CANACCORD Genuity
Wealth Management

To us there are no foreign markets.™

December 17, 2017

Weekly Note

Investment Team

Robert Jukes
Global Strategist
T: 44.207.523.4594
robert.jukes@canaccord.com

Michael Quach
Senior Research Analyst
T: 44.207.523.4528
michael.quach@canaccord.com

Ian LeCroy
Research Analyst
T: 416.867.2643
ian.lecroy@canaccord.com

Price Tag

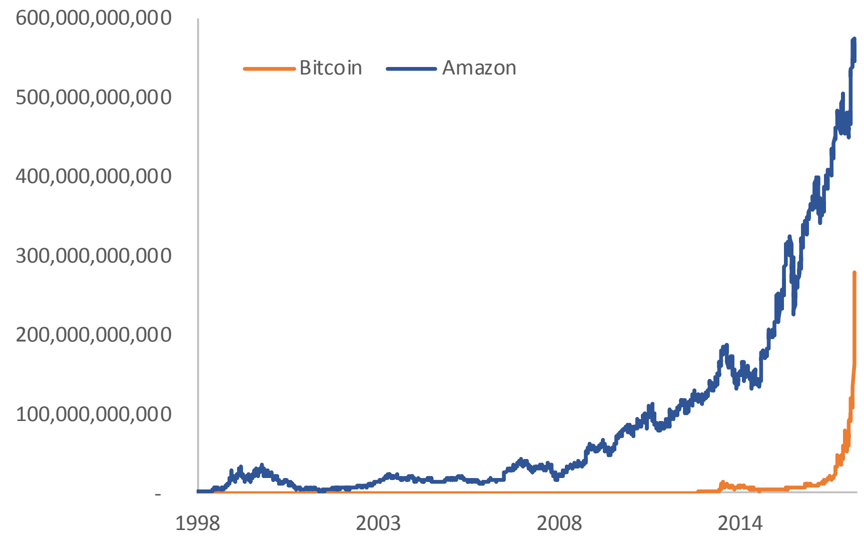
Is it possible to put a value on Bitcoin? The geeky economist in us is inclined to say that we can, but the real world is often more complicated than models allow. Nonetheless, we set about the valuation challenge by asking a relatively simple question: "what if Bitcoin were to replace the US dollar (USD) as the world's reserve currency?" We ask that question because on one simplistic level Bitcoin is a fledgling currency, so perhaps we should aim to value it as such. Fledgling is the key word here though, there are many impediments to Bitcoin growing up and successfully becoming the world's reserve currency, so we must probability adjust the price accordingly. When we do that, we conclude that Bitcoin is already overvalued. To buy from here, you need to forget about the price tag, because it is not about the value.

Our simple question assumes that Bitcoin is a currency, but it does not yet have all attributes required to be a cash alternative, and it is also competing with equally compelling solutions to grow into that space, so we should probably value it at a discount to cash. Just as was the case during the "dot com" mania of the late 1990s, Bitcoin is an exciting investment opportunity for speculative investors. It may or may not survive, but just as we would struggle to imagine a world without the internet today, we suspect that in ten years' time a world without the blockchain will be equally unimaginable. In many ways, it is the blockchain which is the more interesting story.

Let's begin by recognizing that not every investment conforms to the standard model. Take equities for example, the most common method of valuation is to discount the expected future dividend payments from a company to arrive at a theoretical valuation based on the net present value of all future cash flows that return to the investor. That view came under significant pressure through the "dot.com" era, where many internet companies achieved large stock market valuations without making any profits, let alone returning dividends to shareholders.

Today, we no longer flinch when considering a company with a market capitalization of $560bn that has never paid a dividend, and reports earnings that are so low it has a Price to Earnings (PE) ratio at around 300x (wider US market at 22x). All that said, this company (Amazon) has enjoyed almost exponential price growth. Some assets are simply worth what someone else is willing to pay for them. A fiat currency is similar, but without a balance sheet of tangible assets behind it.

Figure 1: Amazon.com v Bitcoin (market capitalisation in USD)



Source: Datastream, blockchain.info, Canaccord Genuity Wealth Management

If we were to compare the market capitalization (shares outstanding times share price) of Amazon to Bitcoin market capitalization (number of coins times price) then Bitcoin has roughly half the market capitalization of Amazon (Figure 1). The most shocking element of that chart, however, is the speed at which Bitcoin has achieved this. No wonder the speculative interest in Bitcoin. Amazon is one of the successful survivors of the "dot.com" boom, there are plenty of companies that just didn't make it – remember using Netscape?

The point is this, Bitcoin may have had an impressive start, so did many of the dot.com companies, but in this fast-moving world of cryptocurrencies, there are many other candidates that could dominate over Bitcoin. Ethereum, Ripple, Litecoin, and Bitcoin Cash are all existing contenders for cryptocurrency supremacy, and there are almost certainly other candidates waiting in the wings, perhaps even a few state sponsored alternatives. Would a cryptocurrency backed by a sovereign nation be more or less attractive than Bitcoin? Whatever the answer, each of the competing currencies should have a discount applied to the true value of a successful solution.

To value Bitcoin, we really want to compare Bitcoin to money. To do that, we should first define what we mean by the term money. That might seem like a silly endeavour given that we all use money every day - we are all intimately familiar with it. Nonetheless, we think it is helpful to define money as a medium of exchange, which is also a store of value and a unit of account – the traditional economist definition. The medium of exchange is straightforward, something that can be exchanged for goods and services. In some way the next two attributes follow from the first in so far as money also must be recognizable with an agreed value, hence the "store of value," which is also likely to mean it should have a relatively stable value over time.

That last point is important because money, as a store of value, can be used to separate transactions in time. If that were not the case, money would just be an intermediate step in a barter system where all transactions occur simultaneously – not that helpful. Finally, the unit of account simply allows us to express the value of something using money. In a barter system, one haircut might be worth a dozen apples, but in a money system, it can simply be priced as $10. When money functions as a unit of account, it also facilitates credit – much easier to borrow $10 than it is to borrow a haircut. So money has a number of attributes that make it useful, perhaps not all of those attributes are obvious at first glance.

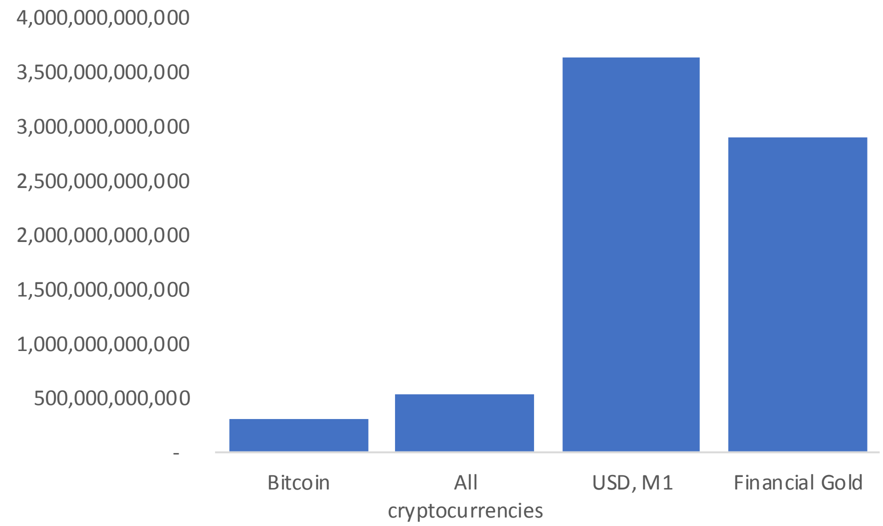
Unlike money, which has a physical form, Bitcoin is held by the user in an electronic wallet that has a Bitcoin address (actually many of them), much like an email address, each of which are unique, and then shared with other parties to send or receive Bitcoin (to make transactions). Unlike traditional money where transactions are checked by banks, Bitcoin transactions are checked and verified on what is called the blockchain. This is a distributed public ledger upon which the complete Bitcoin network relies and its integrity is protected with cryptography. A transaction is therefore a successful transfer of Bitcoin between two Bitcoin wallets that has been verified by the blockchain using a process called mining – a competitive lottery that prevents individuals being fraudulent. In many ways, it is the blockchain technology that is more interesting than Bitcoin, as it has a massive disruptive potential to any industry that relies on record keeping, but that is a note for another time.

So, does Bitcoin meet this definition of money? Perhaps the fairest answer is to say that it has the potential to do so, but not just yet. Bitcoin can in some circumstances be used to purchase goods and services, although it is still a long way from being ubiquitously accepted as a means of payment. The city of Arnhem in Holland has a particularly dense population of vendors (including Burger King and Spar) that will accept Bitcoin, but this has been driven by a small group of enthusiasts that have promoted it tirelessly within their community since 2014. There are not many other similar examples. One obvious problem for Bitcoin in becoming more widely used as a medium of exchange is price stability, and that is clear from Figure 1, the value of Bitcoin is far from stable. Given the exponential rate at which the value of Bitcoin has grown over the past few years, consumers now have expectations that it will continue in the same way, they are therefore unlikely to want to part with Bitcoin in exchange for goods and services – a classic deflation problem. The price of almost any good or service in Bitcoin today is almost 2000 times cheaper than it was a year ago. Why buy today when tomorrow it will be cheaper? It is this very same problem, however, that attracts the speculative investors, but can they justify the potential value of Bitcoin rising still further?

Bitcoin is not quite a money alternative insofar as it is not ubiquitously accepted as a means of transaction, and it is not yet an effective store of value. Anything that can appreciate by 2000% over a year must have the potential to fall by the same, so it cannot really be relied upon as an intertemporal separation between purchase and sale. Once the price of Bitcoin settles down, and the mania subsides, then maybe it will move further into the realm of money, but until then, it should be priced at a further discount to that of cash. Perhaps it is fairer to compare Bitcoin to gold, so we make both comparisons below, starting with the assumption that Bitcoin can completely replace US dollars and then gold.

In figure 2, we chart the market capitalization of Bitcoin, all cryptocurrencies, USD M1, and financial gold. The US money supply, defined as notes and coins plus cash money balances at banks (M1) is worth just less than half of the total value of all gold above ground, but slightly more than what we have called financial gold. Financial gold is the gold held for investment purposes in bars, coins, ETF's and by central banks as currency reserves. We ignore the rest because Bitcoin could never be a gold substitute in jewellery and other industrial applications because it has no physical form. Comparing Bitcoin to the US money supply is therefore the most favourable comparison for Bitcoin given that it is just over 12 times smaller than the US money supply. If Bitcoin were to replace US dollars in M1, then it could be worth 173,000 dollars a coin at the theoretical maximum supply of Bitcoin. That's quite some headroom for further gains in Bitcoin, but then we have not yet considered how to discount Bitcoin appropriately relative to USD to take account of the hurdles ahead of it in replacing USD as the world's reserve currency.

Figure 2: Market capitalisation Bitcoin, US money supply, Gold in USD



Source: Datastream, World Gold Council, coinmarket.com, Canaccord Genuity Wealth Management

Before we consider the discounting of Bitcoin against the potential value in replacing USD in M1, we should first recognize that it is quite unlikely that the US dollar will disappear entirely any time soon. Central banks earn a fee from printing coins and cash, and are unlikely to give that up (seigniorage). There is also a libertarian argument to say that individuals should be free to conduct their business without anyone else interfering or even knowing about it. Bitcoin addresses the privacy part of that to some extent, but then it was only recently that many US citizens thought they had asset privacy via offshore Swiss bank accounts. So perhaps a tighter assumption about replacing USD is that Bitcoin could possibly replace half of the money stock in M1. On that assumption, Bitcoin could be worth $86k per coin in the future – a five times uplift in valuation from here.

As already discussed, however, Bitcoin is not the only cryptocurrency solution out there, and there will surely be more to come. We should apply a discount to the theoretical dollar replacement value, but what should that be? Well we have listed four alternatives to Bitcoin above, but there are 100 alternatives listed on coinmarket.com. Let's keep things simple and say that Bitcoin has a 1 in 2 chance being the eventual winner based on the market capitalization of Bitcoin, relative to the total market capitalization of cryptocurrencies that exist today. That would take our hypothetical value down from $86k to $43k, still more than 2.5 times the present value of Bitcoin.

There are of course other risks to Bitcoin. What about other solutions that have yet to present themselves, perhaps even a state sponsored solution? If there were a 20% chance of a state sponsored cryptocurrencies surpassing Bitcoin, then the hypothetical value falls to just twice the current traded value of Bitcoin. That is all before we consider that Bitcoin is far from universally accepted. To gain more mainstream acceptance as a medium of exchange it is needs a much higher level of vendor engagement, and that will be difficult to achieve because no vendor wants to accept a currency mismatch – dollar costs and Bitcoin revenues – without hedging which is not free. Then we have the problem that Bitcoin does not quite function as a store of value. What about the possibility of other countries (not just China) outlawing Bitcoin exchanges? Applying a further discount to these issues, most likely more than 50%, takes us below the market price for Bitcoin.

Essentially, to see value in Bitcoin from here, you would need to see the probability of Bitcoin replacing 50% of the US dollar notes and coins as being greater than 1 in 5. That seems like a stretch to us. It really is all about the price tag, and this one is way too volatile to be anything other than a speculative play. Like all manias, there needs to be a good story, and Bitcoin is no different, the blockchain is here to stay, but to buy into Bitcoin at these levels you'd, "…need shades on your eyes and heels so high….", and to, "…forget about the price tag."