# THE STO DON'T LIE

## TECHNICAL ANALYSIS AND THE INTEREST RATE CYCLE

As the 30-year Treasury bond continues to spike to ever lower yields under the ominous mantle of world deflationary expectations (this written as of 08/09/98), and the august and redoubtable pundits forecast a freefall to long bond rates not seen since the 50's, it is well to remember that "extrapolism" is a dangerous game when applied to as cyclically receptive phenomena as interest rates. One need only advert to the myriad indicators in technical analysis ("TA") to be duly chastened on that count.

Almost all TA indicators, from the simplicity of relative strength, to the complexity of directional movement, will do yeoman's work in limning the overbought, oversold, buy and sell points in the periodic interest rate cycle swings.

But one particular TA deserves to be singled out for special recognition and commendation for its exemplary service in divining these arcane cycles: It is that TA known as the Stochastic ("Sto"), or Stochastic Process.

## A QUICK PRIMER

### What is the Stochastic Process?

The term "stochastic" in statistics refers to random or chance variables, or that which involves chance or probability. The price behavior of all cash and commodity instruments embodies those descriptions and was duly noted by Dr. George Lane nearly 40 years ago. Lane observed that as the level of the price of an instrument continued to rise or fall, its closing price tended to be closer to the top or bottom of the range, respectively. In an attempt to rationally quantify this empirical dynamic, he constructed a formulaic process by which a stochastic or "educated guess" as to the direction of an instrument's price could be confidently applied and designated it as "Stochastic Process".

### How is the formula for the Stochastic Process determined?

The Stochastic is always measured through the relationship of two lines, %K and %D, which determine the relative overbought or oversold condition of a traded instrument in its particular market. As %D is a moving average of %K, the latter (represented by a solid line), will always appear to move "faster" than the former, (depicted as a dashed line).

In its simplest form, the Stochastic variable, or %K, is derived in the following manner:

$$\%K = 100[(C-L)/(H-L)] \qquad \text{where } C = \text{Close},\ H = \text{High},\ L = \text{Low}$$

By construction, it is evident that %K may vary from 0 to 100%, measuring the closing price as a percentage of the total range. Depending on the time frame desired, %K may represent this relationship for a selected number of minutes, hours, days, weeks, months , years, or any other interval.

The Stochastic variable %D is simply a moving average of %K and will, therefore, describe the identical movements of %K on a lagged basis. Other common references to the Stochastic such as "Slow Stochastic", "Smoothed Slow Stochastic", "Exponential Slow Stochastic" are no more than statistical techniques applied to the basic Stochastic in order to enhance its prognosticative value and to filter out extraneous and distorting statistical "noise".

### How is the Stochastic interpreted?

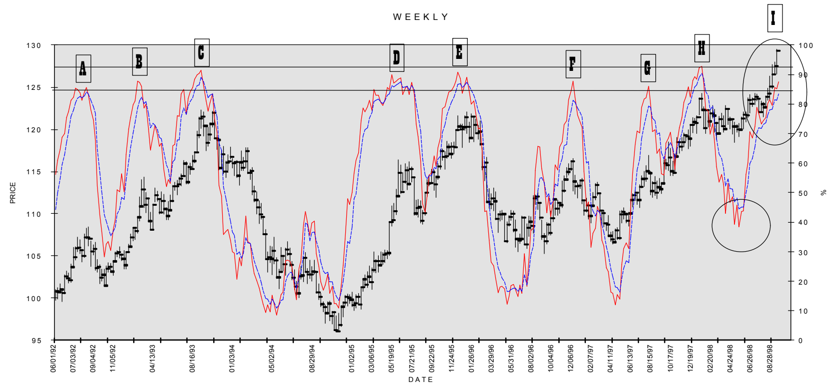
The Stochastic is constructed as an oscillator, cycling periodically between overbought and oversold conditions. An overbought condition is signaled when it rises beyond the 80-85% zone, while an oversold condition is indicated when it falls below the 10-15% level. A sell signal is triggered from an overbought condition when %K crosses down through %D and the converse from an oversold position. The validity and authority of either signal is enhanced when the cross of %K is effected after the apex or nadir of %D, respectively. Divergences, bullish or bearish also figure prominently into the presumption of strength in the ensuing move. A bullish divergence occurs when %D forms two declining peaks (the 2nd lower than the 1st), while the price of the instrument moves higher and the converse for a bearish divergence. The optimal signal is triggered when a leading %K cross occurs in an extreme zone accompanied by a divergence.

## THE FUTURE

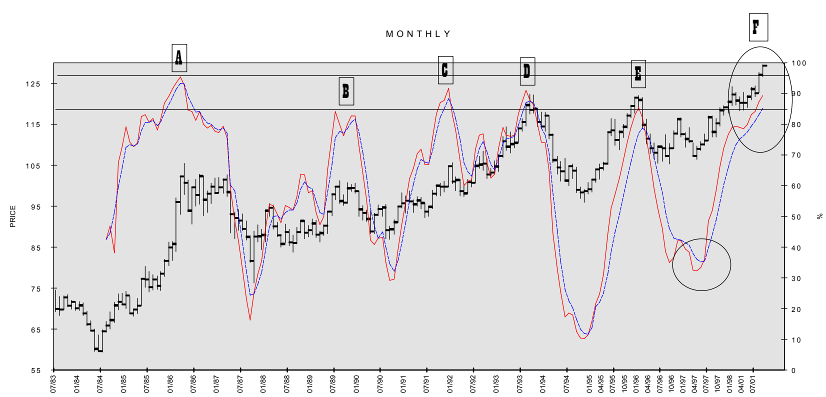
### What is the Sto Prognosing for the Bonds?

Although many different time frames are employed by Stochastic practitioners, depending on an individual's trading time horizon, this author, through his free Sto facility on the web and aptly appellated StoMaster (http://www.stomaster.com), employs a 60 Minute, 100 Minute, Daily, Weekly and Monthly Sto. It is the last two, the Weekly and the Monthly, which are paramount at this juncture and which, in fact, will be signaling shortly a seachange in direction for bonds, a change which most fundamentalists will find counterintuitive and many technicians will consider absurd.

First, a quick perusal of the charts:




The sine wave oscillations of the stochastic %K (solid line) and %D (broken line) define periods when the price of the bond is overbought (peaks) and oversold (troughs). Note that at stochastic peaks (A,B,C,D,E....etc.), the corresponding price of bonds (the vertical black line directly under each peak K/D reading and representing the high, low and closing price of the bond for the key month in the case of the Monthly chart below and the key week in the case of the Weekly chart above) is also at a peak. At these price peaks, the bond yield is at a cyclical low. Note that in the case of the Weekly, since 1992 there have been eight cyclical peaks, with the last one completed in 01/98 and demarked by the letter "H". Each full cycle is an average of 24-32 weeks in duration and it is seen from the graph that another peak is in the process of being forged at a new prospective point "I".




Monthly cycles typically take 24-30 months to complete. Note that since 1983 , the Monthly has forged five cyclical peaks, with the last one completed in 01/96 at letter "E" demarked on the Monthly chart. Note that a new, prospective peak at a "to be designated" point "F" is in the formative process. For purposes of comparison and confirmation, the Monthly may be used in conjunction with the

Weekly in determining when a Weekly peak will most likely reflect a secular (long term) low in interest rates. For example, in 01/96, the Weekly cyclical peak "E" was confirmed as a long term secular peak indicated by point "E" on the Monthly chart.

It is easily observed from the above charts that the bonds are currently in the final phase of completing two important long and medium term cycles. In the case of the former, the Monthly is now in the 15th month of its average 12-15 month cycle marking the termination of the secular bull market begun 06/97. With respect to the latter, the Weekly is now in the 15th week of its average 12-16 week upcycle. The convergence of these two crucial Sto's at respective tops is a powerful tocsin foreboding a downturn in bonds, one of significant magnitude; in short, a secular bear market.

The importance of these profiles cannot be underestimated. Of late, I have been carrying the following caveat in the StoMaster daily update (http://www.stomaster.com/stopdfdc.pdf):

> "OF PARTICULAR MOMENT IS THE ENDGAME PROFILE OF THE MONTHLY. THE MONTHLY HIT A HIGH OF 89/85 K/D, HIGHER THAN 2 OF THE 5 FORMER PEAKS AND JUST UNDER THE REMAINING 3 (SEE GRAPH). BE CAUTIONED THAT THE MONTHLY STO PEAKS AT THESE LEVELS HAVE NEVER FAILED TO PREFACE A SECULAR DOWNTURN."

The prognosticative power of the Sto is truly uncanny and often counter to the prevailing advised and considered thought of the day. There are countless examples of this presciency, but the most current is particularly poignant. When the Monthly Sto upcrossed last June 1997, thereby asserting a sinewy bull market for the next 12-15 months, most of the economic cognoscenti were diametrically opposed to that prognosis. The Fed had just bumped Fed funds 1/4% to 3 1/2% and sensitive measures such as the Employment Cost Index, the CPI and the Consumption component of GDP were on the rise. These seers vehemently plumped for the bear case in bonds. The Monthly Sto, however, was contra mundum and on 06/06/97, with the 30 year Treasury bond yielding close to 7.00%, I wrote:

> "The 06/06 upcross of the Monthly stochastic and subsequent memorialization on 06/30 defines a watershed event: the formal commencement of the secular bull market in bonds. This constructive long term outlook will provide for gently declining long term interest rates over the next 15-18 months, ultimately taking the long bond to under 6%, with the 30 year mortgage maturity at the 7% level."

Who could have possibly scried at that time a global currency meltdown portending rampant and unbridled deflation abroad and the potential for the same in the U.S.? Certainly no seriously considered economist extant. But the Sto saw it coming. . By 12/97, the yield broke 6.00% and by 09/98, 15 months later, it was under 5.50%.

Does Life Imitate Art in Sto Analytics?
It would suspend disbelief to presume, or even suggest that economic fundamentals are somehow shaped by the prophecy of the Sto. Yet given the incontrovertibility of the Sto's exemplary record, it often is productive to simulate fundamental economic outcomes that comport with the Sto's prediction. How about this one: Amidst the global coercive hue and cry of deflation, the Fed eases Fed fund's in a misguided attempt to liquefy the world. The dollar, already in a weakened and declining state, goes into a freefall just as SE Asia, lead by a reconstructed Japan, finds its economic legs once again. The U.S., meanwhile, never having quite attrited to deflationary expectations, finds a vastly improving (or at least optimistic) world economy, a robust domestic economy and a continuing tight labor market prying at the Pandora's box of inflationary expectations once again. The bond market, having discounted the beau ideal of deflation into its rich pricing, finds itself juked once again and adjusts appropriately in the form of a 12-15 month secular bear market. Stocks, elated in having avoided the "d" word, lushly embrace the implied modicum of inflation and covet the Dow 10,000 metric.

For closing emphasis, let me again quote from my StoMaster daily:

> "To review, the Weekly most recently upcrossed on 05/26/98, after having downcrossed on 01/20/98 and upcrossed on 10/27/97. The current upcycle coincides with the Monthly's final upleg of the secular bull market begun 06/97. Given the Monthly's average 12-15 month cycle and the Weekly's average 12-16 week cycle, both cycles are indicating coincident termination in 09/98. At that juncture, we will be attent to a prospective topping formation as peaks "F" and "I" are completed on the Monthly and Weekly stochastic sine waves, respectively."

If ever in doubt, screw your courage to the sticking point, stare out of countenance and repeat the StoMaster's mantra:

Other techs might seem to fly,
But in the end, the Sto don't lie.
No, in the end, the Sto don't lie

(Fade to bear market).

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