

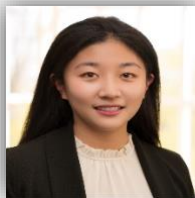
Should Digital Assets be a Part of a Recommended Asset Allocation?

Opinion
Snapshot

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Introduction

Fifteen years ago, digital assets consisted mainly of multimedia files and important documents kept on private servers. In 2009, digital assets took on a new meaning with the inception of Bitcoin. Although dollars and other currencies had been stored digitally on bank ledgers for years, the advent of cryptocurrency was an evolutionary leap for digital assets. One effective difference between fiat currency and the new digital assets or cryptocurrency is the removal of an intermediary (like a bank) to transfer assets from party to party. The initial interest in Bitcoin has spread to other digital assets, such as non-fungible tokens (NFTs), and we continue to see innovation in this space.

In 2020, many institutions reached an inflection point.¹ Because of low interest rates and the recent rounds of economic stimulus in the United States, investors described Bitcoin as “digital gold,” and their foray into cryptocurrency was driven by a belief in Bitcoin’s ability to hedge inflation. As of June 2020, institutional investors owned 6.47% of all Bitcoin, and up to 36% of institutional investors owned cryptocurrency assets.² Additionally, various sovereign nations are exploring the uses of cryptocurrency, including El Salvador, which declared Bitcoin an official currency in 2021.³ NFTs also took the market by storm and, in one example, saw a sales price of \$91.8 million for a digital artwork sold in 2021. In another example, also from 2021, digital artist Beeple sold his NFT art for \$69.3 million. It is only right that we analyze their potential role in asset allocations.

- It’s worth emphasizing: the reason to group investments as an asset class is to simplify an individual or institution’s understanding of the risk and return of their overall investment strategy.
- Some Digital Assets, notably established “crypto currencies” such as Bitcoin and Ethereum, possess characteristics of a unique asset class, including significant market capitalization, similar characteristics and regulation, established liquidity and high correlation with each other.
- Digital Assets are an “emerging” asset class, analogous to private equity in 1970’s, and may be incorporated “mildly” into an investment strategy for individuals and institutions with long time horizons.

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In this paper, we seek to answer the question:

“Should digital assets be a part of a recommended asset allocation?”

We set the stage by discussing asset classes, their definitions, and the fundamental concept of correlation. Since digital asset classes are new, this paper includes a dedicated section that discusses what digital assets are. We focus on cryptocurrency in the bid to answer our question, but we also take care to contextualize the broad term “digital assets.” The paper particularly summarizes the different digital assets and focuses on NFTs, cryptocurrency, and their grounding in blockchain technology. To answer our question, we then ask how to classify digital assets. Based on our analysis, we posit that cryptocurrency is an emerging class, whereas NFTs and other tokenized assets do not meet our criteria. This difference allows us to discuss their respective places within recommended asset allocations. Our research culminates in an analysis of digital assets as seen through the eyes of three different groups of investors.

What is an Asset Class?

Asset-class categories evolve slowly over time. For example, private equity wasn’t really considered an established asset class until the 1980s, as more investors gravitated toward the return potential of buyout funds. Today, there is growing interest in digital assets. As we consider whether digital assets merit a new and separate distinction, we first need to understand the defining characteristics of an asset class. Then we can assess whether or not digital assets are a new category of assets.

The term “asset class” refers to a grouping of investments that exhibit similar traits and are subject to the same laws and regulations.⁴ In the face of similar market-moving events, individual investments within the same asset class have similar characteristics and move in a common direction.⁵ Traditional asset classes include stocks

(equities), bonds or other fixed-income investments, cash or cash equivalents, and real estate and other tangible assets. “Alternative” asset classes include private equity and hedge funds.⁶ A major distinction among asset classes is that investments in different classes will exhibit low or even negative correlation with each other. Hence, grouping individual investments into separate asset class categories can help simplify the overall understanding of the risk and the return potential of the overall investment strategy.

Investors take many factors into consideration when allocating to asset classes, and the two most common determinants for asset allocation are time horizon and risk tolerance. Investors with long time horizons commonly take on riskier or more volatile investments, whereas investors with short time horizons would choose less risky or less volatile investments. Risk tolerance is the measure of one’s sensitivity to potentially losing all or some of the investment in exchange for higher returns.⁷

Some asset classes are large, liquid, and established. For example, the total market capitalization of the U.S. stock market was \$53.4 trillion as of 2021⁸ and \$124.4 trillion for the global stock market.⁹ Equities are commonly issued by public corporations and trade on listed exchanges around the globe. Investing in the equity of a company makes an individual a shareholder in the company. People earn returns through investing in equities by receiving capital growth through increases in the share price and receiving income in the form of dividends. However, earning positive returns in equities is not guaranteed, and the share price of the equities may fall below the value they had when people first invested.¹⁰ Four major types of equity asset classes are domestic equity, foreign developed markets equity, emerging markets equity, and private equity. Equities are generally riskier than many other asset classes, but at the same time they are expected to produce higher returns than most asset classes over the course of a business cycle. Private equity commonly refers to investments in the equity of companies that are

not publicly traded. Investments in private equity are usually made through a professionally managed fund that serves as the intermediary for activities such as evaluating and monitoring the private equity investments.¹¹

What are Digital Assets?

Most investors have a working understanding of the definitions of equities, bonds, cash, and other established asset classes. But digital assets can cause a great deal of confusion, because innovation in this field is rapidly evolving. To understand whether digital assets are a separate asset class, we first need to understand their defining characteristics.

Digital assets in the past have meant anything from data, music, and logos to high-value scanned documents. The onset of the use of blockchain and cryptocurrency led to reappraisal and redefinition of the term. Today, they refer to a broad range of diverse products. According to the *Financial Times*, digital assets are electronic files owned and transferable by individuals, used as a currency in transactions, or used as storage for intangible content such as contract documents and art.¹²

The advent of Bitcoin and the subsequent growth in cryptocurrency and other digital assets have been made possible by advances in blockchain technology. The technology uses cryptographic protocols to allow data transmission and storage on a peer-to-peer basis.¹³ To provide context, there are two types of blockchain technologies currently in use. Permissioned blockchains are private, nontransparent, and tend to be centrally governed, making them the standard approach in regulated applications. Cryptocurrency offered by a central bank uses these. Permissionless blockchains, on the other hand, are fully decentralized and transparent to the public, but come with a layer of anonymity. Permissionless blockchains seek to limit the power of central actors and instead emphasize creating decentralized networks secured by cryptography and economic incentives. Blockchain technology governs many mainstream cryptocurrencies we know.

We classify digital assets into three categories based on their role in the financial industry. They are currency, asset-backed tokens, and utility

tokens. When tokens are used as a medium of exchange, they serve as currency. These kinds of digital assets primarily exist to transfer monetary value. Digital coins are becoming a new legal tender for transactions and exchange today. Several businesses like Tesla are already accepting them, and the government of El Salvador has spent up to \$106.3 million on Bitcoin.¹⁴ Fiat currency has three criteria: a unit of account, a store of value, and a medium of exchange. Although the term “cryptocurrency” implies that it possesses these three characteristics, it does not meet these criteria. For instance, cryptocurrency does not serve as a stable store of value or a unit of account. In Tesla’s case, for example, the company keeps the value of its cars in dollars, and consumers can pay the exchange rate in Bitcoin. In the current economic climate, digital coins have proven very volatile.

When digital assets are backed by more traditional assets like equity, debt, or physical assets, they are asset-backed tokens. Tokens backed by traditional securities such as equity or debt are sometimes also referred to as security tokens. These digital assets represent ownership rights or the value of an asset that does not exist on the blockchain. Asset-backed tokens derive their value from the valuation of the underlying asset. Gold, real estate, equity, soybeans, and any other financial asset can be tokenized. To tokenize is to transform units of asset ownership or rights to an asset into a digital token housed on a blockchain network. Tokenized digital assets prove their value through the broader investor base, broader geographic reach, an increase in collateral, and decreased cost for reconciliation in securities trading. Tokenization has made all of these possible.¹⁵ Digital tokens allow more investors to buy high-value assets or illiquid instruments in smaller chunks. For example, the first instance of tokenization in Europe took place in France in June 2019. Seventeen partners bought a luxury property, the AnnA Villa in Boulogne–Billancourt, and Ethereum’s blockchain provided the infrastructure for the transaction. All documents, including ownership rights and the conditions of purchase, sale, and exchange, were recorded on the blockchain. The partners divided the luxury property into 100 digitized tokens with a further divisibility factor of 10,000. With as little as 6.5 euros, an investor could easily own part of the house.¹⁶

Non-fungible tokens (NFTs) are a high-profile subset of asset-backed tokens. They are unique identifiers that prove ownership of digital assets. People might make copies and view a copy of the NFT, but, just like the *Mona Lisa*, only one authentic version exists, and it is the most valuable. For example, Jack Dorsey of Twitter sold an NFT of his first tweet, “just setting up my twtr” for \$2.9 million. Thus, each NFT is unique, creating digital scarcity and superior proof of ownership.

The third type of digital asset is the utility token, which generates revenue, rewards, and other benefits for their holders. Not quite as tangible as currency or asset-backed tokens, utility tokens allow users to execute some action on a certain network. The utility token is unique to that network and performs just about any function the creators want it to have.¹⁷ Examples of utility tokens are the exchange tokens BNB issued by Binance and FTT issued by FTX. Somewhat like software, they provide access to a service. These digital assets provide reduced trading fees on cryptocurrency exchange platforms, among other benefits.¹⁸ For example, BNB gives users a 25% discount on trading fees.

The ethos of blockchain and cryptocurrency is to redirect power away from global hegemony and institutions. Permissionless blockchain ledgers are public, and the data in both permissionless and permissioned blockchains is fully encrypted and protected. These blockchain protocols enable open-source distributed marketplaces that are more secure than traditional financial institutions.¹⁹ The technology behind digital assets, including blockchain, has gained traction worldwide due to its increased efficiency as well as its security. The ability to decentralize transactions from large financial institutions and governments is intriguing. The interest in decentralized systems goes beyond that of individual investors. Financial institutions such as JPMorgan Chase & Co. (JPM) are instituting blockchain technology to lower transaction costs by streamlining payments.²⁰

The adoption of digital assets by large companies and governments contributes to the reputation that digital assets continue to build. As mentioned earlier, the adoption of digital assets in everyday transactions has also developed, exemplified by Tesla’s acceptance of Bitcoin as a payment

method for its products. Tesla also filed with the Securities and Exchange Commission (SEC), announcing that the company had bought \$1.5 billion worth of Bitcoin, though Tesla recently sold the bulk of this position.²¹ Although they are not yet widely adopted, the more digital assets, especially cryptocurrencies, are used in everyday transactions, the more comfortable consumers and investors will become with the novel technology. In 2021, El Salvador became the first country to establish Bitcoin as acceptable currency for goods and services, taxes, and debt obligations. El Salvador aims to reduce reliance on remittances, decrease the number of underbanked people (since 70% of El Salvador’s residents do not have a bank account), and decrease the reliance on the U.S. dollar.²² The extreme reliance of El Salvador’s economy on remittances—money transfers from outside the country—is also a factor. Over 20% of its GDP comes from remittances. Often, transaction costs can consume up to 30% to 50% of the total value of the transferred money. Government officials hope that the use of Bitcoin can lower the burden of these transaction costs. Unfortunately, the Salvadoran government’s Bitcoin holdings have lost about 60% of their estimated value as of July 5, 2022. The loss has caused a lot of turmoil within the country, hurting President Nayib Bukele’s reputation.²³ El Salvador took a risk on the use of Bitcoin as a currency. Though the past few months have been tumultuous, the Salvadoran government continues to hope that Bitcoin will stabilize and prove its value by lowering transaction costs.

The growing interest in cryptocurrency comes with additional caveats. Mt. Gox, a Japan-based Bitcoin exchange and the largest handler of Bitcoin transactions from 2010 to 2014, lost over 850,000 Bitcoin in that period and filed for bankruptcy. Silk Road, which also used Bitcoin as its primary payment system, was a shield for illegal activity.²⁴ As a result, despite the potential benefits of a decentralized financial instrument, digital assets have faced many challenges in their quest to become mainstream.

How Should We Classify Digital Assets – Asset Class or Not?

The more intertwined digital assets become with the world of finance, the more pressing it is to determine if they are a new and definable asset class. Or, do they fit into the other already established asset classes? And, if they are a separate asset class, how large of a component should this constitute in a comprehensive investment plan? Digital assets have amassed great interest from investors, but relative to more established asset classes, digital assets lack regulation and do not have a long series of historical returns from which we can draw inferences. This leads us to define some digital assets as an emerging asset class.

The size of the cryptocurrency market has ballooned over the last decade from almost nothing to a high market capitalization of \$2.839 trillion in November 2021, before stumbling recently to \$954 billion as of July 17, 2022.²⁵ This size and epic climb to a market cap in the trillions have cemented digital assets in the news cycle and as a force to be reckoned with in the investment world. The value of one bitcoin, the marquee digital asset, climbed from effectively \$0 at inception to more than \$60,000 at several points in 2021, before dropping to \$20,000 as of August 2022.

Digital assets, revolutionary in their infancy, have become attractive to millions of everyday investors. The reasons for this attraction are plentiful:

1. *Decentralization*
2. *Blockchain Technology*
3. *Democratization*

4. *Peer-to-Peer Transactions*

5. *International Exchanges*

6. *In some cases, a Finite Supply*

Decentralization allows digital assets to trade on exchanges outside the control of a central authority. Blockchain technology allows digital assets to be tracked and verified more easily than ever and instantly ensures settlement of ownership and transactions. The democratization of these assets allows structural decisions to be made by the majority of holders. The peer-to-peer transactions that come with digital assets allow payments to be completed with lower or no transaction costs and to take place in real time anywhere in the world. Finally, the finite supply of many of these assets—for example, there can only ever be 21 million Bitcoin—keeps these assets free from dilution by any government or agency.²⁶

And yet investors will need to navigate the extreme volatility of digital assets. Seeing returns disappear quickly and sometimes inexplicably is a risk previously unknown to most investors. For example, in May 2022, Terraform Labs' TerraUSD and Luna collapsed. TerraUSD was a stablecoin, meaning that it was supposed to keep a constant value of \$1. But it dipped below \$1 and continued to fall. Luna tokens, once worth more than \$100 each, crashed to below a penny, all but erasing a market value that had exceeded \$60 billion.²⁷ Exhibit 1 shows the sudden decline of Luna, including its final precipitous drop over 24 hours in May 2022. This type of collapse, with all of one's initial investment becoming essentially worthless, is catastrophic for any investor. For investors planning to retire, such a loss would likely be insurmountable, given their likely inability to generate an income to earn back these losses.

*Exhibit 1:
Terra's LUNA Price Drop*



Source: Sharuya Malwa, Terra's LUNA Drops to Almost \$1 After 90% Weekly Plunge, CoinDesk.²⁸

One additional drawback concerning digital assets is valuation. Unlike with stocks or bonds, it is difficult to value digital assets and thereby develop long-term expected returns. For the most part, there are no dividends, coupon payments, or other cash flows useful for conducting discounted cash flow analysis or employing other valuation models. The absence of cash flows has led us to see parallels between digital assets and commodities. Commodities generate no cash flow and are often priced intrinsically via basic supply and demand. In fact, there have been efforts, most notably by Senators Cynthia Lummis and Kirsten Gillibrand, to allow the Commodity Futures Trading Commission (CFTC) to regulate the digital assets market.²⁹

The SEC has also grappled with the concept of regulating digital assets, but currently no U.S. government regulatory agency is directly responsible for digital assets. The SEC has brought 80 enforcement actions against some crypto platforms, but Congress has yet to determine the SEC's true role in the digital asset world. This uncertainty leaves digital assets in legal limbo that may make them unattractive for conservative investors.³⁰

The lack of widespread ownership can also keep investors away. The novelty of digital assets means that concentrated ownership presents an acute risk with many of them. For example, as of October 2021, the top 10,000 individual investors in Bitcoin own around one third of all Bitcoin in circulation.³¹ Such heavy concentration can reduce liquidity and exacerbate market risks if many investors decide to sell simultaneously.

So, given the heavy interest but the number of drawbacks, how should we classify digital assets from an investor's point of view? We would classify cryptocurrency as an emerging asset class. This choice is due to massive interest in cryptocurrency and to its large market capitalization, although that capitalization fell significantly over the course of 2022. Avinash Shekhar, the CEO of ZebPay, one of the leading cryptocurrency exchanges worldwide, called cryptocurrency "a great asset class where Bitcoin and Ethereum serve as a store of value and reservoir of use cases, respectively. These will continue to grow and have reached their maturity. Bitcoin specifically has become an asset class due to people seeking long-term gains rather than speculative trading."³²

*Exhibit 2:
S&P 500 and Bitcoin Correlation*



Source: Bloomberg

NFTs and other tokenized assets have garnered an incredible amount of attention, especially from high-net-worth investors. These investors have poured millions into popular collections of NFTs such as the Bored Ape Yacht Club collection. One celebrity investing in NFTs is the actor Seth Green, who purchased four NFTs for a total of \$300,000. His investment was then stolen by a hacker in a phishing attack, leaving Green in legal limbo as he tried to reclaim his assets. He ended up having to pay an additional \$260,000 to reclaim his investment.³³ This additional risk, paired with a lack of liquidity and the niche nature of investing in an illiquid asset with many of the characteristics of a collectible, makes NFTs less attractive than their cryptocurrency counterparts. In fact, NFT market capitalization is only \$1.859 billion as of July 2022,³⁴ well below the size of the U.S. equity market, which today exceeds \$50 trillion. These aspects make NFTs less of an independent emerging asset class. Therefore, we would only classify cryptocurrency—but not NFTs—as an emerging asset class. NFTs are not nearly of the size, liquidity, and scale to merit consideration as an asset class. Our hesitancy to classify them as an asset class could change as the market evolves and access to these unique investments becomes more available to a broader set of investors.

Digital assets' novelty as well as the unique blockchain technology that backs them has introduced investors to assets unlike any they have seen before. This interest has made digital assets one of the most intriguing stories in the financial industry. We consider these new assets to be split chiefly into two categories. Cryptocurrencies can stand alone, and we posit that they are an emerging asset class due to their significant market capitalization and unique benefits. NFTs and some of the other lesser-known digital assets do not quite meet the criteria of an emerging asset class and remain too thin a market to be considered an emerging asset class. The coming months and years will see digital assets become more and more established, especially as the United States government figures out how to regulate and account for digital assets. These assets will continue to democratize investment and open a new frontier of investment for those looking to diversify their portfolios away from traditional assets.

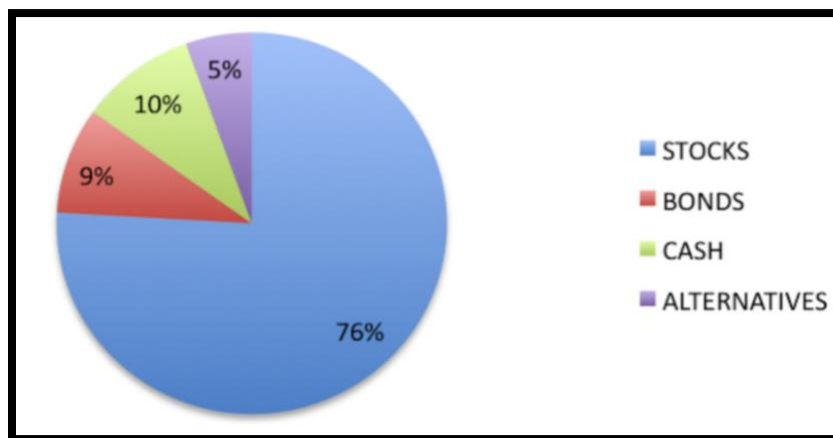
Who Should Invest in Digital Assets?

We believe that investors need to exercise caution when investing in digital assets. Digital assets are speculative due to the absence of predictable cash flows and their high levels of volatility, though they can also offer compelling returns as well as diversification potential. These characteristics make digital assets suitable only for certain types of investors. Given the volatility of digital assets we have chosen to make recommendations to investors with different time horizons. We analyze investors early in their careers, investors nearing retirement, and college endowments. The reason we chose these three is that they all have different needs and goals for their investments. The ability to integrate digital assets into their portfolios may be the difference between portfolios that significantly beat the market and those that struggle to keep up.

Early-Career Investors

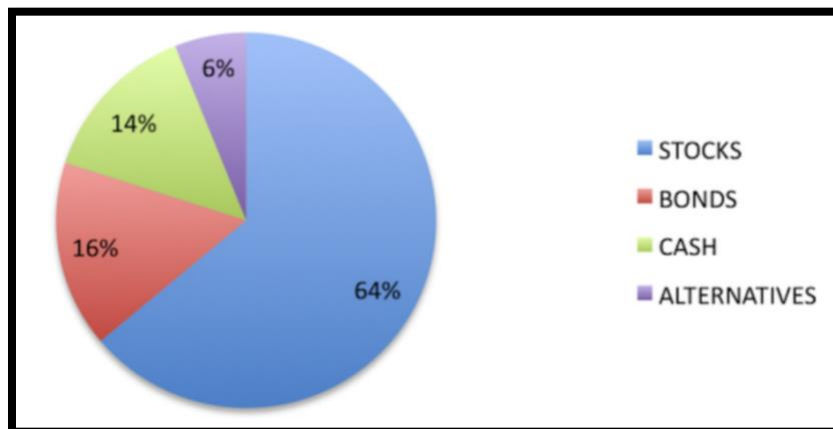
The advantage of investing in cryptocurrency for people aged 19 to 21 is that individuals in this age group have a 45-year time horizon until retirement, allowing them to sustain more risk. Indeed, compared to investors nearing retirement, young people tend to invest a larger portion of their assets in equities rather than in fixed income. Exhibit 3 shows that young investors allocate a high percentage of their assets in equities, a very volatile asset class. Like equities, digital assets commonly come with high risks. Investors early in their careers are more likely to overcome periods of drawdown in their investments, with more years remaining to earn back any erosion of capital. Therefore, we recommend that investors under age 30 consider some exposure to digital assets with the expectation of continued growth in this industry. This exposure, paired with the diversification of their portfolios that digital assets can provide, makes a measured allocation to digital assets an appropriate choice for younger investors.

*Exhibit 3:
Average Asset Allocation for 20- to 34-Year-Olds*



Source: "Should I Buy Bonds to Build Wealth? Wealthy People Don't," Financial Samurai, April 26, 2021, <https://www.financialsamurai.com/should-i-buy-bonds-wealthy-people-dont/>.

Exhibit 4:
Average Asset Allocation for 55- to 64-Year-Olds



Source: "Should I Buy Bonds to Build Wealth? Wealthy People Don't," Financial Samurai, April 26, 2021, <https://www.financialsamurai.com/should-i-buy-bonds-wealthy-people-dont/>.

Investors Nearing Retirement (Late Career)

In contrast to early-career individuals, investors nearing retirement face a shorter time horizon for their investment outlook. Clearly, a time horizon of 10 years is much shorter than the horizon faced by a 20-year-old investor. Exhibit 4 shows that investors nearing retirement carry less exposure to equities and make a higher allocation to fixed-income investments than younger investors, reflecting a greater aversion to risk among older investors. Due to their short time horizon and to protect their principal, we recommend that investors nearing retirement should avoid digital assets completely. As interest rates continue to increase along with bond yields, fixed-income investments should become more attractive to investors nearing retirement. The brevity of these investors' time horizons will favor more traditional investment strategies like the popular 60/40 portfolio, leaving no room for digital asset allocation.

One of our earlier examples demonstrates the potential danger of investing in digital assets at a late age. As Exhibit 1 shows, Terra's LUNA fell from a market capitalization of almost \$17 billion, with the price falling 96% in 24 hours to a minuscule value of \$1.30. This catastrophic decline is unacceptable to investors looking to begin withdrawing from the investments that they worked

so hard to create. Losing wealth at this late stage is known as "sequencing risk," which highlights that those investors near retirement have more assets invested than younger people, and less time and ability to make up for any losses.

College Endowments

We believe that only investors with lengthy time horizons should own digital assets. As we move away from individuals and think about institutional investors, college endowments are prime candidates. We expect endowments to be first movers in this space compared to other institutional investors.

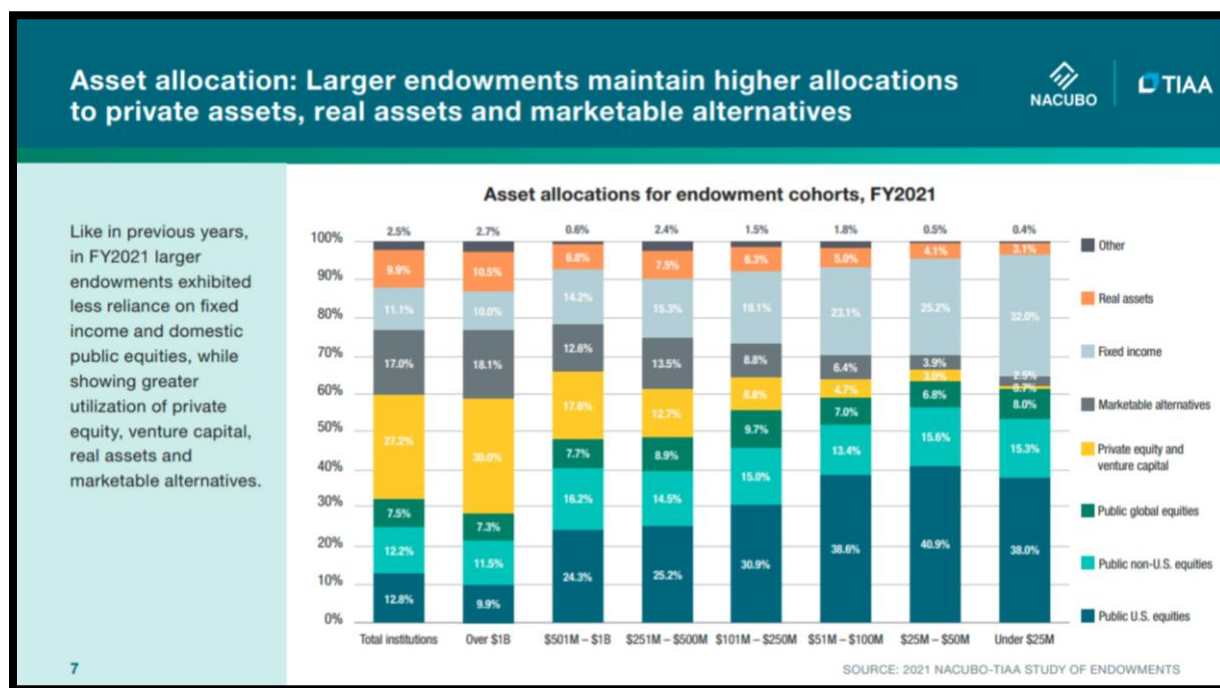
College endowments represent assets invested by institutions of higher education to support their educational and research missions in perpetuity. Most endowments operate on a perpetual, or infinite, time horizon. A lengthy time horizon encourages innovation and flexibility when designing the overall asset allocation.³⁵ For these reasons, college endowments are prime candidates for investing in digital assets.

The methods of David Swensen, the former endowment fund manager and chief investment officer of Yale University, have greatly influenced endowment asset allocations. The baseline of his Yale Model involved investing in illiquid and alternative investments. His ideas incorporated broad diversifications across asset classes, low allocations to assets with low expected returns (fixed income, commodities), and high allocations to illiquid assets like hedge funds, private equity, private real estate, and venture capital. Other college endowments adopted this model after it enjoyed unprecedented returns. The three characteristics of the Yale Model are supportive of endowments wishing to invest in cryptocurrency. Cryptocurrency and the backing blockchain technology are alternative assets in today's investment atmosphere. Earlier on, we appropriately called them emerging asset classes.

Digital assets include tokens that lean more toward the illiquid assets Swensen favored. The past years for cryptocurrency have also seen massive returns. Additionally, with blockchain technology, college endowments could benefit from greater security and faster transactions from holding some of their illiquid assets in digital tokens.

Furthermore, college endowments are likely already investing in digital assets. A report by CoinDesk in January claimed that higher education institutions like Harvard, Yale, and the University of Michigan had invested an unknown portion of their endowment funds in cryptocurrency, specifically Bitcoin, through the cryptocurrency exchange platform Coinbase. Although the claims were not confirmed, Coinbase's 2020 annual report did show college endowments, albeit unnamed ones, as its clients.³⁶

Exhibit 5:
Endowment Asset Allocations



Source: 2021 National Association of College and University Business Officers (NACUBO) and Teachers Insurance and Annuity Association (TIAA) Study of Endowments³⁷

For colleges wishing to invest in digital assets, the main challenge may be determining the size of the allocation. The endowment study is a report regularly done by TIAA and NACUBO. In Exhibit 5, we see that the higher the value of a college endowment, the more it is diversified away from traditional assets such as equities and bonds. Larger endowments that are diversified away from traditional assets tend to have stronger returns. College endowments have more freedom and complexity, and many do not use an investment model like 60/40 or 70/30 asset allocation. We believe, at the very least, that digital assets could fit into the “other” investments bucket in Exhibit 5. Another possibility would be for endowments to

create an “opportunistic” asset class and hold digital assets in this category. This “opportunistic” asset class should carry a weight of no more than 2.5% to 5% of the overall asset allocation, reflecting a higher degree of risk than other, more standard, asset classes.

That said, we believe at this stage that college endowment funds should maintain mild exposures to digital assets because of the gaping lack of information and the extreme volatility of these assets. Digital assets have in the past seen massive returns, but even perpetual investors like college endowments must take the proper steps in asset allocation to curb these risks.

Conclusion

Digital assets are an emerging asset class. They have amassed significant interest from investors, allowing for a sizable market capitalization. These positive attributes are tempered by a lack of regulation and a lack of historical returns over a long time period during which potential investors can analyze all of the risks. Digital assets have six positive attributes likely to draw investor interest for many years: decentralization, blockchain technology, democratization, peer-to-peer transactions, international exchanges, and a finite supply. The increased efficiency and security of digital assets as a result of the technology backing them, such as blockchain, have gained worldwide traction. This recommendation, however, specifically applies to cryptocurrency but not to its illiquid NFT counterparts. Moreover, investors’ time horizons are one of the largest factors that groups of investors consider when deciding whether to recommend digital assets to financial advisors. Our analysis, coupled with a consideration of the potential extreme volatility of digital assets, leads us to a conclusion that supports a mild allocation to digital assets for younger individual investors and for *institutions*, such as college endowments, with long time horizons.

As Digital Assets become increasingly prevalent in markets worldwide, we hope that our research proves useful in navigating where they fit into the portfolios of investors. We understand that Digital Assets are novel and extremely volatile, and we do not claim to know what the future holds for this incredibly interesting investment. Through our Opinion Snapshot, we hope to make educated predictions of where Digital Assets are heading. We set out to accomplish this by providing a background of digital assets and attempting to display where they may fit into the portfolios of investors with time horizons ranging anywhere between 10, 45, or an infinite number of years. These opinions belong to the members of the group and reflect our research. We would like to extend our gratitude to the Sapere Aude Consortium for allowing us to participate in an incredible program and complete enriching research. We would also like to thank Ashley Oerth of Invesco for her informative presentation on Digital Assets as well as Ric Thomas, CFA, and Jason Windawi for their invaluable expertise, guidance, and mentorship throughout this process.

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