Volume #32 Issue #9 16 February 2019

THE BOLLINGER BANDS LETTER

"I don't know where the stock market is going, but I will say this, that if it continues higher, this will do more to stimulate the economy than anything we've been talking about today or anything anybody else was talking about." Alan Greenspan

The Squeeze

One of the most popular aspects of Bollinger Band analysis is the Squeeze, a setup that arises from a period in which the Bollinger Bands come together in a tight formation. To determine when we are in a Squeeze we judge this tightness of the bands relative to history. The opposite of a Squeeze is a Bulge, which is a period in which the bands are far apart relative to history. Before we go any farther we need to introduce an indicator, BandWidth, which tells us how wide the Bollinger Bands are. BandWidth is the distance from the upper BB to the lower BB. Since the things we analyze trade at many different price levels we normalize BandWidth to a percent by dividing by the value of the middle Bollinger Band. Now that we can measure the width of the bands we can proceed.

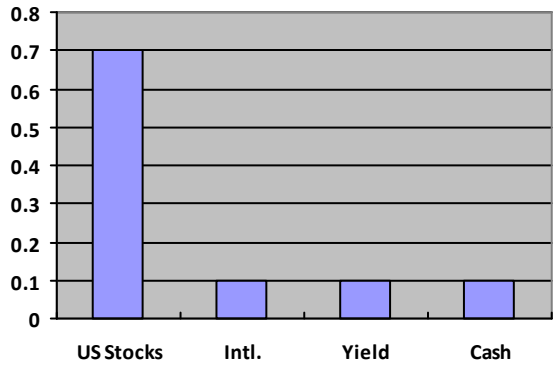
We use a 125-period window to quantify Squeezes and Bulges. A Squeeze occurs when the value of BandWidth is the lowest it has been in the past 125-periods. The length of the periods does not matter, hours, days, weeks, etc… a Squeeze is always a 125-period low in BandWidth and a Bulge is always a 125-period peak in BandWidth. It turns out that 125 is a very robust number and variations around it, even rather large ones, all seem to work as well.

Now that we know how to define a Squeeze and a Bulge we need to ask, why they are so popular? The answer is that traders have correctly figured out that Squeezes often mark the beginnings of important moves just as Bulges often mark the end of important moves. These ideas actually have a very long history in trading. For example, in the late 1980s volatility breakouts became popular. Even before that, technical analysts knew that certain types of price formations that occurred after strong trends were precursors to important moves. Depending on the writer and the time, these formations were called wedges, pennants, flags, coils, consolidations and so on, often with rising or falling as qualifiers. For example, there is a rising wedge on the two hour chart of the crypto-currency Ethereum at present that is also a Squeeze. (Chart page 14) From a Bollinger Band perspective it turns out that BandWidth almost always declines during these formations, so that a trough in BandWidth several weeks into a consolidation often qualifies as a Squeeze and can set the stage for the next important move as the formation matures.

These relationships are precisely why it is important to understand the basic principles of technical analysis. The works of Schabacher, Wyckoff, and Edwards & Magee contain lucid descriptions and explanations of these formations and it doesn't take much to translate them into today's algorithms. It is interesting that academics often deride this work, belittling its colorful language and chastising its adherents as naive at best, all-the-while busily incorporating these same ideas into their work; a classic case of 'not invented here'. What is most important to understand is that underlying all of this, in both the classic and modern sense, lies basic market psychology and the forces of supply and demand writ clearly in price.

Other than Bollinger Bands, which define high and low on a relative basis, BandWidth, which tells us how wide the bands are, %b, which tells us where we are in relation to the bands, and the concepts of the Squeeze, Bulge and Head Fake—more on which later—what have my contributions to this arena been? Primarily an understanding that volatility is not mean reverting as is the common assumption; rather it is extreme seeking. Which is to say that a peak in volatility in not a forecast

Asset Allocations

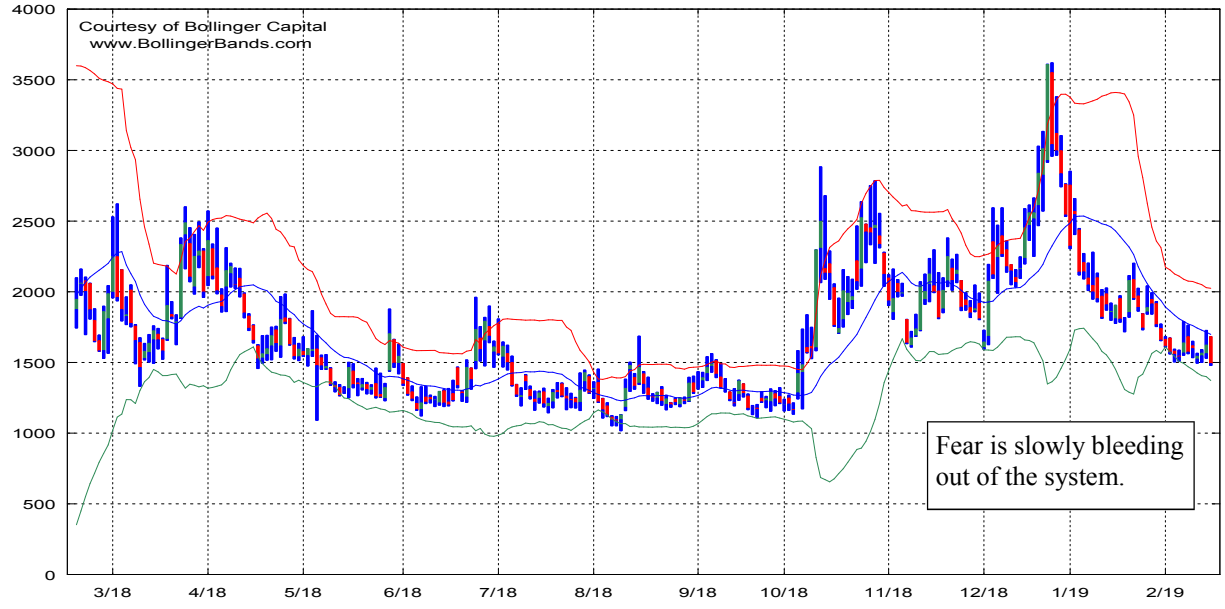


Value Line Arithmetic — VALUA — One Year

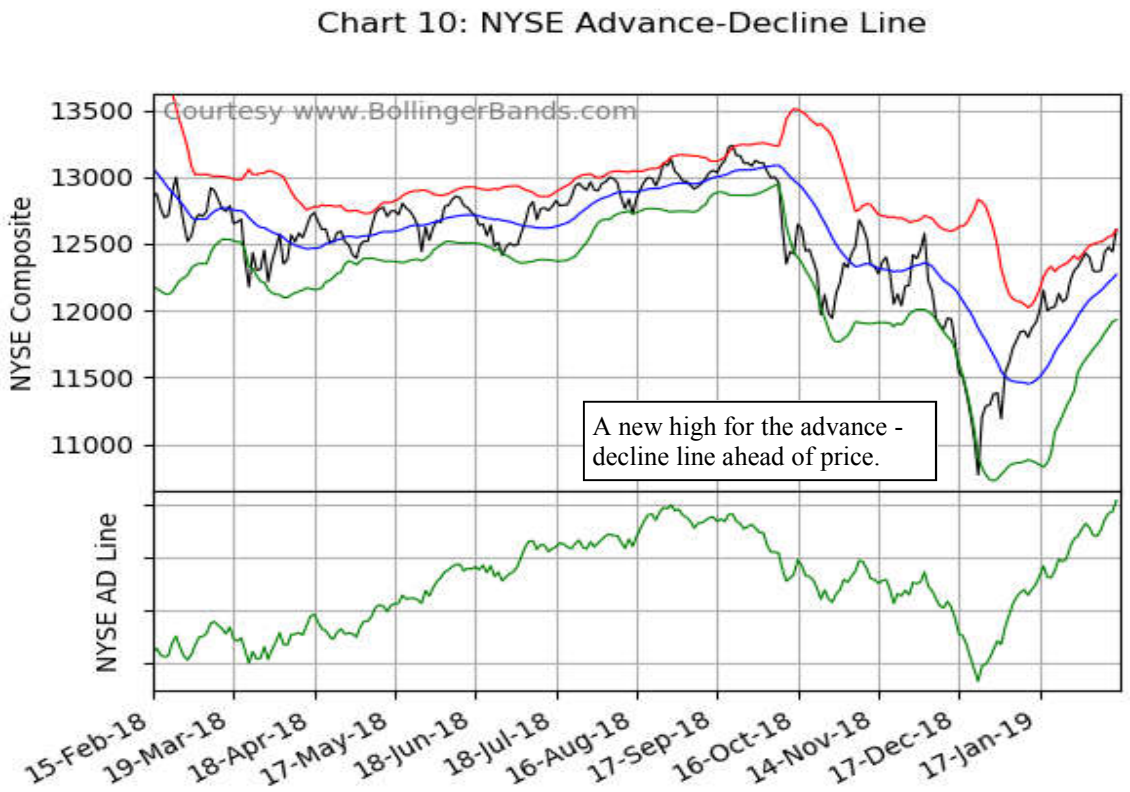
for average volatility as the academy would have you believe, it is a forecast for low volatility. Likewise a trough in volatility is not a forecast for average volatility, it is a forecast for high volatility.

The question that everyone has in relation to the Squeeze is this: "Which way will price go in the wake of the Squeeze." Often traditional technical analysis can provide a useful answer, and just as often supply demand indicators like Accumulation Distribution or Intraday Intensity can also be helpful, but sometimes it just isn't possible to know in advance; you just have to sit and wait for the market to tell you. In the old days, when breakout approaches were in vogue, in the wake of a Squeeze if price broke higher you could expect to see price continue to trend higher and vice versa. Today we more often get what we call the Head Fake, an initial move in one direction followed by a sharp reversal and then the real move taking off in the other direction. Today the highest probability, best risk-reward trade to me is to wait for Head Fakes and trade them rather than the breakouts.

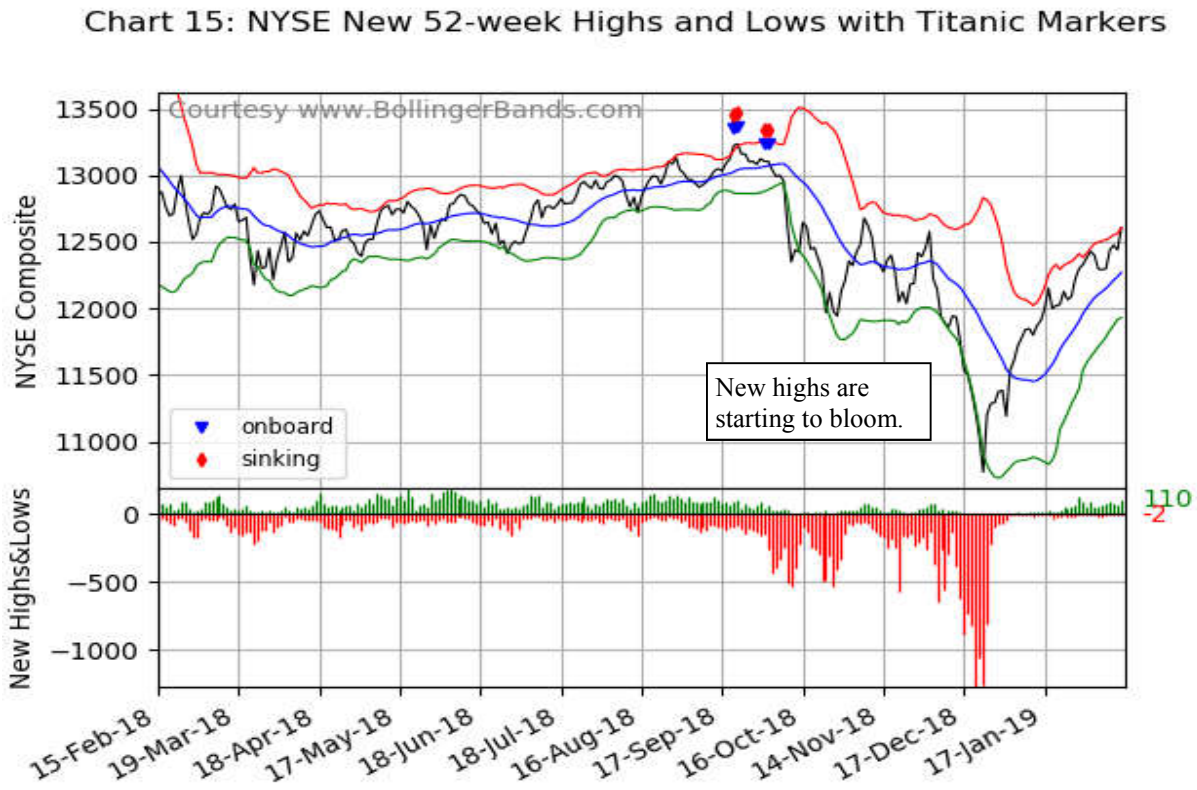
Important: There is a lesson here, breakout systems are



The Volatility Index — VIX — One Year



NYSE Composite and Advance - Decline Line — Daily — One Year



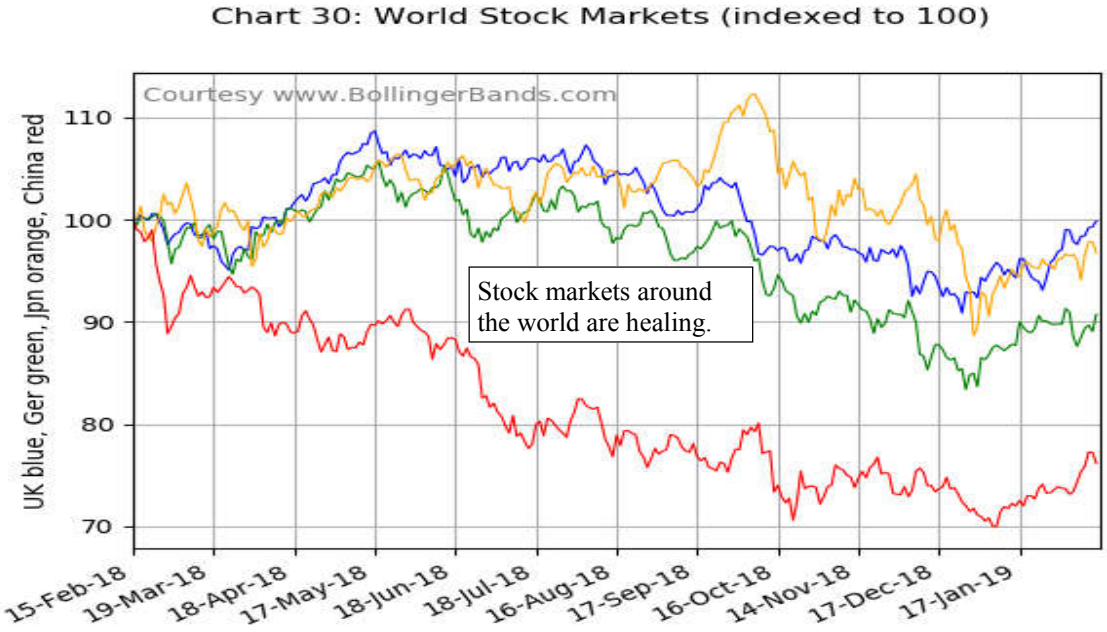
NYSE Composite and New Highs / New Lows Histogram — Daily — One Year

Shanghai Composite — Daily—One Year

systems and as such can be arbitraged away. Indicators like Bollinger Bands that touch first principles of the market are fundamental to the market and cannot be arbitraged away. So a system using Bollinger Bands can fade, but the bands themselves are robust across time.

My intention here isn't to give a lesson on how to trade the Squeeze, but to look into what the Squeeze is, how it works today and draw parallels between Squeezes/ Bulges, traditional technical analysis, and our markets today, and to suggest that there is in fact nothing new under the sun; this work is part of a continuum as old as the markets themselves. Have the details changed? Certainly. Have the basics changed? No, not at all. It is true that the technicians of yore didn't understand volatility as we do today, but they did understand price and they knew that a coil had potential without knowing that BandWidth was at an n-day low.

Pennants are consolidations that form in the wake of trends, either up or down. I like to call them wedges, as that was the first name I learned, though there are many



China, Germany, Japan & the UK — Daily — One Year

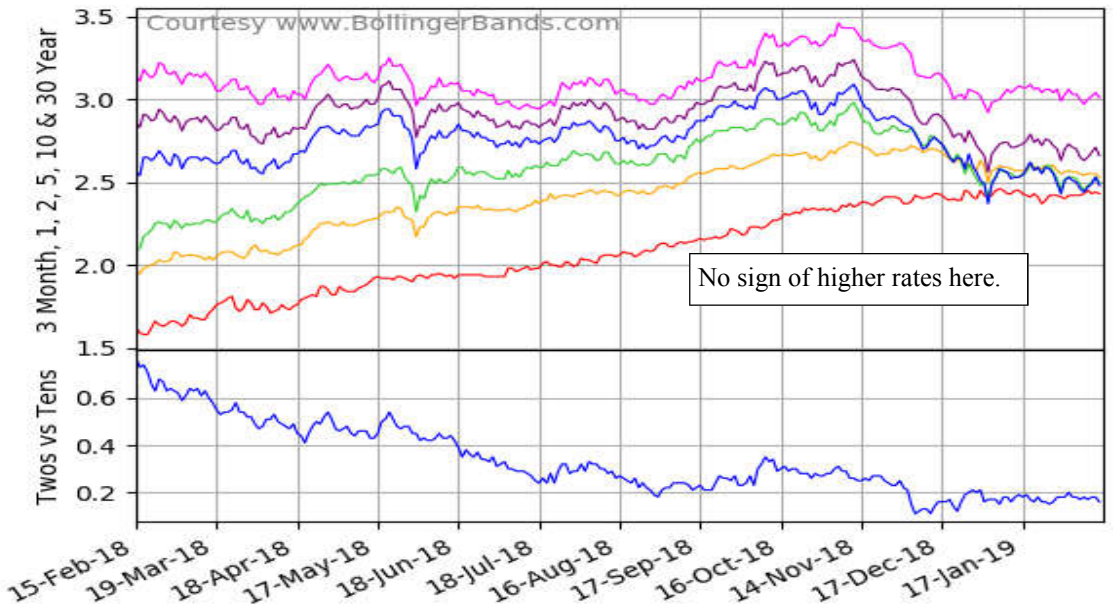
other descriptors. The best formations are generally shaped like a pennant, gradually narrowing from start to apex. I don't much care if they have a tilt up or down, though slope can have some forecasting value; it is the waning of volatility that they represent that is of greatest interest to me. If you go back through the classic technical analysis literature you will find a lot of ink devoted to these patterns. The classic technicians intuitively understood their importance, even if they didn't yet understand the underlying volatility dynamics. Today I see them as volatility signatures rather than price patterns. In any case, these formations are ripe for the picking by the armchair technician, and Bollinger Bands and the related tools make the job even easier. I think that equipped with this knowledge you will be far more able to engage with the Squeeze successfully.

Stock Picking

I was speaking to a reader the other day who called to renew his newsletter subscription. He opined that he would be willing to subscribe to another service for more stock picks. I told him that this was the only service we had, but the conversation started me thinking. I used to recommend more stocks, but as public interest shifted towards ETFs our interest shifted with the trend. While I have an abiding interest as a stock picker, I have no interest in starting another website or launching a stock picking service; a monthly letter and weekly updates are already more than enough. For many years I referred those interested in stock picks to our websites EquityTrader.com and BollingerOnBollingerBands.com for lists of recommendations to fit various trading styles, but those sites were closed a few years ago. However, I think it might be useful to do some basic stock picking here, presenting ideas occasionally as conditions dictate. Our most recent foray into stock picking, our Bounce picks, worked well enough, with most beating the market handily. The biggest problem for me is tracking the picks; calculating purchase prices, tracking dividends, adjusting for stock splits, calculating and posting stops and so on. I haven't the time or, for that matter, the will, to do all that. What I am willing to do is post some ideas of interest occasionally. I won't track them in a rigorous way, but I may comment on them from time-to-time.

So, where will these ideas come from? As this is a letter with a primarily intermediate-term focus, initially I plan to use a relative strength model, looking for high relative strength stocks that are on pullbacks. I'll use a methodology akin to Bob Pierce's relative strength model published long ago in the then *Market Technicians Journal* that I have adapted for daily data instead of weekly, employing a shorter look-back period for the relative strength calculation, and an even shorter one for the volatility calculation used to adjust the RS data. As Bob's was a very long term approach, these changes well suit our intermediate-term goals. In essence, I have tailored his methods to our preferences. We have been using a version of this approach for the ETF portfolios for a long while, so we have a good deal of experience

Chart 29: US Treasury Constant Maturity Interest Rates



Treasury Rates — One Year

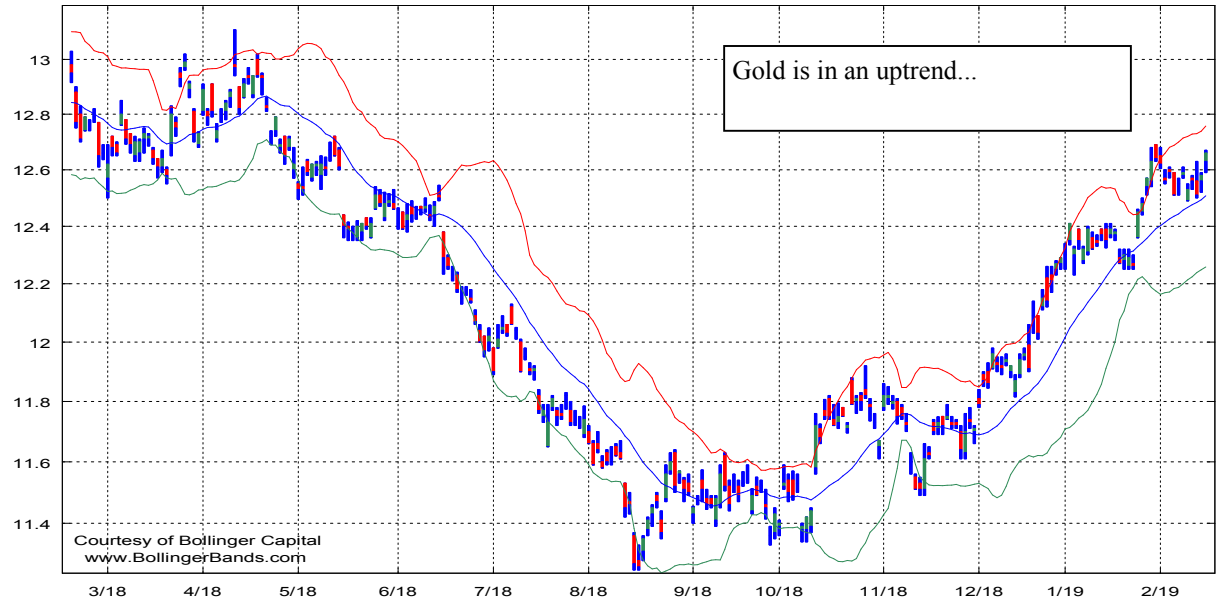
Crude Oil ETF — USO — One Year

with it and that record can give you a good idea of its strengths and weaknesses.

Our first idea is: DORM, Dorman Products

If we were after a shorter-term, more trading-oriented approach, I might use a Bollinger Bands approach similar to that which drives our Ice Breaker system. Perhaps we can consider that at some point in the future. Speaking of Ice Breaker, a report on that system is due. Ice Breaker has handled the current market, including the correction, quite well. These are our current Ice Breaker positions, 4 DIA, 3 QQQ, 4 SPY, 4 IJR, and 4 MDY with returns ranging from just under 10% to over 20%. The full details are available on our web site. This success is of particular interest to me as the two legs of the correction we saw coming into year-end were exactly the sort of environment that stresses Ice Breaker to the max. Be sure to check the actual numbers for the past year, they are very interesting.

Oil Stock ETF — XLE — One Year



Gold Bullion ETF — IAU — One Year

The Stock Market

Our outlook for the stock market remains positive. We are operating off a series of important buy signals generated around the Xmas Eve low—detailed in the January letter—that the market has gone on to confirm. Advance – decline data is strong, as is that for up and down volume. 52-week new highs are starting to expand while new lows are almost nonexistent. Jim Meikka's Summation Index work chimed in with an all clear, but I still need to research that signal's track record as it is new to me. All-in-all, there is very little to complain about; the stock market continues to climb a wall of worry as it is wont to do. You should be as fully invested and is comfortable and consistent with your long-term goals and risk/reward preferences.

The Economy

I love the Alan Greenspan quote at the head of this letter as it puts the market and the economy into proper perspective, the market leading and the economy following.

Gold Stock ETF — GDX—One Year

Those who are worrying about economic growth or even a looming recession should consider the stock market's record since the December low. What people often fail to consider is that higher stock prices in-and-of-themselves are economically stimulative. Perhaps it is the wealth effect, or simply that a bull market spreads happiness… I cannot say, but it is clear to me as it is to Mr. Greenspan that rising stock prices have a positive impact on the economy as a whole. One aspect may be that higher stock prices help pay down debt and increase liquidity. In any case our economic outlook is the same as our stock market outlook, positive.

Energy

A few days back an analyst working at IG in Sweden asked me about Brent, essentially the price of crude oil on the continent. BandWidth was at low levels and he was wondering about the prospects for the resolution of a Squeeze. My first thought was that it looked like Brent was at or near a sort of equilibrium price. You may recall that we have discussed equilibrium prices for energy many times before. These exist for other series as well, but they have always seemed very useful in energy. My second thought was that the Squeeze had gone on rather longer than I preferred. I cited a prior Squeeze setup in Brent from September had been more to my taste where BandWidth had come down to a low and immediately turned back up as a strong rally broke out. Squeeze and go! That's the way, aha aha, I like it, aha aha.

The Dollar

After a long period in limbo when no one seemed to care, the dollar got an outing the other day with an assist from the Federal Reserve Board chair. In the short term we did see a bit of strength, but when we step back and take a look at the bigger picture we see a dollar index mired in the middle of a four-year trading range. Yeah, I know the buck had its outing in the news, but we aren't seeing anything on the charts that suggests dramatically high prices for the dollar. Our bet is that the market will again forget about the dollar and go back to worrying about the White House and the trade wars.

Rates

Two important fundamental/psychological factors underlying the stock market correction were a fear of a trade war and a fear of higher interest rates/tight monetary policy. It is starting to look like the trade war with China has at least a chance of being curtailed and that the fear of higher interest rates has ebbed as Fed Chair Powell has taken a more dovish stance. Looking at US Treasury rates across the spectrum we see little or no indication of higher rates in the immediate future. The yield curve is flattish and low by historical standards, which is NOT a forecast for higher rates. A stock market reinvigorated by stable Fed policy and waning trade fears may eventually cause the Fed some concern, but for now we see Fed policy as neutral to slightly supportive of both stocks and the economy. In a longer-term sense we expect much higher interest rates, but that is safely in the future for now.

Commodity ETF — DJP — One Year

View from the Beach

I recently took a trip to Thailand, my first, to attend an audio conference. I arrived a few days early so I could take an eco-trek. After I was picked up we drove a couple of hours south of Chang Mai and up into the mountains. The trek was organized by a group of Karen people. The Karen originate from Myanmar and have been in the area for a very long time. They have their own language and writing, customs and culture. Their homes are on platforms supported by stilts with the people living above and the animals, mostly pigs and chickens, living below. The houses are mostly a large single room, perhaps with a few lightweight partitions, with an open hearth being the focal point. These are very self-sufficient people; I imagine that a typical Karen family could live for a year on what a typical American family goes through in a week. Each family has its own plot to grow rice, mostly for their own consumption, along with a variety of vegetables. Their diet consists mostly of rice and various tasty curries. The rice is often accompanied by fiery Thai chilies. In the off season when farm work is slack, the women weave beautiful cloth by hand. The roads in the area are just starting to be paved and electricity is starting to arrive. Many Karen now have cell phones and the cell reception is surprisingly good. A few of the men work in town, but mostly these are self-sufficient communities with little reliance on the outside world.

Our trek started in one village and went to the next. That may sound easy, but there was a mountain in-between. We ate lunch on top of the mountain with plates and platters made from banana leaves. That night we slept in a valley next to a waterfall in one of those platform houses on what had been a rice farm. Another day, another mountain and then back to Chiang Mai. It was a wonderful experience and highly recommended; just keep in mind that you will be HIKING!

http://www.thaiecotrekadventure.com/

It is really interesting how industrious these people are. For example, on the top of the second mountain someone had cultivated a plot and was growing radishes; it is a long hike to and from that plot. The area has been made a national park and new cultivation is no longer allowed, so these communities cannot grow. Things are changing fast, the children of the immediately prior generation grew up in the forest and made their own toys, the kids of the current generation have access to phones with games and some manufactured toys and spend much less time in nature. The younger people mostly speak Thai and Karen, but the older people are primarily Karen speakers. As is the case everywhere, many of the young folks are moving into the cities. I imagine that in another generation the pace of change will have altered these lives completely.

Appearances

TradersEXPO
March 10-12, 2019
New York City
http://bit.ly/2sVwBw1

IG Zurich
March 13, 2019
https://www.ig.com/en-ch/swiss-trading-day

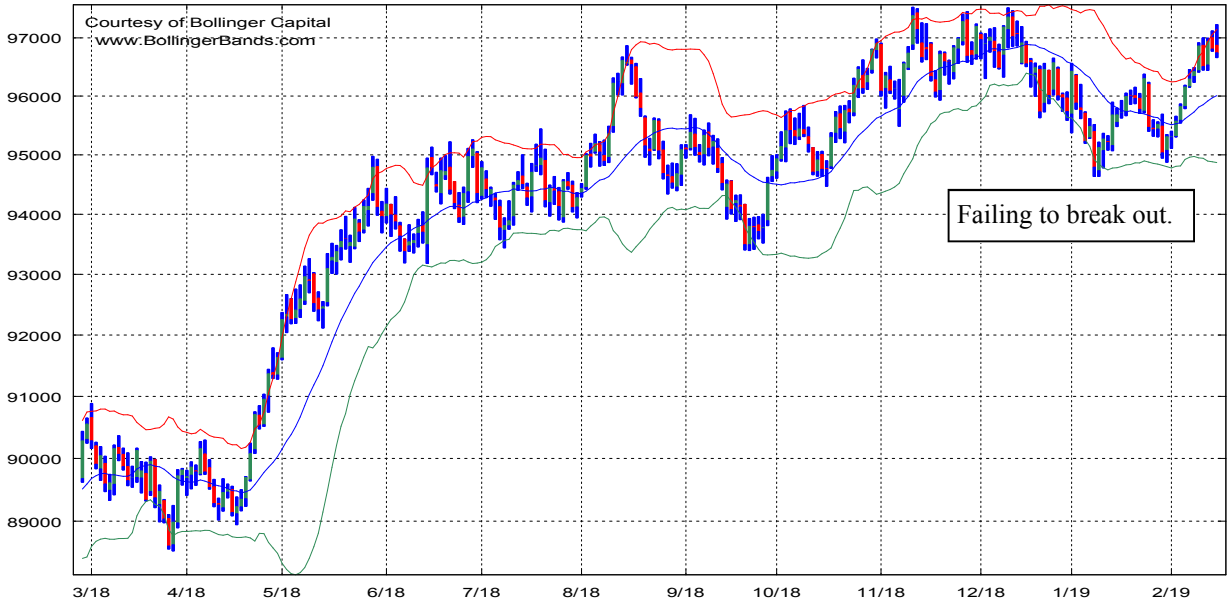
YouFinance.it
Bologna, Italy
April 5, 2019
https://www.youfinance.it/investi-bene/eventi/venerdi-5-aprile

ETF Portfolios	Symbol	Date Selected	Purchase Price	Current Price	Dividends	Return	Rank
Style							(# in 21)
Russell 2000 Growth	IWO	2/8/2019	189.46	197.82	0.00	4.42%	3
Russell MidCap	IWR	2/1/2019	51.73	53.44	0.00	3.32%	2
Russell MidCap Grow	IWP	1/11/2019	122.15	133.01	0.00	8.90%	1
International							(# in 24)
Russia	RSX	11/2/2018	21.35	20.47	0.97	0.41%	10
Switzerland	EWL	8/3/2018	34.42	33.97	0.00	-1.29%	8
Brazil	EWZ	10/12/2018	37.10	44.45	0.57	21.37%	1
Sector							(# in 27)
Gold	IAU	2/8/2019	12.52	12.66	0.00	1.12%	1
Utilities	XLU	10/19/2018	54.39	55.71	0.46	3.27%	10
Software	PSJ	1/11/2019	77.64	87.49	0.00	12.69%	3

ETF Portfolios

Smaller stocks stole the market from their bigger brethren last week, nearly doubling their gains. I would be tilting my portfolio in this direction a bit as this feels like the emerging leadership, but then I have a soft spot in my heart for smaller stocks. Growth versus value remains a push. With the Value Line Geometric Index at 540.79, the Value Line Plan remains in the market with a Friday sell stop of 528.00. There is one change to the ETF portfolios this week, sell IVV and buy IWO, which is a switch into small-cap growth. Our FAANG index has stalled after regaining approximately two-thirds of its correction losses. FAANG is clearly not where the leadership is. Our stock pick this issue is Dorman Products, DORM. We see no signs of weakness, just normal rotational activity. We think that the under invested are getting desperate and buying any weakness they see. We are looking for higher prices into mid-year with the possibly of a good deal of rotation and some consolidations/ minor corrections.

Portfolio Notes



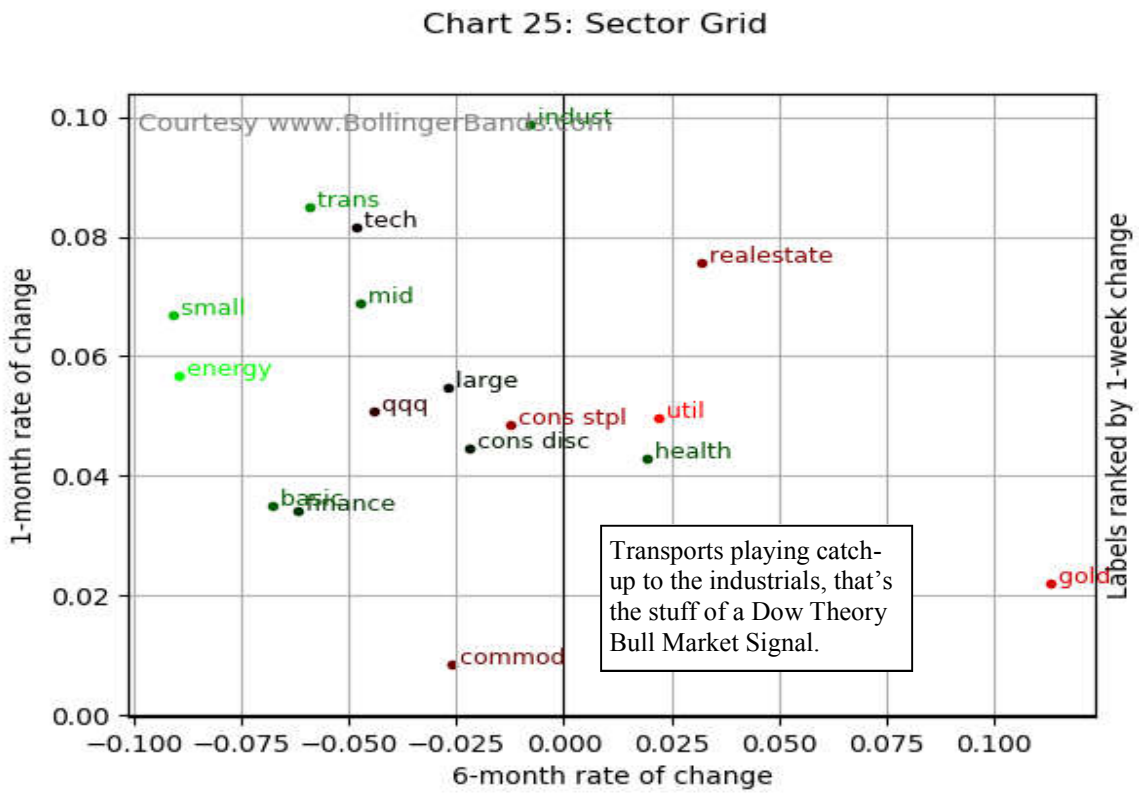
Dollar Index Futures — Daily — One Year

Portfolio

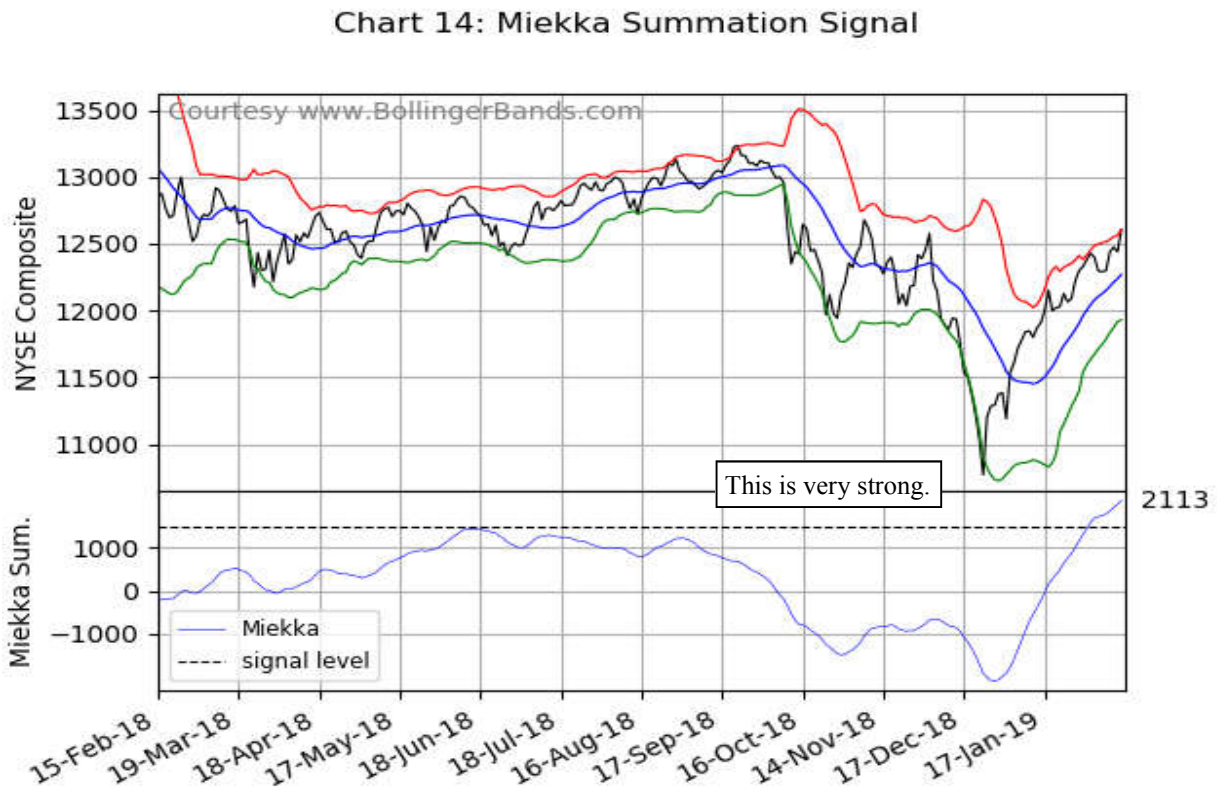
Slot	Name	Symbol	Entry Date	Entry Price	Current Price	Divid.	Total Return	Mental Stop	Action
Core Portfolio - US Equities									
1	Healthcare ETF	IYH	01/14/17	147.28	195.52	3.90	35.4%		Hold
2	S&P 500	SPY			80.17	1.44			Filler
3	Microcap	IWC	11/17/18	92.71	95.56	0.20	3.3%		Hold
4	Home Depot	HD	11/17/18	174.55	192.39	1.03	10.8%		Hold
Core Portfolio - International									
1	Japan	EWJ	12/14/12	44.99	54.49	2.22	26.1%		Hold
2	World	VEU	10/19/15	45.53	49.30	3.36	15.7%		Hold
3	Int'l Property ETF	WPS	05/26/17	37.43	37.52	2.28	6.3%		Hold
4	Emerging Markets	EEM	11/17/18	40.46	42.09	0.58	5.5%		Hold
5	Emerging Markets	VWO	08/04/18	43.01	40.86	0.73	-3.3%		Hold
Energy Trials									
1	British Petroleum	BP	11/17/18	40.77	42.29	-	3.7%		Hold
2	Royal Dutch B	RDS.B	11/17/18	63.42	62.56	-	-1.4%		Hold
3	Exxon Mobile	XOM	11/17/18	78.90	77.71	0.82	-0.5%		Hold
Core Portfolio - Dividend									
1	General Mills	GIS	05/11/18	42.58	45.04	1.47	9.2%		Hold
2	IBM	IBM	05/11/18	144.63	138.03	4.71	-1.3%		Hold
3	Sanofi-Aventis	SNY	05/11/18	38.58	42.55	-	10.3%		Hold
4	Verizon	VZ	05/11/18	48.59	55.16	1.80	17.2%		Hold
Bounce Cndidates									
1	IBM	IBM	12/29/18	113.38	138.03	0.82	22.5%		Hold
2	Apple	AAPL	12/29/18	157.92	170.42	0.73	8.4%		Hold
3	Beckin Dickinson	BDX	12/29/18	225.86	248.34	-	10.0%		Hold
4	Schlumberger	SLB	12/29/18	36.04	44.95	-	24.7%		Hold
5	Amazon	AMZN	12/29/18	1,503.88	1,607.95	-	6.9%		Hold
6	PCAR	PCAR	12/29/18	57.12	68.10	0.32	19.8%		Hold
7	MMM	MMM	12/29/18	190.08	208.86	-	9.9%		Hold
8	Citi	C	12/29/18	52.03	64.27	0.45	24.4%		Hold
9	B fo A	BAC	12/29/18	24.67	29.11	-	18.0%		Hold
10	Ford	F	12/29/18	7.68	8.54	0.15	13.2%		Hold
11	LGI Homes	LGIH	12/29/18	45.25	60.37	-	33.4%		Hold
12	Micro Cap	IWC	12/29/18	81.85	95.56	-	16.8%		Hold
13	Small Cap	IJR	12/29/18	68.82	80.17	-	16.5%		Hold
Core Portfolio - Yield									
1	Barclays High Yield	JNK	02/20/09	29.17	35.50	24.65	106.2%		Hold
2	iShares High Yield	HYG	02/20/09	69.98	85.40	49.91	93.4%		Hold
3	PS Finan. Preferred	PGF	03/13/09	8.35	18.23	13.74	282.8%		Hold
Cash									
1	Doubleline Low Dura	DBLSX	09/15/17	10.09	9.95	0.38	2.4%		Hold
2	Vanguard Short Tern	VCSH	09/15/17	79.79	78.85	2.65	2.1%		Hold

John Bollinger's Bollinger Bands Letter is published monthly by Bollinger Capital Management, Inc., P.O. Box 3358, Manhattan Beach, CA 90266.; Phone: (310)798-8855 Website: www.BollingerBands.com E-mail: BBands@BollingerBands.com Subscription rates: $39/month, $419 a year This newsletter contains information obtained from sources we fully believe to be reliable; however we do not guarantee accuracy. Although opinions expressed herein are based on sound judgment and research, no warranty is given or implied as to their true reliability. The responsibility for decisions made from information contained in this newsletter lies solely with the individual making those decisions. It should not be assumed that recommendations made in the future will be as profitable or equal the performance of the securities in this list. Officers of Bollinger Capital Management, Inc. may at times have positions in securities mentioned.

FAANG Index



Sector Grid



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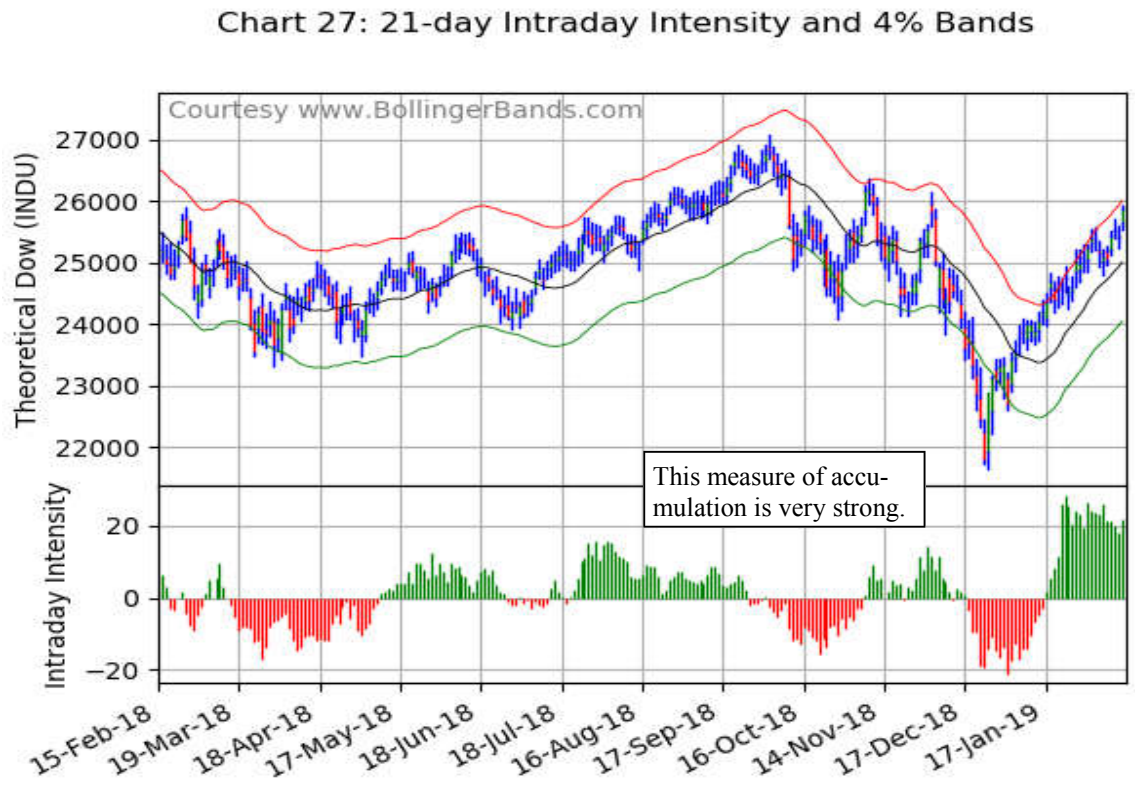
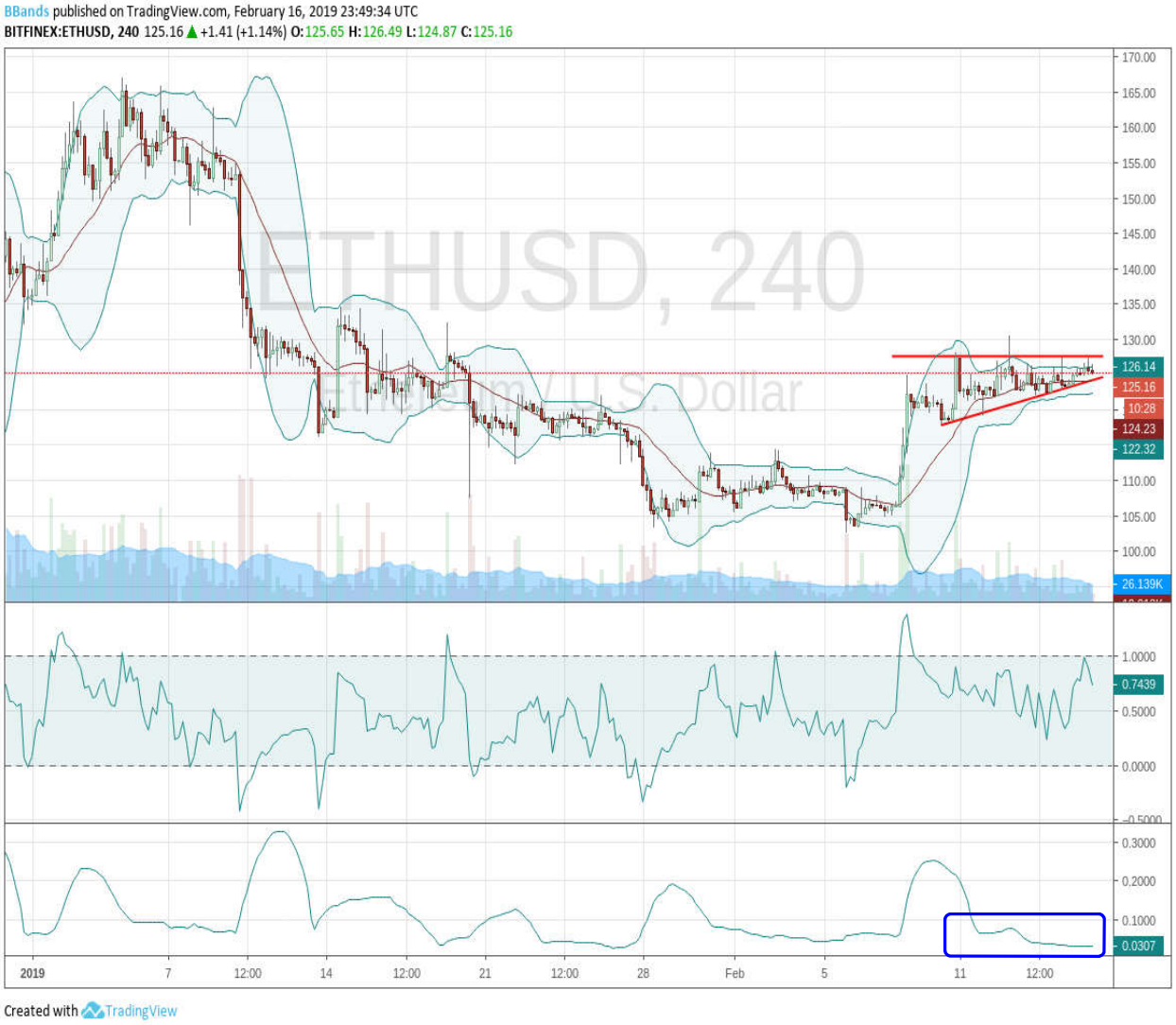


DJ Industrials & Intraday Intensity



Ethereum Four Hour Chart — Rising Wedge and Squeeze