

Cryptoassets:

A Viable Asset for Pension Funds?

by | Gregory Leonberger and Brandon Von Feldt



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Should pension funds consider investing in cryptocurrencies such as Bitcoin? The authors provide some basics on this developing asset and discuss the risks and opportunities it may present for institutional investors.

The rising popularity of cryptoassets, specifically Bitcoin, has institutional investors pondering whether they should begin making a dedicated allocation to this emerging asset. Both their astronomical returns and large losses have garnered attention around the globe. Though the asset is in its beginning stages of adoption, pension funds and trustees should be aware of cryptoassets and how they work in order to make informed asset allocation decisions for their plan participants.

What Are Cryptoassets?

Cryptoassets, also known as *cryptocurrencies*, are digital assets that are encrypted in order to facilitate and verify payments between two parties in a transaction. A key feature of these transactions is that they are decentralized, which means that the cryptoassets flow directly from one person to another without the use of a bank or other financial intermediary.

The benefit of eliminating a bank from a transaction is that the fees that banks charge would be eliminated, providing a cost savings to the parties involved. These transactions are instead recorded on a blockchain and verified by the network of users. A *blockchain* is an electronic ledger that is available to all of the members in a network. This ledger is encrypted in order to preserve the transaction history and ensure that the digital record can't be changed by anyone who may be looking to do harm to the parties that have transactions stored on the blockchain.

What Is Bitcoin?

Bitcoin is the most popular form of cryptocurrency and was launched in 2009. With more than seven million users worldwide and 350,000 daily transactions, Bitcoin has come far from the fledgling technology it began as. A sophisticated encryption algorithm ensures the integrity of transactions and controls the new supply of Bitcoin. Nearly 1,800 new bitcoins are issued every day. A key differentiator between Bitcoin and Ethereum, the next most famous cryptocurrency, is that Bitcoin has a limited supply of 21 million coins, while Ethereum is unlimited.¹ Ethereum also has a different function than Bitcoin. Bitcoin is used as a medium of exchange, while Ethereum is used as a means to validate a special transaction known as a *smart contract*.

What Are Cryptoassets Used For?

Bitcoin and Ethereum are the cryptoassets that dominate the headlines, though there are more than 2,300 total types of cryptoassets.² Bitcoin is becoming increasingly common as a form of payment; a growing number of online retailers have begun to accept it

on their websites. Companies like Microsoft, Shopify and Overstock already accept Bitcoin, with others planning to implement it as it gains popularity. KFC Canada even allows customers to purchase a bucket of chicken using Bitcoin.³ Another use of Bitcoin is as a potential preservation of value in case of a large currency value depreciation. This is less of an issue in developed markets like the U.S., but for countries that are going through default or a turbulent regime shift, like Argentina, Bitcoin could potentially provide a much-needed source of stability.

Is This Really a Financial Asset?

Financial assets are liquid assets that derive their value from a contractual right or ownership claim. *Stocks* are one of the most prevalent examples of a financial asset. They are a share of ownership in a company that is purchased primarily for the purpose of price appreciation. When a company's worth rises, the value of the stock rises. *Bonds*, on the other hand, are loans that provide the investor regular interest income. When a bond matures, the investor receives his or her original prin-

cipal back. Stocks and bonds both have their own risk and return profiles, with stocks offering a higher risk and return profile, while bonds are lower on the risk and return spectrum.

When compared with traditional financial assets, the key differentiator of cryptoassets is that the blockchain preserves the entire transaction history and ownership records of each cryptoasset's entire lifetime. In contrast to stocks and bonds, there is no underlying asset supporting its value, which makes it difficult to compute an intrinsic value.

How Do Cryptoassets Differ From Other Currencies?

Many experts treat cryptoassets the same as a currency, though this is certainly not a perfect comparison. As mentioned before, one major difference is that there is no bank guaranteeing the transaction. The risk is that no financial intermediary exists, and the blockchain is the sole record of any transaction history. If the blockchain were to be changed, someone could potentially steal a person's cryptoassets and create evidence that it was a legitimate transaction, and that person would have no fraud protection from a bank. The sheer volume of transactions that a traditional financial company can handle is also much larger than the amount currently taking place in the cryptoassets space. For example, Visa can currently handle up to 24,000 transactions per second while Ethereum can accommodate only 20.⁴

Another key difference is that there is no bank responsible for the oversight of any cryptocurrency. Traditional currencies—like the U.S. dollar—are monitored by a central bank (for the U.S.

takeaways

- *Cryptoassets*, also known as *cryptocurrencies*, are digital assets that are encrypted in order to facilitate and verify payments between two parties in a transaction.
- *Bitcoin* is the most popular form of cryptocurrency and was launched in 2009.
- Unlike other financial assets such as stocks and bonds, cryptoassets have no underlying asset to support their value, which makes it difficult to compute an intrinsic value.
- Cryptoassets can be acquired in three ways: (1) purchased directly on an exchange, (2) through "mining" or (3) through an investment trust.
- Few pension funds have invested in cryptocurrencies so far. Challenges include high volatility and difficulty classifying these assets.
- Attractive features include low correlation with other assets and lower fees because of the lack of a central authority.

dollar, it is the Federal Reserve) that can control interest rates and the amount of money in the system as well as regulate banking operations. Central banks provide currency stability using these tools that cryptoassets do not have.

These features allow the dollar to be relatively stable when compared with cryptocurrencies. When compared with more modern payment systems, like PayPal, there are still key differences. PayPal is centralized because it allows payments to be refunded if an item is returned or a potential bad actor is attempting to abuse the system. Though the market size of cryptoassets is double the size of PayPal, transactions made via the blockchain are less transparent since the payer does not ultimately know who is receiving the payment. Furthermore, PayPal is used almost exclusively for facilitating payments between two parties, whereas cryptoassets have other potential uses such as preservation of value and investment upside potential. The total market size of the dollar is six times larger than cryptoassets. Payments around the world are denominated in the U.S. dollar because of the stability and guarantee from the U.S. government that the payment will be honored.

How Do Cryptoassets Work?

Cryptoassets can function as a result of the infrastructure system provided by the blockchain. The blockchain is a ledger that is shared by all approved users. Approved users can add or change data in the blockchain and instantly view transactions made by others. The data in the blockchain is replicated and synchronized, eliminating any chance of discrepancy or manipulation by bad actors. Every time a block is changed, all of the previous blocks are re-encrypted. This key feature ensures transparency and consistency and reduces the risk of privacy breaches and unauthorized data manipulation. The growing list of records, called *blocks*, are linked using cryptography. Each block contains a record from the previous block, a time stamp and the current block's transaction data.

How Are Cryptoassets Acquired?

There are three ways to invest in cryptoassets.

1. **Purchase them directly on an exchange.** Exchanges such as Bitstamp and Coinbase provide the ability to purchase and sell cryptoassets (such as Bitcoin) directly, much like how a stock is traded on the stock exchange.

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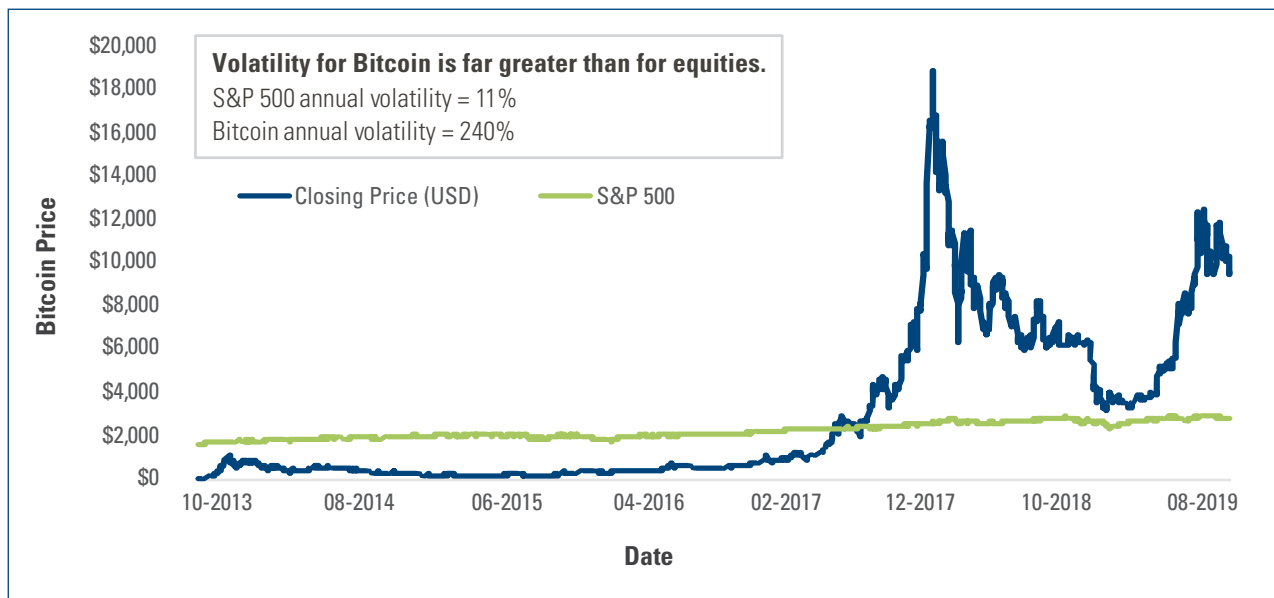
2. **“Mine” for them.** This is a more complicated way to acquire cryptoassets. Mining is the main source of new tokens for a majority of cryptoassets, including Bitcoin and Ethereum. Miners use computers to solve complex math puzzles. The winner of the puzzle processes the transactions on the block and collects Bitcoins as a result of solving the problem correctly. For Bitcoin, there are 25 coins awarded every ten minutes, with each problem becoming increasingly more difficult than the last. Highly specialized and powerful computers are typically used to mine, and competition is fierce as the industry is a winner-take-all system.
3. **Purchase an investment trust.** This is comparable to a mutual fund. A key caveat to purchasing an investment trust is that it is only open to accredited investors and requires a \$50,000 minimum investment. To qualify as an accredited investor, individuals must have a salary of greater than \$200,000 for the trailing two years. Institutional investor qualifications are dependent on plan asset size instead of salary. The fees on the investment trust are steep at 2.0%, and the fund has a mandatory one-year lock-up period. The fund also trades at a premium to Bitcoin due to the ease of access and the fact that the fund takes care of storing the Bitcoins, which can be a costly process for individual investors.

How Are Cryptoassets Valued?

Cryptoassets have value because people think they have value. Sentiment drives price, and this causes massive

FIGURE

Invest at Your Own Risk



Sources: Bloomberg, Coinbase.

swings in price from one day to the next. Because cryptoassets have no intrinsic value and no income stream, it is impossible to value a cryptoasset using a discounted cash flow model like an investor would for a stock or bond. As a result, some financial experts have turned to valuing cryptoassets as a currency by looking at supply and demand dynamics. By using transaction volume and the amount of cryptoassets in circulation in comparison with other common currencies, investors can derive a rough price at which they think cryptoassets should be trading.

As an investment, the price of Bitcoin has been exceptionally volatile compared with other assets as shown in the figure. Bitcoin lost 70% of its value in 2018 and has had an annual volatility of 240% since October 2013. In the same time period, the S&P 500 had an annual volatility of 11%, far less than that of Bitcoin.⁵ Bitcoin's return since 2011 has been 52% per year, far greater than traditional assets. This return may seem attractive, but Bitcoin has had five drawdowns of more than 60% in only eight years.

There is another feature of Bitcoin that is attractive from an asset allocation standpoint: low correlation to stocks and bonds. Correlation provides a diversification

benefit, increasing the return per unit of risk from a total portfolio standpoint. Though Bitcoin has a few attractive characteristics, it is not yet an institutional-ready asset. Bitcoin has an extremely short data history, is volatile and is quite small compared with the market size of other common financial assets. In addition, Bitcoin has seen exchange-traded-fund (ETF) formations denied by the Securities and Exchange Commission to protect individual investors due to its unregulated market and the threat of cybersecurity breaches.

Considerations for Pension Funds

In all, Bitcoin and other cryptocurrencies are still in their early stages, and pension funds should continue to monitor the asset as it evolves. Plan fiduciaries must evaluate cryptoassets just as they would other plan investments for compliance with the Employee Retirement Income Security Act of 1974 (ERISA).

There are numerous concerns from both a cybersecurity and regulatory standpoint, but the potential remains for cryptocurrencies to eventually become a mainstay of payment transfers in one way or another. Facebook's work on

the introduction and development of Libra, its own cryptocurrency, provides a large platform from which Facebook users can send and receive payments directly. Though Libra has seen significant challenges from a regulatory standpoint, it has the potential to make cryptocurrencies common as a payment transfer medium.

Cryptoassets have inherent cost advantages over traditional centralized banking systems, though it remains to be seen whether the asset as an investment will prove profitable in the future.

The complicated code behind the blockchain and questions regarding how to value a cryptocurrency provide barriers to becoming an institutional asset fit for investment portfolios.

Over the past four years, Bitcoin has seen wild price swings both to the upside and to the downside. As a result, it is no surprise that it has been one of the most popular topics of discussion in the investment community. Investors are tempted to speculate on Bitcoin because of the perceived potential to generate high returns quickly.

There are inherent risks in investing in such a volatile and emerging asset. Bitcoin storage is not always secure, and some of the largest exchanges have experienced hacks that have resulted in the loss of billions of dollars. Bitcoin and other cryptocurrencies are also the preferred medium for illicit activities since the transactions are often untraceable. Ransomware attacks have forced some municipalities to pay hackers in Bitcoin to restore their systems, and as a result some countries, namely South Korea, have banned the use of Bitcoin altogether.

Pension funds have taken an increased interest in the space; however, very few have taken the leap to invest in the asset. In addition to the risks, one of the main issues for trustees is in the asset allocation process. How does one classify cryptoassets? Is it a commodity, a hedge fund or completely separate altogether? What benchmarks are appropriate to use? There is no standard answer to these questions. Many investment advisors view cryptoassets as speculative and a potentially inappropriate investment for their plan participants' funds due to the high volatility.

A recent study of 441 institutional investors by Fidelity Investments notes that four in ten respondents are open to having a cryptoasset allocation in their portfolio within the next five years. The legitimization of the asset would certainly increase if investors follow through on this decision.

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Gregory Leonberger, FSA, EA, MAAA,

is the director of research and a managing partner for Marquette Associates, where he leads the firm's capital markets research and directs investment strategies and policies. He also serves on the firm's investment committee and discretionary committee. He holds a B.S. degree in mathematics and economics from the University of Notre Dame and an M.B.A. degree in analytic finance from the University of Chicago Booth School of Business. He is a fellow of the Society of Actuaries, an enrolled actuary and a member of the American Academy of Actuaries.



Brandon Von Feldt, CFA,

is a research associate for Marquette Associates, where he works with asset class analysts and the director of manager search on research projects, constructs manager searches and interacts with investment firms. He is a member of the firm's investment committee and the secretary for the traditional investment manager search committee. He holds a B.S. degree in finance from DePaul University and is a CFA charterholder, a member of the CFA Institute and a member of the CFA Society of Chicago.

The large, stable market and backing from the U.S. government provides a guaranteed and worry-free way to transfer money that cryptocurrencies currently do not have the ability to provide.

However, the relative infancy and significant growth of cryptoassets make it an asset worth watching in the future. **■**

Endnotes

1. See www.coindesk.com/learn/bitcoin-101/what-is-bitcoin.
2. See www.coinbase.com.
3. Chris Morris, "KFC Introduces a Bucket That Can Only Be Paid for in Bitcoin," *Fortune*. January 12, 2018. Available at <https://fortune.com/2018/01/12/kfc-bitcoin-bucket/>.
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5. Bloomberg and Coinbase data.

