

INVESTMENT THESIS (TRANCHE 2)

MACRO OUTLOOK

In Tranche 1, we discussed the state of the current financial system as a result of government spending in 2020. To view that thesis, click [here](#).

In 2021, governments of the world have continued to spend. Federal Chair Jerome Powell initially said there would be no inflation as a result of government spending. In late 2020, Powell admitted that inflation was taking place but that it was transient, later explaining that “transient” meant that it was short-term inflation but not that the price increases would revert back to their previous levels. In Q3 of 2021, the Fed started issuing warnings that if spending isn’t controlled, inflation may not remain transient.

Despite the Fed’s warnings, there does not appear to be an end in sight. 30-40% of all money ever printed in the United States has been printed since March of 2020. On October 4, 2021, President Joe Biden explained that the debt ceiling needs to be raised in order to pay off the spending promises of previous governments. The concept of needing a higher debt ceiling to allow for greater borrowing today in order to pay off smaller debts of the past has a continuing snowballing effect.

In response, wealthy individuals and companies throughout the world have started to acquire safe-haven assets, causing price inflation in almost every asset class. Early adopters, like Tesla, Paypal, Square, and Microstrategy have started to hold Bitcoin on their balance sheets to protect against the declining dollar. El Salvador made Bitcoin legal tender in an attempt to decouple from the USD. Many of the largest banks in the US have started to offer custodial services for cryptocurrencies to service the 55+ million Americans now using cryptocurrencies.

BITCOIN THESIS

One of the most common statements we hear is “I missed the boat. I wish I had gotten into bitcoin in 2017.” This statement is an analysis of the present price based on a comparison of past prices but it fails to take into account what is happening in the present to help predict the future. If we are still in the early stages of adoption, then it is likely that these same people will one day say that they wish they had gotten into Bitcoin in 2021. So, the question is, where are we in the Bitcoin adoption cycle?

“First they ignore you, then they laugh at you, then they fight you and then you win.”

– Nicholas Klein¹

¹ The actual phrase is more extensive than this and is often misattributed to Mahatma Gandhi. The alternative wording adopted by Arthur Schopenhauer is, “*All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as being self-evident.*”

It is unequivocal that we are in the latter part of the “then they fight you” stage. China has banned Bitcoin again. Countries like India and Nigeria have tried repeatedly to ban Bitcoin, only to realize that it resulted in greater Bitcoin usage than prior to each ban. Both countries have amended their approach to “regulate rather than ban”. The International Monetary Fund and the European Central Bank have tried to wage a marketing war against cryptocurrencies, arguing that “#Crypto poses new challenges to financial stability”.

“In retrospect, it was inevitable.”²

– Elon Musk, Tesla

Many in the world have started to recognize the inevitability of Bitcoin as an asset class and a store of value.

Over the course of the last few months, the United States has resigned itself to the fact that cryptocurrency is here to stay. Federal legislation has been passed allowing tier 1 banks in the US to custody cryptocurrency. Due to high customer demand, banks such as BNY Mellon, JP Morgan, Wells Fargo, Bank of America and others started offering crypto custody services to their high net-worth clients. Gary Gensler, a former Bitcoin professor at the Michigan Institute of Technology, was appointed to be the SEC Chair. He has repeatedly called Bitcoin a technological marvel and has indicated that the SEC has no plans to regulate it.³ Federal Reserve Chair Jerome Powell recently indicated that the Federal Reserve has no interest in trying to ban cryptocurrencies. Tom Emmer, Chair of the National Republican Congressional Committee, has recently emerged as a strong voice in support of cryptocurrencies. Senators Cynthia Lummis, Ron Wyden and Pat Toomey recently held up an infrastructure bill in an attempt to protect unnecessary regulation of cryptocurrencies, which caused Senator Ted Cruz to note that the Senate owes it to the future of America to educate themselves on a technology that is “generating jobs, entrepreneurs who are creating new values, new hedges against inflation, new opportunities, and it is fast moving. It is dynamic.”

So, where does it go from here? The growth curve of any new technology is parabolic. Each new technology goes through an accelerated adoption curve as compared to its predecessors until it reaches critical mass. The internet was adopted at a significantly faster rate than the telephone. Bitcoin is being adopted at a significantly faster rate than any technology before it. The concept at play is a “network effect”. The utility of the network grows exponentially as the number of users on the network grows and therefore adoption rates grow in multiples.

Bitcoin and other cryptocurrencies, however, contain a unique characteristic that makes them different from any predecessor network ever released: Bitcoin holders are compensated directly for adopting the

² Although Musk’s quote is in respect of Tesla’s eventual decision to place \$1B of their reserves into Bitcoin, the statement rings true for the future of Bitcoin adoption.

³ Gary Gensler is a former Bitcoin professor at the Michigan Institute of Technology and has repeatedly stated that Bitcoin is not a security.

network and for recruiting new users, and are rewarded for their early adoption by way of greater compensation than later adopters.

The network effect theory then dovetails into “game theory”, which assumes that rational actors with competing interests will act in a certain way. In this case, the wealthiest rational actors in the world have started to accumulate Bitcoin as a hedge against inflation and, as a result, other wealthy actors are forced to take part in order to protect against the alternative of being wrong. These actors include some of the world’s largest institutions, sovereign funds, ultra-high net-worth individuals, public companies and private companies. This theory played out recently when oil billionaire Kjell Inge Røkke, the second richest man in Norway made a small \$58M USD investment into Bitcoin. A week later, his rival Øystein Stray Spetalen, a Norwegian billionaire that had previously been extremely vocal about banning Bitcoin, made his first investments into Bitcoin and Bitcoin infrastructure, stating that “I can't bear to see that Røkke makes money and not me”.⁴ Similar fear of missing out (FOMO) has been happening at the corporate and state level around the world.⁵

“Bitcoin has already won. The world has yet to realize it.”

- Michael Saylor, Microstrategy

The argument is simple. There are 46 million millionaires in the world and only 21 million bitcoins will ever be produced. This has become a land grab amongst the rich (and the under 30 crowd) while the rest of the world waits expectantly for Bitcoin to fail. Now that Bitcoin holdings can be borrowed against almost instantaneously at interest rates lower than those available in the real estate market (i.e. 1%), the strategy being adopted is similar to that being used by real estate moguls: hold it forever and borrow against it to acquire more. The race to own the scarcest asset in the world has begun but majority of the world hasn’t even gotten out of the starting gate.

One of the common comments about Bitcoin is that it is volatile. Yes, it is currently volatile but it will eventually become less volatile as it approaches and achieves critical mass. Volatility on its own, however, is neither a positive nor a negative. Fiat currencies have not been volatile over time but have trended consistently downward. Gold is a reasonably low volatility asset that has trended upward slowly. Comparatively, the top 5 stocks on the S&P500 (the FAANG stocks) have been highly volatile over the last decade but all their volatility has been to the upside. In 9 of 11 years of its existence, the yearly low for Bitcoin has been higher than the previous year and during its life, it has been the best performing asset in the world.

“(Cryptocurrency has become) too large to ignore”

- Alkesh Shah, Bank of America

⁴ <https://decrypt.co/63065/this-norwegian-billionaire-used-to-hate-bitcoin-now-hes-an-investor>.

⁵ See recent announcements by Brazil and Panama as examples of countries trying to make Bitcoin legal tender. See also the New Zealand Sovereign Wealth Fund and multiple Ivy League university funds (Harvard, Yale, Brown) and other university funds (University of Michigan and Dartmouth) investments into Bitcoin.

So, how early are we? On October 5, 2021, the Bank of America released their first digital assets report titled “Digital Assets Primer: Only the first inning” stating that institutional investors have poured \$17 billion into the cryptocurrency ecosystem and that 221 million people are now trading in the sector as evidence of the steady growth of the sector. According to NORC, a research group out of the University of Chicago, approximately 13% of Americans traded in cryptocurrencies in the last 12 months, as compared to 24% of Americans that traded in the stock market over that same period. Bitcoin still needs to grow by 10X to take over gold, its analog counterpart. Its adoption as a method of payment through the use of the Lightning Network in countries like El Salvador provide evidence that its potential is greater than that of just a store of value. The key conclusion in the Bank of America report, however, was that we are still only in the first inning of the cryptocurrency story.

MINING THESIS

Entering into the mining industry is capital intensive due to the energy consumption of the mining operation. Once the infrastructure is in place for a mining operation, future expenditures relate to the acquisition of additional miners and the capital outlays relating to additional power requirements. The profitability of a mining operation is dependent upon a number of factors, including the price of Bitcoin, the hashpower (i.e. the horsepower of the machines in the operation), miner efficiency (i.e how many watts of power used per unit of hashpower), mining difficulty (i.e. how difficult it is to earn a block reward, which increases as hashpower around the world increases), the amount of block rewards (i.e the reward earned by a miner for successfully confirming a block on the Bitcoin blockchain), and the cost of electricity consumed to mine the block. The upward trajectory of the Bitcoin price is discussed above in *The Bitcoin Thesis*. Hashpower is dependent on the processing power of the equipment itself. Many mining operations have outdated, inefficient machines and therefore the electricity consumption is high in relation to the hashpower of their equipment, resulting in lower profitability. As more miners get involved, the difficulty of mining a block goes up, thereby requiring more hashpower to successfully mine a block. The current block reward is 6.25 Bitcoin per block successfully mined. Block rewards are cut in half every 4 years and the last halving event took place on May 11, 2020, thereby reducing the amount of new Bitcoin available on the market following each halving. The price of Bitcoin has historically responded favorably to such halving events, as the cost of producing a Bitcoin has increased. This price increase in reaction to production cost is known as a stock-to-flow ratio and has been representative of price increases in other commodities as their production has become more difficult.

Technological advancement in terms of mining equipment is not expected to continue to rise at the exponential rate that it has to-date. Further, many current operators have large stocks of S9s (13.5 TH/s), S15s (28 TH/s) and S17s (53 TH/s) in their inventory, which all operate at less than half the hashpower of the S19 Pro and at substantially reduced efficiencies. In other words, many existing mining organizations are saddled with obsolete equipment and therefore will have less profitable operations than new miners.

Taking into account all relevant factors, the current payback period on a S19/S19 Pro at today’s prices and difficulty is under 12 months. The Bitcoin market is highly liquid and therefore selling the Bitcoin rewards earned by the miners is instantaneous and seamless. Consequently, when funds are invested into a

Bitcoin mining operation, the returns on that investment are seen almost instantly (i.e. within weeks) and therefore results in an immediate increase to the EBITDA of the mining business.

MODERN MINING THESIS

Modern Mining is in the process of building out what should be one of the most profitable mining operations in Canada. As mentioned above, one of our advantages is that our 4,500 sq. ft. Medicine Hat facility will be filled with nothing but the latest Antminer units (T19s, S19s, S19j Pros, and S19 Pros) and therefore all of our equipment will be the most efficient equipment on the market. We will utilize smart automation and remote monitoring (i.e. the ability to remotely monitor, configure, and reset any part of the operation) to reduce operational expenses by way of reduced staffing requirements and decreased downtime.

What makes Modern Mining unique, however, is our plan to immerse the miners in tanks filled with dielectric fluid. The use of fluid cooling as compared to air cooling yields many benefits, including increased lifespan of the miner, lower electricity consumption, and the ability to overclock the hardware without risk of overheating or damaging the components. Practically speaking, this means that we can run our miners approximately 30% faster than air-cooled miners without risk of damaging the hardware, which should therefore result in increased profitability.

In our first raise, Modern Mining secured ~\$3.7M of funding, by way of shares, convertible debt, and corporate debt. We have used these funds to acquire all of the infrastructure required to commence operations, including a transformer capable of handling 2MW worth of power, 10,000 litres of dielectric fluid, switchgear, custom made immersion tanks, pumps, etc. We have also acquired 200 miners and we have deployed 160 of these miners in an air-cooled environment. We expect to deploy 40 more miners in November. With our currently deployed 160 miners, we are producing 1 Bitcoin every 10 days (in an air-cooled environment). Once all 200 miners have been deployed, we expect to mine 1 Bitcoin every 8 days. Upon final deployment of these 200 miners in our immersion cooled facility, we expect the rate of production improve to approximately 1 Bitcoin every 6 days or approximately 61 Bitcoins a year. At a projected price of \$50,000 USD an approximate cost of \$7,500 USD per Bitcoin, our fleet of 200 miners will yield approximately \$2.59M USD (\$3.25M CAD) in profits a year.

See our updated [Buildout Strategy for Tranche 2](#) for details relating to the Tranche 2 raise.

