

20th March 2021

Welcome to our latest edition of Hearing, Seeing and Thinking (HST). In today's note, signs of a bear steepener emerge, high-flying tech stocks begin to wobble and we share some thoughts on inflation given the subject sits firmly in the centre of almost everything we're hearing, seeing and thinking these days. But we begin today with an entire section dedicated to "the Bitcoin" and why a few thousand lines of computer code have investors repeating behaviour reminiscent of the U.S. Cabbage Patch riots that went down in the autumn and winter of 1983.



Source: Twitter.

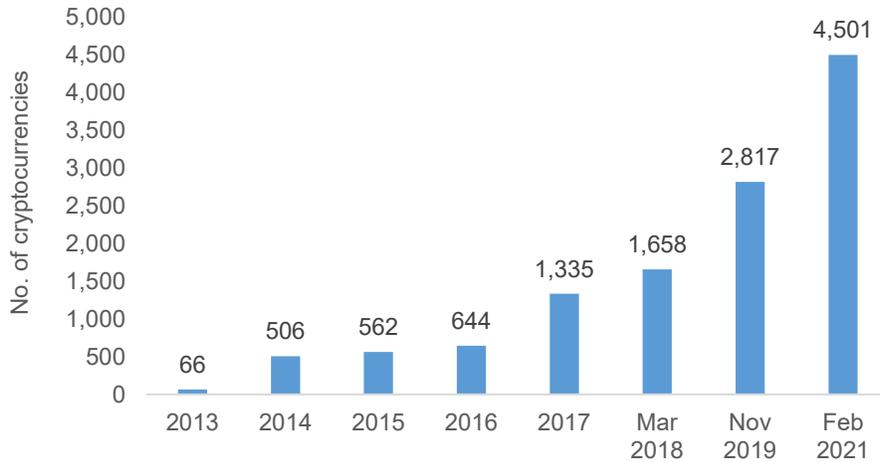
What We're Hearing

The main functions of money are distinguished as: a medium of exchange; a unit of account; a store of value.¹

- There are more than 4,500 cryptocurrencies in existence today but the most recognizable of them all, and the one we hear about frequently, is undoubtedly Bitcoin. Broadly speaking, a cryptocurrency utilises sophisticated cryptography (i.e. safe & secure communication of data) to allow for the creation and distribution of a unique code (i.e. coin) across a vast decentralised system of computer databases, often referred to as a ledger (i.e. blockchain), in a way that no single person or group has control. If still confused, please read on. As we see it, proponents of Bitcoin identify two primary benefits. The technology prevents a coin from being counterfeited (i.e. safe). Coins are created in such a way that they

have a limited and finite supply (i.e. scarce). In other words, it's akin to digital gold. And like gold, Bitcoin is expensive to mine, difficult to value and impractical for everyday economic transactions.

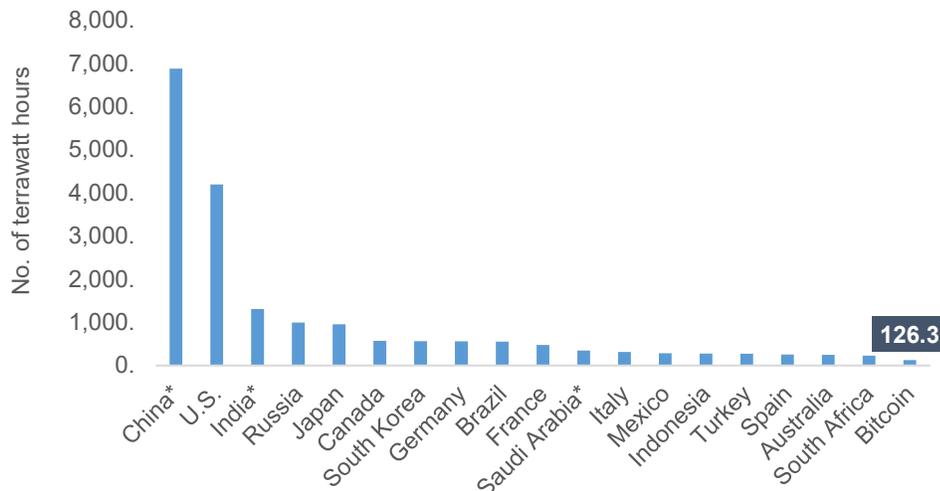
Quantity of cryptocurrencies 2013-2021



Source: Statista, CoinMarketCap. Survey period 2013 to 2021. Data published February 2021.

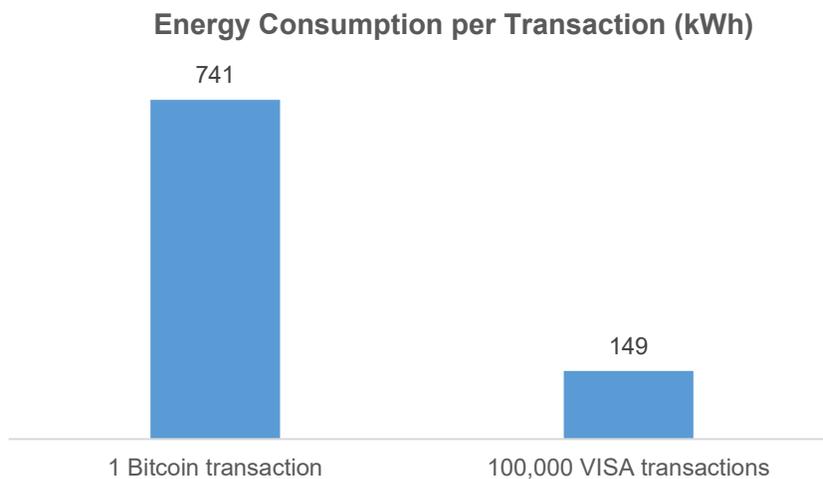
- Successfully verifying transactions, combined with solving for a 64-digit hexadecimal number (a "hash") in order to produce a new Bitcoin (i.e. mining), is a profoundly energy-intensive process. Computers dedicated to the effort devour vast amounts of electricity. The Cambridge Bitcoin Electricity Consumption Index estimates Bitcoin consumes 126.3 TW of power annually² – a figure on par with a medium-sized European country (e.g. Sweden, Norway or the Netherlands). Most of that energy consumption takes place in China where coal remains the primary source of power (62%)³. To complicate matters, Bitcoin's popularity puts upward pressure on its price. Rising prices make mining more attractive. More mining means more power. You get the idea. Moreover, Bitcoin miners are essentially just scratching the surface. It's projected that it will take more than 100 years before the Bitcoin network mines its very last token. It's eerily akin to actual mining with picks and shovels: once the easy ore is extracted, the real dirty work begins.

Electricity consumption worldwide in 2019, by select country (in terrawatt hours)



Source: Statista, IEA. Survey period 2018 and 2019. * Data is for 2018. Data published February 2021.

- In 1972 National BankAmericard Inc. launched BankAmericard Service Exchange, better known as BASE I. By 4 April 1973 the proprietary authorisation system became operational. One month later the system was running twenty-four hours a day. The organisation we now know as Visa was born. The day Visa's pioneering computer system went into effect, the average time it took to approve a card-based payment dropped from over five minutes to around fifty-six seconds. Today, acceptance is virtually instantaneous and Visa's network can handle 65,000+ transactions per second⁴. Alongside its twin sibling, MasterCard, the payment networks are changing the very nature of money by taking control of its most fundamental function: the medium of exchange. As for Bitcoin, experts estimate its maximum processing capacity at somewhere between 3.3 and 7 transactions per second. Limited throughput inherently means limited acceptance. Furthermore, a currency with a single denomination worth "thousands" hardly works wonders for consumer discretionary items that cost less than a Ferrari. Bitcoin also lacks key operating characteristics in the realm of dispute resolution that traditional payment networks provide. And if the environmental argument did not hit home hard enough in the last bullet, we leave you with one more chart on the subject.



Source: Statista. Data from 1 January 2020 to 31 December 2020.

- Here at HST Headquarters we subscribe to the idea that by investing in equities we are buying part ownership of a business. If a business has wonderful economics that are easy to understand but extremely difficult to replicate, then we believe in holding the investment for the long term. As for paying the appropriate price, we also subscribe to a time-tested view on intrinsic value. In short, the value of a business is simply the sum of all the cash it is expected to generate in the future discounted back at the appropriate rate of return. The same process is used with bonds, real estate and other cash-generating assets. Assets that produce no cash (e.g. gold, art or Bitcoin) are difficult to value given their price is primarily a function of supply and demand. In addition to having a long history as a financial asset, gold has economic applications in electronics, medicine and jewellery. Anyone with a soul, who has spent no more than six seconds in front of Vermeer's Girl with a Pearl Earring, knows the infinite value of art. But beyond a limited and finite supply of seventy-seven thousand lines of invisible binary code, the utility of a cryptocurrency like Bitcoin is beyond us. Does our skepticism prevent the price of Bitcoin from rocketing to levels that make its \$55.8k price tag appear firmly grounded on earth? Of course not. Would any owners at that point have a better view of its intrinsic value looking down from above? Of course not. In a sense, Bitcoin is art. It's the art of speculation.



Girl with a Pearl Earring by Johannes Vermeer, c.1665.

What We're Seeing

- The start of last week saw Tesla's stock begin its seemingly inevitable return to earth. Shares were down 29% since the end of January compared to a +3.1% showing for the S&P 500® Index⁵. That **was** the case before the NASDAQ 100 surged 4% last Tuesday in the biggest advance since November. Stocks with ultra-high valuations led that charge, as Tesla, Peloton, Pinduoduo and DocuSign all saw double-digit gains. Despite a sobering start in 2021, this cohort remains emblematic of a growing trend. Put simply, the market is willing to project fantastically far into the future to find the cash that can validate nosebleed valuations. Catherine D. Wood, Founder and CIO, ARK Invest, sums up the zeitgeist best: "Disruptive innovation is often not priced correctly by traditional investment strategies because people may not understand how big the ultimate opportunities are going to be. They aren't sizing the opportunity and they aren't analyzing the disruption."⁶ Many market participants apparently share this vision. ARK's actively managed ETFs **had** absorbed billions heading into the month. Like Tesla, the tide seems to be turning, despite last Tuesday's rally. Investors remain hopeful, though it's been said that hope is a pleasant acquaintance, but an unsafe friend.

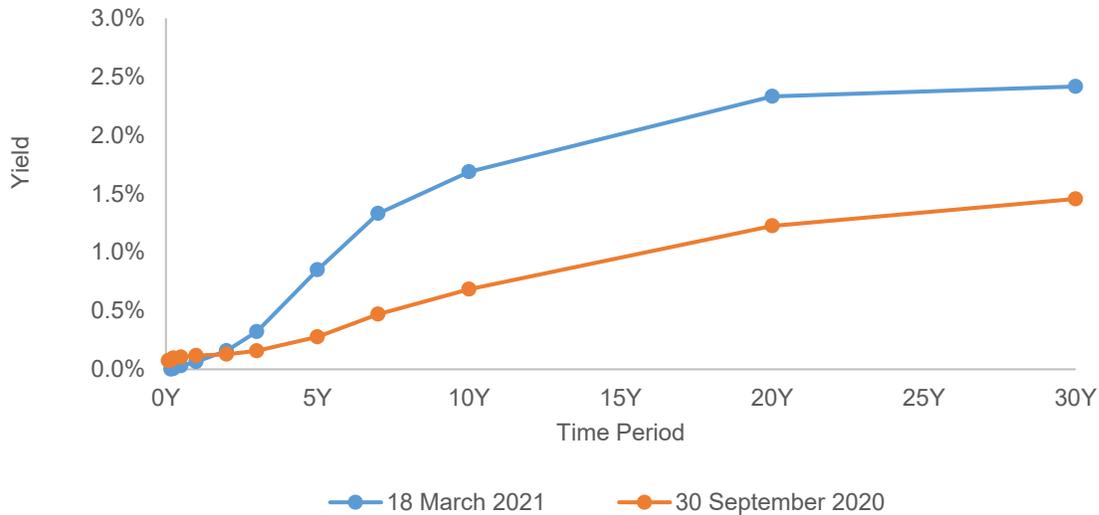
ARK ETFs - Fund Flows and Average Performance



Source: Bloomberg. Data from 31 December 2019 to 18 March 2021.

- Have you ever lost sleep or broken into a nervous sweat when confronted with the prospect of facing a bear steepener? My better half initially assumed a couple of pints put me on the wrong side of a school-boy wager that involved fog, freestyle moguls and something akin to a blindfold on the appropriately named “Know You Don’t” piste at the base of Deer Valley mountain. In fact, a bear steepener is simply bond-trader jargon for a situation where long-term interest rates rise more quickly than short-term rates. Expectations for stronger economic growth alongside higher inflation are the most common reasons for the shift. The chart below illustrates that longer rates have been rising pretty consistently since 30 September 2020, prompting many investors to ask: where will it all end given the gravitational pull higher rates have on asset prices? If history is a guide, it’s anyone’s guess. It’s impossible to know what the Fed is willing to tolerate. For now, Fed officials have waved off the rise in longer-term rates as a welcome sign of economic optimism. But their tune could change if financial markets begin to shudder or the economic recovery falls short. A six handle on the U.S. unemployment rate may provide cover for the Fed to step in and control the back end of the curve. Therefore, the question on everyone’s mind is whether inflationary pressures are a temporary and transitory phenomenon, or is something more sinister brewing. As for what we think, we move on to the next section.

**Beware of the Bear Steepener
U.S. Treasury Yield Curve**



Source: Bloomberg. Data as of 18 March 2021 and 30 September 2020.

What We're Thinking

- Greek mythology depicts opposing dangers as navigating Scylla and Charybdis, maritime hazards on opposite sides of the Strait of Messina between Sicily and Calabria. Passing sailors were confronted with choosing between Scylla, a rock shoal off the coast of Italy, and Charybdis, a whirlpool off the coast of Sicily. Successfully avoiding one meant moving too close to the other. Dropping anchor was not an option. Investors today fear they too are confronted between a proverbial rock (i.e. inflation) and hard place (i.e. deflation). The ship's crew seems evenly divided, like two warring tribes hell bent on convincing the other side to see it their way.



Political cartoon by James Gillray: *Britannia between Scylla and Charybdis* (1793).

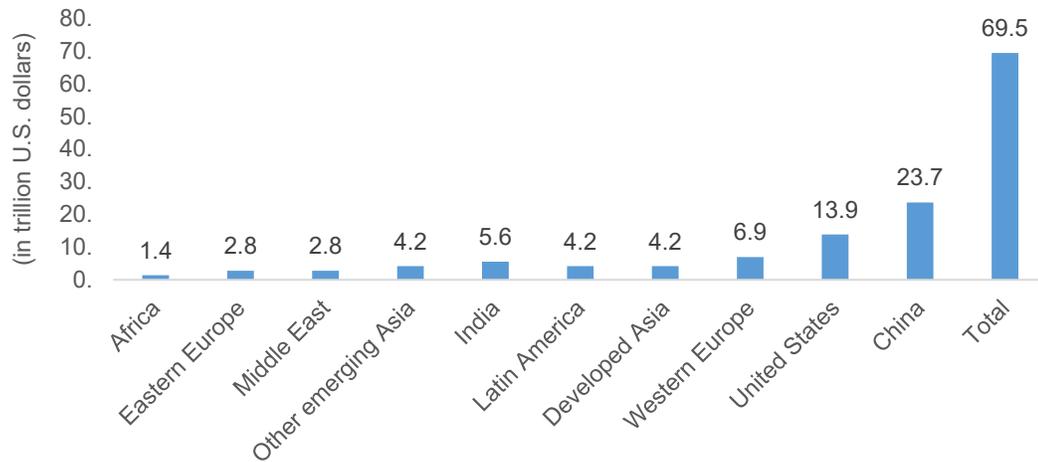
- Tribe inflation correctly points to a combination of seemingly endless fiscal stimulus and relatively inexpensive money, wage pressure in low-cost Asian manufacturing centres and supply-side constraints resulting from COVID-induced lockdowns. Their camp argues for gold, commodities and natural resources as a hedge against a sustained rise in prices—in turn driving a fall in the purchasing power of money. In their worldview, government bonds get destroyed. On the other hand, evidence presented by tribe deflation seems just as sound. Those in this camp allude to elevated levels of debt and persistently high unemployment alongside productivity gains that outpace any pressure on wages. They correctly conclude that a reduction of the general level of prices would wreak havoc on the prices for gold and other commodities. In this scenario, one of the core assets investors want to own are longer-dated government bonds.



Source: YouTube screenshot, *Survivor* TV Show.

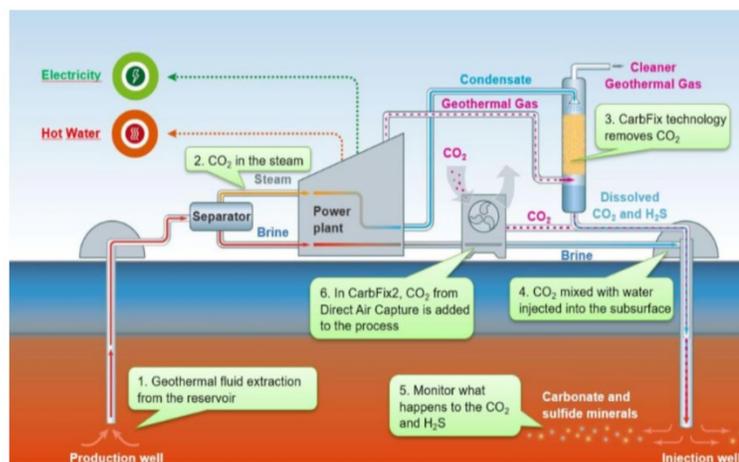
- We understand that reasonable minds can make sensible arguments for either scenario. We do not pretend to know or seek to predict the path forward for prices. What we seek to achieve are portfolios positioned to perform reasonably well in either scenario, a proverbial mid-channel passage that helps protect us from the dangers on either side. Therefore, we've been actively allocating to real assets with stable demand, little-to-moderate competition and the ability to raise prices. In addition to income-producing real estate, we've added exposure to long-life, mission-critical infrastructure which facilitate the movement and storage of energy, water, freight, passengers and data, given these assets typically have a lower risk of capital loss and inflation-linked returns. We believe these assets can deliver a 7%-10% annualised return through a combination of above-average income and modest capital appreciation. In a low-rate world where our forward-return expectations for equities are meaningfully lower over the next 10 years compared to the previous 10, these assets should serve investors well irrespective of where prices go from here.

**Projected Infrastructure needs from 2017-2035
by region or country**



Source: Statista; McKinsey; IHS Global Insight; ITF; GWI; Various sources (National Statistics); United Nations. Survey period 2016. Data published in November 2019.

- For those few that have made it thus far, we like to end this note on an upbeat ESG development. Bloomberg recently highlighted an Icelandic startup used by Bill Gates that is turning carbon dioxide into stone, allowing the greenhouse gas to be stored forever instead of escaping into the atmosphere. Carbfix captures and dissolves CO₂ in water, then injects it into the ground where it transforms into rock in less than two years. The tech works in two ways: With carbon capture, trapping gas before it escapes, and carbon removal, sucking it from the air around us. Bill Gates also released his latest book, *How to Avoid a Climate Disaster*, in which he estimates the cost of removing a tonne of carbon from the air is at least \$200, with the prospects of reducing that figure by half if the technology reaches reasonable expectations. Either way, it's not a panacea, but it's a start.



Source: Carbfix.

Until next time,

Christopher 'Kif' Hancock
Head of International Investment Solutions Group

Text Sources: ¹ [Wikipedia](#). ² [Cambridge Bitcoin Electricity Consumption Index](#), Cambridge Centre for Alternative Finance, University of Cambridge Judge Business School. ³ Based on IEA data from IEA World Energy Balances 2020, IEA 2020, www.iea.org/statistics, All rights reserved; as modified by Brown Advisory. ⁴ [Visa](#), data as of August 2017. ⁵ Bloomberg, data as of 8 March 2021. ⁶ [YouTube](#): Steve Forbes Interviews Catherine Wood, CEO at ARK Invest.

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