



Volume 41 - Number 4

Winter 2017

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Market Update – *Who's Drinking the Tea?*

by David A. Jaffe, M.D.

Long Island Iced Tea, a company whose stock was bouncing around \$2.50 per share for most of 2017, pulled off a public relations stunt reminiscent of the dot-com bubble of the late '90's when it rebranded itself *Long Blockchain Corp.* at the end of 2017. Founded in 2011, the company offers ready-to-drink iced tea and lemonade ... and oh ... as of December 2017 added to its business model "focus on developing and investing in globally scalable blockchain technology solutions." During the last week of December, investors rewarded this progressive business plan with a temporary jump of 400% in stock price, before ending the year at \$5.10, still more than double the average price of the preceding few months.

After nine years of uninterrupted gains, broad stock market valuations are above the norm, with some areas exhibiting extremely speculative pricing. Still, despite tightening credit markets, richly valued equity prices, unprecedented speculation in a computer product few understand (see below), and (two) world leaders arguing over the size of their nuclear "buttons", 2017 was characterized by a steady market advance, and noteworthy for the absence of volatility. The seemingly unstoppable bull finished 2017 with another extraordinary gain, the S&P 500 returning 21.83% for the year (with reinvested dividends).

PASI captured the vast majority of the 2017 stock market gains, but our belief in controlling the level of risk we take with our client's capital caused us to lag the benchmark, still logging a healthy annual return of 18.73% (with reinvested dividends). With PASI corporate bond returns of 2.64%, our "average" 60:40 account returned 12.30%. Yes, in such a market environment we all wish our investments were 100% stock, but growth potential must be balanced against preservation of capital, especially for those dependent on their savings for living expenses. It's valuable to recall that the "average" PASI account declined less than half the stock market plunge of 37% in 2008. Credit our conservative portfolio and the stability of the bond holdings.

The inevitable and perennial question arises: what does 2018 hold, and how long can this advance go on? Identifying the data being fed into the stock market's "averaging machine" is

fairly easy. On the plus side, global economies remain strong, as does employment. Most housing markets have fully recovered from the slump of the “Great Recession”. U.S. companies laud business friendly regulatory and tax reform under the current administration. Expectations for earnings growth remain high. Despite recent tightening on the part of the Federal Reserve, interest rates are low from a historical perspective and fixed income returns unexciting. Balance these fundamental observations vs. the more nebulous view that stocks are “priced for perfection” – with elevated price earnings ratios, record profit margins, regulatory and tax reform *a fait accompli*, and investors digesting the substantial gains of the past nine years, the nagging worry is that an economic disappointment, or aggressive interest rate hikes by a Federal Reserve concerned about an overheated economy and resultant inflation, could derail the aging bull. Paradoxically, investor complacency, as reflected by measures such as record low volatility, high margin debt, and widespread bullishness, is also viewed by many as a contrary indicator regarding stock market health.

As we begin the New Year, the Dow Jones Industrial Average (DJIA) surged past 25,000; by some measures the *broad market* is off to its best start since 1964. The advance has included 2017 laggards in areas such as energy and retail. We’re pleased to report that, with all of seven trading days behind us in 2018, the PASI portfolio is leading the S&P 500 by a comfortable margin. Of course we’re all long-term investors, and our focus remains on long-term growth and preservation of capital. In truth, what the market will do this month or this year is easy to forecast and impossible to know, but 40 years of history has cemented our confidence in the prudence and success of our time tested investment strategy.

The Disruption Bubble

by Nathan Polackwich, CFA

\$16,000 – That’s about what a single Bitcoin will run you (as of this minute). Here are some other things you can purchase for \$16,000:

- A 2017 Toyota Camry with less than 15,000 miles (an admittedly good deal I found on autotrader.com)
- Six top of the line MacBook Pro laptop computers
- A 12-day Viking River Cruise trip for four people from Paris to the Swiss Alps (plus an extra \$2,000 for shopping)

You get the point. To be fair, those buying Bitcoin don’t view their purchases as consumption but rather as an investment. They expect their Bitcoin will be worth significantly more in the future. But more what? Ironically, Bitcoin investors/speculators are exchanging U.S. dollars (or whatever their local currency) for Bitcoin in the hope that one day their Bitcoin will be worth...wait for it...more U.S. dollars. So what most of the people speculating on Bitcoin today are dreaming about is not a future where they’ll use their Bitcoins to buy things. Rather, they’re dreaming about eventually cashing in their Bitcoins for (hopefully a whole lot more) trusty-old U.S. dollars – You know, the stuff you’ll actually need if you want to buy cars and computers and European river cruises.

To be honest, I'm not a "tech" guy so despite a fair amount of effort I've had some trouble wrapping my head around how crypto currencies actually work and what problem they purport to solve. Here's what I've got so far, using BitCoin as my example:

- Cryptocurrencies like BitCoin make it possible for people to safely transfer value electronically without a centralized intermediary (like a bank or credit card company) to verify the transaction.
- The foundation of every cryptocurrency like BitCoin is a software encryption technology called a blockchain. A blockchain is a digital ledger that records every Bitcoin ever created, every BitCoin transaction ever made, and every owner (identified by a random numerical format).
- Rather than a centralized database, the BitCoin blockchain is maintained by a network of computers all over the world called "nodes," which BitCoin enthusiasts apparently provide for no direct economic incentive.
- Owners of BitCoins are given a private "key" (another randomized number) which allows them to access their BitCoins and transfer them to other people or entities.
- To be verified, new BitCoin transactions must be added to new blocks on the blockchain.
- This verification process is accomplished by BitCoin "miners" who must also solve a complex algorithmic math problem (which gets increasingly difficult over time) in order to successfully complete a new block. Miners are awarded new BitCoins for each block they add to the blockchain.
- The algorithmic math problem the miners must solve is referred to as a "proof of work." Apparently the enormous computing power required to solve a proof of work and add it to the blockchain makes hacking the BitCoin network uneconomical.
- Just under 17 million BitCoins have been mined (4 million of which have been lost), and only 21 million BitCoins will ever exist. Around 99% of all BitCoins will be mined by 2032.
- Once all BitCoins have been mined, miners will just earn transaction fees – presumably paid by those transacting in BitCoins – to add new blocks to the blockchain.

So what does BitCoin accomplish that modern, centralized financial systems don't already do? Well, if people decide it holds value they can anonymously and securely pay each other with BitCoins potentially avoiding government monitoring, taxes, and bank transfer fees. That has value, particularly if you're a drug or international arms dealer.¹ For those less interested in anonymity, BitCoin is also theoretically a cheap way to transfer funds, as the system bypasses conventional financial institutions. Of course, that's not really anything special, as you can already transfer funds for free using apps like PayPal's Venmo.

Some BitCoin adherents argue that because there's a fixed supply of BitCoin that can never be increased, it's a superior store of value to traditional sovereign backed money which would lose value in an inflationary environment. The trouble with this line of reasoning is that BitCoin doesn't have a monopoly on blockchain technology. Thus, while there may be a fixed number of BitCoins, there's a potentially infinite supply of other digital currencies that can do everything

¹ However, converting your BitCoins to actual cash is a lot harder to accomplish anonymously.

Bitcoin can and potentially more. Further, if you're concerned about inflation why not just buy stocks or commercial real estate which offer an annual income in addition to their inflation protection?

So, is Bitcoin going to replace traditional sovereign currencies and take over the world? – In a word, no. Blockchain technology is interesting and may even have applications beyond digital currency², but so far doesn't seem to offer anything better than what sovereign money and the existing financial system already provide. Moreover, the Bitcoin system simply doesn't scale for the global economy. Each digital Bitcoin block must be one megabyte in size or less, which means the entire Bitcoin network can only support 3-7 transactions per second (a bottleneck that's caused rising delays in Bitcoin transaction verification). By comparison, Visa's network can process 24,000 transactions per second. While you can pay a fee to get your transaction prioritized for faster processing on the Bitcoin blockchain, those fees can often be more expensive than what traditional financial institutions charge to transmit funds.

Can't the Bitcoin network just increase the block size to accommodate more transactions? Yes, but such a change would require enormous additional amounts of storage space, computing power, and bandwidth – something most Bitcoin node operators and miners would be unable to afford. Ultimately, if the block size increases substantially, only large companies/organizations would have the financial capacity to operate a Bitcoin node or mine Bitcoins. But this kind of concentration of the Bitcoin network is anathema to the digital currency's original purpose of a people-powered decentralized system.

Bitcoin is also outlandishly wasteful from an energy-use standpoint. Miners use massive computing power (and therefore electricity) to solve Bitcoin's mathematical proof of work and add new blocks to the blockchain. The website Digiconomist recently estimated that the Bitcoin network already uses more energy than the entire country of Denmark – And that's with only three to four hundred thousand daily transactions! A single Bitcoin transaction, then, uses enough energy to power the average American home for a week. Such an insanely inefficient system can never be widely used.

Aside from scalability, Bitcoin faces numerous other barriers including 1) the hackability and lack of regulation of the exchanges where people trade/store Bitcoins and convert them back to cash, 2) the inflexibility of the Bitcoin security code system – if you lose your private key (or lose your password to access your digital wallet), your Bitcoins are essentially unrecoverable, and 3) Bitcoin's wild price volatility and transaction time delay means that most merchants won't accept Bitcoin because their profit margin could easily be wiped out in a matter of seconds.

Finally, governments will never allow Bitcoin or any other anonymous digital currency to supplant sovereign money, as it would impede tax collecting and governments' ability to function. Thus, even if some future digital coin eventually solves cryptocurrencies' scalability,

² For instance, software applications could be hosted and run over a distributed rather than centralized network.

hackability, and volatility issues, you can be sure governments will shut it down before it ever reaches critical mass.

Despite BitCoin's obvious issues, which I suspect most of the people speculating on it have no idea about, its price surged from around \$1,000 at the start of 2017 to an astonishing \$16,000 by the end of the year. What's fueling this price move, which I believe will go down as one of the craziest bubbles in economic history? In short, I think the dramatic rise in BitCoin and other cryptocurrency prices is emblematic (symptomatic?) of a general bubble in disruptive technologies that took flight in 2017.

In his famous book, *Manias, Panics, and Crashes* (1978), economic historian Charles Kinderberger identified economic "displacement" as the primary ingredient in history's speculative bubbles. He found that such displacements usually came from 1) the rise of a new economic power (e.g., the United States in the 1920s, Japan in the 1980s, China in the 2000s), or 2) new technologies that change the world (e.g., railroads, automobiles, radio, computers, and the Internet). Today's displacement looks like a fuller realization of the promise of the last two technological displacements – computers and the Internet – which has led to rapid advances in cloud computing, automation, artificial intelligence, and robotics. BitCoin – a digital currency powered by a new technology (the blockchain) – fits perfectly into this new disruptive narrative.

Now, the current displacement is absolutely real and undeniably already having an outsized impact on the global economy. Still, many investors seem to be conflating technological displacement with a profitable business model – Or perhaps they believe that profitability no longer matters. So far they've been right, as disruptors like Amazon, Netflix, Tesla, and, yes, BitCoin, despite dubious profitability – see their prices spiral ever higher.

New technology may change the world, but the disruptors that don't ultimately turn a profit will eventually see their prices decline just as dramatically as they rose. For PASI the current speculative activity in largely unprofitable businesses makes managing the investment portfolio temporarily challenging. We're willing (and excited) to put money into profitable and reasonably valued disruptors like Facebook, Google, Priceline, and PayPal. But we're not going to chase stocks with outrageous valuations reflecting wildly optimistic assumptions for future growth.

This may weigh on our relative performance modestly in the event of a continued market melt-up. But this wave of speculation will eventually ebb. And when it inevitably does, investors exposed to these areas will lose much of what they put in (though their speculation will have served the higher purpose of encouraging entrepreneurs to make further advances in these exciting industries). As Warren Buffett once quipped, "You only find out who is swimming naked when the tide goes out."

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