



Internals: Tick & Advancing / Declining Issues and Volume

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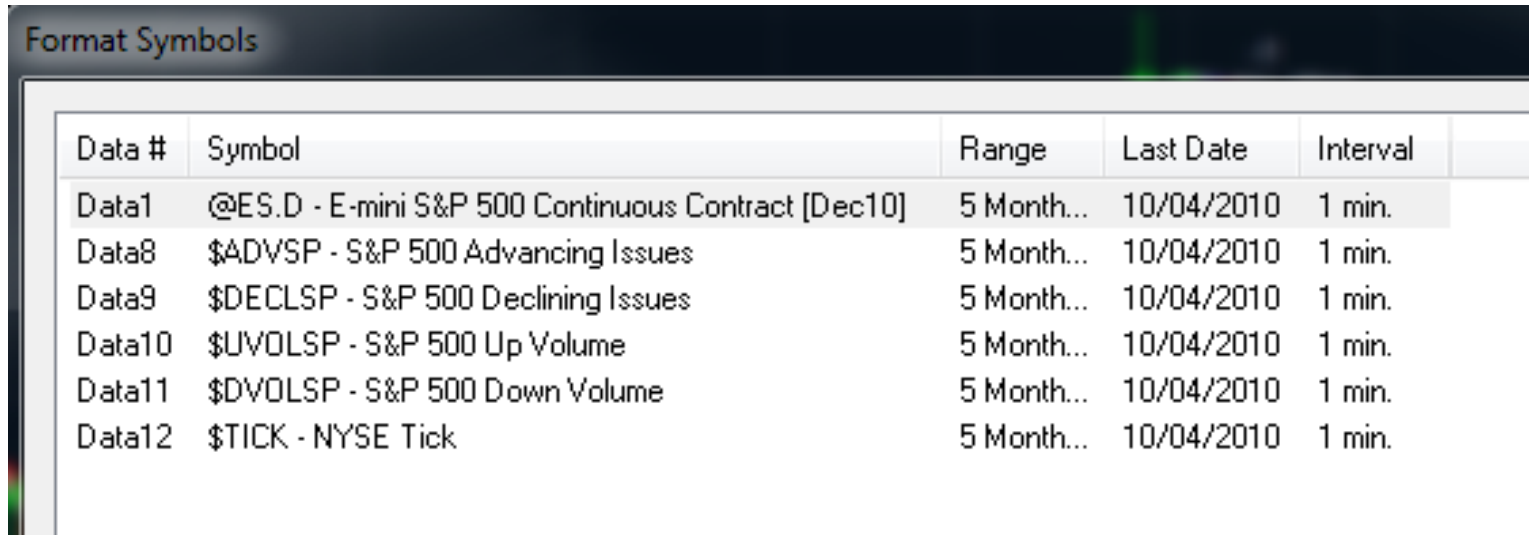
@rruscio

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What are 'internals'?

- 'Internals' are:
 - Data that describes some measure of activity in the Market, or ...
 - Some algorithmic combination of those activity describing numbers that indicate 'something'.
- Our plan of attack:
 - Describe what the raw numbers are:
 - Tick, Advancing and Declining Issues, Advancing and Declining Volume
 - Show some of the algorithms involved
 - Look at pictures and strategies

Why I use what I use



The screenshot shows a window titled "Format Symbols" with a table containing the following data:

Data #	Symbol	Range	Last Date	Interval
Data1	@ES.D - E-mini S&P 500 Continuous Contract [Dec10]	5 Month...	10/04/2010	1 min.
Data8	\$ADVSP - S&P 500 Advancing Issues	5 Month...	10/04/2010	1 min.
Data9	\$DECLSP - S&P 500 Declining Issues	5 Month...	10/04/2010	1 min.
Data10	\$UVOLSP - S&P 500 Up Volume	5 Month...	10/04/2010	1 min.
Data11	\$DVOLSP - S&P 500 Down Volume	5 Month...	10/04/2010	1 min.
Data12	\$TICK - NYSE Tick	5 Month...	10/04/2010	1 min.

- The S&P 500 A/D U/D data, because I trade ES exclusively.
- NYSE Tick because it gave me useful information, where the S&P 500 Tick (\$TIKSP) didn't.
- Hull Moving Average (HMA)
 - $(2 * \text{Close} + \text{High} + \text{Low})/4$
 - It looks better to my eye.
 - It is more sensitive to sudden change.

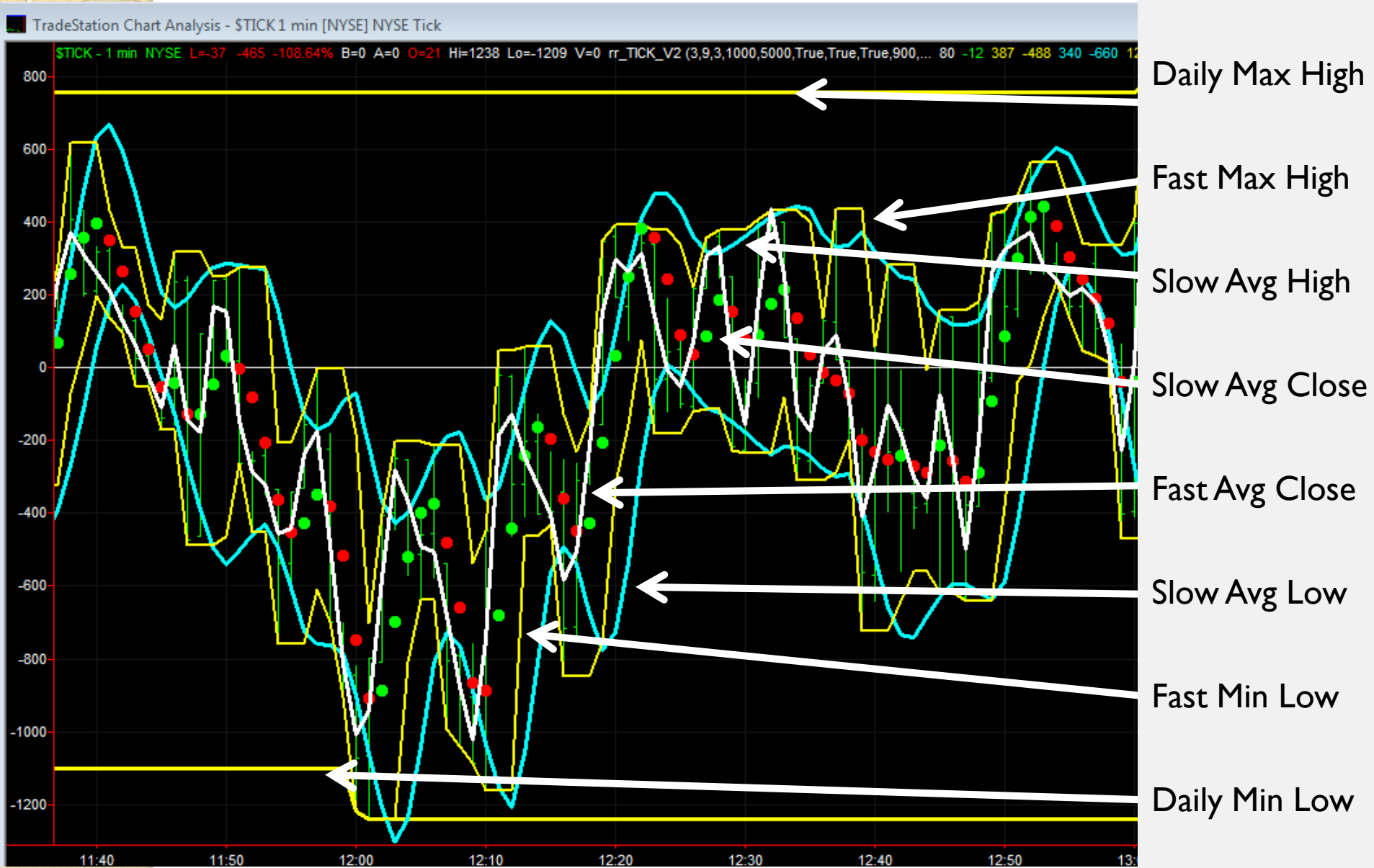
Data Item Definitions: Tick

- The New York Stock Exchange (NYSE) Tick is a measure of how many stocks are rising in price versus how many are declining in price. An upticking stock is one where the most recent change in price was positive; a downticking stock is one where the most recent change was negative. Tick is calculated by subtracting the number of downticking stocks from the number of upticking stocks.
- <http://www.investorglossary.com/tick.htm>
- NYSE calculates the number, and 'publishes' it every 6 seconds.
- Order flow happens. Tick cannot have a continuous value, only discrete. It is the count of activities during some time slice.
 - Which makes it wild, crazy, and noisy.
- There are discrepancies among HA Chat members on what the numbers are. TOS and TS, for example, usually agree, but not always.

Tick



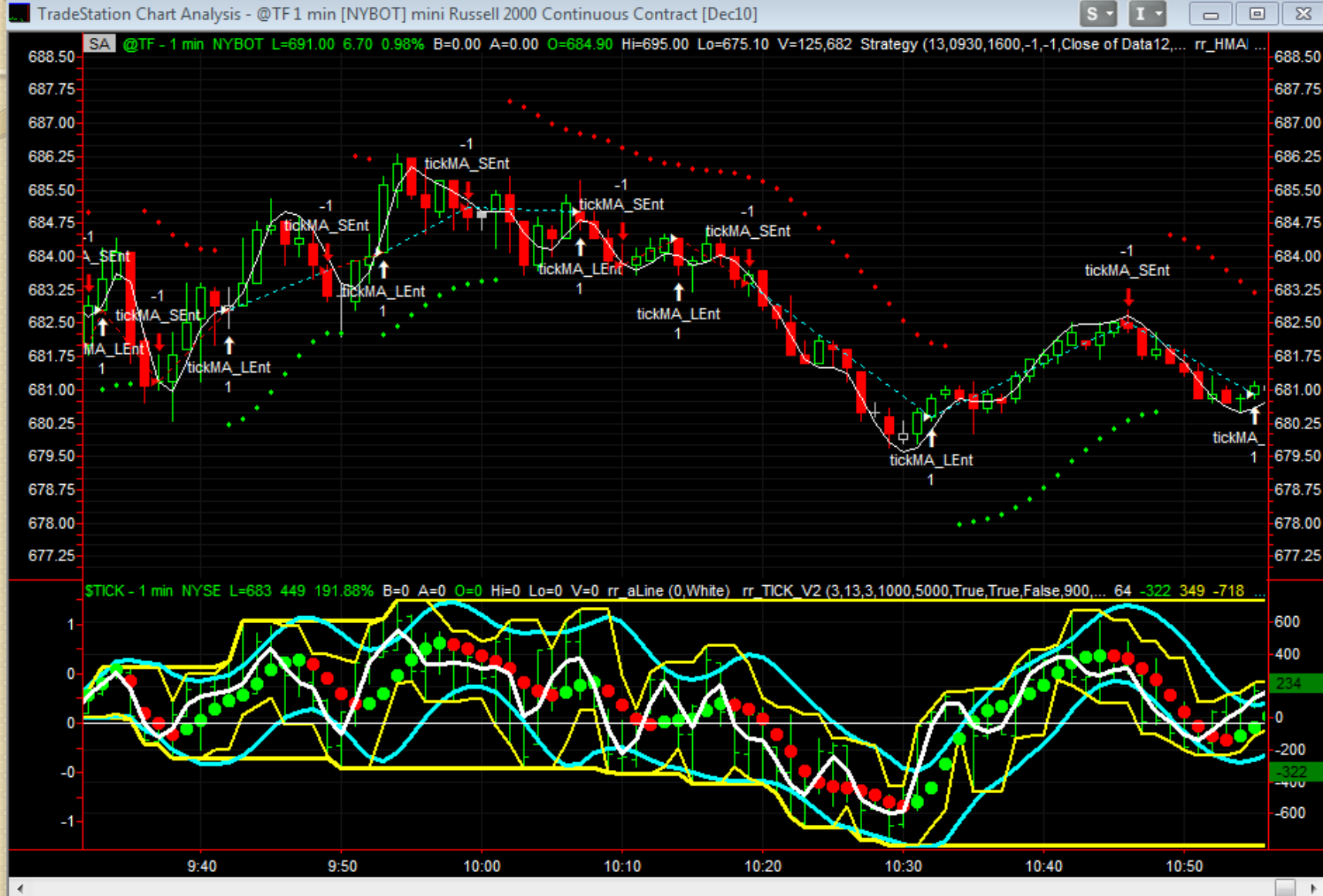
Tick all dressed up



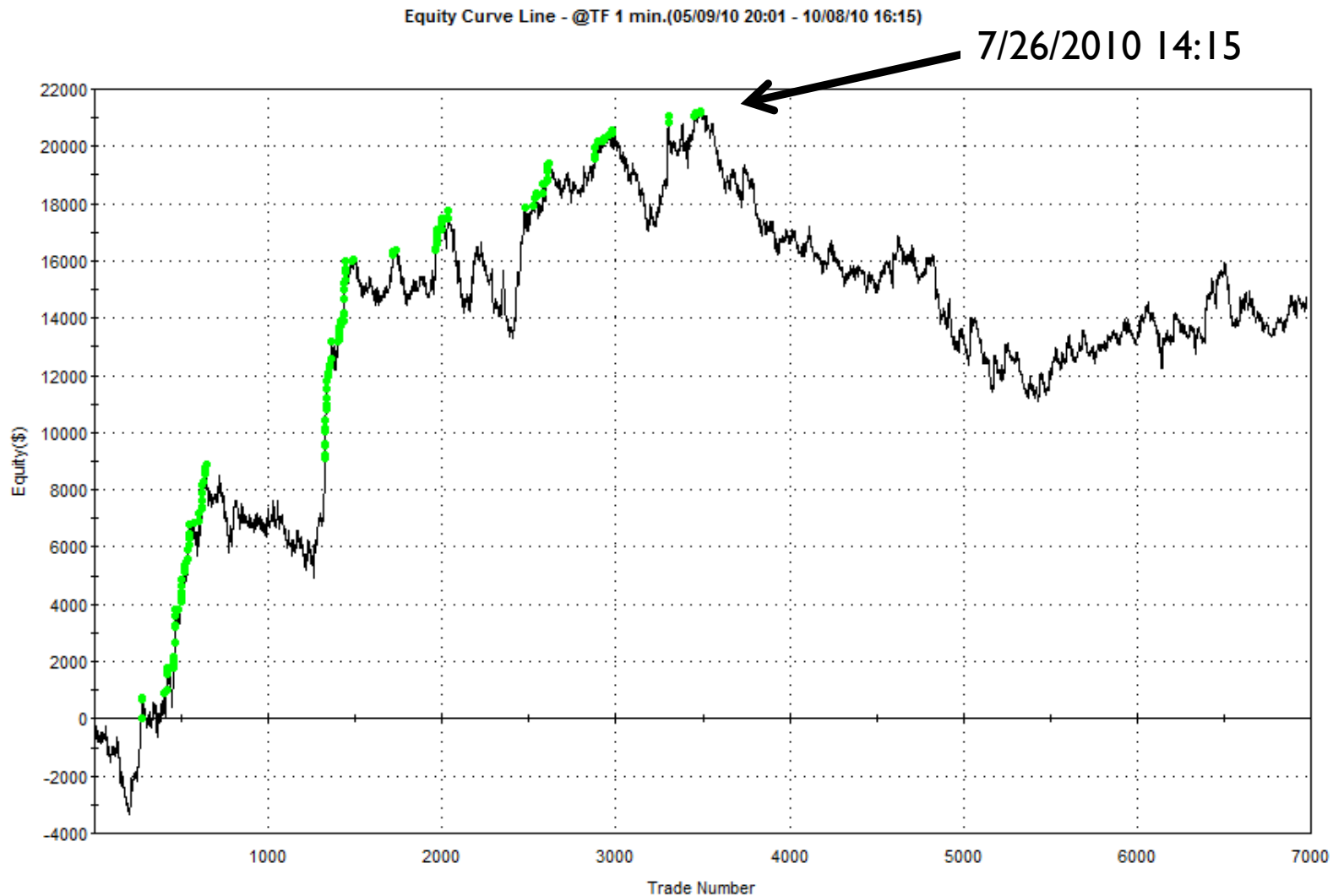
Tick Chart Uses

- Slow Avg Close Slope Change
 - Tick trend change implies Price trend change
 - Length of up/down runs shows chop
- Slow Avg Close in Range
 - -300 to +300 isn't very interesting (slow churn)
 - >600 or <-600 is interesting (longer runs imply strong price movement)
- Slow Avg High and Low
 - 'Eyeball' working range. Think "Sigma Charts" for noisy data.
- Fast Avg Close
 - Alert, to pay attention
- Really Big Tick Bars (>900 points)
 - They tend to be rare, and suggest a trend change / amplification.
- Zero Line
 - Over is up, under is down ("gone Dixie")
 - Causes changes to cumulative Tick indicator
 - Used to have on Alert, but it happens too much

Tick Slope Change Strategy



Tick Slope Change Strategy Equity Curve



Data Item Definitions: Advancing & Declining Issues

- Advancing Issues
 - The number of issues (securities) that closed above their opening price.
- Declining Issues
 - The number of issues (securities) that closed below their opening price.
- <http://www.tradingsolutions.com/functions/AdvancingDecliningIssues.html>
- Like Tick, this is the count of price locations at a given point in time. So, it will be discrete, sometimes discontinuous, and somewhat noisy.

Data Item Definitions:

Advancing & Declining Volume

- Advancing volume
 - The total volume for all securities that advanced in price.
- Declining volume
 - The total volume for all securities that declined in price.
- http://en.mimi.hu/stockmarket/advancing_volume.html
- This is the count of a collection of discrete items, and it is cumulative throughout the day.
 - As such, it gets less noisy over the day.

S&P 500 Adv/Dec Issues, Volume



Algorithms in Use – Market Thrust

From TradeStation

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RawMktThr = AdvIssues * AdvVol - DeclIssues * DecVol ;

MktThr = Average(RawMktThr, SmoothingLength) ;

From R Ruscio

```
marketThrust = ((advIssues * advVolume) - (declIssues * decVolume))/scaleAxis;  
If (Time >= startZeroTime) or (Time <= endZeroTime) then marketThrust = 0;  
avgMT = rr_Hull_MA (marketThrust, shortMovAvgLength);  
longAvgMT = rr_Hull_MA (marketThrust, longMovAvgLength);  
oscMT = marketThrust - avgMT;  
shortMTSlopeChange = rr_SlopeChange (avgMT, shortMTSlopeUp,  
    shortMTSlopeDown);
```

Market Thrust in use



Fast HMA, colored by slope

Slow HMA, colored by slope

Actual calc'd value

Calc'd value - HMA

General Notes, Market Thrust

- @FollowMyTrade uses a 5 minute chart, and the traditional MA cross to help determine long/short posture
 - And, I owe him my thanks for showing me MT.
- General/Common
 - Signals:
 - If data Positive, Long, else Short
 - If data above MA, Long, else Short
 - Commonly used with NYSE data
- This indicator is useless on trend days
 - Stuck with the pedal to the metal
- This indicator seems to work best on 'fear' or non-robot days.
 - Declining, big rotational, not ramps or fine chop
- The data only exists during RTH
 - Using many indicators at RTH start is an interesting problem
- Tough to use with tick (not time) charts on TradeStation
 - Multi-symbol tick charts NOT supported

Alternative Uses of Market Thrust

- Using a Hull MA, of MT, on a 1 minute chart
 - The signal is the line slope change:
 - Slope up = long, down = short
 - A warning: is the data 'off of' the MA line?
 - If slope up, and data below (or vice versa)
 - Pay Attention!!
 - Consider using the 'warning' as a trade signal
 - Strength of change
 - Actual MT value minus Hull MA
 - Value depends on the HMA Length

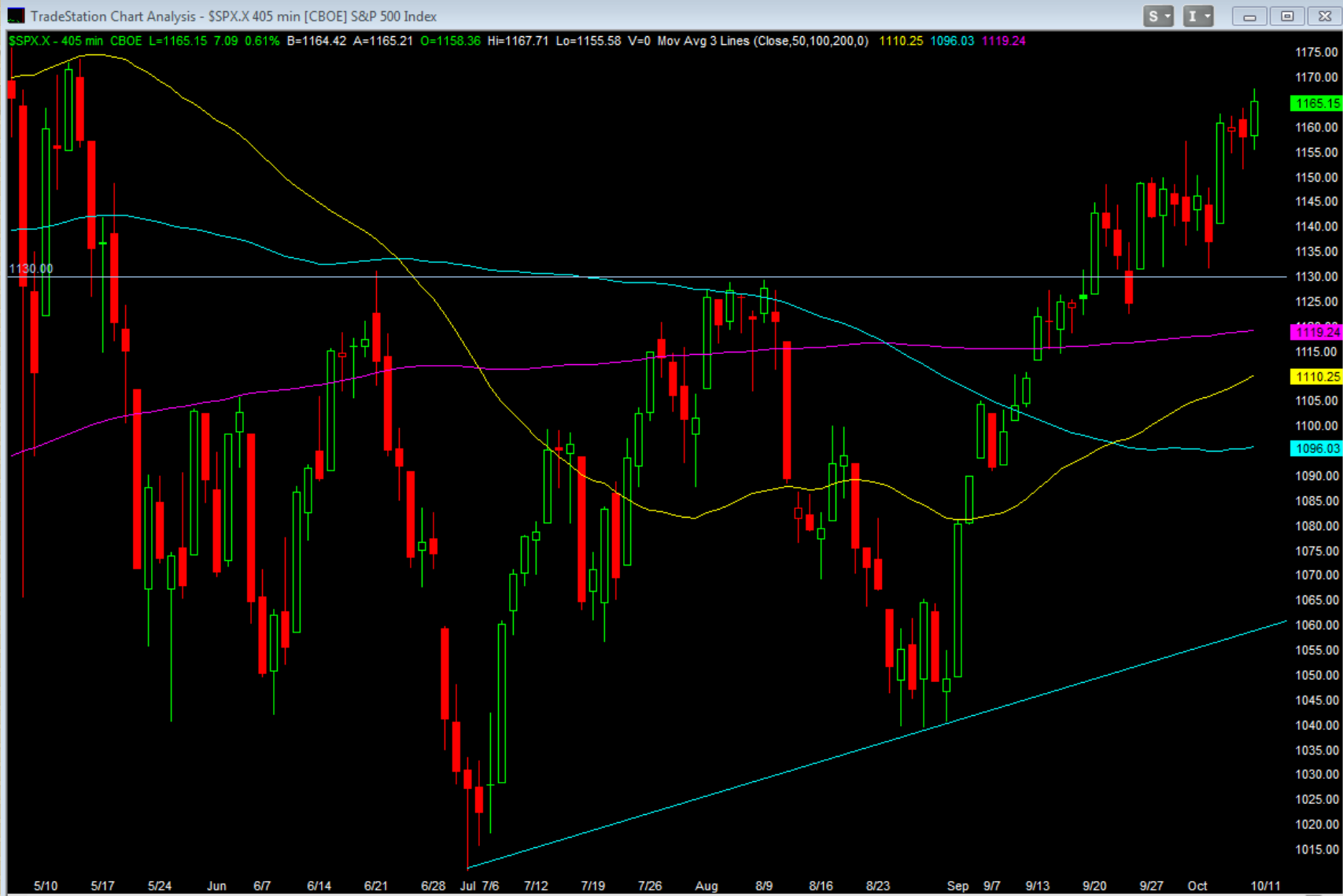
MT Strategy Equity Curve Line

Equity Curve Line - @ES 1 min.(05/09/10 18:01 - 10/08/10 16:15)

7/21/2010 09:52



\$SPX.X



Final Notes

- You can detect what **has** happened. You need to predict what **might** happen.
 - Those are two very different things.
- Both Tick and Market Thrust can be successful at detecting ES price trend changes.
 - There are other ways to detect trend changes.
- It isn't the turn that matters to the profitability of the entry and exit – it's the length (and depth) of the next straightaway.
 - A 'too short' next trend is a whipsaw.
- There are many more signals than reasonable trades.
 - Skipping the 'wrong' trades is really powerful.



Thank You

Back Pocket Slides



Algorithms in Use – Hull Moving Average

This function calculates a Hull Moving Average.

- Hull Moving Average
- {Author:Atavachron} {May 2005} {http://trader.online.pl/ELZ/t-i-Hull_Moving_Average.html}
- Inputs: price(NumericSeries), length(NumericSimple);
- Vars: halvedLength(0), sqrRootLength(0);
- if ((ceiling(length / 2) - (length / 2)) <= 0.5) then
- halvedLength = ceiling(length / 2)
- else
- halvedLength = floor(length / 2);
- if ((ceiling(SquareRoot(length)) - SquareRoot(length)) <= 0.5) then
- sqrRootLength = ceiling(SquareRoot(length))
- else
- sqrRootLength = floor(SquareRoot(length));
- Value1 = 2 * WAverage(price, halvedLength);
- Value2 = WAverage(price, length);
- Value3 = WAverage((Value1 - Value2), sqrRootLength);
- rr_Hull_MA = Value3;

Why use HMA?

It looks better
to my eye.

It is more
sensitive to
sudden change.

Algorithms in use – Hull MA, 'shooter'

- MA's are slow, so anything to 'speed them up' is good.
- Two tactics:
 - Alternative data
 - A shooter
- Some code ...

```
myData = (2 * Close + High + Low)/4;  
myMA = rr_Hull_MA(myData, HMA_Length) ;  
mySlope = rr_LinRegSlopeSFC(myMA,  
    linRegresLength, myYIntercept);  
myValue = rr_Hull_MA( mySlope + myData,  
    linRegresLength);
```

Hull MA and shooter



Hull MA, colored by slope

The Shooter