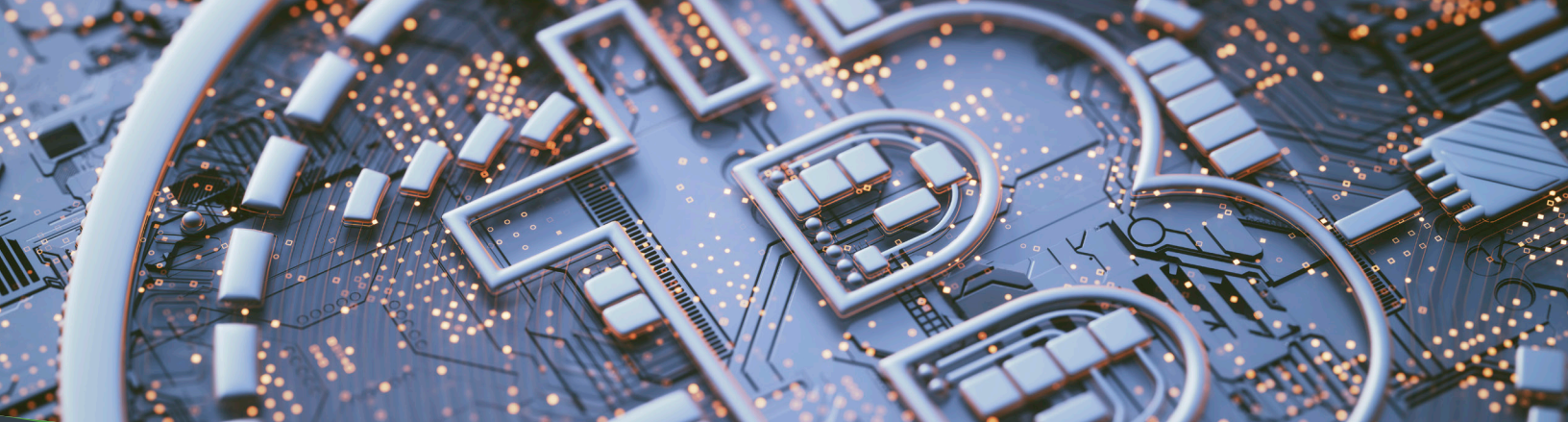


Investing Ideas

Institutional Insights

Considerations when assessing spot bitcoin ETPs

Key questions to understanding the nuances and unique features of spot bitcoin exchange-traded products (ETPs).



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KEY TAKEAWAYS

- Spot bitcoin ETPs are the first exchange-traded products in the U.S. that track the price of bitcoin by holding actual bitcoin as their underlying asset.
- With the long-awaited launch of these ETPs, investors have a new and easier way to gain exposure to the price of bitcoin—without buying it directly—in brokerage, trust, and tax-advantaged accounts.
- However, these investment products are not all the same and it is important to consider the right provider with the expertise and resources to best track the price of bitcoin, ensure secure custody of the underlying assets, and provide the most value to investors.
- Among the key topics to understand: the issuer's experience; why the custodian is so important; the direct and indirect costs; what keeps ETP share prices in line with the price of bitcoin; and tools to evaluate the efficiency of spot bitcoin ETPs.

Spot bitcoin ETPs are for investors with a high risk tolerance. An investor may lose all or substantially all their investment in these funds. They invest in a single asset, bitcoin, which is highly volatile and can become illiquid at any time.

Fidelity INVESTMENTS

Introduction

The launch of the long-awaited category of spot bitcoin ETPs offers investors a new and easier way to gain exposure to the price of bitcoin—without buying it directly—in brokerage, trust, or tax-advantaged accounts. Approximately 4% of all bitcoin in circulation is now held by these U.S.-based ETPs,[1] illustrating not only expanding access but also the increasing maturity of the segment.

However, these investment products are not all the same and it is important to understand the differences to select the right provider with the expertise and resources to best track the price of bitcoin, ensure secure custody of the underlying assets, and provide the most value to investors. This paper will present the key questions an investor may want to explore when considering a spot bitcoin ETP.

Does the issuer have a history of managing ETFs? Does the issuer have the domain expertise in bitcoin and other digital assets?

Investors have plenty of choice when it comes to selecting a spot bitcoin ETP as part of a diversified asset allocation mix. ETP issuers vary widely in terms of their history, size, and commitment to digital assets as an asset class. Investors may want to consider a provider with broad experience for several reasons. First, a provider with a history of managing ETFs investing across multiple asset classes—not just digital assets—may be more likely to have considerable experience and extensive market relationships in managing ETFs, particularly during significant market volatility and downturns. Some investors may want to select an issuer that they already know and trust, with a long history and proven expertise managing ETFs. Such a track record may potentially help alleviate some of the concerns about the risks of investing in bitcoin.

Investors may also want to explore an issuer's level of commitment and resources to research and evaluate digital assets. Bitcoin is a cryptocurrency that operates and trades in markets differently from traditional capital markets. Ideally, a provider would have a history of researching bitcoin and the broader digital asset ecosystem and would understand the technology and market infrastructure of the asset class. Investors may want to explore an issuer's operating history with digital assets over the last decade, and their work utilizing and implementing blockchain technologies, including early testing and research.

Why is the custodian so important to consider when selecting a digital assets investment product? What are the risks related to an ETP custodian versus owning bitcoin directly?

Spot bitcoin ETPs have expanded access to the price exposure of bitcoin through a traditional exchange-traded product. Investors own shares of the trust, representative of the underlying asset, bitcoin. The trust, in turn, owns "physical" bitcoin rather than using derivative instruments such as futures or swaps (an approach used by some existing bitcoin ETFs). This structure can increase transparency and improve performance of these products. However, holding physical bitcoin in an ETP, which requires the ETP issuer to use a custodian to hold the bitcoin, entails potential risks, some of which may be different than owning bitcoin directly.

Ownership of bitcoin is determined by controlling the private keys to a corresponding bitcoin address enabling a bitcoin user to interact with the Bitcoin network.* The devices used to store these private keys are commonly referred to as wallets, which take a variety of different forms. Bitcoin itself has not experienced any breaches in its cryptography; cases of theft have been due to end users mismanaging the private keys stored in the wallet. The custodian who holds the physical bitcoin for spot bitcoin ETPs is therefore a critical service provider for risk management.

Potential investors may want to address additional questions on safekeeping to the issuer and ensure the issuer has evaluated the risks around the digital assets custodian that safeguards the bitcoin held by the fund. We suggest these due diligence considerations should span three categories to assess the risks:

1. security and risk management;
2. the track record; and
3. governance and regulation.

Authorized participants (APs)
Typically large financial institutions who create and redeem ETP shares directly with the issuer.

Bid/ask spread
The spread between the price to buy and sell a security (including ETFs and ETPs) in the secondary market.

Spot bitcoin price
The price to buy or sell bitcoin at a given point in time. Bitcoin does not have a universal price because it trades 24/7 globally on multiple exchanges, and the prices of bitcoin may differ between different exchanges leading to multiple spot prices.

Net asset value (NAV)
The value of all assets, including bitcoin, held by an ETP less accrued fees or other liabilities. For spot bitcoin ETPs, the value of bitcoin held is often measured using an index price and is reported at the end of each day.

Intraday net asset value (NAV)
The NAV as measured during the trading day, typically using a spot price instead of an index price to determine the value of the underlying bitcoin.

ETP share price
The price at which investors buy or sell ETP shares in the secondary market, which is a result of supply and demand.

Bitcoin index price
Bitcoin ETPs have indexes that act as their "benchmarks" and are used to calculate the NAV. Indexes may have different methodologies (spot-based or volume-weighted average) in how they measure the price of bitcoin.

The definitions above are not universal for all ETPs and provide an overview of topics covered in this article.

What are the costs of ownership for spot bitcoin ETPs?

The total cost of ownership for spot bitcoin ETPs includes both direct costs and indirect costs (Exhibit 1). The direct costs for spot bitcoin ETPs are expressed in a unified fee that the issuer charges (called "sponsor fee" in the prospectus) as a percentage of the ETP's net assets. Indirect costs for spot bitcoin ETPs are a result of how the shares trade in the secondary market. Some important components include the spread between the price for an investor to buy (ask) and the price to sell (bid), and also how closely these prices track the value of the underlying bitcoin.

Total Cost of Ownership = Direct Costs + Indirect Costs

Investors in spot bitcoin ETPs must purchase and sell shares in the secondary market at market-determined prices, as opposed to mutual funds where investors buy shares directly from or sell directly to the issuer at the end-of-day net asset value (NAV). The spread between the prices at which investors can buy and sell is referred to as the "bid-ask" spread, and this spread can be influenced by market volatility, trading volume, and overall liquidity conditions for the shares. A market for ETP shares that is "deep," meaning relatively large volumes can be traded at or near the best available price, can help to minimize the effective cost to buy or sell. If a market is less deep or has less trading volume, investor trading activity can have a larger market impact in terms of execution costs, and this activity would also represent a larger share of trading volume.

Another indirect cost for spot bitcoin ETPs is a result of differences between ETP share prices and the intrinsic value[2] of those shares at the time of purchase. The intrinsic value of a spot bitcoin ETP can be measured as the end-of-day NAV or by the intraday NAV when calculated during the trading day. If the share price of the spot bitcoin ETP is trading above its intraday NAV, the ETP is said to be trading at a premium. Conversely, if the share price of the spot bitcoin ETP is trading below its intraday NAV, the ETP is said to be trading at a discount.

As with U.S. equity ETFs, variation in the premium or discount is an indirect cost as investors are at risk of buying shares at a premium and/or selling at a discount. In the following sections, this paper will discuss approaches to evaluating and measuring this indirect cost for spot bitcoin ETPs. For spot bitcoin ETPs, changes in the premium or discount to NAV can be influenced by market factors, including investor sentiment and price volatility for spot bitcoin, in addition to factors related to the create/redeem process discussed below.

EXHIBIT 1: Comparing total cost of ownership for spot bitcoin ETPs against other investment products.

		Mutual Funds	U.S. Equity ETFs	Spot Bitcoin ETPs
DIRECT COSTS				
Unified fees	Unified management fee or sponsor fee charged as a percentage of net assets.	✓	✓	✓
Fund operating expenses	Operating expenses charged to the fund range from legal and marketing expenses to custodial, audit, and index licensing fees.	✓	Priced in unified fees	
Offsetting lending revenue	Revenue earned by the fund for lending out underlying securities. This can reduce, and in some cases offset, the expense ratio or associated portfolio management costs.	✓	✓	✗
INDIRECT COSTS				
Bid-ask spread	The difference between the price a buyer is willing to pay for ETF shares and the price at which a seller is willing to sell.	✗	✓	✓
Premium/discount to NAV	ETP share price relative to intraday NAV, and how much the relationship varies over time.	✗	✓	✓

Source: Fidelity Investments.

What keeps ETP share prices in line with the price of bitcoin?

Spot bitcoin ETPs use a share creation/redemption process just like ETFs. In this process, authorized participants ("APs") create (purchase) new shares directly with the issuer at NAV and then sell them on the secondary market, or APs buy shares on the secondary market and redeem them with the issuer at NAV. Through this arbitrage mechanism, APs and market makers work to keep share prices in the secondary market close to NAV.

When shares are trading at a premium, APs can submit orders to create new shares from the issuer at NAV and sell them to investors on the secondary market at market prices. In the opposite case when shares are trading at a discount, APs can buy shares on the secondary market and submit an order to redeem them with the issuer at NAV. This helps to bring the ETP share price back in line with the underlying value, as represented by intraday NAV.

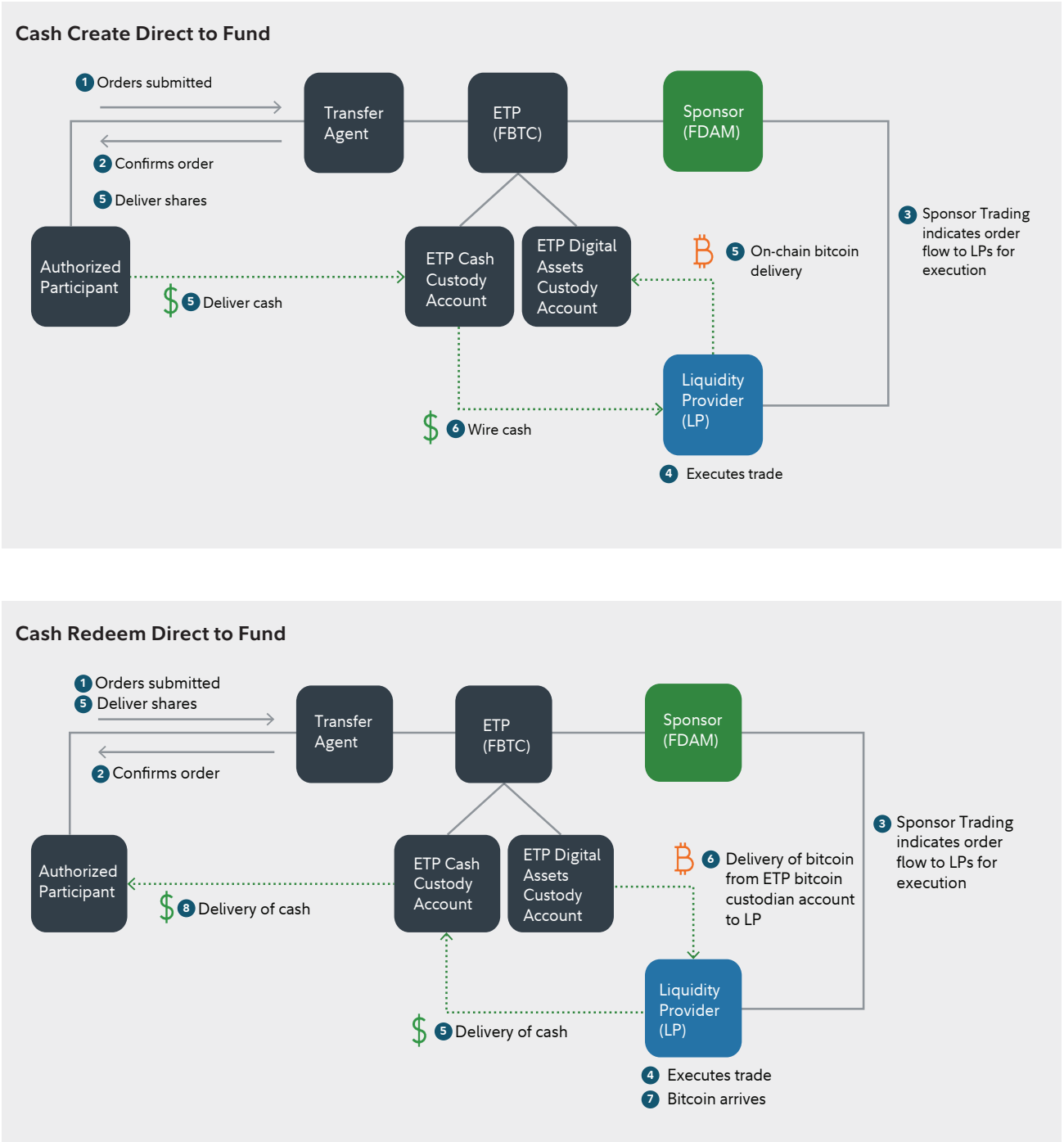
As of the time of writing, all spot bitcoin ETPs rely on an "in-cash" create/redeem process, meaning that APs deliver cash to the issuer when creating shares and receive cash from the issuer when redeeming shares. In this model, the issuer is responsible for buying or selling the underlying bitcoin held by the ETP. Any trading costs incurred by the issuer are passed on to the APs, who consider those costs as part of the create/redeem process along with any additional costs they might incur from their own trading or hedging activities. Higher total costs during the create/redeem process can lead to wider premiums and/or discounts experienced by end investors. A more efficient create/redeem process allows APs to create or redeem shares at a lower cost, which in turn can reduce the variability and magnitude of these premiums or discounts to end investors. Exhibits 2 and 3 outline the steps involved in this creation/redemption process.

EXHIBIT 2: Understanding how spot bitcoin ETPs track the price of bitcoin, share creation/ redemption, and how APs manage premiums and discounts.

During trading hours, ETP share prices fluctuate as shares are bought and sold. The APs sell or buy shares to keep ETP share prices in line with their net asset value	
SHARES AT A PREMIUM—AP CREATES	**SHARES AT A DISCOUNT—AP REDEEMS**
When the price of ETP shares trade higher than the intrinsic value at a spread large enough for a net gain to APs, after considering all transaction costs, APs would sell shares of the ETP in the secondary market and submit an order to create shares to the ETP issuer at NAV.	When the price of ETP shares trade lower than the intrinsic value at a spread large enough for a net gain to APs, after considering all transaction costs, APs would buy shares of the ETP in the secondary market and submit an order to redeem shares to the ETP issuer at NAV.
The "sell" made by APs then brings the trading price of ETPs down in the market closer to the intraday NAV.	The "buy" made by APs then brings the trading price of ETPs up in the market closer to the intraday NAV.
The issuer then buys the equivalent quantity of bitcoin on the spot market.	The issuer then sells the equivalent quantity of bitcoin on the spot market.
The following day, the AP is credited with new shares of the ETP by the issuer while paying cash on settlement.	The following day, the AP redeems ETP shares with the issuer for cash on settlement.

Source: Fidelity Investments. See the sidebar on page 3 for definitions of terms. Spot bitcoin ETPs are for investors with a high risk tolerance. An investor may lose all or substantially all their investment in these funds. They invest in a single asset, bitcoin, which is highly volatile and can become illiquid at any time. See the endnotes for more about the risks.

EXHIBIT 3: The creation and redemption process for shares of the Fidelity® Wise Origin® Bitcoin Fund (FBTC).



Source: Fidelity Investments. This simplified representation of the creation process is for illustrative purposes only. See sidebar on page 3 for definitions of terms. Spot bitcoin ETPs are for investors with a high risk tolerance. An investor may lose all or substantially all their investment in these funds. They invest in a single asset, bitcoin, which is highly volatile and can become illiquid at any time. See the end notes for more about FBTC and the risks.

How can investors evaluate the impact of the total cost of ownership, including indirect costs, for spot bitcoin ETPs?

One approach investors can use to evaluate the costs of ownership for spot bitcoin ETPs is tracking error. Tracking error is a statistical measure of variability between two sets of returns over a period of time. While tracking error is a commonly used metric, there are different approaches to calculating tracking error and the most useful approach for spot bitcoin ETPs may be different than for other products. Exhibit 4 illustrates a comparison of features of different products and the most useful approaches for measuring indirect costs and efficiencies. For spot bitcoin ETPs, we believe two relationships are of particular importance for investors to consider. Specifically:

- NAV vs. index—the most common way to measure tracking error is to compare returns for a product's NAV versus its index. For spot bitcoin ETPs, this will measure the impact of fees and expenses (net the effect of any fee waivers) and serve as a measure of fund operational efficiency. The metric is of limited use for spot bitcoin ETPs as it does not capture the impact of the indirect costs, which can be material.
- Share price vs. spot BTC price—we believe the most informative way to measure tracking error for spot BTC ETPs is to compare the ETP share price versus spot BTC prices. The ETP share price represents the price at which investors actually buy and sell shares while the spot BTC price represents the exposure investors want to achieve. Using these two sets of prices to calculate tracking error can provide more information about the product, including the efficiency of the create/redeem process and how effectively the product provides exposure to the price of bitcoin.

Measuring the tracking error of a spot bitcoin ETP by comparing the NAV to the index shows the impact of fees applied to the fund. Because there are no trading or rebalancing costs applied to the fund's assets, and typically no cash is held in the funds, the main reason that NAV returns should deviate from the index are the direct costs applied to the fund's assets. In contrast, issuers of most mutual funds and US equity ETFs rebalance portfolios and also maintain some cash balances that can result in a drag on returns. For those reasons, comparing the NAV for those products to their indexes can provide information about the issuer's portfolio management efficiency, which is not the case for spot bitcoin ETPs.

To capture the impact of a spot bitcoin ETP's indirect costs, investors can compare the returns of ETP share prices against returns for spot bitcoin prices. Because share prices reflect indirect costs of ownership for investors, we believe it is a more informative data point for investors than NAV. And using spot prices rather than index prices to calculate tracking error can be more useful for spot bitcoin ETPs than for other products as a result of their index construction.

EXHIBIT 4: A comparison of features of different products and the most useful approaches for measuring indirect costs and efficiencies.

		Mutual Funds	U.S. Equity ETFs	Spot Bitcoin ETPs
Investor Access Point	Where do investors purchase the product	Direct from Issuer	Secondary Market	Secondary Market
Price to Investors	What determines the price at which investors can buy or sell	End-of-Day NAV	Market Price	Market Price
Index Construction	How is the index constructed, used for calculating end-of-day NAV	Closing Prices	Closing Prices	Weighted Average/Median Prices*
Efficiency Metric	What are the most useful points of comparison to evaluate product efficiency	NAV vs Index	Share Price vs Index	Share Price vs Spot BTC Price

*While most spot bitcoin ETPs use index prices that are an average or median over time , certain ETPs use different methodologies.
Source: Fidelity Investments.

Most spot bitcoin ETPs use an index price that is a weighted average or weighted median of prices over the final hour of the trading day. But ETP share prices most closely track spot bitcoin prices during the trading day, regardless of index construction, so comparing the closing share price versus the index price can result in superficial differences in returns because of these timing differences. In contrast, the index prices for most mutual funds and U.S. equity ETFs are based on closing prices or other single points in time. So comparing share prices for those products versus their index does not have the same timing mismatch.

Investment implications

With the long-awaited launch of spot bitcoin ETPs, investors have a new and easier way to gain exposure to the price of bitcoin in brokerage, trust, and tax-advantaged accounts. Approximately 4% of all bitcoin in circulation is now held by these U.S.-based ETPs,[3] illustrating not only expanding access but the increasing maturation of the segment. However, these products are not all the same and it is important to understand the differences in order to select the right provider with the expertise and resources to best track the price of bitcoin, ensure secure custody of the underlying assets, and provide the most value to investors.

For more information on spot bitcoin ETPs and their potential role in a multi-asset class portfolio, please contact your Fidelity representative.

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Endnotes

1. Bloomberg Finance LP, as of Aug. 20, 2024. **2.** We refer to intraday NAV as a measure of intrinsic value. **3.** See footnote 1.

* Bitcoin, the network, is capitalized; bitcoin, the asset, is lowercase.

Exhibit 2: Refer to the **FBTC prospectus** for more detail. FBTC: Fidelity® Wise Origin® Bitcoin Fund. FDAM: Fidelity Digital Asset Management. ETP: Exchange-traded product.

FBTC is not an investment company registered under the Investment Company Act of 1940 (the "1940 Act") nor is it a commodity pool under the Commodity Exchange Act of 1936 (the "CEA"). As a result, shareholders of FBTC do not have the protections associated with ownership of shares in a registered investment company nor are shareholders afforded the protections of investing in an CEA-regulated instrument or commodity pool.

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Investors must make their own determination whether an investment in any particular digital asset/cryptocurrency is consistent with their investment objectives, risk tolerance, financial situation, and evaluation of the digital asset. **Neither Fidelity nor any of its affiliates are recommending or endorsing these assets by making them available.**

Bitcoin exchanges may suffer from operational issues, such as delayed execution. Digital asset exchanges have been closed due to fraud, failure, or security breaches. Assets that reside on an exchange that shuts down or suffers a breach may be lost.

Several factors may affect the price of bitcoin, including, but not limited to: supply and demand, investors' expectations with respect to the rate of inflation, interest rates, currency exchange rates or future regulatory measures (if any) that restrict the trading of bitcoin or the use of bitcoin as a form of payment. There is no assurance that bitcoin will maintain its long-term value in terms of purchasing power in the future, or that acceptance of bitcoin payments by mainstream retail merchants and commercial businesses will continue to grow. Bitcoin is created, issued, transmitted, and stored according to protocols run by computers in the bitcoin network. It is possible the bitcoin protocol has undiscovered flaws that could result in the loss of some or all assets. There may also be network-scale attacks against the bitcoin protocol, which result in the loss of some or all of assets. Advancements in quantum computing could break bitcoin's cryptographic rules.

The performance of spot bitcoin ETPs will not reflect the specific return an investor would realize if the investor actually purchased bitcoin. Investors in a spot bitcoin ETP will not have any rights that bitcoin holders have and will not have the right to receive any redemption proceeds in the underlying bitcoin.

Past performance and dividend rates are historical and do not guarantee future results.

All indices are unmanaged. You cannot invest directly in an index.

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