



Cryptocurrencies vs Gold

1 June 2021

Mining

Bitcoin is Not the New Gold - it's the New Tulip 2.0!



Summary

- **Widespread misunderstanding of what constitutes a currency**
- **Cryptocurrencies have no collateral/assets**
- **Trust is fickle, history littered with currency failures**
- **Financial Bubbles are typically associated with technological innovation**
- **Second generation Stablecoins will be more resilient**
- **Short Crypto/Long Gold Equities**

The collective Zeitgeist claim that Bitcoin and other cryptocurrencies hold safe-haven status with gold, is about to be found seriously wanting. This relates to a general conceptual misunderstanding of what a currency is, highlighted by the exponential rise in various cryptocurrencies; driven not by fundamentals, but impelled by speculative mania supplemented with some postscript institutional buying. In the interim, gold has suffered, as EFTs have been liquidated by funds and redeployed into the burgeoning crypto market. Using Farrell's 4th Rule, parabolic markets do not correct by going sideways, and his 8th Rule, Bear markets typically have three distinct stages, (i) a sharp down, (ii) reflexive rebound, and (iii) a drawn-out fundamental downtrend.

How large is the potential policy challenge? The collective crypto market cap has surpassed \$2.4Tn (of which, Bitcoin makes up >\$2Tn), which is greater than the total amount of US currency (\$2.1Tn) in circulation; in spite of recent economic stimulus measures. Total losses during the Sub-prime Crisis were est. to be >\$1Tn, but were ultimately backed by collateral. The lack of assets (either financial, territorial, or commodity) by any major crypto, implies that the key value determinant is: How much do you think it is worth? In many cases, could that be zero?

Recommendations: Expect some rotation back into Gold. **SELL:** (NASDAQ) MARA, RIOT, BTBT, COIN, CAN, HUT, (TSE) GLXY, (LSE) ARB. **BUY:** (ASX) CHN, BGL, DEG, GOR. **SPEC BUY:** (ASX) KSN, ALK, (CVE) HSTR

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What is Money? Why do Currencies Fail?

Sure, if we had our time again, would we be warning investors about the incoherence, flaws and speculative nature of cryptocurrencies? No of course not! We would be signed up cheer-squad members, waving pom poms, extolling their virtues; whilst begging, borrowing and stealing, to purchase as much crypto coin as humanly possible. But ultimately, we would reach a juncture where mass physiology of greed would be unable to maintain current pricing; in an instant, when fundamentals begin to reassert themselves, everyone heads for the doors.

What is money? This is the crux of the following discussion, and frames our world-view. Generally, there are four accepted characteristics associated with a viable currency:

- (i) Durability;
- (ii) Divisibility;
- (iii) Transportability; and
- (iv) Non-counterfeitability.

Why do currencies fail? Inevitably, it comes down to the asset backing of the relevant medium of exchange. For example, USD is relatable to the size of the American economy, military prowess, and the fact it is relatively politically stable, which endows the currency with substantial trust.

Bitcoin is benefiting from a wave of institutional interest which is accelerating mainstream acceptance, with the underlying conviction that the cryptocurrency is a genuine asset class and a credible alternative asset to gold, endorsed by corporate sponsorship from the likes of PayPal, MicroStrategy, Blackrock and (formerly) Tesla. History of currencies is a fascinating and complicated subject, one that cannot be done justice here. There are literally hundreds of documented instances of currency failure; although all have idiosyncratic histories, there are some distinctive themes which all result in a single outcome: the lack in physical (either financial, territorial, or commodity) backing resulting in the individual losing faith¹ in the longevity of the medium for financial exchange.

¹ Enclosed in Appendix A, we give some historical reasons why various currencies failed.

Cryptocurrencies are CDOs without ANY Collateral!

Our assertion that the creation of any national currency ultimately relies on its territory domain, productive assets and other strengths (e.g. military) associated with a nation state (collectively), as collateral to underwrite a country's medium of exchange. The reason why so many currencies have historically failed (typically associated with hyperinflation) is usually the result of a fundamental change in statehood, for example, a military defeat, or too much accumulated debt, in that the assets behind the medium no longer match outstanding liabilities so that the collective trust in that particular currency medium inevitably fails.

One of the most famous parables in Western finance, is the anecdote recalled by Joe Kennedy, that in the late summer of 1929, a shoe-shine boy gave him stock tips recalled from clients earlier in the day, thinking to himself "*If shoe shine boys are giving stock tips, then it's time to get out of the market;*" selling all of his holdings, preserving his fortune and helped to propel his son, JFK, to become the President of the United States some three decades later.

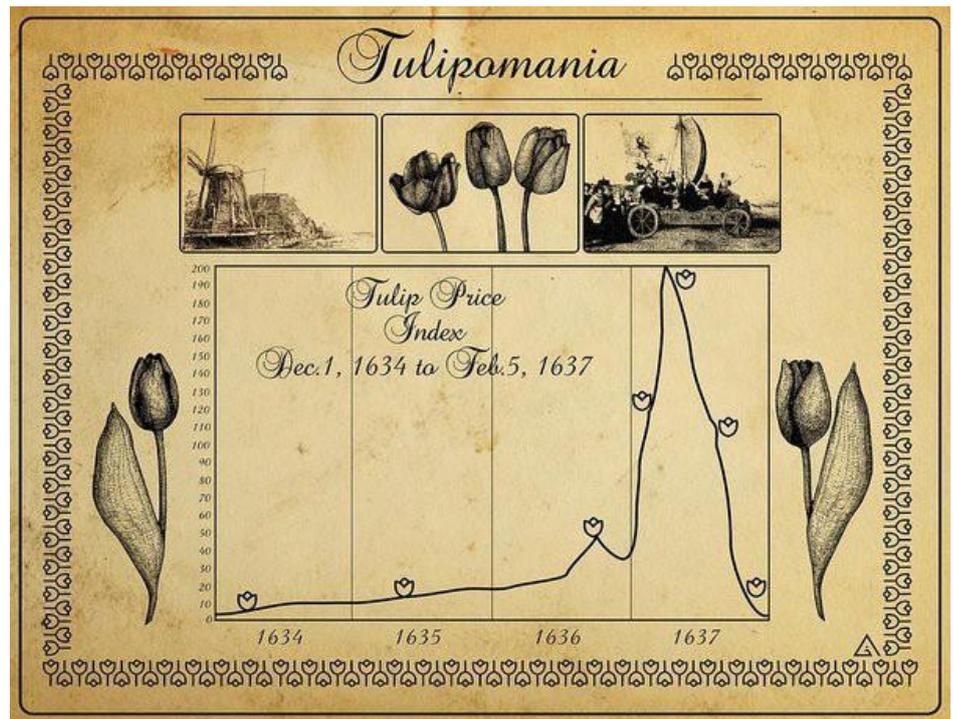
Our anecdote is not that dissimilar. My son, in the midst of completing his GCSEs in southern rural Kent, is constantly getting distracted by a number of his friends trading on the market². After some intensive badgering, Dad has finally agreed to set up an account (at some indeterminate time after exams) in the name of his progeny, so like Dick Whittington's cat, he too can make his fortune. But this underlies the fact that this investment mania is pervasive and has captured the imagination of all levels of society; from doctors wanting to quit their day jobs, to mechanics day trading whilst working on your car. The opportunity to buy fractional shares using margin borrowing and Apps has introduced an entirely new generation to what appears to be 'free money'.

The current generation of cryptocurrencies (as opposed to the second generation corporate based stablecoins – see Appendix B) typically have no assets, their collective trust is purely market based. Their primary use appears to be speculative trading (Greater Fool Theory). Although every "Bubble" is different, a common element underlying virtually every financial exuberance is the willingness of the "investor" to suspend disbelief and steadfastly believe the narrative *that this time is different*. In relation to the Tulip Bubble, although there is some debate over the severity of the historical financial impact on 17th Century Holland (Goldgar vs Galbraith), what is not in dispute was that the upper trader class in Dutch society, with large disposable incomes (*in the middle of a pandemic*), became fixated on tulip bulbs (see Figure 19). With a single bulb trading up to ten times a day, and one particular bulb was documented to have reached 5,000 guilders, the equivalent of a single, well-appointed house at the time.

² Their apparent favourite is Dogecoin; some days making >£200 per session, which to the average 16-year-old (probably on a £5-10 per week pocket money), is pure gold. The great irony being that the Dogecoin cryptocurrency was created by several software engineers as a joke in reaction to market speculation. But at its peak had a market cap. ~\$90Bn.

Furthermore, we believe that, not unlike Galbraith's version of history, the loss of wealth following this pending deflation event resulting from this obtuse bubble will be one for the history books. How large? The most recent market correction was the US Subprime Crisis, using collateralised debt obligation instruments, 45 banks³ realised a collective loss of ~US\$293.5Bn, covering an asset base ~\$1.4Tn, which equates to around 21% gross loss. But critically, these financial instruments had underlying physical assets, and although exact figures are difficult to come by, attributable losses amounted to around €535Bn⁴ in Europe and >\$600Bn in the US. Wider economic damage was limited as a result of rapid government stimulus targeting peer to peer liquidity between various Investment Banks, as well as providing a financial backstop for the two largest mortgage providers, Freddie Mac and Fannie Mae.

Figure 1: A chart showing the growing demand for tulips within the Dutch Republic



Source: Amsterdam Tulip Museum

By comparison, the collective net worth from various cryptocurrencies has exceeded \$2.4Tn, not including investment into various infrastructure (e.g. trading platforms). We believe that expected losses >90% is not unreasonable at the conclusion of this cycle, with many platforms likely to disappear altogether. The vast majority of participants are not institutional, but founders and retail investors, meaning that any resultant deflation event will be far more keenly felt by the general populace, strongly affecting domestic consumption.

³ https://en.wikipedia.org/wiki/List_of_writedowns_due_to_subprime_crisis

⁴ <https://arxiv.org/abs/1403.7628>

The Bitcoin Emperor has no Clothes

The Cambridge Electricity Consumption Index estimates that Bitcoin consumes “more electricity than Argentina”. Why? When a transaction occurs, an additional entry is made to the existing digital record; but before it is accepted, it has to be verified. A computer solves a crypto-puzzle⁵, the unique solution is then shared amongst all other computers on the network. These mathematical miners work as auditors, verifying the legitimacy of every Bitcoin transaction, eradicating the possibility of double spending. Machines that perform the computations consume enormous amounts of energy, an ongoing cost component that can never diminish in time so long as the Bitcoin model exists. For comparison, the amount of energy consumed by a single Bitcoin transaction, equates to ~451,700 VISA transactions⁶.

We had previously commented on the policy dissonance that if Tesla wanted to be considered a low-carbon company, why invest in a payments system that consumes more energy than a mid-sized country every year? Belatedly, Elon Musk⁷ has realised the folly of backing Bitcoin, tweeting “*Cryptocurrency is a good idea on many levels, and we believe it has a promising future, but this cannot come at great cost to the environment*” – later articulating that the company was looking at other cryptocurrencies that consume less energy.

Figures 2 & 3: National energy usage (TWh). Bitcoin consumes more energy than Argentina (Left); and Cryptocurrencies transaction speeds compared to Visa & Paypal. In 2019, the average speed of a Bitcoin transaction was estimated to take ~60 minutes (Right).



Source: BBC (2021), Cambridge Bitcoin Electricity Consumption Index (2021), howmuchnet (2021), Statista (2019)

⁵ Blockchain technology is essentially a trusted ledger/record of data in chronological order. When a new event occurs, an additional entry is made to the existing digital record, but before it is accepted, it has to be verified. A computer solves a crypto-puzzle, the unique solution is then shared amongst all other computers on the network. Once verified, a new block of information is tagged onto the existing ledger, with tens of thousands of identical copies stored on every network computer as a permanent record. If the data is subsequently tampered with, its unique "hash-code" will change and be in conflict with all other identical archives recorded. Because every block ledger is verified, the collective (network) register imbues trust that the information provided is indeed correct and can, therefore, be relied upon.

⁶ <https://digiconomist.net/bitcoin-energy-consumption/>

⁷ We make the observation that blaming Elon Musk's public comments for Bitcoin's recent market woes is disingenuous, the price had peaked a month earlier.

But that apparently glib answer, however, fundamentally ignores the scope and basis of the purported payments system. With a dizzying array of proposed and existing cryptocurrencies, will Tesla only accept Elon's own planned "Marscoin"? Or will it include those proposed by Google, Facebook, etc? Any non-state currency needs to not only be durable, but transferable, transparent and secure. Equally, there has to be a widespread acceptance on a peer-to-peer basis of what it will accept, and exclude? In that respect, there are four critical questions to ask before any currency (outside Statehood) can be considered a realistic alternative:

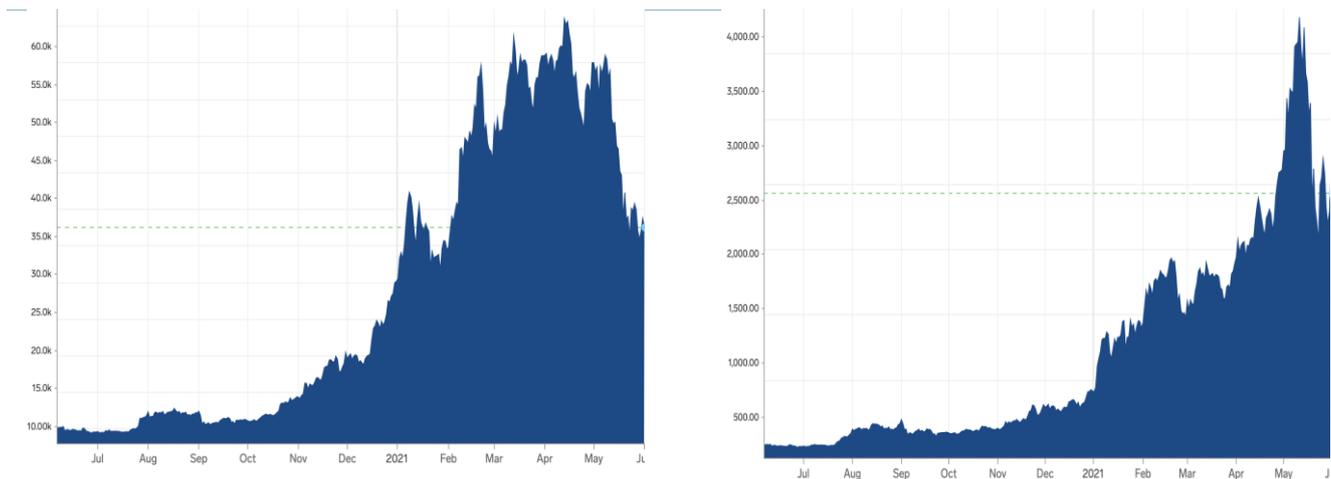
- (i) Which currency platform imbues more trust (e.g. Bitcoin's energy intensive hashtag methodology; Mark Zuckerberg as the arbiter of truth; or Elon Musk's erratic genius)?
- (ii) Longevity, and how does this migrate over time (e.g. Bill Gates carefully cultivated clean Geek image, was recently stripped in a period of less than two weeks);
- (iii) The quality of assets (if any?) underpinning collateral transfers? Current cryptos vs upcoming corporate based stablecoins (see Appendix B); and
- (iv) The sustainability and ramification of a distributed payments system without regulatory oversight (e.g. Central Banks), that easily hides money laundering, terrorism funding, etc.?

The Prisoner's Dilemma - He Who Worries First, Acts, Worries Best!

Game Theory explains why two completely rational individuals are more than likely to not cooperate, even if it initially appears that it is in their best interests to do so. The *Nash Equilibrium* implies that each participant's optimal game strategy is when each act unilaterally, taking action to secure the best outcomes for themselves, despite the fact that mutual cooperation could lead to a better overall outcome. How does this theorem apply in real-life and in particular to our discussion regarding cryptocurrencies?

We previously had estimated that 70% of cryptocurrency transactions were for speculative purposes, we now believe that figure is approaching 100%. As a medium of currency, Bitcoin is currently only able to complete between three to seven transactions per second, Ethereum approximately 20, by comparison, the Mastercard network is able to process >40k transactions per second⁸. Taking an hour (on average) to complete a single Bitcoin transaction explains its limited use in the retail and commercial marketplace. Even after a decade of operation, Bitcoin and all other cryptocurrencies (excluding the application of other direct ledger technologies, especially manipulating databases) have no real applicable use in the wider economy. Their sole purpose, appears to be speculative purposes only. Post the cryptocurrency bubble peak, Game Theory suggests that every individual fares best if they defect (i.e. Sell), ironically, leading to the worst outcome, as all players will defect on mass. The best outcome, of course, would be if no one sold. But what is the point of an "asset" whose value is unrealisable?

Figures 4 & 5: Bitcoin price profile over the past 12-months in USD (Left); and Ethereum price profile over the past 12-months in USD (Right); both diagrams 10.30 GMT 1/6/21.



Source: MarketsInsider (2021)

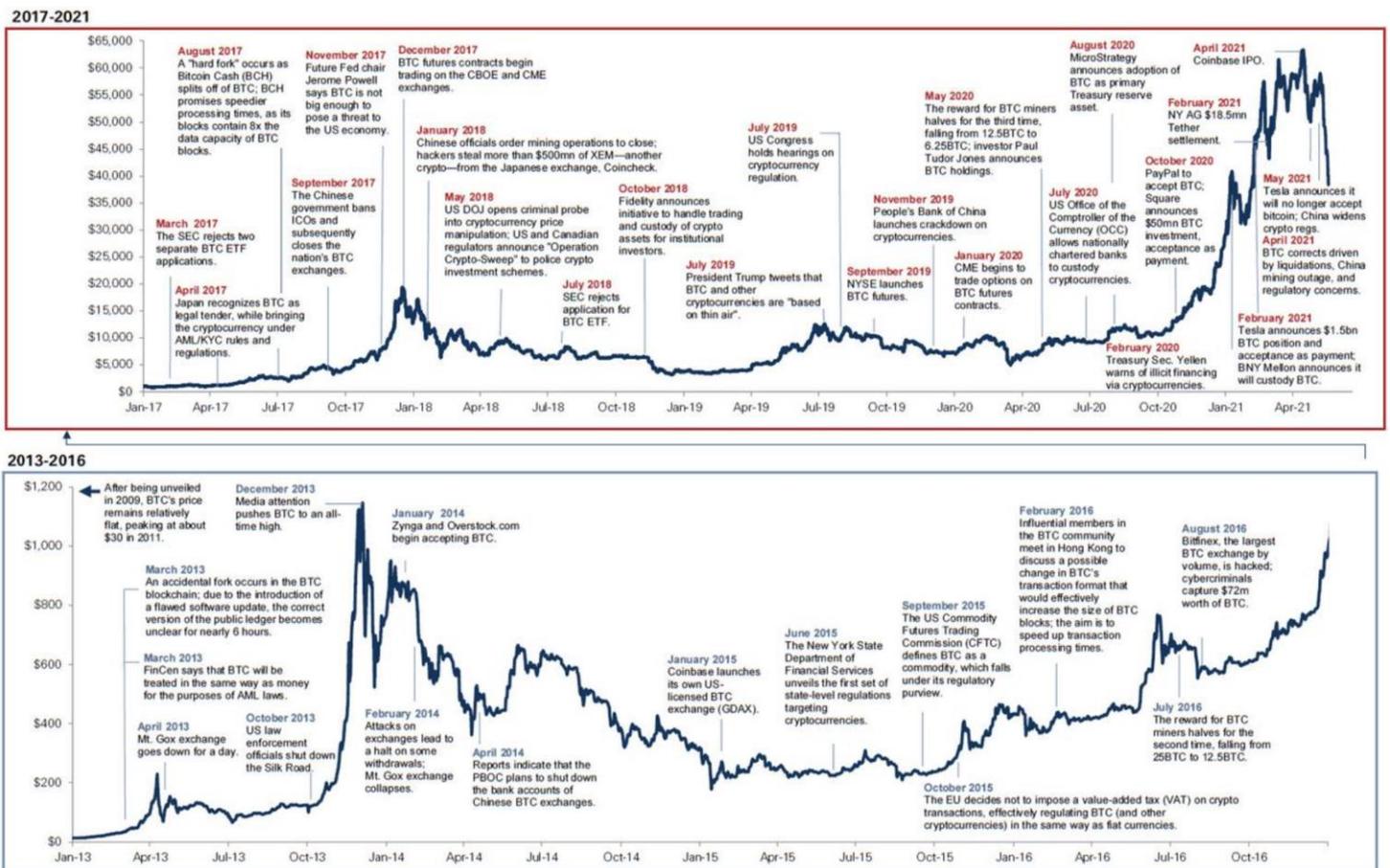
How does this relate to Game Theory? The "Game" is entirely based on trust. Cryptocurrencies, by definition, have no external assets to under-write their existence, and we would point out that this is not an entirely new idea, with

⁸ Sproule, C., 2019, *pers. com.* Oxford; the quoted Visa variation in Figure 3, are actuals versus network capacity.

literally hundreds of documented instances of currency failure. Although all have idiosyncratic histories, all collapsed as a result of the individual losing faith in the longevity of the medium for financial exchange. Without asset backing, *the key determinant on how to value Bitcoin (or any cryptocurrency) – is basically, how much do you think it is worth!*

Hence the “Prisoner’s Dilemma”, although it may be theoretically better for all the participating “investors” in various crypto’s not to Sell, or at least, to exit in a slow and orderly fashion (when/if volumes allow). As we all know with Bank runs of old, *those who panic first, are at the front of the line and get their money out, and do so before the bank becomes insolvent.*

Figure 6: Annotated price chart following BTC price trajectory.

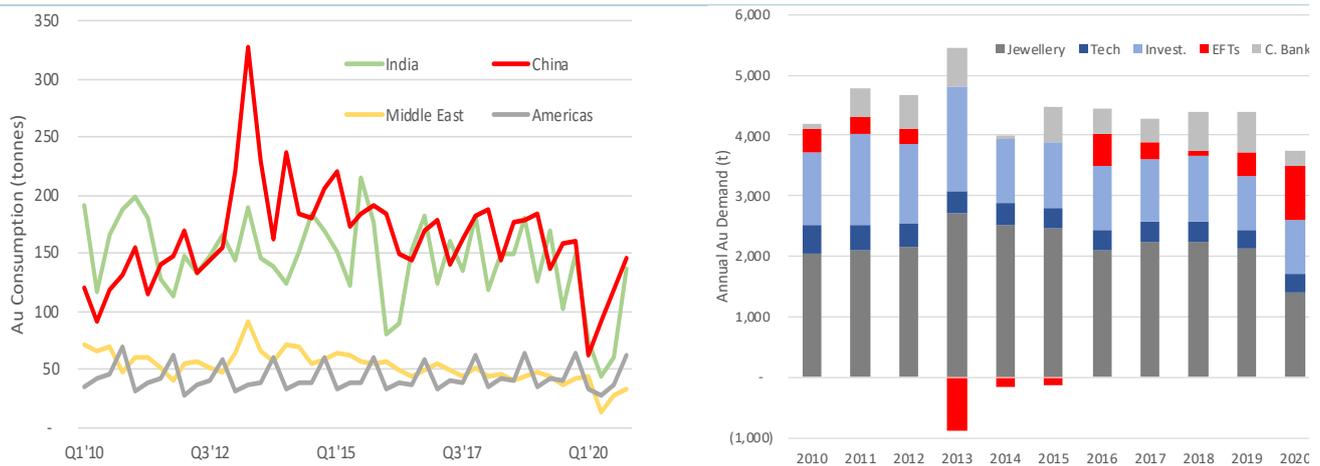


Source: GS (2021)

Gold Strengths are the Exact Opposite of Crypto!

With ever increasing questions about the continued viability of various cryptocurrencies, the opportunity-cost for the saver, therefore, is to acquire an asset that cannot be duplicated, with long-term storage that is effectively cost-free. Virtually all the gold ever mined remains in circulation, estimated to collectively total ~190kt Au (~20.42m²). It is the only medium/currency that is not someone else's liability; its inherent value is recognised globally, from Central Banks to the back-streets of Cairo. The financial attributes behind gold holdings are well understood, and more importantly, as a monetary medium, will retain its role indefinitely.

Figures 7 & 8: Annualised global segmental jewellery demand from 2010 to 2020 with particular drops in demand from China and India (Left); and annualised global segmental demand from 2010 to 2020 (Right). 2020 demand at 3,760t Au (-14.2% over the pcp), which was the lowest in more than a decade.



Source: WGC (2021), FD NB: Americas – includes Canada, United States, Mexico and Brazil

Gold prices are increasingly independent of other commodities, and the overall market in general; over the period of time that gold fell -19% (see Figures 7 & 8), silver fell slightly less -12%, iron ore prices increased 47%, tin went up by 44%, whilst copper gained 57%. Gold, historically, has typically had a negative Beta (i.e. a contrarian investment), when gold prices do poorly, other investments typically do well, and vice versa. From a CAPM⁹ perspective, the lack of correlation diversifies any portfolio. Viewed in combination with other investment classes, adding gold often reduces a portfolio's overall volatility.

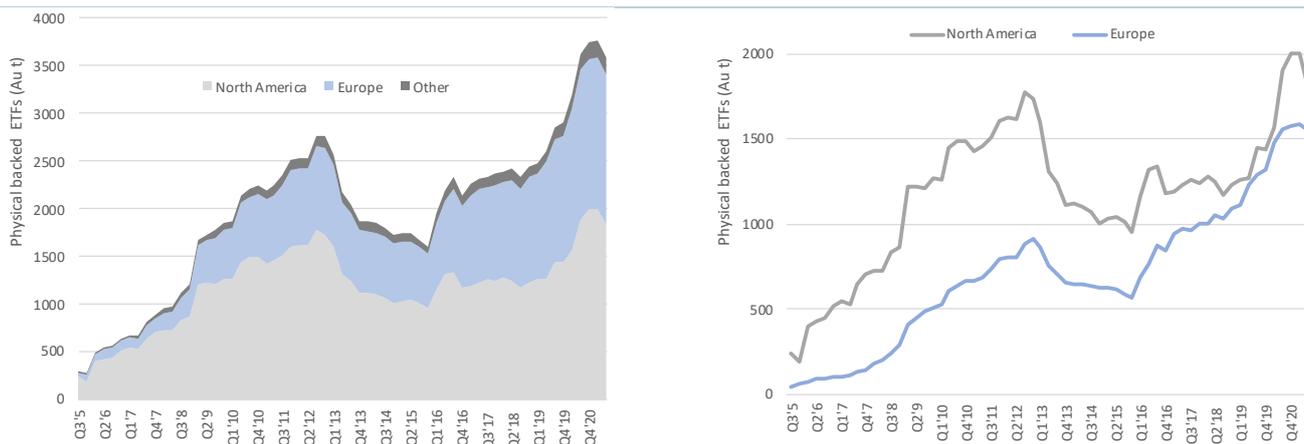
Although we generally accept the premise that investors participating in crypto are probably different from those that invest in the gold market, we do believe there is some cross-over. To the point, whereby some of gold's recent decline can be attributed to the reallocation of speculative funds into crypto. It therefore follows that, as the cryptocurrency bubble continues to deflate, some of those funds will be redeployed back into bullion EFTs and gold equities.

⁹ A theory that attempts to describe the relationship between systematic risk and expected return for assets.

When discussing gold, its rarity is the critical aspect in understanding the inherent nature of a non-renewable Resource:

- The exploitation of a particular deposit will result in physical mineral depletion. If depletion continues unchecked, while other economic and technological conditions remain the same, resource scarcity will increase, causing real mineral prices to rise. Presently, the global average for all-in sustaining costs (AISC) range currently resides between \$980 and \$1,050/oz Au. This can therefore, be considered the absolute floor for the gold price in a general deflation event (what is stopping BTC going to zero?);
- Discovery depletion (*ceteris paribus*) means that the easier-to-find deposits will be located first, and the more difficult deposits found later. The latter deposits, as a rule, are typically of a poorer quality than those found in initial operating mines. In that over-time, their production costs per unit of output will continue to rise (e.g. gold mines become deeper and/or lower-grade); and
- Despite the relative stability in demand (see Figure 8), the decline in quality of resources is the result of geological constraints. Inevitably, the future supply of gold will become increasingly more inelastic. Meaning, when gold demand begins to grow again, the price will be re-rated significantly upward.

Figures 9 & 10: Global EFT Gold assets under management (Left); and comparison of EFT quantities bought by US and European investors (Right). Fifteen years ago, European EFT purchases were ~20% that of the US, but in more recent years, now approximates ~85%. Recent drop in EFT demand coincided with declining gold prices.



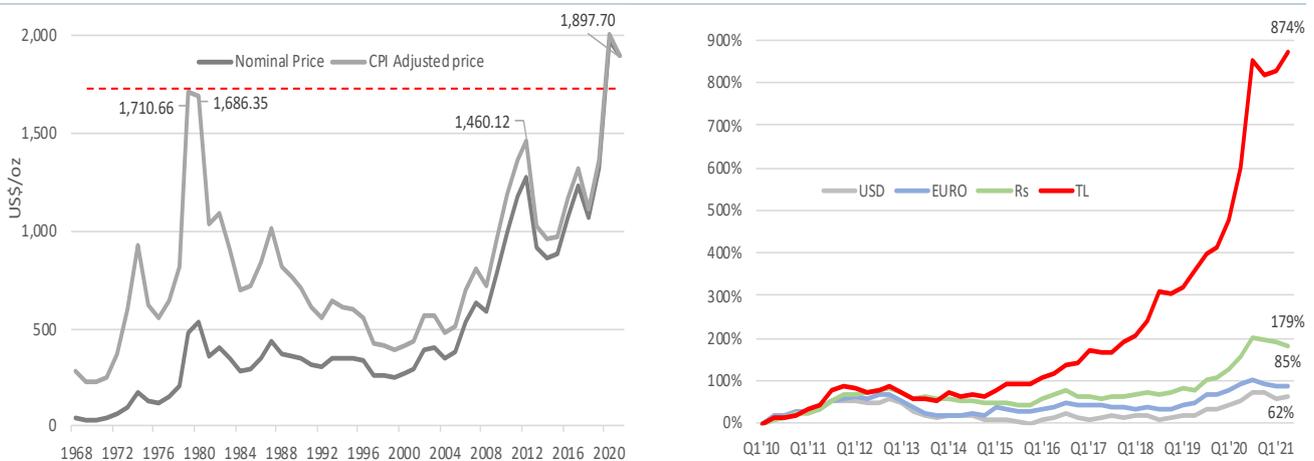
Source: WGC (2021), FD

If we briefly ignore the highly volatile nature of cryptos, and we compare gold's performance over time against traditional currencies (which have enjoyed the fundamental backing of a nation state as underlying collateral) over the past decade, the Euro has lost more than half its relative value to gold. While Turkey, with a large current account deficit, dwindling central-bank reserves, debt mostly denominated in USD, and an unorthodox interest rate policy (whereby real rates are significantly below zero), has lost >870%, potentially facing a near-term hyperinflation event. The USD is relatable to the size of the American economy, military prowess, and the fact it is relatively politically

stable, which endows the currency with substantial levels of trust, and as a consequence, has only lost 62% (see Figure 12).

In any case, most Developed Nation Central Banks have a stated policy of targeting 2% annual inflation rate and adjust monetary policy accordingly. From a purely monetarist point of view, using the “72 Rule”¹⁰ basically implies that if this CPI is achieved, then the purchasing power of a nation state currency halves every 35 years. Although any currency’s loss against gold over time will be significantly greater, for several reasons. Firstly, large participants of bullion have the opportunity to lend out their holdings for a small fee to speculators. The income, although modest, makes the assets similar to a bond. Secondly, to reiterate about the nature of a non-renewable resource, increased scarcity over time automatically implies asset inflation. Adding these factors together, gold as a store of wealth has no peer and is the primary reason why gold inflation in currency terms is out-performing official CPI estimates.

Figures 11 & 12: Annualised nominal and CPI adjusted gold price (US\$/oz) over time. Note that before 1975, the gold price was effectively mandated (Left); and comparison of EFT quantities bought by US and European investors (Right).



Source: Inflationdata.com (2021), Insider Business (2021), GoldBullion (2021), Good retruns.in (2021), Goldbroker (2021), WGC (2020), FD

The argument still remains, however, that if notional currencies can devalue so rapidly over time (with enormous political, financial and in some instances, military assets as a form of underlying collateral), then what is stopping various blockchain currencies with no collateral from devaluing to zero? Add in the fact that particular platforms, such as Bitcoin, are so illiquid (taking an hour on average to complete a transaction) that in times of market stress, we envisage that these wait times could easily blow out.

During the 2008/09 market correction, at a time when many securities/bonds/asset classes were totally illiquid, many investors were unable to sell assets to meet margin calls, no matter how low the Offer. That never was a problem with the gold market, in fact, its price suffered only

¹⁰ The Rule of 72 is a shortcut or rule of thumb used to estimate the number of years required to double your money at a given annual rate of return and *vice versa*.

because so many investors were forced to sell their gold holdings because it was the only thing they could transact!

Recommendations

SELL: As a result, we have selected a number of shorts, all are highly leveraged to the continuation of “crypto mania”, either as transaction mediums, or mining applications.

- MARA (NASDAQ) - Marathon Digital Holdings intend to build the largest crypto mining operation in North America, at one of the lowest energy costs. But if no one buys Bitcoin in the future, will we need any mining?
- RIOT (NASDAQ) - Bitcoin mining company.
- BTBT (NASDAQ) – Bitcoin miner.
- COIN (NASDAQ) - Coinbase, operating a cryptocurrency exchange platform. What will be its core business model when this bubble deflates?
- CAN (NASDAQ) - Canaan Creative, a China-based computer hardware manufacturer, specialising in Blockchain servers and ASIC microprocessors for bitcoin mining.
- HUT (NASDAQ) - Bitcoin miner.
- GLXY (TSE) - Galaxy Digital, a financial services platform targeting the institutional sector.
- ARB (LSE) – Argo, a LSE cryptocurrency mining company.

BUY: Likewise, Gold has numerous millennia of history, actual rareness, does not degenerate geochemically, and in particular, it cannot be replicated outside of primary mining supply.

- CHN (ASX) – Completely new geological model, continue to recommend it since the first discovery hole. It could end up being the world’s first primary Palladium producer; a market which has largely been in deficit for more than a decade, strongly reliant on by-products from its Norilsk nickel operations.
- BGL (ASX) – Continuing to grow the Resource. With a consummate promoter at the helm, we suspect they will eventually look for a suitor. In the meantime, getting larger.
- DEG (ASX) – A discovery that surprised us, have bought and sold in the past. Large, diffuse, open-pit, modest grade. Appointed an experienced operator, which implies the intention to eventually mine. Will enter production, with significant leverage to the gold price.
- GOR (ASX) - Unique gold company globally, controlling an entire greenstone belt, coupled with a 50% JV (130-150k oz pa attributable) of the Gruyere project built by Anglo Gold. Currently has four drill rigs operating at Yamarna (100%) and one at Yandina (>88%). Fully funded and *will* find numerous multi-million-ounce deposits in time. One for the bottom drawer. Let’s hope they don’t pay dividends!

Spec. BUY:

- KSN (ASX) - Misima Project, PNG, 130koz pa, PFS 15-year production, ~1160/oz ASIC. Massive exploration upside.
- ALK (ASX) – Ian Chalmers explaining Boda upside¹¹, as a potential a mini Cadia.
- HSTR (CVE) – Highly prospective, walk-up Aleutian Island prospects, some former operations.

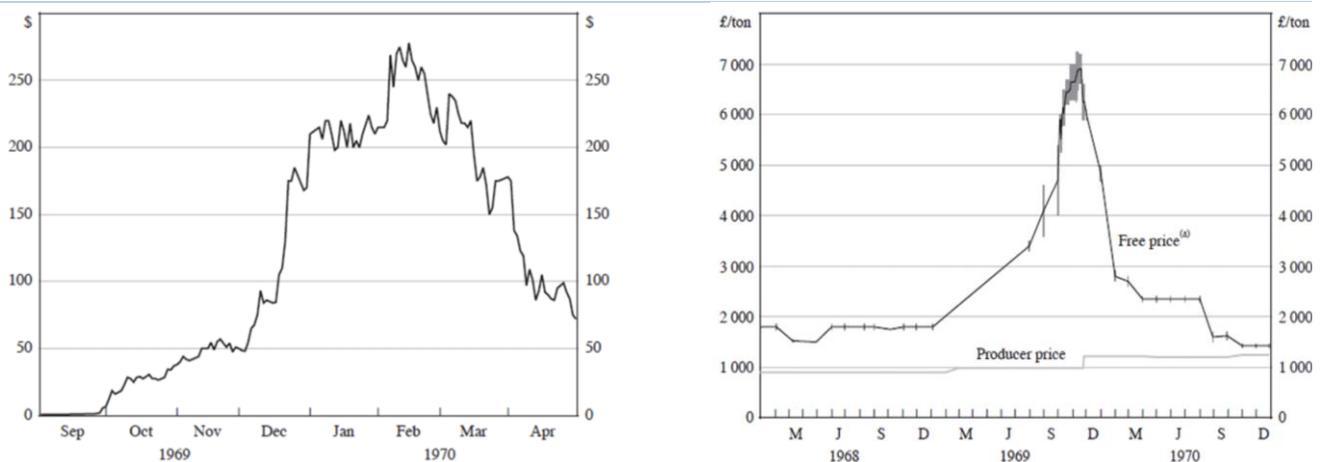
¹¹ <https://www.youtube.com/watch?v=8sNKNAZrmzg>

No-one makes a Fortune in a Bubble - Why?

We have always been fascinated by market bubbles, the confluence of finance, science and mass psychology (delusion?), illustrating both human hubris and short-term financial memory. The repeated instances in history of financial bubbles have led some market commentators, such as James Dines, to conclude that bubbles are somehow invisible to the masses, and in particular, “*are invisible to those inside*” and the axiom “*it is different this time*” always applies.

Of particular interest is the little known “Poseidon Nickel Boom”. Having worked professionally in nickel for WMC, it is part of Western Australian folklore. In the late 1960s, nickel was a key commodity that was in short supply for several reasons, including inelastic demand stemming from the Vietnam war and ongoing industrial disruption at Sudbury in Canada. Together, they pushed up the price of nickel to record levels, peaking at £7,000/t on the LME in early November, 1969 (see Figure 14).

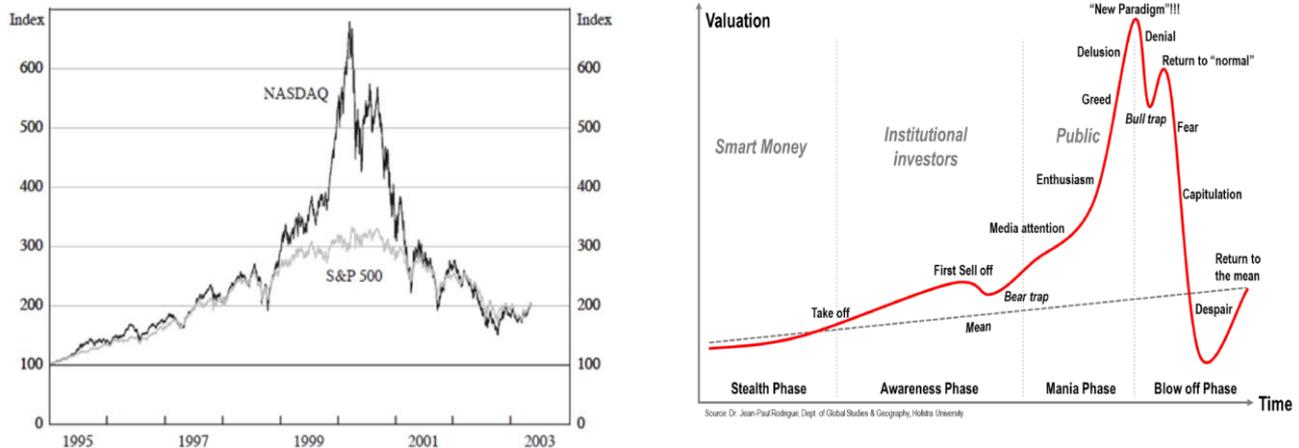
Figures 13 & 14: The Poseidon share price (Left); and free price of nickel reached a peak of around £7,000 per ton on the London market at the beginning of November, 1969 (Right).



Source: AFR/RBA (2003)

At the new Kambalda nickel sulphide discovery nearby, in Western Australia, led to an unprecedented exploration boom targeting nickel-hosting komatiite greenstone belts. Ken Shirley, a 40-year prospector hired by Poseidon, found several promising outcroppings and staked out a drill site. The discovery of some samples, the highest of which contained 3.5% Ni, triggered a stock market run, with shares rising from 80 cents in September 1969 to A\$12.30 on 1st October on news of the discovery. Amazingly, after this point, virtually no more news was released by the company. Yet the shares continued climbing, peaking at A\$280 on 10th January 1970, an increase of 35,000% (see Figure 13) on little more than hype and apparently some improper trading practices. In a time-honoured tradition, it is reputed that a particularly well-informed UK broker managed to value the shares at A\$382!

Figures 15 & 16: US share price indices, 3 January 1995 = 100% illustrating the Tech Bubble build up that culminated in 2000 (Left); and generic bubble profile (Right)



Source: RBA (2003), SCMP (2020)

The effect it had on other nickel companies was equally profound, many listing even without projects (equivalent modern day SPACs), but with the vague intention to discover nickel somewhere. Inevitably, the shares fell like a stone soon afterward. By the time Poseidon brought the (subsequently renamed) Windarra nickel deposit into production, the nickel price had fallen from its peaks, the anticipated nickel grades never materialised, extraction costs were higher than expected, and, ultimately, profits were insufficient to keep the mine a viable entity. By 1976, after only several years in operation, the company was delisted.

What is particularly fascinating is not how many people participated in the Poseidon Bubble, but how very few actually made anywhere near the theoretical multiples that were implied by the share price run. As a personal observation, investors can be divided into two distinct groups:

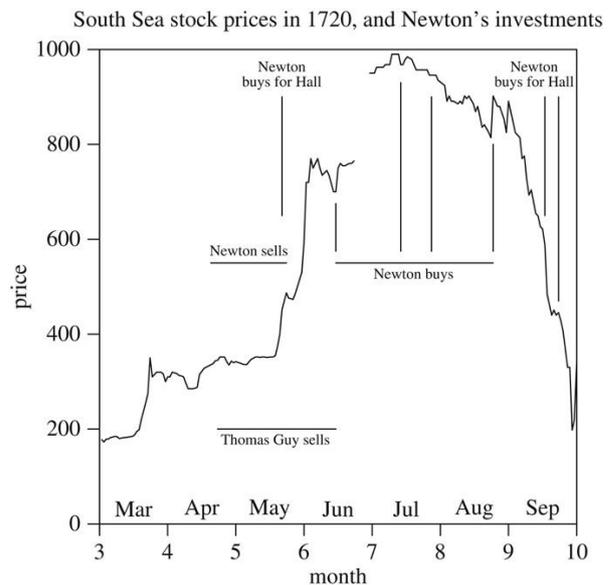
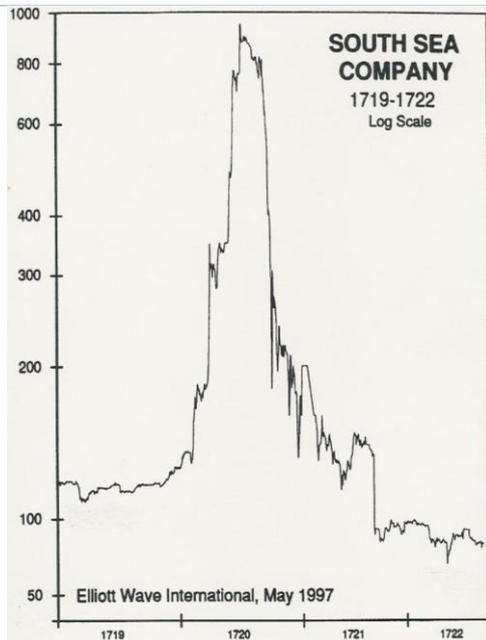
- (a) Working at a former brokerage in London, we came across an advisor who had bought Poseidon shares and made several multiples before selling; and
- (b) Others, after buying, held the shares all the way to the top, then all the way back down again. In particular, an anecdote from a geologist who worked on site, in realising the opportunity, sold everything to buy more shares; at one stage was notionally worth millions (average wage was ~A\$3,100 pa¹²). When I asked why he did not sell when the shares were falling, he replied, “*because I thought they would go back up...*”

Despite several decades in the finance industry, we have yet to meet a individual who was able to get in early, retain their faculties of reason to recognise that following appreciation was related to bubble behaviour, had the fortitude to hold, but more importantly, Sell anywhere near the top. The reason why this is an uncommon moment, resides in the fact that if one’s market

¹² <https://tradingeconomics.com/australia/wages>

orientation is based on market fundamentals, you will exit those positions far too early, and criticise from the side-line's as subsequent "asset" appreciation proves you wrong. Conversely, if the investor accepts that this is a new paradigm, he/she then becomes a true believer, refusing to exit even after the peak; many reasoning that they have incurred a theoretical loss, promising themselves they will Sell on the next rebound.

Figures 17 & 18: The South Sea Bubble - at its peak, the company's market capitalisation was around twice the total value of all the land in England (Left); and South Sea stock prices and investments by Newton and Thomas Guy during the Bubble of 1720. It seems that in early 1720, Newton liquidated the bulk of his South Sea holdings for a profit of ~£20 000, however, several weeks later it appears he re-entered the market and spent all that money repurchasing that same security at about double the price (Right).



Source: Elliot Wave, BoE (2018), Odlyzko (2018)¹³

This form of logic is not dissimilar to Sir Isaac Newton and the South Sea Company. First formed in 1711, it was primarily a scheme to manage government debt. Newton, an early investor, profited very well, however, in 1720 the company's stock experienced one of the most legendary rises in financial history (see Figure 17). Deciding in the early stages of that mania that it was going to end rather badly, Newton liquidated his holdings at an enormous profit. But as the bubble kept inflating, and despite him resisting the urge for a considerable period of time, Newton jumped back in almost at its peak, losing a reputed £20,000 (worth ~£20m currently)¹⁴. Leading to his infamous quote, "*I can calculate the motions of the heavenly bodies, but not the madness of people.*"

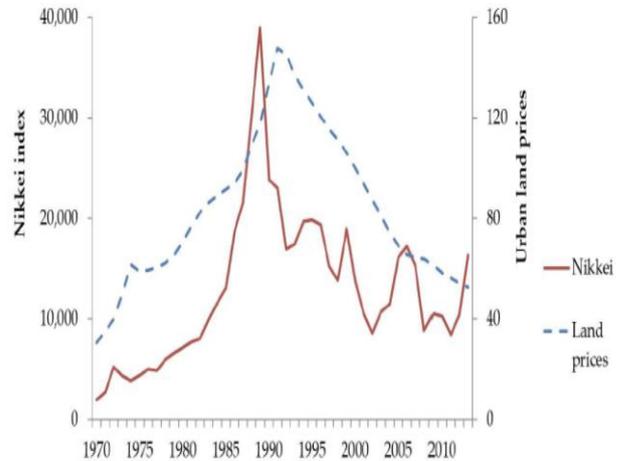
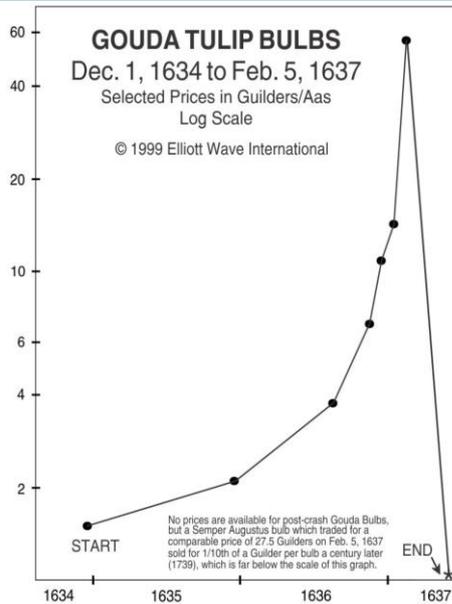
It is critical to note that Newton was by all accounts a very astute/shrewd investor (worth £30,000 at the time of his death), he was the first Master of the Royal Mint, participated in major monetary change discussions, and was responsible for initiating the move from silver to gold as the standard; a

¹³ Odlyzko, A. (2018) "Newton's financial misadventures in the South Sea Bubble". *Royal Society*, <https://royalsocietypublishing.org/doi/10.1098/rsnr.2018.0018>

¹⁴ *Ibid*

decision that was later followed by most of the world. So to suggest that he was not a sophisticated investor of his time, and therefore, didn't appreciate the risks involved and was influenced merely by emotion, is patently wrong.

Figures 19 & 20: 17th century Tulip Bubble, most of the tulip traders were aristocrats and from merchant-class. Ironically, Holland now controls 50% of the \$10Bn global market in cut flowers (Left); and Japanese Land Bubble, overlain with the Nikkei Index Bubble. At its peak, Tokyo real estate was selling for as much as US\$139k per sq. ft; nearly 350x that in Manhattan. Extrapolating that relationship, some have concluded that the Imperial Palace in Tokyo was worth as much as the entire US state of California (Right).



Source: Elliot Wave, <http://www.imes.boj.or.jp/research/papers/english/me19-s1-14.pdf>, Viswanathan (2014)

Odlyzko (2018) hypothesises that the South Sea Bubble appears less about the perpetual folly of mankind, and more about the conceptual difficulties adjusting to the continual innovation of financial markets. In that respect the Dot.com boom was probably far more rational than many have subsequently given it credit for. Historically, it is important to note that many individual companies peaked in 1997/98, with the 1999 bubble mania largely driven by large tech companies such as AOL, Cisco, Microsoft, and Yahoo. Financial projections that may seem comical now, were a recognition that business was going to evolve online, but not realising the time it would take; it took several decades before the NASDAQ index regained its heady year 2000 valuations. Again, the current market is not dissimilar to a host of finance and economics PhDs, extolling CDOs in 2006-2008 as the new great financial stabiliser, without any reference to asset values on the ground, and recognition of large scale public and judicial malfeasance.

All the above leads us to a single observation: we have recently read several bulge-bracket research reports extolling the virtues of cryptocurrencies, glibly using catch phrases such as “peer-to-peer payments network”, “smart contracts”, a “trusted intermediary”; without any reference to the reality on the ground. Despite being around for a decade, cryptos are effectively not used in any major commercial application. Their sole purpose appears to be entirely for speculation. The truth is, a single Bitcoin has no value outside of its own network.

Appendix A – Historical Currency Fails

- Lack of an Alternative:** Resulting from severe Civil War money shortage, many Confederate southern states, cities and businesses printed their own currency. For example, notes issued by the Jackson & Great Northern Rail Road Company, a prominent Confederate railroad, was considered so critical that even after the city was captured by the Union in 1862, it was allowed to continue printing currency to maintain continued operations. Under the Free Banking era (between 1837 and 1866), virtually any entity in United States was legally able to issue currency, which included various States, municipalities, banks, railroad, construction companies, even individuals printing reputedly upwards of ~ 8,000 different types of currency by 1860 (none of which, is legal tender today). If an issuer went bankrupt, the note would instantly be rendered worthless.

Figures 21 & 22: Confederate currency had images of enslaved people, historical caricatures and mythical deities (Left); and bank notes from well-established banks tended to circulate at a discount proportional to the distance at which the transaction took place from the bank's headquarters (Right).



Source: theconversation.com (2021), Barrons (2013)

- Reneging on a Deal:** The Papiermark is infamous for its association with hyperinflation. The Weimar Republic, after WW1 refused to uphold a condition of the Treaty of Versailles of paying, what was then considered, a relatively un-onerous level of recompense (e.g. compared with that imposed following the Franco-Prussian wars, and WWI Russian peace settlement to the Germans) for damage done to civilian property in France and Belgium. France and Belgium then occupied various industrialised regions of Germany as further compensation, causing a loss in economic productivity. The German government, in an attempt to (once again!) renege on paying their war debt, printed exorbitant levels of money resulting in domestic hyperinflation. At the introduction of the subsequent Rentenmark in 1923 (to replace the existing Papiermark), the exchange rate was 1 for 1 trillion.
- Economic Ignorance:** The Chinese had experimented with paper money as early as the 7th Century, but historically, copper coins within China dominated transactions right up until late in the 19th Century. However, as a result of copper shortages in the 11th Century, a bank within the Szechuan province, promoted the use of paper as an alternate currency medium that became relatively widespread.

Concurrently, war with the Mongols resulted in defeat. The incoming Kublai Khan, oblivious as to how to govern an established state, replaced (the now worthless) paper currency by issuing the new Yuan (also known as Jiaochao), the world's first fully fiat currency. The Yuan government then attempted to prohibit all transactions in, or possession of silver or gold, which was to be confiscated by the government (we assume then recompensed via the equivalent issue of the new currency). Vast amounts of the new paper Jiaochao were then printed, far exceeding any rational demand; effectively leading it to become worthless, destroying many once wealthy Dynasties, creating internal chaos, civil war and widespread economic distress.

- **Self-enrichment of the Establishment:** At the onset of the 1st Century A.D., the Roman denarius was contained at 100% Ag. By 54 A.D. (during the reign of Emperor Nero), the composition was reduced to ~94% Ag, falling gradually to 85% Ag by 100 A.D., courtesy of all succeeding emperors. The scam was entirely deliberate and not related to the availability or primary supply of silver. By reducing the silver content of their coinage, the emperors could, simultaneously, pay off their debts, and keep the valuation differential, whilst becoming personally wealthy in the interim. By 244 A.D., Emperor Philip reduced it to ~0.05% Ag (26 years earlier, 218 A.D., the Denarius ~43% Ag), which did not go down well with his Legions, who rebelled, eventually deposing him. By the time the Roman Empire was collapsing (circa 476 A.D.), the denarius contained ~0.02% Ag, and at which point, its store of value, or as a medium of exchange, was defunct (which is still seen in contrasting relative values for coins sold on eBay – see Figures 23 & 24).

Figures 23 & 24: Claudius silver Denarius circa 49AD (>95% Ag), estimated value US\$8,000 (Left); and Philip I (The Arab) 244-49 AD, “silver” double-denarius, (<0.05% Ag), estimated value US\$100-\$188 (Right).



Source: eBay (2021)

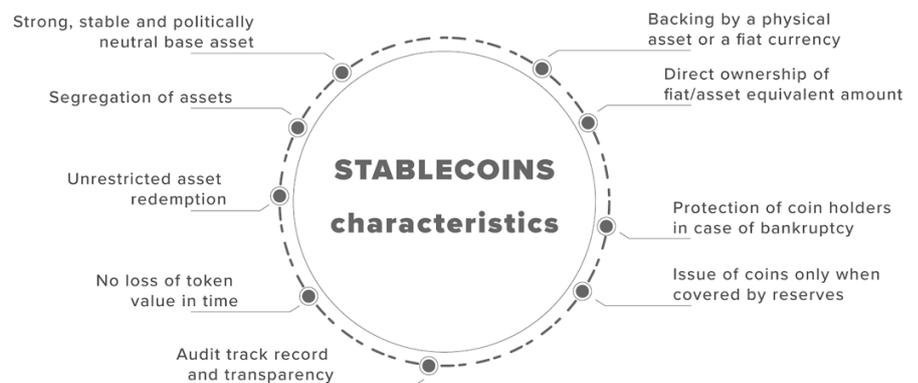
Appendix B – What follows 1st Gen Crypto? Stablecoins?

Post the current shakeup of current providers, the next generation of cryptocurrencies are likely to come from existing internet providers (e.g. Google, Facebook, Apple), which have remarkable parallels in History, in particular, Railroad IOU currency iterations that were common in the US during the 19th Century. Railways were, at the time, the enormous technological leap of their age, transforming transportation economics, with the ability to shift large numbers of goods/people far more inexpensively and conveniently than ever before. This is truly remarkable, given that mere decades earlier, people relied on slow moving wagons to migrate Westward toward their collective “Manifest Destiny”.

Over time, stronger railroad corporations acquired the weaker competition, slowly transforming various rail networks to become natural monopolies. To the point that in 1900, six US railroad companies owned, or controlled, 90% of the domestic coal market. This gifted operators numerous instances of market manipulation and select competition, whereby owners of a particular resource (e.g. lumber) would have to sell their holdings to the railroad company far below market value, or inevitably have transport rights withdrawn and suffer bankruptcy. In addition, it was not uncommon for many coal workers to be paid via coal scrip, effectively IOUs/tokens with an assigned monetary value. Typically, this “scrip” could only be used at a specific locality/coal town at a store under domain of the company that issued it.

Clearly, the “Railroad” of our times is of course the Internet, and not unlike the rail companies of old, or the infamous Standard Oil, the “Big Five” service providers (i.e. Apple, Amazon, Facebook, Google and Microsoft) are self-regulated, profit-seeking entities who legally channel customers to select retail outlets who, in turn, pay enormous sums for preferred access (e.g. Epic Games vs Apple legal challenge over Monopoly claims).

Figure 25: Proposed Stablecoin characteristics



Source: A. Das (2019)¹⁵

¹⁵ <https://bravenewcoin.com/insights/new-report-evaluates-stablecoin-contenders-and-the-sectors-likely>

The most detailed stablecoin proposal released presently by a major corporate, is Facebook's "Libra"; with the new currency to be pegged to an assemblage of low-volatility assets, that may include bank deposits, AAA corporate debt and multiple currencies. It appears, from initial released documents, that when you purchase Libra coinage, your initial deposit would be used collectively to acquire these assets. The annuity returns from these assets, however, are not distributed but retained by the Libra corporate entity itself as its source of revenue. Libra's corporate entity is ultimately related to Facebook's balance sheet, coupled with the purchase of low-volatility assets. Held assets by Libra with no returns will degenerate in time; meaning its per unit monetary backing will inevitably decline as a result of future inflation expectations.

The future challenge for policy makers, is that if these natural monopolies are allowed to establish their own cryptocurrencies in the wake of the current crop of corporate failures; the disintermediation of purchasing channels outside what is offered under that particular currency selection would naturally preclude competition. And not unlike their railroad predecessors, at some point in time, various Governments will have to introduce anti-trust legislation to break-up these monopolies, possibly on a regional basis.

Research Disclosures



Gaius L.L. King

Gaius L.L. King has 25 years' experience in mining, exploration, corporate finance, mineral economics and as a resource analyst. As a geologist, he worked five years in various underground operations, and was involved in discovering and delineating ~2.6 Mt @ 3.5% Ni from a variety of ore bodies. Gaius has analysed fundamental supply and demand of iron ore, nickel, PGE, uranium, gold, REE, borate and lithium, among others. As an analyst, he has specialised in the mid-tier/junior sectors, covering mining stocks on the ASX and AIM.

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Cryptocurrencies vs Gold

