

31 October 2023

WisdomTree Crypto Monthly



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Market Commentary:

Markets pricing in the approval of spot bitcoin and ether ETFs in the US

Macro environment improving for Digital Assets

The October year-over-year consumer price index (CPI) came at 3.2% versus the survey expectation of 3.3%. For digital assets, lower inflation is positive as it could mean interest rate hikes are over. However, the US Federal Reserve has been quite clear in that should inflation rise again, they would not hesitate to raise interest rates. The markets are expecting lower interest rates from mid-2024 onwards, and should this expectation materialise, it could create a positive environment for digital assets. Global liquidity has improved since late September and a further improvement could be positive for the digital asset ecosystem.

Monthly inflows almost 50% of year-to-date flows

The total assets under management (AUM) for digital asset products globally were \$44.3 billion[1], more than doubling the AUM from the beginning of the year (\$21.8 billion). The US is, by far, the largest individual country market with 74% of the AUM, followed by Canada (6%), Switzerland (6%), Germany (5%) and Sweden (5%). In the past month[2], the digital assets industry saw inflows of over half a billion (\$548 million) coming particularly from the US (44% of total inflows), Canada (24%), Germany (18%) and Switzerland (14%). These monthly inflows were almost 50% of the yearto-date number, which is a very positive sign and a meaningful shift in the flows to the industry. Yearto-date, the largest country markets for inflows have been the US (50%), Germany (31%), Switzerland (27%) and Canada (7%). Many markets experienced meaningful outflows earlier in the year. Looking at individual crypto assets, the most monthly inflows came to bitcoin with 86% of total inflows and on a year-to-date basis the share of bitcoin of total inflows is ever higher at 95%. Ethereum experienced a turnaround and monthly inflows were 11% of total versus -5% outflows year-to-date. Solana has seen growing inflows consisting of 4% of total inflows on a monthly basis and 11% of inflows year-to-date. Many other digital assets have experienced outflows on a monthly and yearly basis. To put the inflows into context, bitcoin has 71% of total AUM of the industry, followed by ethereum with 20% and solana with 1%. Multi-asset products have 7% of the AUM.

^[1] Bloomberg, as of 10th of Nov, 2023

^[2] Bloomberg, as of 10th of Nov, 2023

Market Commentary:

Markets pricing in the approval of spot bitcoin and ether ETFs in the US

Approval of a spot bitcoin ETF in the US very likely

Since mid-October, the price of bitcoin is up by 37%[1]. The likelihood of a spot bitcoin ETF being approved in the US has become very high. The approval could meaningfully increase the demand from investment advisors as we wrote in our recent blog, and expand the investor base for bitcoin. The increased demand for bitcoin might coincide with a reduction in bitcoin supply next spring, when an event called 'bitcoin halving' takes place. This will reduce the number of new bitcoin awarded to miners and miners will have less bitcoin to sell to the market. This imbalance in supply/demand could lead to an increase in the price of bitcoin.

There are some other issues that need to be considered though. Grayscale won the court case against the SEC and is back in talks with the regulator to convert its Grayscale Bitcoin Trust (GBTC) to a spot ETF. The closed-end fund's discount to NAV has reduced meaningfully from -49% in December 2022 to the most recent -10%. Investors are clearly expecting a successful outcome for the conversion request. It is likely that, if the conversion becomes possible, some early investors in GBTC might liquidate and take profits, and potentially invest in some alternative coins/tokens, which have more growth potential.

We do not yet know whether the lawsuit filed by the New York Attorney General against Genesis and Digital Currency Group (DCG), the parent company of Grayscale, could have an impact on the GBTC. DCG and its CEO have been charged with defrauding investors and seeking to conceal losses of over \$1.1 billion. The Attorney General is seeking compensation for investors. GBTC is DCG's most profitable company as it is charging 2% per annum on the product, which had grown to \$23 billion in mid-November 2023. This translates into \$460 million fee per annum.

Spot Ether ETF likely to follow suit

Ethereum got a big boost in its price after Blackrock registered a corporate entity for a spot ethereum product in the US. Back in September, ARK 21 Shares filed for the first spot ether ETF in the US. The price of ether is up 31% since mid-October[2]. It seems quite likely to us that a spot ether product could follow the potential approval of a spot bitcoin ETF. This would expand the investor base for ether.

Ethereum remains the most popular smart contract network among developers by a wide margin. However, the Proto-Danksharding upgrade seems to have been postponed to early 2024. This upgrade is expected to improve the scalability of the ethereum network, reduce cost of transactions and improve the transaction processing time. The number of ethereum transactions have increased somewhat since September but we need to see more data in the coming months to see whether the downtrend in transactions has reversed.

- [1] Bloomberg, as of 14th of Nov, 2023
- [2] Bloomberg, as of 14th of Nov, 2023

Historical performance is not an indication of future performance and any investments may go down in value. Cryptocurrencies are a high-risk investment and may not be suitable for all types of investor.

 $\label{lem:condition} \textbf{Cryptocurrencies can demonstrate higher volatility than other asset classes.}$

Market Commentary:

Markets pricing in the approval of spot bitcoin and ether ETFs in the US

Solana defying selling pressure

Solana's SOL token rose 145% since mid-October 2023[1], which is impressive, given that the bankrupt FTX holds \$1.1 billion in solana tokens (approximately 15% of total issuance) and has been consistently selling solana every week. It seems to us that institutional investors have been moving to solana with the hope that its gains going forward could be bigger than the gains for more established crypto assets.

Gary Gensler, the chairman of the Securities and Exchange commission (SEC), commented recently that the revival of FTX could be possible and this gave hopes for the industry that perhaps the \$1.1 billion selling pressure on solana might not fully materialise. On a more fundamental front, several news announcements were made at a recent Solana conference, Breakpoint. One of the most notable ones was the announcement of a scalability upgrade, Firedancer, which went live on a Solana testnet. Solana has had a loyal developer base as the network is fast and offers cheaper transactions than ethereum, but the network has suffered from outages. The Firedancer upgrade is expected to address these outages and improve the stability, speed and validator diversity of the network. The Solana mainnet launch with Firedancer is schedule for first half of 2024.

As we have written before, improved scalability of blockchain networks is one of the key requirements for a mass market to materialise. There is a race going on now between the smart contract networks and which network can provide a secure, fast, stable and cheap transmission mechanism for blockchain transactions first.

1] Bloomberg, as of 14th of Nov, 2023

Insight of the Month: Blockchain Use Cases

In this month's Crypto Monthly Insight section, we will focus on blockchain use cases as it is one of the most often asked questions by institutional investors. However, as is often the case with new technologies, we do not tend to know in advance which application emerges and takes the market by storm. It is often only in retrospect that it seems obvious that an application is superior to anything we have used before. It is highly likely that this will be the case with blockchains we well.

Bitcoin and stablecoins have several advantages over current global payments

The first blockchain application was bitcoin and it enables peer-to-peer payments around the world 24/7, almost instantaneously, with low cost and without an intermediary. Due to bitcoin's volatility, some investors prefer using stablecoins instead when making payments. The stablecoin market, or tokenised currencies, most often denominated in USD, is already a \$120 billion market. Bitcoin and stablecoins are widely used in countries where inflation erodes the purchasing power and where regulation prohibits or limits the use of USD. The biggest difference between bitcoin and stablecoins, in addition to bitcoin's volatility, is the fact that stablecoins are issued by a private company, which creates a counterparty risk. Bitcoin is an open blockchain and is decentralised, which means it is not dependent on any central bank or issuer.

The most natural application area in global payments is the global remittance market, which was estimated at \$650 billion in 2022[1]. A big part of this market is made up of people working abroad and sending money back home. An increasing market is also a global gig economy, where employees can work from anywhere, and were almost-instantaneous payments are desired.

In addition to losing money in currency conversions, an average simple money transfer can cost \$50 or more per transaction and in most cases both a sender and a receiver pay a fee. In some cases, the banks can take a 3-4% fee of the total transaction, which can amount to a very high fee. In most of these cases, the use of bitcoin or stablecoins could cut the transaction fee down significantly and enable almost instantaneous transfer of funds globally 24/7 and this is a meaningful improvement over the current international money transfers which can take days to go through.

Tokenised assets offer meaningful cost benefits and operational efficiencies

One could say the killer application of today for blockchains is the tokenisation of real world assets and financial assets, particularly tokenised currencies, also called stablecoins. We covered the benefits of tokenisation in our August 2023, Crypto Monthly, link here, and will therefore not repeat the many benefits of tokenisation here. However, it could just be noted that "tokenised assets could do to exchange-traded funds (ETFs) what ETFs did to mutual funds"[2] meaning that tokenised assets could take market share from ETFs due to their cost benefits, ability to improve the efficiency of operations, increased liquidity of assets and a potential for a wider investor base. Putting real-world value on a blockchain and being able to track the ownership of it throughout its life cycle is a major benefit in many industries.

- [1] International Monetary Fund
- [2] WisdomTree Founder and CEO, Jonathan Steinberg

Insight of the Month: Blockchain Use Cases

DeFi eliminates the human error but code auditing is necessary

Two other applications, which have already proven their usefulness, and which have already experienced their first bull market in 2020-2021 are decentralised finance (DeFi) and non-fungible tokens (NFTs). The successful business models are still on the build-out phase, but we believe many of the problems in DeFi and NFTs had to do expensive transaction fees on the blockchains, which were not yet scalable enough to handle a large number of transactions taking place at the same time. We expect the improved scalability of the major blockchains to lower the transaction fees and enable a higher throughput and faster transmission times. DeFi eliminates the human mistakes as the applications are written in code and executed automatically, but basing a business model on code requires new actions. Making sure the code base is audited by an independent firm after every single new code introduction will be critical in ensuring the reliability of the business model.

NFTs could unlock the intangible value of brand names and communities

Non-fungible tokens (NFTs) enable ownership of an asset to be recorded on a blockchain and thereby enable creation of digital certificates of ownership. Putting an asset on a blockchain also enables a uniquely identifiable asset to be created. NFTs have so far been primarily used in collectibles and art. We see great potential for companies and individuals to monetise some of their intangible assets, and for companies to unlock some of the value from the intangible section of the balance sheet. Buying a stock is one way to participate in the success of the company, but NFTs could offer an opportunity to capture some of the brand and user community value of a company. Some companies are exploring ways to attract users who like and use their brand and are creating communities around their brand names. A portion of revenues or profits could be directed to this brand community. Current users of the brand are often the best ambassadors for the brand and can be incentivised to spread a message in social media. We believe NFTs offer many disruptive business model opportunities in the creative industries. We have seen some early experiments in tokenising a professional sports contract (Spencer Dinwiddie), publishing a book (Ben Mezrich), sharing music royalties with fans (Rihanna, Timbaland) or selling digital fashion items online. The producers behind Rihanna, for example, sold a small stake of the royalties for some of her songs as NFTs. Nike, on the other hand, has made over \$185 million from NFT sales and royalties in 2022, followed by Dolce & Gabbana and Tiffany[1].

However, there are some key issues that need to be clarified before the industry can truly blossom. One of the most important ones is the intellectual property (IP) rights issue. When buying an NFT work of art or a collectible, it is important for the buyer to understand which IP rights come along with it, for example, does the buyer have the right to create and distribute products based on the NFT and collect related revenues as a result.

[1] Vogue Business

Insight of the Month: Blockchain Use Cases

Blockchain gaming enables in-game assets to be moved across blockchains

The global size of the digital gaming market was estimated at round \$200 billion at the end of 2022 and is estimated to grow to close to \$900 billion by 2031[1]. Most of the spending goes into in-game purchases, which the gamer cannot transport to other games. This is a major problem if a game is discontinued or a company behind it goes bankrupt. There is another problem from the game developer's point of view: the platform hosting the game can sometimes block games or want a bigger chuck of the profit for themselves. Not owning access to gamers can be a major impediment. We have therefore seen an acceleration in the development of blockchain gaming, which enable the gamers to own their own digital merchandise and move them across the different gaming and digital environments. Blockchains also enable gamers to buy and sell their digital content and merchandise globally as they wish, which is a meaningful improvement to the situation today, where gamers are locked to closed-wall environments.

Decentralised social media giving users more control over their creative output and data

The same limitation applies to the current social media. When we create content and accumulate followers, these are limited to the platform we are using and we cannot move the data or followers to another platform. From a content creator's point of view, this is a major limitation. In addition, social media sites can censor the message and control the angle that is allowed on their social media platform. Decentralised social media web sites based on blockchains enable users to control their own content and take followers across to other platforms. These blockchain-based social media sites are also encrypted, which enhances the security and privacy of the conversations. Monetisation of creative output is enabled as decentralised platforms allow content to be tokenised and traded online.

Using blockchains to combat AI-generated fake content

Artificial intelligence enables the creation of fake content, manipulated images, videos, voice and text. In the future, it will be increasingly important to be able to track whether the information we consume is "deepfake" or whether it is the real thing - the original piece of content. We think blockchains could potentially be used to authenticate the original content. When a piece of content is created, it could be registered on a blockchain and a unique hash identifier could be created with some metadata. This data would verify the creator, the time, the place and the type of content on the blockchain and the data would be immutable. We believe technologies verifying the authenticity of content will be critical in the future to eliminate the potential erosion of trust to information and content around us.

[1] Business Research Insights: Digital Gaming Report, Oct 2023

Insight of the Month: Blockchain Use Cases

Blockchains as a tool to trace illegal activities

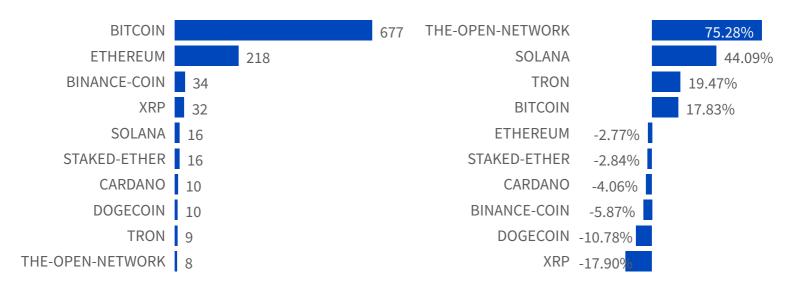
The crypto industry is often blamed for facilitating illegal activities, such as money laundering. In fact, oftentimes, the opposite is the case. In a recent book[1], it was revealed that government and private investigators have traced and caught hundreds of criminals related to the SilkRoad, Mt Gox, North Korean hackers, AlphaBay, child exploitation etc. with the help of blockchain technology. In general, blockchains are totally traceable. Every transaction is registered on the public blockchain, cannot be changed and can be traced using forensic analysis tools.

[1] Tracers in the Dark by Andy Greenberg, 2022

Market Summary

Top 10 by Market Cap | USDbn

3-Month Return | USD



Summary Statistics

Asset	Market Cap ▼	1m Return	3m Return	Volatility	Correlation w. Bitcoin
BITCOIN	677.05	28.20%	17.83%	37.86%	1.00
ETHEREUM	218.46	8.53%	-2.77%	33.69%	0.87
BINANCE-COIN	34.35	6.04%	-5.87%	28.12%	0.79
XRP	32.15	10.97%	-17.90%	47.55%	0.68
SOLANA	16.15	72.22%	44.09%	69.39%	0.68
STAKED-ETHER	15.93	8.36%	-2.84%	32.59%	0.86
CARDANO	10.33	21.33%	-4.06%	36.45%	0.71
DOGECOIN	9.67	12.01%	-10.78%	42.91%	0.68
TRON	8.63	7.26%	19.47%	26.35%	0.47
THE-OPEN-NETWORK	7.50	-2.19%	75.28%	75.99%	0.34

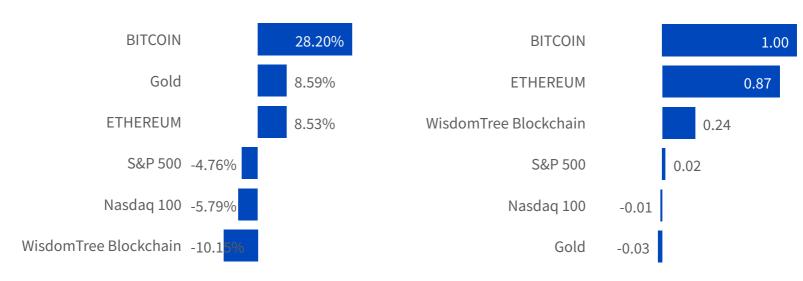
3-Month Correlation | Daily USD Returns

Asset	ВТС	ETH	BNB	XRP	SOL	STETH	ADA	DOGE	TRX
ETHEREUM	0.86								
BINANCE-COIN	0.73	0.77							
XRP	0.47	0.57	0.45						
SOLANA	0.70	0.78	0.71	0.50					
STAKED-ETHER	0.86	0.95	0.76	0.55	0.74				
CARDANO	0.72	0.80	0.72	0.71	0.73	0.76			
DOGECOIN	0.64	0.74	0.61	0.46	0.60	0.70	0.68		
TRON	0.62	0.67	0.57	0.44	0.58	0.62	0.63	0.54	
THE-OPEN-NETWORK	0.38	0.40	0.39	0.22	0.35	0.42	0.33	0.35	0.24

Source: WisdomTree. Volatility and correlation on 3-month USD returns. As of 31 October 2023.

Market Summary

Top 10 by Market Cap | USDbn



Correlation with Bitcoin

Summary Statistics

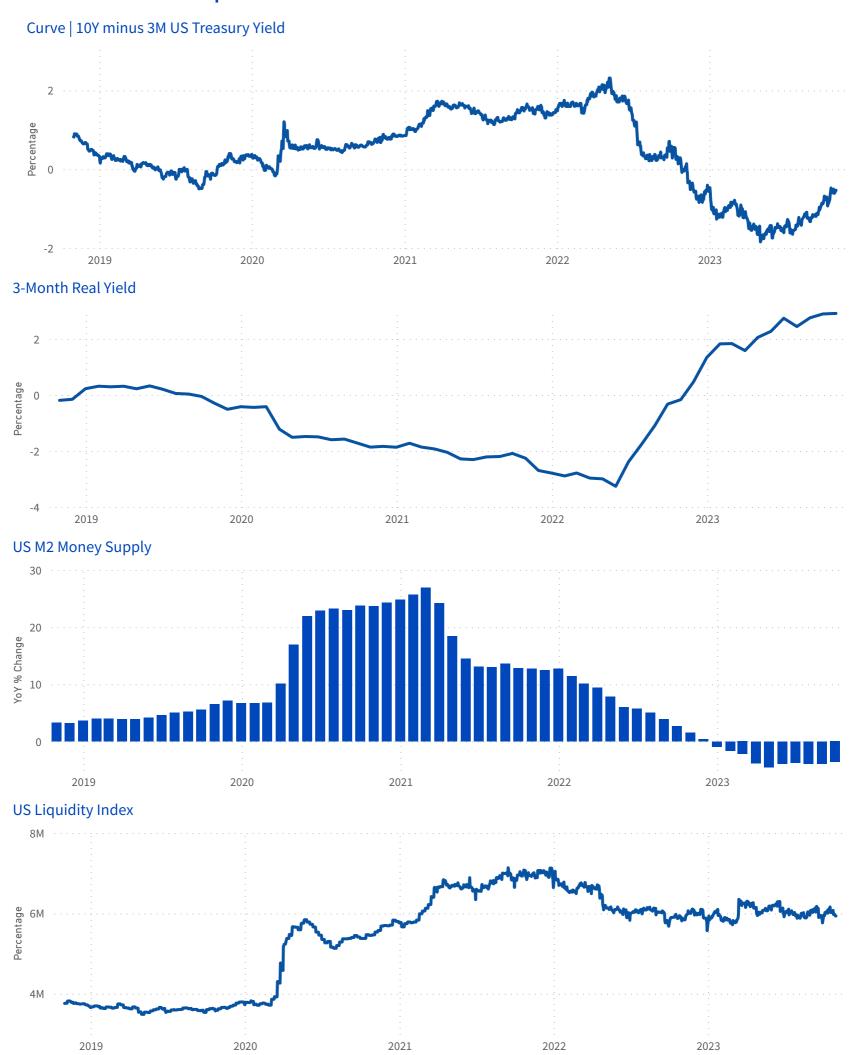
Asset	1m Return	3m Return	Volatility	Correlation w. Bitcoin
BITCOIN	28.20%	17.83%	37.86%	1.00
ETHEREUM	8.53%	-2.77%	33.69%	0.87
Gold	8.59%	1.93%	14.13%	-0.03
Nasdaq 100	-5.79%	-17.31%	20.69%	-0.01
S&P 500	-4.76%	-13.91%	14.72%	0.02
WisdomTree Blockchain	-10.15%	-39.86%	65.63%	0.24

3-Month Correlation | Daily USD Returns

Asset	втс	ETH	NASDAQ 100	S&P 500	GOLD
ETHEREUM	0.86				
Nasdaq 100	0.25	0.34			
S&P 500	0.27	0.36	0.95		
Gold	0.05	0.06	0.16	0.15	
WisdomTree Blockchain	0.42	0.42	0.59	0.59	0.13

Source: WisdomTree. Volatility and correlation on 3-month USD returns. As of <u>31 October 2023</u>. Equity indices are USD Net Total Return.

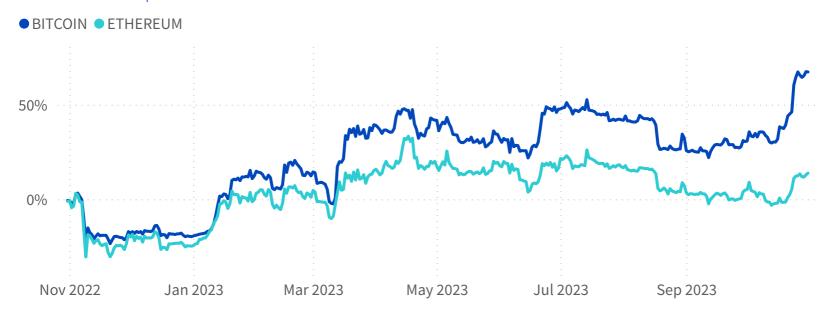
Macro Landscape



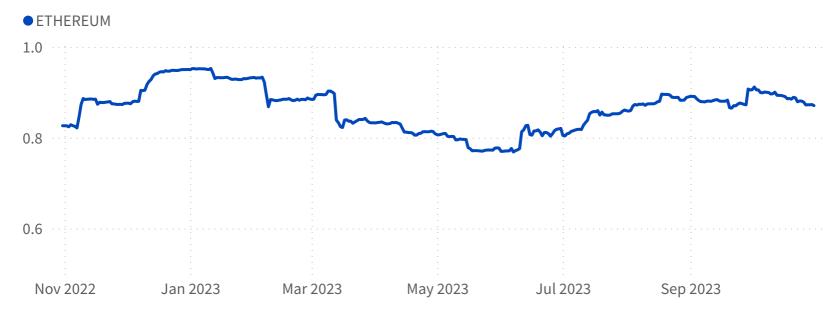
Source: WisdomTree. Bloomberg. As of 31 October 2023.

Bitcoin And Ether Focus

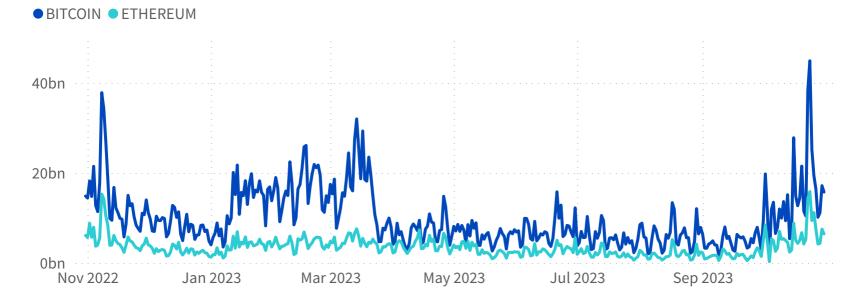
Cumulative Return | 12 Months



Rolling 90-Day Correlation with Bitcoin | 12 Months



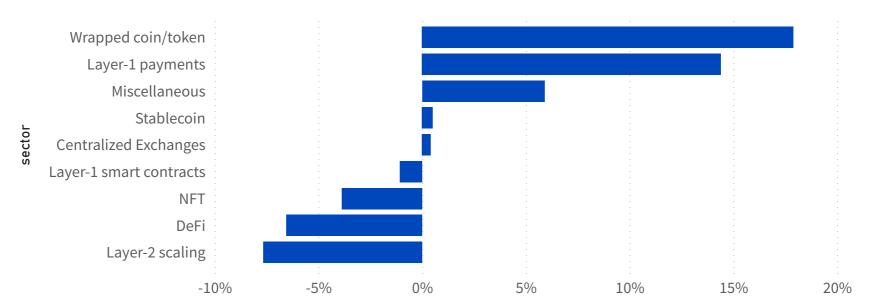
Daily Volume | USD



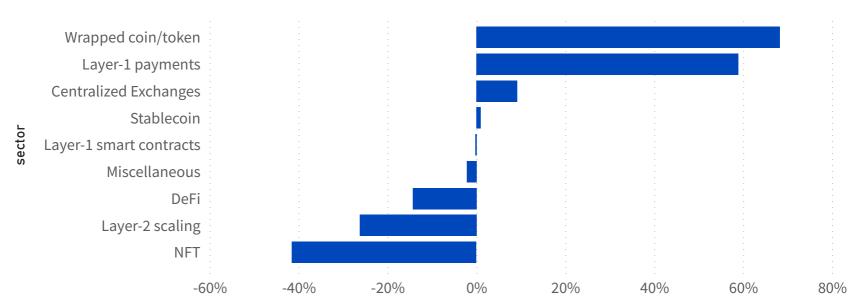
Source: WisdomTree, Messari. As of <u>31 October 2023</u>.

Sector Summary

3-Month Performance



1-Year Performance



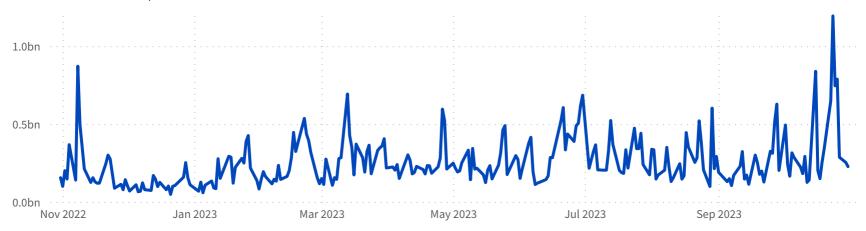
Sector Performance

sector	YTD ▼	1M	3M	6M	1Y
Wrapped coin/token	108.0%	28.2%	17.9%	17.8%	68.3%
Layer-1 payments	98.6%	26.6%	14.4%	16.9%	58.9%
Miscellaneous	46.5%	19.1%	5.9%	-4.8%	-2.2%
Layer-1 smart contract	s 38.0%	10.7%	-1.1%	-9.8%	-0.1%
Centralized Exchanges	32.6%	8.4%	0.4%	-4.9%	9.2%
DeFi	26.4%	10.4%	-6.6%	-11.7%	-14.3%
Uncategorized	11.7%	14.2%	-5.1%	-25.3%	-26.7%
Stablecoin	0.5%	0.3%	0.5%	0.5%	0.9%
NFT	-3.0%	27.1%	-3.9%	-35.3%	-41.5%
Layer-2 scaling	-12.6%	20.6%	-7.6%	-35.2%	-26.2%

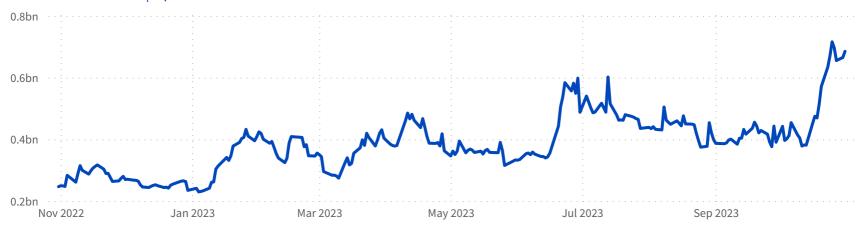
Source: WisdomTree. As of 31 October 2023.

Regulated Futures (1/2)

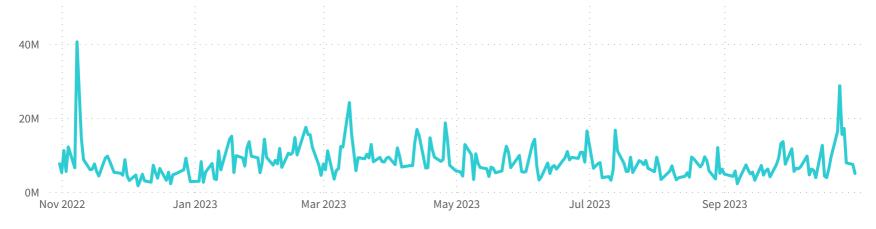
Bitcoin CME Futures | Volume USD



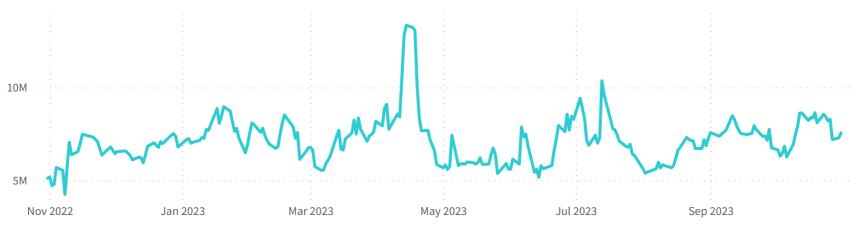
Bitcoin CME Futures | Open Interest USD



Ether CME Futures | Volume USD



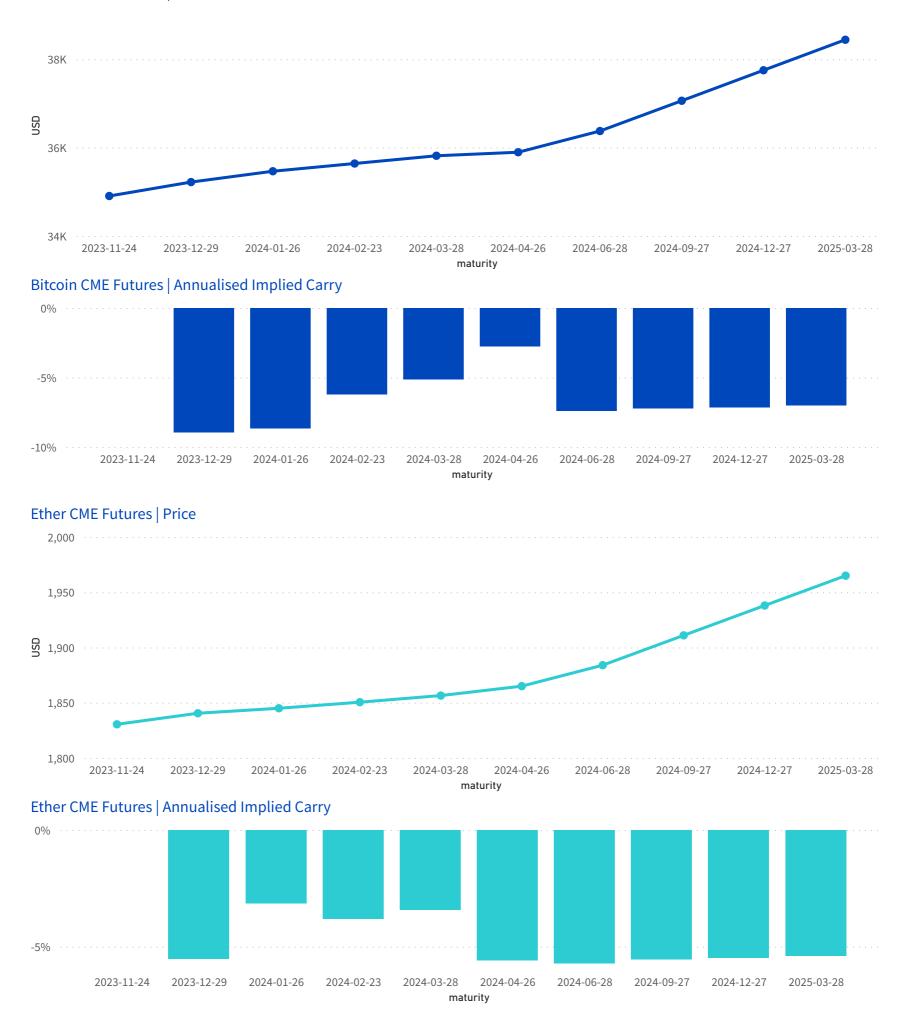
Ether CME Futures | Open Interest USD



Source: WisdomTree, Bloomberg. As of 31 October 2023.

Regulated Futures (2/2)

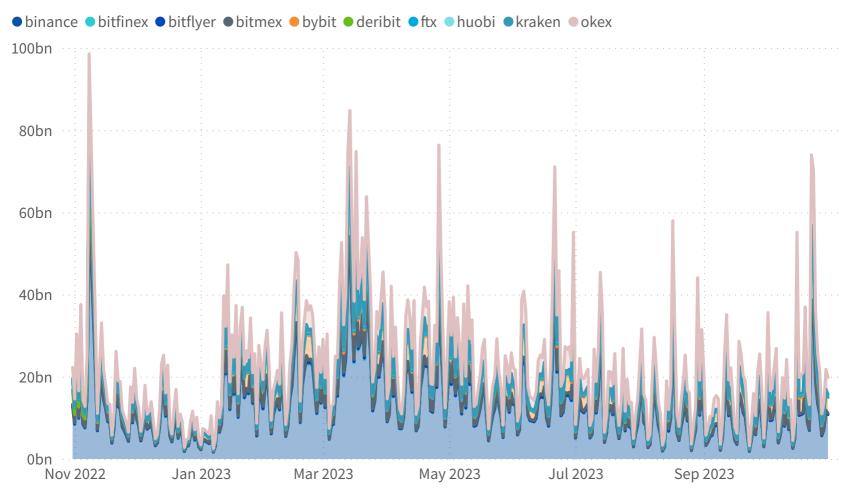
Bitcoin CME Futures | Price



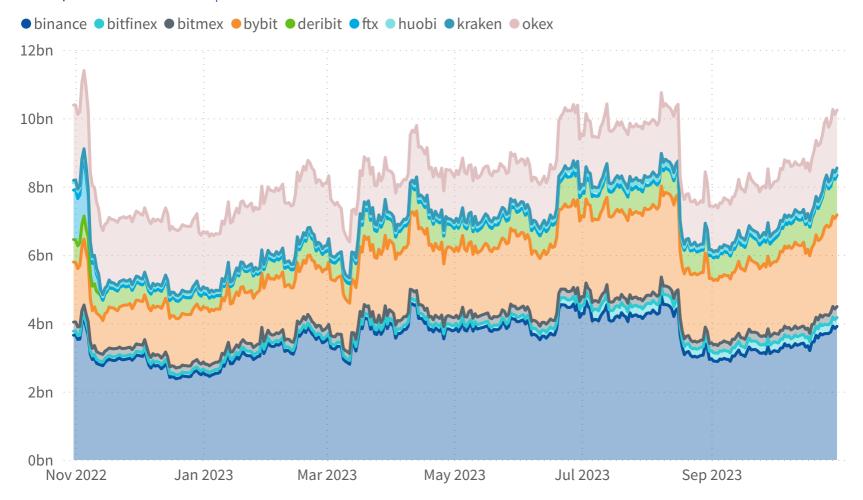
Source: WisdomTree, Glassnode. As of $\underline{\tt 31\,October\,2023}$.

Unregulated Futures (1/3)

USD Volume in Futures | Bitcoin



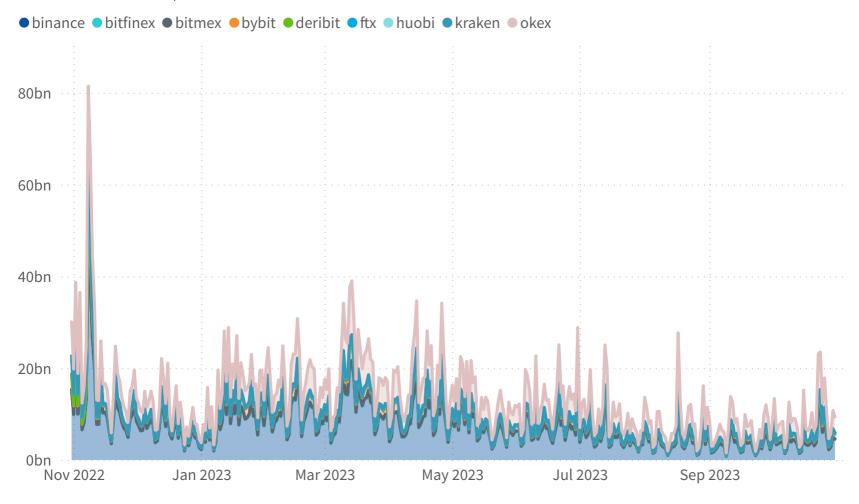
USD Open Interest in Futures | Bitcoin



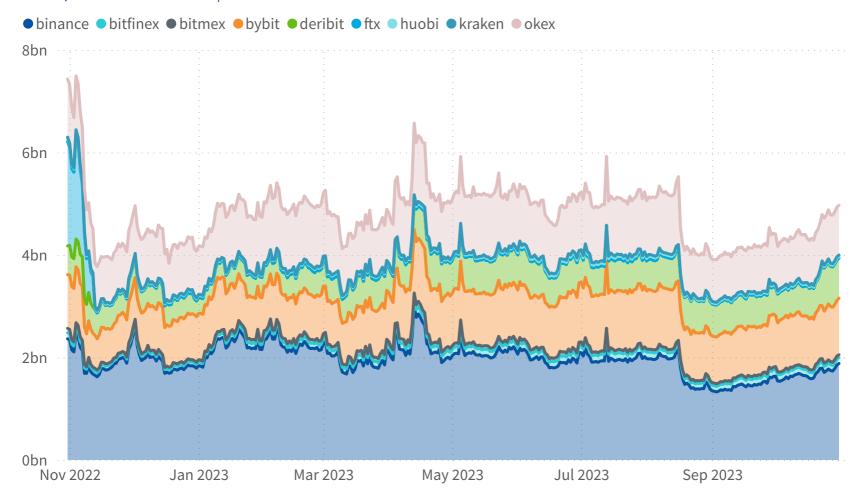
Source: WisdomTree, Glassnode. As of 31 October 2022.

Unregulated Futures (2/3)

USD Volume in Futures | Bitcoin



USD Open Interest in Futures | Bitcoin



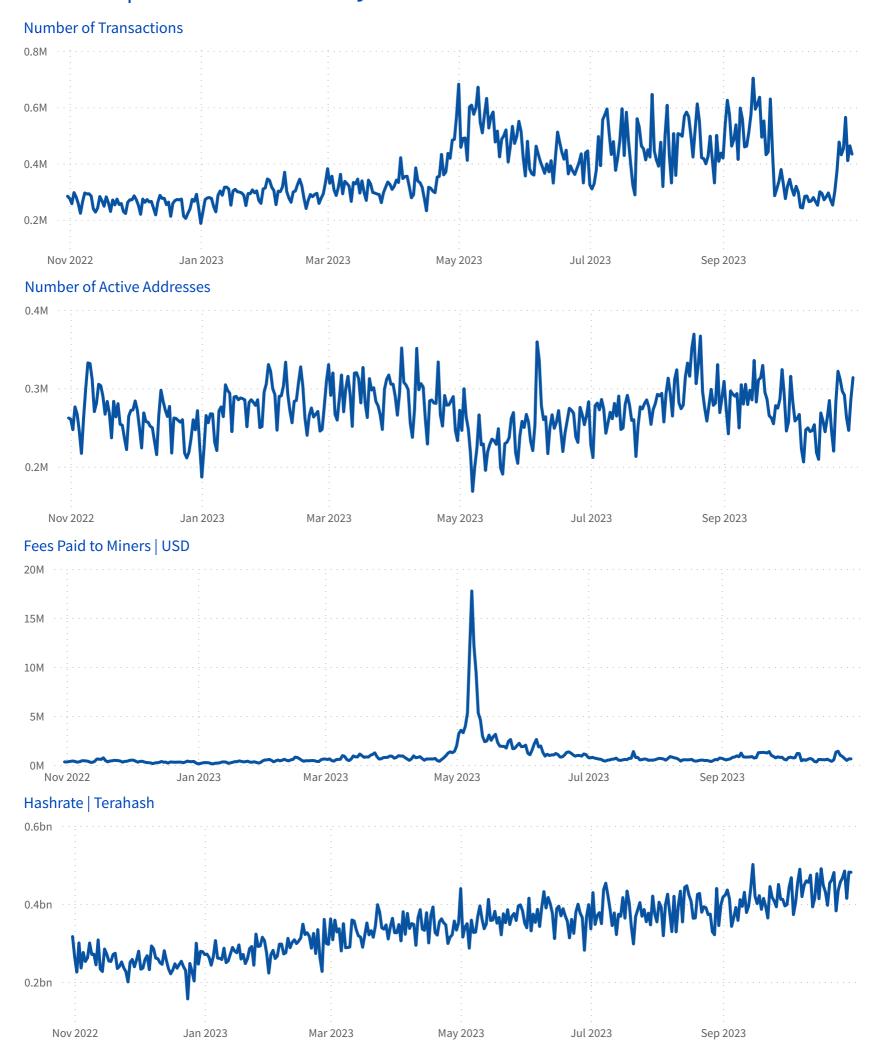
Source: WisdomTree, Glassnode. As of $\underline{\sf 31\ October\ 2023}$.

Unregulated Futures (3/3)



Source: WisdomTree, Glassnode. As of $\underline{\tt 31\,October\,2023}$.

Bitcoin | On-Chain Activity



Source: WisdomTree, Glassnode. As of $\underline{\tt 31\,October\,2023}$.

Valuation Metrics



Source: WisdomTree, Glassnode. As of $\underline{\sf 31\ October\ 2023}$.

Jan 2023

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May 2023

Jul 2023

Sep 2023

Mar 2023

20bn

Nov 2022

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