GRAYSCALE®

DIGITAL CURRENCY INVESTOR TOOLKIT

INVESTING IN BITCOIN

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GRAYSCALE

Introduction

The Age of Digital Currencies has arrived. Through a combination of computer science, cryptography, economics and network theory, an entirely new and compelling asset class has emerged. As digital currencies transform our global financial infrastructure and challenge Modern Monetary Theory, we believe that they represent one of the most exciting investment opportunities of the 21st century.

Bitcoin[1] continues to gain broader acceptance from some of the world's largest institutional investors, asset managers and public companies which have embraced and advocated Bitcoin's value proposition as an inflationary hedge and superior store of value. The adoption of digital currencies and advancement into a more digital world was accelerated this past year by the pandemic and growing concerns over inflation, currency debasement and loss of purchasing power resulting from massive unprecedented money printing by central banks.

With growing mainstream acceptance of digital currencies, investors are seeking to understand and evaluate this emergent asset class. Grayscale Investments, the world's largest digital currency asset manager, is committed to helping financial advisors better understand, consider and determine how digital currencies can best fit into their client's portfolios and investment strategies.

Our goal is to provide straightforward and objective educational resources focused on the most successful and widely circulated digital currency – Bitcoin – in one place, so that you are better equipped to address your clients' needs.[2]

1. When referring to the Bitcoin network, blockchain protocol and system as a whole, we will use "Bitcoin," with an uppercase "B." When referring to the network's unit of account, BTC, we will use "bitcoin(s)," with a lowercase "b."
2. While this Toolkit is focused on investing in Bitcoin, Grayscale resources on other digital currencies can be accessed at https://grayscale.com/digital-currency-basics/

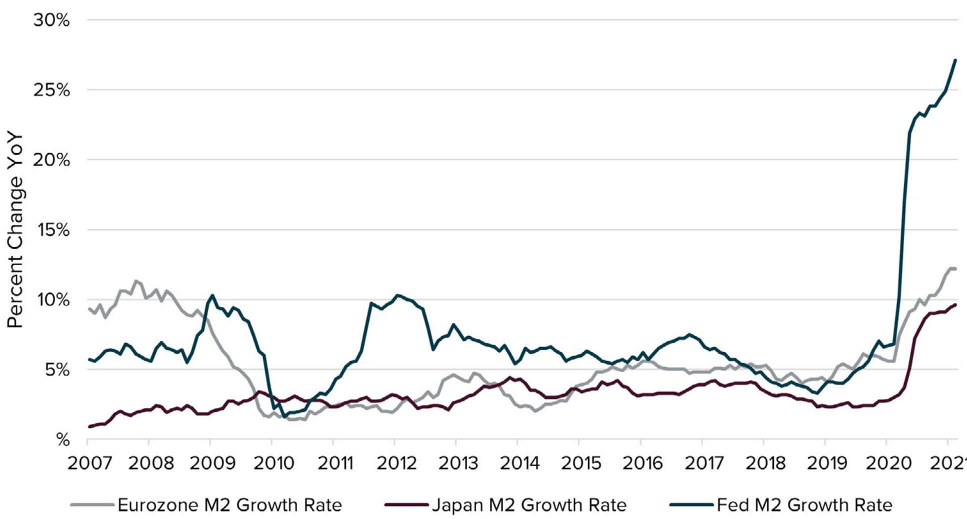
Table of Contents

1. Current Monetary Environment

Against the backdrop of the Covid-19 pandemic, the worst economic crisis since the Great Depression and unprecedented monetary and fiscal policy responses by governments and central banks, Bitcoin experienced explosive growth. This strong demand for Bitcoin is attributable in large part to Investors embracing Bitcoin's anti-inflationary and non-correlated asset qualities as they seek to protect their assets against a seemingly ever-expanding monetary supply. The cranking up of money printing presses and the flooding of markets with newly printed fiat stands in stark contrast to Bitcoin's verifiable scarcity and perfect inelasticity which is increasingly attractive to Investors.

Concerns have been growing over the debasement of fiat currencies as G3 central banks' (ECB, Fed, and BoJ) collective total assets rose by approximately $8 trillion in 2020, a level of growth which took almost eight years to achieve following the global financial crisis.[3] In the United States, between February 2020 and February 2021, the quantity of money in the U.S. economy, measured by M2, increased by a shocking $4.2 trillion. This increase of over 27% represents the largest YoY percentage increase since World War II.

FIGURE 1: **M2 MONEY SUPPLY GROWTH Y-O-Y**[4]



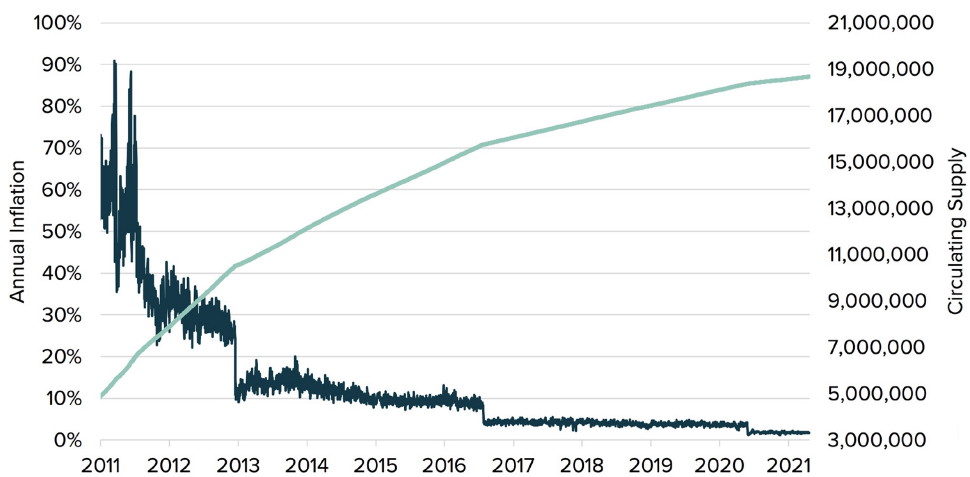
3. https://www.wsj.com/articles/how-the-2020-qe-boom-might-trip-up-central-bankers-11609237796
4. Source: Grayscale, Bloomberg; April 15, 2021

2. Bitcoin's Disinflationary Qualities

Bitcoin is immune from fiscal and monetary policy and its disinflationary qualities were highlighted this past year as Bitcoin underwent its third scheduled "halving," which resulted in a 50% reduction in the rate of newly mined bitcoins. The geometrically decreasing flow of block rewards, which occurs every four years, ensures that bitcoin does not experience inflation and suggests that it will become more valuable relative to the seemingly ever-expanding government backed fiat currencies. There will only ever be 21 million bitcoin.

Figure 2 below demonstrates the decreasing issuance of bitcoin as a result of the halving event every four years.

FIGURE 2: **MINING DISTRIBUTION & CIRCULATING SUPPLY**[5]



> **"Sound money is money that gains in value slightly over time, meaning that holding onto it is likely to offer an increase in purchasing power."**
>
> Dr. Saifedean Ammous, author of *The Bitcoin Standard*

5. Source: Grayscale, Coin Metrics, April 15, 2021

3. Bitcoin's Increasing Adoption

We have seen an incredible evolution of Bitcoin over the last 12 years. Since its inception in 2009, Bitcoin has grown from an obscure nine-page white paper, entitled "Bitcoin: A Peer-to-Peer Electronic Cash System," into a widely accepted decentralized, trustless digital monetary network. Similarly to how the computer and internet radically transformed the ways in which we store, process, and exchange information, Bitcoin is radically transforming the ways in which we are able to store, process and exchange monetary value.

Bitcoin continues to gain credibility as a safe-haven store of value and as a hedge against inflation and currency debasement. Current demand is being driven not only by retail investors and high net worth individuals, but increasingly by large institutional investors and organizations. Some of the world's most respected money managers including Paul Tudor Jones, Stanley Druckenmiller and Bill Miller have gone long Bitcoin. Meanwhile, public tech companies like Tesla (TSLA), MicroStrategy (MSTR) and Square (SQ) have acquired bitcoin to hold as treasury reserve assets on their corporate balance sheets and insurance giant MassMutual recently purchased bitcoin for its general investment fund. The growth of Square's Cash App and the launch of PayPal's cryptocurrency trading has opened the door to hundreds of millions of new bitcoin buyers, many of whom are millennials receptive to technological advancements and digital currencies.

Not only is Bitcoin proving to be one of the strongest protections against runaway global monetary expansion and associated currency debasement, but it also provides a bullish bet on a major revolutionary technology shift and an entirely new ecosystem.

Bitcoin has defied expectations, growing from a whitepaper into the dominant leader of an entirely new asset class and achieving a $1 trillion market cap in a shorter timeframe than even the most successful tech companies. While it took Microsoft 44 years, Apple 42 years, Amazon 24 years and Google 21 years to achieve a thirteen-figure market value – it took Bitcoin just 12 years to reach that lofty milestone.

We believe that Bitcoin is here to stay and its store of value and anti-inflationary qualities have earned it an allocation in a well-diversified investment portfolio. Bitcoin offers one of the most compelling risk-reward profiles among assets and investors should consider the real opportunity cost associated with anything but a non-zero portfolio allocation.

4. Bitcoin's Fundamentals

Bitcoin possesses a superior composition of "good money" qualities: it is perfectly scarce, independent of central authority, verifiable, durable, portable, immutable, divisible and fungible.

Bitcoin Is Perfectly Scarce
There will only ever be 21 million bitcoins. One of Bitcoin's key features is its predetermined digital scarcity. This fixed supply was hard coded into the protocol when it was created and cannot be changed. To date, about 18.6 million bitcoins have been created,[6] approximately 89% of all bitcoins that will ever exist, with the remaining 2.4 million bitcoins to be mined through the year 2140.

Bitcoin Is Independent
One critical difference between Bitcoin and other asset classes is that there is no central authority that governs Bitcoin's monetary policy or global distribution. Changing political climates do not impact how much bitcoin is created daily. The ability to send and receive bitcoin cannot be controlled by any government.

Bitcoin is Verifiable
Bitcoin can be verified with mathematical certainty on the Bitcoin blockchain, in real-time, from anywhere in the world. Using cryptographic signatures, the owner of a bitcoin can publicly prove ownership.

Bitcoin is Durable
Bitcoin resides on an open-source network maintained by a global base of users. The open-source nature of the Bitcoin protocol has made the network incredibly durable to threats, eliminating single points of failure and allowing for continuous adaptation and improvement.

Bitcoin is Portable
Because Bitcoin is a digital currency, it can be stored easily on any digital medium. Whether via computer, smartphone, or even a simple mobile device, connectivity to the internet is all that is required to send bitcoin quickly and securely, to and from anywhere in the world, at any time, in any amount, with little or no transaction costs, and with transparent and verifiable transaction records.

Bitcoin is Immutable
Proof-of-Work makes it prohibitively expensive for anyone to attempt to rewrite or undo a Bitcoin transaction, thus making transactions effectively immutable. Once a block has been recorded those transactions cannot be reversed.

Bitcoin is Divisible
A bitcoin is displayed to the eighth decimal place, creating one hundred million units within each bitcoin. The smallest unit, a "satoshi," represents 0.00000001 of a single bitcoin and is the smallest fraction of a bitcoin that can be transacted.

Bitcoin is Fungible
One bitcoin has exactly the same value as any other bitcoin on the network.

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6. Note that the actual number of bitcoins available will always be less than the number created, because some bitcoins are irretrievable as users have lost private keys and the electronic mediums on which their bitcoin are stored.

5. Bitcoin's Mechanics

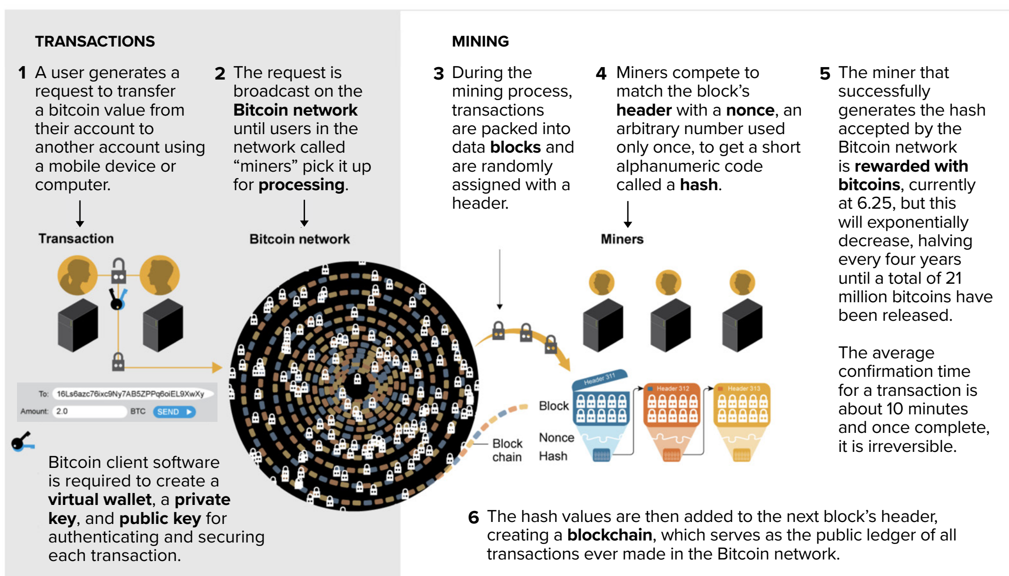
Bitcoin's origin begins with the circulation of a nine-page white paper[7] by the pseudonymous Satoshi Nakamoto to a small cryptography mailing list in October 2008. In it, Satoshi proposed a solution to a long-standing digital double-spending problem, known as the Byzantine Generals Problem. When the Bitcoin network launched in January 2009, for the first time in history, it was possible for value to be quickly and securely transferred across great distances without the need for a trusted third party.

Bitcoin is an open-source digital monetary network that allows users to utilize blockchain technology and encryption to transfer value to other participants on the network, without the need for a central administrator or authority, by relying on a global network of peers to enforce its rules. Transaction validators, known as "miners," compete to solve cryptographic problems. The miner who first solves a problem gets to update and verify a new block of data on the blockchain, and in return, receives a block reward consisting of transaction fees and newly mined bitcoins. On average, a new block of data is added to the blockchain every 10 minutes.[8]

Every 210,000 blocks, about every four years, the block reward undergoes a halving and decreases by 50%. These halvings will continue until the total number of mined bitcoin reaches the built-in supply cap of 21 million around the year 2140. After reaching this cap, no new bitcoins will ever be produced. In May 2020 Bitcoin underwent its third halving, which reduced the block reward from 12.5 bitcoins to 6.25 bitcoins per block. The fourth halving, in 2024, will reduce the block reward to 3.125 bitcoins.

FIGURE 3: **THE BITCOIN ECONOMY**[9]

Bitcoin is a digital currency that enables payment in a decentralized peer-to peer (P2P) network that is powered and approved by the consensus of its users. There is no central authority or middleman that controls it.



7. Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," White Paper, Bitcoin.org (31 Oct. 2008). https://Bitcoin.org/bitcoin.pdf
8. The difficulty adjustment is one of the crowning achievements by Satoshi; it essentially enforces a fixed issuance schedule.
9. Adapted from Bitcoin.org; Bitcoin Ladder; Reuters

6. Mining and Proof-of-Work

The Bitcoin network requires the massive computational processing power of thousands of independently working miners to verify and validate transactions. These miners compete for the opportunity to add new blocks of transactions to the Bitcoin blockchain in return for newly created bitcoins and transaction fees. This competition involves solving hash functions, which are mathematical equations (requiring quadrillions of hashing operations per second across the entire Bitcoin network), that can only be solved through a trial and error process. Once solved, the solution can be easily verified. This competitive process, known as Proof-of-Work, protects the network's ledger of transactions from manipulation by imposing a prohibitively high cost in the form of the computing power required to solve hash functions.

7. Mining Difficulty Adjustment

The difficulty adjustment is one of Satoshi's greatest achievements as it fundamentally enforces a fixed issuance schedule. The Bitcoin protocol automatically increases (or decreases) the difficulty of mining every 2,016 blocks (roughly every two weeks) so that the timing of transaction verifications and the creation of new bitcoins does not accelerate (or decelerate) beyond the preset target of 10 minutes. As Satoshi explained, "[t]o compensate for increasing hardware speed and varying interest in running nodes over time, the proof-of-work difficulty is determined by a moving average targeting an average number of blocks per hour. If they are generated too fast, the difficulty increases."[10]

8. Bitcoin is Digital Gold

Bitcoin is viewed by many as a new and improved form of gold, a "Digital Gold," that is better suited to the modern digital age. In many ways Bitcoin is actually better at being gold than gold – in the sense that it is more scarce, more salable and far easier to transport.

For thousands of years, gold has held the pre-eminent position as the most widely recognized and sustainable store of value in the world. Countless nations and currencies have risen and fallen, but throughout recorded history, gold has remained a valued median of exchange as it represents the ultimate store of value due to its scarcity and good money qualities. The same properties that make gold an effective store of value and have afforded it a +$12 trillion valuation are also present in Bitcoin. This suggests that Bitcoin's +$1 trillion valuation should continue to rise.

While physical gold historically played a crucial role in global trade and local economies, the world we inhabit today is becoming increasingly digital. As our money and payment systems evolve, Bitcoin looks to displace gold because it exhibits some

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10. Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," White Paper, Bitcoin.org (31 Oct. 2008). https://Bitcoin.org/bitcoin.pdf

clear advantages over physical gold. While physical gold remains difficult and costly to transport and store, bitcoin's digital transferability makes it far easier to transport and store. Bitcoin can be sent across physical borders at the speed of information 24 hours/day, 365 days/year.

Although recognized as a scarce asset, the total amount of unmined gold is unknown. At present, new gold production has a low annual supply rate of 1-2%.[11] When the price of gold increases significantly, production of gold tends to rise thereby increasing the supply and exerting downward pressure on its value.

Bitcoin is the first store of value in history in which its supply is completely unaffected by an increase in demand. Bitcoin is perfectly inelastic. Its supply cap of 21 million is hard coded into the protocol – no matter how high the value or level of demand rises, the supply of bitcoin remains consistent. With each halving, Bitcoin's supply growth is cut by 50%. Bitcoin's third halving in May 2020 resulted in the annual issuance rate dropping to below 2%. The fourth halving in 2024 will result in Bitcoin's annual issuance rate dropping below 1%, bringing it below gold's current supply growth.

9. Great Wealth Transfer to Millennials

In what is projected to be the greatest wealth transfer in modern history, an estimated $68 trillion in wealth will be handed down from the baby boomer generation to the millennial generation over the course of the next several decades. By 2030, it is estimated that millennials will hold five times as much wealth as they do today.

Recent surveys of millennials have indicated that this digitally native generation exhibits an openness towards investing in Bitcoin and other digital currencies as part of their portfolio strategy. A November 2019 Millennials and the Future of Money Report by Edelman found that 63% of the millennial "crypto users" believe that crypto is a "better investment than gold in a volatile economy."[12] A survey conducted by financial advisory DeVere Group in December 2020 echoed that sentiment reflecting that 66% of its +700 millennial clients, born between 1980 and 1996, view Bitcoin as a better safe-haven asset than gold.[13]

Charles Schwab released an SDBA Indicators Report which illustrated that millennials allocated more to Grayscale Bitcoin Trust (1.84%) than to some of the largest and most well-known public companies, including Walt Disney (1.68%), Netflix (1.58%), Microsoft (1.53%), and Alibaba (1.39%).[14] Schwab's data came from a total of 142,000 Schwab retirement plan participants with balances between $5,000 and $10 million.[15]

11. In 2005, some 2,470 metric tons of gold was produced worldwide, with gold production increasing steadily to an estimated 3,200 metric tons in 2019. Statista, "Global production of gold mines 2005 to 2020," M. Garside, March 19, 2021. https://www.statista.com/statistics/238414/global-gold-production-since-2005/ As technologies for the extraction of gold advance or asteroid mining becomes reality, the supply of gold could rise dramatically.
12. https://www.edelman.com/sites/g/files/aatuss191/files/2019-11/2019%20Edelman%20Millennials%20and%20the%20Future%20of%20Money%20Report.pdf
13. https://www.devere-group.com/news/Two-thirds-of-millennials-prefer-Bitcoin-to-gold-as-safe-haven-survey%20
14. https://www.bloomberg.com/press-releases/2019-12-04/schwab-report-self-directed-401-k-balances-hold-steady-millennials-allocate-more-to-etfs-and-cash-than-gen-x-boomers
15. Ibid.

FIGURE 4: **TOP HOLDINGS AS PERCENTAGE OF ASSETS HELD IN CHARLES SCHWAB**

MILLENIALS		GEN X		BABY BOOMERS	
Amazon (AMZN)	7.87%	Apple (AAPL)	10.52%	Apple (AAPL)	9.19%
Apple (AAPL)	6.18%	Amazon (AMZN)	7.16%	Amazon (AMZN)	5.32%
Tesla (TSLA)	3.22%	Berkshire Hathaway (BRK)	2.37%	Berkshire Hathaway (BRK)	2.75%
Facebook (FB)	3.03%	Facebook (FB)	2.26%	Microsoft (MSFT)	2.69%
Grayscale Bitcoin Trust (GBTC)	1.84%	Microsoft (MSFT)	2.16%	Facebook (FB)	1.43%
Berkshire Hathaway (BRK)	1.73%	Tesla (TSLA)	1.45%	Visa (V)	1.25%
Walt Disney (DIS)	1.68%	Alphabet (GOOG)	1.30%	Alphabet (GOOG)	1.23%
Netflix (NFLX)	1.58%	Netflix (NFLX)	1.29%	AT&T (T)	1.17%
Microsoft (MSFT)	1.53%	Alibaba (BABA)	1.23%	Boeing (BA)	1.08%
Alibaba (BABA)	1.39%	Visa (V)	1.23%	Alibaba (BABA)	0.98%

10. Societal Benefits for Individuals in Developing Countries

Bitcoin's borderless accessibility offers a heightened level of financial inclusion by providing savings and investment opportunities to individuals who are desperate to escape the volatile currency fluctuations and disastrous inflationary monetary policies of their governments. As Bitcoin is permissionless, it provides these individuals with the ability to buy, sell, store, move or transfer ownership instantly without the need to obtain approval from any authority.

In developing countries such as Nigeria, Venezuela, Argentina, Turkey, Lebanon, Iran and Cuba, millions of individuals, both banked and unbanked, have been able to mitigate the impact of inflation and the erosion of purchasing power of their local currencies by utilizing Bitcoin, a digital monetary network that has a far better track record as a store of value and hedge against inflation.

11. Regulatory Clarity Paves the Way

In the United States, key regulatory developments have provided clarity that has enabled institutional investors to get more comfortable with investing in the digital currency space. Bitcoin has been recognized and addressed by nearly every applicable regulatory authority in the U.S. dating as far back as 2013. Bitcoin is classified as a commodity by the Commodity Futures Trading Commission (CFTC),[16] a non-security by the Securities and Exchange Commission,[17] property by the Internal Revenue Service,[18] and money by Treasury's FinCEN.[19] The U.S. government has even auctioned off 185,230.75 bitcoins worth over $10.6 billion (at current market value) to the public since 2014 – it would be difficult to imagine that they would then circle back to ban it.[20]

16. https://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-6
17. https://www.sec.gov/news/speech/speech-hinman-061418
18. https://www.irs.gov/pub/irs-drop/n-14-21.pdf
19. https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf
20. https://jlopp.github.io/us-marshals-bitcoin-auctions/

Guidance on Bitcoin and digital currencies was further provided by the Office of the Comptroller of the Currency (OCC), an independent bureau within the U.S. Department of the Treasury. In July 2020, the OCC authorized regulated banks to custody digital currencies[21] and in October 2020, the OCC authorized regulated banks to hold stablecoin[22] reserves for customers.[23] Then in January 2021, the OCC gave approval for regulated banks to run blockchain nodes and use stablecoins to conduct payments.[24] The OCC also approved the U.S.'s first national cryptocurrency bank charter advising that "the national bank charters provided under the National Bank Act are broad and flexible enough to accommodate evolving approaches to financial services in the 21st century."[25]

> **"Nobody's going to ban Bitcoin."**
>
> Brian Brooks, US Acting Comptroller of the Currency, Dec. 4, 2020

12. Cryptocurrency-Related Crime at All-Time Low

In its early years, Bitcoin unfortunately suffered reputational damage due to the exploitation by bad actors who utilized the network for nefarious purposes. Fortunately, cryptocurrency-related crime has fallen significantly since then and represents only a fraction of overall cryptocurrency transactions today. According to Chainalysis 2021 Crypto Crime Report, only 2% of all cryptocurrency transaction volume was linked to illicit activity in 2019 and by 2020 that figure had declined to just 0.3%.[26]

As the Bitcoin blockchain is transparent and immutable, every transaction is traceable and, in reality, digital currencies make a poor choice for nefarious activities. Blockchain analytics firms have developed specialized blockchain tracing techniques and methodologies for identifying sources and real-world identities. Physical cash is therefore a far better medium for illicit activity than a transparent blockchain.

According to a 2020 "Follow the Money" Report by the Society for Worldwide Interbank Financial Telecommunication (SWIFT), "cases of laundering through cryptocurrencies remain relatively small compared to the volumes of cash laundered through traditional methods."[27] Indeed, as former Deputy Assistant Secretary for the Treasury's Office of Terrorist Financing and Financial Crimes, Jennifer Fowler, testified in a Senate Judiciary Committee Hearing (2017), "although virtual currencies are used for illicit transactions, the volume is small compared to the volume of illicit activity through traditional financial services."

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21. Office of the Comptroller of the Currency Interpretive Letter #1170.
https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2020/int1170.pdf
22. A stablecoin is a type of digital currency with its value tied to an outside asset, such as USD or gold, to stabilize the price.
23. Office of the Comptroller of the Currency Interpretive Letter #1172.
https://www.occ.gov/topics/charters-and-licensing/interpretations-and-actions/2020/int1172.pdf
24. Office of the Comptroller of the Currency Interpretive Letter # 1174.
https://www.occ.gov/news-issuances/news-releases/2021/nr-occ-2021-2a.pdf
25. https://www.occ.treas.gov/news-issuances/news-releases/2021/nr-occ-2021-6.html
26. Chainalysis, The 2021 Crypto Crime Report, Feb. 16, 2021.
https://go.chainalysis.com/rs/503-FAP-074/images/Chainalysis-Crypto-Crime-2021.pdf
27. "Follow the Money," https://www.swift.com/sites/default/files/files/swift_bae_report_Follow-The%20Money.pdf

13. Is Bitcoin Worth the Energy

It is a fact that Bitcoin mining is highly energy intensive.[28] The Bitcoin network uses as much energy as a small country. Annual consumption of energy estimates range from around 79.6 terawatt-hours, according to Digiconomist,[29] to 127.7 terawatt-hours according to the Cambridge Center for Alternative Finance.[30]

One important question to address is whether the value derived from Bitcoin justifies its energy consumption. A trillion dollars in market cap suggests that it does. The Bitcoin network has also facilitated nearly $13 trillion worth of transactions throughout its history and over $4 trillion in the last year alone.

The value derived from the most secure, decentralized and censorship-resistant digital monetary network in the world is immense and, as defended by advocates, well worth the energy consumed to maintain it. Bitcoin is providing the world with a sound digital monetary good in a digital age. Proponents take the position that if bitcoin miners are willing to pay for the electricity required to run the hashing algorithms that produce bitcoin, then they should be entitled to do so.

Another important question to address is what are the sources of the energy? Due to the economics and highly competitive nature of the bitcoin mining industry, bitcoin miners tend to seek out the most economical energy sources, which are increasingly coming from renewables. According to Cambridge's 3RD Global Cryptoasset Benchmarking Study, 76% of Bitcoin miners use renewable energy sources as part of their energy mix.[31] The Cambridge Study found that of the total energy consumed by Bitcoin mining globally, 39% comes from renewable energy sources.[32] In comparison to other global industries, this represents one of the highest percentages of renewable penetration.

Additionally, a significant portion of the energy consumed by the Bitcoin network is derived from stranded and wasted energy sources. Of all the energy currently being produced in the US, it is estimated that only 32.5% is actually being consumed, with more than 67% being wasted.[33] Bitcoin mining has been able to convert some of this unutilized energy into something useful that has monetary value. For example, in North Dakota and Texas, bitcoin miners have been working with gas companies to utilize stranded and wasted gas to power their bitcoin mining.

28. While most industries and sectors are opaque about their energy consumption, Bitcoin is not. The Bitcoin network documents its energy use and is extremely transparent, which makes Bitcoin an easy target. It is almost impossible to calculate, for example, how much energy the banking industry or the U.S. military uses.
29. https://digiconomist.net/bitcoin-energy-consumption/
30. https://cbeci.org/
31. University of Cambridge's 3RD Global Cryptoasset Benchmarking Study, pp. 26-28 (2020).
32. Ibid.
33. https://flowcharts.llnl.gov/commodities/energy

As Bitcoin miners are geographically agnostic and mining facilities can be located anywhere, Bitcoin can monetize isolated energy sources in remote areas of the world, wherever there is cheap and abundant energy. Bitcoin mining can be utilized to create economic value in certain regions where jobs and industry are scarce.

Bitcoin could ultimately become a huge catalyst for innovation in the development of renewable energy technology and maximization of resources. Developers of wind farms, hydro dam generators, nuclear plants, and others are looking to develop revenue-enhancement strategies by maximizing the energy they produce.

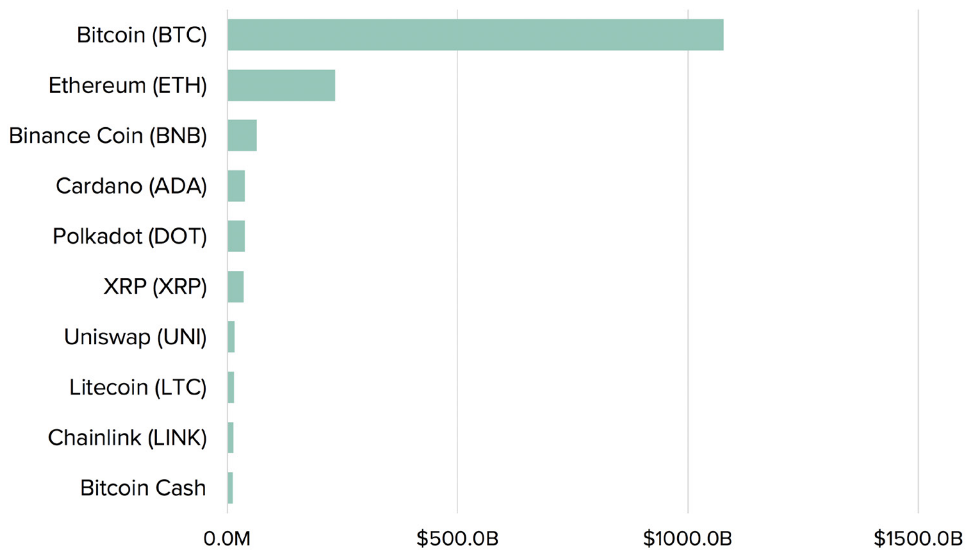
> **"In the long-game, there may be no greater, more important use of energy than that which is deployed to secure the integrity of a monetary network and constructively, in this case, the bitcoin network."**
>
> Parker Lewis, Unchained Capital

14. Bitcoin is Past the Point of Being Overtaken

Bitcoin is the first and by far the largest and most well-known digital currency. Despite the arrival of thousands of "competitor" digital currencies, Bitcoin has not been displaced. As an open-source software protocol, it has always been possible to copy Bitcoin's software and thousands of digital currencies have tried to "improve" upon a perceived "deficiency" or "limitation" of Bitcoin. None of them, however, have been able to replicate Bitcoin's network effect. Bitcoin continues to dominate in terms of market value, liquidity of its market and number of miners, validators and users. Bitcoin's first mover advantage and a market cap that is in orders of magnitude higher than that of other digital currencies make it unlikely to be overtaken.

Technologist Michael Saylor, CEO of MicroStrategy and author of *The Mobile Wave*, has cited $100 billion as the threshold at which a network achieves a near-certain dominance. In the history of digital networks there have never been any examples of a $100 billion-dollar digital network that was vanquished once it reached that dominant position. Once the market value surpasses that threshold, it would appear that the market has spoken. Bitcoin's market cap hit $100 billion on October 20, 2017. By February 19, 2021, Bitcoin's market value had surpassed the $1 trillion mark, making it the fastest growth to a trillion dollars of any digital network.

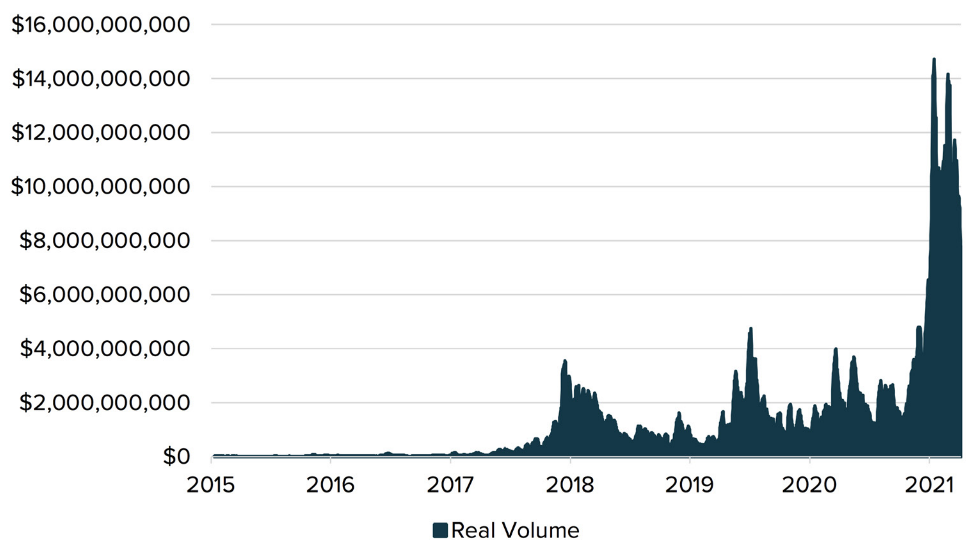
FIGURE 5: **TOP 10 DIGITAL CURRENCIES BY MARKET CAPITALIZATION**[34]



15. Bitcoin's Increasing Volume and Liquidity

Bitcoin has quickly become a very liquid asset, from trading under a billion dollars per day in 2017, to well over $10 billion per day in 2021. Not only is there sufficient liquidity, but it is one of the few markets that is globally accessible and traded 24 hours a day, 365 days a year.

FIGURE 6: **BITCOIN VOLUME (REAL)**[35]

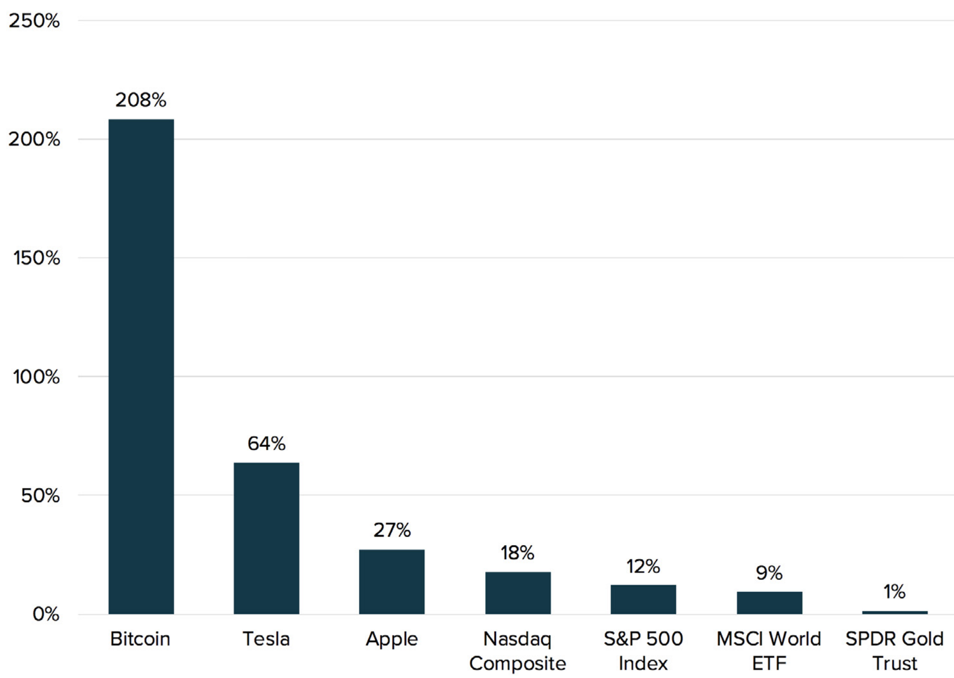


34. Source: Messari; April 10, 2021
35. Ibid.

16. Bitcoin Has Been the Best Performing Asset of the 21st Century

With little more than a 12-year history, Bitcoin has been the best performing investment of this century. It has also been the best performing asset, as compared to major asset classes, in eight of the past ten calendar years, with triple digit returns in six of those years and a compound annual growth rate of over 200% as reflected below.

FIGURE 7: **TEN YEAR COMPOUNDED ANNUAL GROWTH RATES (CAGR)**[36]

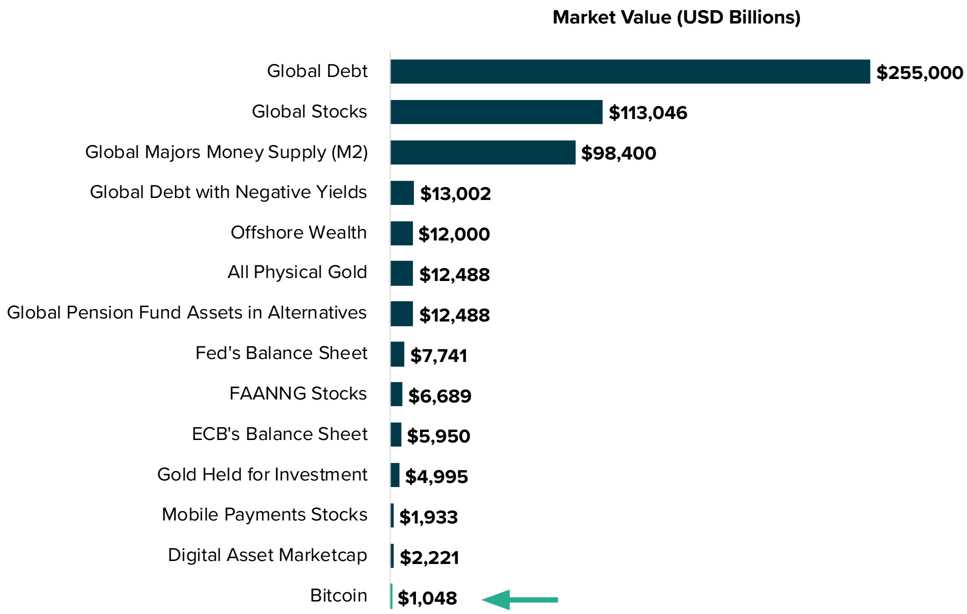


17. A Growing Store of Value with Tremendous Upside Potential

Bitcoin's market value today represents only a fraction of the markets it stands to disrupt. We believe that it is still early and that Bitcoin is only just beginning its ascent and will take significant market share from other asset classes. In fact, Bitcoin has been taking market share from gold, as evidenced by recent outflows from gold funds and inflows into Bitcoin. Further, with global bond yields now close to zero, Bitcoin looks to replace some of the nominal bond exposure in traditional 60/40 stock/bond portfolios.

36. Source: Grayscale, Bloomberg; April 11, 2011 to April 11, 2021

FIGURE 8: **THE WORLD'S MONEY & MARKETS**[37]



18. Bitcoin Stock-to-Flow (Supply)

The investment community often employs the stock-to-flow ratio as a measure of scarcity for commodities. It is calculated by dividing the total existing supply of a commodity by that commodity's annual new production. The model measures the number of years (flow) needed to replace the current supply (stock). Commodities with high stock-to-flow ratios including gold and silver have been utilized as stores of value. Historically gold has had the highest stock-to-flow ratio, it has been the commodity with the lowest price elasticity of supply. Around the year 2022, Bitcoin's stock-to-flow ratio will overtake that of gold.

Figure 9 shows a popular model that uses Bitcoin's historical relationship between price and stock-to-flow to estimate a future price.[38] The hypothesis of this model is that Bitcoin's price can be directly derived from its scarcity or stock-to-flow values. As Bitcoin's annual inflation decreases every four years through the halving events, the stock-to-flow increases in turn increasing the price projections. While it is true that Bitcoin's price has followed this stock-to-flow model with high correlation, the model may be limited as it does not consider the requisite demand for price appreciation.

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37. Source: Bloomberg, World Gold Council, BIS, CoinMarketCap.com, April 15, 2021.
38. "Modeling Bitcoin Value with Scarcity," Medium, March 22, 2019.
https://medium.com/@100trillionUSD/modeling-bitcoins-value-with-scarcity-91fa0fc03e25

FIGURE 9: **STOCK-TO-FLOW MODEL**[39]

> **"The Bitcoin story is very easy, it's supply and demand. Bitcoin's supply is growing at around 2.5% a year, and the demand is growing faster than that and there's going to be fixed number of them."**
>
> Bill Miller, Founder of Miller Value Partners, Chairman and CIO

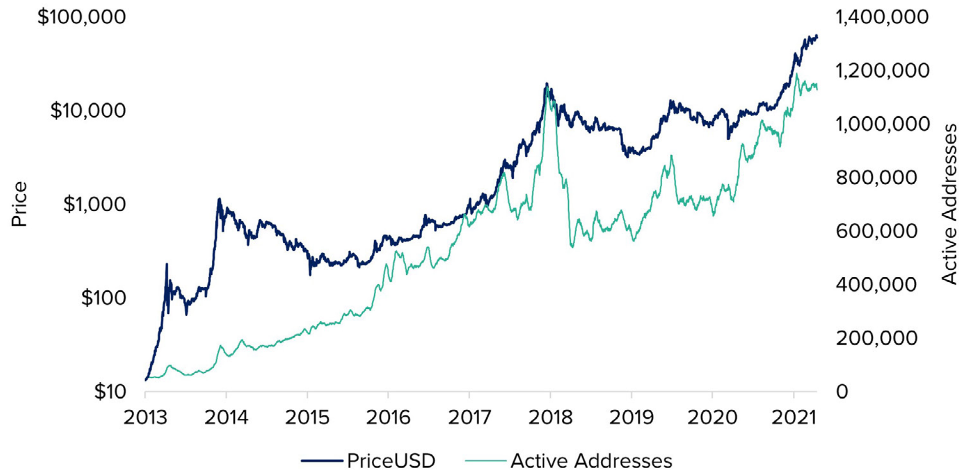
19. Bitcoin and Metcalfe's Law (Demand)

Metcalfe's Law, named after Ethernet inventor Robert Metcalfe, states that the value of a network will grow geometrically and is proportional to the square of the number of participants in the network (n^2). In this context, Bitcoin's demand-side dynamic is analyzed not as a currency but as a network of connected users, and the more people on the network, the more valuable it will become. Metcalfe's Law was famously used to value Facebook and Tencent revenue growth in the early days of each network.

Compared to other digital currencies, Bitcoin has by far the strongest network effect by orders of magnitude. According to Jeff Booth, a technology entrepreneur and author of *The Price of Tomorrow*, unless a new challenger can deliver a 10x advantage to the market, it has no chance of achieving escape velocity to become a new category leader. This advantage is demonstrated in the continued growth in daily active addresses on the Bitcoin network as shown below.

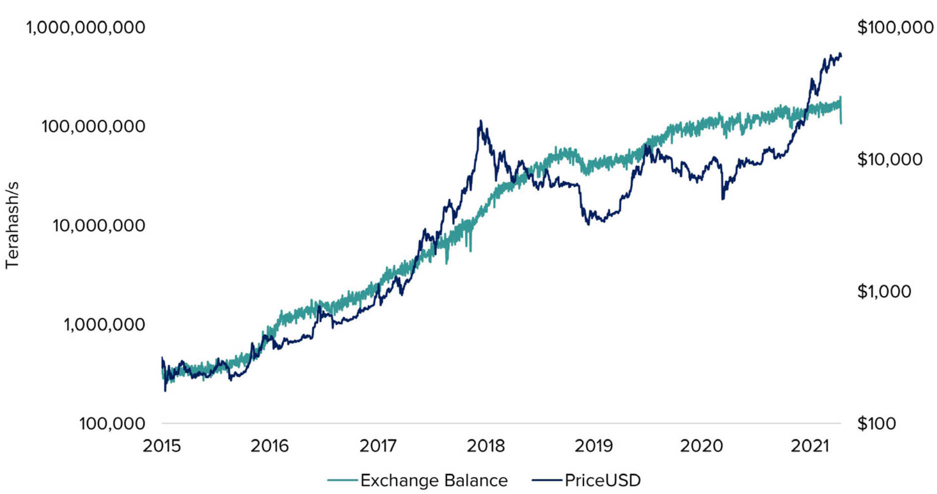
39. Source: Grayscale, Coin Metrics, April 15, 2021

FIGURE 10: **BITCOIN'S DAILY ACTIVE ADDRESSES**[40]



This network effect carries forward to the security accrued by the Bitcoin network. Bitcoin hashrate is the measure of aggregate computing power devoted to mining transactions on the network. As the hashrate increases, so does the security of the network. Since Bitcoin's inception, the hashrate has grown significantly, now commanding over 150 Exahashes per second, more than any computing network in the world. Simply put, the Bitcoin network is extremely secure.

FIGURE 11: **BITCOIN HASHRATE VS PRICE**[41]



40. Source: Grayscale, Coin Metrics, April 15, 2021
41. Ibid.

20. Bitcoin and Modern Portfolio Theory

Modern Portfolio Theory, developed by Harry Markowitz and published in the Journal of Finance in 1952, states that investors can design a diversified portfolio of investments that generate maximum returns while minimizing systematic risk. The inclusion of assets that are imperfectly correlated may offer downside protection when traditional assets fall and may also help reduce volatility. Diversification can lower risk without necessarily causing an offsetting reduction in expected return and is thus generally viewed as a highly desirable method of generating improved risk-adjusted returns.

Generally uncorrelated to the behavior of other asset classes, Bitcoin can serve as a strategic allocation in a well-diversified portfolio. Low correlations between traditional asset classes and Bitcoin should minimize idiosyncratic risks and lower overall volatility, resulting in higher risk-adjusted returns.

Bitcoin's history of positive returns and track record as a low correlation asset relative to other asset classes make it an attractive addition to modern portfolios. This is demonstrated in the below chart that shows correlations of daily returns since 2016 for a collection of major assets and indices.

FIGURE 12: **CORRELATIONS OF DAILY RETURNS**[42]
January 1, 2016 – April 10, 2021

	BTC Return	SPX Return	AGG Return	GLD Return	URTH Return	GOOG Return	DXY Return
BTC Return							
SPX Return	0.16						
AGG Return	0.07	0.02					
GLD Return	0.12	-0.01	0.35				
URTH Return	0.17	0.97	0.05	0.01			
GOOG Return	0.12	0.76	0.03	0.00	0.73		
DXY Return	-0.02	-0.01	-0.21	-0.44	-0.09	0.01	

42. Source: Grayscale, Bloomberg

21. Portfolio Simulations with Bitcoin

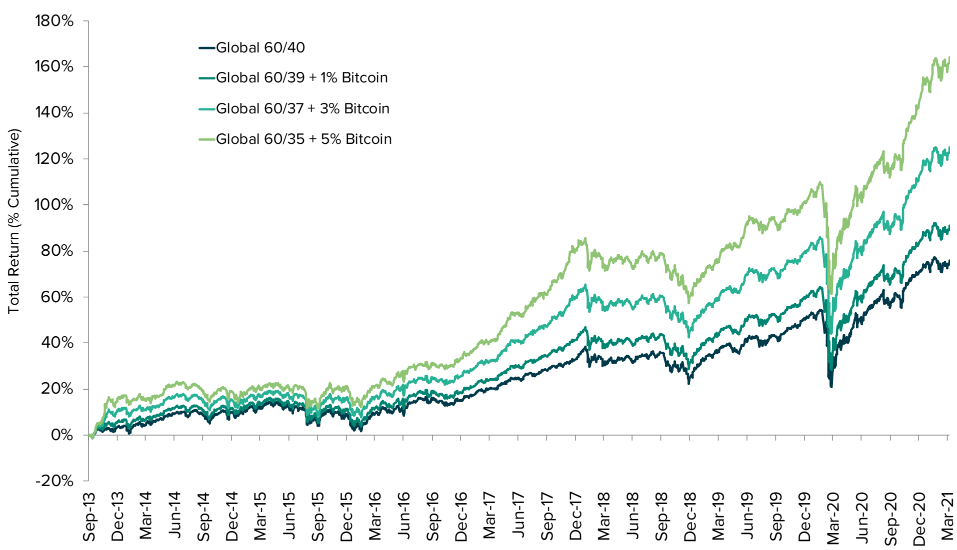
What does the data say about the historical performance of Bitcoin? How would a portfolio have performed with or without Bitcoin over the last several years?

To answer these questions, we have modelled the incremental effects of incorporating different sized allocations of Bitcoin, 1%, 3% and 5%, to a traditional portfolio allocation of 60% global equities and 40% global bonds (the "Global 60/40").[43] With bond yields close to zero, we have replaced some of the portfolio's nominal bond exposure with Bitcoin.

By replacing a portion of the 40% bond allocation with hypothetical allocations of 1%, 3%, and 5% of Bitcoin, the portfolios returned 91.0%, 124.9%, and 164.2%, respectively, since 2013.

FIGURE 13: **HYPOTHETICAL SIMULATED PORTFOLIO PERFORMANCE**[44]

Hypothetical Simulated Portfolio Performance (September 24, 2013 through March 31, 2021)				
Portfolio	Global 60/40	Global 60/39 + 1% Bitcoin	Global 60/37 + 3% Bitcoin	Global 60/35 + 5% Bitcoin
Total Return (Cumulative)	75.9%	91.0%	124.9%	164.2%
Total Return (Annualized)	7.9%	9.1%	11.5%	13.9%
Risk (Annualized Std Dev)	10.3%	10.5%	10.9%	11.5%
Sharpe Ratio	0.69	0.79	0.98	1.14
Change in Annualized Return	–	1.2%	3.6%	6.1%
Change in Annualized Risk	–	0.1%	0.5%	1.2%
Sharpe Ratio Improvement	–	15.6%	43.3%	66.1%



43. The model uses iShares MSCI ACWI ETF (ACWI), which includes the stocks of developed and emerging markets, as a proxy for global equities and uses the Vanguard Total Bond Market ETF (BND) as a proxy for the US dollar denominated bond market. The model uses daily data from Coin Metrics to represent Bitcoin in portfolios. We use total returns, which assumes that all dividends are reinvested. Portfolios assume quarterly rebalancing. Any fees and expenses associated with building and maintaining the portfolios have not been deducted in our hypothetical analysis.
44. Source: Grayscale, Bloomberg, Coinmarketcap

Our analysis reflects that even a relatively small allocation of Bitcoin can significantly enhance the returns of traditional portfolios, like the Global 60/40, without having a material impact on portfolio volatility. For example:

- Allocating **1% Bitcoin** to the Global 60/40 increased annual returns by 120bps, increased volatility by 10bps, and improved the Sharpe ratio by 15.6%.
- Allocating **3% Bitcoin** to the Global 60/40 increased annual returns by 360bps, increased volatility by 50bps, and improved the Sharpe ratio by 43.3%.
- Allocating **5% Bitcoin** to the Global 60/40 increased annual returns by 610 bps, increased volatility by 120bps, and improved the Sharpe ratio by 66.1%.

Because Bitcoin has demonstrated return-enhancing and even risk-reducing potential, when added to modern investment portfolios, we believe that this is a compelling case for investors to have an allocation to this asset in their portfolios.

22. How to Invest in Bitcoin

Purchasing Bitcoin Directly vs. Bitcoin Investment Products

Historically, the Bitcoin market has proved difficult for investors to access— even those who work with a seasoned financial advisor. As Bitcoin is not a physical commodity, purchasing and storing it directly often comes with barriers to entry that can feel overly complicated.

However, the market for Bitcoin and digital assets over the last few years has become an increasingly accessible and regulated ecosystem. There are now numerous options available to investors who are interested in investing in digital currencies. Below are two main investment pathways.

Investing Directly

Directly buying or selling, transferring, storing, and safekeeping Bitcoin has been around since the asset's inception. While the principle has remained unchanged — you or your client manage the Bitcoin allocation directly — the process has become a bit more streamlined over the years. To purchase and store bitcoin directly today, you will need to advise your clients on the following:

> **A Bitcoin wallet:** As bitcoin are digital assets, they cannot be stored in physical locations like physical cash. Enter the Bitcoin wallet — a secure, digital hub where investors can store their bitcoin and carry out transactions. Bitcoin wallets come in many forms, the most popular of which are desktop/mobile applications

and physical hardware devices. You or your client will need to ensure the secure storage of the wallet's private key (akin to a password), consisting of a long alphanumeric string of characters. Unlike traditional login/password pairs, Bitcoin wallet private keys typically do not offer the ability to be reset if lost or forgotten. It is likely that no financial institution or help desk will be able to help recover your client's private key, making these keys especially difficult to manage for investors not comfortable with this level of security.

Bitcoin wallets exist in two forms, "hot wallets" and "cold wallets." Hot wallets are connected to the internet and held online, while cold wallets are not connected to the internet and held offline. Examples of hot wallets include the Blockchain Wallet, Cash App wallet and PayPal wallet. Examples of cold wallets include the Ledger and Trezor hardware wallets which are physical devices that store private keys offline.

Access to a Bitcoin exchange or order book: Bitcoin exchanges and order books are similar to stock exchanges in the sense that assets are bought and sold within a trading venue accessible by many parties. In this instance, however, Bitcoin exchanges allow you to trade traditional currencies (U.S. Dollars, for example) for bitcoin. Bitcoin exchanges can be accessed digitally by using a secure internet connection. It should be noted that there is no "official" Bitcoin exchange or order book — a multitude of options exist which may reflect different prices and spreads. While exchanges will often trade the same digital assets, they each offer slightly different services in different geographies and vary widely when it comes to security, processing fees, exchange rates, and reliability. It is critical to know that no requirement exists for Bitcoin exchanges or order book brokers to trade at the best available price when buying and selling digital currencies. It is best to do a thorough competitive analysis of major Bitcoin exchanges and order books to ensure that you are selecting an exchange that meets your client's needs. Once you have selected an appropriate venue, you or your client would wire funds to that exchange prior to transacting. Finally, you or your client must also decide whether to store the purchased bitcoin on the exchange or transfer them to a personal Bitcoin wallet as outlined above.

Major cryptocurrency exchanges like Coinbase, Kraken and Gemini provide popular entry points for buying bitcoin while Genesis Trading, itBit, and Cumberland provide OTC bitcoin trading.

It is important to note that in contrast to purchasing a stock and having it settle automatically to an investment account, investing directly in Bitcoin or any other digital asset takes place in an ecosystem separate from existing investment infrastructure, be it national securities exchanges, custodians, prime brokers, or clearing houses. You may want to ask your custodian and clearing house if they are familiar with Grayscale's products.

The Alternative? Gain exposure through traditional investment vehicles

There are also ways to increase your clients' exposure to digital assets without having to purchase and store bitcoin directly. Traditional, institutional-grade products exist to ensure investors can access familiar, regulated products that easily fit into an existing product mix while providing diversification within a portfolio. In fact, you might already be recommending equities that have significant exposure to the digital asset space, or at least the underlying technology that supports it. Stocks that fit within this theme are emerging as opportunities for investors. For example:

> **MicroStrategy** (Symbol: MSTR) is an enterprise analytics software and services company which has adopted Bitcoin as its primary treasury reserve asset.
>
> **NVIDIA** (Symbol: NVDA) manufactures graphics processing units (GPUs), which are key components for the artificial intelligence, autonomous vehicles, and gaming industries. GPUs are also essential for digital asset mining as miners use these GPUs to process transactions on certain blockchains.
>
> **Square** (Symbol: SQ) operates Cash App, a person-to-person payment platform that allows users to buy and sell bitcoin. Square has its own team of Bitcoin developers, known as Square Crypto, which is focused on contributing to bitcoin open-source work and it also recently launched the Cryptocurrency Open Patent Alliance (COPA), a non-profit organization encouraging digital currency innovation.
>
> **Riot Blockchain** (Symbol: RIOT) is a Bitcoin mining company focused in the U.S. and it has invested in blockchain-focused technologies.

Then there are traditional investment products built for Bitcoin exposure. The list of bespoke, institutional-grade Bitcoin investment products continues to grow, a signal that there is an increase in investor adoption. These products are designed to be familiar to investors and advisors alike, such as Bitcoin Futures or investment funds and trusts, including those focused on a single asset like Bitcoin (eg. Grayscale Bitcoin Trust) or a multi-asset offering of a basket of digital currencies allowing investors to diversify even further into the asset class (eg. Grayscale Digital Large Cap Fund).

As digital assets continue to find a home in the traditional finance space, they represent a growing trend of marketplace transformation. In the same way that now-familiar investment products drastically transformed investors' ability to access the gold and precious metals market in the past, the potential for similar growth and expansion is present for digital assets.

23. About Grayscale

Grayscale is the world's largest digital currency asset manager, with more than $45 billion in assets under management as of March 31, 2021. The firm focuses on bringing digital currency investments into the mainstream – in other words, to operate as a traditional asset manager, offering familiar investment vehicles for investors to gain exposure to digital currencies. With an operational track record of success dating back to 2013, Grayscale prioritizes its legal, compliance, reporting and disclosure, supporting its investors with best-in-class service providers and products.

Grayscale was early to identify digital currencies as an investable asset class and create accessible products that are familiar to investors. Unlike traditional investments, digital currencies can be difficult to buy, transfer, store, and safekeep. To address these challenges, Grayscale has brought to market a family of 14 investment products providing access and exposure to the digital currency asset class in the form of a familiar security without the challenges of buying, storing, and safekeeping digital currencies directly.

Perhaps most importantly to a financial advisor like yourself, all of Grayscale's products operate within existing regulatory frameworks, creating secure and compliant exposure – as well as peace of mind – for investors. For example, Grayscale Bitcoin Trust is the first digital currency investment vehicle to become an SEC reporting company. As such, Grayscale Bitcoin Trust is held to the same reporting and disclosure standards as any publicly traded company or investment product.

24. Grayscale's Investment Products

Grayscale Investments is behind fourteen investment products, all of which are modeled after popular commodity investment products, designed to have the value of their shares reflect the price performance of the underlying digital asset(s) they hold.

Important Qualities of Grayscale Products

- Titled, auditable ownership in an investment vehicle, providing a familiar structure for financial and tax advisors and easy transferability to beneficiaries under estate laws.

- Shares are eligible to be held in traditional brokerage accounts as well as tax-advantaged accounts such as IRAs and Roth IRAs.

- Highly secure, by being stored in 100% offline or "cold" storage with Coinbase Custody Trust Company, LLC, as Custodian. The Custodian is an independent qualified custodian and a fiduciary under New York state banking laws, as well as the first digital currency custodian to be issued both SOC 1 Type 2 and SOC 2 Type 2 compliance reports.

- Grayscale's investment products are only available to accredited investors. Certain Grayscale products trade publicly on OTC Markets. Shares of these products that have become unrestricted in accordance with the rules and regulations of the SEC may be bought and sold throughout the trading day through any brokerage account at prices established by the market.

Of the various Grayscale products, two in particular may be of specific interest to your clients, depending on whether they are interested in investing in Bitcoin as the most prevalent and popular digital currency, or in a basket of the top digital currencies to achieve further diversification within the asset class.

Grayscale Digital Large Cap Fund (OTCQX: GDLC)

Grayscale Digital Large Cap Fund is a diversified digital currency investment vehicle, providing exposure to the top liquid digital currencies by market capitalization covering the upper 70% of the digital currency market. The Fund currently holds Bitcoin (BTC), Ethereum (ETH), Bitcoin Cash (BCH), Litecoin (LTC) and Chainlink (LINK) on a market cap-weighted basis and evaluates its fund components quarterly.

Shares of Grayscale Digital Large Cap Fund are currently offered in a private placement pursuant to the exemption from registration provided by Rule 506(c) under Regulation D of the Securities Act and are only available to accredited investors.

Investor Profile: Investors who want exposure to digital currencies, but rather than having to choose a single digital currency, want to achieve broader-based coverage of the digital currency market and achieve further diversification.

Grayscale Bitcoin Trust (OTCQX: GBTC)

Grayscale Bitcoin Trust is the largest Bitcoin investment product in the world, with more than $38.5 billion in assets under management as of the end of March 2021. Grayscale Bitcoin Trust is solely and passively invested in Bitcoin.

Grayscale Bitcoin Trust private placement is offered on a periodic basis throughout the year and is currently closed, however shares of Grayscale Bitcoin Trust are publicly-traded on OTCQX® under the ticker symbol GBTC. Shares of the trust that have become unrestricted in accordance with the rules and regulations of the SEC may be bought and sold throughout the day via any brokerage account.

Grayscale Bitcoin Trust is the first and only bitcoin digital currency investment vehicle to attain the status of an SEC reporting company. As an SEC reporting company, it is held to the same disclosures and reporting standards that investors have come to expect from all their investments. Advisors and investors may obtain up-to-date reporting and information on Grayscale Bitcoin Trust through its 10-K, 10-Q, and 8-K filings with the SEC.

Investor Profile: Investors who want to diversify their existing portfolio through exposure to the price movement of Bitcoin, the most popular digital currency, via an investment vehicle.

Important Disclosures & Other Information

This content is for informational purposes only and does not constitute an offer to sell or the solicitation of an offer to sell or buy any security in any jurisdiction where such an offer or solicitation would be illegal. There is not enough information contained in this content to make an investment decision and any information contained herein should not be used as a basis for this purpose. This content does not constitute a recommendation or take into account the particular investment objectives, financial situations, or needs of investors. Investors are not to construe this content as legal, tax or invest- ment advice, and should consult their own advisors concerning an investment in digital assets. The price and value of assets referred to in this content and the income from them may fluctuate. Past performance is not indicative of the future performance of any assets referred to herein. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments.

Investors should be aware that Grayscale is the sponsor of Grayscale Bitcoin Trust (BTC), Grayscale Bitcoin Cash Trust (BCH), Grayscale Ethereum Trust (ETH), Grayscale Ethereum Classic Trust (ETC), Grayscale Litecoin Trust (LTC), Grayscale Horizen Trust (ZEN), Grayscale Stellar Lumens Trust (XLM), Grayscale Zcash Trust (ZEC), Grayscale Basic Attention Token Trust (BAT), Grayscale Chainlink Trust (LINK), Grayscale Decentraland Trust (MANA), Grayscale Filecoin Trust (FIL), Grayscale Livepeer Trust (LPT) (each, a "Trust") and the manager of Grayscale Digital Large Cap Fund LLC (the "Fund"). The Trusts and the Fund are collectively referred to herein as the "Products." Any Product currently offering Share creations is referred to herein as an "Offered Product". Information provided about an Offered Product is not intended to be, nor should it be construed or used as investment, tax or legal advice, and prospective investors should consult their own advisors concerning an investment in such Offered Product. This content does not constitute an offer to sell or the solicitation of an offer to buy interests in any of the Products. Any offer or solicitation of an investment in a Product may be made only by delivery of such Product's confidential offering documents (the "Offering Documents") to qualified accredited investors (as defined under Rule 501(a) of Regulation D of the U.S. Securities Act of 1933, as amended (the "Securities Act")), which contain material information not contained herein and which supersede the information provided herein in its entirety.

The shares of each Product are not registered under the Securities Act, the Securities Exchange Act of 1934 (except for Grayscale Bitcoin Trust), the Investment Company Act of 1940, or any state securities laws. The Products are offered in private placements pursuant to the exemption from registration provided by Rule 506(c) under Regulation D of the Securities Act and are only available to accredited investors. As a result, the shares of each Product are restricted and subject to significant limitations on resales and transfers. Potential investors in any Product should carefully consider the long-term nature of an investment in that Product prior to making an investment decision. The shares of certain Products are also publicly quoted on OTC Markets and shares that have become unrestricted in accordance with the rules and regulations of the SEC may be bought and sold throughout the day through any brokerage account. Any interests in each Product described herein have not been recommended by any U.S. federal or state, or non-U.S., securities commission or regulatory authority, including the SEC. Furthermore, the foregoing authorities have not confirmed the accuracy or determined the adequacy of this document. Any representation to the contrary is a criminal offense.

Certain of the statements contained herein may be statements of future expectations and other forward-looking statements that are based on Gray- scale's views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. In addition to statements that are forward-looking by reason of context, the words "may, will, should, could, can, expects, plans, intends, anticipates, believes, estimates, predicts, potential, projected, or continue" and similar expressions identify forward-looking statements. Grayscale assumes no obligation to update any forward-looking statements contained herein and you should not place undue reliance on such statements, which speak only as of the date hereof. Although Grayscale has taken reasonable care to ensure that the information contained herein is accurate, no representation or warranty (including liability towards third parties), expressed or implied, is made by Grayscale as to its accuracy, reliability or completeness. You should not make any investment decisions based on these estimates and forward-looking statements.

Note On Hypothetical Simulated Performance Results

HYPOTHETICAL SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. There is no guarantee that the market conditions during the past period will be present in the future. Rather, it is most likely that the future market conditions will differ significantly from those of this past period, which could have a materially adverse impact on future returns. Unlike an actual performance record, simulated results do not represent actual trading or the costs of managing the portfolio. Also, since the trades have not actually been executed, the results may have under or over compensated for the impact, if any, of certain market factors, such as lack of liquidity. Simulated trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

The hypothetical simulated performance results are based on a model that used inputs that are based on assumptions about a variety of conditions and events and provides hypothetical not actual results. As with all mathematical models, results may vary significantly depending upon the value of the inputs given, so that a relatively minor modification of any assumption may have a significant impact on the result. Among other things, the hypothetical simulated performance calculations do not take into account all aspects of the applicable asset's characteristics under certain conditions, including characteristics that can have a significant impact on the results. Further, in evaluating the hypothetical simulated performance results herein, each prospective investor should understand that not all of the hypothetical assumptions used in the model are described herein, and conditions and events that are not accounted for by the model may have a significant adverse effect on the performance of the assets described herein. Prospective investors should consider whether the behavior of these assets should be tested based on different and/or additional assumptions from those included in the information herein.

IN ADDITION TO OTHER DIFFERENCES, PROSPECTIVE INVESTORS IN A PRODUCT SHOULD NOTE THE FOLLOWING POTENTIALLY SIGNIFICANT DIFFERENCES BETWEEN THE ASSUMPTIONS MADE IN THE HYPOTHETICAL SIMULATED PERFORMANCE RESULTS INCLUDED HEREIN AND THE CONDITIONS UNDER WHICH A PRODUCT WILL PERFORM, WHICH COULD CAUSE THE ACTUAL RETURN OF SUCH PRODUCT TO DIFFER CONSID- ERABLY FROM RETURNS SET FORTH BY THE HYPOTHETICAL SIMULATED PERFORMANCE, TO BE MATERIALLY LOWER THAN THE RETURNS AND TO RESULT IN LOSSES OF SOME OR ALL OF THE INVESTMENT BY PROSPECTIVE INVESTORS:

FOR EXAMPLE, EACH TRUST WILL HOLD ONLY ONE DIGITAL ASSET, WHEREAS THE HYPOTHETICAL SIMULATED PERFORMANCE RESULTS ARE INTENDED TO SHOW HYPOTHETICAL PERFORMANCE OF AN INVESTMENT MULTIPLE DIGITAL ASSETS. IN ADDITION, THE GENERAL MARKET DATA USED IN THE HYPOTHETICAL SIMULATED PERFORMANCE RESULTS DO NOT REFLECT ACTUAL TRADING ACTIVITY AND COULD NOT BE REPLICATED BY A PRODUCT IN ITS ACTUAL TRANSACTIONS. If actual trading activity was executed at levels that differed significantly from the general market data used in the hypothetical simulated performance, the actual returns achieved would have varied considerably from the results of the hypothetical simulated performances and could have been substantially lower and could result in significant losses.

IN ADDITION, THE HYPOTHETICAL SIMULATED PERFORMANCE RESULTS DO NOT ASSUME ANY GAINS OR LOSSES FROM TRADING AND THEREFORE DO NOT REFLECT THE POTENTIAL LOSSES, COSTS AND RISKS POSED BY TRADING AND HOLDING ACTUAL ASSETS.

The hypothetical simulated performance results do not reflect the impact the market conditions may have had upon a Product were it in existence during the historical period selected. The hypothetical simulated performance results do not reflect any fees incurred by a Product. If such amounts had been included in the hypothetical simulated performance, the results would have been lowered.

AS A RESULT OF THESE AND OTHER DIFFERENCES, THE ACTUAL RETURNS OF A PRODUCT MAY BE HIGHER OR LOWER THAN THE RETURNS SET FORTH IN THE HYPOTHETICAL SIMULATED PERFORMANCE RESULTS, WHICH ARE HYPOTHETICAL AND MAY NEVER BE ACHIEVED. Reasons for a deviation may also include, but are by no means limited to, changes in regulatory and/or tax law, generally unfavorable market conditions and the Risk Factors set forth below.

Certain Risk Factors

Each Product is a private, unregistered investment vehicle and not subject to the same regulatory requirements as exchange traded funds or mutual funds, including the requirement to provide certain periodic and standardized pricing and valuation information to investors. There are substantial risks in investing in a Product or in digital assets directly, including but not limited to:

- PRICE VOLATILITY
  Digital assets have historically experienced significant intraday and long-term price swings. In addition, none of the Products currently operates a redemption program and may halt creations from time to time. There can be no assurance that the value of the common units of fractional undivided beneficial interest ("Shares") of any Product will approximate the value of the digital assets held by such Product and such Shares may trade at a substantial premium over or discount to the value of the digital assets held by such Product. At this time, none of the Products is operating a redemption program and therefore Shares are not redeemable by any Product. Subject to receipt of regulatory approval from the SEC and approval by Grayscale, in its sole discretion, any Product may in the future operate a redemption program. Because none of the Products believes that the SEC would, at this time, entertain an application for the waiver of rules needed in order to operate an ongoing redemption program, none of the Products currently has any intention of seeking regulatory approval from the SEC to operate an ongoing redemption program.

- MARKET ADOPTION
  It is possible that digital assets generally or any digital asset in particular will never be broadly adopted by either the retail or commercial marketplace, in which case, one or more digital assets may lose most, if not all, of its value.

- GOVERNMENT REGULATION
  The regulatory framework of digital assets remains unclear and application of existing regulations and/or future restrictions by federal and state authorities may have a significant impact on the value of digital assets.

- SECURITY
  While each Product has implemented security measures for the safe storage of its digital assets, there have been significant incidents of digital asset theft and digital assets remains a potential target for hackers. Digital assets that are lost or stolen cannot be replaced, as transactions are irrevocable.

- TAX TREATMENT OF VIRTUAL CURRENCY
  For U.S. federal income tax purposes, Digital Large Cap Fund will be a passive foreign investment company (a "PFIC") and, in certain circumstances, may be a controlled foreign corporation (a "CFC"). Digital Large Cap Fund will make available a PFIC Annual Information Statement that will include information required to permit each eligible shareholder to make a "qualified electing fund" election (a "QEF Election") with respect to Digital Large Cap Fund. Each of the

other Products intends to take the position that it is a grantor trust for U.S. federal income tax purposes. Assuming that a Product is properly treated as a grantor trust, Shareholders of that Product generally will be treated as if they directly owned their respective pro rata shares of the underlying assets held in the Product, directly received their respective pro rata shares of the Product's income and directly incurred their respective pro rata shares of the Product 's expenses. Most state and local tax authorities follow U.S. income tax rules in this regard. Prospective investors should discuss the tax consequences of an investment in a Product with their tax advisors.

- NO SHAREHOLDER CONTROL
  Grayscale, as sponsor of each Trust and the manager of the Fund, has total authority over the Trusts and the Fund and shareholders' rights are extremely limited.

- LACK OF LIQUIDITY AND TRANSFER RESTRICTIONS
  An investment in a Product will be illiquid and there will be significant restrictions on transferring interests in such Product. The Products are not registered with the SEC, any state securities laws, or the U.S. Investment Company Act of 1940, as amended, and the Shares of each Product are being offered in a private placement pursuant to Rule 506(c) under Regulation D of the Securities Act of 1933, as amended (the "Securities Act"). As a result, the Shares of each Product are restricted Shares and are subject to (i) a one year holding period or (ii) a six month holding period after the Product has been subject to the reporting requirements of Section 13 under the Exchange Act for a period of 90 days in accordance with Rule 144 under the Securities Act. In addition, none of the Products currently operates a redemption program. Because of the holding period and the lack of an ongoing redemption program, Shares should not be purchased by any investor who is not willing and able to bear the risk of investment and lack of liquidity for at least one year or six months, as applicable. No assurances are given that after the one year holding period, there will be any market for the resale of Shares of any Product, or, if there is such a market, as to the price at such Shares may be sold into such a market.

- POTENTIAL RELIANCE ON THIRD-PARTY MANAGEMENT; CONFLICTS OF INTEREST
  The Products and their sponsors or managers and advisors may rely on the trading expertise and experience of third-party sponsors, managers or advisors, the identity of which may not be fully disclosed to investors. The Products and their sponsors or managers and advisors and agents may be subject to various conflicts of interest.

- FEES AND EXPENSES
  Each Product's fees and expenses (which may be substantial regardless of any returns on investment) will offset each Product's trading profits.

Additional General Disclosures

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GRAYSCALE®

www.grayscale.com

info@grayscale.com

212.668.1427

@Grayscale