Volume #31 Issue #11 21 April 2018

THE BOLLINGER BANDS LETTER

"Being part of San Francisco's middle class doesn't mean you can afford middle-class living.

A new report from Paragon Real Estate reveals that the household income now required to buy a median-priced home in San Francisco reached an all-time-high of $303,000 in December.

That means a person who wants to buy property in the city needs a mid-six-figure salary in order to afford the 20% down payment on a $1.5 million home — the median sale price of a single-family home in San Francisco last quarter." Business Insider, 21 February 2018

TRIN and Open Arms

The TRading INdex (TRIN) is one of the most powerful and useful market-timing tools, yet today it feels like it is amongst the least used. It falls in the category of market-breadth tools and has been around for a long time. I don't know who actually invented it, but Richard (Dick) Arms was clearly its main exponent and popularizer. He avers that he created it, but I suspect that it predates him. In any case, he should absolutely get a lot of credit as it is impossible to talk about the TRIN without thinking of Dick and his books on the subject, the first and most important of which is: "The Arms Index (TRIN): An Introduction to the Volume Analysis of Stock and Bond Markets", 1996, by Richard W. Arms Jr.

Here is the formula for the Trading Index:

adv = # of NYSE issues up on the day
dec = # of NYSE issues down on the day
upvol = total volume of NYSE issues up on the day
dnvol = total volume of NYSE issues down on the day

TRIN = (adv / dec) / (upvol / dnvol)

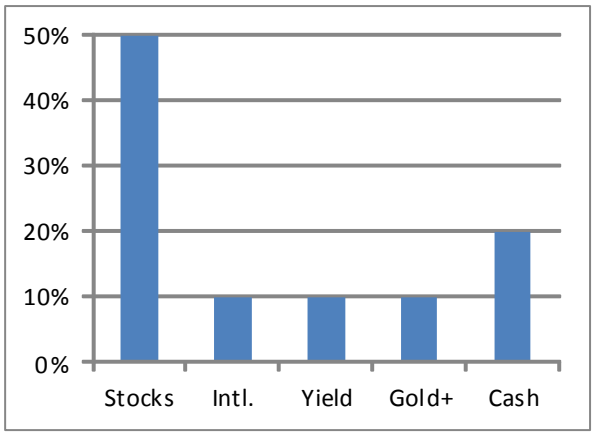
Due to its formulation the TRIN is a quirky tool that can be tricky to use. Its problems arise from the fact that it is a ratio of two ratios, which results in an odd/non-intuitive distribution of values. Another potential perceptual problem is that 1.0 is neutral, not zero as is common with many other indicators. And yet another perceptual problem is the inverted nature of the index, with peaks in the index corresponding to troughs in price and vice versa.

To understand let's look at the TRIN's numerator, advances / declines. When advances and declines are equal the result will be one; twice as many advances yields 2.0 while twice as many declines yields 0.5. Technicians have wrestled with this for a long time. One solution has been along the lines of advances / total issues, which ranges from 1.0 to 0.0. Taken as a percentage, 90% was the key to Marty Zweig's Breadth Thrust work. Another application of that approach is the High Low Index, new highs / (new highs + new lows).

With that ratio in mind let's take a look at the TRIN. When the market is neutral the TRIN will range tightly around 1.00. On strong up days when there is twice as much interest in issues that are up on the day as in those that are down the TRIN will be 0.50 or even less. On strong down days when there is twice as much interest in down issues the TRIN will be 2.0 or greater. It turns out that is a rough range for the TRIN over time, 0.5 for strong up to 2.00 for strong down. However, over the long haul the TRIN has a slight bias to match the market's bullish bias, so on average it runs at a bit less than one; in some markets the median can be as low as 0.8.

Perhaps you have noticed or guessed at a problem created by that distribution, The equal, but opposite values of 0.5 and 2.0 average to 1.25, not the neutral 1.00 one might intuitively expect. Early on it was discovered that averages of the TRIN were a good short- to intermediate-term timing tool, but they were plagued by distortions caused by arithmetically averaging the raw TRIN values. Peter Eliades propounded one solution, average the

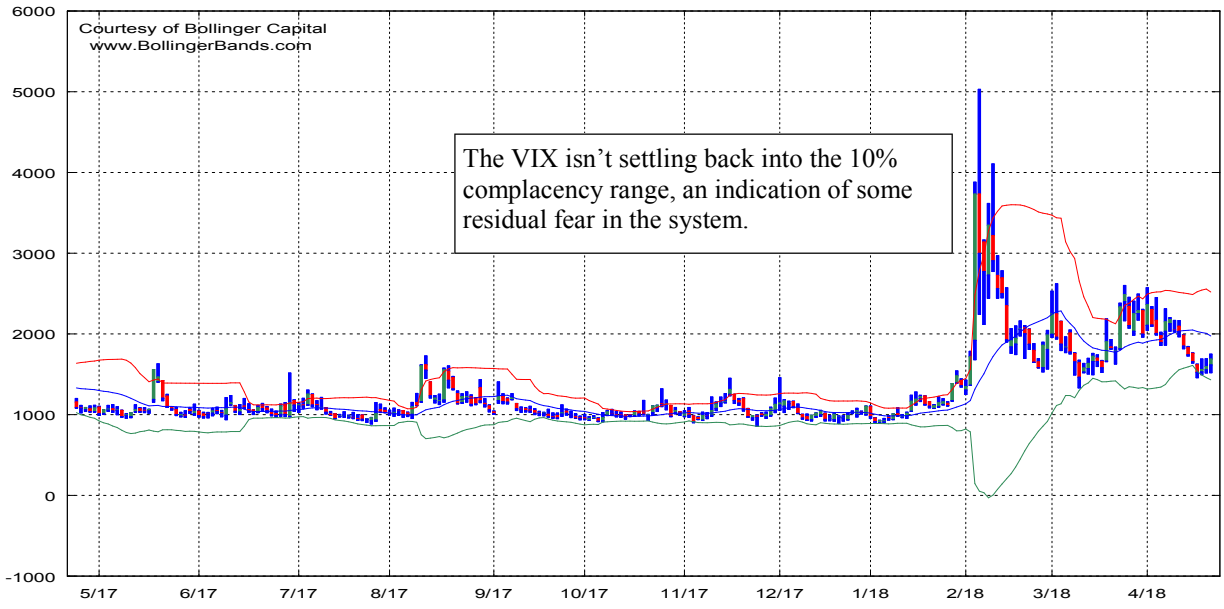
Asset Allocations



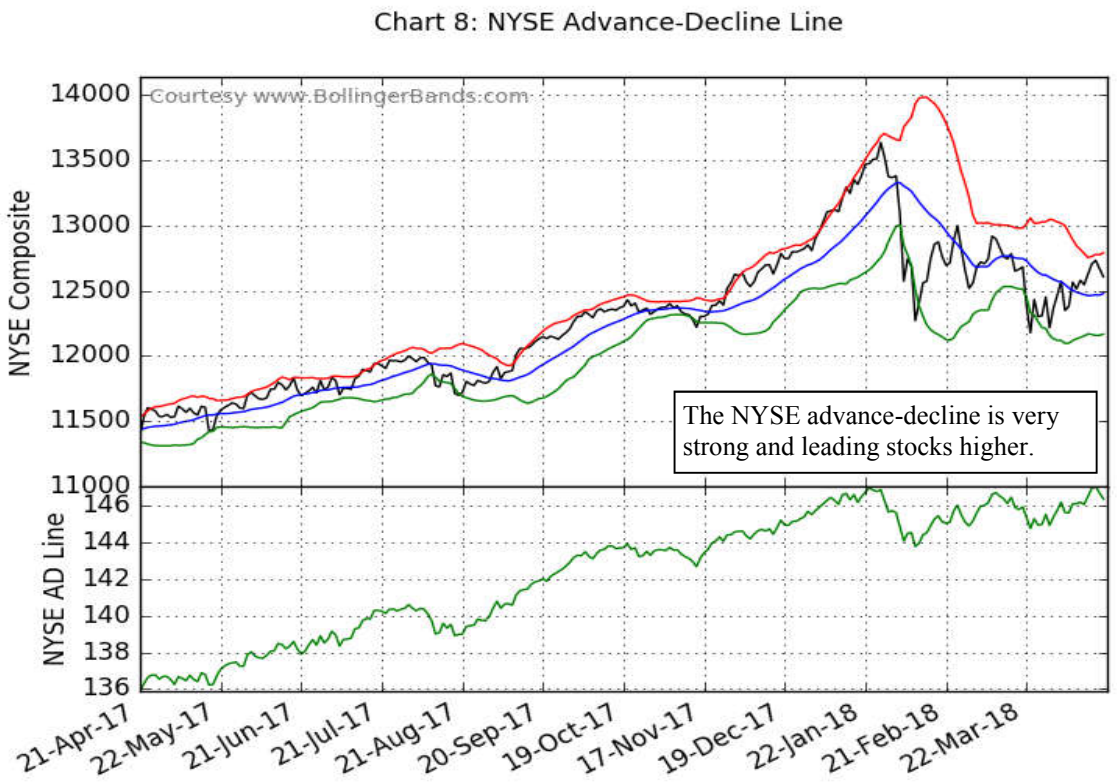
Value Line Arithmetic — One Year

components first and then calculate the TRIN, which became known as the Open Arms Index. The most popular version was, and is, the 10-day Open Arms Index. Another solution is to take the logs of the TRIN, calculate the averages and then take the anti-log (raise the result to an exponent). Both approaches work and the results are the same, but the log approach provided a trail head for me to solve the perceptual problems of these tools once and for all and create a display for these market-timing tools that is intuitively correct.

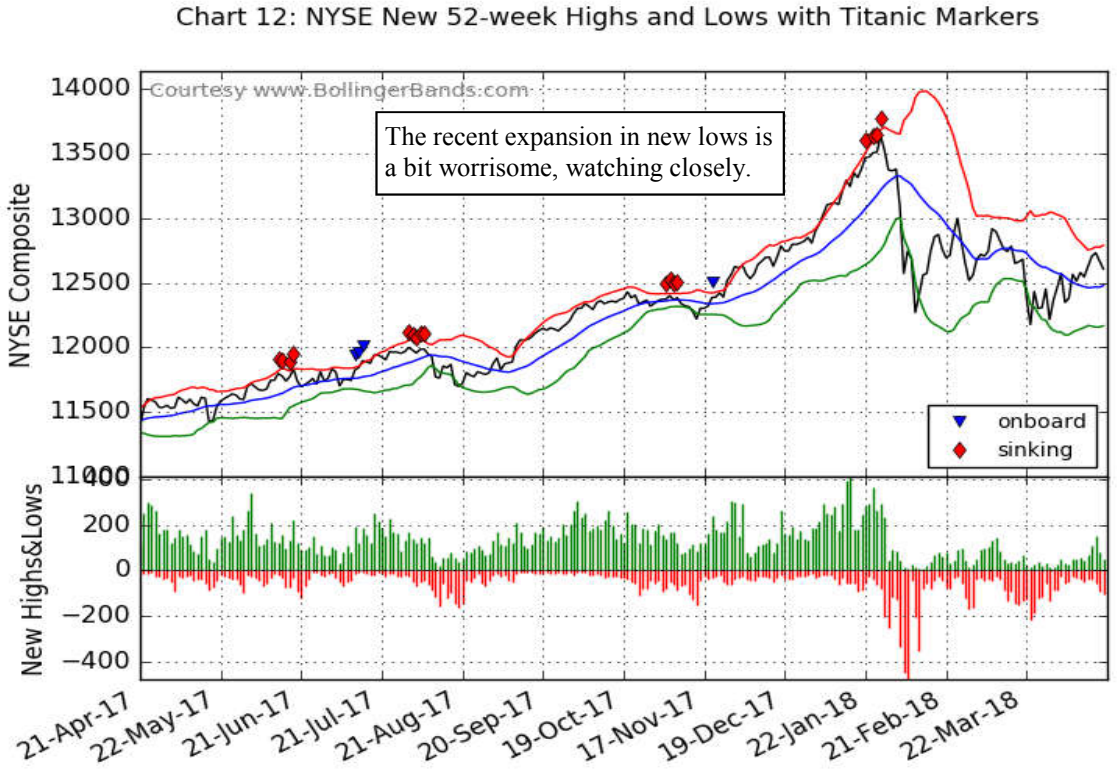
This discussion arises directly from an effort on my part to plot the 10-day Open Arms Index and the daily TRIN on the same chart in our Market Timing Chart Pack. The Open Arms and the TRIN are distributed differently with the TRIN being much wider ranging. At first, I tried plotting the log of the TRIN with the Open Arms, a standard data transformation technique, which looked like an improvement, but one was one-based and the other was zero-based, so though the ranges were now similar they weren't on a contiguous scale. Next I subtracted one from the Open Arms, effectively rebasing it to zero and putting the two on the same scale. The result was intuitively correct but still inversely related to price,



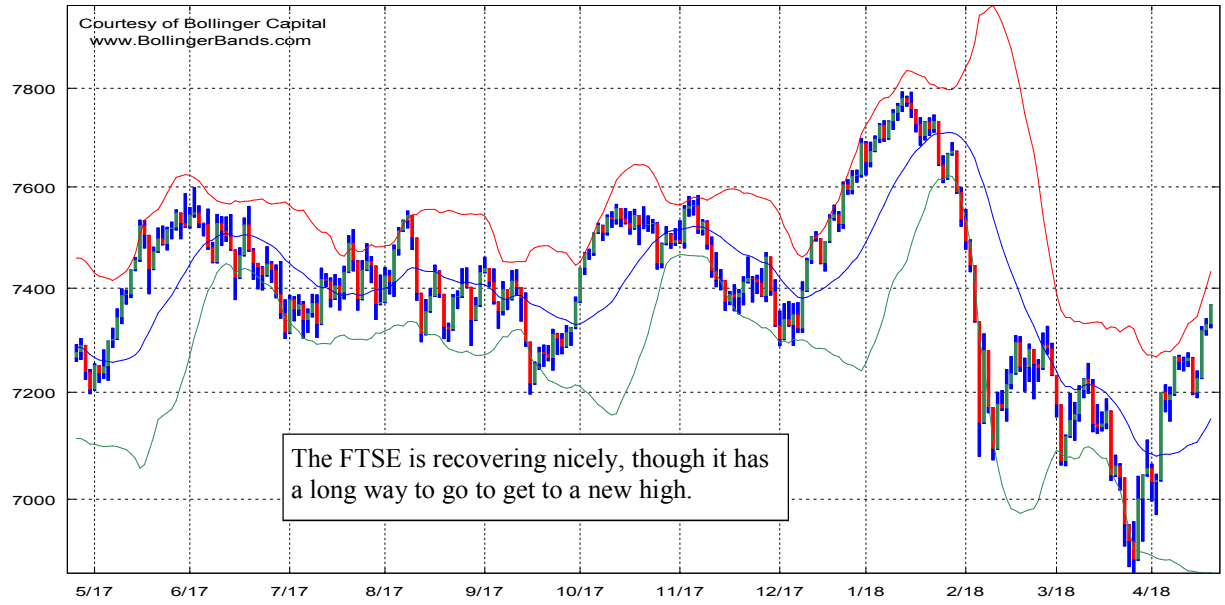
The Volatility Index — VIX — One Year



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



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



FTSE — Daily—One Year

so taking a trick I learned from Arthur Merrill, I inverted the indicator's scale. (I could have multiplied both by minus one which would have yielded the same result, but the inversion seemed more elegant.) Voila! An intuitively correct display of market-timing information.

A tip of the hat to Edward Tufte, whose book, "The Visual Display of Quantitative Information", started me thinking about data visualization long ago. I am at a loss why this wasn't done previously and adopted as the standard display, but as you can see from the chart on page 13, it is an informative and intuitive presentation of the data.

All of this arose from some work that my friend Fred Wynia did on extreme TRIN values. He focused on TRIN values of two or greater, noting that if they occurred early in a move they were impulsive and when they occurred later in a move they tended to be climatic.

And this brings up the question of why technical indicators aren't always displayed in a manner which makes

Shanghai — Daily — One Year

the retrieval of the information they contain as easy as possible? A lot simply has to do with tradition; that is the way it has always been done, but it doesn't have to be that way. When I created the first two Bollinger Bands indicators, I set out to create technical indicators, not statistics, indicators that would be easy for technicians to understand and use. For %b I used the formula from Stochastics instead of a z score or something similar. For BandWidth I took the width of the bands and normalized it by dividing by the value of the middle band. I could have used standard deviation, the variance, the coefficient of variation, or another similar stat, but I wanted something usable, not scientifically correct. In both cases I wanted the results to be intuitively correct within the realm of technical analysis. I suspect that the visual presentation of many technical indicators could be improved.

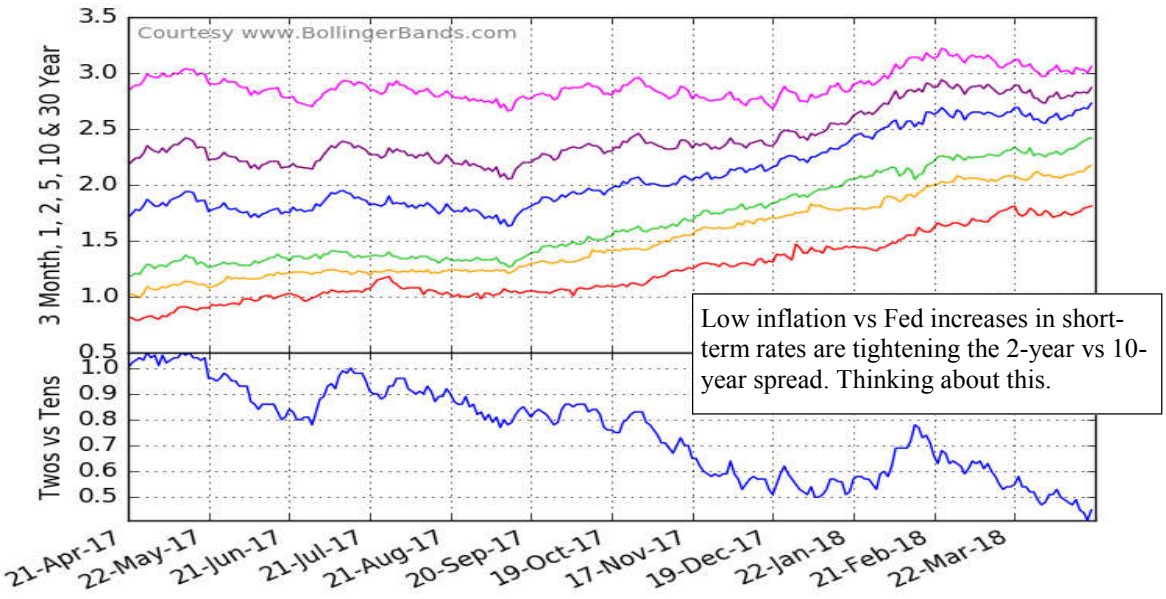
Stock Market Outlook

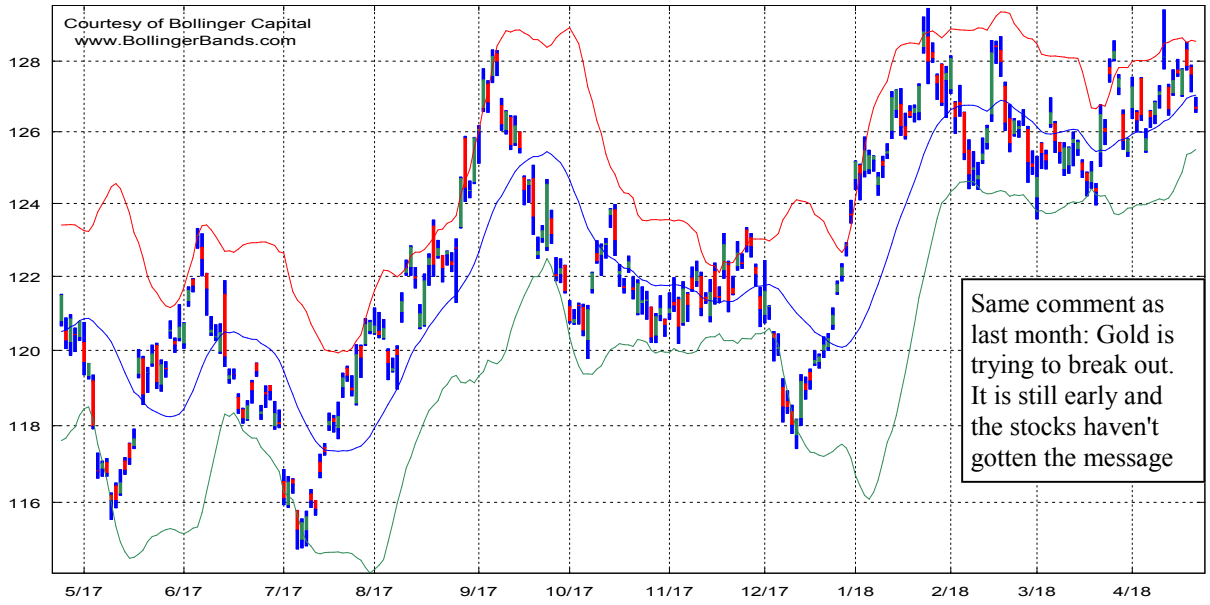
Our current stock-market outlook remains positive. There are two important tells, the leadership of smaller stocks and growth stocks is one, and the strength of the various advance – decline lines that we track, all of which are either at new highs or knocking on the door, is another. As we step through our market-timing charts, it is hard to find much to dislike. Yes, some sectors are lagging and it will undoubtedly be hard to get through January's highs, but this is a market with strong internals and really not very much to complain about. BBTrend is one troubling indicator and Intraday Intensity is another. We expect to see those improve as we challenge the old highs; if they don't increased caution will be indicated. In the meanwhile, let's earn some returns by holding stocks while keeping an eye on the door in case condition deteriorate.

Working?

After having fallen from 67.3% in 2000 to a low of 62.3% in 2015, the Civilian Labor Force Participation Rate has stabilized just under 63% for a year-and-a-half. Taking a slightly longer view, it first fell below 63% in October of 2014 and reached its low a year later, so we have been in this vicinity for three-and-a-half years, a welcome relief from a 15-year contraction. Considering that the labor force is taken to be persons 16 years of age and older and is thought to be roughly 160 million, a one percent change is equivalent to 1.6 million people gaining or losing jobs. Getting more of these people working jobs is this country's greatest economic challenge. I keep on hearing that we need immigrants to do our work for us, but can't help but think how much better off we'd be if we got more Americans working. I do understand that it isn't a simple issue, but getting Americans back to work is a vital issue. If we just got back to the 2000 peak, that would be seven million more Americans with jobs. Think of what an economic stimulus that would be! An aside: Spanish is the language of construction in LA; if you don't speak it you would be hard pressed to function on a site. How did we get there? Sanctuary cities? More like occupied cities. I'll bet that some of our vets, given a bit of training, would be happy to fill some of those jobs. One final point, I am not in any way against immigration, what I am against is illegal immigration.

Chart 21: US Treasury Constant Maturity Interest Rates



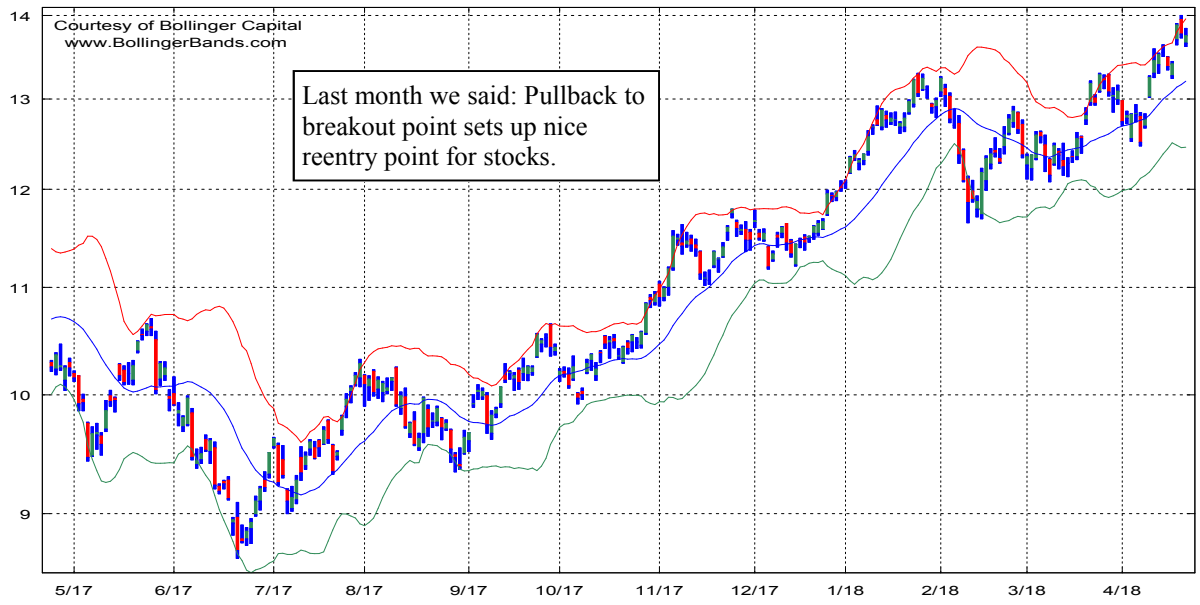


Gold Bullion ETF — GLD — One Year

"Money makes the stocks go 'round."

One set of factors does not bode well for stocks, monetary factors. Interest rates are rising, despite a little pause, and monetary growth is stalling. Neither is critical yet, but the alerts are there and analysts must pay attention and prepare. Take the growth of the M2 measure of money supply; a couple of years ago it was growing at more than twice the rate it is today. And interest rates, which were negative in many cases not long ago have been steadily rising for a couple of years. Taken together, the supply of money and the cost of money have pulled back from stimulative levels to more neutral levels that are in line with economy growth and inflation, but are no longer as supportive as they once were for stocks. One discreet series to watch is the yield spread between two-year and ten-year Treasuries, which has been falling dramatically as the Fed raises rates and reported inflation remains low. We chart that in our market-timing pack to remind us of what is actually going on with rates.

Gold Miners ETF — GDX — One Year



Crude Oil ETF — USO — One Year

Crypto Currencies

It seems pretty clear to me that the decline in Bitcoin, the crypto currencies and the alt coins is over, that a base has formed and that a rally is getting under way. I understand that it has become hyper fashionable for everyone from governments to fund managers to bash the sector, but price rarely lies and price isn't going down anymore despite an ongoing press of bad news. I consider that last bit to be very important. When bad news no longer produces declines, it is time to look the other way. I suspect that the biggest gains will come for the alt coins and the even smaller coins that are commonly referred to as "shit coins". I also think that all boats will rise with the tide, and that the biggest name, Bitcoin, will do well along with the other leading coins like Etherium, Litecoin, Ripple and Monero for example. I especially like the prospects of the coins designed for anonymity.

Adoption of the Crypto currencies is spreading and I have noticed signs like "Bitcoin accepted here" more frequently. At the CMT Association Symposium Tom

Oil Service Stock ETF — OIH — One Year

Lee from FundStrat gave a convincing presentation arguing that millennial demographics will help drive Bitcoin adoption. I do believe that millennials will be a huge economic force as they come of age and start driving the economy. Marc Chaikin noted at the same symposium that he believed that the recent surge in the home builders has to do with millennials. Why? Apparently they want to live with their pets and that means moving out of mom and dad's and into their own home. Whether you should believe that or not I have no idea, but I do think that millennials will be an increasing economic force, one that should be ignored only at the peril of missing out on understanding an important economic driver.

In any case, I think that the case for the cryptos is clear for speculators and becoming compelling for investors. Will there be bumps, absolutely so, especially as governments fight to retain control, but the idea is in the wild now and it is going to be very hard to crush it.

Gold and Energy

Gold is clearly trying to break out; the key level is 1,340/50/60 with clearing 1,400 being the final barrier. The stocks are behaving OK, which is to say that they are not declining, but nor are they confirming. It is early in the game yet and the crowd is not at all convinced that the precious metals are headed higher.

For gold and energy we can employ a technique that Bill Ohama of Titanic Syndrome fame would recognize as 3D.

1 is the price of the metal itself
2 is the price of the related stocks
3 is the price of the related resources

We've noted that the stocks are lagging and, with the singular exception of palladium, so are the other precious metals. Yet it feels like something is afoot and I am watching carefully for signs of confirmation. A breakout without confirmation would not be sustainable.

The energy complex presents a similarly confused 3D picture. Crude has done well, but not natural gas; big oil stocks have done well, but not the exploration stocks. Frankly even though the energy complex is in marginally better technical condition I like the prospects for the precious metals complex better. However for investors there are real dividend yields to be earned from the oil stocks, especially from some of the large integrated stocks and some of the foreign biggies. (I wish I were more versed on the fundamentals of the various energy related master limited partnerships and royalty trusts, as I feel that there is an income opportunity there, but I am not. This is an area in which Rational Analysis is required for success.)

Interest Rates

Slowly the message about a bear market for bonds is getting out. Tom Lee of FundStrat was on CNBC Friday morning suggesting six to seven percent yields for the 10-year Treasury note. I don't know how long he has held that opinion, but it is emblematic of the increasing acceptance of a long-term trend towards higher interest

Commodity Prices — DBC — One Year

rates on the part of professionals. (I met Tom Lee for the first time last week at the CMT Association Symposium in NYC where he gave a terrific presentation on crypto currencies.)

The interesting part is that I don't think that non-professionals are getting the message yet. On Friday I tweeted about the bear market in bonds and virtually instantly the deniers jumped in. Think about this: Taking the midpoint of Mister Lee's forecast, 6.5%, would suggest mortgage rates in the 8% range; that would be hell on the real estate market, yet the bid for all types of real estate remains incredibly strong.

View from the Beach

What bubble? Four years ago we bought a small office building complex that stands on four of the five equal-sized lots that comprise a block front on a busy avenue. It is in very good condition and fully rented. Recently the owner/occupier of the fifth lot passed on and we decided to make a bid for it. It is in tough condition and would need a huge amount of work to make it rentable. The counter to our offer was almost the price we paid for the other four lots complete with two solid buildings, garages, a stable rent role, etc. With interest rates rising and mortgage rates going with them as discussed above, we can't help but expect at minimum a plateau in real estate prices and perhaps something unimaginable, lower prices. Capitalization rates (net operating income / purchase price) for desirable Southern California properties are down in the two to three percent range, not much economic reserve in that. And the case is worse in some other markets. The quote at the beginning of the letter regarding San Francisco reflects current interest rates; one can only imagine the economics as rates continue to rise.

Speaking Engagements

Oslo, Norway
May 22, 2018
https://www.ig.com/no/tradingevent-bollinger

Stockholm, Sweden
May 24, 2018
https://www.ig.com/se/tradingevent-bollinger

TradersEXPO, Chicago, IL
July 22 - 24, 2018
https://tinyurl.com/ychnng26

ETF Portfolios	Symbol	Date Selected	Purchase Price	Current Price	Dividends	Return	Rank
Style							(# in 21)
Core Growth	IUSG	4/24/2017	46.87	55.21	0.35	18.54%	9
Russell 1000 Growth	IWF	2/10/2017	111.06	137.64	1.88	25.63%	10
Russell 2000 Growth	IWO	3/23/2018	191.64	194.80	0.00	1.65%	3
International							(# in 24)
Austria	EWO	1/20/2017	17.26	25.67	0.50	51.63%	5
Italy	EWI	4/6/2018	33.00	33.99	0.00	3.00%	1
Malaysia	EWM	2/16/2018	35.45	35.85	0.00	1.14%	3
Sector							(# in 27)
Technology	XLK	11/10/2017	63.41	66.21	0.46	5.14%	10
Gold	IAU	3/23/2018	12.99	12.82	0.00	-1.31%	7
Consumer, Disc.	XLY	12/1/2017	97.96	102.98	0.64	5.78%	8

ETF Portfolios

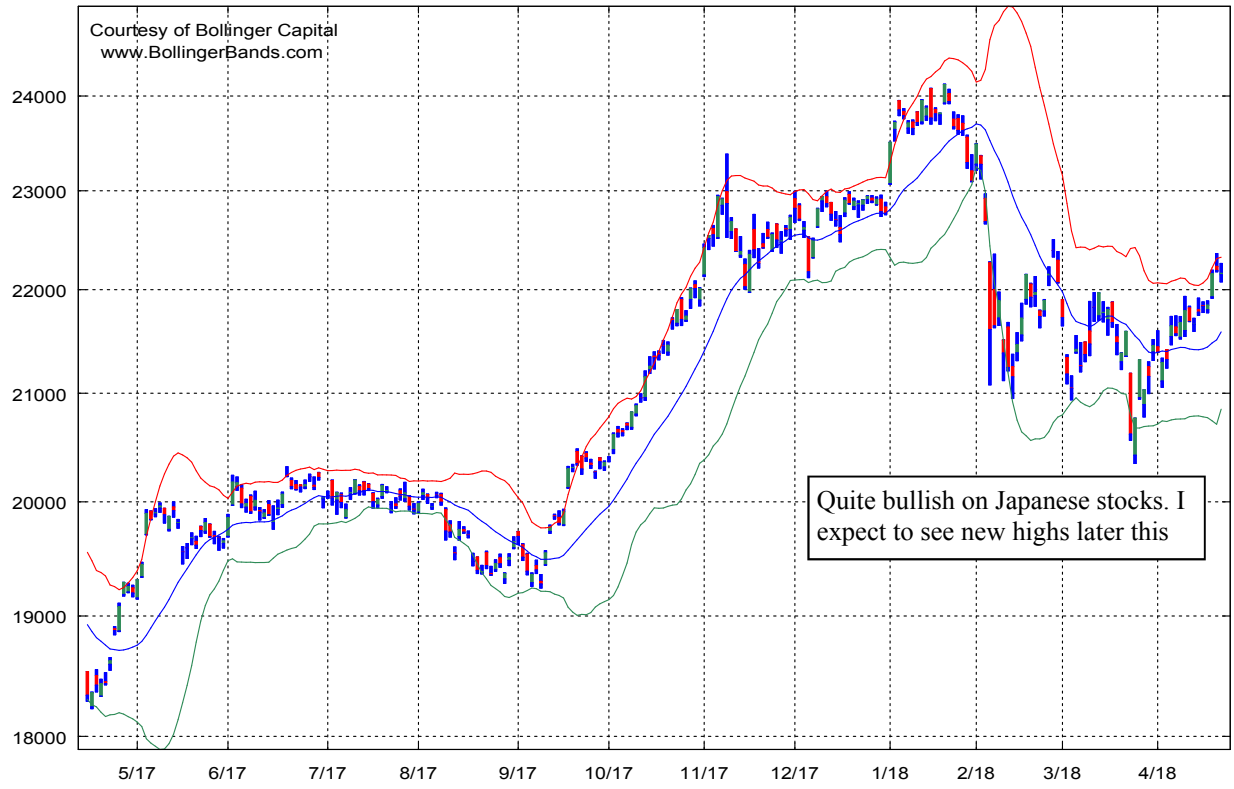
Bitcoin — Daily — One Year

Portfolio

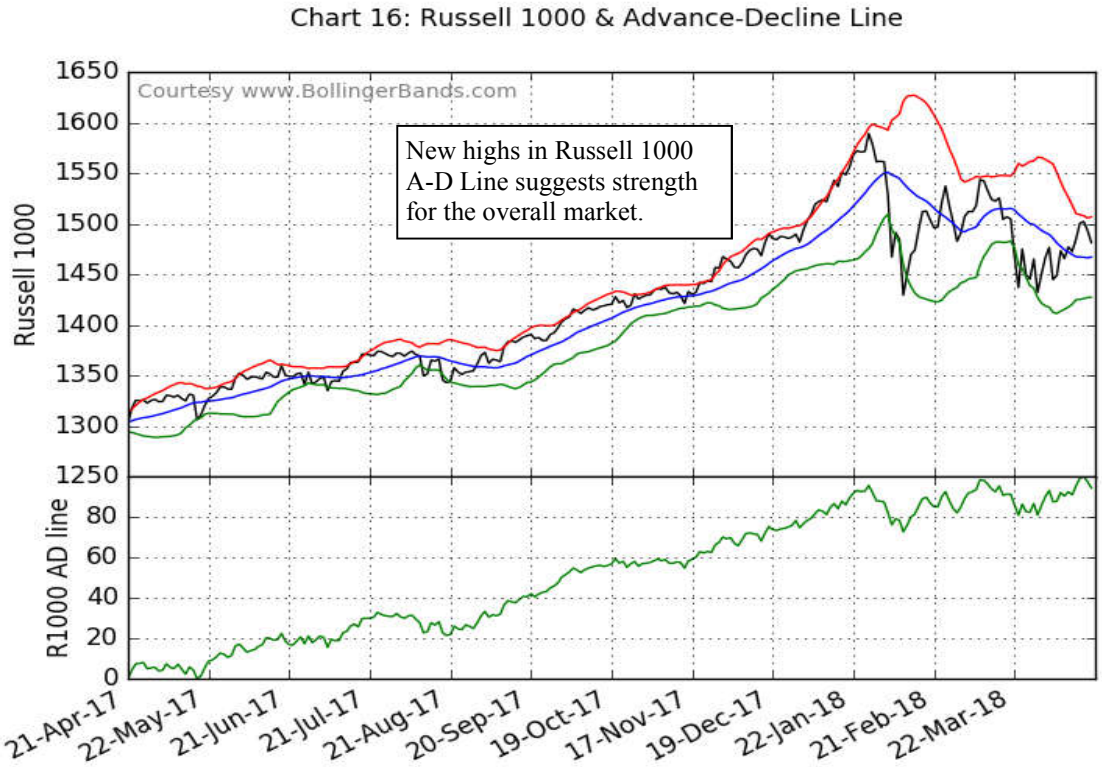
Slot	Name	Symbol	Entry Date	Entry Price	Current Price	Divid.	Total Return	Mental Stop	Action
Core Portfolio - US Equities									
1	S&P 500	SPY	10/19/15	203.20	266.61	11.65	36.9%	253.00	Hold
2	Russell 2000	IWM	11/02/15	118.21	155.55	4.64	35.5%	142.00	1/2
3	S&P MidCap	MDY	04/18/16	267.64	345.83	19.77	36.6%	320.00	1/2
4	Finance	XLF	10/08/16	19.75	27.88	0.62	44.3%	26.50	Hold
5	Russell 1000 (Equal)	EQAL	12/05/16	26.81	31.00	0.61	17.9%	28.50	Add
6	Healthcare ETF	IYH	01/14/17	147.28	173.92	1.96	19.4%	167.00	Hold
7	S&P Small Cap	IJR	03/17/17	69.35	79.06	0.95	15.4%	72.00	Add
8	S&P 500 Growth	IVW	03/17/17	131.81	156.90	1.68	20.3%	145.00	Hold
9	Royal Dutch A	RDS.A	05/26/17	54.63	70.65	2.72	34.3%	58.00	Hold
10	Apple	AAPL	10/23/17	156.25	165.72	1.26	6.9%	152.00	Sell
11	Basic Materials	XLB	02/17/18	60.10	59.00	0.23	-1.4%	56.00	Add
12	Telecomm	VOX	12/09/17	86.39	87.00	1.87	2.9%	82.00	Hold
Core Portfolio - International									
1	Japan	EWJ	12/14/12	44.99	60.69	1.81	38.9%		Hold
2	World	VEU	10/19/15	45.53	54.89	2.64	26.4%		Hold
3	Int'l Property ETF	WPS	05/26/17	37.43	39.17	1.43	8.5%		Hold
4	Germany	EWG	02/17/18	33.02	32.96	-	-0.2%		Hold
Core Portfolio - Gold+									
1	Gold Miners	GDX	02/17/18	22.07	22.71	-	2.9%		Hold
2	Bitcoin	BTC	02/17/18	10,380.04	8,890.01	-	-14.4%		Add
Core Portfolio - Yield									
1	Barclays High Yield	JNK	02/20/09	29.17	35.99	23.01	102.3%		Hold
2	iShares High Yield	HYG	02/20/09	69.98	85.89	46.40	89.0%		Hold
3	PS Finan. Preferred	PGF	03/13/09	8.35	18.43	12.98	276.2%		Hold
Cash									
1	Doubleline Low Dura	DBLSX	09/15/17	10.09	9.97	0.32	2.0%		Hold
2	Vangaurd Short Tern	VCSH	09/15/17	79.79	78.08	0.94	-1.0%		Hold

Portfolio Notes: Small-cap growth seems to be drawing a lot of interest, this may be due to a perceived immunity to the trade disruptions. Of course growth in general and the FAANG stocks in specific are doing well too. With the Value Line Geometric at 556.26, the Value Line Plan remains in the market with a Friday sell stop of 543.29. Our outlook for the US stock market remains positive. Market internals are solid, with a few exceptions, and we expect a retest of the January highs soon. I have a number of letter-related projects that I am working on, a replacement for the Value Line Plan, a new group and sector analysis engine, and automation for the ETF portfolios. Don't forget our Market-Timing Chart Pack, it is a valuable supplement to this letter. Speculators can take or add to positions in the crypto currencies and major alts with an eye on an intermediate-term move higher. There are no changes to the ETF portfolios this week. Sorry if this is a bit disjointed and a day late, battling the flu. Moved IJR and BTC to add status. Recommended the sale of AAPL due to political uncertainties; will revisit later.

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.

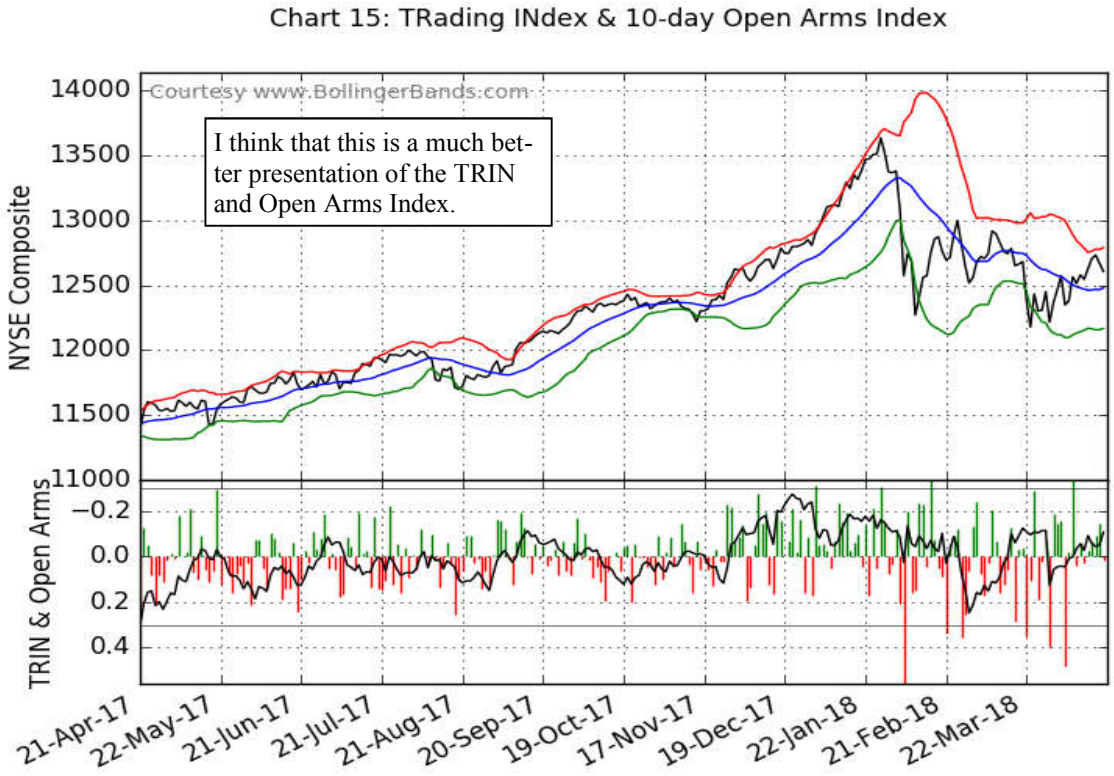


Nikkei 225 — One Year



NASDAQ 100 — One Year

FAANG — Six Months



TRIN and Open Arms Index — One Year