Private Capital Advisers

Spotlight on Crypto currencies

Executive Summary

Despite astonishingly good returns during their limited history, there are too many uncertainties around crypto currencies for Private Capital Advisers to consider them an investable asset. They are difficult to value. We do not know if demand can continue to grow fast enough to support further price rises. We do not know which historical precedents, if any, we can use to understand them. Finally, and most tellingly, there is the issue of whether the sheer size of this asset class today passes the common sense test.

We can't estimate value - prices are set by supply and demand

Most crypto currencies are fundamentally difficult to value. As a result, prices are set by supply and demand. Crypto advocates argue that the limited supply of any crypto currency provides a floor under its value. Opponents argue that while the supply of any single crypto currency is limited, there is no limit to the number of crypto currencies. There are different sources of demand including those wishing to conduct their affairs out of the eyes of governments, those who are looking for protection from debased paper currencies and from those who believe wonderful past performance will continue. The first source of demand is under attack as governments get better at tracking crypto transactions. The second and third depend on the maintenance of investor belief in the asset class. So far that belief has appeared unshakeable but is by no means a given and, right now, is being tested again.

A tulip, an Iris, gold or something completely different?

In the absence of a long-term history for crypto currencies we look to historical asset price booms as a possible road map for the future. Many of these booms involved hard to value assets such as tulips, gold or fine art. Not all these booms ended in tears. Tulip-mania in the 1600's was a boom that ended badly and is often cited as a possible parallel for crypto currencies. However, we could also cite gold or fine art which have endured as investment assets for centuries. Van Gogh's Irises sold for $84,000 in 1954, $54 million in 1987, today it is valued at over $150 million and would probably fetch well above that if it actually came up for auction. Will Bitcoin come to be seen as more like gold, a tulip or like Irises? We believe that in ten years' time it is most likely to be seen as one of the first two, that is, either a store of value or a bubble. It turns out that neither is an exciting prospect for investors.

The common sense test: How big are crypto currencies compared to other assets?

In the absence of an intrinsic valuation metric, it is often useful to compare the total value of assets against other unrelated assets a common sense test. In the late 1980's the land beneath the Japanese Emperor's palace was deemed to be worth as much as all of California an indication that prices may be in bubble territory. Comparing the total value of crypto currencies against the size of different economies and sharemarkets reveals similar red flags. Do we really believe crypto currencies will be worth four times the value of the UK economy in 2032, worth two times the value of all the gold bullion in the world? We are sceptical – despite recent price falls, we do not see this as a buying opportunity.

Crypto currencies

Despite recent volatility and ongoing scepticism from mainstream investors, huge fortunes have been made in crypto currencies over the past decade. Many believe that the likes of Bitcoin are the future of money, a sound currency free from the reach of banks and untrustworthy governments. Traditional investors have been left on the sidelines trying to make sense of it all. And that is what we will try to do in this report. Here we look at the long-term outlook for the crypto currencies that have their value determined by the market rather than by reference to other assets. We are talking about Bitcoin, Ethereum and the like rather than those coins linked to the price of another asset such as a paper-based currency or gold. While we occasionally mention an individual crypto as an illustration, this report is about the market as a whole not any individual crypto where we expect that there will be winners and losers. It is a little like saying that the equity market is expensive which doesn't mean every stock is expensive but, rather, that if we were to buy an equity index fund, we expect returns will be low.

We can't estimate value - prices are set by supply and demand

Are crypto currencies cheap or expensive? We don't know because with most crypto currencies - and many other assets such as gold and fine art - it is difficult to come up with an estimate of their intrinsic value. Even the strongest crypto advocates agree on this. The best we can do is say that value is the price the market will pay, and that price is determined by supply and demand.

A limited supply of Bitcoin but an unlimited supply of crypto currencies

Proponents of crypto currencies argue that the limited supply of any crypto currency provides a floor under the value of that crypto. Opponents argue that there is no limit to the number of crypto currencies. It is as if the government of the day limited production of $50 notes and started printing $100 notes instead. In any event, for now, let us just focus on Bitcoin where supply seems to be genuinely capped. Given that, a rising Bitcoin price would appear to depend entirely on demand increasing over time.

Demand does seem to be ever expanding

If supply is limited, strongly rising prices suggest that demand for Bitcoin is similarly increasing. But where does that demand come from? We can identify four logical reasons to buy a crypto currency:

- The desire to operate one's affairs independently of governments
- The desire to transact in secrecy for criminal or other purposes
- The belief that crypto currencies will act as a store of value as paper currencies are debased by money printing
- The hope or expectation that the crypto currency will rise in value

For those living in repressive regimes or where there is a risk that the government of the day may turn that way, the desire to operate outside of the reach of government is a valid reason to buy. However, most western democracies appear to be a long, long way from that. However, we do recognise the rise of right-wing groups in the United States that harbour serious concerns about the direction of their democracy. The strong aversion to big government that appears to be deeply ingrained in the American psyche may indeed be one of the sources of steadily rising demand for crypto currencies over the past decade and one that may continue into the next.

The second reason to invest in crypto currencies, the desire to transact in secret, may be temporary. Recent reports suggest that the FBI is becoming more adept at tracking crypto transactions. This particular source of demand may well dry up in future.

Many believe crypto currencies will act as a store of value in the event that governments seek to inflate away their debts. Private Capital Advisers struggles with this idea. Their ten-year history provides very little evidence that crypto currencies can indeed fulfil this role and, more to the point, there any many other assets that could do the job more reliably. Here we are thinking about gold, real estate or shares for starters.

And so we come to what appears to be the main source of demand the expectation that prices will rise in the future. This appears to be based largely on the wonderful past returns of Bitcoin and the like. If this expectation persists, then the value of Bitcoin will keep rising - until investors lose faith, which typically occurs after a large downturn. Will the current downturn be the catalyst?

It is too early to say. Bitcoin has already survived three potentially bubble ending bear markets. As can be seen in Figure 1, prior to the current downturn, there have already been three huge bear markets over the past ten years. Note that this chart has a logarithmic scale this means that a 10-fold increase in price looks the same regardless of whether it is from $10 to $100 or $1000 to $10,000. Without this scale, the 2012 and 2014 falls would be invisible. As it is, the downturns look still look like blips, but they are not. In anyone's language a 75% plus fall in price is significant on a conventional scale.

Figure 1: Bitcoin US$ (logarithmic scale)

Source: Official Data Foundation, US Federal Reserve, farrelly's analysis

If Bitcoin is a bubble, you would think that a 75% fall would be enough to destroy any delusions investors had about this asset somehow being any different from all the other bubbles that have come before. And yet, after each major downturn, Bitcoin has bounced back and gone on to new highs. If Bitcoin is indeed a bubble, it is the most resilient bubble in investment history. There is something really different happening here. Faith in the future of this asset has proven to be incredibly hard to shake.

Rapid increases in prices of hard to value assets are nothing new

For hundreds of years we have seen wild bull markets in hard to value assets: precious metals, fine art, start-up businesses or even tulips. Many turn out to be bubbles, others persist. Looking at some past examples gives us some clues, if not answers, to the question of whether Bitcoin is a bubble.

The Tulip-mania of the 1600's is often cited as a possible parallel for crypto currencies. Others argue that a better analogy for crypto currencies is gold which has proved to be a store of value for centuries, a form of money that is beyond the reach of government. Yet another possible parallel is fine art, another hard to value asset which has experienced strong price increases for decades.

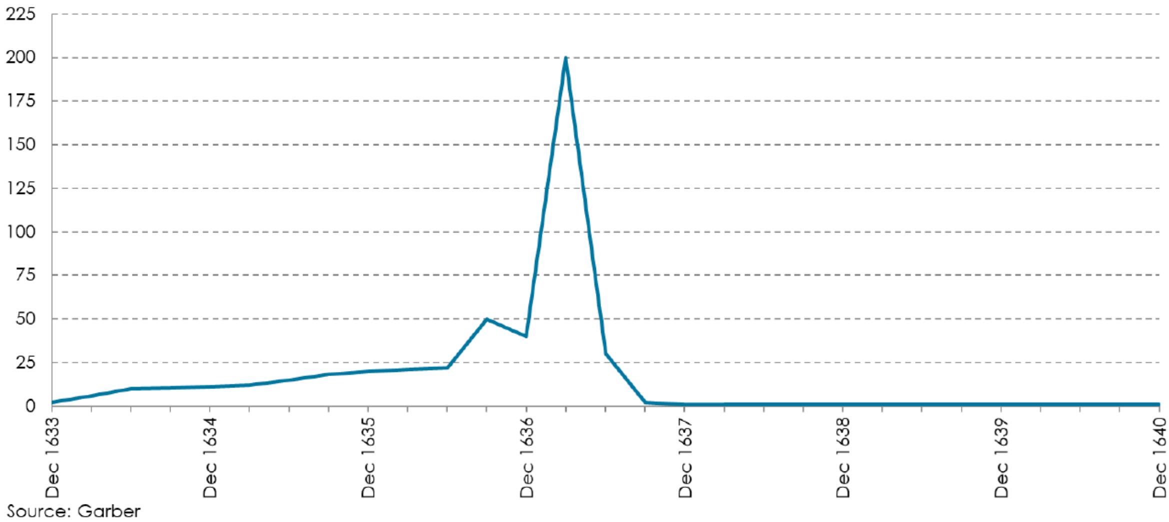
Where are the parallels and differences between these assets and Bitcoin?

Tulip-mania

Around 1610 the rare and beautiful tulip was an expensive commodity a single flower would sell for 0.5 guilder or about a half of a day's wages. But that was just the beginning. Over the following 25 years the price of these flowers kept on rising but it was not until 1634 that prices really began to increase exponentially. At the peak of the boom in 1637, a single bulb traded at the equivalent of 20 years earnings for an average worker. The major driver for the mania stage of this boom appeared to be speculation driven by the promise of riches from ever increasing prices and the possibility of gearing via futures markets (yes, they existed back then!). After the boom burst, prices collapsed all the way back to where they started and stayed there. Fortunes were lost and the legend of Tulip-mania was born.

If the tulip is a good guide, the Bitcoin adventure will end in tears. But perhaps not for some time yet, the bull market in tulips lasted for 25 years.

Figure 3: Tulip prices in Guilders (1633 1640)



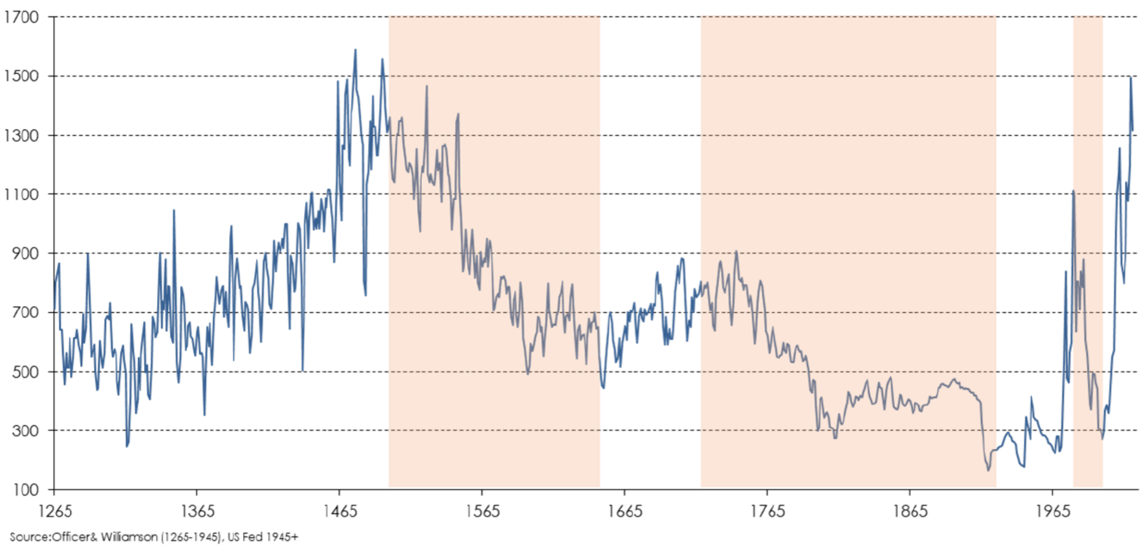
Gold hard to value but no flash in the pan

The history of gold shows that when humans decide something is a store of value, rationally or not, that value can be retained indefinitely despite huge booms and busts.

Figure 2, which shows the inflation adjusted price of gold over the past 700 years in Pound Sterling terms, illustrates how gold has retained its purchasing power over centuries. The real price of gold has essentially moved sideways, in other words, it has produced returns around the level of inflation and with huge volatility.

While it is difficult to put an intrinsic value on gold because it produces no income, no one argues that it is actually worthless or that its price may be headed to zero. We will conduct a detailed review of gold soon but, for the purposes of this review, it is sufficient to say that the history of gold suggests that 10 or 20 years of strong price increases do not mean a permanent crash is necessarily around the corner. Equally, history shows that even an asset that retains its value over centuries can experience decades of value destroying returns as shown in the shaded regions.

Figure 2: Real Gold prices (Pound Sterling per Ounce)



Another hard to value asset is fine art and it too has been involved in a very long boom. When the National Gallery of Australia bought Blue Poles in 1973 for A$1.3 million, many took it as proof that Prime Minister Gough Whitlam, who approved the purchase, had gone mad. Today it is valued at up to $350 million. This is equivalent to a 12% per annum increase, vastly higher than inflation which has averaged just 3.7% per annum in that time. Similarly, Van Gogh's Irises sold for $84,000 in 1954, $54 million in 1987 and is almost certainly worth multiples of that today; again a return of around 12% per annum.

Now, art has real value as a thing of beauty but that doesn't make it any easier to estimate its intrinsic value - is any painting really worth $350 million?

We can compare what buyers are prepared to pay for comparable works but, in the end, like Bitcoin, its price is an issue of demand and supply. We know the supply of Van Gogh artworks - the question is how much collectors may be prepared to pay and why?

Here we get some useful insights. A 2019 Citibank report found that portfolios of investable art appreciated by around 5% per annum from 1985 to 2018 - around 2.5% per annum faster than inflation, but well below the rates of increase of Blue Poles or Irises.

Thinking about demand and supply starts to provide some clues to why prices at the very high end of the art market has appreciated much faster than the majority of art collections. Given the output of any artist is limited and demand comes largely from collectors, it is not unreasonable to assume that prices should rise with collectors' ability to pay and that should rise with their wealth.

So, again, is any artwork really worth $350 million? We think the answer is yes. This is because, at the very top end of the market, collectors are paying for something much more important than beauty status. In the ultra-competitive world of the super-rich, owning a painting by Van Gogh is an ultimate statement of wealth. We also know that the number of billionaires and the average wealth of those billionaires has grown enormously over the past two decades and, with that, has grown the price of status; the price of fine art at the very top end.

Will Bitcoin come to be seen as more like a tulip, gold or Irises?

All are possible.

Tulips have real value as a thing of beauty but so do many other things. When investors lost faith in their investment merits their value retreated to their starting point - what are they worth as a flower. In the 17th century that was half a day's labour. Today, tulip bulbs still have value but it is only about 5 minutes of labour. If crypto currencies lose their investment lustre, the tulip example suggests the downside could be very severe.

Gold is a very long-term store of value prone to booms and busts. If this is the roadmap, term returns around inflation, say 2% per annum, would be what's in store. A far cry from Bitcoin returns of the last decade.

Finally, like fine art, demand for cryptocurrencies may continue to rise indefinitely, and prices with it. However, this scenario feels like a stretch. Unlike fine art, crypto currencies are not a thing of beauty and neither are they a hard to obtain status symbol.

Is an elephant bigger than the moon?

Elephants are big. Really big. But how do we define big? Sometimes a comparison between two unrelated entities can help us make some sense of proportions. And so, yes, elephants are big, but that doesn't make them bigger than the moon.

In the 1980's the land under the Japanese emperor's palace was estimated to be worth more than all the land in California. This observation did not tell us what Japanese land values should have been but it was a fairly big clue that something was amiss. Here we attempt a similar comparison between crypto currencies and other large things to see if valuations of cryptos make sense. We look at the market capitalisation of crypto currencies against the total size of large economies, the value of US stocks or the value of all the gold bullion in the world. The results are interesting.

Over the past month crypto currencies have been valued at between US$1.7 trillion and US$3.0 trillion in aggregate – let us say US$2.3 trillion on average. It is helpful to compare that valuation with other valuations in two-time frames - firstly, as at today and, secondly, looking ahead to 2032.

Figure 4: Current and expected relative market capitalization of crypto currencies

Valuation benchmarks	Jan 2022		2032	
	Market cap US$ trillion	Crypto as a % of benchmark	Market cap US$ trillion[1]	Crypto as a % of benchmark
Crypto-currencies	**2.3[2]**		**15.2**	
UK GDP	2.7	84%	4.0	380%
US GDP	20.9	11%	30.9	49%
Gold bullion (excludes jewellery)	6.9	33%	8.5	180%
S&P500	41.0	6%	60.7	25%
World Equities	67.2	3%	99.5	15%

Source: Bloomberg, World Bank; Coinranking.com; farrelly's analysis

Assumptions 1. Economies grow at 4%pa, Sharemarket capitalisation grows at 4%pa, Gold grows at 2%pa & Crypto-currency prices grow at 10%pa and issuance grows at 10% pa. 2. Average for January 2022

Putting the two together we see in Figure 4 what these relative valuations look like now and in 2032. A total valuation of cryptocurrencies of US$2.3 trillion is about the same size as the UK economy, 11% of the size of the US economy and 6% of the value of the US sharemarket. To own crypto currency suggests we would willingly swap ownership of 6% of the US sharemarket for a bunch of hard to value crypto assets. Let's suspend all scepticism and assume this swap is attractive. We then ask, would we make the same swap in 2032?

If crypto currencies are good value now, then the value of cryptocurrencies in 2032 will be roughly four times the value of the UK economy, 50% of the value of the US economy, almost double the value of all gold bullion in the world and 25% of the value of the S&P500. Would even the most wide-eyed investor really swap ownership of 25% of the US sharemarket for a bunch of hard to define crypto assets? Would they swap all the gold bullion in the world for a 50% share of all crypto currencies? If the answer is no - and it should be - then that suggests that the return from crypto currencies over the next decade will be much lower than 10% per annum. Our guess is that the return will have a minus sign at the front.

As for the often-repeated claim that Bitcoin could be worth US$1 million a coin? That would value crypto currencies at double the value of the US sharemarket. This really, really is not going to happen.

If elephants are smaller than the moon, crypto returns over the next decade will probably be well under 10% per annum.

Does the Blockchain technology justify the aggregate valuations?

We doubt it. We fail to see how the Blockchain technology, regardless of how transformative it is, can enhance the value of crypto currencies to the extent that they justify the aggregate valuations shown in Figure 4.

The combination of the invention of paper money and modern banking systems, including central banks as lenders of last resort, totally transformed the world economy. Huge fortunes accrued to early adopters of the banking systems such as the Rothschilds and J.P. Morgan. However, it didn't do much for the value of the paper money. Similarly, the internet transformed retailing but, again, online retail doesn't seem to have much done much for the purchasing power of a dollar.

Even if a crypto asset such as Ethereum unlocks the ability to create value, we would be amazed if the sum of that value ultimately justifies the market capitalisation of crypto currencies.

Too many uncertainties

As stated at the outset, our perspective is there are just too many uncertainties, both positive and negative, surrounding crypto currencies for them to meet our criteria of an investment worthy asset class.

- The extraordinary resilience to potentially bubble bursting bear markets could indicate this is an asset type completely different to anything ever seen before or that this is just a harder beast to kill
- The potentially transformative nature of the Blockchain technology could make crypto-currencies more valuable than easily imagined - or may be irrelevant
- We don’t know how to estimate intrinsic value
- The future supply and demand dynamics are far from certain
- Historical precedents vary but, on balance, suggest caution

Private Capital Adviser’s whole philosophy is based on estimating whether or not we are likely to get reasonable returns out of assets. With crypto currencies we have huge uncertainties and doubts. Given all of this, we would rather head to the casino where at least we know the odds. We are happy to leave this investment to others.

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