

The Modern Portfolio

The Case for Allocating to Digital Assets

The Modern Portfolio

The Case for Allocating to Digital Assets

It's not every day, or even every decade, that an entirely new asset class is born. Yet, through a combination of computer science, cryptography, economics, and network theory, digital assets have arrived and are proving they are an asset class unlike any other. As they transform our global financial infrastructure and challenge Modern Monetary Theory¹, we believe digital assets are one of the most exciting investment opportunities of the 21st century. *In this paper, we will demonstrate why we view digital assets as a brand-new asset class that can enhance strategic asset allocation and help investors build portfolios with higher risk-adjusted returns.*

New asset classes are rare and powerful because they offer a unique return stream that can provide a diversification benefit. This might seem like a simple concept, but few investors truly appreciate the impact this can have on the 'return-to-risk' profile of a portfolio and consequently, wealth creation. As Cliff Asness, Managing Principal and CIO of AQR Capital Management, has said, "diversification is the one free lunch of investing, and when you see a free lunch, the only rational thing to do is eat".²

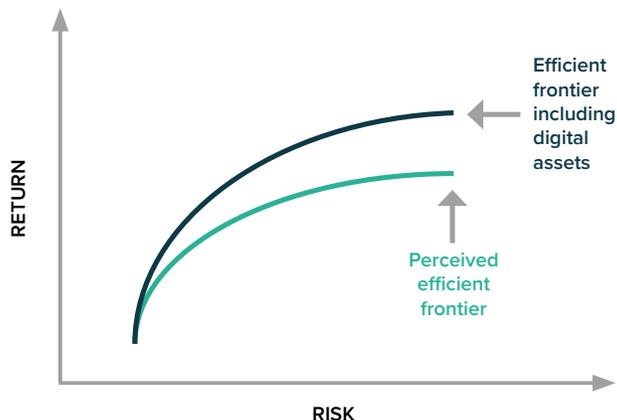
Consistent with Modern Portfolio Theory, we generally subscribe to the notion that the optimal return-to-risk ratio for a portfolio can be found on the efficient frontier. But contrary to conventional wisdom, we think many asset allocators are missing out on a "free lunch". That is because (i) digital assets represent a brand-new investment opportunity that is uncorrelated to other asset classes and (ii) investors are generally underallocated to this market.

1. Economic Research: Federal Reserve Bank of St. Louis. The Case for Central Bank Electronic Money and the Non-case for Central Bank Cryptocurrencies. Vol. 100, No.2, April 16, 2018. Aleksander Berentsen and Fabian Schar. <https://research.stlouisfed.org/publications/review/2018/02/13/the-case-for-central-bank-electronic-money-and-the-non-case-for-central-bankcryptocurrencies>.
2. AQR Perspective: Efficient Frontier "Theory for the Long Run. Cliff Asness, December 10, 2014. <https://www.aqr.com/Insights/Perspectives/Efficient-Frontier-Theory-for-the-Long-Run>.



It is our view that the optimal beta portfolio³ lies somewhere higher than what was previously believed to be the efficient frontier, and digital assets are the proverbial “missing piece of the puzzle”.

FIGURE 1: A NEW FRONTIER



A Brand New Asset Class

Over the past several years, Bitcoin has demonstrated the power of decentralized systems, surviving and thriving with no single point of failure in both a permissionless and censorship-resistant manner. This important proof-of concept has now led to an explosion in the development of second-generation blockchain protocols, designed to expand upon the capabilities of Bitcoin by modifying its social, economic and technological constructs to satisfy different needs. These differences have necessitated a new way to describe the assets that operate these protocols – there are no longer just digital currencies, but also digital commodities and digital tokens, which fall into the broader category of digital assets.

Digital currencies, like Bitcoin, seek to fulfill the role of a global medium-of-exchange and store-of-value – an important alternative to fiat monetary regimes in the post-financial crisis world. Others, like Zcash (ZEC) and Monero (XMR), build upon Bitcoin’s role by offering privacy-enhancing features that further protect the identities of users and transaction details. Digital commodities, like Ethereum (ETH), fuel decentralized applications (DApps) that can execute autonomous, condition-based payments using smart contracts, while assets like Ethereum Classic (ETC) combine the economic principles underpinning Bitcoin with the smart contract capabilities of Ethereum to serve as a hybrid commodity-currency. These are just a few examples of how digital assets are functioning today.

3. A “beta portfolio” is a theoretical portfolio of investments that includes every type of asset available in the global financial market, with each asset weighted in proportion to its total presence in the market. The “optimal beta portfolio” is the portfolio that includes every type of asset available in the global financial market, with each asset weighted in order to maximize the return of the portfolio per unit of risk. Source: Investopedia.



Moreover, digital assets are squarely at the intersection of some of the most significant trends reshaping the global economy⁴, including:

- A new market paradigm, characterized by slow economic growth, high debt burdens, deteriorating effectiveness of monetary policies, low-yielding assets, and a widening wealth gap.
- Rapid advancements in financial technologies and payment infrastructure, which now make it possible to transfer and clear the settlement of assets at the same speed as information.
- Regulatory shifts, altering financial industry economics and significantly increasing the cost of compliance
- Demographic shifts, driven by (i) Millenials entering their prime earning years and looking for future-proof investments (ii) Baby Boomers entering retirement and divesting from equity and bond portfolios, and (iii) a generational wealth transfer of \$68 trillion over the next 25 years.⁵

Below we examine the relationship that some established digital assets have to traditional assets and each other through a correlation matrix constructed from rolling 30-day returns over the last six years.

FIGURE 2: MULTI-ASSET CORRELATION MATRIX⁶
September 25, 2013 through August 31, 2019. Based on Rolling 30-Day Returns

Asset	Bitcoin	Bitcoin Cash	Ethereum	Ethereum Classic	Litecoin	Stellar Lumens	XRP	Zcash	Zen	Grayscale Digital Large Cap Fund
	BTC	BCH	ETH	ETC	LTC	XLM	XRP	ZEC	ZEN	"DLC"
COMEX Gold Index	-0.16	-0.01	0.26	0.01	-0.18	-0.05	0.01	0.11	-0.02	0.13
Thai Baht (THB)	-0.11	0.00	0.21	0.09	-0.15	0.04	0.02	0.14	-0.07	0.05
Japanese Yen (JPY)	-0.11	-0.01	0.17	0.09	-0.14	-0.09	-0.08	0.15	-0.09	0.07
Brazilian Real (BRL)	-0.07	0.00	0.10	-0.02	-0.07	-0.01	-0.04	-0.04	-0.08	0.20
Swiss Franc (CHF)	-0.06	-0.12	0.15	0.21	0.03	0.07	0.08	0.19	-0.22	-0.07
Bloomberg Barclays Global Bond Index	-0.04	0.04	0.24	0.24	-0.04	0.05	0.06	0.24	-0.07	0.04
Canadian Dollar (CAD)	-0.04	0.06	0.17	0.01	-0.05	-0.02	0.02	0.09	-0.05	0.21
DJCM Spot FX Index	-0.02	0.01	0.23	0.23	0.03	0.13	0.13	0.22	-0.09	0.00
Bloomberg Commodity Index	-0.01	0.17	-0.02	-0.13	0.02	0.00	0.03	-0.09	0.20	0.17
Singapore Dollar (SGD)	0.01	0.07	0.30	0.18	-0.01	0.09	0.08	0.25	-0.03	-0.08
MSCI Emerging Markets Index	0.00	0.11	0.16	0.13	-0.02	0.12	0.09	0.19	0.09	0.05
Argentine Peso (ARS)	0.05	0.13	0.06	0.12	0.02	0.01	-0.01	0.16	0.20	0.18
Euro (EUR)	0.04	0.06	0.24	0.31	0.09	0.21	0.20	0.27	-0.03	0.02
Chinese Renminbi (RMB)	0.03	0.04	0.18	0.06	0.08	0.09	0.11	0.15	0.03	-0.14
Russian Ruble (RUB)	0.06	-0.03	0.09	0.06	0.02	0.00	-0.03	0.05	0.01	0.11
British Pound (GBP)	0.06	-0.03	0.03	0.09	0.17	0.14	0.15	-0.06	-0.07	-0.15
MSCI EAFE Index	0.11	0.15	0.15	0.27	0.06	0.20	0.14	0.27	0.20	0.25
MSCI World Index	0.15	0.13	0.10	0.16	0.06	0.14	0.08	0.17	0.15	0.19
Nasdaq Composite	0.15	0.13	0.03	0.12	0.08	0.11	0.08	0.09	0.09	0.13
S&P 500 Index	0.18	0.11	0.07	0.10	0.08	0.10	0.05	0.11	0.12	0.16
Bitcoin (BTC)	1.00	0.57	0.32	0.58	0.80	0.42	0.34	0.52	0.58	0.95
Bitcoin Cash (BCH)	0.57	1.00	0.59	0.76	0.46	0.39	0.26	0.65	0.54	0.84
Ethereum (ETH)	0.32	0.59	1.00	0.78	0.33	0.35	0.38	0.87	0.53	0.89
Ethereum Classic (ETC)	0.58	0.76	0.78	1.00	0.59	0.60	0.48	0.78	0.46	0.82
Litecoin (LTC)	0.80	0.46	0.33	0.59	1.00	0.53	0.47	0.47	0.33	0.77
Stellar Lumens (XLM)	0.42	0.39	0.35	0.60	0.53	1.00	0.76	0.44	0.46	0.69
XRP (XRP)	0.34	0.26	0.38	0.48	0.47	0.76	1.00	0.48	0.25	0.67
Zcash (ZEC)	0.52	0.65	0.87	0.78	0.47	0.44	0.48	1.00	0.54	0.85
Zen (ZEN)	0.58	0.54	0.53	0.46	0.33	0.46	0.25	0.54	1.00	0.67
Grayscale Digital Large Cap Fund ("DLC")	0.95	0.84	0.89	0.82	0.77	0.69	0.67	0.85	0.67	1.00

Maximum: 0.31
Minimum: -0.22
Average: 0.07

Maximum: 0.95
Minimum: 0.25
Average: 0.57

4. Source: BlackRock: Built for Change. Geraldine Buckingham, Global Head of Corporate Strategy. June 2016. <http://ir.blackrock.com/Cache/1500088361.PDF?O=PDF&T=&Y=&D=&FID=1500088361&iid=4048287>

5. Source: Cerulli Associates: "The Great Wealth Transfer." U.S. High-Net-Worth and Ultra-High-Net-Worth Markets 2018: Shifting Demographics of Private Wealth. November 29, 2018.

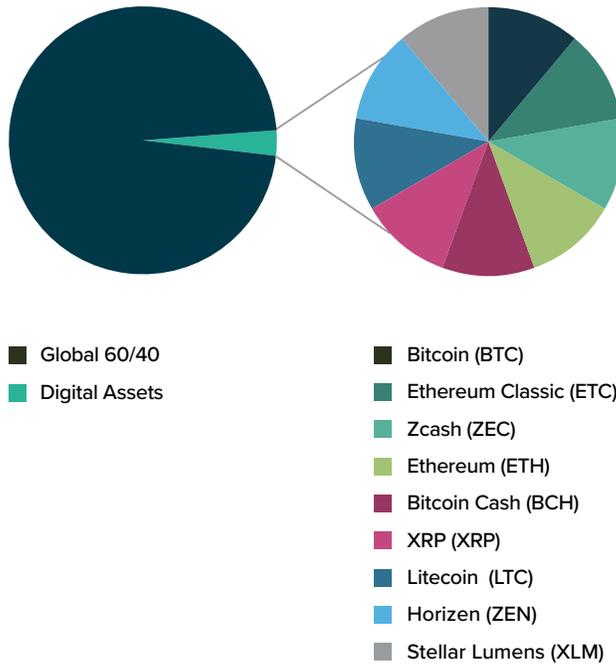
6. Source: Bloomberg, CoinMarketCap.com. Based on 30-day rolling returns from September 25, 2013 through August 31, 2019. The digital assets shown above have historically experienced significant intraday and long-term price swings. As the period during which digital has been available for trading is limited, the correlations may not be meaningful when considering longer periods. Past performance is not indicative of future results.



From the previous tables, we can see that the correlations of rolling 30-day returns range from negative to slightly positive, with an average of nearly zero. This provides evidence that digital assets can be considered a diversifying component in multi-asset portfolios. Moreover, many digital assets are imperfectly correlated to one another, which indicates there may be diversification benefits within the asset class itself.

To gain a deeper understanding of these benefits, we conducted a series of portfolio simulations to assess how an allocation to an equal-weighted mix of select digital assets might have impacted the return-to-risk profile of a portfolio comprised of global equities and bonds (the “Global 60/40”).⁷

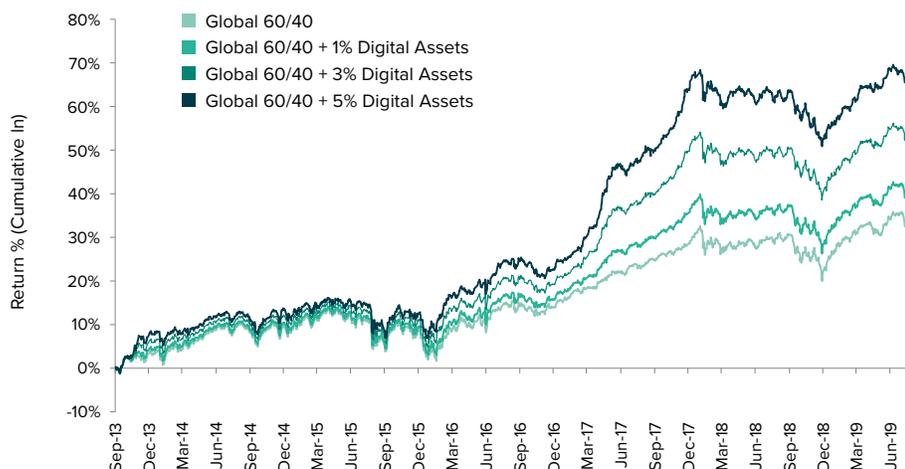
FIGURE 3: DIGITAL ASSET ALLOCATION IN HYPOTHETICAL SIMULATED PORTFOLIO



⁷ “Global 60/40” consists of a 60% allocation to the iShares MSCI ACWI and a 40% allocation to the Vanguard Total International Bond ETF.

FIGURE 4: DIGITAL ASSET ALLOCATION IN HYPOTHETICAL SIMULATED PORTFOLIO⁸
September 25, 2013 through August 31, 2019

PORTFOLIO	Global 60/40	Global 60/40 + 1% Digital Assets	Global 60/40 + 3% Digital Assets	Global 60/40 + 5% Digital Assets
Cumulative Total Return (%)	41.3%	50.6%	70.8%	93.5%
Annualized Total Return (%)	6.1%	7.2%	9.5%	11.9%
Annualized Risk (% Std Dev)	7.7%	7.7%	7.9%	8.3%
Sharpe Ratio	0.68	0.84	1.11	1.33
Change in Annualized Return (%)	--	1.2%	3.5%	5.8%
Change in Annualized Risk (%)	--	0.0%	0.2%	0.6%
Ratio Improvement	--	22%	62%	95%



8. 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. Source: Bloomberg, CoinMarketCap.com. Performance is shown from September 25, 2013 through August 31, 2019. We selected the timeframe for our analysis because we believe it broadly constitutes the most complete historical dataset for the digital assets that we have chosen to analyze. For the sake of consistency and for comparison purposes, we will use this timeframe throughout the paper. Annualized figures are based on 252 trading days. "Global 60/40" consists of a 60% allocation to the iShares MSCI ACWI and a 40% allocation to the Vanguard Total International Bond ETF. "Digital Assets" consists of an equal-weighted mix of Bitcoin (BTC), Bitcoin Cash (BCH), Ethereum (ETH), Ethereum Classic (ETC), Litecoin (LTC), Horizen (ZEN), Stellar Lumens (XLM), XRP (XRP), and Zcash (ZEC). THE GLOBAL 60/40 + 1%/3%/5% DIGITAL ASSETS RESULTS ARE HYPOTHETICAL AND ARE NOT BASED ON ACTUAL RETURNS OR HISTORICAL PERFORMANCE. DIGITAL ASSETS HAVE HISTORICALLY EXPERIENCED SIGNIFICANT INTRADAY AND LONG-TERM PRICE SWINGS AND PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Component asset weights are held constant over the period. The Sharpe Ratio is calculated as the annualized excess return of the portfolio over the 3-month US T-Bill divided by the standard deviation of excess returns. Ratio improvement is calculated by taking the Sharpe Ratio of the Global 60/40 + 1%/3%/5% Digital Assets Portfolios and dividing each by the Sharpe Ratio of the Global 60/40 Portfolio.

PLEASE REVIEW IMPORTANT DISCLOSURES & OTHER INFORMATION AT THE END OF THIS REPORT.



Looking at the results in Figure 4, it appears that portfolios containing an allocation to digital assets performed even better than the Global 60/40, on both an absolute and risk-adjusted basis. For example:

- Adding a 1% digital asset allocation to the Global 60/40 increased annual returns by 115 bps, reduced volatility by 3 bps, and improved the return-to-risk ratio by 22%.
- Adding a 3% digital asset allocation to the Global 60/40 increased annual returns by 347 bps, increased volatility by 15 bps, and improved the return-to-risk ratio by 62%.
- Adding a 5% digital asset allocation to the Global 60/40 increased annual returns by 582 bps, increased volatility by 60 bps, and improved the return-to-risk ratio by 95%.

Given what we know about portfolio theory, this is not all that surprising. Since digital assets are uncorrelated with traditional assets and imperfectly correlated with one another, they can be combined to build portfolios with higher risk-adjusted returns.

Conclusion

At Grayscale, we were early investors in digital assets because we have long believed in their potential to capture a share of some of the largest markets in the world (e.g., store-of-value), improve the efficiency of our global financial system, and create business models that democratize information and value in incredible new ways. We also recognize that because of their highly unique set of properties, digital assets offer a distinct return stream, allowing them to play a diversifying role in investor portfolios.

It's still early in the lifecycle of digital assets, but there is a compelling case for investors to allocate some portion of their portfolio to this new asset class. A lot can happen over the next few years, but remember: diversification is a "free lunch" and asset allocation is all about the long-game.



About Grayscale Investments

Grayscale Investments, LLC (“Grayscale”) is the world’s largest digital currency asset manager, with a proven track record and unrivaled experience. We give investors the tools to make informed investing decisions in a burgeoning asset class. As part of Digital Currency Group, Grayscale accesses the world’s biggest network of digital currency intelligence to build better investment products. We have removed the barrier to entry so that institutions and investors can benefit from exposure to digital currencies. Now, forward-thinking investors can embrace a digital future with an institutional grade investment.

Grayscale is headquartered in New York City. For more information on Grayscale, please visit, please visit www.grayscale.co or follow us on Twitter [@GrayscaleInvest](https://twitter.com/GrayscaleInvest).



Important Disclosures & Other Information

©Grayscale Investments, LLC. All content is original and has been researched and produced by Grayscale Investments, LLC (“Grayscale”) unless otherwise stated herein. No part of this content may be reproduced in any form, or referred to in any other publication, without the express consent of Grayscale.

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 investment 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 XRP Trust (XRP) and Grayscale Zcash Trust (ZEC) (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), which contain material information not contained herein and which supersede the information provided herein in its entirety.

The Products are private investment vehicles. Shares of Grayscale Bitcoin Trust (BTC), which are only offered on a periodic basis, are publicly quoted under the symbol: GBTC. The Products are 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. The Products are not registered with the Securities and Exchange Commission (the “SEC”), any state securities laws, or the U.S. Investment Company Act of 1940, as amended. There are substantial risks in investing in one or more Products. 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 Grayscale’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.

[PLEASE REVIEW IMPORTANT DISCLOSURES & OTHER INFORMATION AT THE END OF THIS REPORT.](#)



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 CONSIDERABLY 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.

[PLEASE REVIEW IMPORTANT DISCLOSURES & OTHER INFORMATION AT THE END OF THIS REPORT.](#)

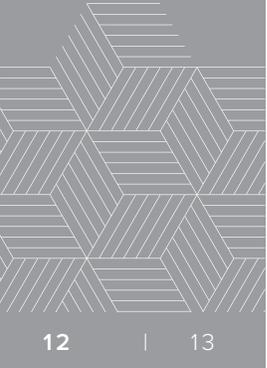


Certain Risk Factors

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 or, in the case of Grayscale Bitcoin Trust (BTC), periodically. 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 a one-year holding period in accordance with Rule 144 under the Securities Act. In addition, none of the Products currently operates a redemption program. Because of the one-year 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. 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

Investors must have the financial ability, sophistication/experience and willingness to bear the risks of an investment. This document is intended for those with an in-depth understanding of the high risk nature of investments in digital assets and these investments may not be suitable for you. This document may not be distributed in either excerpts or in its entirety beyond its intended audience and the Products and Grayscale will not be held responsible if this document is used or is distributed beyond its initial recipient or if it is used for any unintended purpose.

The Products and Grayscale do not: make recommendations to purchase or sell specific securities; provide investment advisory services; or conduct a general retail business. None of the Products or Grayscale, its affiliates, nor any of its directors, officers, employees or agents shall have any liability, howsoever arising, for any error or incompleteness of fact or opinion in it or lack of care in its preparation or publication, provided that this shall not exclude liability to the extent that this is impermissible under applicable securities laws.

The logos, graphics, icons, trademarks, service marks and headers for each Product and Grayscale appearing herein are service marks, trademarks (whether registered or not) and/or trade dress of Grayscale Investments, LLC. (the "Marks"). All other trademarks, company names, logos, service marks and/or trade dress mentioned, displayed, cited or otherwise indicated herein ("Third Party Marks") are the sole property of their respective owners. The Marks or the Third Party Marks may not be copied, downloaded, displayed, used as metatags, misused, or otherwise exploited in any manner without the prior express written permission of the relevant Product and Grayscale or the owner of such Third Party Mark.

The above summary is not a complete list of the risks and other important disclosures involved in investing in any Product or digital assets and is subject to the more complete disclosures contained in each Product's Offering Documents, which must be reviewed carefully. For Grayscale Bitcoin Trust (BTC), Grayscale Ethereum Trust (ETH) and Grayscale Ethereum Classic Trust (ETC), additional information is available in their annual and quarterly reports on the OTC Markets website, www.otcmarkets.com. Such reports are not prepared in accordance with SEC requirements and may not contain all information that is useful for an informed investment decision.



