CRYPTOCURRENCY SERIES

HAS BITCOIN BOTTOMED? A BRIEF HISTORY OF BUBBLES

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CAPCO

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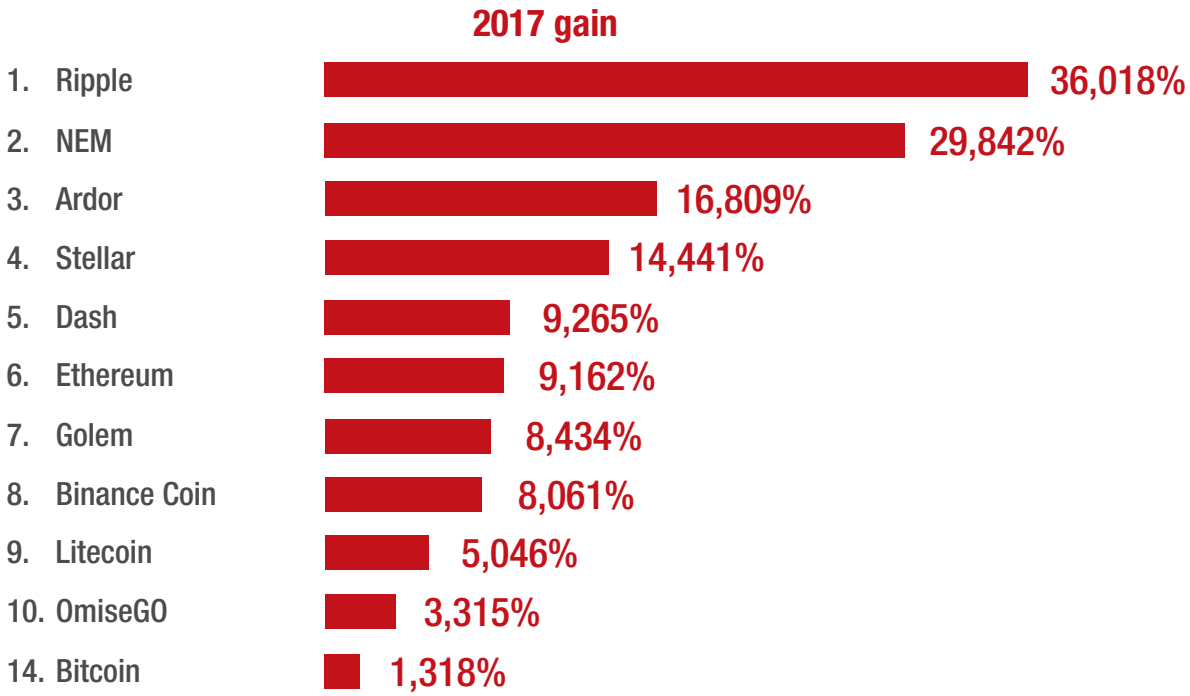
INTRODUCTION

"90% of South Koreans have heard of Bitcoin, yet only 8% have heard of blockchain"[1]

Bitcoin is ten years old this year. Created by the pseudonymous Satoshi Nakamoto, Bitcoin is the first cryptocurrency and the first commercial use of blockchain. Since its creation in 2008, it has taken close to nine years for Bitcoin to reach stratospheric bubble territory. In 2017 alone, Bitcoin's price increased 1,300%. But this was not even the strongest cryptocurrency performer. That honor goes to Ripple, at a staggering 36,000%![2]

2017's biggest cryptoassets ranked by performance



Source: Quartz, Jan 2018

REFERENCES

[1]Bitcoin.com, 7th December 2017
[2]Quartz, January 2018

INTRODUCTION CONTINUED

Many correctly argue that this is the biggest asset bubble in history. Driven by irrational investor exuberance and a fear of missing out (commonly known as 'FOMO'), it was typical to see a 10x price increase across many cryptocurrencies in 2017. Stories abound the internet of people turning tiny investments, sometimes as little as a few hundred dollars, into millions. Within social media circles these people were referred to as 'lambos'. And the common catchphrase became "When lambo?", meaning when is your coin going to make you enough money to buy a Lamborghini? Even websites selling supercars were cropping up accepting only Bitcoin or Ethereum as payment[3].

Fast forward to May 2018, and we have seen a 65 percent drop in the price of Bitcoin – from its all time high; along with a major slump in the majority of cryptocurrency prices.

To understand why this has happened and whether this has further to go, it's helpful if we turn to history.

REFERENCES

[3]https://www.moonassets.io/supercars

PARALLELS TO HISTORY – BUBBLES AND TECHNICAL INNOVATION

There are a number of historical precedents which can help us better understand the behavior of asset bubbles; two of which relate to mass technological innovation, like Bitcoin.

British Railway Mania in the 1840s and the Dotcom Bubble of the late 1990s were both the result of large-scale technological innovation, which promised to *change the world*. The 1840s Railway Bubble was driven by new feats of engineering and the Dotcom Bubble was fueled by the creation of the internet. And both bubbles ended badly. Even the 2008 Sub-prime Mortgage Crisis involved an innovative financial derivative product which led to the world's largest recession since The Great Depression. And now Bitcoin and the wider cryptocurrency market, with many of its vagaries, built on innovative blockchain technology, promises to *change the world*.

A review of all major asset bubbles in history (see table) suggests that price increases are most commonly driven by irrational investor behavior and fraud. Many investors also find it difficult to accurately measure the value of the underlying asset.

- **Dotcom Bubble**: by 2004, some 9 years after the start of the dotcom bubble, less than half of the original companies remained and by 2015 the few that had survived became household names like Amazon and eBay. In fact, had you bought Amazon when it bottomed in September 2001, at around $6 per share you would have multiplied your investment 250x at today's price! The Bubble 'burst' when it became obvious that companies were not making money. Companies were simply adding a '.com' to their business name and seeing their stock price rise overnight. IPOs were making dishonest and unachievable profitability claims. There was a lot of FOMO price action as well.

- **1840s British Railway Mania**: investors had become enamored with the growth prospects of railway companies, induced by promotional deals (often making dishonest claims), driven by the allure of technological advancements in railway engineering. When the railway bubble eventually burst in 1846 – ten years after it began, the majority of rail companies went out of business and railway stocks were ruined. It took at least another 20 years before the market showed any signs of recovery.

- **2008 Sub-prime Mortgage Crisis**: was the result of an overheated property market in the USA which spread to Western Europe. It involved an innovative credit derivative product linked to sub-prime borrowers who couldn't afford their mortgages. Mis-selling was rife. House prices nearly doubled between 2002-2006 and mortgage fraud or 'condo flipping' was rampant.[4] It all came crashing down when Lehman Brothers announced it was insolvent in September 2008. Like Bitcoin, people found it difficult to value the underlying asset.

OTHER BUBBLES OF NOTE

- **Japanese Bubble**: in 1989, the value of the Imperial Palace grounds in Tokyo were greater than all the real estate in the entire state of California. Referred to as the lost decade (it actually lasted two decades), real estate experienced manic price activity, with prices in Tokyo's prime neighborhoods rising to levels that made them 350 times more expensive than comparable land in Manhattan, New York.[5]

REFERENCES

[4]Investopedia, 23rd June 2015

[5]The Bubble Bubble, June 2012

OTHER BUBBLES OF NOTE CONTINUED

- **South Sea Bubble**: in 1720, in return for a loan of £7 million to finance the war against France, the House of Lords (UK) passed the South Sea Bill, which allowed the South Sea Company to monopolize trade with South America. The company even underwrote the national debt. Shares rose to 10x their value; speculation was rampant and all sorts of companies, some fraudulent or just optimistic were launched. The country went wild, stocks increased, and huge fortunes were made overnight. Unsurprisingly, stocks eventually crashed and people all over the country lost their money. There were also strong suggestions of fraud[6] with repeated allegations that the South Sea Company manipulated the price of government debt.

- **Tulip Mania**: in the 1600s, Tulip Mania gripped the Netherlands. The price of tulip bulbs skyrocketed in 1636, only to collapse a year later – soon after the introduction of *cash settled futures* in tulip bulbs. Price manipulation and fraudulent activity was also heavily present. However, it's probably worth noting that much of the Dutch economy was unaffected when the tulip price collapsed. This will be much the same if the Bitcoin price collapses 100%. Indeed, the potential impact of a Bitcoin collapse to the wider economy is estimated to be similar to a 1% fall in the stock market[7].

- **Bitcoin Bubble**: in 2017, nearly ten years after the creation of Bitcoin, it was common to see 10x price increases in many cryptocurrencies, which many investors associated with classic pump and dump price cycles. Bitcoin increased 1,300% in 2017, and it is not uncommon to hear of fraudulent activity associated with ICO fund raising.

COMMON HISTORICAL THEMES WE CAN LEARN FROM

- **Technology which promises to *change the world* provokes irrational behavior**: technology-induced bubbles are nearly always driven by the development of new innovative technology which promises to *change the world* or acts as an opportunist subset for a wider economic climate or malaise, such as the 1840s railway boom and bust. History suggests that mass technological innovation takes many, many years to mature. In the case of the Dotcom Bubble, it took at least 15 years to achieve mass internet adoption after a crash.

- **Opaque underlying asset value**: in all asset bubbles relating to technological change, the price jumps ahead of its underlying value. Price does not truly reflect the benefits derived from the asset. It is also difficult to measure. Disagreements over asset value are common. In the case of Bitcoin, the underlying asset is blockchain related technology and in the case of the 2008 Sub-prime Mortgage Crisis, the underlying assets were opaque delinquent mortgages.

- **Investor exuberance**: investors get excited about the potential for the new technology before capabilities are realised or even properly understood. They buy in the hope of perceived future benefits, often buying into largely unproven technology. Price action is usually driven by frenzied speculation in the lead up to a crash. Irrational investor behavior and a herd mentality are also common.

- **Fraudulent activity**: bubbles nearly always involve fraudulent conduct or dishonesty. For example, the Dotcom Bubble involved IPO fraud and unfounded claims of future

REFERENCES

[6]Today I Found Out, 25th April 2013

[7]UK Business Insider, 8th December 2017

COMMON HISTORICAL THEMES WE CAN LEARN FROM CONTINUED

company profitability. The 2008 Financial Crisis involved mis-selling. The South Sea Bubble involved government debt manipulation. The 1840s Railway Stock Bubble involved dishonest promotional claims. And now the Cryptocurrency Bubble is littered with unsubstantiated and dishonest claims by ICOs. Pump and dump cycles are common soon after an ICO launch.

- **Correlation between futures and crashes**: if history is anything to go by, crashes follow soon after the introduction of futures contracts. The price of tulips skyrocketed in 1636 only to collapse, a year later– not long after the Dutch created a futures market for buying bulbs[8]. And we saw the Bitcoin price begin its large correction in December 2017, soon after CME and CBOE exchanges introduced Bitcoin futures.

REFERENCES

[8]The Conversation, December 2017

TABLE: BITCOIN AND ASSET BUBBLES, A BRIEF LOOK AT HISTORY...

Research in the table below suggests prices retrace 80-100% during a crash, with the exception being the gold price crash in the early 80s (65%) and the 2008 sub-prime mortgage crash (45%).

ASSET BUBBLE	BULL RUN	PRICE INCREASE	LOSS	COUNTRY	PRICE CRASH	YEARS TO RECOVER
Japanese Bubble[9]	1986-1991	Nikkei 4-fold Property 10-fold	Stocks $2 trill Property $2,000 trill	Japan	Stocks 70% Property 90%[10]	15- 20 years
1929 Wall St. Crash	1922-1929	5-fold	$400 bill	USA, EUR	80% by 1932	5- 20 years[11]
1970s gold prices[12]	1971-1980	7-fold	-	Global	65%[13]	15 years
Dotcom Bubble[14]	1995-2000	5-fold	$5+ trillion	Nth America	Stocks 90%	7-15 years
2008 Oil Bubble	2007-2008	3-fold	-	Global	120%	10+ years
Tulip Mania	1636-1637	20-fold	-	Holland	100%	never
2008 Sub-prime Mortgage Crisis	2000-2007[15]	100-fold CDO's[16]	$15 trillion	Nth America	45% (S&P 500)	10+ years
South Sea Bubble[17]	1710-1720	10-fold	$350 bill[18]	UK	100%	never
1840s railway shares	1837-1846[19]	3-fold	-	UK	60-80%	20+ years
2017 Bitcoin Bubble	2008-2017	11-fold+ (2017)	?	Global	65%	?

Source: Romal Almazo, April 2018

REFERENCES

[9] Wikipedia, Japan: the lost decade(s)
[10] The Bubble Bubble, 4th June 2012
[11] The New York Times, 25th April 2009
[12] Medium, 9th December 2017
[13] Buying Gold, 14th January 2008
[14] Investopedia
[15] Forbes, 22nd November 2011
[16] University of North Carolina, undated
[17] Investopedia, 23rd June 2015
[18] Today I Found Out, 25th April 2013
[19] Victorian Web, 13th March 2014

TABLE: BUBBLES AND FRAUD

ASSET BUBBLE	PERIOD	ASSET CLASS	EVIDENCE OF FRAUD
Japanese Bubble	1986-1991	Property, Shares	Reports of real estate investment scams involving 'shared' housing'[20]
1929 Wall St. Crash	1922-1929	Shares	Investors lost faith in a corrupt political elite leading to the creation of the SEC in 1934[21]
1970s gold prices	1971-1980	Gold, Futures	Persistent claims of gold price manipulation by opaque cartels and governments[22]
Dotcom Bubble	1995-2000	Internet, Tech stocks	IPO fraud, investor exploitation and company profits that never materialised[23]
2008 Oil Bubble	2007-2008	Oil, Futures	Price manipulation by financial speculators and the oil cartel; lack of regulatory oversight[24]
Tulip Mania	1636-1637	Tulip, Futures	Government interference in Tulip futures and options contracts to manipulate price[25]
2008 Sub-prime Mortgage Crisis	2000-2007[26]	Property, Credit derivatives	Widespread mortgage mis-selling, condo 'flipping' and credit assessment fraud[27]
South Sea Bubble	1710-1720	Shares, Government debt	Mis-priced government debt and overhyped valuation of the South Sea company which was in fact worthless at the time[28]
1840s railway shares	1837-1846[29]	Shares, Government debt	Stock price fraud, dishonest promotional claims and company mismanagement[30]
2017 Bitcoin Bubble	2008-2017	Digital Assets, Cryptocurrency	Research suggesting that 80% of Initial Coin Offerings (ICOs) are scams[31]

Source: Romal Almazo, April 2018

REFERENCES

[20] The Japan Times, March 2018
[21] The Market Oracle, June 2010
[22] Kitco, January 2014; CIA declassified memos, Zero Hedge, January 2017; Seeking Alpha, June 2017
[23] The Guardian, March 2010
[24] China Dialogue, 2012; CNN, 2008
[25] The Economist, October 2013
[26] Forbes, 22nd November 2011
[27] The New York Times, 2015
[28] Today I Found Out, 25th April 2013
[29] Victorian Web, 13th March 2014
[30] Ibid
[31] Bitcoin.com, 28th March 2018

SUMMARY

Bitcoin and the wider cryptocurrency market align closely to common themes to major asset bubbles in history. The themes most commonly associated with bubbles include frenzied price activity, irrational investor behavior, fraud and asset values which are difficult to measure.

Drawing parallels to bubbles relating to mass technological innovation would suggest Bitcoin and the wider cryptocurrency market is no different.

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FURTHER READING

The Capco Cryptocurrency Series
► So, The Bitcoin Bubble Is Bursting – What Next? (Published: 25 April 2018)

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