Bitcoin: Currency or Asset Class?

Sovereign currencies meet three criteria:

1) **They are used as a medium of exchange**.

   – To represent a medium of exchange, an instrument must facilitate the transaction of goods or services between parties *(e.g., US$ are used to buy a barrel of oil)*.

2) **They serve as unit of account**.

   – A unit of account is a measurement which allows value to be accounted and compared *(e.g., a barrel of oil is worth ~$33)*.

3) **They are a store of value**.

   – A store of value is an asset that can be saved, stored, and exchanged in the future for a predictable stable value *(e.g., with 2% annual inflation, a nominal dollar today will be worth 82¢ in 10 years)*.

Source: Investment Strategy Group, Do Digital Currencies Pose a Threat to Sovereign Currencies and Central Banks?, Daniel Heller, PIIE.

Cryptocurrencies Including Bitcoin Are Not an Asset Class

- Do Not Generate Cash Flow Like Bonds
- Do Not Generate any Earnings Through Exposure to Global Economic Growth
- Do Not Provide Consistent Diversification Benefits Given Their Unstable Correlations
- Do Not Dampen Volatility Given Historical Volatility of 76%
  - On March 12, 2020, the price of Bitcoin fell 37% in one day
- Do Not Show Evidence of Hedging Inflation

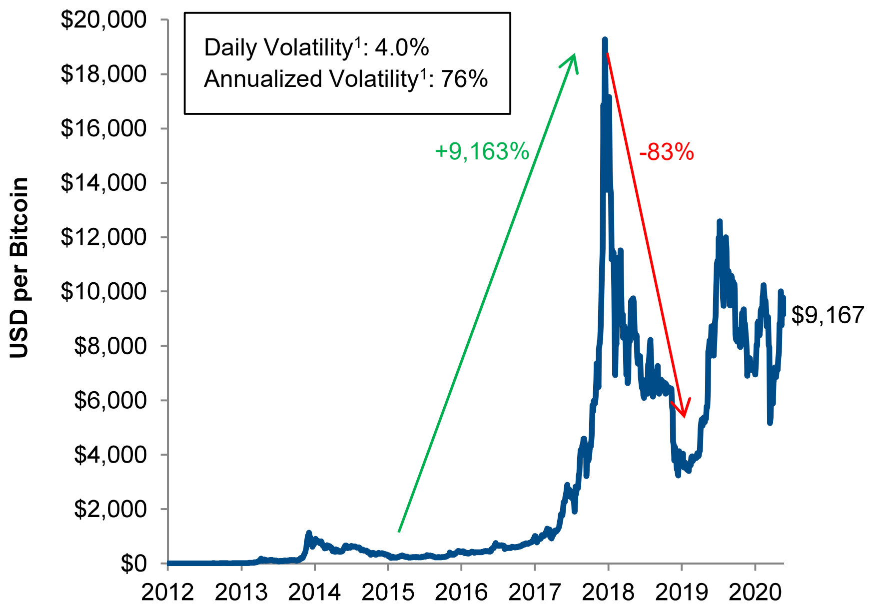
- We believe that a security whose appreciation is primarily dependent on whether someone else is willing to pay a higher price for it is not a suitable investment for our clients.

- We also believe that while hedge funds may find trading cryptocurrencies appealing because of their high volatility, that allure does not constitute a viable investment rationale.

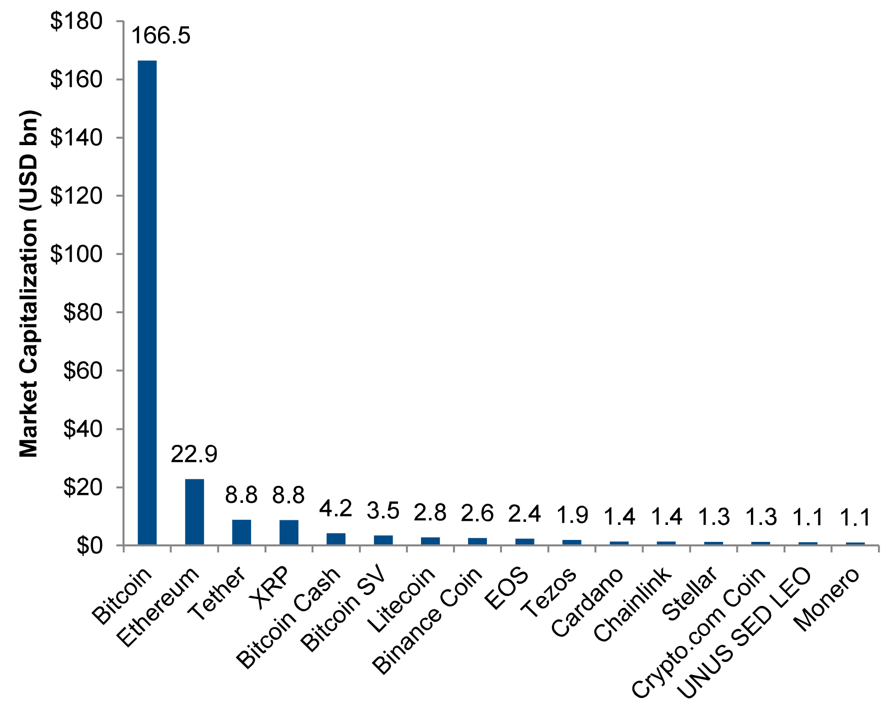
Source: Investment Strategy Group.

Cryptocurrencies Have Received Enormous Attention

1. Bitcoin Price – Through May 23, 2020



2. Cryptocurrencies with Market Capitalization over US$1 Billion



- Since Bitcoin was created in 2008, several thousand cryptocurrencies have come into existence, with a combined market cap of ~$250 billion.
- Though individual cryptocurrencies have limited supplies, cryptocurrencies as a whole are not a scarce resource. For example, three of the largest six cryptocurrencies are forks—i.e., nearly identical clones—of Bitcoin (Bitcoin, Bitcoin Cash, and Bitcoin SV).

1) Volatility from December 31, 2014 – May 23, 2020

Source: Blockchain.com, Coinmarketcap.com

Cryptocurrency Can Be a Conduit for Illicit Activity

Despite that most cryptocurrency ledgers are permanent and auditable public records, cryptocurrencies nevertheless abet illicit activities such as Ponzi schemes, ransomware, money laundering, and darknet markets[1]

Ponzi Schemes

- Ponzi schemes are fraudulent investment scams in which scammers offer impossibly quick and high returns.
- In 2019 a Ponzi scheme known as PlusToken collected more than $2 billion from more than 30 million people by promising 10–30% annual returns.[1]

Ransomware

- Ransomware is software that hijacks computer networks and only unlocks them in exchange for payment, typically via cryptocurrency.
- In 2019, the US saw nearly 1,000 ransomware attacks. In addition to the potentially $7 billion+ cost of these attacks, ransomware attacks disrupted emergency responders, schools, healthcare providers and other vital services.[2]

Money Laundering

- The money laundering infrastructure within cryptocurrency networks is driven primarily by over-the-counter brokers, and it enables other crypto crimes.
- In 2019, $2.8 billion in Bitcoin was sent to currency exchanges from criminal entities.[1]

Darknet Markets

- In darknet markets, vendors sell illicit wares on the internet. Their medium of exchange is typically cryptocurrency.
- Darknet market revenue reached nearly $800 million in 2019.[1]

Sources:

1) Chainalysis 2020 State of Crypto Crime https://go.chainalysis.com/rs/503-FAP-074/images/2020-Crypto-Crime-Report.pdf

2) Emsisoft, The State of Ransomware in the US: Report and Statistics 2019 https://blog.emsisoft.com/en/34822/the-state-of-ransomware-in-the-us-report-and-statistics-2019/

The Cryptocurrency Infrastructure is Still Young and Susceptible to Hacking or Inadvertent Loss

Timeline of Major Cryptocurrency Hacks/Losses and Amount Lost

2011
- Allinvain – 25,000 BTC

2012
- BitFloor – 24,000 BTC
- Bitcoin Savings and Trust – 46,703 BTC

2013
- BIPS – 1,295 BTC
- Inputs.io – 4,100 BTC
- Picostocks – 6,000 BTC

2014
- Mt Gox – 75,000 BTC
- Poloniex – undisclosed BTC
- Canadian Bitcoins – undisclosed BTC
- Flexcoin – 1,000 BTC
- Bitcurex – undisclosed BTC

2015
- Coinapult – 150 BTC
- Bitfinex – 1,500 BTC
- Scrypt.CC – undisclosed BTC
- BitStamp – 18,866 BTC
- BTER – 7,170 BTC
- Purse.io – 10,235 BTC

2016
- Bitfinex – $65mil
- Gatecoin – $2mil
- Cryptsy – 13,000 BTC
- Cointrader – undisclosed BTC
- DAO – $55mil

2017
- æternity blockchain – undisclosed
- Edgeless Casino – undisclosed
- Parity (Ethereum) – ~$350mil
- YouBit – undisclosed
- CoinDash – $7mil
- Swarm City – $32.6mil
- Bithumb – $1mil
- Veritaseum – $8.4mil

2018
- Bitgrail – $170mil of NANO
- Bithumb – $31mil of XRP
- QuadrigaCX – $190mil
- Coincheck – $533mil of NEM
- Coinrail – $40mil
- Zaif – $60mil

2019
- CoinBene – $100mil (unconfirmed)
- Gatehub – $10mil of XRP
- Upbit – $50mil of ETH
- Cryptopia – $16mil of ETH
- Bithumb – $19mil of EOS and XRP
- Binance – $40mil of BTC
- Bitpoint – $32mil

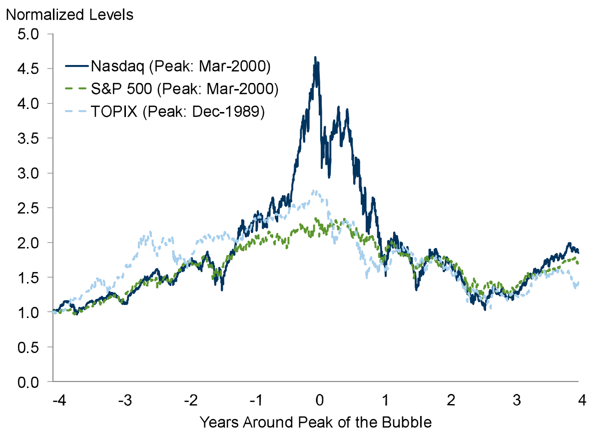
2020
- Altsbit– $70mil

- Although cryptocurrencies cannot be spent without control of the corresponding private keys, care must be taken to protect those private keys. Many cryptocurrency owners allow exchanges or other custody providers to control their private keys, which makes these custodians prime targets for hackers:
  - If hackers are able to access owners' private keys, they can deplete owners' digital wallets.
  - Inadvertent loss occurs when particular cryptocurrency tokens can no longer be spent by anyone. Between the losses at QuadrigaCX (due to the death of the sole private key holder) and Parity (due to a coding error), over $500 million of cryptocurrency was rendered inaccessible.
- Estimates vary but suggest that hacking and inadvertent loss has resulted in well over a billion dollars of lost cryptocurrency.

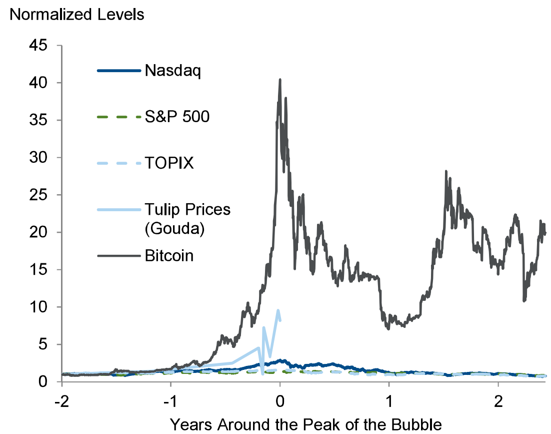
(1) http://fortune.com/2016/08/29/risk-of-bitcoin-hacking-is-real/
Source: Investment Strategy Group, public news sources. See appendix for list of articles.

The Cryptocurrency Mania Dwarfed Historical Manias

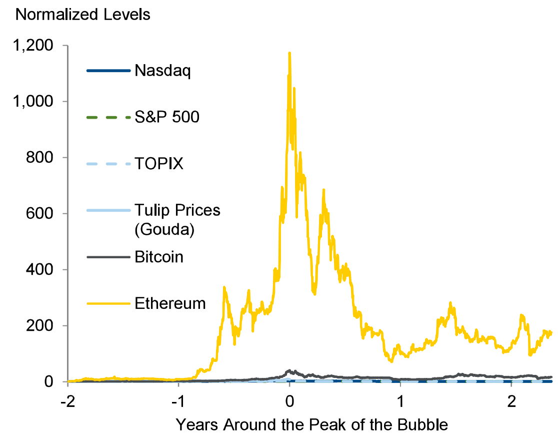
1. Equity Bubbles



2. Bitcoin in the Context of Equity Market Bubbles and Tulips



3. Ether in the Context of Equity Market Bubbles, Bitcoin and Tulips



- In late 2017, as discussed in our 2018 *Outlook*, cryptocurrencies moved beyond bubble levels in financial markets and even beyond levels seen during the Dutch "tulipmania" between 1634 and early 1637.
- We have compared bitcoin and ether, two of the largest cryptocurrencies by market capitalization, to the Gouda variety of tulip bulbs and to the equity bubbles in the Nasdaq, S&P 500 and the TOPIX. In the year prior to their respective peaks:
  - Nasdaq rallied 109%
  - Tulip prices jumped 485%
  - Bitcoin rose 2,292%
  - Ether rallied 14,193%.

Source: Investment Strategy Group, Datastream, Bloomberg, Peter M. Garber, *Famous First Bubbles: The Fundamentals of Early Manias*, 2000, MIT Press, Cambridge MA. Anne Goldgar, *Tulipmania: Money, Honor, and Knowledge, in the Dutch Golden Age*, 2007, University of Chicago Press, Chicago. E.H. Krelage, "Bloemenspeculatie in Nederland. De Tulpomanie van 1636-'37 en de Hyacintenhandel van 1720-'36", 1942, P.N. Kampen & Zoon, Amsterdam."