WCCC 02/22/11
Cycle Analysis Methodology
(or how I arrive at my messy charts)

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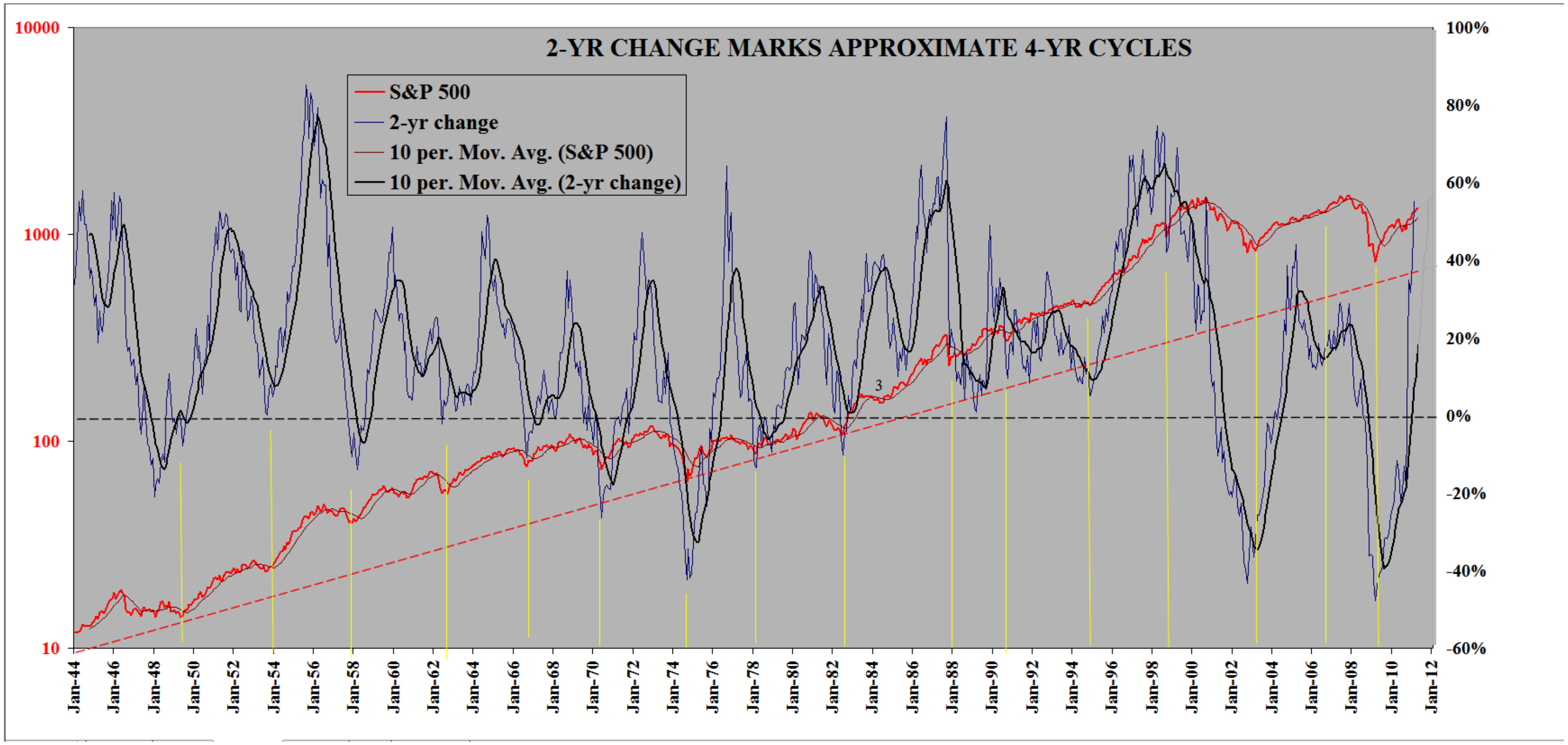
MARKET FORECASTING APPROACH

- Based primarily on the observation that markets are cyclical with periods that are sufficiently regular to be useful in forecasting the direction of prices
  - Periods tend to vary within +/- 1/3 of the nominal period
  - Cycle bottoms tend to nest; peaks do not
- Supplemented by moving averages as longer-term trend indicators
- Further supplemented by Fibonacci support and resistance
- Further supplemented by the observation that certain investor groups tend to bullish extremes at market peaks and bearish extremes at market bottoms (Advisory services, Individual Investors)
  - Rising optimism and extreme pessimism are bullish
  - Declining optimism and extreme optimism are bearish
- Further supplemented by the observation that volatility tends to peak at market bottoms and trough at market tops.

THE FOUR YEAR CYCLE IS WIDELY RECOGNIZED BECAUSE IT IS QUITE EVIDENT FROM CASUAL OBSERVATION

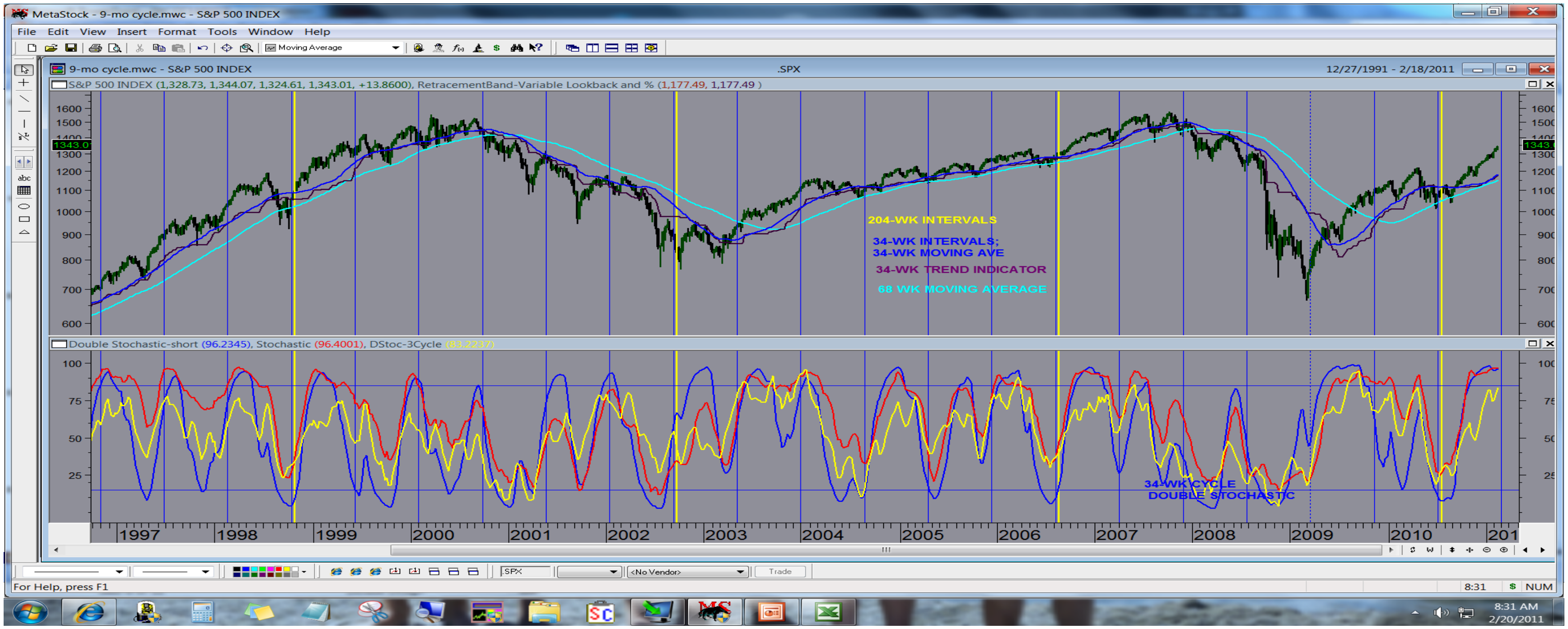


- **Of the fifteen 4-year cycles from 1949 to 2009, only the 2006 bottom is difficult to recognize on a price chart**
- **One extended to 5 yrs (1987); Two contracted to 3 yrs (1990, 2009)**

34-WK (ABBREVIATED 9-MO) CYCLE IS ALSO EVIDENT ON PRICE CHART

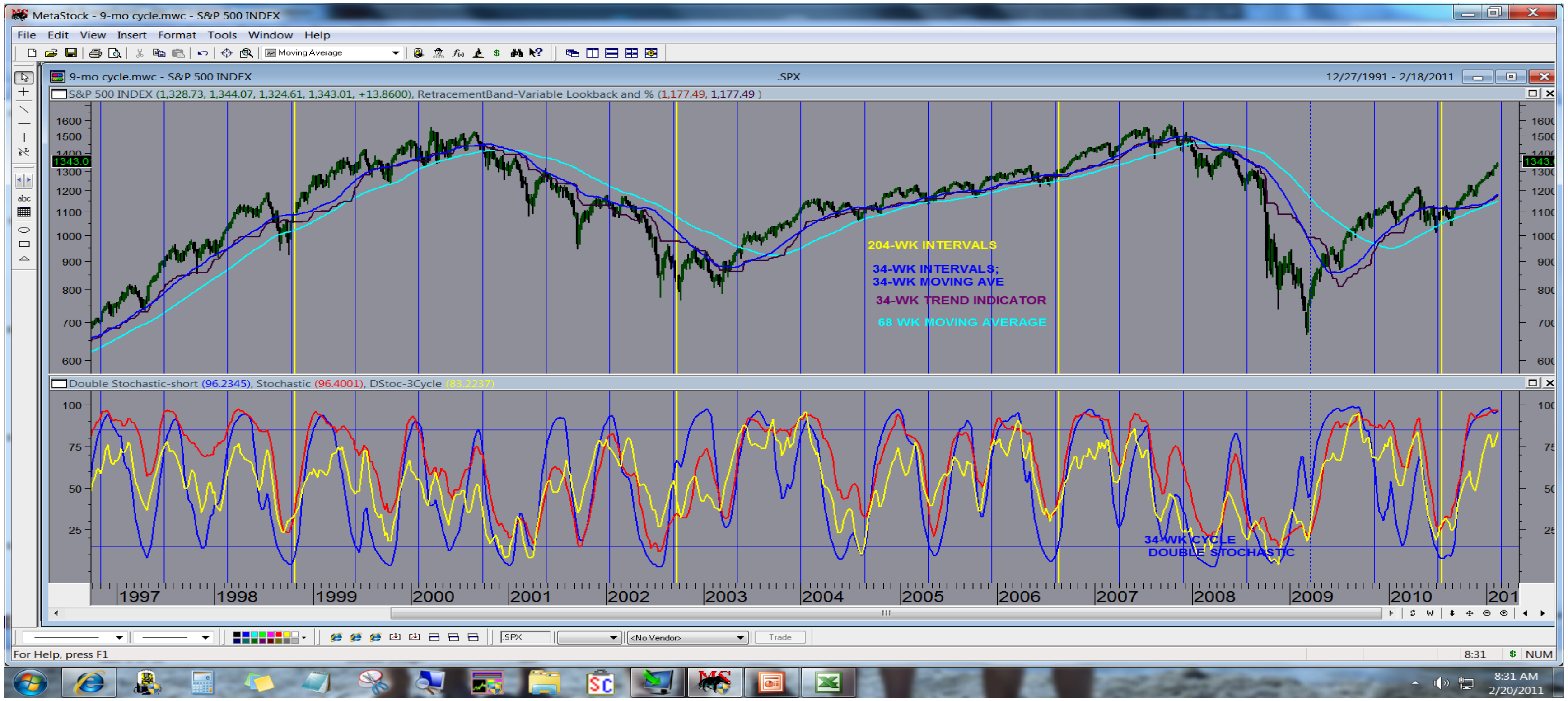
- Double Stochastic (DStoc) adjusts for variations in cycle duration
- DStoc is a stochastic of a stochastic
  - DStoc=Mov((A-LLV(A,pds))/(HHV(A,pds)-LLV(A,pds)),avg,E)*100
  - Where A:=Mov((CLOSE-LLV(LOW,pds))/(HHV(H,pds)-LLV(L,pds)),avg,E)*100;
- DStoc (blue) is more precise and smoother than the standard single stochastic (red)
- Use a period (pds) equal to half the nominal cycle duration
- Use a moving average (avg) equal to half the period to filter out the shorter cycles
- Evidently, the current cycle will extend beyond 34 weeks

COMPOSITE DStoc COMBINES MULTIPLE CYCLES IN A SINGLE INDICATOR



- Adds precision
- Simplifies analysis when dealing with multiple cycles
- Weighting factors used to emphasize longer cycles over shorter cycles
- Composite suggests shorter cycles may drive prices a little higher

MOVING AVERAGES ARE USEFUL IN FILTERING OUT THE CYCLES AND IDENTIFYING THE LONGER TREND



- Avoid shorting unfavorable cycles in a longer uptrend
  - Avoid buying favorable cycles in a longer downtrend
  - Avoid shorting unfavorable cycles in a longer uptrend
- Moving averages frequently identify support and resistance levels as well
  - Resistance in a longer downtrend
  - Support in a longer uptrend

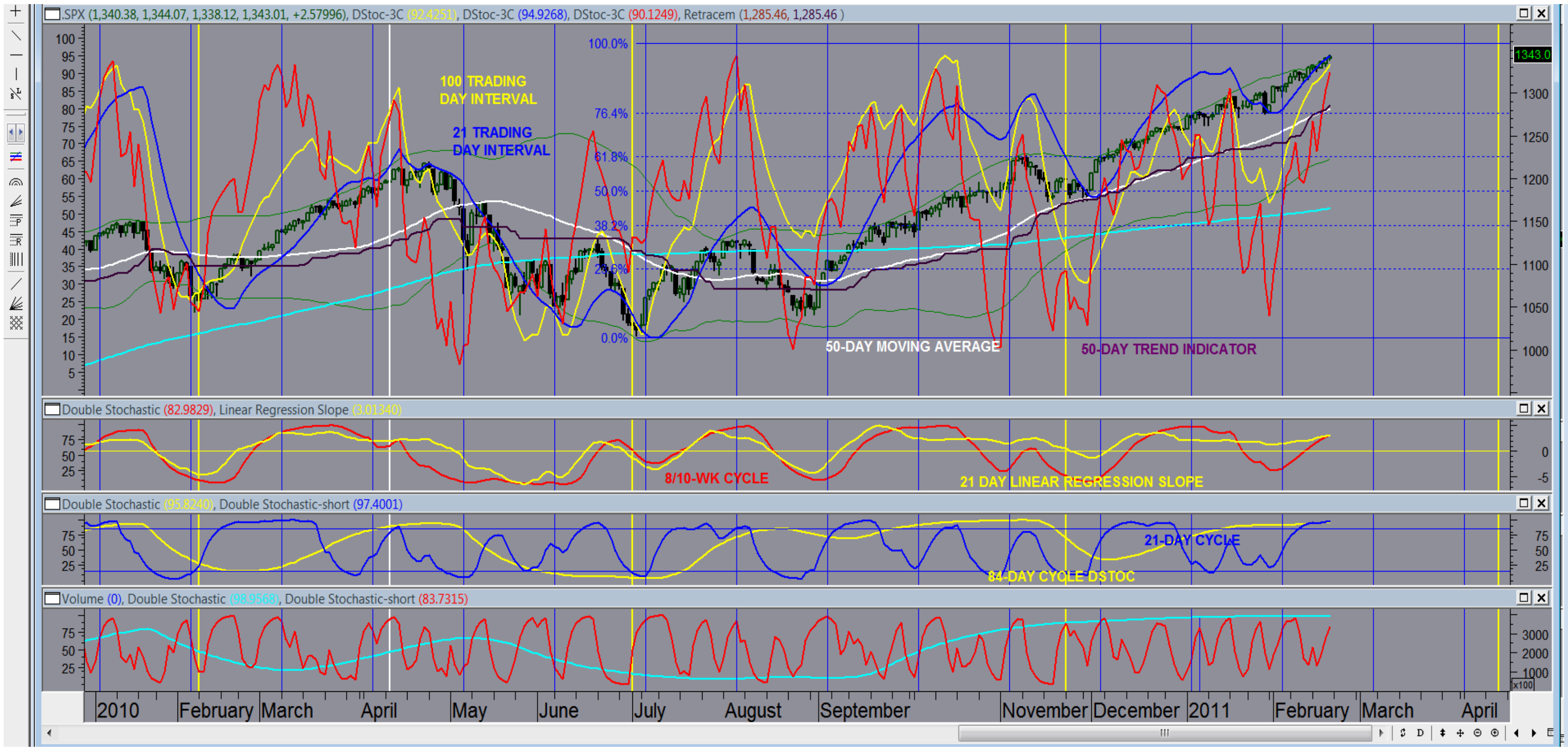
FIBONACCI RETRACEMENT LEVELS ARE ALSO USEFUL FOR IDENTIFYING LIKELY SUPPORT AND RESISTANCE LEVELS

- **Note the significant turns at the 23.6%, 38.2%, and 61.8% retracement levels of the 2007-2009 bear market**
- **SPX is now very close to resistance at the 76.4% retracement level**

SAME METHODOLOGY CAN BE APPLIED TO ANY TIME FRAME, ANY SECURITY, AND ANY CYCLE

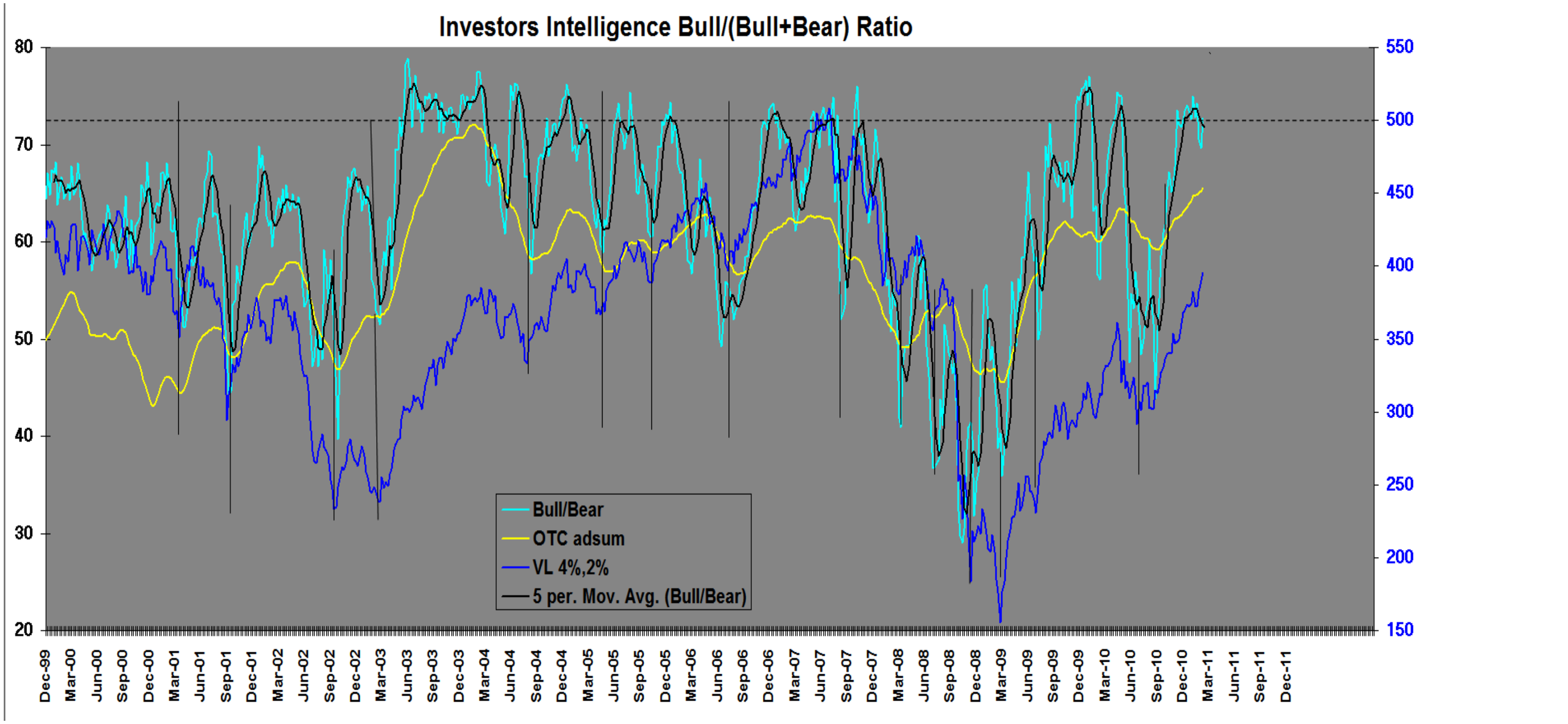
- This is a daily chart that illustrates the 17-wk cycle in the NDX
- Note that the last bottom was about 4 weeks late, but the DStoc adjusted for the delay
- The DStoc is currently very overbought and the 17-wk cycle is 13-weeks old
  - Will it shrink to compensate for the last extended cycle? (Appears unlikely)
  - Will it expand to another 21-wks, which was the normal duration a few years ago?
  - The DStoc will answer the question

FOR A SIMULTANEOUS PICTURE OF ALL CYCLES, I CREATE A BUSY CHART WITH MULTIPLE CYCLE INDICATORS



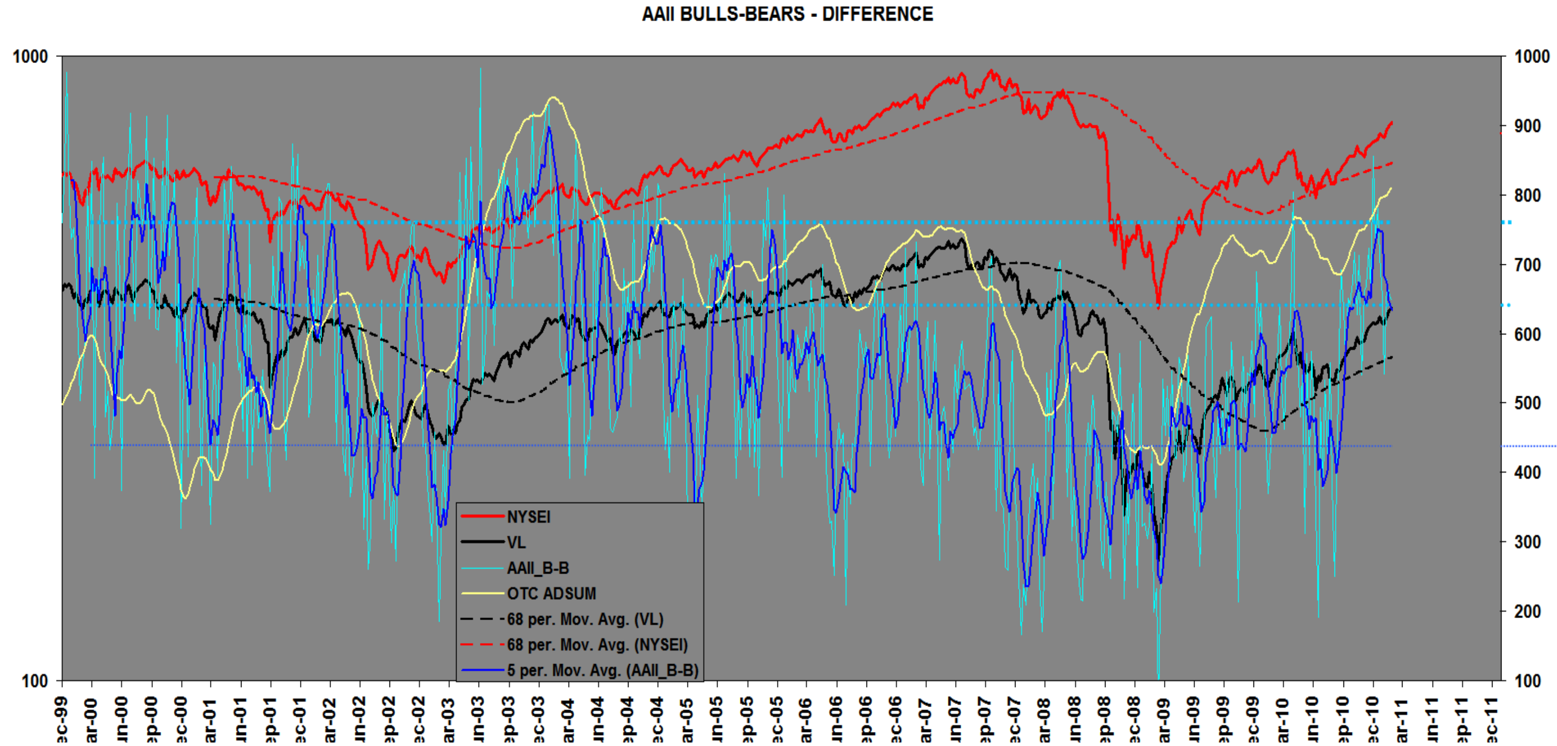
- **This S&P 500 chart indicates:**
  - **All cycles are moderately to extremely overbought and middle-aged or beyond**
    - **Suggests a peak is imminent**
  - **The 13-week-old 17/20-wk cycle will have a right-translated peak, probably when the 4-week-old 8/10-wk cycle peaks**
  - **The 34/40-wk cycle low is likely to arrive in the early April time frame**

EXTREMES IN ADVISORY SERVICE SENTIMENT AID IN ASSESSING TURNING POINTS IN THE LONGER CYCLES



- **Noisy data requires some smoothing to minimize whiplash**
  - **A 5-wk moving average works well**
- **Direction of movement is more important than absolute level**
- **Currently the 5-wk moving average is near a high extreme and dropping**
  - **That's a classic 9-mo cycle sell signal (but obviously premature)**

AAII MEMBERS ALSO TEND TO BE WRONG AT TURNING POINTS IN INTERMEDIATE AND LONG CYCLES



- When most investors have already bought, there is a shortage of new buyers
- When the weak investors have sold out, there is a shortage of available stock for the remaining buyers
- AAII members have also produced a premature sell signal

VOLATILITY ALSO PEAKS AND TROUGHS AT MARKET TURNING POINTS

- The VIX and VXN measure premiums on short term options, which are highly correlated with market volatility
  - Peaks at market bottoms (usually well defined)
  - Troughs at market tops (usually poorly defined)
- Double Stochastics identify peaks and troughs
- Last week the VIX and VXN established at least a short-term low

PUTTING IT ALL TOGETHER

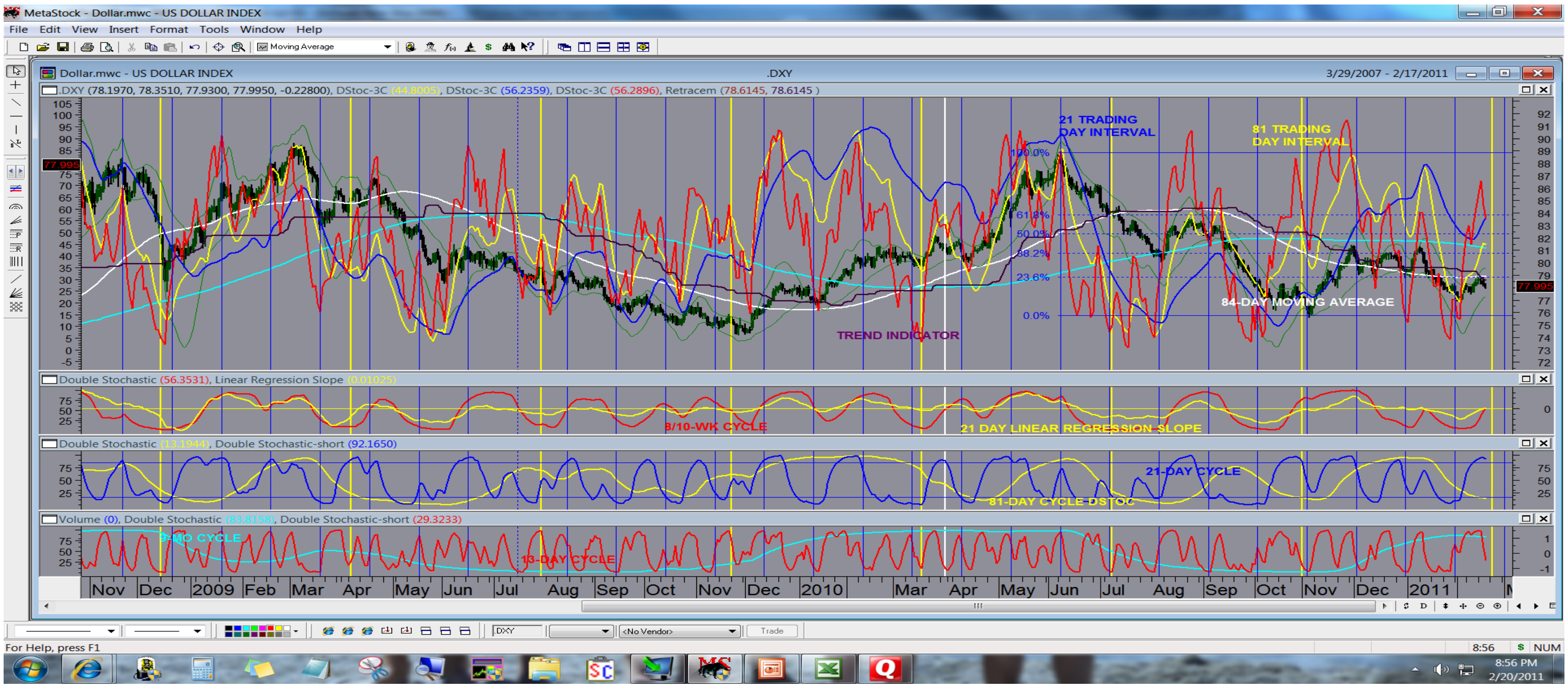
- **STOCKS ARE DUE FOR A 9-MO CYCLE CORRECTION**
  - The "9-mo" (34/40-wk) cycle is 33 weeks old and its DStoc is very overbought
  - The 17/20 week cycle is 13 weeks old and moderately overbought
    - But it's still rising
  - Short-term cycles (8/10 week and shorter) are probably peaking
    - Confirmed by apparent short-term bottoms in the oversold volatility indexes
  - Prices are very close to the 76.4% Fibonacci retracement level of the last bear market
    - Likely to provide resistance
  - Sentiment indicators have turned down from extremely optimistic levels

- **A SINGLE-DIGIT % CORRECTION IS THE LIKELY OUTCOME**
  - Right translation of the 34/40 and 17/20-wk cycle peaks shows a strong underlying longer-term uptrend and compresses the time available to reach a normal bottom
  - Trend indicators are rising strongly on all time frames
  - A normal 38.2% Fibonacci correction of the 9-mo cycle advance in a bull market would produce slightly more than a 9% decline in the SPX and NDX
    - The median correction after similar non-volatile 30% gains in the past was 9%

METHODOLOGY IS APPLICABLE TO ALL SECURITIES, BUT DIFFERENT SECURITIES HAVE DIFFERENT CYCLE CHARACTERISTICS

- Gold fluctuates with somewhat longer cycles than the stock indexes
  - 17/20-wk cycle extends to about 22 weeks
- Based on the rising composites, it appears that GLD established a 22-wk cycle bottom 4 weeks ago

THE DOLLAR OSCILATES WITH A SLIGHTLY SHORTER PERIOD THAN STOCKS (16 vs. 17 weeks)



- The DStocs suggest that the 15-week-old 16-wk cycle is within a week or two of its next bottom
- Don’t expect a big rally
  - The long-term trend is flat to slightly down and the next 16-wk cycle is the second within this 7-mo cycle

JUNK BONDS OSCILLATE WITH A CYCLE THAT IS SHORTER YET – SLIGHTLY > 14 WEEKS FOR THE DOMINANT CYCLE

- It's 10 to 13 weeks into the first 14 week cycle within the 28-wk cycle
  - But both shorter and longer cycles are rising, and so are all of the composites
  - And the long-term trend indicators are rising.
  - So you have to give a continuing rally the benefit of the doubt – at least for this week

INVESTMENT GRADE CORPORATE BONDS OSCILLATE AT THE SAME FREQUENCY AS JUNK

- **LQD's composites are rising but the trend indicators are declining**
  - **Currently a poorer bet than JNK**

TREASURY BONDS CONTINUE TO OSCILLATE WITH THE HISTORICAL 10, 20 AND 40-WK PERIODS

- Based on elapsed time and upturns in all of the composite DStocs from extreme oversold conditions, it appears that T-bonds established a 9-mo cycle low on February 9
- But the trend indicators are declining
  - Expect a weak 9-mo cycle rally for T-bonds with a likely lower left-translated peak

THE TREASURY'S INFLATION PROTECTED BONDS OSCILLATE WITH A PERIOD SIMILAR TO THAT OF CORPORATE BONDS

- Although the composite DStocs turned up for TIPS, there are reasons to expect a further decline before an intermediate bottom
  - The 76-day cycle DStoc is still declining and it's not due to bottom for about 2 weeks
  - The intermediate composite didn't reach an oversold condition before turning up
  - Fibonacci turning points on the way down project lower prices at the bottom

MUNICIPAL BONDS OSCILLATE WITH THE HISTORICAL 10, 20 AND 40-WK PERIODS

- MUB made an on-schedule 9-mo cycle low in mid January
- But trend indicators are moving steeply downward
- The rally encountered resistance at the 20-wk moving average and 50% retracement
- The 10-wk cycle is middle aged and overbought