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8 April 2017

THE BOLLINGER BAND LETTER

"On Wall Street, bad ideas rarely die. They often go into hibernation until resurrected in a new form. And portfolio insurance — a leading contributor to the 1987 "Black Monday" crash — is, for some, making a return to markets. Institutional investors are allocating billions of dollars to "risk mitigation" or "crisis risk offset" programmes that are designed to act as a counterweight when markets are in turmoil. They mostly comprise long-maturity government bonds and trend-following hedge funds, which tend to do well when equities plummet." – "Rise in new form of 'portfolio insurance' sparks fears", Financial Times, 20 March 2017

Time for a Change

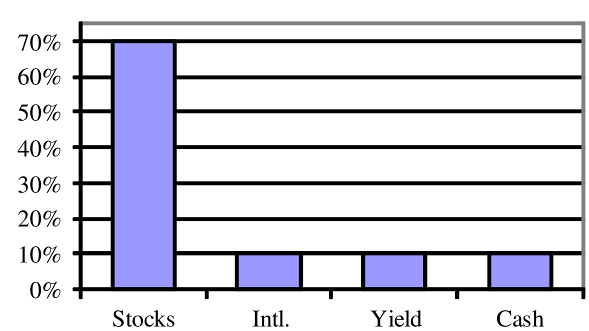
It is hard for me to believe, but this newsletter is 30 years old. 360 issues, that is a lot of analysis and a lot of typing, especially for one whose mind runs considerably faster than he can type. I recently looked back at the first issue and find the progress I have made towards being able to communicate my ideas pleasantly surprising. While the earliest issues may have been somewhat regrettable, I feel that the recent letters have been approaching what I'd like them to be, a blend of market analysis, how to, history and strategy; in essence, a reflection of who I am. It has been a long journey, I wish to thank you for your loyalty; you have been excellent company on this trip.

With all the changes taking place to our web sites, I thought I would take this opportunity to make some changes to the letter. First, a name change, The Bollinger Band Letter is a title that reflects a change in emphasis rather than a sea change; time to sharpen our focus and get a little closer to home. Next, I plan to target the second Saturday of the month as the publication date, which will move us away from publishing in the midst of derivatives expiration. I settled on the third Friday long ago for reasons that elude me now. In any case, I think the second Saturday will work better all around. The subscription price has been the same for nearly two decades, so it is time to change that as well. The new price will be $39 a month or $419 a year. As a current subscriber you will be grandfathered and can subscribe at the old price of $300 for one year and $500 for two. Information on how to order at the end of the letter.

The Investing Environment

Monetary	Model	Current
Fed Model	Neutral	
Yield Curve	Positive	2.373
Money Supply	Positive	6.5%
Sentiment	Model	Current
Net Bulls	Negative	37.5
Options	Positive	0.95
Valuation (S&P 500)	Last Signal	Current
Yield		2.03%
P/E Ratio		24.91
Current Trends	Short Term	Long Term
Stocks	Up	Up
Interest Rates	Down	Up
Energy	Down	Up
Gold	Up	Down
Commodities	Down	Down
Dollar	Flat	Up

Asset Allocations



Hold on for a sec! "The Bollinger Band Letter"? Is there a better idea? "The Bollinger Band Forecast"? "BBs to the Moon"? Or simply "Bollinger Bands"? What do you think? Do you have a better suggestion? Any suggestion? Please drop me a line at bbands@bollingerbands.com.

Bollinger Bands

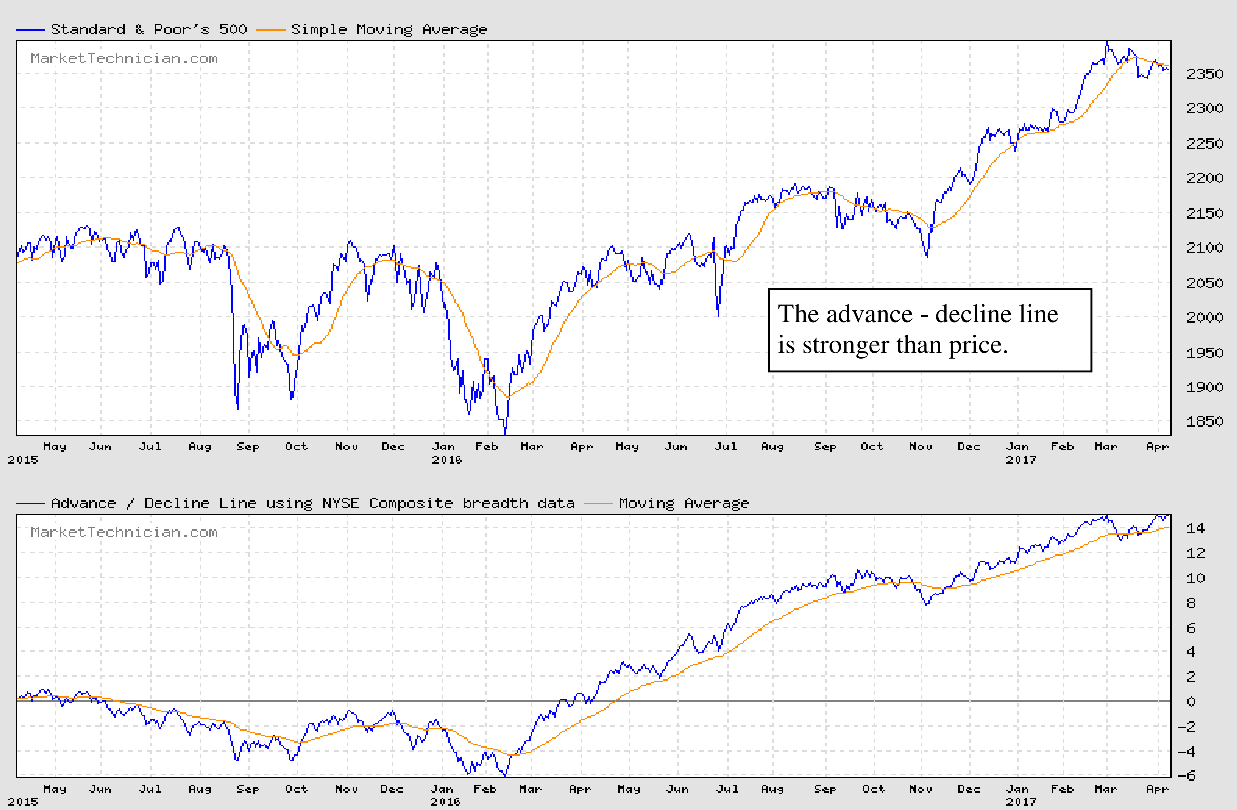
Perhaps you recall the story of the development of Bollinger Bands as I have often told it. If not, here is a short version. It was the early '80s and we were using a trading system that compared internal market data: NYSE advances and declines and up and down volume to price of the Dow Jones Industrials relative to percent bands. It was the need to adjust those bands that led to my search for an automatic method to set the width of trading bands and ultimately to Bollinger Bands.

I have had many people ask whether that trading system is still useful today. The answer is complex in large part because the data has changed due to the fact that Dow Jones changed the way that their averages are calculated. Today the averages are calculated in real time with the high for the day being the highest intraday value and the low being the lowest intraday value. Prior to 1982 the averages were calculated using what is known today as the 'theoretical' method. At the end of each day the highest high of each of the component stocks regardless of what time it occurred was used to calculate the high for the average and the lows of the day were averaged to calculate the average's low. In practice the intraday range for the theoretical calculation is much wider than the range from the real-time calculation and it turns out that the theoretical method throws off some unique information that is very useful for market timing work. I wanted to recreate the data we used then, so I turned to Richard Dale of Norgate Data and asked if he could calculate and include the theoreticals in his data feed. He said 'no problem', so I now have access to data that I haven't seen for 35 years.

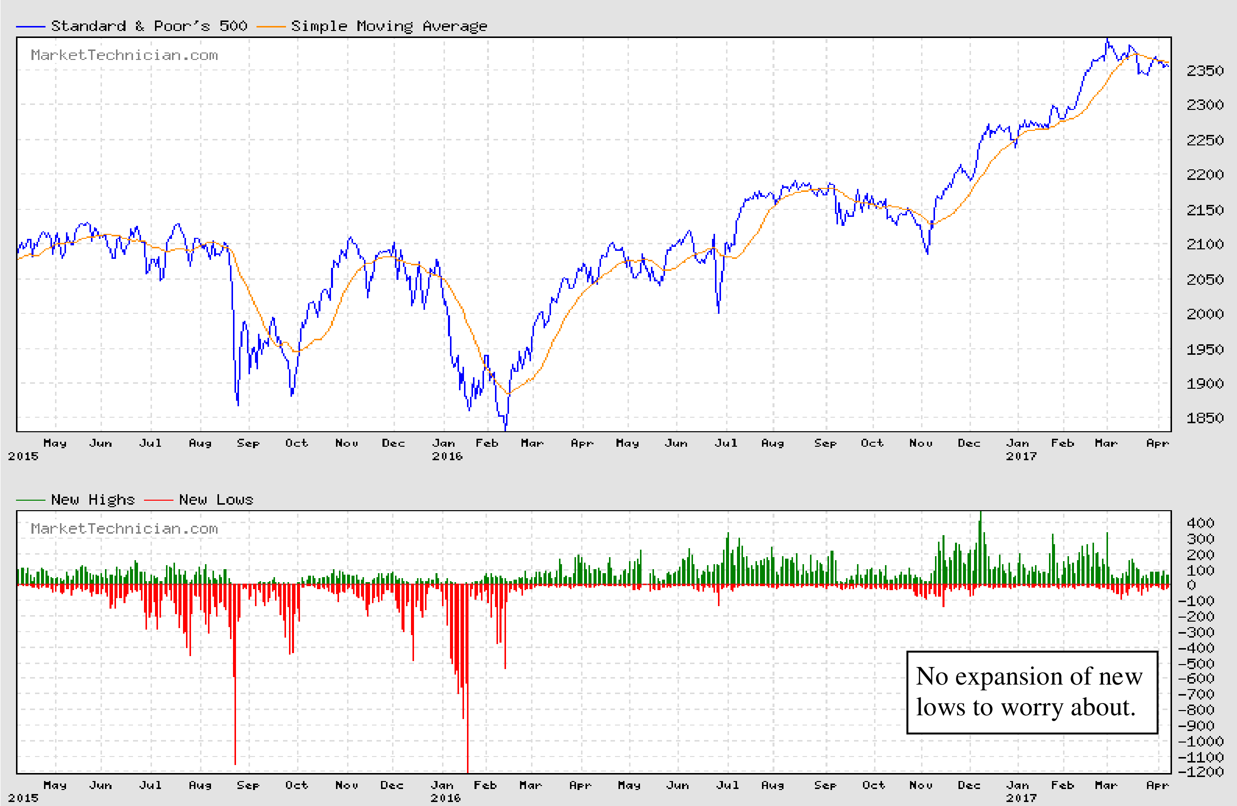
(Thanks to the late Jerry Smith of AIQ fame for bringing the idea of continuing to use the theoretical calculation to my attention many years ago.)

35 years later we still find it useful to compare internal market data to price action bounded by trading bands. Much else has changed in the technical analysis world, but this is a first principles idea that has proved to be robust over time. The concept is clear and strong: If price is strong but internals are weak, beware. If price is weak, but internals are strong, think opportunity. With that in mind, the NYSE advance - decline line made a new high on Friday March 31. Strong stock-market internal indicators like that simply do not suggest that a negative outlook for the market is appropriate at this time. In the face of such internal strength our outlook has to be positive, which means that we are looking to buy weakness. It is not that the possibility of a negative outcome is forgone, it is just that the odds are against a serious decline at present and we play the odds. Confirming the strength in the a-d line is an absence of new 52-week lows during the recent consolidation. If this were a top being built we would expect to see both the a-d line roll over and turn down and new lows start to

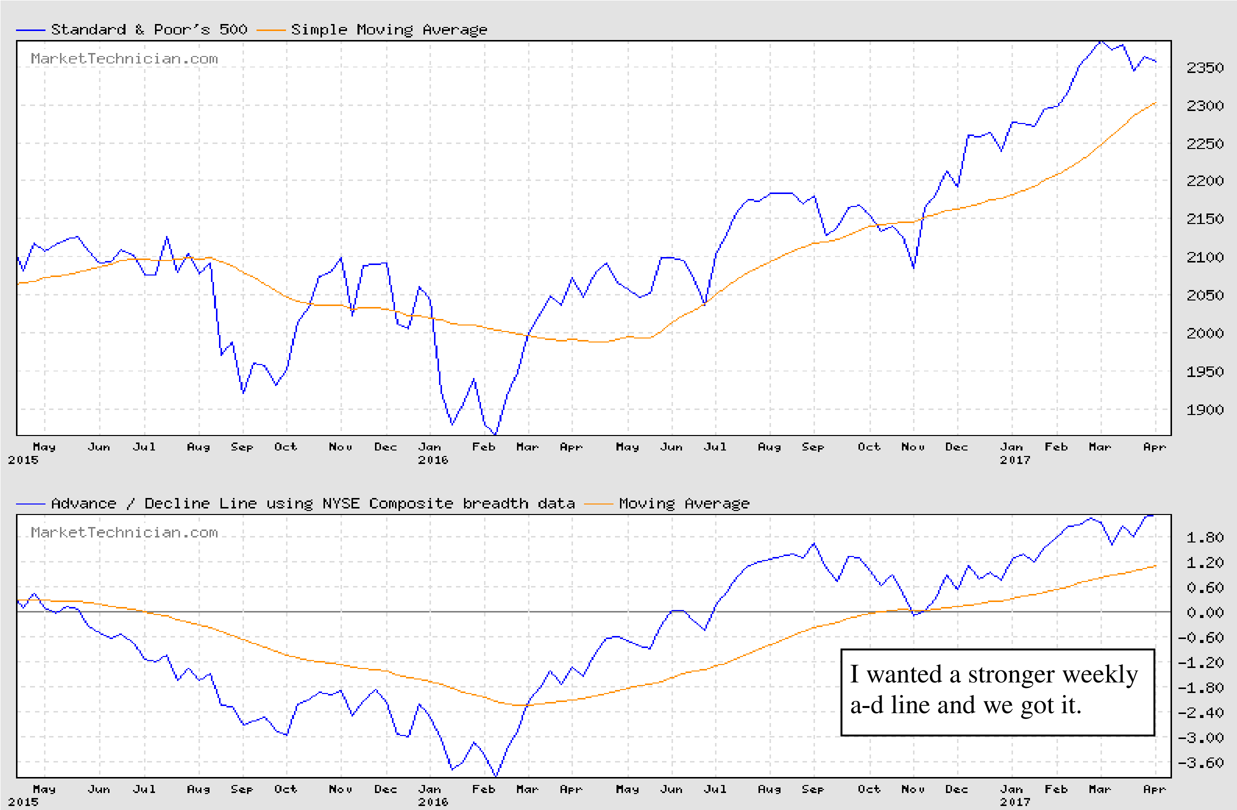
Value Line Arithmetic — One Year



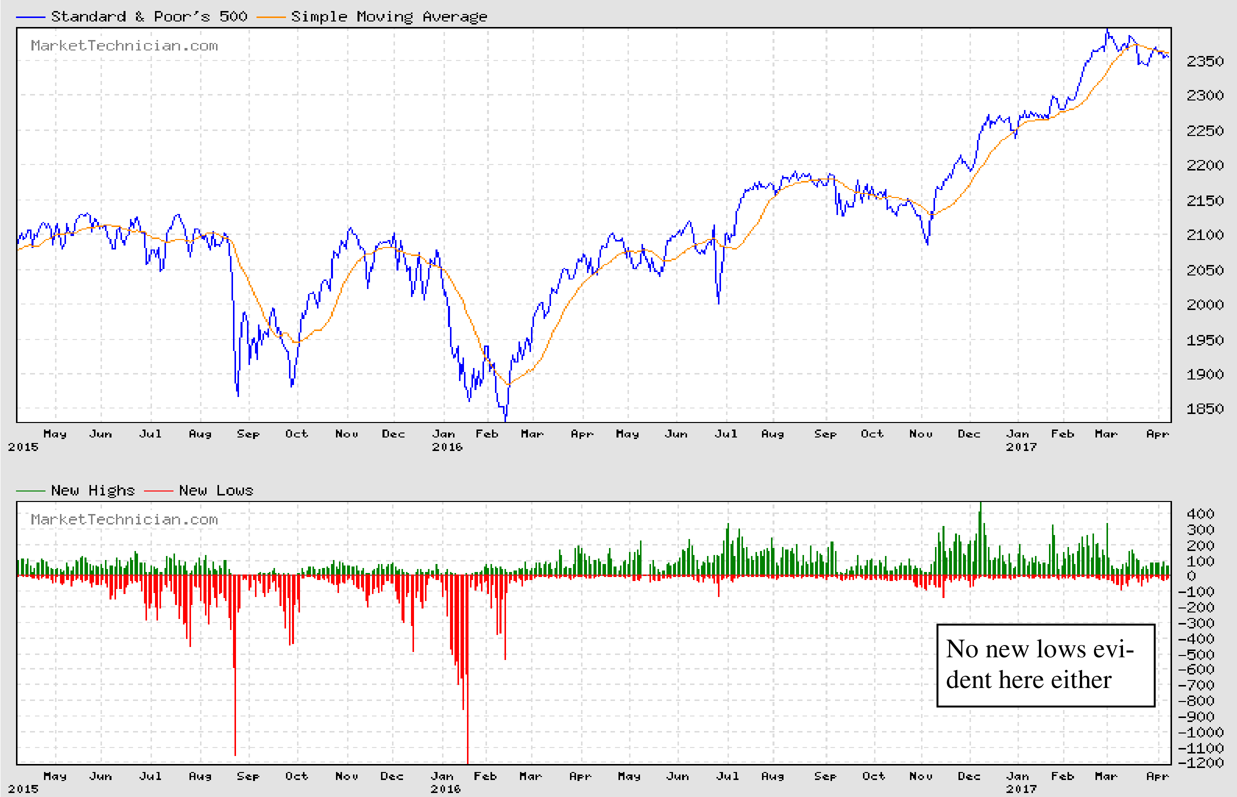
S&P 500 and NYSE Advance - Decline Line — Daily — One Year



S&P 500 and NYSE New Highs / New Lows Histogram — Daily — One Year



S&P 500 and NYSE Advance - Decline Line — Weekly — Five Years



S&P 500 and NYSE New Highs / New Lows Histogram — Weekly — Five Years

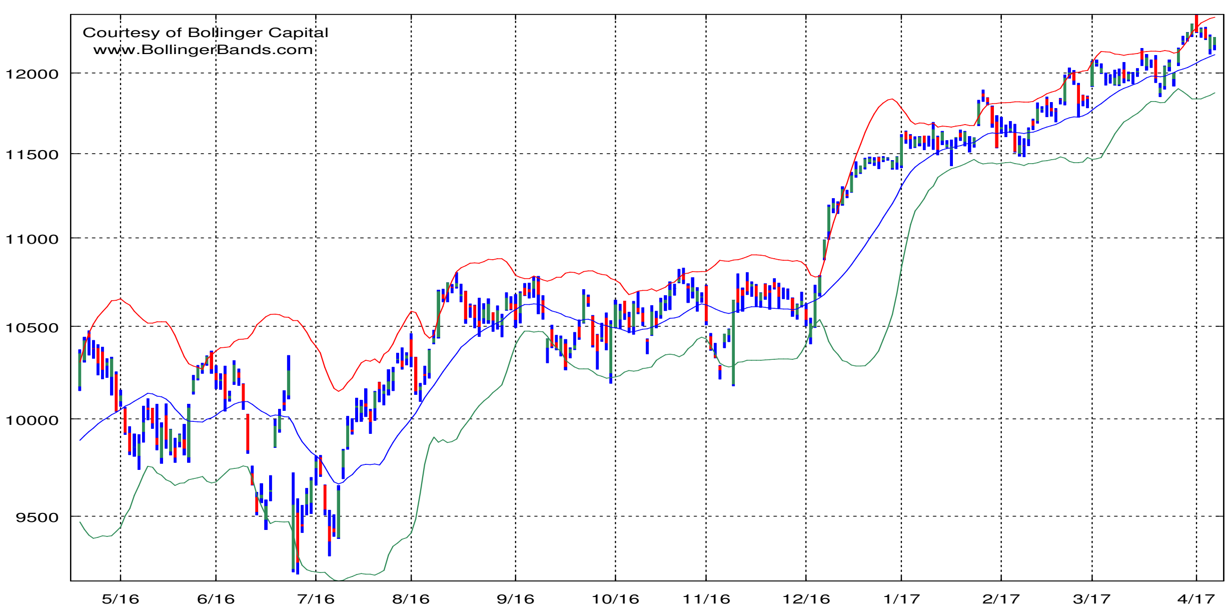
FTSE — Daily — One Year

expand.

If, as seems likely, we rally and tag the upper Bollinger Band, market internals will likely confirm, validating the idea of continuing to own stocks. What seems much less likely is that we will get a confirmed tag of the lower band, alerting us to a downturn and decline.

Bollinger Bands II

With many of the Bollinger Band analytical web sites retired, we are hard at work on making our tools and techniques available across a wide variety of platforms. Our latest effort is a partnership with TradeStation that has resulted in a BB Squeeze package for the TS platform. The Squeeze is perhaps the most popular Bollinger Band idea. This new package lets you scan huge lists overnight or monitor stocks and futures in real time for Squeezes, breakouts and breakdowns, and reversals at the bands. (The latter is the key to Head Fakes.) Also included is a powerful supply/demand indicator, Intraday Intensity. Of course this package comes complete with charting visualizations for all the tools in the pack-



DAX — Daily—One Year

age. For people who want to focus on trading the Squeeze, this package is really all you need. We just released the first update with some improvements based on early user feedback. In the next couple of weeks we will be releasing some additional support videos, and in the next release we plan to add a bonus supply/demand indicator to complement Intraday Intensity. Details here: https://www.bollingerbands.com/tradestation-squeeze

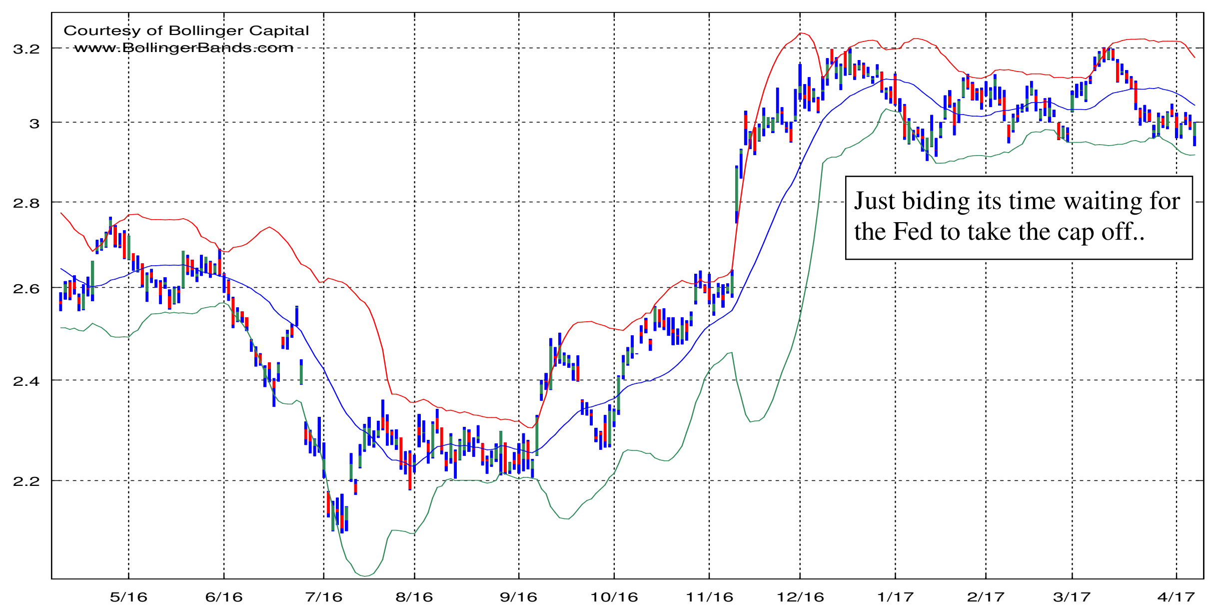
Next up is MetaStock. We'll start with an update to their existing Bollinger Band Tool Kit to bring it up to date with the latest and greatest BB tools and techniques. Then we'll work on some specialized BB packages to help you identify opportunities like the Squeeze and W bottoms. Don't forget their "Bollinger Band System", which is still going strong and winning awards after all these years.

Bollinger Bands III

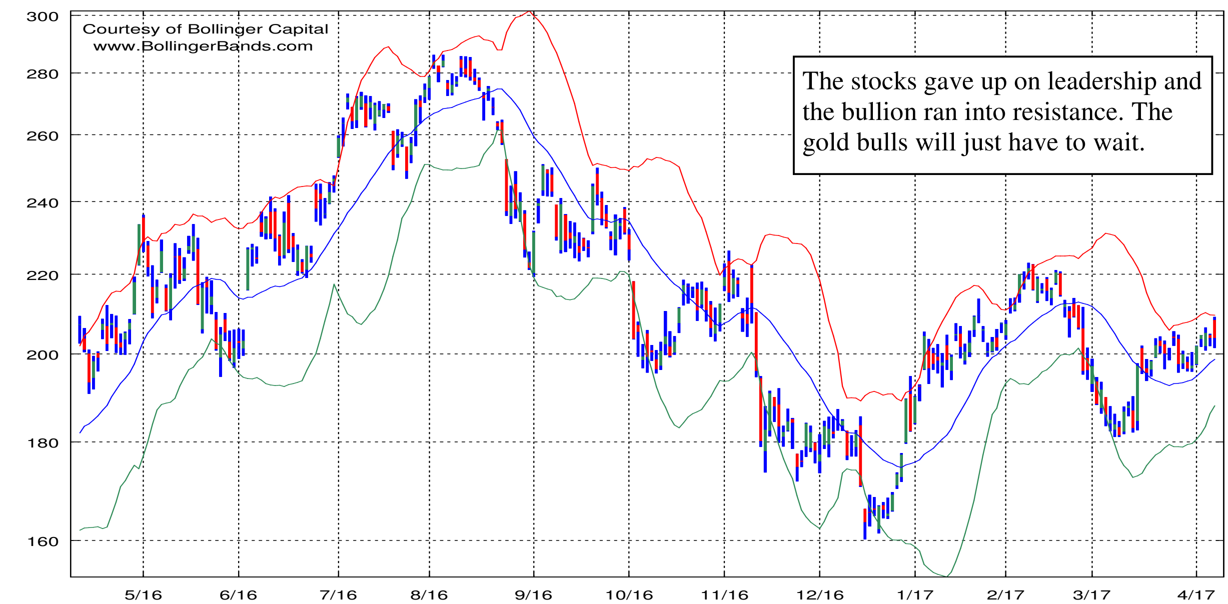
There is a lot of talk these days about volatility, or more specifically a lack thereof. As you know, volatility is the core component of the Bollinger Bands. Using daily Bollinger Bands and the indicator BandWidth, which tells us how wide the bands are, we can see that volatility is indeed quite low. Not impressively low, but low nonetheless. However, other time frames present different pictures. On the weekly charts volatility was quite high just four weeks ago and though it has turned down it is still well above average. On the monthlies volatility was really quite low last year, but it turned up last June and has been rising ever since. So, yes, in a daily sense volatility is low, but considering longer time frames suggests that it is anything but low.

The thing that is worrisome is not the level of historical volatility, but talk of major players being willing to sell insurance (volatility) at these levels. This is done largely via the options market, with the net result being portfolios that are short volatility, which is a strategy that works much of the time producing quite nice returns. However, it is also a strategy that leaves nothing behind but smoldering wreckage when it blows up. I have always wondered about the sanity of people who sell insurance, ending up with short option positions. It reminds me of those who engage in certain types of illicit vices; it feels good whilst they are playing, but when they are inevitably caught their lives are ruined. The classic example was portfolio insurance in the months before the crash in 1987. Back then it was the way-cool, ultra-hip thing to do. A few months later the house burned down. Interestingly when that portfolio insurance imploded it took another group of traders with them, put-option sellers. Their famous last words were: "It's a bull market, these out-of-the-money put options we are short will never get hit." So the demise of the portfolio insurers crushed the put sellers and in crushing the put sellers further exacerbated the insurer's pain, and so on and on… in a circle that was anything but virtuous. The old saw goes: "He who sells what is'n his'n, must buy it back or go to pris'n."

Important note: Part of the result of all this insurance selling is that the VIX is in historically low territory. It is not in that territory because volatility is low, it isn't. It is there because the sellers of options (insurance sellers)



10-Year Interest Rates



Gold Stock Index — HUI — One Year

are pushing option premiums down and the VIX is a measure of options premiums, not volatility.

Ice Breaker

It seems that there is an increasing amount of interest in our Ice Breaker trading system. Ice Breaker, hereafter known as IB, was developed in the early days of exchange traded funds when there were relatively few ETFs and just two really popular ones, SPY, which tracked the S&P 500 Index and QQQ, which tracked the NASDAQ 100 Index. At the time ETFs were traded on the American Stock Exchange. On the floor QQQ was know as the Qs or the cubes. The latter moniker came from the fact that there were three Qs in the symbol and Q * Q * Q equals Q cubed. So naturally we took it one step farther and called them ice cubes. So, when I developed a system to trade the cubes, it seemed natural to call it Ice Breaker. Over the years we expanded IB use to include SPY and DIA, which tracks the Dow Jones Industrial Average. Recently we added coverage of a mid-cap ETF, MDY, and a small-cap ETF, IJR. So today we track five ETFs with IB.

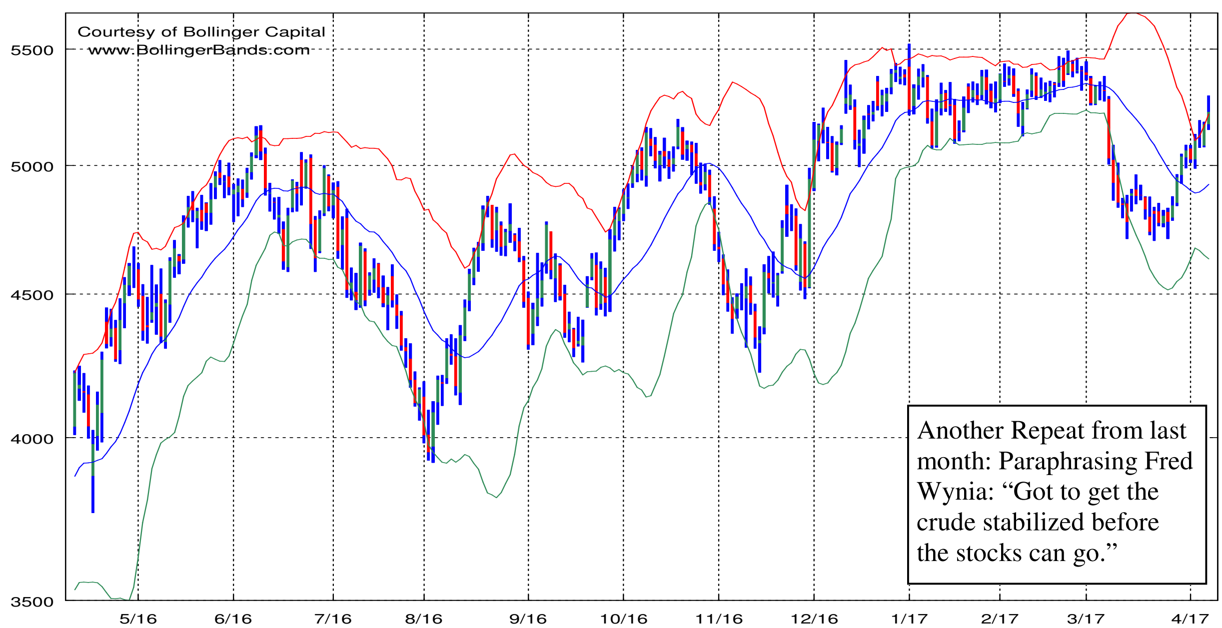
Gold Bullion Futures — GC — One Year

Energy Stock Index — XOI — One Year

Now IB isn't for everyone, it is a mean-reversion trading system that buys into plunging markets. These can be scary entry times and the natural impulse is to say "No way!" So if buying into oversold markets is not your cup of tea, then IB is probably not for you.

IB uses a progressive trailing stop that is started below the low of the signal day. The stop advances each day a new high is made and will also rise as volatility decreases in the wake of the decline. Unlike a Parabolic stop which advances each period, in consolidations the IB stop will run along under the consolidation until it meets a pullback sufficiently deep to trigger an exit, or the rally resumes and the stop again starts to increment up.

One aspect of IB that some people find uncomfortable is that Ice Breaker can take more than one position, as a result we get a lot of questions about the correct position size. While there are many approaches to this question, the one I like is to assign a fixed dollar or percent amount to each signal such that three positions equals



Crude Oil Futures — CL — One Year

the maximum amount of capital you would assign to this approach at any given time, two positions equals the average commitment you would undertake and one position is the initial commitment.

IB can be used for sells as well as buys, but that is a trickier proposition and something best left for exploration on the platforms IB will be supported on where the full dynamics of the approach can be explored.

One thing that you may notice from time-to-time is that a pullback against an uptrend will both exit an existing position and enter a new position. IB is not broken when that happens, it is just that occasionally the decision conditions overlap. Given the sort of system that IB is, this is not something to be corrected. As programmers might say, it is a feature, not a bug.

Daily IB reports are available for the five monitored ETFs on our new BollingerBands.com in the subscriber area. For the time being to see the reports you will have to right click on the word "here" on the page for each IB ETF and select the 'open in new tab', or 'open in new window' option. We have to make some changes which are underway to the source programs before they are allowed to be included in the page.

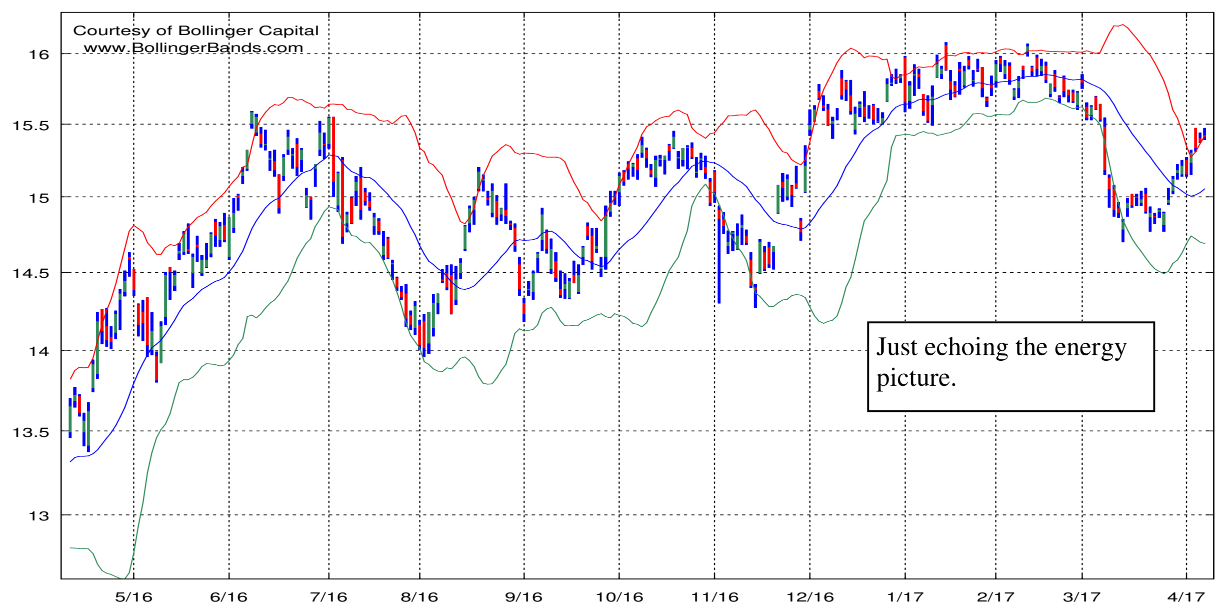
I have had reports of IB being successfully employed on short-term data, but have no direct experience to report other than the observation that it seems to work. Shortly we will make Ice Breaker available on TradeStation, with other platforms planned soon after the initial TS release. There you be be able to engage ideas with short time frames and/or sell signals.

Reading Rack

I recently read Michael Lewis' new book, "The Undoing Project", which is a biography of Daniel Kahneman and Amos Tversky, a pair of scientists whose work provided the background for what we know today as behavioral finance. I am not a fan of Michael Lewis' work; I thought that "Liar's Poker" improperly aggrandized a group of individuals that might better have been considered for prison and glorified behavior that should have been denigrated. All that aside, "The Undoing Project" is a very worthwhile read.

Humans make all sorts systematic errors and Kahneman and Tversky were the first academics to explore this territory, making a number of important discoveries as they did so. The founder of contrary opinion, Humphrey B. Neill, The Vermont Ruminator, had already delved deeply into some of the systematic errors that investors make at the time K&T were born, but K&T opened up vast new vistas and did so in a manner that got notice/acceptance in the academic community.

Of course a backlash against their work was inevitable. One form that the backlash took is basically a variation of the intelligent design argument used in defense of creationism. If you want to explore the backlash against K&T's research here is a link that will provide a useful trail head. http://www.foundingfuel.com/article/gigerenzers-simple-rules/ The interesting part there is that simple rules can indeed be useful in our work, as



Commodity ETF — DBC — One Year

long as they are the right ones. Therein lies the rub, as we often pick the wrong ones. Indeed, despite all the bluster, what Gigerenzer and crew are really doing is elaborating on K&T with an emphasis on what we do right rather than what we do wrong. Myself? I would rather work on my errors.

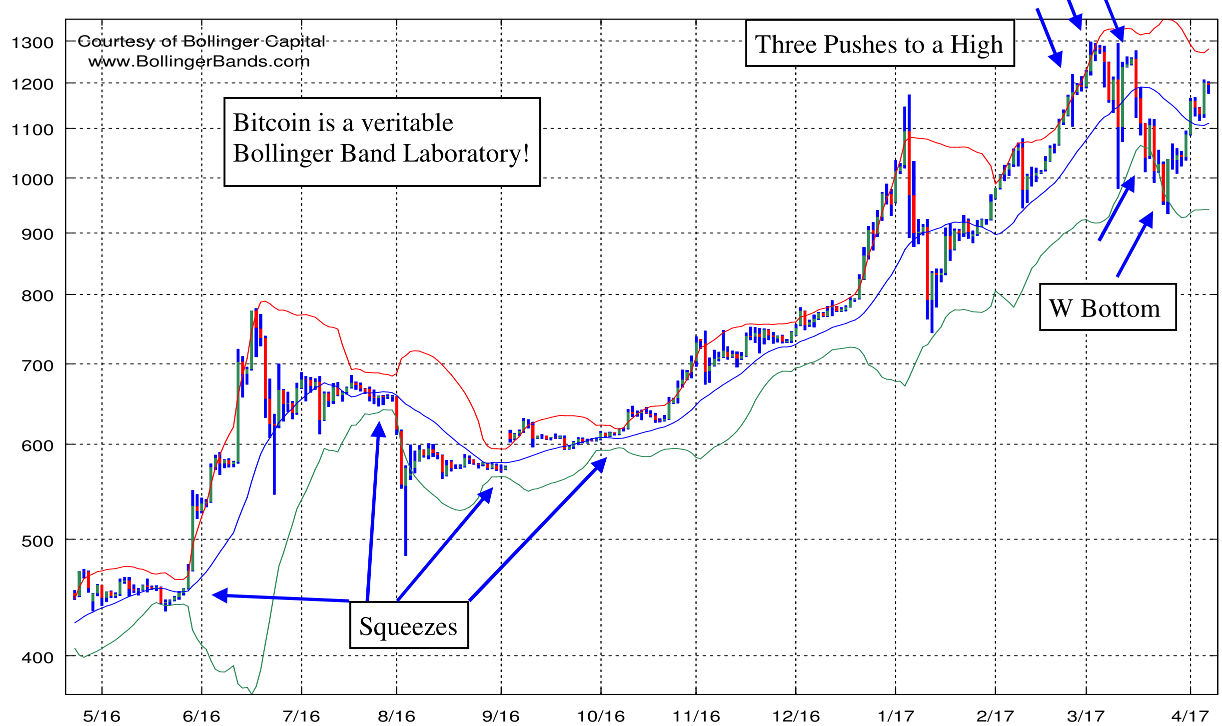
I had meant to read Daniel Kahneman's 2011 book, "Thinking, Fast and Slow", for a long time, so as soon as I finished "The Undoing Project" I went to my local book store and bought a copy. I have only had a chance to read the introduction and the first chapter, but I can tell that this is going to be a heady read. Just those few pages have me looking at things differently.

Computer Corner

I don't normally write negative reviews, but in this case I must. We were using Panda Antivirus on a couple of our computers, one of which we were using to participate in Norgate's beta-test program for their new data utility. We were having some really quite bizarre problems and it turned out that Panda was making changes to our system without asking permission or reporting them. This is sort of the ultimate no-no for such a program. What you need from your defense program is the highest possible degree of transparency, not complete obfuscation. So, please, if you are using Panda on any of your computers uninstall it completely and go with another product. We have done so and Norgate's programs are back to working exactly as they should. I can only wonder what other problems Panda had been causing? By the by, that beta test is almost over and I think that they will launch just past mid year. https://www.premiumdata.net/

View from the Beach

Wondering why Trump got elected? The following is a minor example of the type of government overreach that was an important factor. There is a Thai restaurant near my office where I have lunch every couple of weeks. It has been there for more than 20 years and is beloved. Recently they put up a notice of ownership change. I was rather shocked as I'd taken it for granted that they'd be there for another 20 years. It turns out that the health department is requiring changes to their kitchen costing 50 to 60 thousand dollars. They had just finished a round of mandated kitchen upgrades six months ago and simply do not have the money for another round. They were lucky to be able to arrange for a deep-pocketed competitor to take over their lease. A rational bureaucracy would work with local businesses, especially a small one, to ensure a good/reasonable outcome, but rather than work out a doable solution, a series of inflexible, non-negotiable demands has crushed a local business. The result? Well, let's just say voting them out becomes an attractive idea.



Bitcoin versus the US Dollar — XBTUSD—One Year

Appearances

The Nippon Technical Analysts Association
Fukuoka, Japan, May 20, 2017
http://www.ntaa.or.jp/ntaw/02-cnt/uploads/2017/03/John-Bollinger0520.pdf

The San Francisco Money Show
San Francisco, CA, August 26, 2017
http://ow.ly/FWlY30aFNZD

Newsletter Subscription Offer

As an existing subscriber you can lock in the existing newsletter pre-paid rates of $300 for one year and $500 for two years. That can be done online:
https://www.bollingerbands.com/shop

If you select the one-year subscription use coupon code "cgl-one-year" for the $300 price.

If you select the two-year subscription use coupon code "cgl-two-year" for the $500 price.

Or feel free to call our office at 310-798-8855 the week of April 17th.

Sector Selector ETF Portfolios

ETF Portfolios	Symbol	Date Selected	Purchase Price	Current Price	Dividends	Return	Rank
Style							(# in 21)
Core Value	IUSV	10/14/2016	45.28	50.29	0.50	12.18%	7
Russell 100 Growth	IWF	2/10/2017	111.06	113.39	0.33	2.40%	3
Russell 1000	IWB	1/27/2017	126.69	130.90	0.56	3.77%	5
International							(# in 24)
Austria	EWO	1/20/2017	17.26	18.34	0.00	6.26%	4
Spain	EWP	4/7/2017	29.85	30.44	0.00	1.98%	1
Taiwan	EWT	2/10/2017	32.41	33.24	0.00	2.56%	5
Sector							(# in 27)
Technology	XLK	3/3/2017	52.51	53.06	0.21	1.44%	1
Global Finance	IXG	12/16/2016	57.96	60.04	0.41	4.30%	10
Semiconductors	SOXX	10/7/2016	113.43	135.19	0.64	19.76%	3

Portfolio

Slot	Name	Symbol	Entry Date	Entry Price	Current Price	Divid.	Total Return	Mental Stop	Action
Core Portfolio - US Equities									
1	S&P 500	SPY	10/19/15	203.20	235.20	6.78	19.1%	224.00	Hold
2	Russell 2000	IWM	11/02/15	118.21	135.52	2.74	17.0%	132.00	Hold
3	S&P MidCap	MDY	04/18/16	267.64	310.08	3.95	17.3%	300.00	Hold
4	Chevron	CVX	08/08/16	101.15	108.86	2.15	9.8%	104.00	Hold
5	Oil Services HOLDRS	OIH	08/08/16	28.87	30.74	0.47	8.1%	28.00	Hold
6	Finance	XLF	10/08/16	19.75	23.52	0.19	20.1%	22.00	Hold
7	National Oil Well	NOV	12/05/16	38.23	38.89	-	1.7%	35.00	Hold
8	Russell 100 (Equal)	EQAL	12/05/16	26.81	28.11	0.19	5.6%	27.00	Add
9	Healthcare ETF	IYH	01/14/17	147.28	155.62	0.44	6.0%	148.00	Hold
10	Global Telecomm ETF	IXP	01/14/17	60.09	59.29	-	-1.3%	56.50	Hold
11	S&P Small Cap	IJR	03/17/17	67.84	67.84	0.22	0.3%	65.50	Hold
12	S&P 500 Growth	IVW	03/17/17	131.34	131.34	0.15	0.1%	124.00	Add
Core Portfolio - International									
1	Japan	EWJ	12/14/12	44.99	51.07	1.07	15.9%		Hold/Add
1	World	VEU	10/19/15	45.53	47.59	1.48	7.8%		Hold
Core Portfolio - Yield									
1	Barclays High Yield	JNK	02/20/09	29.17	36.76	21.00	98.0%		Hold
2	iShares High Yield	HYG	02/20/09	69.98	87.39	42.01	84.9%		Hold
3	PS Finan. Preferred	PGF	03/13/09	8.35	18.83	9.75	242.3%		Hold
Core Portfolio - Speculation									
1	VIX Inverse	XIV	10/06/15	27.29	69.67	-	155.3%		Add

Portfolio Notes: There is a real battle going on for stock-market leadership between large-cap stocks and their smaller brethren. We have been seesawing back and forth for a bit more than a month. But when it comes to growth versus value, growth is determined to maintain a leadership role. If we wanted to add exposure on a pull-back the easy way it would be via a large-cap growth ETF, like Vanguard's VUG. The Value Line Plan is in the market, the geometric average stands at 514.90 with a sell stop at 507.75. We are reviewing the plan, but have not decided on any changes yet. There are no changes to the ETF portfolios this week. With the market marching sideways there are no changes to the Core Portfolio this month. We adjusted several stops and reduced the number of positions marked Add.

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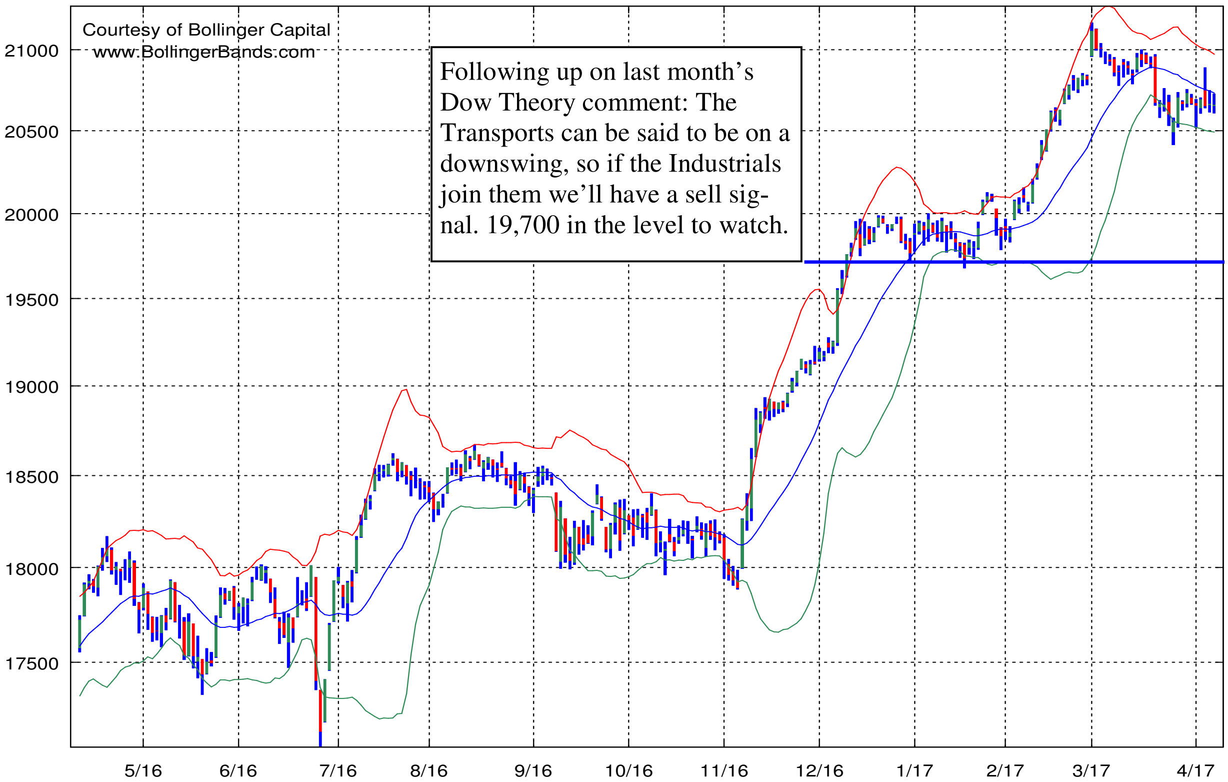
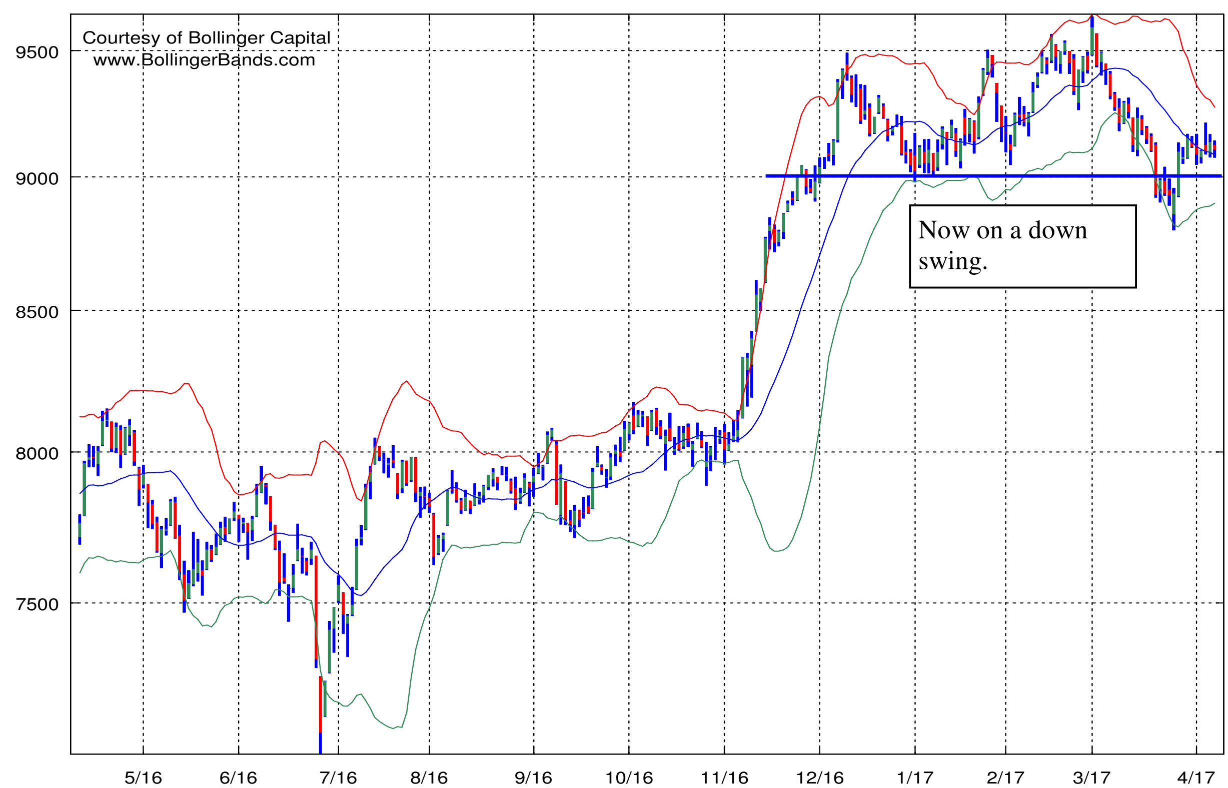


Dow Jones Industrial Average — One Year



Dow Jones Transportation Average — One Year