

One Size Trading System Doesn't Fit All

*Yeah, running down a dream
That never would come to me
Working on a mystery
Going wherever it leads
Running down a dream*

- Tom Petty and The Heartbreakers

Let's get right down to business: Stocks and commodities are different, and any attempt to trade them on a common technical basis with the smug insistence that your system treats all markets as "just numbers" is doomed to failure. An understanding of these differences will be critical to your trading success as we move into the world of single stock futures trading.

An old associate used to tell the story of a commodity executive who, during one of the huge soybean rallies of the 1970s, would keep one of the plain little yellow legumes wrapped up in his pocket. When the conversation turned to what part of the moon bean prices would land upon, he would pull the bean from his pocket, unwrap it, and proclaim: "Gentlemen, this is a soybean. You won't feed these to pigs at \$13.50 a bushel!"

This is nothing short of received wisdom. Stocks and commodities differ in many different ways, but this is the most fundamental. Nearly all commodities are factor inputs into an economic process: Grains are fed to livestock, gasoline is consumed, money is borrowed, and currencies are exchanged. Stocks can trade on hope alone. Actually, it's best to trade a stock on hope alone, as its price can reflect vaporous delusions: Many good stocks represent terrible companies, and many good companies have dreary stocks.

Commodities, generally perceived to be riskier than stocks, trade on the pedestrian realities of process economics. Futures markets arose to handle the short-term risks associated with these transactions, to facilitate storage and to provide for price discovery. All futures contracts, no matter how long-dated, have a finite life. The futures industry treats the interests of the buyer and the seller symmetrically; there is no equivalent of an uptick rule for selling in futures. Commodity traders don't have to borrow anything to go short; a new short position can be created at any time regardless of your immediate ability to deliver against the contract. While many futures markets still have daily price limits, there is nothing else equivalent to the "the market's gone down far enough; everyone go sit in a corner and cool it for a while" trading restrictions that came into stock trading after the 1987 crash.

A stock, on the other hand, fulfills much of its economic mission, the raising of capital for the issuing corporation, at the moment it comes into being. Salmon spawn and die at the end of a hard life, but corporations spawn and distribute the risks and rights of ownership at the beginning of their indefinite lifespans.

A Different Level Of Volatility

The bounded nature of commodity valuation stands in stark contrast to the more unbounded nature of stock prices. A buyer of commodities will be forced to change his habits if his feedstock costs rise, and this limits the upside for commodities. Let's recall the spectacular quadrupling of natural gas prices in 2000; like most commodity rallies, most of the movement higher took place in a very short time at the end of the rally. Almost 7% of the country's natural gas demand was for the manufacture of ammonia-based fertilizers, and these firms have limited capacity to pass higher costs on to farmers. On December 11, 2000, Mississippi Chemical announced it was selling its gas hedges and more or less ceasing domestic ammonia manufacture. The natural gas rally ended shortly thereafter.

February 2001 Natural Gas: Too Expensive To Use



Would a parallel situation exist in stocks? Probably not, portfolio managers are notorious for end-of-quarter window dressing, and highflying stocks perversely are often in great demand at this time. These stocks have no natural economic limit, as they are not used in any subsequent economic process. Remember that the economic value of a stock is its discounted stream of expected future dividends, and that's not a number you can look up anywhere. As the paean to Tom Petty suggests, we're just running down a dream here.

While this may sound unduly cynical, it's supported by observed volatility patterns. If implied volatility is the market's price for uncertainty, it stands to reason that high volatility indicates a very wide dispersion of value estimates. Commodities, even those with a well-deserved reputation for volatility, typically rank well below stocks on a volatility scale, and this is consistent with the bounded nature of their price moves. We can compare the average implied volatilities of fifty stocks selected as underlying assets for single stock futures against those of a wide range of commodity futures over the year from February 2001 to February 2002. The contrast is as stark as the infamous "red state / blue state" split in the 2000 presidential election.

The natural volatility split is worsened by when information comes into the two markets. Most earnings announcements for stocks come after the close of normal business hours, and most government reports occur prior to the opening of normal business hours. Most commodity markets see their news hit either during the trading day or when electronic markets are open. For short-term interest rate and currency markets, the very concept of a trading day is becoming moot. In fairness, the government crop and livestock reports after the close of business are a major exception to this tendency. All of this suggests a substantial gap risk for stocks relative to commodities, and once again makes us question how commodities got the reputation of being risky relative to stocks.

Red States / Blue States

It's Easy To See

Implied Volatility

Juniper Networks Inc	105.9%
CIENA Corp	104.4%
Brocade Communications System	103.5%

Siebel Systems Inc	93.5%
Veritas Software Corp	90.7%
Advanced Micro Devices	79.1%
Sun Microsystems Inc	77.5%
EMC Corp/Massachusetts	76.6%
Micron Technology Inc	75.5%
eBay Inc	73.6%
Qualcomm Inc	73.0%
Natural Gas	72.0%
Oracle Corp	69.9%
Cisco Systems Inc	69.3%
Applied Materials Inc	67.8%
Compaq Computer Corp	67.2%
Texas Instruments Inc	65.8%
Nokia OYJ	64.5%
WorldCom Inc	63.1%
Dell Computer Corp	57.4%
Genzyme Corp	56.6%
Intel Corp	54.3%
AOL Time Warner Inc	52.1%
Morgan Stanley Dean Witter & Co	51.7%
Coffee C	47.6%
Merrill Lynch & Co Inc	47.5%
Amgen Inc	47.0%
Honeywell International Inc	45.3%
Crude Oil	45.2%
Heating Oil	44.9%
AT&T Corp	42.9%
Microsoft Corp	42.4%
JP Morgan Chase & Co	42.3%
Walt Disney Co	41.6%
Home Depot Inc	40.8%
Ford Motor Co	38.3%
International Business Machines Corp	37.5%
General Electric Co	37.5%
Cocoa	37.5%
Sugar 11	37.0%
Citigroup Inc	35.7%
SBC Communications Inc	34.9%
Bank of America Corp	34.6%
General Motors Corp	34.5%
Wal-Mart Stores Inc	34.4%
Cotton	33.6%
Bristol-Myers Squibb Co	32.8%

Pfizer Inc	31.6%
Verizon Communications Inc	30.3%
Coca-Cola Co	29.6%
Merck & Co Inc	29.4%
American International Group	27.9%
Pepsico Inc	27.9%
Procter & Gamble Co	27.6%
Johnson & Johnson	26.2%
Exxon Mobil Corp	25.8%
ChevronTexaco Corp	24.8%
Orange Juice	24.2%
Corn	23.6%
Wheat	22.7%
Eurodollar	22.6%
Platinum	22.1%
Copper	21.9%
Soybeans	20.8%
Lean Hogs	20.2%
Silver	20.1%
Gold	16.1%
Euro Currency	11.5%
Japanese Yen	11.0%
Treasury Bonds	9.6%
Treasury Notes	7.3%
Canadian Dollar	6.2%
Five-Year Notes	4.8%

Two Market Approaches

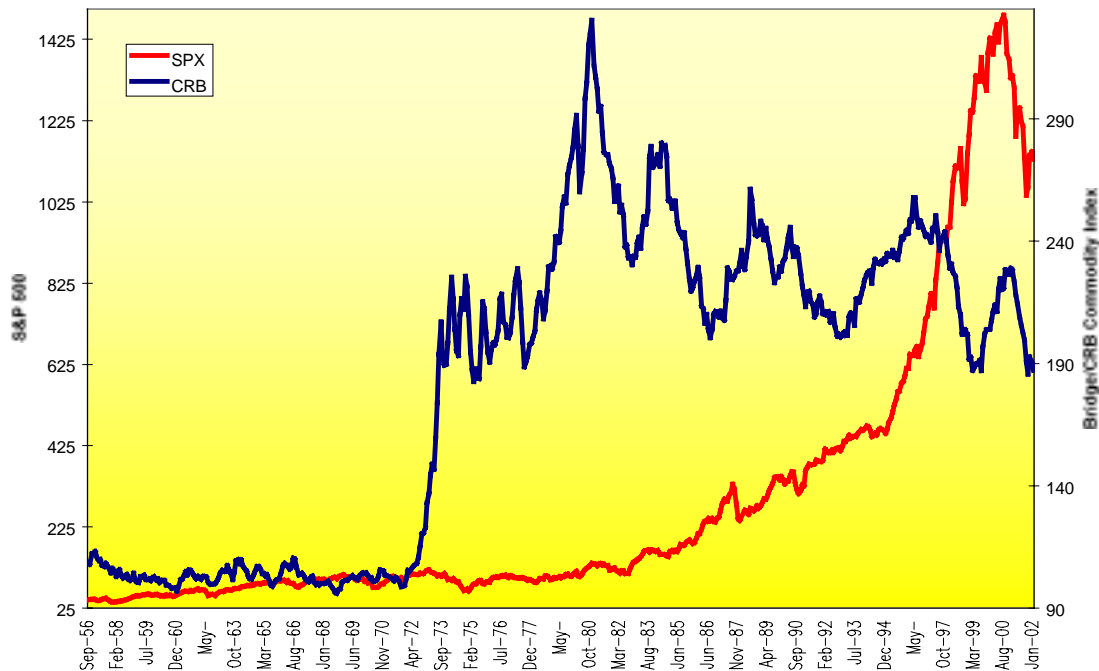
Even with all of the brainpower thrown at trading systems over the years, we still have only two basic ones, trend following and mean reverting. You either buy high to sell higher or buy low to sell high, or the opposite for a short position, and that's it.

The economic value of a stock can change by orders of magnitude, both up and down. Microsoft's price, adjusted for splits, rose nearly 600-fold between 1986 and 2000, and there are many more spectacular increases on record. On the other side, the history of corporate American is littered with bankruptcies wherein the stock goes to zero. No commodity price can jump this high without losing out to substitution, increased supply and decreased demand. If the price of a commodity moved toward zero, people would cut back production and increase demand.

Given the bounded nature of commodity prices and their naturally lower volatility, it stands to reason that most commodity trading systems should be mean reverting? And by the same logic, shouldn't most stock trading systems be trend following? Yet look around the room and note for yourself whether the commodity traders are waiting to hit the rare home run with their trend following systems, and whether the stock traders are taking short, quick profits when huge gains are available.

We can update a graph (see "Next Civilization, No Commodities!" *Futures*, July 2001) on just how pronounced the differences are in the long-term behavior of stocks and commodities. Should the two lines be traded with similar systems on any time frame? It seems both groups have it wrong, but that's why we have a market.

A Tale Of Two Indices: One Trends, One Reverts To A Mean



Get My Drift

Futures represent a financial claim on an underlying asset and therefore can move independently of the underlying commodity. The basis of any futures contract is its cost of carry reduced by any convenience yield. For any year-fraction 'n' going forward, and physical storage cost per unit of time, 'P,' the full carry price of the future is given below:

$$Future_{tn} = Spot_{t0} * e^{n*(r - cy)} + (n * P)$$

For example, a commodity with very low physical storage costs, such as gold, will have a forward curve of its futures contracts that approximates the short-term interest rate cost of carry. A market with well-behaved storage economics, such as grains within an old crop year, will have a forward curve that approximates the short-term interest rate cost of carry plus the cumulative physical storage costs. However, many markets have high convenience yields or seasonal factors that lead to inverted (backwardated) forward curves, and others occasionally move into contango, a state defined by a negative convenience yield.

In any case, the basis of the futures contract, its difference to the underlying cash market, has to converge to zero by the contract's expiration. This convergence distorts the expected continuous lognormal distribution of prices, or geometric Brownian motion, associated with Black-Scholes and other options pricing models:

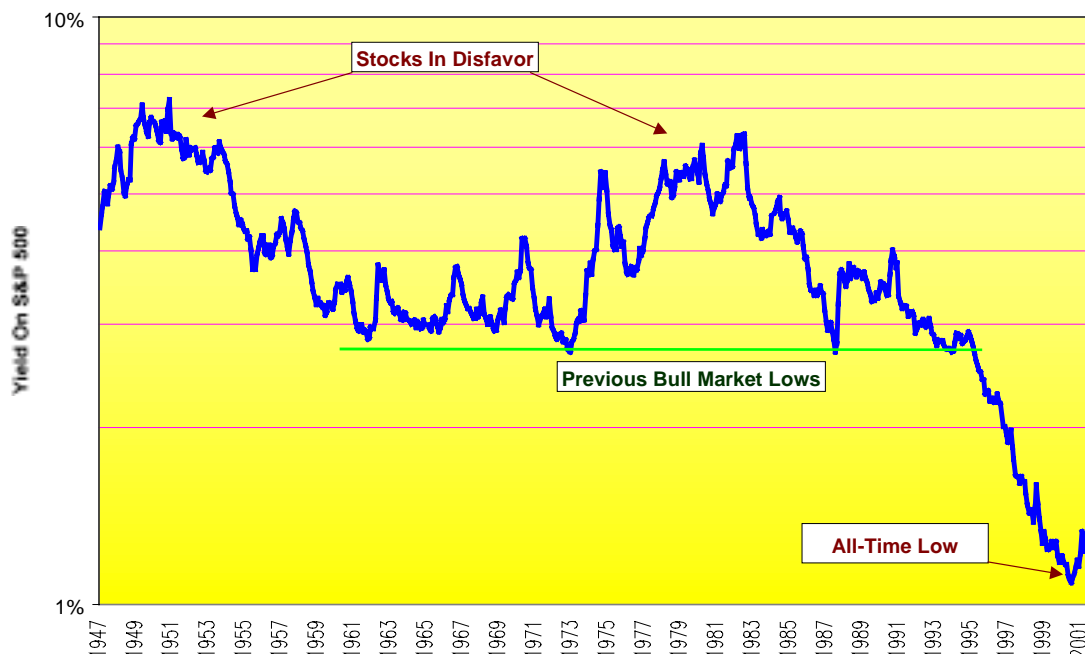
$$Price_{t+1} = Price_{t0} * e^{\mu + .5\sigma * Z}$$

The very presence of basis for a futures contract creates a natural drift term, the μ in the above equation, that is not present in stocks. Volatility, as usual, is represented by σ , and 'Z' is the value of a normal and random variable. The implication for a trading model is simple and straightforward. If a stock goes nowhere over time, you will not see any drift term unassociated with ex-dividend adjustments. If a physical commodity goes nowhere over time, you will see a drift term in the futures contract associated with the amortization or accrual of the basis, and this may be as good as a trend.

Dividends Don't Lie, Do They?

Live long enough, and you'll see a lot of things come back into fashion. The distortions of the tax code and the general preference amongst investors for capital gains as opposed to current income have conspired to drive dividend yields down over recent decades (see "Everything You Know Is Wrong," *Futures*, August 1999).

Will Dividends Return?



Traders know, or should know, there are a lot of reasons for buying anything, and the fact its price has gone down is seldom of the best reasons for doing so. But the arguments for expecting higher dividend yields exceed price alone. Low or absent dividends extend the effective duration of any stock, already an instrument without maturity, even further. While Nobel laureates Merton Miller and Franco Modigliani demonstrated a firm's valuation to be independent of its dividend payout, the risk of holding equities is affected by dividends. Quite simply, you get some of your money back sooner to reinvest as you, and not as corporate management, see fit.

If we are in for a prolonged period of lackluster returns in stocks as seems discouragingly likely, firms likely will increase payouts as an inducement to hold their shares. Dividend payouts affect the price history of stocks without affecting their pre-tax total return. Since we expect stock prices to fall by the amount of the dividend once the issue begins trading ex-dividend, we must account for these discontinuities in our trading models in a neutral manner. A dividend is not a price shock, nor the start of a downtrend, nor anything else that affects the signal portion of our price analysis.

Equity option traders need to stay on top of dividends and their effects. Stock index futures traders already experience the effects of dividend payouts on the index as a whole, but with yields having been so low for so long, the effects have been minor. The Nasdaq 100 future, whose underlying index pays a microscopic dividend of .05%, has an effective basis of the short-term interest rate only, and traders here scarcely pay attention to dividends at all. This is a luxury likely to end for the index futures, and it almost certainly will end for single stock futures as dividend payouts rise.

In On The Action

And, just like natural persons, corporations have all sorts of exciting events, called corporate actions, to prevent everyday existence from getting too dull. These include splits, reverse splits, rights offerings, special dividends, mergers and acquisitions, divestitures, stock dividends and scrip, bankruptcy reorganizations and others in a never-ending list. Anything done by the issuing corporation that changes the number of shares outstanding or the price of these shares is a corporate action. In addition, a corporation may change its by-laws and adopt takeover defenses like "poison puts" or staggered elections for corporate directors. From a technical analysis point of view, these actions change the underlying nature of the asset and distort comparisons to history.

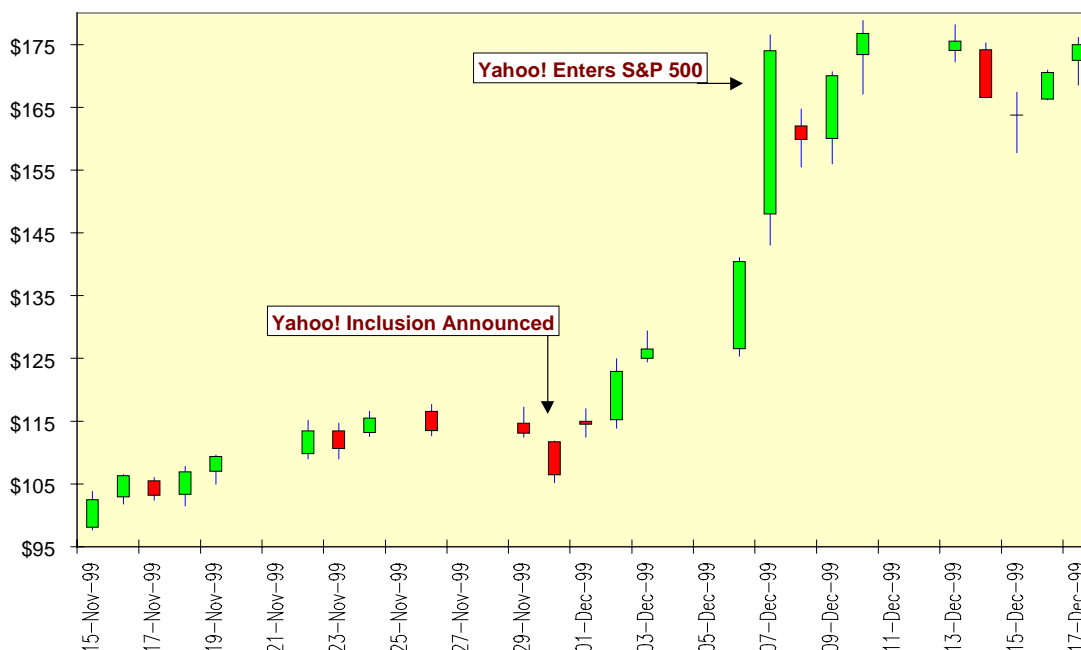
In fact, woe to the corporation whose nature does not change; this is a corporation that has ceased to innovate and remain competitive. We probably have improved various attributes of the wheat plant over the course of its history,

and we most certainly have improved our productivity as farmers, (see "Springtime For Bran Flakes," *Futures*, March 2001) but these changes are minuscule in comparison to the productivity gains seen in technology. On a historic basis, wheat is still wheat, but Intel is an incredibly different entity than it was just twenty years ago. Within bounds, we can say that Intel's all-but-recent history is irrelevant from a technical point of view.

Indexation Is Extrinsic

To a certain extent, we are all indexers now. The very popularity of this strategy creates a trading opportunity around the inclusion date. Stocks being added rise, as index fund managers need to buy them, and remaining stocks in the index often fall as they are sold to accommodate new index members. The most spectacular example of this effect in recent memory occurred in December 1999, with the addition of then-Internet highflier Yahoo! to the S&P 500. The stock had a relatively small float, or number of shares outstanding, and entered the index as the thirtieth largest stock.

Yahoo! And The Indexation Effect



The stock rose a modest 49% in the days between the announcement of its inclusion and its inclusion a few days later, while other stocks fell as they were sold to make room for Yahoo! No such effect exists in the world of commodities, and no technical trading system, not even ones based on jump-diffusion processes, can explain such action. Would anyone wonder about the effect on, say, eurodollars if Goldman Sachs announced the inclusion of Japanese azuki bean futures in its commodity index?

Other Differences

The very different margin systems between the world of equities and the world of futures can force the hand of futures traders after a period of extended volatility. Equity margins are set by the Federal Reserve under Regulation T and are universal regardless of the volatility of the stock. Futures margins are set by the exchanges and respond to increases or decreases in the volatility of the underlying commodity. As futures margins inherently are a lagging indicator, they tend to be raised at the end of a protracted and volatile move and often contribute to its conclusion and reversal.

Futures and stocks are taxed on a different basis. While the unrealized capital gain on a stock is not subject to taxation under American law, the unrealized open equity on a futures contract is taxed on December 31st of each year. Moreover, the frequent expirations of futures contracts create a series of taxable events. Finally, the rules of hedge accounting (FAS 133) create a different set of tax incentives for those who use futures for hedging the risk of an underlying asset.

Sorting It Out

Traders of single stock futures and other equity derivative products need to remember, first and foremost, they are trading the stock as the underlying, and this will dominate the technical trading pattern of these futures. This means futures traders who want to participate in these markets should study stocks and their peculiarities. Stock traders on the other hand need to get comfortable with the key aspects of futures, most notably basis and expiration cycles.

Which group will grab the lion's share of the profits? That's easy: The smart ones.