



# Intelligent Trading

## Commodities, Forex, Futures and Options

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## FOCAL POINT CONCEPTS: Primer on Notional Funds and Leverage

By Mack Frankfurter, Chief Investment Strategist

Here is an interesting fact: the face value of over-the-counter derivatives is approximately \$500 trillion; this amount stands in stark contrast when compared against the combined GDPs of all nations in the world, estimated to be \$50 trillion. Question is, how is it possible that these derivatives are worth ten times more than all the economies of the world? The answer is that this \$500 trillion amount refers to the “nominal value,” which is the *stated value* of the derivative. Simply, this amount does not represent real money, but references an amount used to construct the contract.

Futures contracts are also constructed around the concept of a “nominal face value.” This amount fluctuates based on the contract’s trading unit size and quoted price. For example, wheat futures are quoted as 1/4 cent per bushel, and a single wheat contract involves the delivery of 5,000 bushels—as a result, assuming the contract settles at \$8.96, the contract’s mark-to-market value is \$44,800. This is the amount which a buyer would need to pay if he/she were to take delivery of 5,000 bushels of wheat.

It is important to note, however, that commodity futures traders seldom make or take delivery of the underlying cash asset, but instead liquidate the futures contract before the delivery period. Accordingly, a futures trader does not need to come up with the \$44,800 cash, but instead, is only required to put up an initial margin requirement.

Margin requirements for futures is akin to a “good faith deposit.” This is very different from how margin is defined for the purpose of trading securities. When trading securities, an investor “borrows” money from the broker which is collateralized by other assets held in the account. The limit on borrowing in this manner is currently set at 50% of marginable securities—this limit has not been changed in many years.

On the other hand, the “good faith deposit” required to trade a futures contract can be as low as just 2% of the contract’s nominal face value. As of this writing, the initial margin requirement for a wheat futures contract is \$6,075 and the maintenance margin

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CME S&P 500 Index  
(Symbol: SP)

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requirement is set at \$4,500. This is all that the investor has to maintain in his/her account to trade a wheat futures contract. However, if the mark-to-market value of the account drops below the maintenance requirement, additional monies must be deposited in order to maintain the position. Otherwise, the position must be liquidated.

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*“This relationship between margin requirement and the nominal face value constitutes leverage.”*

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This relationship between margin requirement and the nominal face value of a futures contract constitutes leverage. Leverage allows commodity trading advisors the potential to produce high returns as well as large losses. An important factor to know then is the average and maximum amount of margin a trading program requires to be traded.

### **Margin-to-Equity Concept**

The above description serves as necessary background in order to begin discussing managed futures and notional funding. This is where the proverbial rubber hits the road.

When a commodity trading advisor designs a trading program, he or she usually establishes a baseline account level which determines the number of contracts that he/she will trade for that unit size. The aggregate margin requirement for these contracts is then divided into the account level in order to determine the margin-to-equity ratio.



Margin-to-equity percentages are usually conveyed as the average margin utilized to trade a baseline account level; however, it is also helpful to know what may be the expected maximum percent. The following is an example of how this works.

Let’s imagine that a commodity trading advisor has developed a trading program which trades one wheat contract per \$50,000 base account size. Using information from the prior section, the average margin-to-equity is the initial requirement of \$6,075 or 12%. Allowing for drawdowns due to trading losses, a prospective customer could place just \$25,000 cash in the account, which the trader utilizes in order to trade the wheat contract.

The above is an example of a 50% funded account as a function of the nominal account size. While the commodity trading advisor will calculate rate-of-returns based on the \$50,000 trading level, the investor’s actual return is a function of the monies deposited.

### **Different Kinds of Money**

Given what we have learned so far, we can now finally define “notional funds”!

Notional funding is the difference between the actual cash deposited into the trading account and the trading level account size agreed to by the commodity trading advisor and the investor. Unfortunately, it gets a little more complicated...

Technically, there are two kinds of actual monies: “actual funds” which are deposited into the trading account, and “committed funds” which is real money that is deposited in an account other than the trading account, yet *committed* to the trading program.

Fortunately, the idea of committed funds is not something an investor normally needs

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to be concerned with. We discuss it here because it is defined by futures regulations and it relates to the next concept which is often used in managed futures.

### Cross-Margin Accounts

As we have seen in the examples above, because margin utilized for a trading program is normally less than the trading level, a “fully-funded account” could in theory provide funding for two or more trading accounts. In practice, this is called cross-margining.

A “master cash account” funded with actual monies is usually how cross-margining is set up. This account is crossed against sub-accounts in which the trading occurs.

The key is to monitor closely the margin utilization of each trading sub-account, and to make sure that the aggregate margin-to-equity relative to actual funds on deposit is in line with your risk parameters.

Admittedly, this process can be a little complicated. For that reason, it is advisable to work closely with a broker to construct an optimized “multi-advisor portfolio.”

### Advanced Considerations

The explanation of notional funding and related concepts in this piece serve to provide a foundation understanding. Investors should note that not all trading programs are designed the same, and there are variations in how these concepts are applied.

For example, some advisors increase or decrease the trading level based on accrued profits and losses in the account, while other advisors maintain the trading level at the agreed size regardless of accrued profits or losses. Some do not even allow notional funding.

Unfortunately, semantic differences in how the various advisors interpret these concepts can lead to confusion. However, a competent futures broker familiar with how the trading advisor has constructed his or her program can be extraordinarily helpful in providing guidance.

Which leaves us with the most important consideration, leverage is sure to increase account volatility. Therefore it is important to ensure that the leverage used is appropriate given the risk of the investment.

## STATISTICAL INSIGHT: Standard Deviation

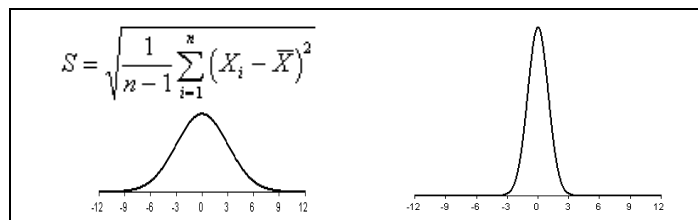


The most difficult investment concept to convey is that of *risk*. Rumsfield’s haiku colorfully describes it this way, “There are ‘known knowns,’ there are ‘known unknowns,’ and then there are ‘unknown unknowns.’” One oft-used method for measuring the risk of an investment portfolio is the statistical tool known as “standard deviation.”

A non-technical way to think of standard deviation is to imagine a car driving down the express highway. If the car is going at the speed limit, it may go a long way without ever changing lanes. However, I’m sure that we have all seen the occasional driver who is going nearly twice the speed limit and is zigzagging across all the lanes of the interstate.

The frequency and amplitude of lane changes represents “volatility,” and standard deviation measures this by plotting the lane changes (i.e., data points) into a graph called a “bell curve.” The middle of the bell curve reflects the average where the data points are most frequent, and the bell splays out as the data points become less frequent.

To help illustrate, the side box shows one bell curve with a wide scattering of data points, and a second with a narrow scattering of data points. The further one goes out on the bell curve, the less likely that one will find a data point lying on that part of the graph. The 68<sup>th</sup> percentile is one standard deviation, the 95<sup>th</sup> percentile is two standard deviations, and so forth as the population becomes less frequent.



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## CONTRACT SPOTLIGHT: CME Standard & Poor's 500 Index (Symbol: SP)

So far we have looked at various futures contracts based on deliverable commodities, such as crude oil, gold and wheat. This month we take a look at a financial futures product based on the S&P 500 Index, an innovative risk management instrument first traded in 1982.

The underlying S&P 500 cash index is designed to be an accurate proxy for a diversified equity portfolio. It is capitalization-weighted and float-adjusted, representing the market value of all outstanding common shares of the 500 firms listed (share price x shares outstanding). This means that a change in the price of any one stock influences the index in proportion to the relative market value of that firm's outstanding shares.

“The financial futures revolution began, like most great ideas, with a single concept: to give business and financial managers the same risk transfer opportunities that their agribusiness counterparts had been using successfully for more than 100 years. Although these types of derivative products began with foreign currency contracts—itsself a revolutionary departure from the theretofore agricultural base for futures—it represented a much broader concept.” [Quote from a 1994 speech by Leo Melamed, former chairman of the Chicago Mercantile Exchange (CME) and a longtime executive in the field of global derivatives.]

The futures contract size is \$250 times the S&P 500 index price, and it moves in 0.10 tick equaling \$25.

### Contract Specifications

<b>Trading Unit</b>	\$250 times the Standard & Poor's 500 Stock Price Index	<b>Price Quotation</b>	1 point = 0.01 index points = \$2.50
<b>Trading Hours (US Eastern Time)</b>	Floor trading: 8:30 a.m. – 3:15 p.m. Central time.  CME Globex platform: 3:30 p.m. – 8:15 a.m. Central time.  On Sundays and holidays, CME Globex trading begins at 5:00 p.m.  Daily shutdown for maintenance is 4:30 p.m. – 5:00 p.m.	<b>Trading Months</b>	March, June, September and December  Position limits: 20,000 net long or short in all contract months combined
<b>Last Trading Day</b>	The Thursday prior to the third Friday of the contract month.	<b>Deliverable Grades</b>	Not Applicable
<b>Settlement Type</b>	Cash settlement. All open positions at the close of the final trading day are settled in cash to the Special Opening Quotation on Friday morning of the S&P 500 Index.	<b>More Information</b>	<a href="http://www.cme.com/clearing/clr/spec/contract_specifications_cl.html?product=SP">http://www.cme.com/clearing/clr/spec/contract_specifications_cl.html?product=SP</a>  <a href="http://www.cme.com/files/EquityIndexManual.pdf">http://www.cme.com/files/EquityIndexManual.pdf</a>

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