Futures Trading Using the 14-day Stochastic Signal as Defined and Published by Robert McHugh, Ph.D.,

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Robert McHugh, Ph.D., owns and maintains the website **www.technicalindicatorindex.com.** At this website, he regularly publishes a variety of indicators relevant to future stock market performance. Among these indicators are signals called the 14-day stochastic signals, 30-day stochastic signals, and PPI signals. (This PPI signal is not to be confused with Producer Price Index; the PPI used by McHugh stands for Purchasing Power Indicator.)

All the signals listed above alternate between buy and sell, and there is a separate indicator or signal for the three following major stock indices: the DJIA, the NASDAQ, and the Russell 2000. Although the DJIA and the S&P are two separate indices, the McHugh signal for the DJIA may be applied to the S&P.

This essay will discuss using the 14-day DJIA stochastic signal for trading contracts of the S&P futures index. In November 2005, McHugh published an article about the performance of several of his indicators/signals. The McHugh article lists the various signal dates, together with the furthest extent of the move in the direction of the signal.

The apparent high ratio of 14-day DJIA stochastic signals which were followed by a tradable move in the direction of the signal suggests further research.

Let's briefly explain futures trading for those subscribers unfamiliar with it.

Futures contracts usually are contracts to buy or sell a specific thing at a specific time at a specific price. Most futures contracts, however, are "liquidated" before delivery. In the case of those contracts, no delivery takes place. This fact makes them suitable for use by speculators, who usually hope to profit from small changes in the price of a thing on a short-term basis. Persons who expect prices to rise soon buy a contract. Persons who expect prices to fall sell a contract. When the price has met their target, or when they have an exit signal, they "liquidate." Liquidation leaves them with either a profit or loss, depending on how prices moved while they held the contract.

In addition to futures contracts that involve actual physical things, there are futures contracts re: financials such as bonds or stock indices. Bonds might be actually delivered at the delivery date, but the stock index futures are "settled" by cash.

Futures contracts are traded based on margin, and the leverage is very, very high by comparison with ordinary stock trading or ETFs. For example, *$4000 is sufficient for*

margin for a mini S&P contract, which controls right now about $65,500 worth of stock. *$20,000 is sufficient for margin for a large S&P contract, which controls about $327,500 worth of stock.*

The high leverage of futures contracts means that speculators can make or lose money dramatically faster than with other similar instruments, given the same fluctuation in price. The margin required to trade a mini S&P or a large S&P is just over 6% of the value of the contract.

As a result, a 1% move up or down in the S&P would normally result in a 16% change if made in comparison with one's initial required margin deposit. Prices can easily move against one's position, even in the early stages of what later becomes a profitable trade or series of trades. As a result, traders must normally begin any given trade with more than the "required initial margin." (The exception to this is when one is purchasing an option. *Options on futures contracts may easily be purchased with the same account as is enabled to trade futures*. This essay does not report on the use of options on S&P futures with the stochastic signals, but some might consider it.)

If one wishes to calculate a "rate of return," a person normally must calculate his rate of return based on an amount two times or three times the margin required by the exchange rules.

In order to trade a signal or a system successfully, using a futures contract, one's "practical" margin required is likely to be two or three times the minimum exchange requirement. The reason is, trading with the barest minimum would result, in the case of an adverse price move, in a possible "margin call" and request for additional funds or the liquidation of the position.

Even with signals that are profitable and more accurate than not, the market often moves a few points in an adverse direction, after entry, but before profitable liquidation.

After liquidation of one's position, one's margin account will have increased or decreased approximately by the amount of the move in the S&P futures times $50/point (for the mini) or $250/point (for a large S&P).

Also, persons should understand the word *"drawdown"* while speaking of futures trading. If a person plans on trading a system or series of signals, it greatly helps to plot a hypothetical equity curve. This "equity curve" is the value of one's account from a start date to an ending date. We assume that the "equity curve" of a system would have an upward slope, otherwise we wouldn't consider trading it. However, even given the general increase in one's equity over time, every equity curve will have "drawdowns."

Given a set a data of signals in the past, we can determine that the system or series of signals would have produced *a loss or series of losses* at some point. *This is true, even if the system (or series of signals) as a whole is profitable.* If we are going to trade a

system, it helps to prepare for the drawdowns. (Remember the biblical story of Joseph in Egypt and the seven years of famine.)

In order to trade a system, therefore, we do what we can to predict the future size and duration of drawdowns. Our prediction might not be perfect, and we might even plan ahead for a somewhat worse drawdown than we have seen in the past. Drawdowns are *those periods of time and/or those amounts* that one's hypothetical or real trading account would have taken losses or has been taking losses.

There are some "profitable" systems that speculators may choose not to trade because of the possible drawdowns involved. ***A system that produces a smaller profit may be better for some traders, if that system also experiences/produces smaller drawdowns.***

A speculator who has a willingness and financial ability to tolerate a large drawdown may be said to have a high risk tolerance. A speculator with a more conservative risk tolerance is one who would choose systems, not primarily for the ultimate profit, but to be profitable while also reducing the drawdowns in the account equity.

Speculators who are learning or beginning would be well advised to have a low risk tolerance.

The website ***www.technicalindiatorindex.com*** keeps archives of its newsletters. We have used these archives to supplement our list of signals and bring it current. ***For this article and its accompanying research, we have used the following sources and software:***

1) the article written by McHugh and published in November 2005;
2) his newsletter archives from October 2005 to the present;
3) historical price data for S&P futures contracts found in the software Track'nTrade Pro;
4) the automated accounting function of Track'nTrade Pro for calculating cumulative profit or loss;
5) Tradestation runs on continuous contract data on the mini S&P;
6) personal email with Robert McHugh.

The McHugh performance article in November 2005 lists 33 14-day stochastic signals. Twenty-two of these signals were followed by a move in the DJIA of 2% or more before the next signal was issued. Several of the signals were in fact followed by a move in the DJIA of 4% or more.

There have been 56 alternating signals of the 14-day DJIA stochastic since February 18, 2004 and up to July 31, 2006. Supposing that this signal series might be profitable, let's backtest it and some other possibilities with varying scenarios. Please note that no real money or clients accounts of which I personally know were put at risk in

the following ways, in whole or in part. It may have happened among some of the subscribers of McHugh's newsletter, but I don't have any personal knowledge of such trading results. So all discussion of potential profits which follows is hypothetical.

__The conclusion of the study is the 14-day stochastic offers promise as the whole or part of a possible futures trading system. The profits generated by backtesting suggest significant profits exist even without filtering by the PPI signal.__

Depending on the initial starting capital and willingness to sustain the occasional drawdown, the signal offers __the potential of creating significant returns__. The signal also has the potential to be used in conjunction with other filters, which might conceivably produce superior returns. However, as a matter of risk disclosure, note: *there is no guarantee that the14-day stochastic signals or the PPI signals as defined by McHugh will perform in the future as well as they have in the past.*

Knowing that the future might be different in some ways than the past, let's nevertheless consider some scenarios of how a speculator might use the signals.

1) Take all signals of the DJIA 14-day stochastic signal and that signal only. From the first sell signal, sell at the open of the next day one S&P contract. Be short, until the open of the day after the next signal, which is a buy. Then, reverse by buying two contracts. Be long, until the open of the day after the next signal which is a sell. Continue this procedure up to July 31, 2006. The last signal in our time period is the buy signal of July 19, 06.

   Although it may be slightly arbitrary, we will exit on the close of July 31, 2006 to close our last position, although we have not yet had a new sell signal. Also, we shall specify that we shall use the "front" S&P contract month for initiating new positions, unless we know from our list of signals that the trade will last over the expiration date of the front month. In that case, we'll use the next available contract month.

2) This is the same as in scenario #1, but for each signal, we establish a profit target of 20 points on the S&P, the target being calculated from the closing price of the S&P futures on the date of the signal.

3) Take all signals of the DJIA PPI signal and that signal only. In order to give this signal every possible benefit, we'll take its signals up to September 1, 2006. We will be long one S&P futures contract with the PPI is on a buy signal, and short an S&P futures contract when it is on a sell signal.

4) We will take the 14-day DJIA stochastic signals only when they are within the window of opportunity of the PPI signal. That is, we'll take a stochastic buy signal if the PPI is on a buy signal, issued previously or the same day. Also, since there are several instances in which the PPI follows the 14-day stochastic day by a single day, we'll take those signals also, but those we'll

take on the open after the PPI has changed to confirm the 14-day stochastic signal. Since using a 20-point profit target seems valuable, we'll use that for this run. We'll exit any given trade when a) we're filled in our profit target; b) there is a new 14-day stochastic signal; or c) if the PPI indicator itself has turned in the contrary direction. Since the PPI signals start 2/4/05, our time period for this study is only from 2/4/05 to 7/31/06.

5) We'll run the same scenario as in #2, limited to the time from 2/4/05 to 7/31/06.

6) Taking the PPI signals only, but with a profit target of 16 points from the closing price of the date of the signal;

The previously specified scenarios produce the following hypothetical trading results:

1) A hypothetical profit of $88,325 before commissions and fees;
2) A hypothetical profit of $96,400 before commissions and fees;
3) A hypothetical loss of $9,720 before commissions and fees;
4) A hypothetical profit of $36,050 before commissions and fees;
5) A hypothetical profit of $62,675 before commissions and fees;
6) A hypothetical profit of $32,650 before commissions and fees;

Some conclusions one might draw from these hypothetical runs and their related hypothetical trading results include:

1) ***The 14-day stochastic signals, despite occasional drawdowns, appear to be significantly profitable, with or without any filtering by the PPI signal;***

2) The trading results of taking the 14-day stochastic signals exist whether or not one is using a specific profit target. They may possibly be improved by adopting a 20-point profit target, if one is trading using S&P futures or mini S&P futures. The target is calculated from the closing of the date of the signal;

3) Although the long-run profits of trading the stochastic signals without the PPI filter or other similar filters are large, that strategy isn't suitable for futures traders with low risk tolerance. This is because of the drawdowns which may occur and which would have occurred in late 05.

4) ***If one is trading by using the PPI signals without any filters, using a profit target of 16 points dramatically improves the hypothetical trading results over having no exit strategy than waiting for the next signal;***

5) A PPI signal, by itself and not considered with any other filters, in the time period studied, has a 61% chance of seeing a move of 16 points in the S&P futures in the direction of the signal before the next signal;

6) The stochastic signals, by themselves, have a slightly lower "accuracy rate" in generating trades that would be filled at their profit target than the PPI signals. However, in the time period studied, there are more than twice as many of them as the PPI signals;

7) Nearly all PPI signals, when they occur, are in the same direction as a pre-existing or simultaneous 14-day stochastic signal;

8) In the time period studied, there were only two (out of 23) PPI signals which occurred in the opposing direction to the pre-existing or simultaneously issued stochastic signal. In both cases, the market then continued in the direction of the PPI signal at least 16 points. It is hard to know if these two of out two cases indicate the usual case. *If one is in a trade because of a stochastic signal and a new and opposing PPI signal occurs, caution or exiting might be wise;*

9) Less than half of the stochastic signals, when they occur, are in the same direction as a pre-existing, simultaneous or next-day PPI signal;

10) If those signals specified in the line above were taken during the time period studied up to 8/31/06, the resulting trade has a 2/3 chance, in the time period studied, of being filled at the profit target of 20 points;

11) *Without filtering by the PPI*, the stochastic signal gives us 3 consecutive losing trades in the time period of 11/15/05 to 1/3/06, and speculators were "whipsawed" around from March 21 to April 18 of 06. We also had a larger than usual loss in July 04. Our largest "close-to-close" drawdown amount in late 05 would have been $18,855 if trading a large S&P, or $3,771 if trading a mini S&P. Our large drawdown period runs from 10/27/05 to 1/3/06, *assuming no filtering*;

12) ***Using the PPI signal as a filter on stochastic signals offers good promise as a profitable system, especially for speculators of less experience or more conservative risk tolerance. The PPI signal as a filter would have very sharply cut the drawdown in late 05. However, there is the additional effect of reducing total profits overall, in comparison with the signals unfiltered.***

13) Taking the PPI signals by themselves, for both entries and exits, seems unlikely to be profitable. This is in contrast to the stochastic signals;

14) Speculators may be rewarded if they can find filters for the 14-day stochastic signals which leave intact more of the winning trades than does the PPI signal;

15) The major losing patches from taking the 14-day stochastic signals are found in July 04, June 05, Nov-Dec 05, and March-April 06.

16) If one is using a profit target of 20 points, the longest time period of losing trades and drawdown in a hypothetical account is from 10/26/05 to 1/3/06. During this time there were 4 "bad" signals without the PPI filter. **With the PPI as a filter, two of those bad signals are not taken, and the loss on a 3rd bad signal is reduced;**

17) **There may be an additional beneficial use of the PPI signal. There are four occasions on which the PPI signal "confirmed" the 14-day stochastic signal, but was "late" by exactly one day. Assuming that one had entered on the morning of trading after the stochastic signal, the PPI signal confirming later by exactly one day seems to be associated with one's being filled at a larger profit target than 20 points, if one had chosen to recalculate one's profit target.**

18) A stop-loss amount of 40 points affects one single trade resulting from a stochastic signal, that of 7/12/04, a loser.

19) **A person with an initial $50,000 and the willingness to continue through the drawdown periods might have chosen to trade the stochastic signals without filters. Over the whole span of time studied, this would have resulted in a profit of $88,325 before commissions and fees, somewhat more than doubling;**

20) **We may take George Soros as an example of professional money managers. He and his hedge fund have an annual average rate of return of approximately 35%. The stochastic signals, taken with or without the PPI as a filter, offer the possibility of comparatively excellent rates of return. Traders with these signals might even do better, on a % basis, than Soros;**

21) In the time period studied, a stop-loss amount of 40 S&P points would leave running all trades that result in eventual winners. In the time period studied, a stop-loss amount of 25 S&P points would leave intact all but two of the potentially winning trades

22) Using that stop-loss amount (25 S&P points) would have resulted in one's being "stopped out" of two trades that would otherwise have gone on to be a winner.

Please note that no stops were used in calculating these hypothetical trading results. A Tradestation run on continuous contract data up to November 2005 did not find that the use of any particular stop loss amount improved performance. In fact, the

use of stop-loss amounts of less than 37 S&P points degrades the performance. (Of course, any particular speculator might choose to use stops for risk management.)

David Zaitzeff is a futures broker and may be reached at PFG West at 800-656-0443, or by email at davidsmail008@yahoo.com He would be happy to discuss trading strategies, especially those involving the 14-day stochastic and/or the PPI, with subscribers to McHugh's newsletter. He would be happy to produce hypothetical equity curves for clients who might wish to explore some of strategies discussed above.

Note re: profit calculation: In calculating the profit or loss on trades involving the PPI as a filter on stochastic signals or by themselves, for the sake of convenience there were some occasions on which I was using a different month than the front month. I do not believe that this had any significant effect on the cumulative profit or loss of the scenarios described.

Hypothetical and Risk Disclosure Disclaimer

All trading has the risk of loss. Not all persons are suitable for futures trading.

Past performance is not necessarily indicative of future results. Profits from trading any given system cannot be guaranteed.

Persons who are consider trading futures with any system or series of signals is advised to review an equity curve of the performance of those signals.

The data for this essay comes from sources deemed reliable but not guaranteed.

All information contained in the above article is hypothetical. As of Sept 1, 2006, no actual trading account personally known to the author has taken trades based upon any signals such as those described above. Nevertheless, it is believed that some subscribers to McHugh's newsletter did in fact take some trades with some unspecified instruments based on signals as discussed above. Any trading results from such trades are unknown to the author at this time. It is believed by the author that McHugh is aware of successful actual trades initiated by some his subscribers as a result of some of his signals, but the author cannot guarantee this.

Hypothetical performance results have many inherent limitations, some of which are described below.

One of the limitations of hypothetical performance results is that they are generally prepared and presented with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. The ability to withstand losses or to adhere to a trading program despite losses are material points which may adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any given trading program which cannot be fully accounted for in the preparation of hypothetical performance results, many of which may adversely affect actual trading results.

There are frequently sharp differences between hypothetical performance results and the actual results achieved by any particular trading program.

Trading results are likely to vary in various ways from individual speculator to individual speculator, unless they have both adopted and adhere to the same set of trading rules without exception.

Robert McHugh Ph.D.'s Comments Re: David Zaitzeff's article *Futures Trading Using the 14 Day Stochastic Signal et. al.:*

I had not met David before he initiated this article. David prepared this analysis independent of my involvement and simply asked that I consider it for publication in the Guest Articles section at www.technicalindicatorindex.com . David's research appears to be extensive and thorough, but I have not audited his work and thus cannot comment on the accuracy of his findings, albeit his findings are fascinating to say the least. Thanks, David, for all your hard work and your willingness to share your research with our subscribers.

Additional Comments by Robert McHugh, Ph.D. Re: his proprietary Stochastic and Purchasing Power Indicators:

1) There are several ways to use our Stochastic and PPI indicators other than as discussed in the above article. David Zaitzeff's article deals exclusively with their use in futures contract transactions.

2) The Stochastic and PPI indicator signals can also be used as a guide for when to increase or decrease long positions in conservative cash market portfolios, such as stock portfolios or stock index portfolios including exchange traded funds and mutual funds. Some people add to their portfolios when buy signals are generated, while others increase cash when sell signals are given.

3) Our Stochastic and PPI signals can also be used for options contract trades, leveraging profit potential over actual cash market performance. Oftentimes a 2 percent move in the S&P 500 can translate into a 20 percent to 30 percent profit in the options market, albeit with risks that one must understand and accept before investing in options.

4) We are not advocating one investment strategy over another, as each individual must choose what works best for her or him based upon their risk appetite, trading experience, and financial position.

5) My opinion is that our key trend-finder indicators – the Stochastic and PPI signals – are entry signals, not exit. Exit strategies depend upon the risk appetite, trading experience, and financial position of the investor. As

David Zaitzeff's article demonstrates, setting profit targets may be one of several preferred exit strategies to consider.

6) Many folks choose to trade one indicator alone, while others use more than one in order to filter the other in an attempt to increase their success rate, but perhaps at the risk of lower returns. Other filters are available at www.technicalindicatorindex.com that can be selected for use in conjunction with the Stochastic and PPI indicators. Some of these include incidences when our percent above 30 day or above 10 day averages move to either an overbought or oversold extreme; incidences when our Plunge Protection Team Intervention Risk Indicator rises above 20.00 percent; incidences when buy or sell signals are triggered on our 10 day average Call/Put Ratio indicator; incidences when our 10 day average Advance/Decline Line Indicator generate buy or sell signals; Elliott Wave analysis high probability wave completion points; Fibonacci phi mate turn dates and Fibonacci Cluster dates; and technical analysis pattern completions to name a few.

7) Investors should pick and choose indicators and filters in combination with one another, along with their choices of investment vehicles, that best suit their unique investment skills, risk appetite, and financial strength in conjunction with strategies designed with the help of their investment advisors. Speculators should only invest a small portion of their total portfolio, and only invest what they are prepared to lose.