

Lane's Stochastics

by George Lane, M.D.



-oo0(GoldTrader)0oo-
Shoestring Trading

In 1954, I was fortunate to join Investment Educators as a "gopher". I carried luggage, ran the projector, made charts, and took attendance for the owner, Ralph Dystant, and for the technical "guru," Roy Larson. When Mr. Larson (who was getting on in years) retired, Mr. Dystant became the guru for the stock market and I took the No. 2 spot teaching commodities.

Mr. Dystant had a heart attack and, for a time, I taught both stocks and commodities. Some 43 members of the Chicago Board of Trade, Chicago Mercantile Exchange, and MidAmerica Commodity Exchange went through our series of basic, intermediate, advanced, and post graduate courses. They were sharp, experienced traders, who took an aggressive approach to their professional training.

When you teach something, you really have to understand how it works. Fortunately for me, I was forced to learn the field of commodities thoroughly just to stay ahead of these students. Ours was the first school to teach a heavy course in Elliott Wave. Our conventions featured such notable speakers of the day as Bolton, Marchal, Jeff Drew, etc. These were research days: 20-hour days, all calculating done by hand. The staff expanded to five. I shall not mention names, as they are all well-off financially, still trading, and don't wish to be bothered.

In our research, our indicators were running all over the page, so we developed the technique of expressing them as a percentage of 100. We developed %A, found it didn't work. We went on to research and to follow 28 oscillators. As we progressed through the oscillators we were developing, we expressed them as percentages as well; thus: %D, %K, %R. Larry Williams has taken our %R and refined it, improved it, and made it one of the more successful trend methods.

In the sixties, we pioneered using the computer to test our oscillators. At that time, computers were vacuum tube models filling large rooms. My, how our computer has shrunk -- land, oh, how its capabilities have increased!

One of the thrills of my life has been to find out that another of our members has been testing %D with an econometric indicator developed at University of Michigan (where we perfected %D) and has found it to be predictive.

How to Use Lane's Stochastics:

This method is based on the observation that as price decreases, the daily closes tend to accumulate ever closer to their extreme lows of the daily range. Conversely, as price increases, the daily closes tend to accumulate ever closer to the extreme highs of the daily range. This concept also holds if you are working in either a weekly or monthly degree.

In working with %D it is important to remember that there is only ONE valid signal. That signal is a **divergence between %D and the stock with which you are working.**

All other signals are only guideposts, or warnings that an important signal is near. The following is a brief description of the various types of formations encountered on the %D chart. We have also provided small diagrams of graphic interest to illustrate the significance of each formation.

I. DIVERGENCE. As previously stated, **this is the only signal, which will cause you to buy or sell.** Briefly stated, when a stock has made a high, then reacts, and subsequently goes to a higher high, while the corresponding peaks on %D make a high then a lower high, **a bearish divergence has been indicated.** A sell signal is upon you.

Conversely, when a stock has made a low, then rallies and subsequently moves down to a lower low, while the corresponding low points of %D have made a low, and then a higher low, you have a **bullish divergence**.

The signal to ACT on this divergence comes when the "K" (dash-line) crosses on the right hand side of the peak of the "D" (solid-line) line, in the case of a top; or on the right hand side of the low point of the "D" line in the case of a bottom.

II. TYPES OF CROSSOVER. A right hand cross over is the most desirable.

III. HINGE. A reduction in the velocity of movement in either "K" or "D" indicating a reverse of trend the next day.

IV. WARNING. When the "K" line has been declining each day and then one day reverses sharply (from 2% - 12%) this is a warning that you have only one or two more days of downward movement before a reversal.

V. "K" REACHING THE EXTREMES OR 0% OR 100%. When the "K" line declines to a value of "0" this does not denote an absolute bottom on the stock. On the contrary, it signifies a pronounced weakness.

IMPORTANT. After "K" initially reaches "0" it will rebound, usually to about 20% - 25% and then come back toward "0". It may not always reach "0" the second time, but should at least come close. (Your experience and observation will indicate closeness to you.) Normally, It will take from 2 days to 5 days for "K" to come back this second time, depending on the velocity of the issue with which you are working.

The importance of it all is that you can **DEPEND** upon its coming back toward zero. On the second time against "0" you can expect at least a minor rally to start.

The reverse of these rules apply at tops using 100%. As in the case of the low, expect a sell-off or correction after the second attempt at 100% by the "K" line. *It must be remembered* that 100% *does not mean* that the stock is as high as it can go, nor does 0% mean that we have reached the culmination of the downward move -- in fact, they mean just the opposite. You will have a reaction or hesitation at that level - - then the resumption of the trend -- of that degree -- which is still in force.

VI. SET-UP. This is another form of divergence. The primary function of this signal is to forewarn of a coming important top or bottom. If a corresponding low is made on a stock and on %D and then a swing to the upside occurs; IF on the sell-off the correction of the stock is normal (in proportion making a higher bottom) but %D falls to new lows exceeding its prior low - a bear divergence set-up is signified.

This means that the next swing up will probably provide an important top. The reverse of this holds true for tops.

VII. FAILURE. When "K" has crossed up through the "D" line and then pulls back a few percentage points the next day, but fails to re-penetrate the "D" line on the downside, we call this a failure - and denotes strength or a continuation of upward progression. The same holds true on the downside.

VIII. DIVERGENCE ON THE "K" LINE ONLY. Many times we observe a divergence on the "K" line only. These divergences will necessarily be a few days apart. Great care must be exercised to match exactly the particular days in question. The significance of this signal is not great, for it merely suggests a minor reaction. If you happen to get this signal in conjunction with a major divergence on the "D" line, you will have an additional aid in timing.



INVESTMENT EDUCATORS

In the below chart, we have what is known as a "Double Bottom" pattern. To an alert trader, this particular pattern makes for an easy profit. It is also one of the safest patterns to trade. Let's dissect what is going on here, step by step.



First, we drew a trendline across the tops as soon as two lower highs were made. Typically, in an established trend, a market will bump up against such a line three or four times before reversing.

Next, we analyze the pattern. Focus on the downswing. In this instance, the price was contracting as it was making its descent. The size of bars on the price chart was smaller than the bars of the previous downswings.

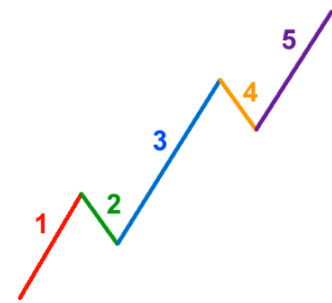
Normally, there will be five "legs" in the downward progression, and then we will see the reversal. It quickly becomes apparent that no new lows are being made at the first leg of the Double Bottom. So, we look for a counter-trend rally --- and we get one! With it, there is a penetration of the trendline. This is a major piece of information!

What comes next is the clincher that tells you that the trend is changing. Price comes back down and touches the trendline, but is unable to make a closing price beneath it.

Since the pattern spells a reversal in trend, we then look to Stochastics to confirm what we think will happen. Stochastics, which was developed here at Investment Educators by our own George Lane, is a momentum oscillator. Its function is to detect changing velocity in trends.

Take a look at the first bottom that the pattern made...the one before the trendline was first penetrated. Look where Stochastics was at the time. Next, look at where the retest of the low was made and observe where Stochastics was at the time of the retest. The second low on Stochastics was higher than the first low on Stochastics, while the price was making equal lows. This is called convergence. Convergence indicates that the momentum has sufficiently changed to predict a reversal in trend. It confirms that the bottom has been made.

On the way up, it quickly becomes apparent that this is a strong, uptrending market. This market is in a hurry to go someplace and we can know this by looking carefully at the size of the "reactions, or "countermoves" that it makes on its way up. They are very small and short-lived. This indicates the aggressiveness of the bulls.



Catching a strong trend like the one shown is what traders live for. They don't come like that every day, so we like to stay in them as long as possible. To accomplish this, there are methods available that will assist us in determining how far a market can go in one direction before correcting again. Elliott Wave is one method that can do this with awe-inspiring accuracy.

We hope you have enjoyed this lesson. Good luck and good trading!

George Lane

GETTING STARTED WITH STOCHASTICS

BY

GEORGE C. LANE & CAIRE LANE



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ABOUT THE AUTHORS

GEORGE LANE was a broker for 10 years, wrote a daily market letter for 11 years, was a member of 3 exchanges and served on the Board of Directors of 1 of them, owned a regional brokerage office with 41 branch offices, and served as Economist/Director of Research for 2 other regional brokerage firms.

A teacher almost as long as he has been a professional trader, he has trained thousands of brokers, market analysts, and financial arbitragers, as well as many more thousands of producers and individual investors all over the world.

He is acknowledged as the originator of and foremost authority on Stochastics.

CAIRE LANE joined her husband in 1979, after a career as a teacher. Studying with George while learning the business, she was a broker and is a Commodity Trading Advisor. She has actively supplemented George in all of his endeavors since that time, including running his research department in his absence and co-authoring his works.

GETTING STARTED WITH STOCHASTICS

Stochastics is the most popular indicator used in technical analysis today. In a world-wide study done by TAG, Stochastics was favored 3:1 over any other indicator. You may have seen it under some of the charts John Murphy analyzes on CNN, or on charts offered by charting services. As you become more involved in trading, you will see Stochastics in almost every computer program for technical analysis of either stocks or commodities used in the industry today.

Stochastics is a momentum oscillator. It compares the Close of the day to the price range of a specified number of periods. As price moves up, the Close of the day has a tendency to crowd the upper portion of the daily range. Just before you get to the absolute price High, the market doesn't have as much push as it did. The Closes no longer crowd the top of the daily range. Therefore, Stochastics turns down at or before the final price High.

Stochastics notifies you that the bull move is over and the trend has changed to down. You get advance warning to take profits on your long position and are in the perfect position to go short for the downmove.

If you are a longer-term trader, trading one-day bars, you can calculate Stochastics with a hand-held calculator, using price information from newspapers and a worksheet to keep track of your calculations. We did it that way for years. You can, then, transfer the information to your chart book, or graph it below your hand-made charts.

FORMULA AND WORKSHEET

The shortened formula for Stochastics is as follows:

$$\frac{\text{CLOSE MINUS 5-PERIOD LOW}}{\text{5-PERIOD HIGH MINUS 5-PERIOD LOW}} = \%K$$

$$\text{SUM OF LAST 3 PERIOD'S \%K DIVIDED BY 3} = \%D$$

$$\text{SUM OF LAST 3 PERIOD'S \%D DIVIDED BY 3} = \%D - \text{SLOW}$$

A period can be a 1-month bar on the bar chart, a 1-week bar, a 1-day bar, a 1-hour bar, a 30-minute bar, a 15-minute bar, a 10-minute bar, a 5-minute bar, or a 3-minute bar. You can change the numbers of bars being considered in the formula from 5 periods to 8, 13, or any other value. The value you select should be based on the cycle you see on the chart with which you are working.

These are the column headings for constructing a worksheet:

1	2	3	4	5	6	7	8	9	10
H	L	H5	L5	C	C-L	H5-L5	%K	%D	%D-S

Directions for using Worksheet:

- (1) Enter the High of the last period in Column 1.
 - (2) Enter the Low of the last period in Column 2.
 - (3) Enter the highest High of the last 5 (or 88, 13, etc.) periods including the current one in Column 3.
 - (4) Enter the lowest Low of the last 5 (or 88, 13, etc.) periods including the current one in Column 4.
 - (5) Enter the current Close in Column 5.
 - (6) Subtract the 5-period Low from Close. Enter in Column 6.
 - (7) Subtract the 5-period Low from the 5-period High. Enter in Column 7.
 - (8) Divide Column 6 by Column 7. **THIS GIVES YOU %K.** Enter in Column 8.
 - (9) Add up the last 3 periods of %K. Divide by 3. **THIS GIVES YOU %D.** Enter in Column 9.
 - (10) Add up the last 3 periods of %D. Divide by 3. **THIS GIVES YOU %D-SLOW.** Enter in Column 10.
- Graph Columns 8 and 9 for fast Stochastics.
 - Graph Columns 9 and 10 for slow Stochastics.
 - Graph Columns 8, 9 and 10 for a 3-line indicator.

Fast Stochastics is the most sensitive to current fluctuations, giving you many signals in %K. If properly structured, it will always give you signals at or before the Top or Bottom.

As a new technician, we suggest that you use slow Stochastics and graph %D (calling it %K) and %D-Slow. This will give you a relatively smooth indicator without some of the fluctuations in %K that might have a tendency to scare a beginner out of the market too soon. It provides a slower signal than fast Stochastics, so, more often than not, you will be joining the trend, rather than anticipating it, but you will be joining it much closer to the Top or Bottom than 80-90% of the traders out there.

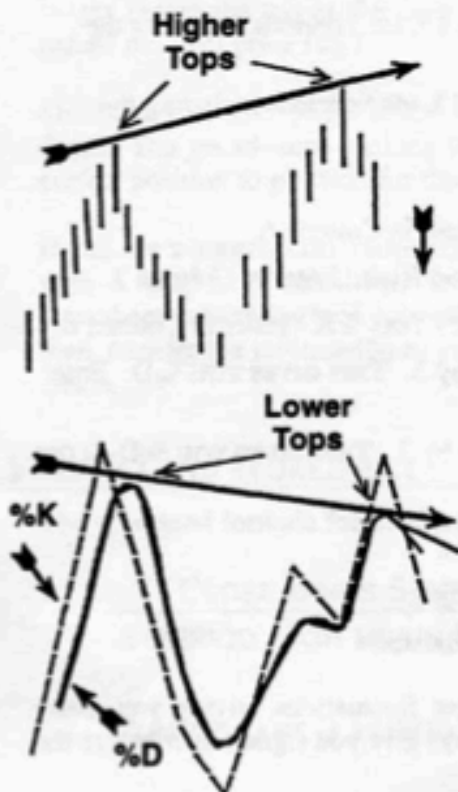
The 3-line Stochastics will give you an anticipatory signal in %K, a signal in the turndown of %D at or before a Top, and confirmation in the turndown of %D-Slow. However, it tends to constrain the trader until receiving confirmation from %D-Slow, which could be well after the start of the move in price.

Now, we will deal with the most important signal generated by Stochastics.

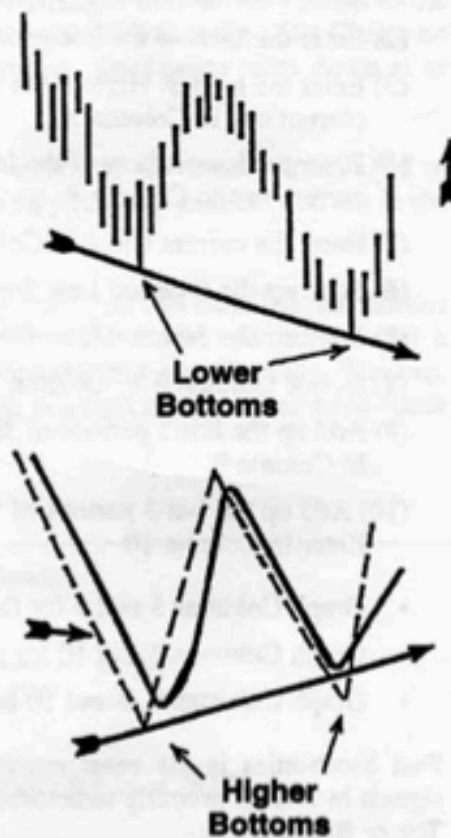
DIVERGENCE - CONVERGENCE

When a stock or commodity has made a High, then reacts, and subsequently goes to a higher High, while the corresponding peaks on %D make a High and then a lower High, a **BEARISH DIVERGENCE** is indicated. Conversely, when a stock or commodity has made a Low, then rallies and subsequently moves down to a lower Low, while the corresponding low points of %D have made a Low and then a higher Low, you have a **BULLISH CONVERGENCE**.

BEARISH DIVERGENCE



BULLISH CONVERGENCE

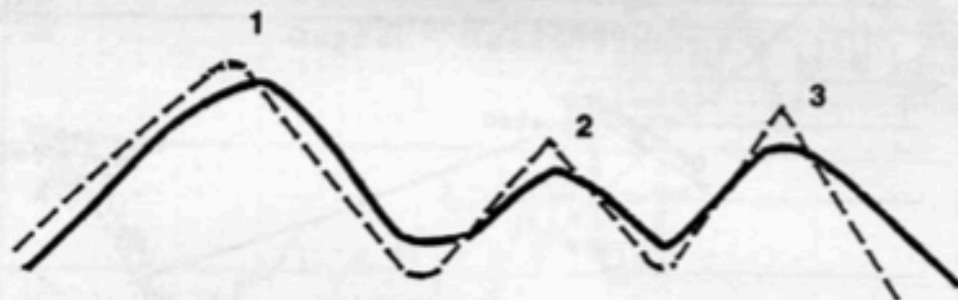


Please note that in the case of a Bottom, the downtrending arrow off the commodity and uptrending arrow off the oscillator will, if extended, converge, while at a Top, the two arrows will never converge.

The signal to act on this divergence or convergence comes when %K crosses on the right-hand side of the peak of %D in the case of a Top, or on the right-hand side of the low point of %D in the case of a Bottom.

Divergence/convergence is a signal which will cause you to sell or buy, but it will be against the major trend of the market.

THE CLASSIC DIVERGENCE SIGNAL



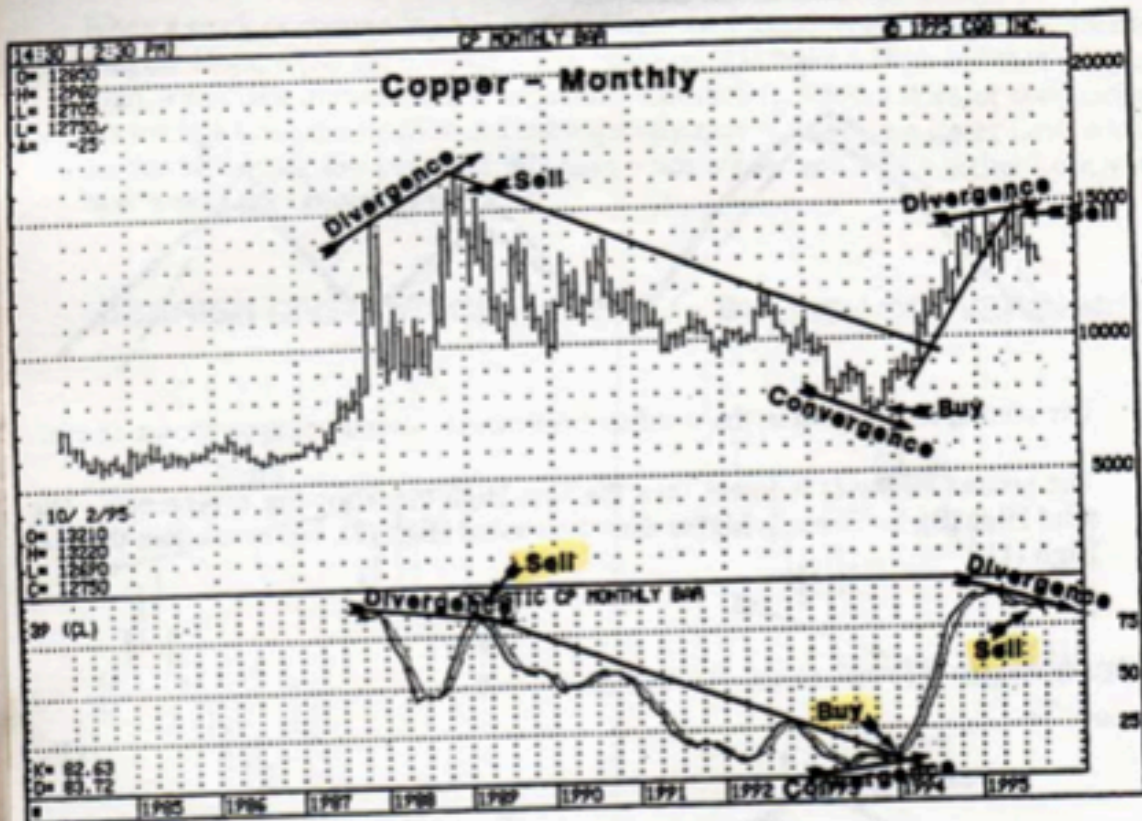
The corresponding Top in the oscillator follows the classic pattern shown above.

The second High (2) is lower than the first High (1), showing divergence. The third High (3), however, is higher than the second High (2), but lower than the first High (1).

SECONDARY DIVERGENCE PATTERN



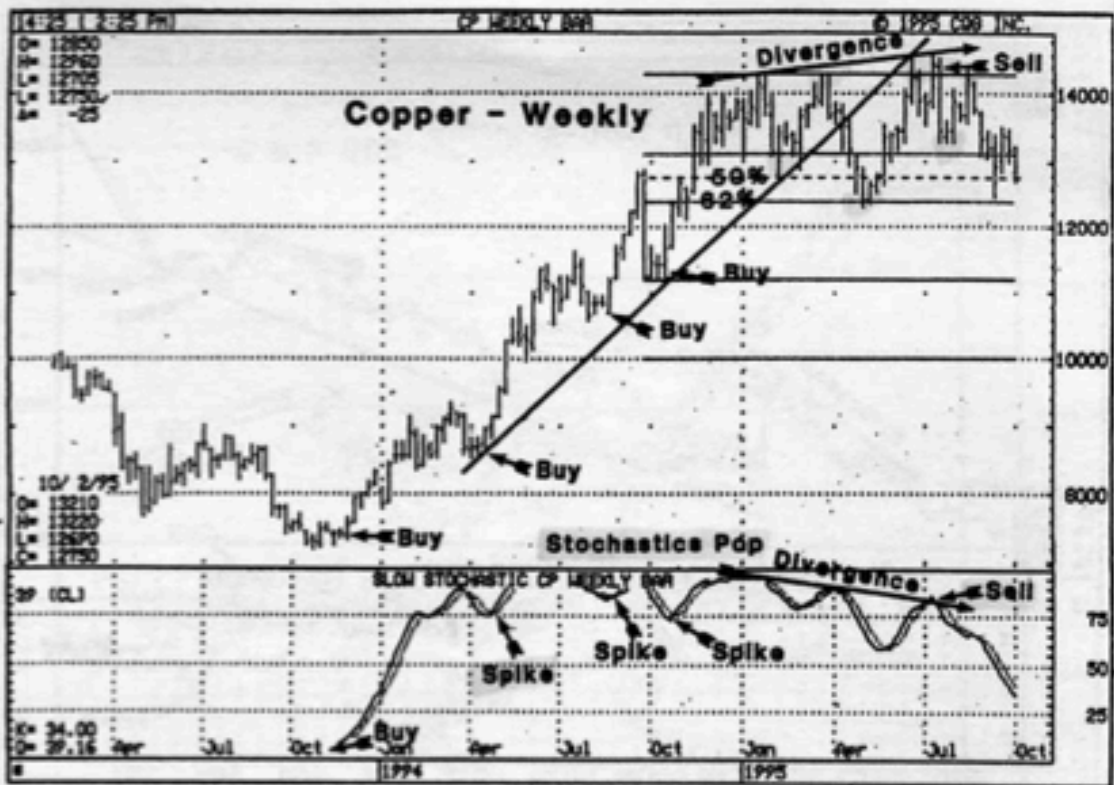
In this pattern, the commodity makes three rallies to a Top, while the oscillator shows a second High (2) lower than the first High (1) and a third High (3) lower than the second High (2), giving a divergence signal.



Applying Stochastics to the monthly Copper chart, we see divergence between the price Highs of 1987-88 and the Tops on Stochastics.

From a High of 164.75, Copper went into a five-year bear market, culminating at a Low of 72.00 at the end of October, 1993. We had a clear pattern of convergence at that Bottom. %K and %D both turned up and, then, so did price.

After a nice move up to the 143.00, we had a breach of the trendline and a move up to the 146.00 area, with a Double Top at 146.00 and 146.10, opposite the old Highs on the wrong side of the trendline. We have a pattern of divergence and a chart that is crying out, "Sell me!"

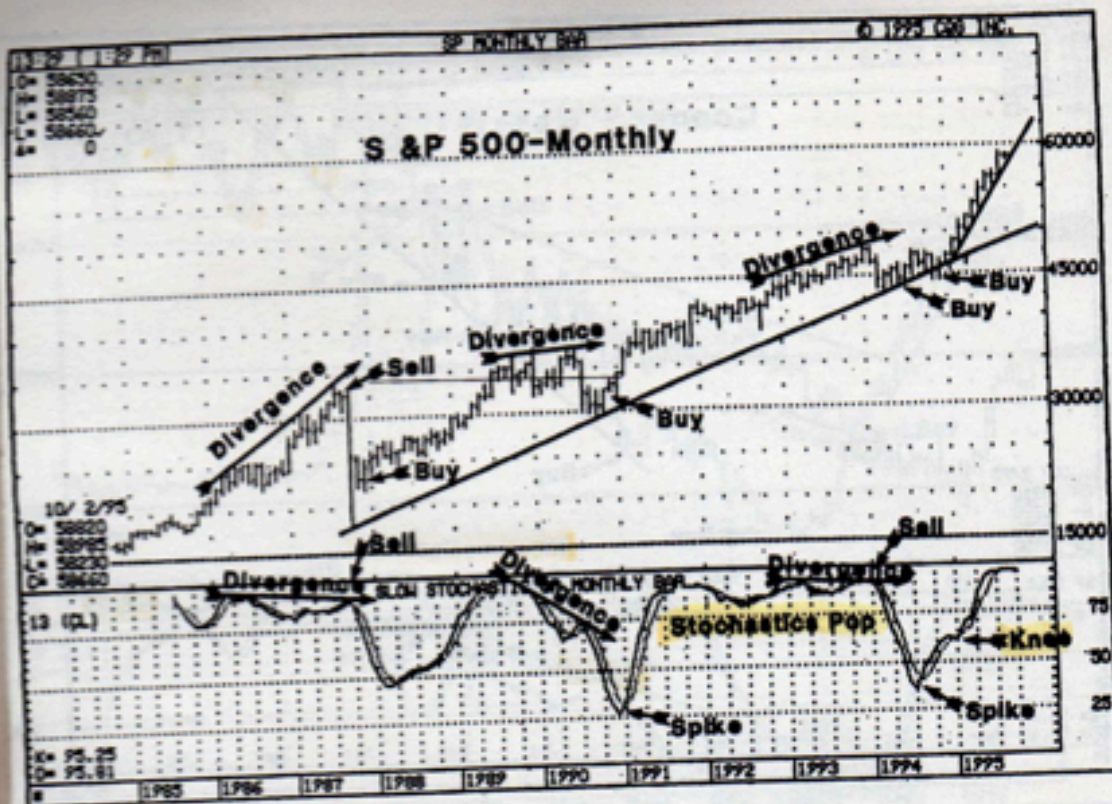


Looking at the weekly Copper chart, we see the Buy at 72.00 during the week of October 25, 1993. The market then entered a Stochastic Pop, with both %K and %D fluttering in the top band, above the 75% level.

In the case of a heavily trending market, use the spike bottoms on the indicator to help you determine when to add to a position. Use a trendline below the price to help you decide when to get out. Your only problem will be remembering to roll over your position with the new contract months – and what kind of car to get to drive all your new wealth to the bank!

At the beginning of 1995, the market made a Top at 142.90 the week of January 16th, reacted exactly 50%, then, moved up to a Top at 143.00 the week of March 27th, for a Double Top. Then, the market reacted 62%, turned around and made a Top at 146.00. It gunned this Top for a High of 146.10 on July 7, 1995, had a reaction and a rally that failed.

During these tops, Stochastics gave us a Secondary Divergence Sell Signal!

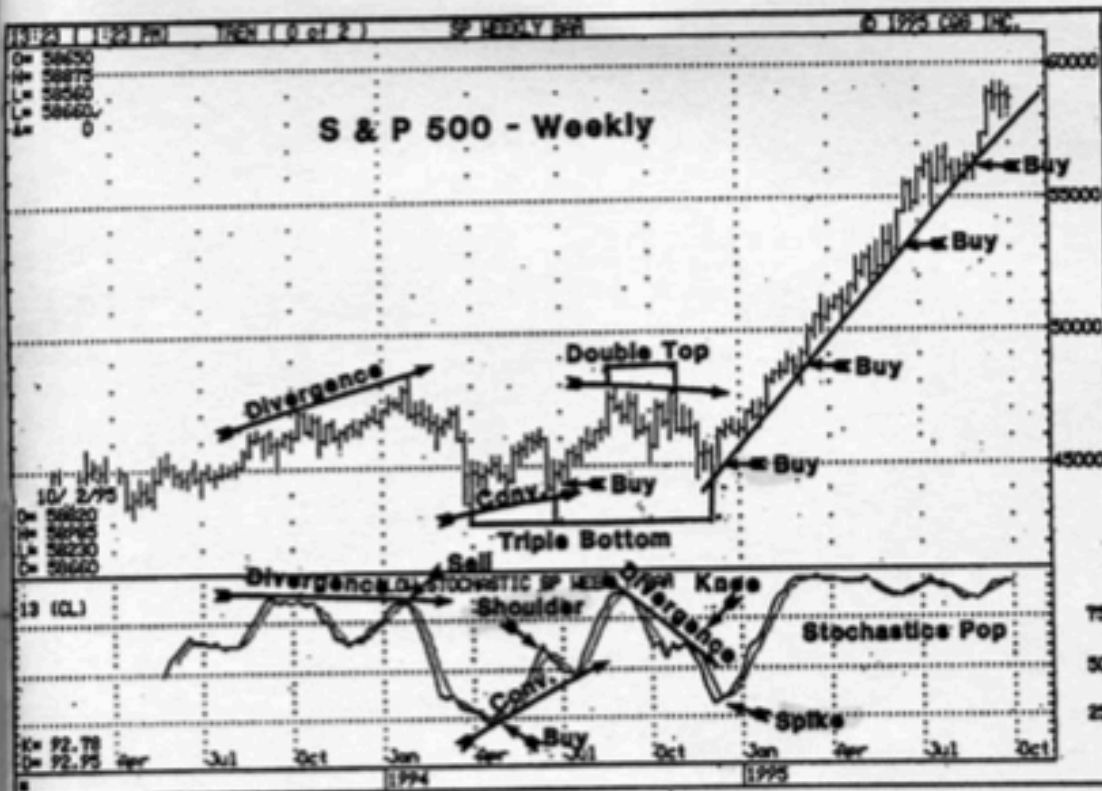


Applying Stochastics to the long-term monthly S&P 500 chart, we see a beautiful, predictive Sell Signal prior to the precipitous decline of October, 1987. Following the correction, which yielded nearly \$50,000 profit per contract in one day for the savvy trader, the market resumed its upward climb.

In 1989-90, divergence in Stochastics predicted a minor decline, while a spike bottom in Stochastics signaled a return to the upside. The market, then, had another Stochastics Pop, with %K and %D fluttering above the 75% level.

In late 1993, Stochastics gave a divergent Sell Signal and the market reacted in early 1994. But, the reaction on the price chart took the form of a broad base. A spike on the Stochastics told us that the trend had actually returned to the upside. A knee on the indicator at the right leg of the double bottom was a continuation pattern denoting strength in the direction of the trend.

Since then, the chart has increased its momentum to the upside. This steep an angle of ascent, characteristic of a runaway bull market, is impossible to maintain for any length of time. In the past, it has been the kiss of death to many a market. However, the S&P 500 leads a charmed life and, as of this writing (October, 1995), Stochastics has not given us a Sell Signal.



Applying Stochastics to the weekly S&P 500 chart, we see divergence in 1993-94, leading into a sell-off. During the sell-off, several interesting things happened.

We got a Buy Signal in April - May, 1994, so we bought. We got a shoulder at the second leg of a Double Bottom, so we bought again. The market moved up to a Double Top with a pattern of divergence, so we covered our Long position and went Short against the major trend. The market didn't go very far before giving us a spike change in trend.

We could now see that what had appeared to be Double Bottom on the monthly chart was, on this chart, base with a Triple Bottom, a bias to the upside and a spike return to the major trend in Stochastics, so we went Long for the long haul. Meantime, we'd had a lot of fun for profit!

The weekly chart began the current, much steeper drive upward at the very end of 1994 and has maintained its momentum during the entire year of 1995. We are in a Stochastic Pop on the indicator, with no Sell Signal in sight.