



The following discussion of Bitcoin and Cryptocurrencies was written in mid-August. While the interceding months have been eventful in the cryptocurrency universe, we feel these comments remain relevant and applicable on a broad scale.



Cryptocurrencies & Bitcoin—Fad or Future?

Caveat Emptor may never have been a more fitting caution than for those looking to enter the cryptocurrency craze. This piece is written in response to numerous inquiries CCR Wealth Management advisors have fielded from clients interested in these digital currency opportunities, or simply out of curiosity.

Readers of our Outlook notice that all our communications with clients include certain rote disclaimers and disclosures required by regulators. We think it is most appropriate to start the discussion here: **Cryptocurrencies (Bitcoin, Ethereum, Litecoin, or the *hundreds* of other digital “altcoins”) are not securities and are not regulated by the SEC or FINRA. As such, CCR Wealth Management does not buy, sell, or recommend (either way) cryptocurrencies to our clients.** We do not claim to be “quants” and in fact we would never be mistaken for a “technophile” (we’ve had some embarrassing calls into the Help Desk).

This discussion is meant to be an informal, “70,000 foot-view” of this new and interesting frontier. Opinions on cryptocurrencies vary widely from fraud/hoax to visionary, futuristic inevitability. The underlying machinations of blockchain technology, the “chassis” of cryptocurrency, is beyond our expertise to fully explain in any detail.

Our final disclosure: Our Chief Investment Officer* is a Bitcoin owner. Going forward in this discussion, we will interchange “Bitcoin” and “cryptocurrency” frequently. Just note that not all digital currency is Bitcoin, though Bitcoin was the first, and is by-far the largest of these currencies.

So, what is “Cryptocurrency”?

Let’s dissect the word. *Cryptography* is method of keeping data secure. Bitcoin and all other cryptocurrencies use “blockchain” technology, a type of distributed ledger which exists on a network across multiple sites (servers). It is decentralized and uses consensus algorithms to record and verify changes to a ledger (or “blocks”, in the case of blockchain technology). It is basically

programming code which exists on the internet. It is specifically designed to be secure and significantly difficult to alter or manipulate in any fraudulent manner, making it ideal as a transaction ledger.

The *currency* part of “cryptocurrency”, in our view, is where things become interesting and somewhat controversial. Currency, as it is understood in economics, must fulfill three basic functions to be considered “money”:

- 1) It must serve as a medium of exchange
- 2) It must serve as a store of value
- 3) It must serve as a unit of account

Bitcoin passes all three prongs of the test. It can be used to purchase goods and services. Thousands (and counting) of vendors and companies accept Bitcoin as a method of payment (including Microsoft, Virgin Galactic, Expedia, Dish Network, and Overstock.com, to name a few). Therefore, it serves as a “medium of exchange”.

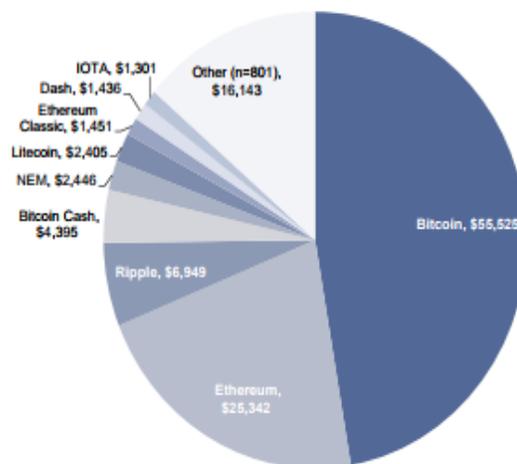
Second, Bitcoin serves as a “store of value”. While a trailer of fresh produce represents a certain value, its value diminishes to nothing over time. The equivalent value of Bitcoin can be deposited into an account, held for a week, a month, or a year, and then exchanged for some other currency, or used to conduct commerce.

Last, Bitcoin is certainly a “unit of account”. In fact it is the accounting of this unit (generally \$/BTC) which has gained so much notoriety of late.

There are current limitations as to *how well* Bitcoin and other cryptocurrencies fill these functions—which we will discuss later. In terms of strict definitions, Bitcoin, at least can be said to be a currency. *Cryptocurrency is, therefore, a global, encrypted, digital, decentralized medium of exchange, store of value and unit of account.*

Exhibit 5: Bitcoin represents almost half of the nearly \$120bn in total cryptocurrency market cap

Distribution of cryptocurrency market cap; \$, millions



Source: Coin Market Cap, Goldman Sachs Global Investment Research. As of August 7, 2017.

The First Global Currency?



In our “Brave New World”, business and scientific luminaries like Elon Musk or Stephen Hawking discuss the *reality* of artificial intelligence—its current and future applications, promises, challenges and potential pitfalls. Not long ago, artificial intelligence was a staple concept of science fiction. Today, artificial intelligence powers self-driving cars and in-home personal assistants (like Amazon’s Alexa or Apple’s Siri). New applications are growing exponentially for both business and consumer use.

Another staple of science fiction has been the concept of a universal, or global currency (Isaac Asimov, Gene Roddenberry, and Arthur C. Clark have all explored the concept). To the extent Bitcoin meets the currency test, it is, in effect, the first *global* currency. We think of this as a particularly important concept when envisioning the possible long-term implications of Bitcoin, or cryptocurrencies in general. Recall that crypto currencies are decentralized. There is no monetary authority governing the quantity Bitcoin “in circulation”. There is no authority (or motivation) to peg the value of these currencies to any other currency, or to sync them with any commodity. In this sense, a “universal currency” exists wherever the internet exists. If a South African consumer wishes to purchase a pair of shoes from a shoemaker in Milan, Italy, their transaction necessarily needs to start in Rand and be converted to Euros. Whether or not the transaction is done with a credit card—this is the process that must take place. Not only are there fees involved at every step—there is also currency risk. Now imagine the products needing to be returned for some reason—the barriers to a smoother transaction double. Further, if the materials to make the shoes are imported, a third currency is introduced adding to the complexity and the risk. If, however, the two parties both agree to transact in Bitcoin, it is theoretically faster, cheaper, and easier. This theory likely gets closer to reality as Bitcoin acceptance increases globally.

In our view, a more important impact of the First Global Currency requires us, as Americans, to suspend our life-experience of living with and using the world’s preeminent fiat currency, and to imagine ourselves pursuing our current occupations in a developing economy. Working hard to create successful businesses and an increased standard of living for families and future generations has finally become a possibility in much of the developing world. Too frequently, however, the fruits of this labor are diminished, or even decimated by ill-considered fiscal or monetary shenanigans designed to benefit a society’s elite.

Roughly 80% of the world's population resides in what we call the Developing World. Global trends show this population as significantly younger than the developed world's population, and increasingly better educated relative to historical standards (though not uniformly so). Middle classes are emerging and growing in most countries around the world. Technology itself has done much to stitch together the global community, with Facebook self-reporting nearly 1.75 billion active monthly users globally at the end of 2016. Drivers in Kenya are equipped with Uber-enabled smartphones, as are university students in Argentina. The point is, technology and internet usage are now, and will become increasingly more universally adopted across the entire world—not just in the US, Europe, and parts of Asia. It should be no surprise then that Bitcoin adoption—even enthusiasm—is growing rapidly around the world, and particularly in developing nations. One aspect of developing economies that remains much slower to change than technological advancement is the political climate. These controlling parties tend to support both a less liberal social society and a more authoritarian grip on the levers of power, including State institutions governing monetary policy. Unfortunately, capital controls, nepotism, graft, and over-dependence on a single industry (often commodity-based) often lead to volatile currencies and *wealth destruction* in societies with burgeoning middle classes. Case in point: Venezuela.

“Venezuela, by the numbers, resembles a country hit by civil war. Its economy, once Latin America’s richest, is estimated to have shrunk 10% in 2016, more than Syria’s. Its inflation that year has been estimated as high as 720 percent, nearly double that of second-ranked South Sudan, rendering its currency worthless. In a country with the world’s largest proven oil reserves, food has grown so scarce that three in four citizens reported involuntary weight loss...”

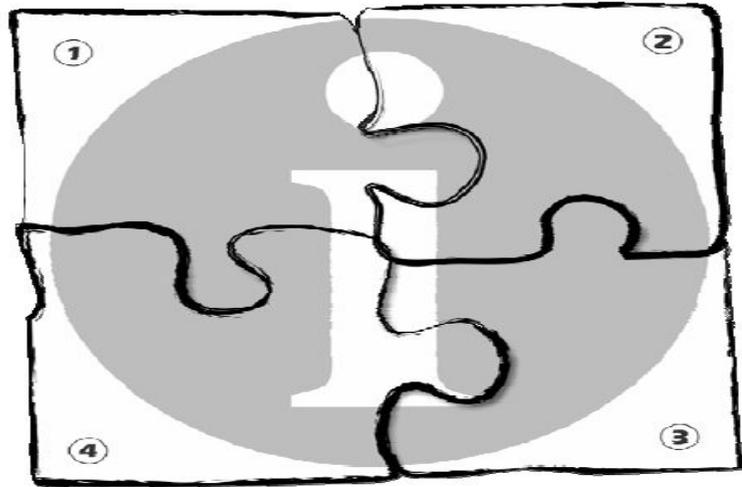
*New York Times, May 14
By Max Fisher and Mary Taub
“How Venezuela Stumbled to
the Brink of collapse”*

In comparison, today, citizens around the world can generally transfer their home currencies into Bitcoin using a smartphone with just a few swipes of a thumb. In this context (again, mentally suspending our fiat-currency heritage), one may understand why adoption of an alternative currency, along with its ease of conversion, is a popular concept around the globe.

Currency, Commodity, Enigma

Having defined Bitcoin as a currency, we now explore its current, practical status.

We have occasionally referred to currency gyrations over the last few years in our Outlooks because the sharply rising dollar, or falling Euro (whichever way you look at it) has sometimes had profound short-term effects on asset returns exposed to these currencies. We have also pointed out that in the long-run, currency is a zero-sum game for “investing” purposes. This means that over time, currencies are mean-reverting, and will generally find a level of parity (purchasing power parity, or interest rate parity). As such, *long-term investment strategies in currencies typically don’t make much sense* as opposed to short term hedging strategies, or what are known as “carry trades” pursued by some hedge funds.



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Despite this, some advisors at CCR Wealth Management are also Bitcoin owners. This may seem to be a contradiction, given that owning currencies should yield little-to-no return over the long run.

While institutional adoption of digital currencies is a major goal of the cryptocurrency community and despite the earlier listing of companies that do honor it, it cannot be said that any cryptocurrency (including Bitcoin, the largest by far) is widely recognized and accepted *today*. The only reason any vendor or company accepts Bitcoin as a payment medium today is because they can (and do) immediately exchange it for fiat currency. The obvious reason for this is the significant volatility of the value of Bitcoin. Were Bitcoin to become a widely accepted payment alternative to the dollar, the Yen, or the Euro in global commerce, volatility would plummet as more participants increase liquidity.

Another unique feature of Bitcoin and other altcoins is its *scarcity*. Going back to our discussion of monetary authorities as stewards of monetary policy, it is important to revisit one of the central tenants of Bitcoin’s “promise” to be a global monetary alternative. All governments control the volume of currency flowing through their economies, including the US government. Money can, and is printed on a regular basis. In some cases, whether by ideological, authoritarian motive, or ill-considered economic theory, this can and has led to inflation, hyper-inflation (Venezuela) and

even war (Weimar Republic). **In contrast, Bitcoin is hard-wired to have a limit of 21 million coins.** There exists no authority to change this, no committee to vote to increase the circulation. Remember, blockchain is a computer program. Without descending into the technical details, Bitcoin is “mined” at a declining rate of Bitcoin per day. There are currently (approximately) 16,500,000 Bitcoins currently in circulation, roughly 79% of the total that will ever be mined, with the total Bitcoin count expected to be reached in the year 2040.

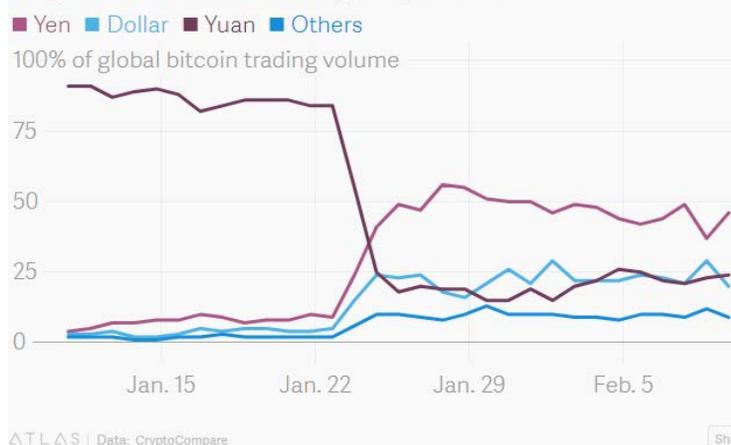
The current state of Bitcoin, then, is less currency like, and more commodity like. A finite (and dwindling) supply will likely factor into Bitcoin’s price as much as an increase in acceptance (demand) as a medium of exchange. An algorithm governs the supply of Bitcoin—though many see the forecasted increase in demand as an article of faith.

Regulation: A double edged sword

Part of what makes the long-term prospect of digital currencies attractive to so many is that these decentralized mediums of exchange by-pass regulatory authorities. As previously stated, these authorities may have a mandate to control capital flows in and out of their countries. The US dollar became a fiat currency for several reasons, not least of which was (mostly) sound monetary and fiscal policy throughout the decades following the World War II. American regulations (necessary as the rule of law allowing for free societies) have engendered confidence.

However, over-regulation can suffocate economic growth. This has allowed Bitcoin and other decentralized digital currencies to grow and start to bypass the traditional banking systems. Unfortunately, they also have become attractive vessels for shady business activities. Money launderers, criminal enterprises, ransomware attacks and “dark net” drug dealing operations run using Bitcoin have been in the news of late. It should be noted that the US and many other developed countries continue to back-stop their banking systems (think FDIC). However, there is no central authority in existence other than the blockchain itself to protect those who choose to invest, save, and transact in cryptocurrencies.

The yuan share of bitcoin trading has plummeted



Let’s also point out that while cryptocurrencies themselves are generally unregulated and decentralized, this does not prevent the ability of governments to *influence the points of exchange*, and therefore the currencies themselves. For example, by influencing the behavior of exchanges in early 2015 (specifically, how they charged for trading), the Chinese government significantly reduced the Yuan’s once-dominant trading volume. The Chinese also

temporarily suspended Bitcoin *withdrawals* (conversions back into Yuan), arguably contributing to a 10% slide in the price of Bitcoin (though this may be difficult to prove conclusively, given Bitcoin's inherent volatility even without the Chinese government influence). In any case, we think it important to remind potential entrants into this marketplace that the world of cryptocurrency remains a bit of the "Wild West". Recalling our entreaty to "suspend" our American sensibilities when considering digital currencies, governments around the world tend to lag in their response to new technologies. One should expect the unexpected in terms of global price fluctuations, possibly due to far-away policy decisions, for the near future.

Recent Bitcoin Developments

Bitcoin was launched in 2009 by "Satoshi Nakamoto". The name is widely believed to be a pseudonym. It could be a person or a group. Bitcoin made several headlines this year, not the least of which was due to its skyrocketing price. On a year-to-date basis, Bitcoin has risen over 420% to \$4,200 per coin (as we write).

- Bitcoin recently "survived" what is described as a "fork" in the underlying blockchain. A debate has simmered for years about BTC's capacity, given the significant increase in trading volume. A "split" of Bitcoin into a "legacy" coin and something called "Bitcoin Cash" in early August had many holding their breath. The split occurred, and Bitcoin went on to reach several additional new highs.
- While institutional interest in Bitcoin has been slow to develop, on August 2, the CBOE (Chicago Board Options Exchange) announced an agreement with Gemini Trust to allow cash-settled Bitcoin futures on the CBOE futures exchange (coming in Q4 or Q1, '18). This increases the digital currency's accessibility on an institutional basis.
- Jamie Dimon (CEO of JP Morgan): "Virtual currency, where it's called a bitcoin vs. a U.S. Dollar, that's going to be stopped. No government will ever support a virtual currency that goes around borders and doesn't have the same controls. It's not going to happen."

Speaking at the Global Fortune Forum, November 2015

- Warren Buffet on Bitcoin: "Stay away from it. It's a mirage, basically...The idea that it has some huge intrinsic value is a joke, in my view".

CNBC Interview, 2014

- Abigail Johnson, Fidelity Investments CEO: "It's no accident that I'm one of the few standing before you today from a large financial services company that hasn't given up on digital currencies. I'm still a believer"

May 2017, speaking at the digital currency news service Coindesk's Consensus conference

- John McAfee, McAfee anti-virus software founder: “[Bitcoin]’s low of \$1,800+ yesterday simply could not be maintained. In the long-term Bitcoin moves above \$500,000 within three years. Bets?”

July 17, 2017 tweet: @officialmcafee

- Milton Friedman, Economist, Nobel Prize Winner 1976: “I think that the Internet is going to be one of the major forces for reducing the role of government. The one thing that’s missing, but that will soon be developed, is a reliable e-cash, a method whereby on the Internet you can transfer funds from A to B without A knowing B or B knowing A. The way I can take a \$20 bill hand it over to you and then there’s no record of where it came from.

You may get that without knowing who I am. That kind of thing will develop on the Internet and that will make it even easier for people using the Internet. Of course, it has its negative side. It means the gangsters, the people who are engaged in illegal transactions, will also have an easier way to carry on their business.”

*YouTube interview, 1999
(9 years before the creation of Bitcoin)*

As mentioned in our introduction, opinions vary on the outlook and viability of cryptocurrencies—at least as an investment vehicle. However, Bitcoin and its peers may be worth watching and for a select, brave few who understand and accept the risks, may be worthy of investment.

FAQ’s and Additional Thoughts:

Q: How do I buy Bitcoin?

Bitcoin, Ether, Litecoin and all other so-called “alt-coins” are purchased through an exchange. Typically, one “opens a virtual wallet” on the exchange, which is the equivalent of opening an on-line investment account (though less personal information is required). Our CIO uses an exchange called Coinbase (coinbase.com), one of the largest in the world. One can purchase Bitcoin, Ether, or Litecoin through a Coinbase wallet (in which you are buying the coins from Coinbase) or through the Coinbase exchange (in which case you are purchasing/trading with others on the exchange). There are numerous other exchanges to explore and consider. *This should not be construed as an endorsement of Coinbase.*

Purchases can be made electronically through your checking/savings account, or via a credit card. Note: in the case of credit card purchases, be prepared to receive a fraud prevention notice from your card company. In the case of a banking connection, Coinbase will “ping” the

account to verify its authenticity. This process can take a few days. Coinbase uses a double-authentication security system.

Q: What is a “wallet”?

In the simplest terms, a wallet is your on-line account at the exchange. A “vault” refers to off-line Bitcoin storage. “Cold Storage” refers to a safety deposit box or safe where one may store cryptocurrency downloaded to a USB drive or other data storage device.

Q: Are Exchanges Secure?

The best advice is *Caveat Emptor*. Hackers are hard at work every day and there have been some shocking and sizeable hacks into several “mainstream” companies like JP Morgan, Target and Citigroup in recent years. To the extent that all businesses today must interact and do business on the internet, we do not feel that any of the largest crypto-exchanges are any less secure than other mainstream companies.

Downloading cryptocurrency to a “vault” or even to an off-line storage device may add a level of security from cyber-hackers. But remember, a lost or damaged USB stick could pose as great a risk off-line.

Q: What about “Altcoin”?

As previously mentioned, there are currently over 800 variations of cryptocurrency. Cryptocurrencies other than Bitcoin (the first, and by-far the largest) are generally referred to as “altcoin”.

Currently, Ethereum is the only other cryptocurrency with a significant market share of the overall \$120 Billion in cryptocurrencies. The following is Goldman Sachs’ description of Ethereum:

A Platform 1st, a Cryptocurrency 2nd. Ethereum differs primarily from Bitcoin in the latter is set up to be an alternative to ‘real money’ while the former is more of a platform set up to run any decentralized application and automatically execute “smart contracts” when certain conditions are met. Ethereum offers a digital currency like Bitcoin – called Ether – but this is just one component of its smart contract execution and primarily used to facilitate and reward using the network.

We take a very cautious (and somewhat skeptical) view of the myriad of newer and smaller cryptocurrencies that abound—with new “ICOs” (initial coin offerings) happening every week it seems. A truly acceptable form of currency must find wide acceptance. We believe Bitcoin is the closest to achieving the required scale, and therefore the most likely to

succeed in the long-term. More specialized cryptocurrency applications are beyond the scope of this discussion. In short, we think it's best not to miss the forest for the trees.

Q: Is Cryptocurrency Taxable?

YES! Interestingly, while the US Treasury Department does not recognize Bitcoin (or any of the altcoins) as currency, the Internal Revenue Department recognizes cryptocurrencies as property. Therefore, proceeds from trading cryptocurrency are subject to the same taxation schedules applied to stocks, bonds, and mutual funds. The IRS published a "Virtual Currency Guide" which may be helpful to those interested in more information.

<https://www.irs.gov/uac/newsroom/irs-virtual-currency-guidance>

Q: Aside from the Price, what is Bitcoin Really Worth?

We find Warren Buffet's assertion about Bitcoin not having a "huge intrinsic value" amusing in some respects. Buffet has been notoriously late in accepting and investing in new technologies throughout his storied career. More to the point— "intrinsic value" is a mathematical evaluation of what a stock or bond is worth based on the present value of all future (forecasted) cashflows. Stocks and bonds have cashflows. Currency does not. The US dollar has no "intrinsic value" other than the cost of the paper it is printed on. Ultimately, Bitcoin's value will be determined by supply and demand, which we have discussed.

We would add here that we are *extremely skeptical* of "news" and "analysis" concerning the price movements of Bitcoin, Ethereum and all other Altcoin. We have sampled several sights which aggregate such output. Apart from misspellings, typo's and incomplete sentences, most output relies on the fairly unreliable method of technical analysis. Again, Caveat Emptor.

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