

MODERN MINING INVESTMENT THESIS

The Big Picture

In 2020, the United States printed 50% of all the money printed in its entire history. By December of 2020, over 35% of the money in circulation in the United States was printed in 2020. Many countries in the world have expanded their spending in similar manners. Consequently, the value of the money system in each of these countries has expanded, thereby potentially devaluing the buying power of the currency itself. Evidence of such devaluation shows up in almost all the publicly available data. In addition to Federal Chair Jerome Powell's announcement on July 13, 2021 that the year over year inflation rate had increased to 5.4%, as evidenced by the CPI, the price of almost every asset and commodity in the world has increased significantly as a result of all the spending by governments.

The Bitcoin Thesis

A flight to safe haven assets such as equities, real estate, gold, silver and art has ensued as the wealthy seek to find their way to protect themselves against such monetary inflation. These assets are unique in that the government cannot directly control the inventory of such assets. With such large expansion of the financial system, more dollars (i.e. in the hands of consumers, translates to increased demand) have been created than inventory of limited assets (i.e. supply) over the same period. The result of demand exceeding supply is rising prices. The downside of these assets is that the total inventory of each asset is expanding and the maximum amount of inventory that will be available in the future is unknown. Unlike each of these assets, Bitcoin's maximum inventory (i.e. supply) is fixed at 21 million Bitcoins.¹ As an emerging asset class, demand for Bitcoin has grown exponentially, as represented by the price growth since its inception (approx. 200% per year). Bitcoin adoption has taken place at a rate that is faster than any other technology in history, including the internet, and is still in its early stages of adoption. It is widely cited that Bitcoin today is at the same place in its trajectory as the internet was in 1998.

The 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 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

¹ There are currently about 18 million bitcoin in circulation. The remaining 3 million will be earned by miners as block rewards over the next 100+ years. The reward earned for mining a block are cut in half every 4 years, thereby requiring higher prices for miners to continue to be incentivized to dedicate hashpower to the network.

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.

Taking into account all relevant factors, the current payback period on a S19/S19 Pro at today's prices and difficulty is under 10 months. The Bitcoin market is highly liquid and therefore selling the Bitcoin rewards earned by the miners is instantaneous and seamless. Consequently, unlike other businesses, a mining operation will generally be profitable on the first day of operations.

The Modern Mining Thesis

Modern Mining has secured relatively low price electricity (6.3 cents CAD per kWh) from the City of Medicine Hat and real estate (4,500 sq. ft. at \$8.50/sq. ft. plus operating costs) for a period of 3 years to keep operating costs low. Modern Mining 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. Through our experience and network, we have secured a transformer capable of delivering the 2MW of power required for the initial operations of the corporation and can facilitate the delivery of S19/S19 Pros within weeks. In addition to the above, we are retrofitting our Medicine Hat facility so that our mining operations are immersion cooled. This means that the miners will be immersed in a dielectric fluid (i.e. a non-energy conducting fluid) that is more efficient than an air cooled facility. Immersion cooling allows the equipment to be overclocked without risk of the equipment overheating or getting damaged. As a result, the hashpower of the mining operation will be enhanced by up to 30% of the hashrate that would normally be generated by the same equipment. Immersion cooling should result in reduced electricity costs and increased hashpower, thereby increasing the profitability of the operation.