the number of open transactions at the end of each trading session. To illustrate, a market with open interest would have at least one market participant who chooses to remain long one

contract, as well as another participant who chooses to maintain the offsetting short position at the end of the trading day. Volume and open interest are reported daily and are used by traders to determine the level of activity in a market for a given day or a price movement.

Some traders consider price moves that occur during periods of low volume to be less important due to the apparent lack of participation by larger market participants. However, the price movement on higher volume suggests that a more substantial market event has taken place. Traders who regularly monitor average daily volume and open interest may gain an interesting perspective into a particular market. It is generally assumed that markets characterized by high open interest and low daily volume have substantial commercial participation. This is due to the fact that commercial hedgers tend to hold open positions for longer-term hedging purposes. Conversely, high-volume markets with low open interest tend to be considered more speculative in nature.



#### DEFINITION

##### VOLUME

The number of contracts in futures or options on futures transacted during a specified period of time.

##### OPEN INTEREST

The total number of futures contracts long or short in a delivery month or market that has been entered into and not yet offset or fulfilled by delivery, also known as Open Contracts or Open Commitments. Each open transaction has a buyer and a seller, but for calculation of open interest, only one side of the contract is counted.

## Contract Size

Choose a contract that is appropriately sized for your account and your particular trading style. In some cases, you can even choose between the standard size contract and a smaller version of the same contract known as an E-mini. Examples include the popular E-mini S&P 500 contract, the E-mini NASDAQ-100 and the E-mini Dow. E-mini contracts are 100% electronically traded, usually very liquid, and because of their smaller size, require a lower initial margin or performance bond than their institutionally sized counterparts. There are also E-micro contracts, which are even smaller in size. For example, there are micro-sized contracts available for gold futures, as well as several of the FX products. These are tailored specifically for the individual trader.

## Performance Bonds

The performance bond required to trade a particular product fluctuates and is a function of a contract's value and price volatility. While you may be comfortable in trading volatile markets, the size of your account relative to the value of the contracts you trade and the performance bond required to do so should be considered when selecting which futures contracts to trade.

### ! DEFINITION

#### FULL-SERVICE BROKERS

Full-service brokers provide guidance, research and support, but generally charge higher commissions to do so.

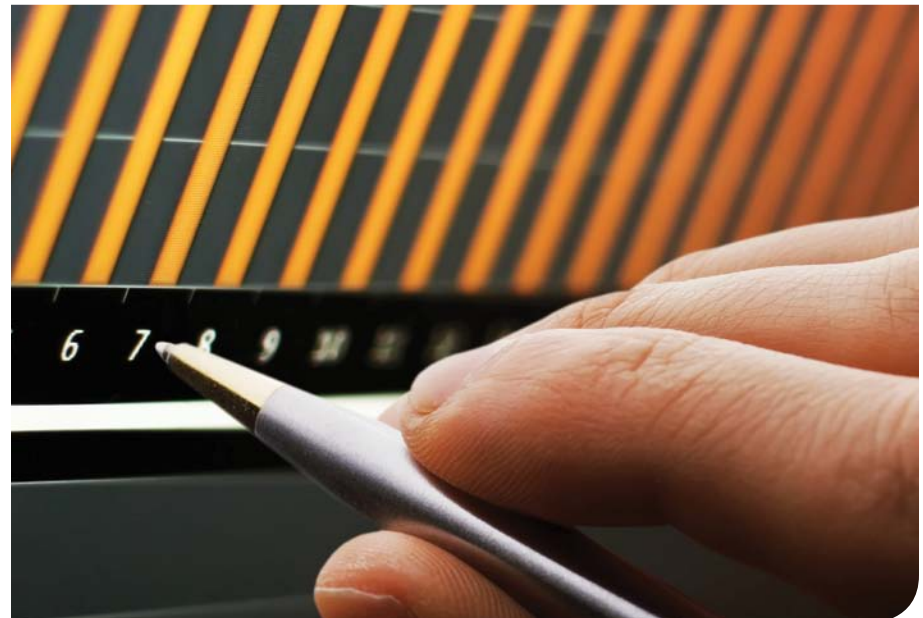
#### DISCOUNT BROKERS

Discount brokers leave all the trading decisions to you. Depending on the level of support and service offered, they are usually able to charge less to execute your trades.

## Select a Good Broker

Before placing your first trade, you need to open an account with a registered futures broker, who will maintain your account and guarantee your trades. In the futures business, brokerage firms are known as either a futures commission merchant (FCM), or an introducing broker (IB). Many securities brokers are also registered to deal in futures. You may want to see if your current broker can provide you with this service. Working with a knowledgeable broker and quality firm can play an important role in your long-term success. Contact several brokers until you find the right combination of cost and service.

Also, be sure to check the background of any potential broker or firm with the National Futures Association (NFA). The NFA directly supervises the activities of all futures brokers and provides background information on all of its members. The NFA provides the complete registration history, as well as complaints, fines and suspensions for all registered brokers and firms. All members of the NFA must observe high levels of conduct that extend beyond the legal requirements. For more information, visit [nfa.futures.org](http://nfa.futures.org).



 **DEFINITION****FUTURES COMMISSION MERCHANT (FCM)**

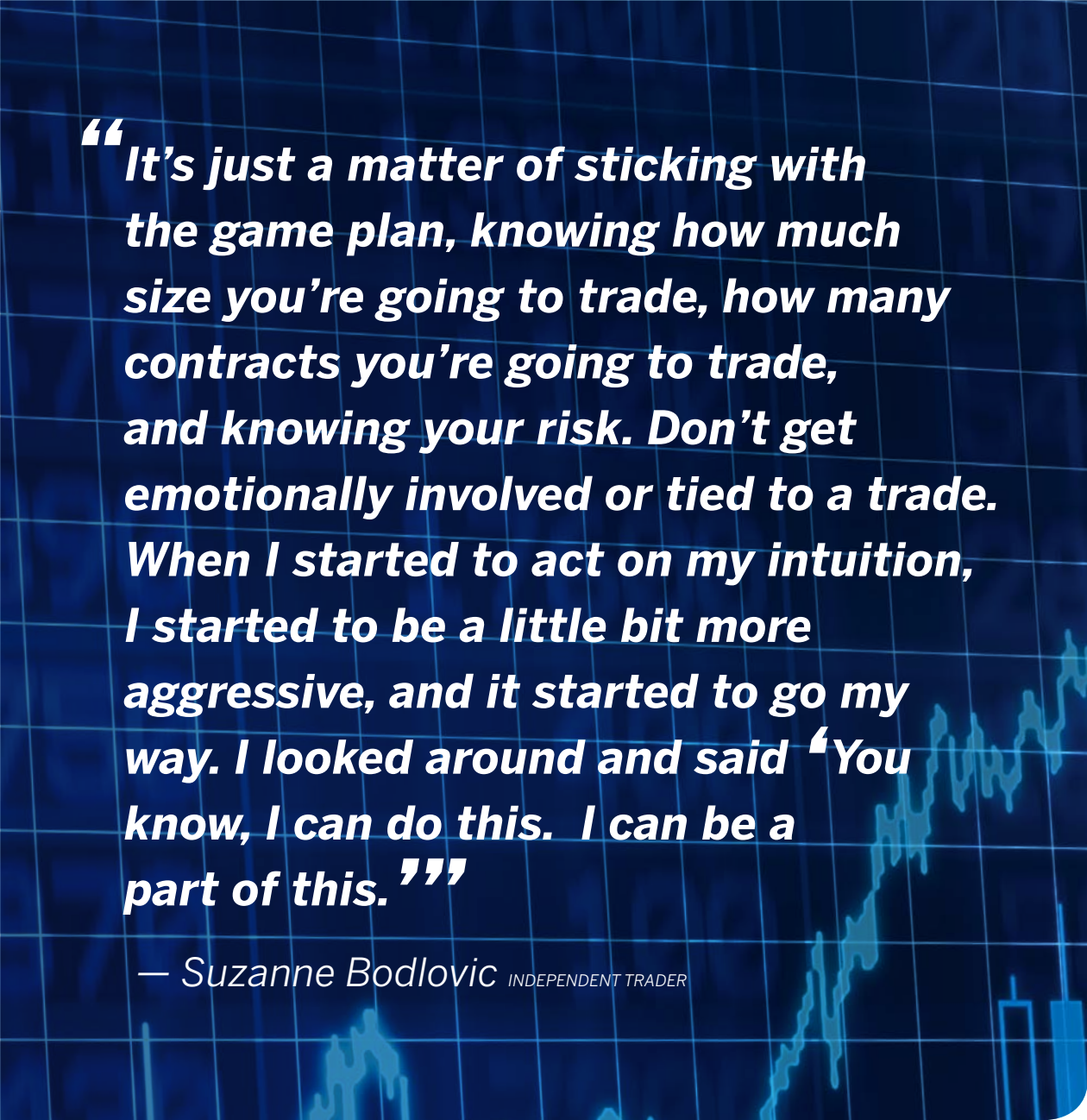
An individual or organization that solicits or accepts orders to buy or sell futures or options on futures contracts and accepts money or other assets from customers in connection with such orders. An FCM must be registered with the CFTC.

**INTRODUCING BROKER (IB)**

A firm or individual that solicits and accepts orders to buy or sell futures or options on futures contracts from customers, but does not accept money or other assets from such customers. An IB must be registered with the CFTC.

**NATIONAL FUTURES ASSOCIATION (NFA)**

The NFA is an independent, self-regulatory organization for the U.S. futures industry with no ties to any specific marketplace.

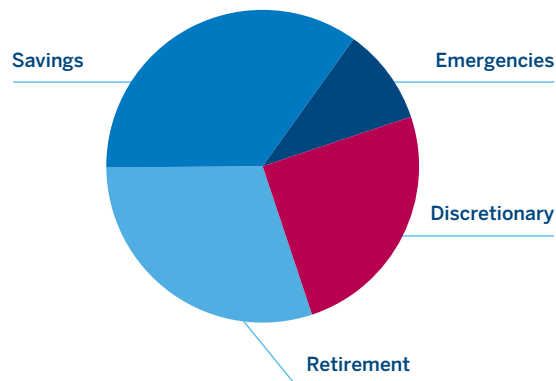


**“It’s just a matter of sticking with the game plan, knowing how much size you’re going to trade, how many contracts you’re going to trade, and knowing your risk. Don’t get emotionally involved or tied to a trade. When I started to act on my intuition, I started to be a little bit more aggressive, and it started to go my way. I looked around and said ‘You know, I can do this. I can be a part of this.’”**

— Suzanne Bodlovic INDEPENDENT TRADER

## Determine the Right Size for Your Trading Account

Spend ample time studying the markets you intend to trade. Make sure you understand the value of the contract and the financial impact of any strategy you implement. Confirm that you will be able to meet the performance bond requirements you may encounter during normal market conditions. The funds you trade should be discretionary, separate from any savings you have set aside for college, retirement or emergencies. In other words, ask yourself if you can afford to lose whatever funds you expose to risk in your futures account. Capitalize your account with enough funds so you only risk a small portion on any one trade. This will allow you to focus on the process of trading rather than simply monitoring the balance of your account.



## Set Definite Risk Parameters Before You Trade

Define your expectations by setting objectives and limits to the risk that you are willing to take. If you find the worst-case scenario to be unacceptable, then look for another trade with risk parameters that better coincide with your needs. Determine exactly how much of a loss you are willing to accept. You can express this as a point value or a dollar amount. By establishing your risk limits upfront, you set your expectations and lessen the possibility of emotions dictating your decisions. The easiest way to let a losing trade get you into trouble is by not setting specific maximum loss parameters at the beginning.

## Have a Trading Plan

Before you actually enter into a trade, develop a plan to guide your decision-making process. Your plan should be based on careful analysis of the markets you intend to trade. The following are some of the issues you will want to evaluate. What is your objective for the trade? To capitalize on an anticipated report, chart pattern or market indicator? To participate in a longer-term trending market? How much risk is in the trade and how much risk are you willing to accept? If the trade turns against you, at what point will you liquidate the position? What types of orders will you use? Can you have protective stop loss orders resting in place? How will you monitor market developments and price movements? Visit [cmegroup.com/gettingstarted](http://cmegroup.com/gettingstarted) for tutorials that may be useful in developing your trading plan.

## Stick to Your Plan

As the saying goes, failing to plan is planning to fail. A key element that differentiates many successful traders from the unsuccessful traders is discipline. Successful traders have emotions like everyone else, but they do not let their emotions get in the way of making good trading decisions.

For instance, when the market moves against a trader and passes through a previously established exit point, a good trader will exit the trade and accept the loss. This does not mean that the trader is happy about the loss, but he or she understands that having a good plan is only half the battle. The other half is sticking to it. You can search the online bookstore at [cmegroup.com/bookstore](http://cmegroup.com/bookstore) for additional reading material on this topic.

## Diversify

Rather than risk your entire trading capital to a single position right off the bat, it is prudent to take smaller positions, involving several trades or contracts. At the same time, be careful not to spread yourself too thin. Depending on the markets and the approach, you may have a difficult time executing your strategy while monitoring a large number of positions. When you are just getting started, it is important to remove as many distractions as possible.

## Know Your Position

Last, but definitely not least, it is your job to keep track of your positions at all times. Fast-moving markets and periods of high volatility can test even the most seasoned veteran. Keep a detailed journal of all your transactions and have backup procedures in place in the event that your Internet connection goes down. Know your broker's policy on how to place orders over the phone and who to contact should you have a question about your position. Many brokers will assist you in viewing the transactions that appear on your statement. At the end of the day, however, it is your responsibility to know your position.



Even seasoned traders should continue to educate themselves on the markets. To stay up-to-date with the latest developments and new learning opportunities, be sure to check back regularly at [cmegroup.com](http://cmegroup.com) for our daily market commentary, online tutorials, strategy papers and new product offerings. You can also provide instant feedback for the materials you find on the site. We are always interested in hearing from our customers on how we can improve our offerings.

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For more information on futures, please contact CME Group at [info@cmegroup.com](mailto:info@cmegroup.com) or **312 930 1000**.

## SECTION 6

# Futures Quiz

## ? QUESTIONS

1.) Which type of contracts are exchange-traded in the U.S.?

- A. Forward contracts
- B. Spot contracts
- C. Futures contracts
- D. Deferred contracts

2.) An individual buyer and seller of soybean oil may commit to a transaction six months from now. This is typically called:

- A. Buy/Sell contract
- B. Source contract
- C. Forward contract
- D. Listed contract

3.) What are the main economic functions of exchange-traded futures contracts?

- A. Allow individuals to participate in trading on a "level playing field" with big institutions.
- B. Allow for the transfer of risk and provide a price discovery mechanism for the products represented by the contracts trading at an exchange.
- C. Facilitate investment in commodities and other financial instruments versus stocks.
- D. Offer a way to use leverage for greater investment returns.

4.) Liquidity can be defined as the ability to transact quickly and efficiently without a substantial effect on the price. Which of the following transactions would be the LEAST liquid?

- A. Buying or selling a house
- B. Buying or selling a car
- C. Buying or selling an E-mini S&P 500 futures contract
- D. Buying or selling a U.S. silver dollar

5.) A farmer wants to hedge his entire estimated 75,000 bushel corn crop. It is late June and the crop will be harvested by September. The December corn contract is trading at \$7.00/bushel. The farmer sees this as a profitable price. To hedge the entire crop at the best price, the farmer should:

- A. Sell a December Corn forward contract at \$6.25/bushel.
- B. Purchase 15 December Corn contracts at \$7.00/bushel.
- C. Sell 25 December Corn contracts at \$7.00/bushel.
- D. Sell 15 December Corn contracts at \$7.00/bushel.

6.) Typically, trading equities (stocks) on margin requires at least 50% of the purchase price. Typically, trading futures requires a performance bond (margin) of what percent of the value of the contract?

- A. 3 – 12%
- B. 50 – 75%
- C. 40%
- D. 35 – 50%

7.) Futures trading in the U.S. is regulated by:

- A. The Securities and Exchange Commission (SEC)
- B. The Federal Reserve (FED)
- C. The Commodity Futures Trading Commission (CFTC)
- D. The U.S. Trade and Tariff Board (UTT)

## ? QUESTIONS

- 8.) All trade clearing and transfer of trading profits and losses for accounts trading CME Group products are monitored and administered by:**
- A. U.S. Office of Banks and Thrifts
  - B. The clearing house of the U.S. Federal Reserve Fund Transfer Office
  - C. CME Clearing
  - D. Major U.S. money center banks
- 9.) Trading account funds held by Futures Brokers (Futures Commission Merchants – FCM's) are:**
- A. Commingled with existing funds of customers trading the same products.
  - B. Segregated according to which commodity the customer has traded.
  - C. Completely segregated by individual customer.
  - D. Placed in a single, aggregate account of the broker.
- 10.) Speculators always take the “other” side of trades made by hedgers.**
- A. True
  - B. False
- 11.) Buying or selling at the market is usually the best way to enter into a position.**
- A. True
  - B. False
- 12.) Stop orders can only be used to exit a market position.**
- A. True
  - B. False
- 13) Price move limits remain the same regardless of market conditions.**
- A. True
  - B. False
- 14) Mark-to-market settlement of futures positions is based on end of trading day or trading session prices.**
- A. True
  - B. False
- 15) What factors are important when selecting a contract to trade?**
- A. Volatility
  - B. Contract size (dollar value of the contract)
  - C. Liquidity
  - D. Hours the contract is traded
  - E. B & C
  - F. All of the above

## ANSWER KEY

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- 1.) **C.** Futures contracts. Forward or deferred contracts are between two or more individual (or corporate) entities and carry with them obligations on each party. Spot contracts are similar obligations with an immediate time frame. None of these types of contracts are exchange-traded, and all carry counter-party risk of failure to perform. Futures contracts are exchanged-traded and are backed by financial safeguards in place at the clearing house.
- 2.) **C.** Forward contract. Again, this type of party-to-party agreement is not an exchange-traded contract.
- 3.) **B.** The other choices are benefits, but not the primary functions.
- 4.) **A.** Buying and selling homes are very illiquid transactions. There are numerous factors for this, including substantial transaction costs (agent fees), difficulty in ascertaining an accurate market price and complications in verifying the capability of the buyer to complete the transaction.
- 5.) **D.** This will lock-in the potential income for the farmer based on market conditions at the time the hedge is put in place. Keep in mind if the price of corn rises between late June and November, the farmer will sacrifice any further potential profit. But if the market declines, the sale price of \$7.00/bushel is "locked in".
- 6.) **A.** Performance bond (margin) rates are set by CME Clearing based on several factors and are subject to change. Please refer to [cmegroup.com/clearing/margins](https://cmegroup.com/clearing/margins) for current information.
- 7.) **C.**
- 8.) **C.**
- 9.) **C.** Customer funds are segregated by CME Clearing and are treated as belonging to the customers of the clearing member (FCM).
- 10.) **False.** Because trading CME Group futures contracts are "anonymous" transactions cleared by CME Clearing, it is impossible for participants to know what kind of transaction (i.e. hedge, speculation, offset) is the counterparty to their trade.
- 11.) **False.** There are many ways to enter or exit markets, which are referred to as order types. For a complete list, refer to "Order Types" at [cmegroup.com/education/glossary](https://cmegroup.com/education/glossary).
- 12.) **False.** All order types can be utilized to enter or exit a market position.
- 13.) **False.** Limits are set by the Exchange and help to regulate dramatic price swings. When a futures contract settles at its limit price, the limit may be expanded to facilitate transactions on the next trading day. This may help futures prices return to a more normal trading range.
- 14.) **True.**
- 15.) **F.**



Futures trading is not suitable for all investors, and involves the risk of loss. Futures are a leveraged investment, and because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for a futures position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles. And only a portion of those funds should be devoted to any one trade because they cannot expect to profit on every trade. All references to options refer to options on futures.

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