

Trend Dynamics: measuring and assessing trend strength with technical tools



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- The risk of trading can be substantial and each investor and/or trader must consider whether this is a suitable investment. You should use risk capital, and not capital required for other purposes, such as retirement savings, student loans, mortgages or education. Past performance, whether actual or indicated by simulated historical tests of indicators, is not indicative of future results.

TRENDS

- What is a trend? How to measure trend?
- Answers from technical analysis
- Practical trading guidelines

(Our focus will be on limitations and blind spots)

MARKETS TREND



Source: Tradestation

PRACTICAL DEFINITIONS OF TREND

- Market movement from one price level to another
- Market movements where momentum dominates mean reversion
- Market movement driven by an imbalance of buying and selling pressure
- A failure of liquidity (on one side)

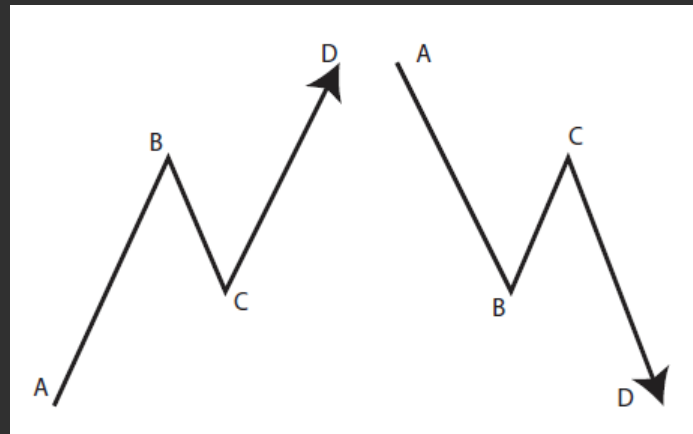
SOME CAVEATS

- Random data trends, too.
 - Presence of a trend is not evidence of non-randomness.
- Trends can be seductive, as the experience of every beginning trader tells us.
- There are patterns associated with trends
 - Beginning
 - Ending
 - Continuing
- ...but these patterns only work within a range of probabilities.

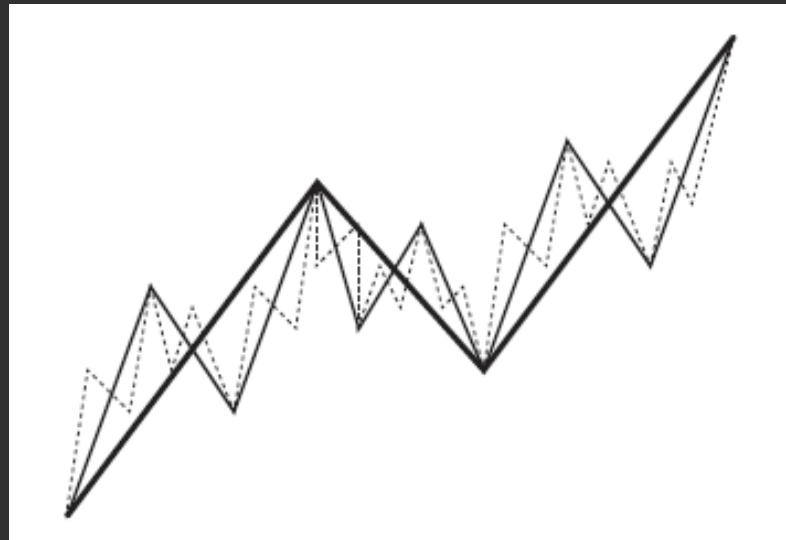
HOW TO MEASURE TRENDS? ANSWERS FROM TECHNICAL ANALYSIS

- Market structure-based methodologies
- Moving averages
- Trend lines
- Indicators

THE FUNDAMENTAL TREND PATTERN



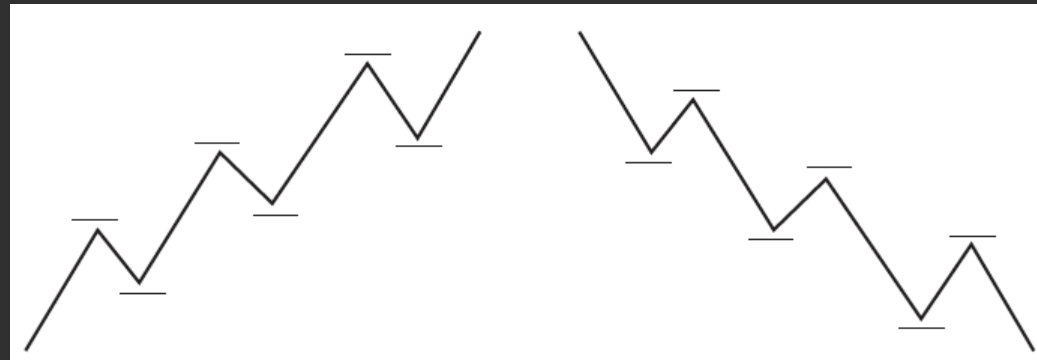
FRACTAL TREND STRUCTURE



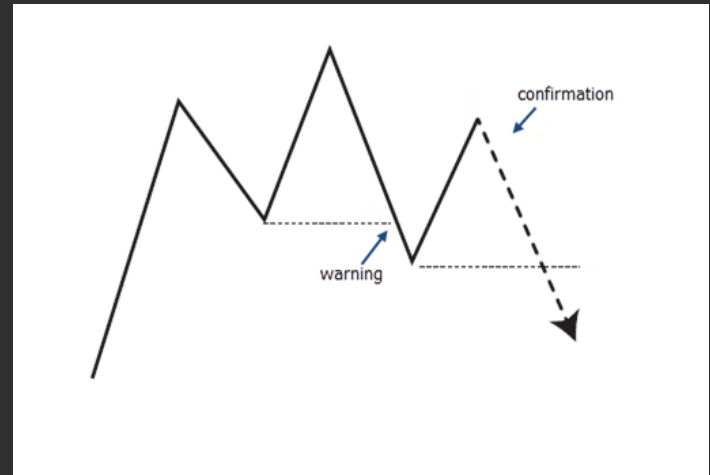
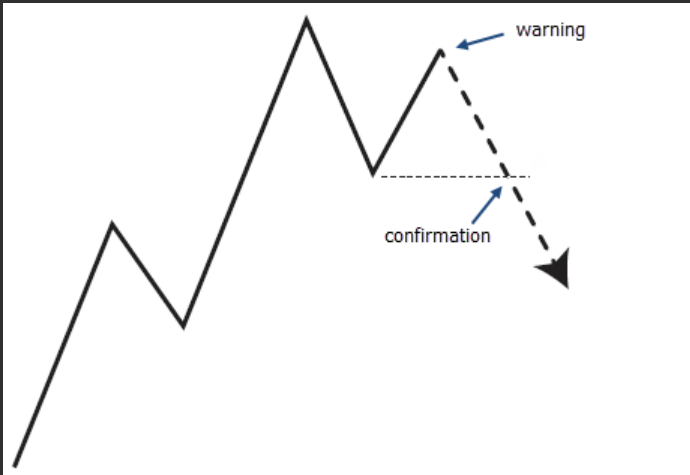
DEFINING TRENDS AND RANGES

- Not so simple to do in practice
- The same area on a chart can often be called trend, range, or uncertain.
 - Definitions matter
 - Timeframe matters

SIMPLE SWING DEFINITION OF TREND



TREND ENDING PATTERNS



TREND STRENGTH

- Compare each swing to previous swing
 - Price
 - Time
- Swings that are longer can be assumed to be stronger
 - Shorter = weaker
 - Same = same
- This price-based approach will lead many indicators.
- This is only context. Probably not possible to trade market structure like this on a stop-and-reverse basis.
- Do not measure precisely. “Close enough” is close enough.

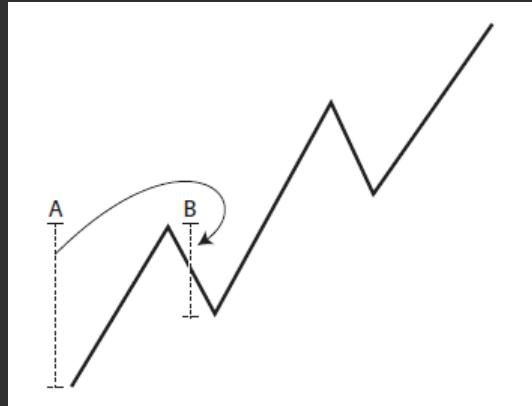
HOW TO ASSESS TREND STRENGTH

- Define swings.
 - Can use pivots and market structure. (See TAAS pp. 15-19)
 - Can also use algorithmic tools. (Pivots, volatility, etc.)
- Consider each swing in context of previous swings.
 - Compare to the actual previous swing
 - Upswing will be compared to downswing
 - Compare to previous swing(s) in same direction
 - Upswing compared to recent upswings
- Probably most relevant locally

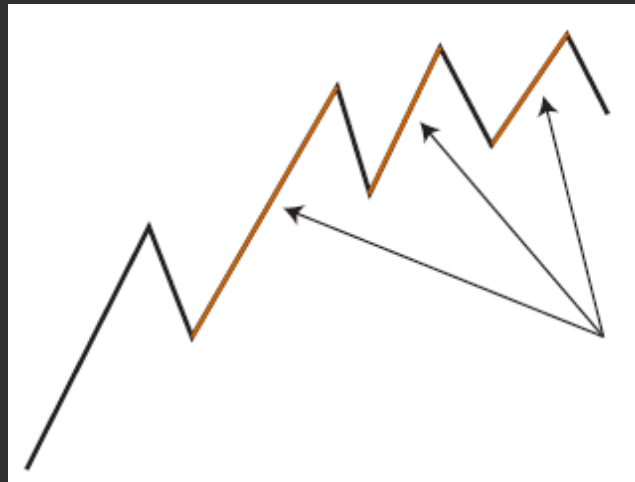
GUIDELINES FOR TREND STRENGTH

- Uptrend:
 - Upswings are larger than downswings, both in price and time.
- Downtrend:
 - Downswings are larger than upswings, both in price and time.
- Pay attention when the pattern changes.
- Markets in equilibrium do not present clear patterns.

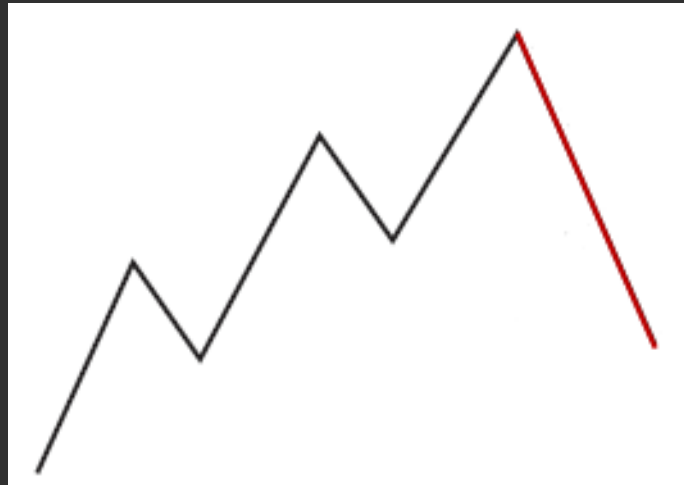
TREND ANALYSIS (1/3)

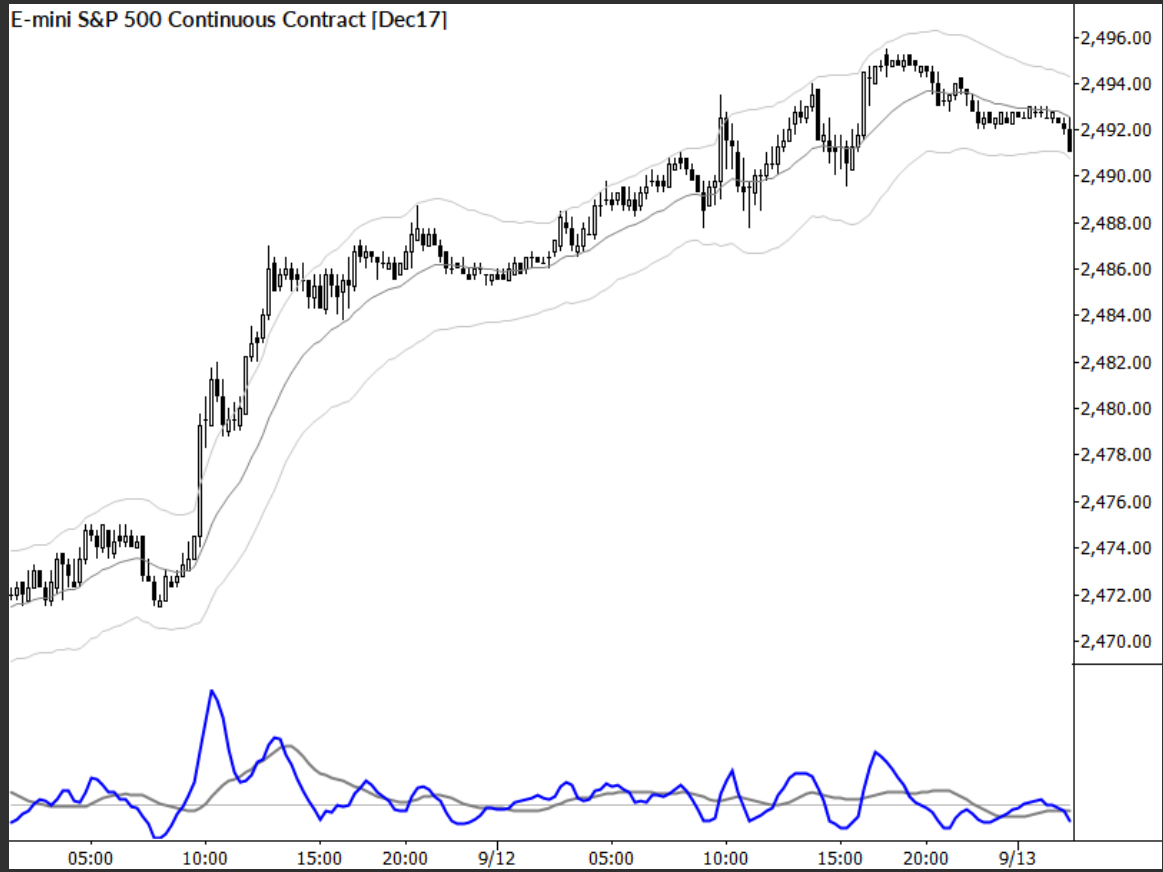


TREND ANALYSIS (2/3)

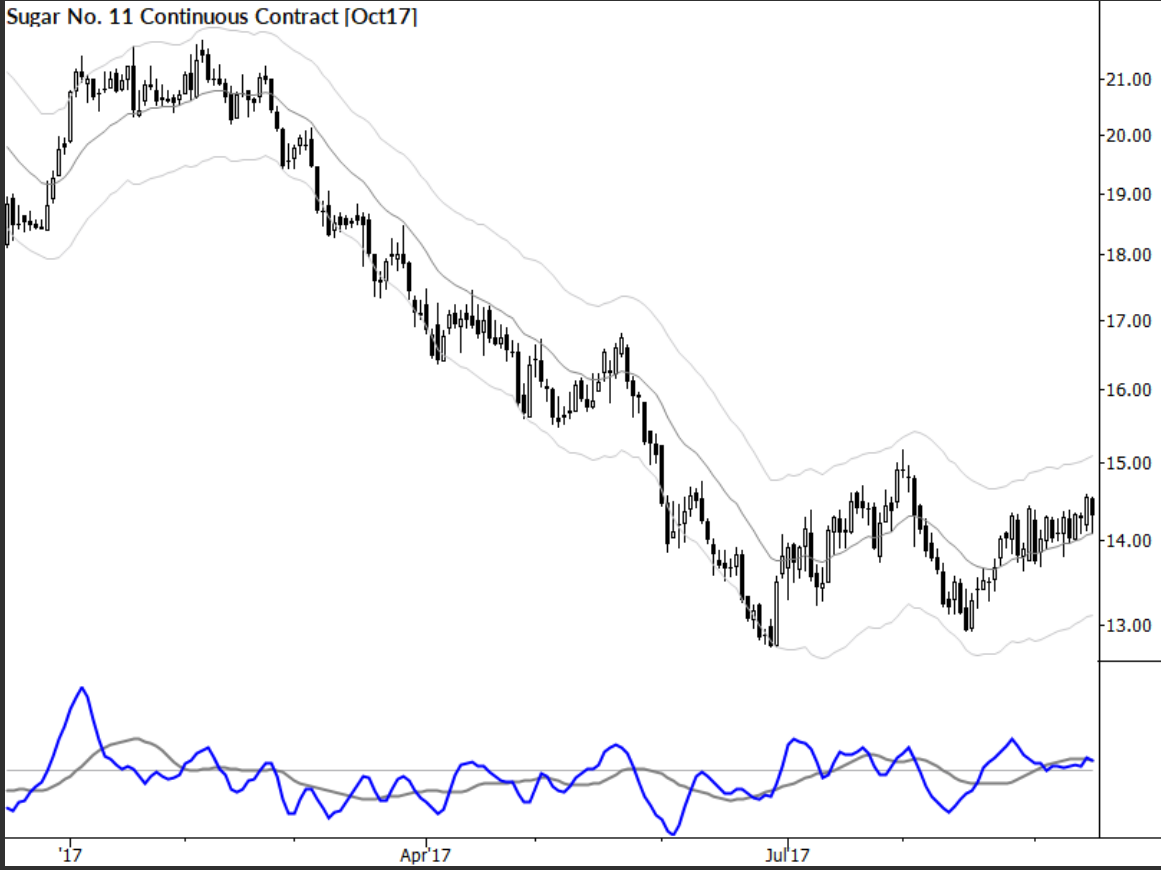


TREND ANALYSIS (3/3)





Source: Tradestation



Source: Tradestation

SUMMARY

- Length of swing matters
 - Both in price and time
- Momentum matters
 - (see above)
- Understanding schematic patterns is a useful framework

TRENDLINES ARE CLOSELY RELATED TO MARKET STRUCTURE



Source: Tradestation

BUT WHICH TRENDLINES ARE THE RIGHT ONES?



Source: Tradestation

DRAWING TRENDLINES

- “You can draw any line you want on a chart...”
 - Yes, you can, but does it really mean anything?
- Cognitive bias will make you think *any* line is important.
 - You absolutely cannot trust your intuitive sense of a line’s importance.
 - “You can just see it works” is an absolutely invalid answer.
- Thinking about what the trendline is supposed to do will lead us to some answers.

TRENDLINES

- Purpose is to define the accepted rate of growth (or decline) for a market.
- If we can do that, then we can monitor the trend for acceleration or deceleration.

SUGGESTED GUIDELINES

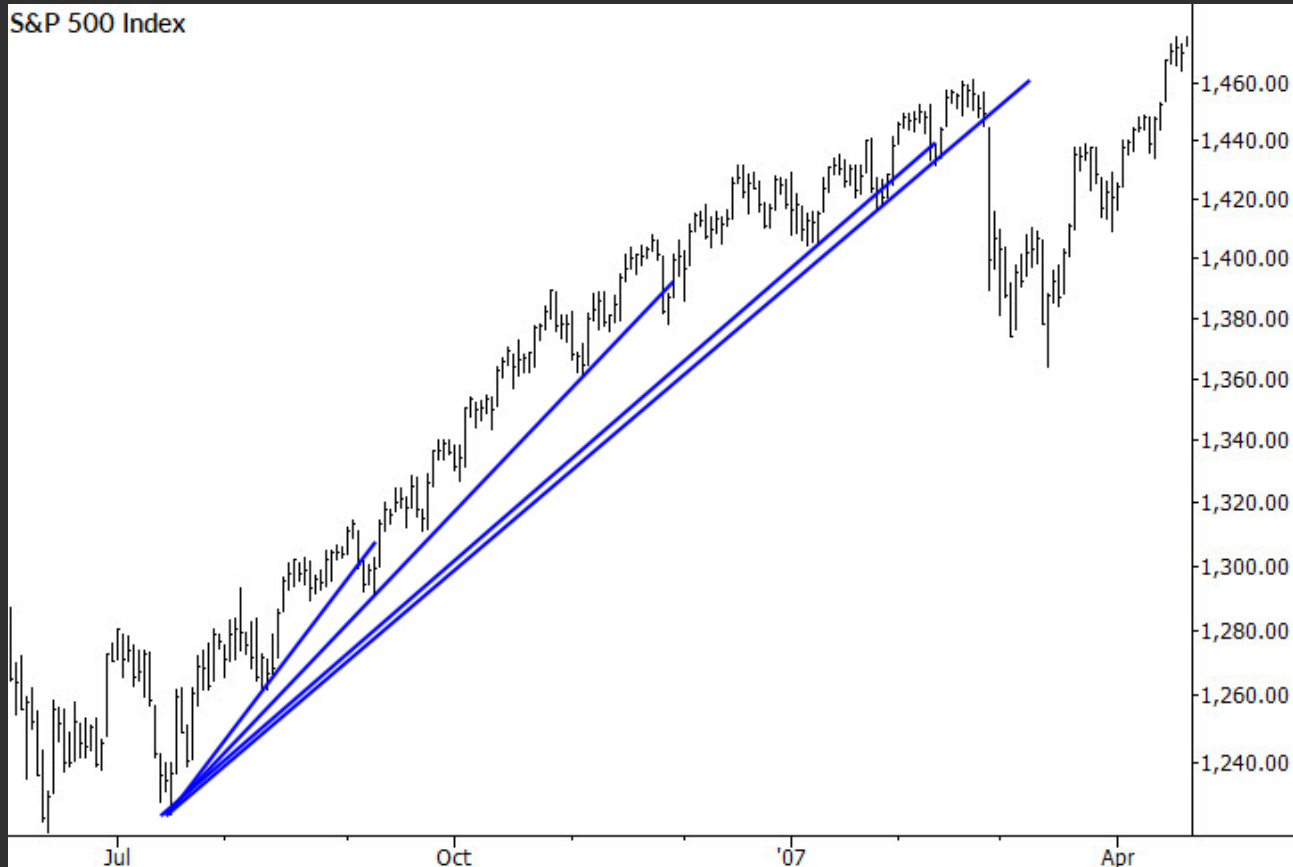
- Uptrend lines are upward sloping
- Uptrend lines are drawn between pivot lows
- Capture the pivot low before the high of the trend.
- Draw from the farthest point back in the trend you can.
- Do not cut prices.
 - More on this in a minute.

VALID TRENDLINE



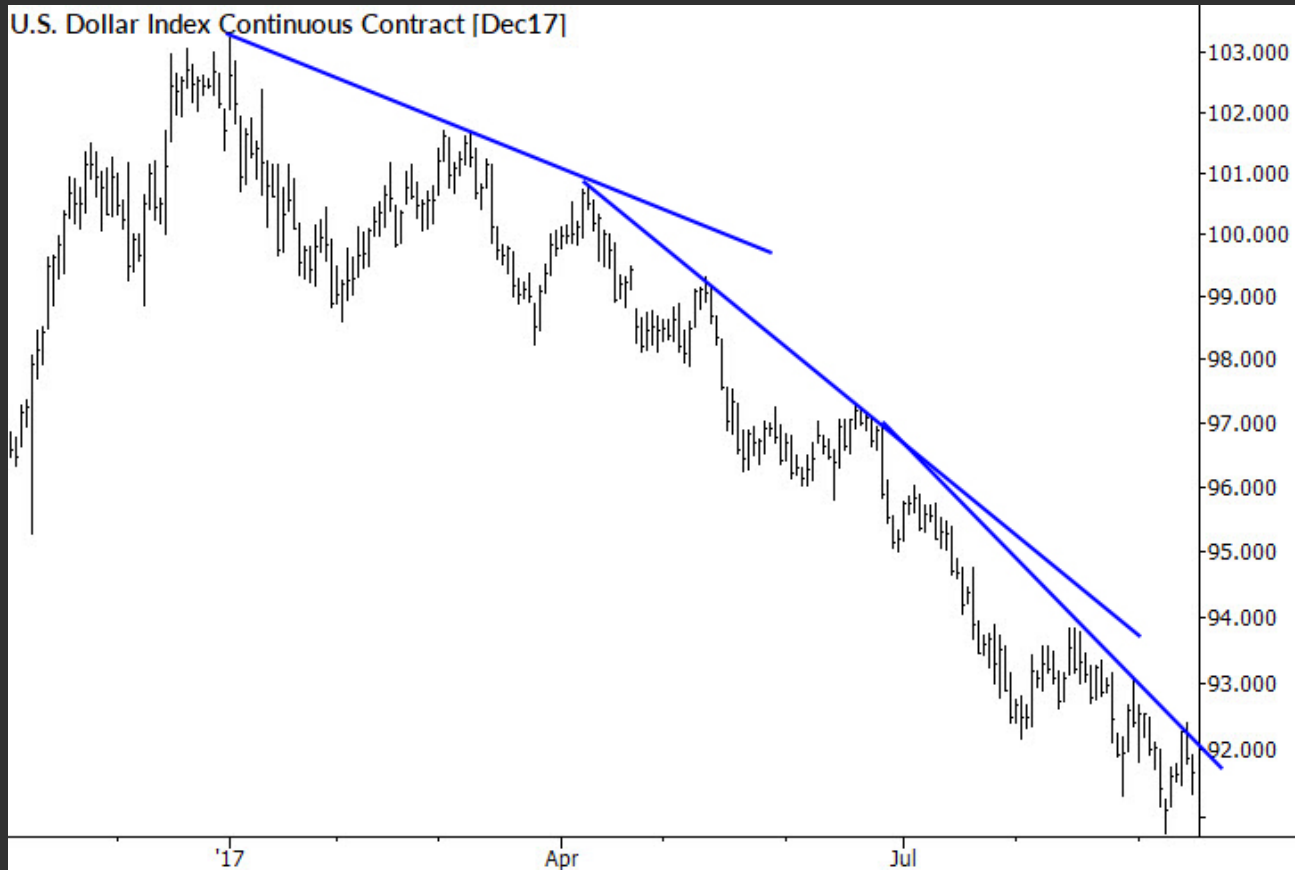
Source: Tradestation

THESE WOULD HAVE BEEN VALID



Source: Tradestation

ACCELERATING TREND



Source: Tradestation

VALID TRENDLINES

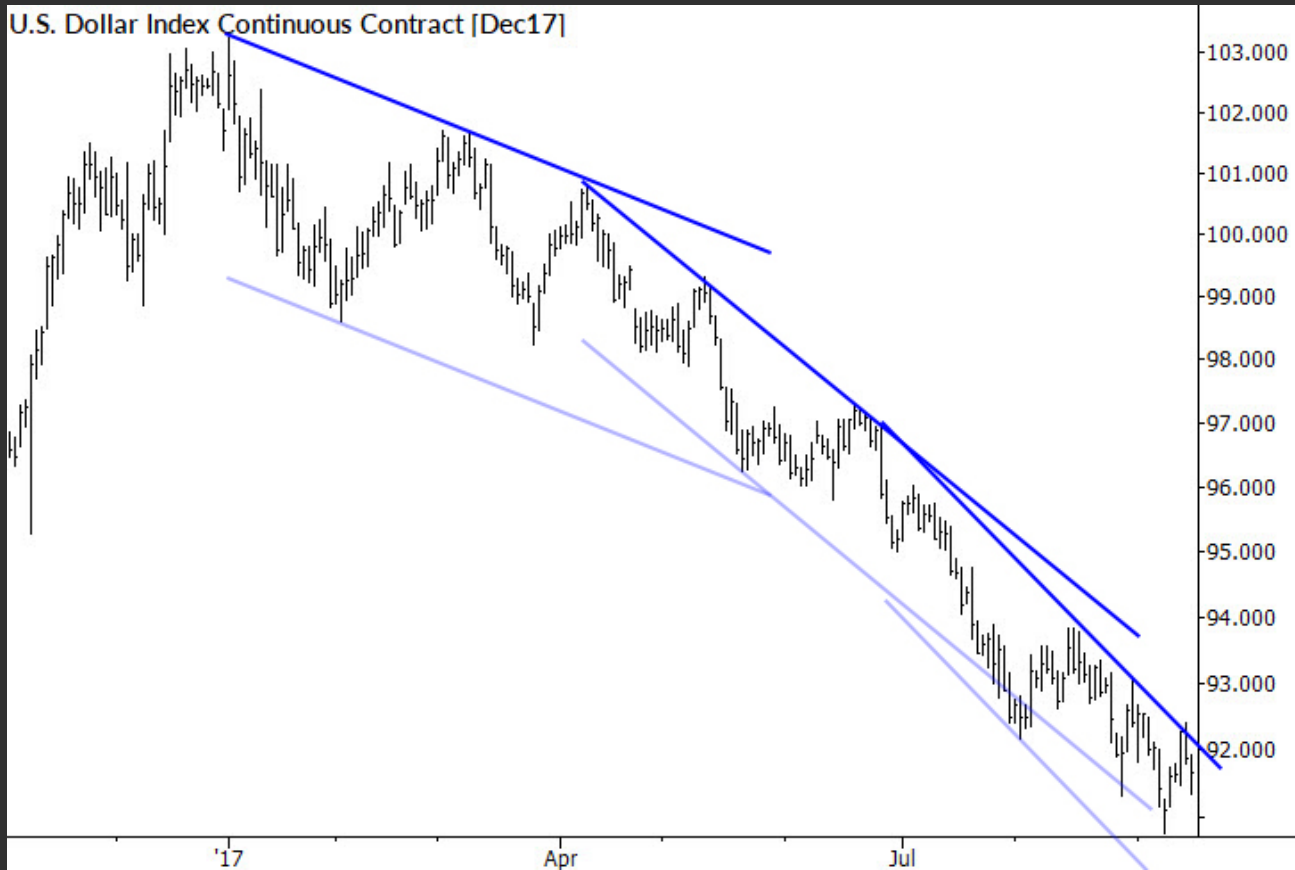


Source: Tradestation

TREND CHANNEL

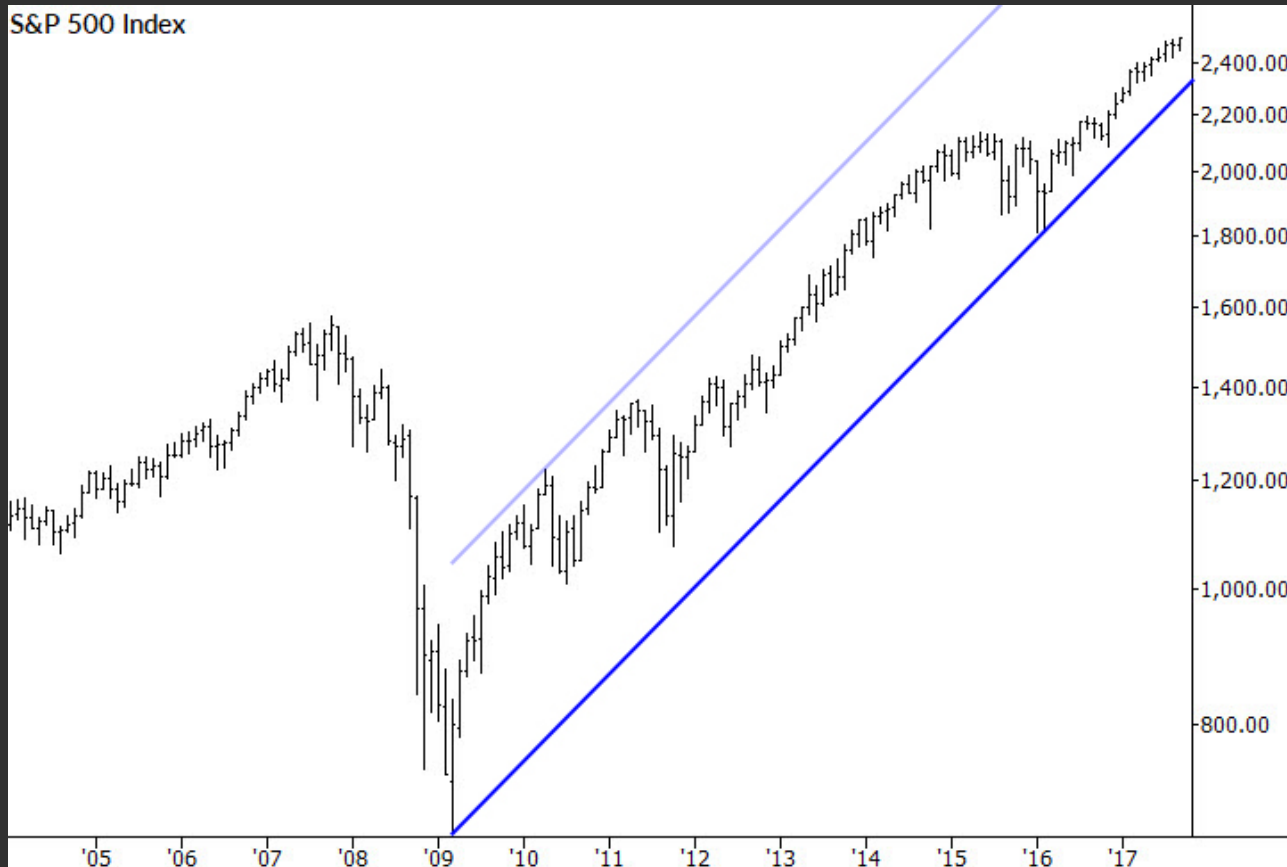
- A parallel trendline above/below an uptrend/downtrend.
- How to:
 - Construct a valid trendline
 - Copy the trendline
 - Move the parallel line to the most extreme swing between the anchor points for the trend.
 - It should not cut prices between those points
- Gives some idea for trend potential or exhaustion

TREND CHANNEL



Source: Tradestation

LONG-TERM TREND CHANNEL



Source: Tradestation

WHAT HAPPENS WHEN TRENDLINE IS BROKEN?

- Be careful of textbook examples and assumptions
- In my experience, a break of a trendline is not significant without confirming momentum.
 - The momentum is what matters
 - (And we're back to market structure)
- Trendlines are especially useful because they shape the way we see the market data.

MOVING AVERAGES



Source: Tradestation

USING MA TO DEFINE TREND

- Slope of MA
- Relationship of market to the average
- Questions of smoothing and confirmation arise
- Which average?

WHICH AVERAGE?



Source: Tradestation

SLOPE OF MA TREND INDICATOR

Table 14.10 Trend Indicator: Slope of 50-Period Moving Average, Categorical Returns

	Equities	Futures	Forex	Random	Total
Down					
N=	580,302	18,818	6,581	22,205	627,906
Mean Excess Return (bp)	177.2	(94.1)	15.5	(85.2)	157.7
StDev Raw Returns (bp)	302.8	152.4	75.6	119.9	293.2
Mean HisVol	39.9	20.4	10.5	18.1	38.2
% Close Up	50.2%	50.1%	50.5%	51.0%	50.2%
Up					
N=	793,221	21,827	9,223	26,283	850,554
Mean Excess Return (bp)	(129.6)	81.1	(11.1)	72.0	(116.4)
StDev Raw Returns (bp)	218.9	150.2	65.2	114.1	213.8
Mean HisVol	30.2	20.5	9.8	17.2	29.3
% Close Up	50.0%	51.1%	51.5%	51.7%	50.1%
All					
N=	1,373,523	40,645	15,804	48,488	1,478,460
Mean Raw Return	2.3	1.8	1.5	1.2	2.3
StDev Raw Returns	257.7	151.2	69.7	116.8	250.6
Mean HisVol	34.3	20.5	10.1	17.6	33.1
% Close Up	50.1%	50.6%	51.1%	51.4%	50.2%

Source: *The Art and Science of Trading* (Hunter Hudson Group, 2017)

TRIPLE MA TREND INDICATOR

Table 14.11 Triple Moving Average Trend Indicator, Categorical Returns

	Equities	Futures	Forex	Random	Total
Down					
N=	365,690	12,372	4,204	14,621	396,887
Excess Ret	166.9	(203.0)	43.6	(74.9)	144.5
StDev Raw Returns	319.2	158.8	78.0	119.9	308.6
Mean HisVol	40.8	20.7	10.7	18.5	39.0
% Close Up	50.2%	49.8%	50.5%	50.9%	50.2%
Up					
N=	537,896	14,652	6,137	17,515	576,200
Excess Ret	(157.9)	80.7	43.9	98.6	(141.5)
StDev Raw Returns	217.6	152.3	66.4	114.6	212.7
Mean HisVol	30.2	20.2	9.6	17.2	29.4
% Close Up	49.9%	51.5%	51.7%	52.0%	50.0%
All					
N=	903,586	27,024	10,341	32,136	973,087
Raw Returns	2.0	1.3	1.9	1.4	2.0
StDev Raw Returns	263.5	155.3	71.3	117.0	256.2
Mean HisVol	34.5	20.4	10.1	17.8	33.3
% Close Up	50.0%	50.7%	51.2%	51.5%	50.1%

Source: *The Art and Science of Trading* (Hunter Hudson Group, 2017)

THE PROBLEM...

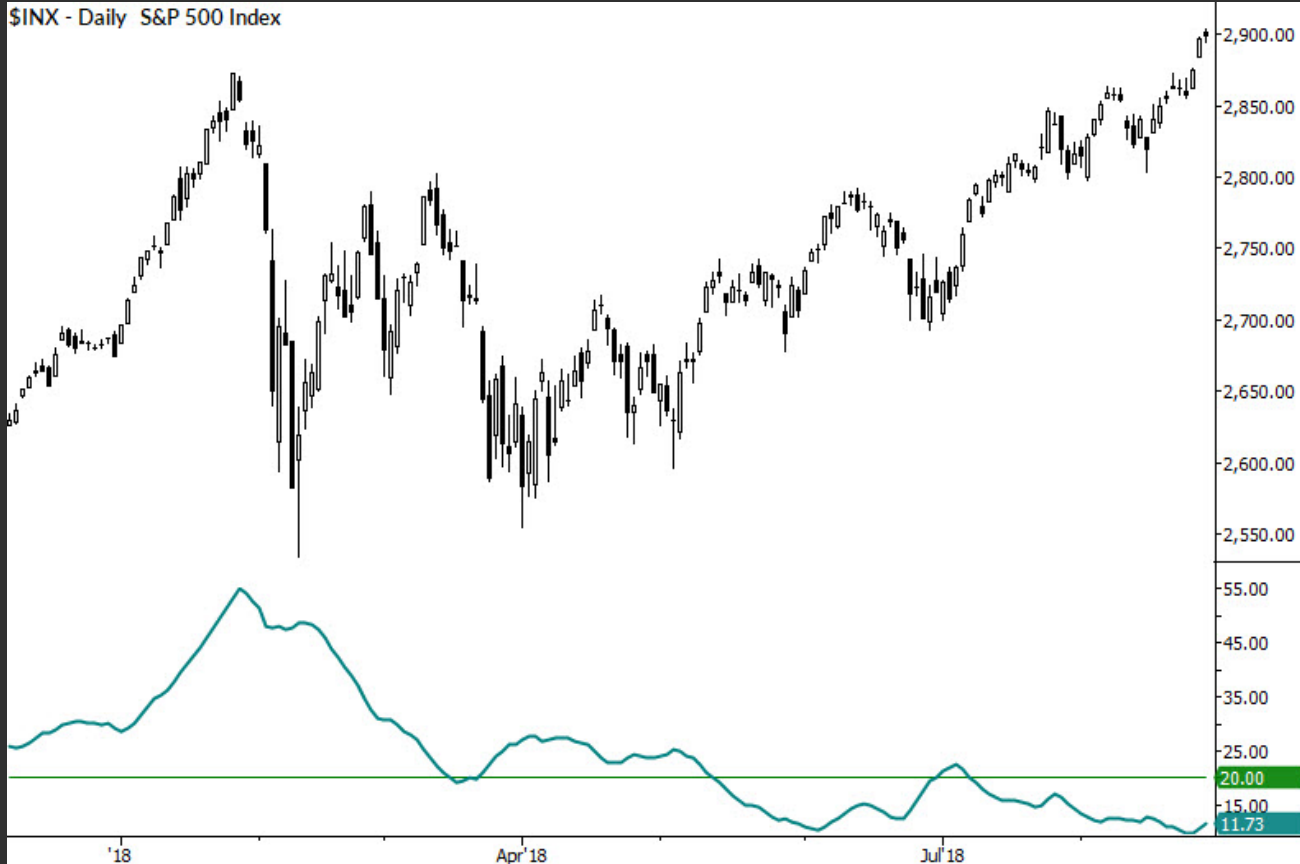
- Is lag and mean reversion.
- Trend indicators can only identify when the trend has turned
- By this time, especially in stocks, we are due for a reversal
- The result is you end up, with strong regularity, on the wrong side of the market.
- Shortening indicator window is not a solution.

ADX



Source: Tradestation

ADX



Source: Tradestation

GRIMES EFFICIENCY RATIO



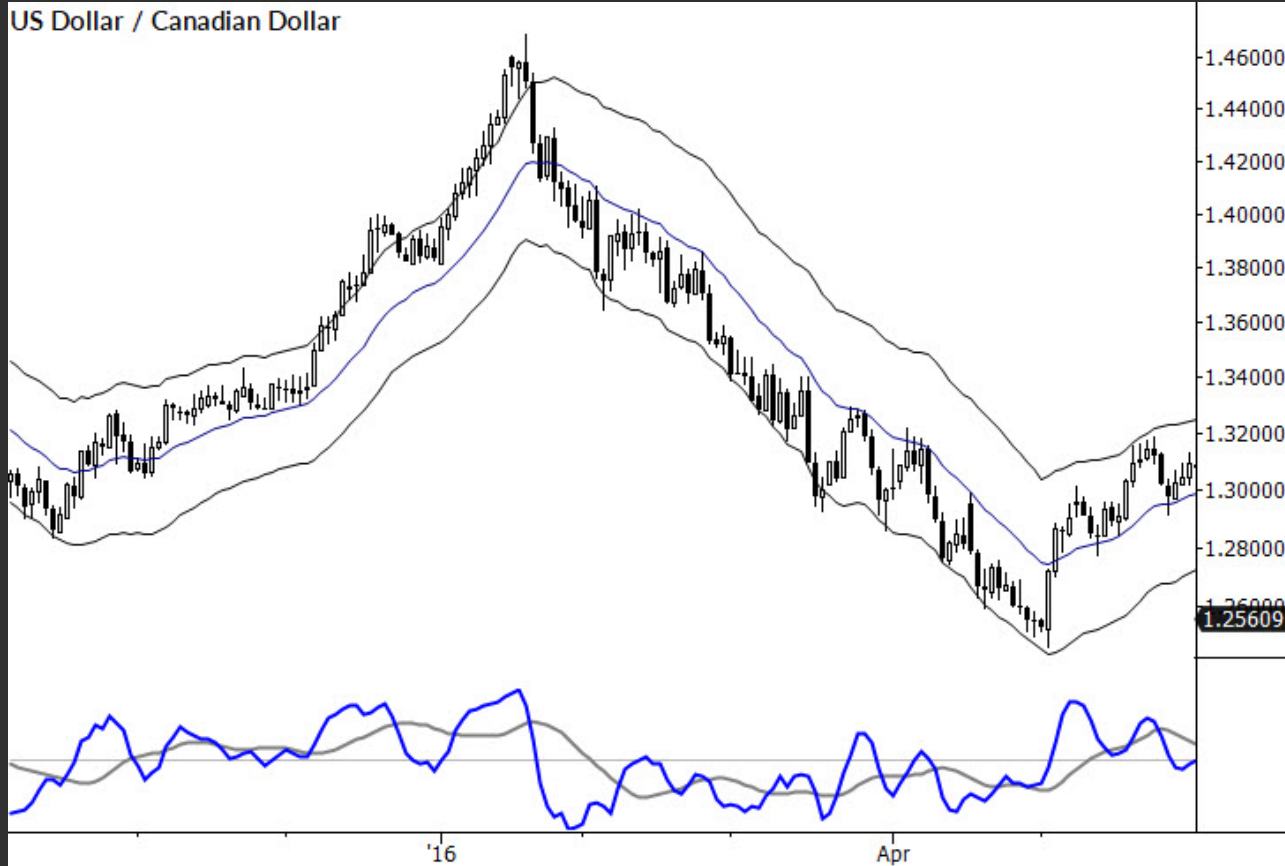
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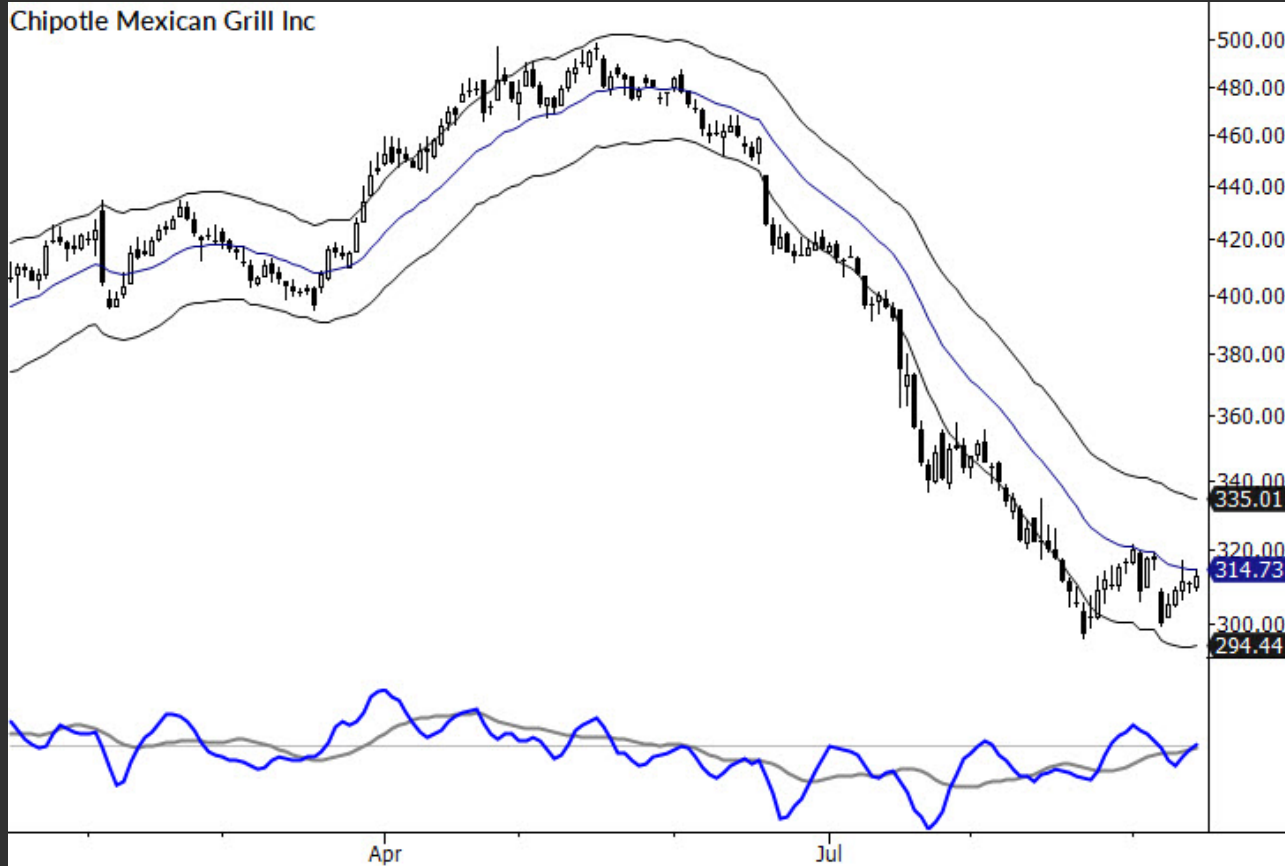
Source: Tradestation

USING BANDS WITH TRENDS



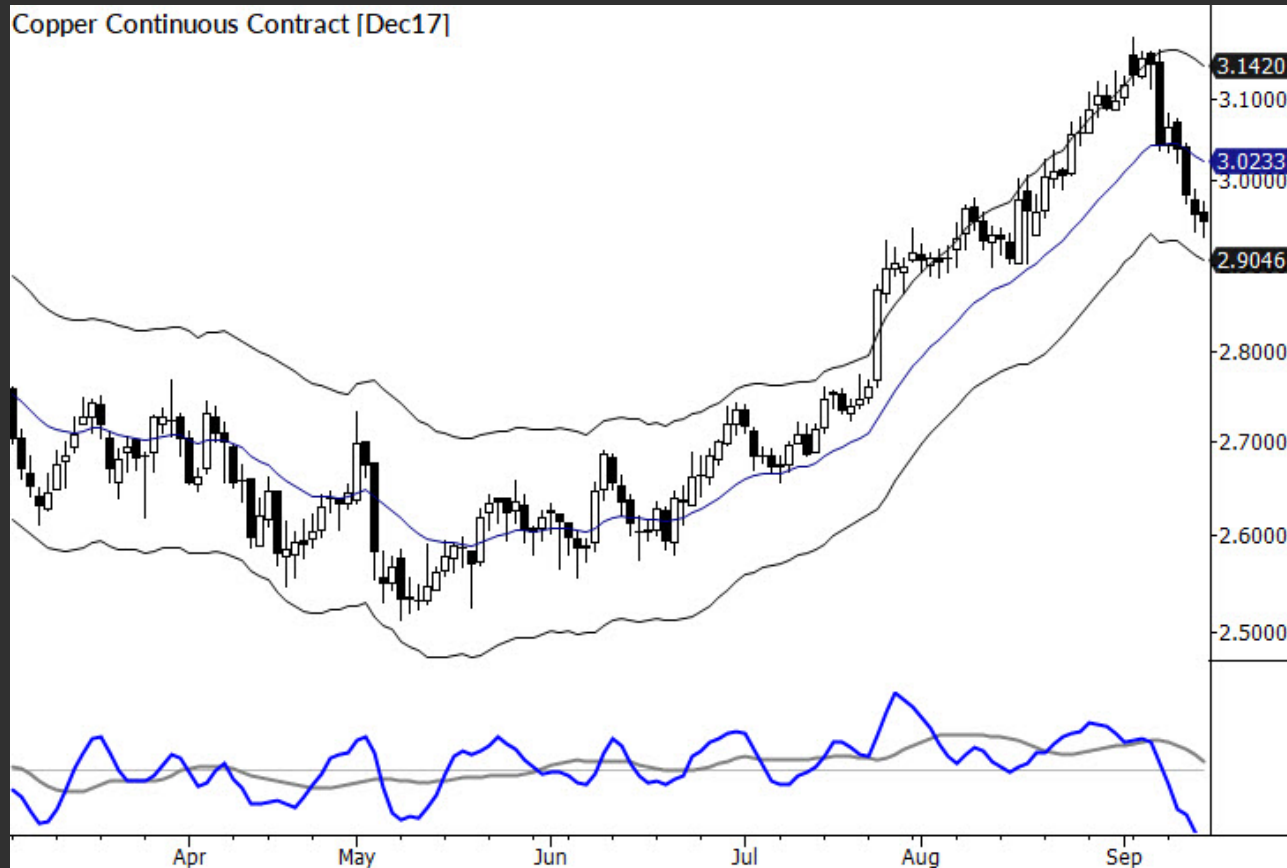
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GAUGING TREND STRENGTH



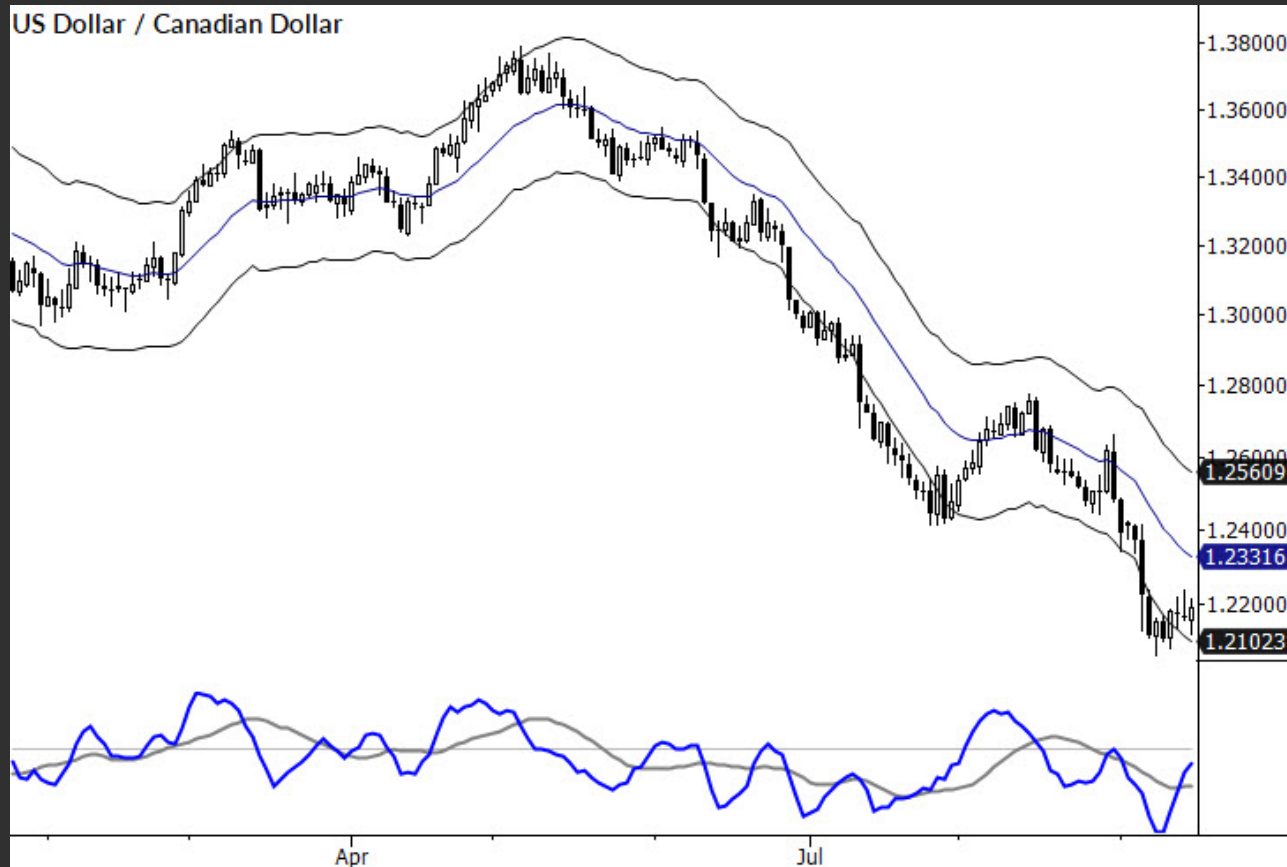
Source: Tradestation

SLIDE ALONG THE BANDS TREND



Source: Tradestation

SLIDE ALONG THE BANDS



Source: Tradestation

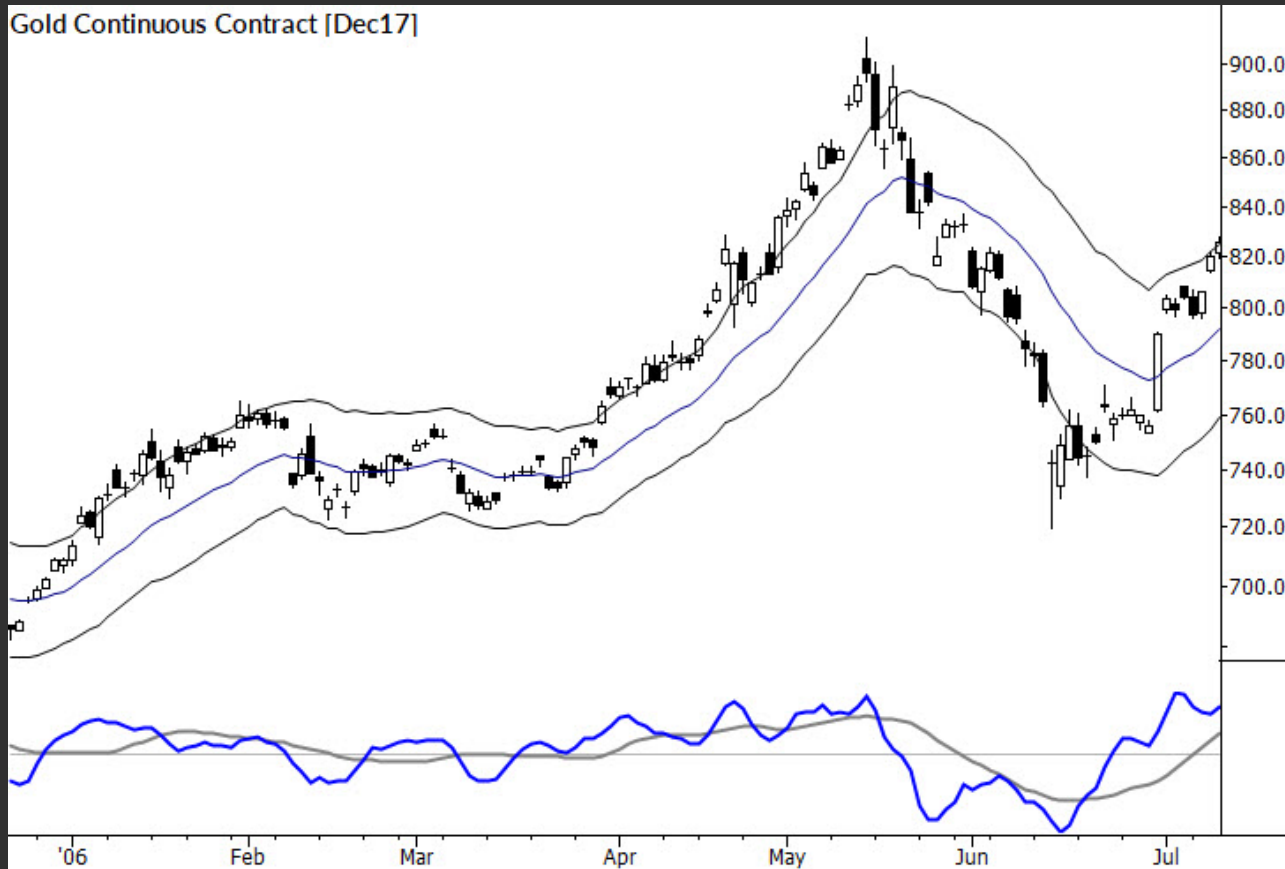
SLIDE ALONG THE BANDS

- Absence of pattern (normal trend fluctuation) is a pattern in itself (suggesting very strong trend.)
- This is a one-sided trending action.
- It can be very strong and extend much further than anyone thinks possible.
- But when it fails, it does so dramatically.
 - Why?

TREND ENDING PATTERNS

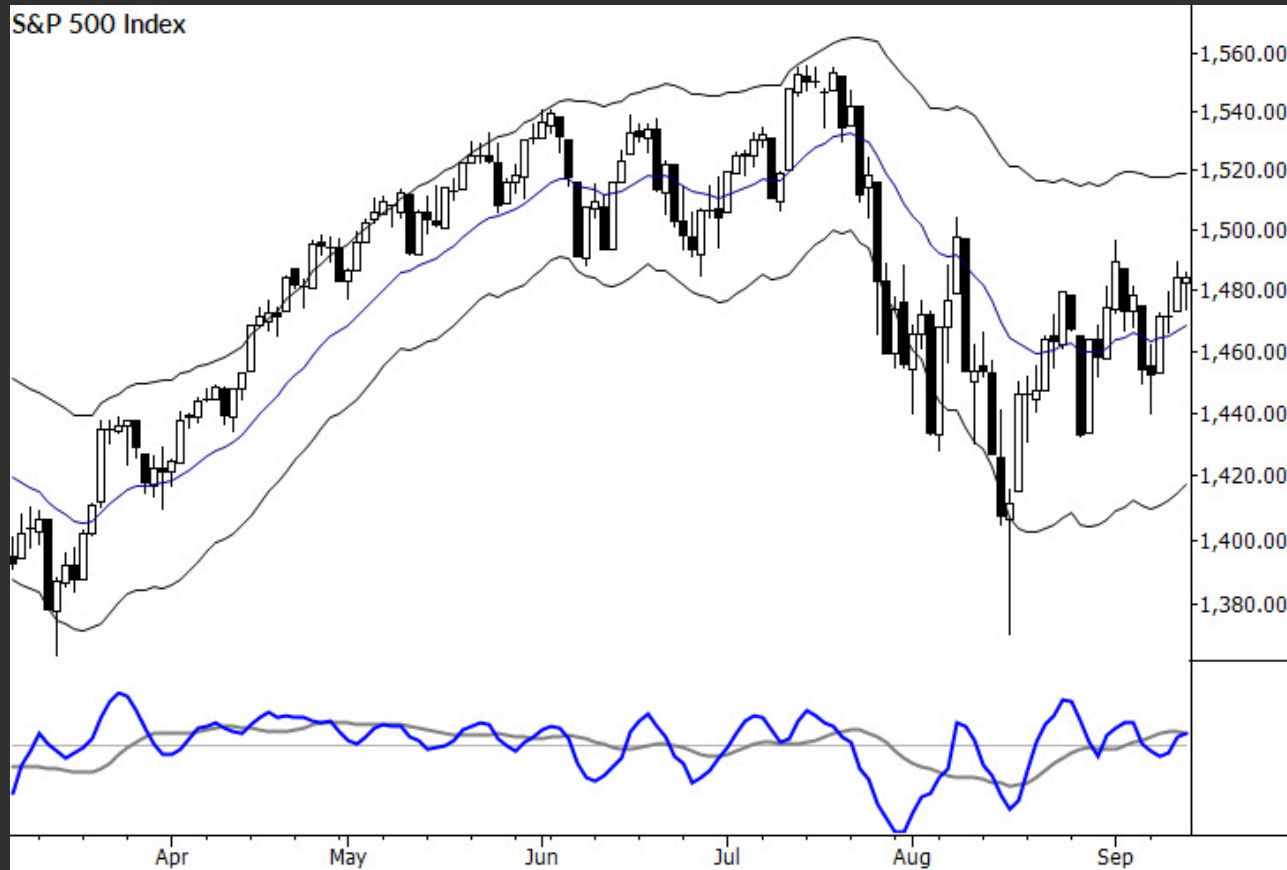
- Exhaust
 - “Parabolic” exhaust or climax
- Rollover
- Strong “surprise” momentum against

EXHAUSTION OR CLIMAX



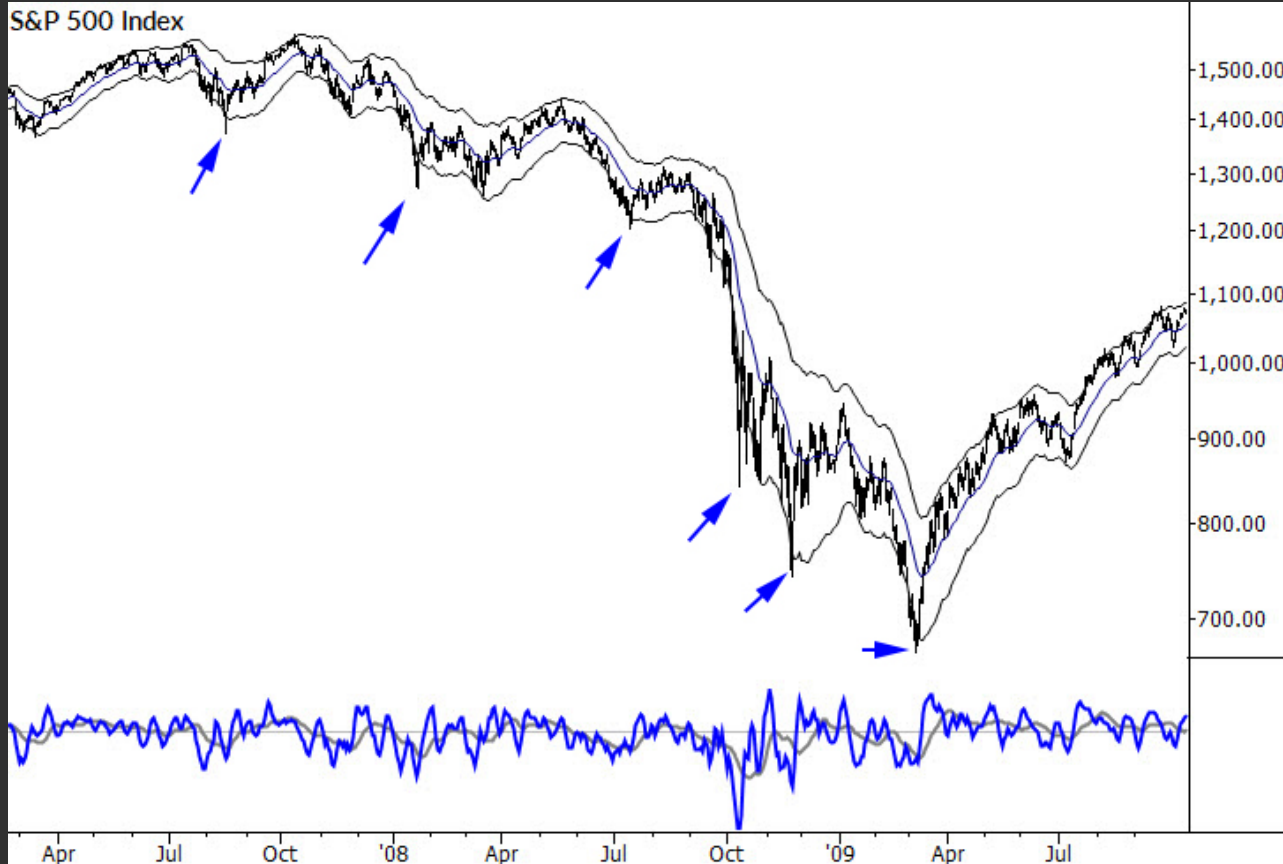
Source: Tradestation

ANOTHER CLIMAX



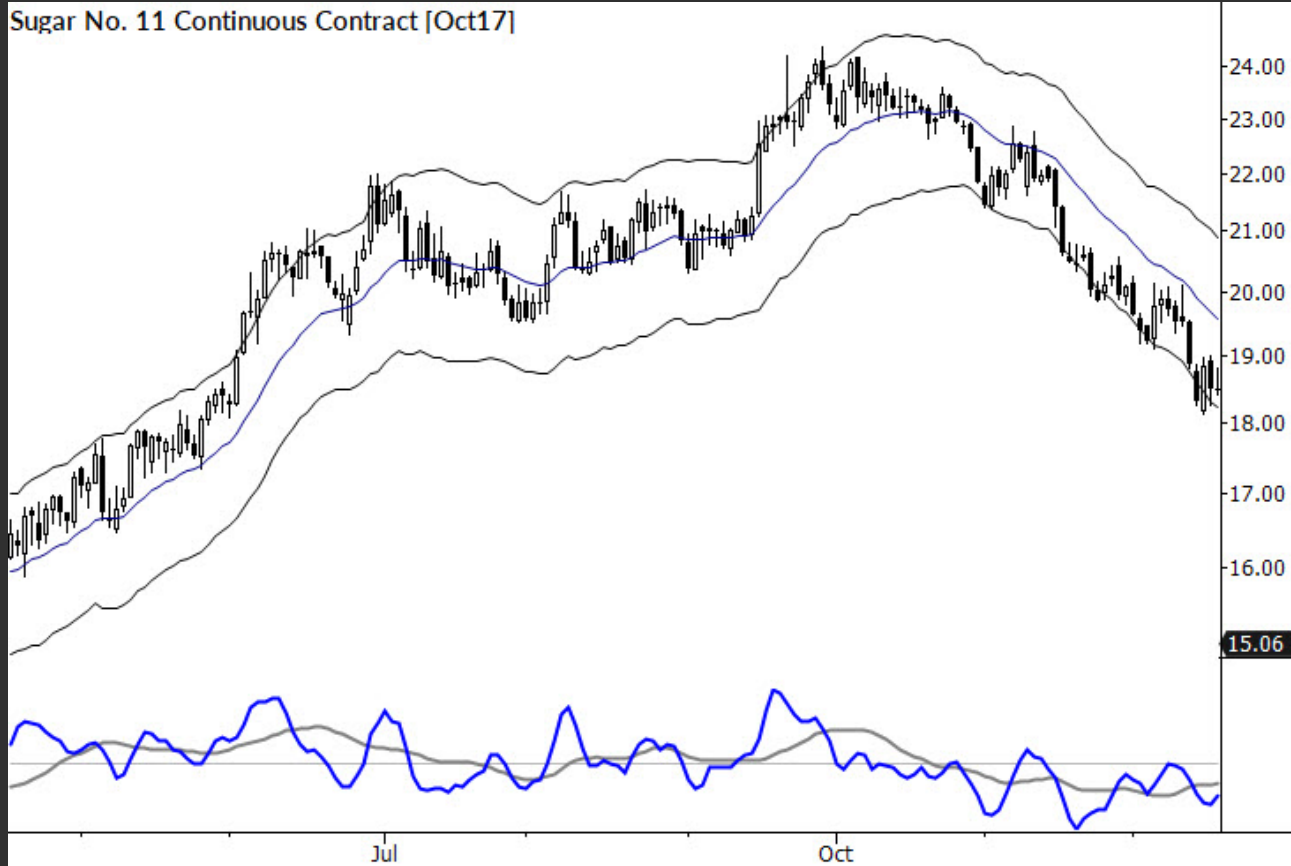
Source: Tradestation

EXPECTATIONS?



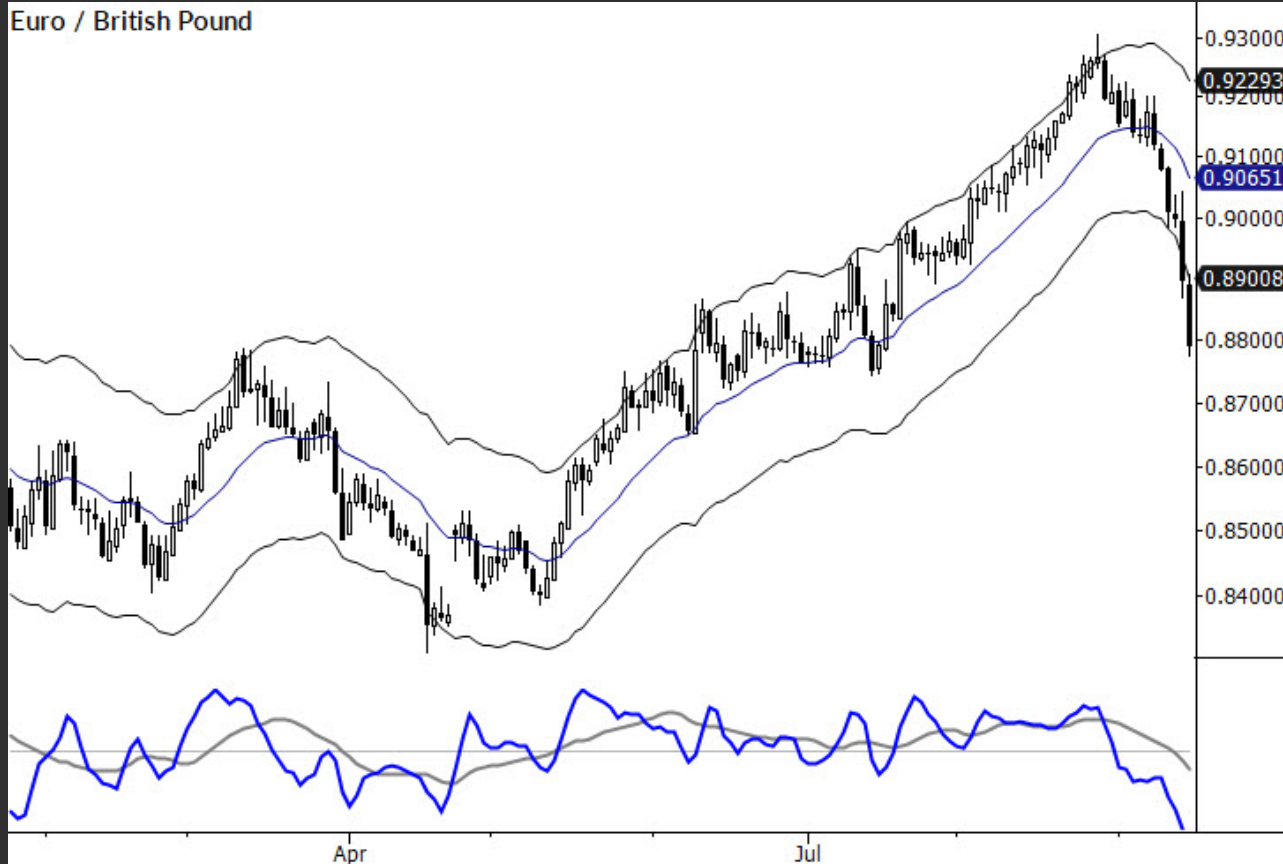
Source: Tradestation

ROLLOVER



Source: Tradestation

SURPRISE MOMENTUM AGAINST



PRACTICAL TRADING GUIDELINES

- “The trend is your friend”?
 - Maybe, but maybe not.
- Decide how you want to trade
 - Trend trader
 - Swing trader
 - Range trader
 - Seller of option premium
- Each of these approaches will require different handling of trends.

TRADING PLAN

- Discipline is a result, as much as it is a goal.
- A result of
 - Having a plan with an edge
 - Having a structure to evaluate how well you follow the plan
- Bottom line is you should have a clearly defined (ideally written) trading plan.
- When you trade, job #1 is to follow the plan.

SUMMARY

- Many ways to measure trends. None are perfect.
- Be careful of combining if there's overlap.
- Simple may be better.
- Trust your intuition (once it has been trained).
- Trading plan is (really) important, but assessing trend may require some finesse and sophistication.
 - Hard to codify in plan, but worthwhile

FOR MORE INFORMATION

- My personal blog
 - adamhgrimes.com
- Podcast
 - The Trader's Workshop
- Comprehensive Free Trading Course
 - marketlifetrading.com
- My books
 - *The Art and Science of Technical Analysis* (Wiley 2012)
 - *The Art and Science of Trading: Course Workbook* (Hunter Hudson Press 2017)
- Google many TA concepts with my name attached!

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