

Around the block

Monthly cryptocurrency and blockchain related highlights from the Truist Investment Advisory Group

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Two noteworthy items this month:

1. FTX founder Sam Bankman-Fried arrested

- The Southern District of NY, SEC and CFTC have separately charged FTX founder Sam Bankman-Fried (SBF) with multiple charges of fraud, conspiracy and money laundering.
- New FTX CEO, John Ray highlighted the lack of recordkeeping, controls, management and corporate governance by FTX and Alameda.

2. Bitcoin miners continue to struggle

- Bitcoin mining stocks have declined over 80% this year.
- As we wrote in our September edition, risks to miner's business model have been amplified by the September Ethereum merge converting from proof-of-work (mining) to a proof-of-stake (validation).
- Miners are being squeezed by elevated costs and diminishing rewards since they are primarily compensated through newly minted bitcoin that remains mired in the ongoing crypto winter.

Investing in speculative investments, like those related to cryptocurrency, involves a high degree of risk and is not suitable for all investors.



Industry developments

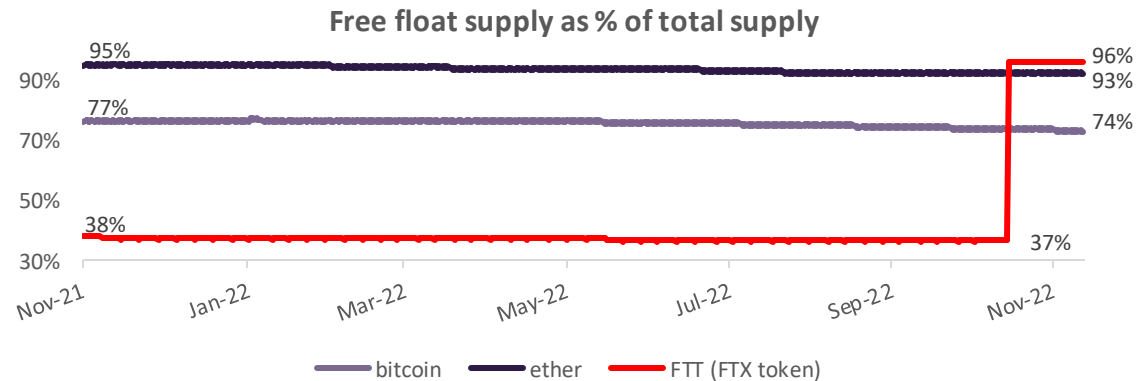
- Robinhood Markets (HOOD) remains under pressure as the SEC could accelerate new market structure proposals in addition to the potential liquidation of the 56 million shares held by FTX founder SBF.
- IBM is shuttering its TradeLens blockchain system designed for shipping giant Maersk as well as its blockchain project with the Australian Stock Exchange.

Regulatory developments

- The SEC offered a sample letter for public companies asking for full disclosure of crypto exposure under existing securities laws.
- The New York Department of Financial Services proposed a new regulation outlining state fee assessments for supervising NY regulated crypto firms.

Chart of the month —FTX was largely illiquid

Free float supply in cryptocurrencies, like equities, measures the supply available to public investors excluding tokens held by institutions, founding project teams and lost tokens. Bitcoin and ether have high float, a sign of greater market liquidity and transparency. Until the FTX bankruptcy, only 38% of FTT (FTX token) supply was “free float” suggesting that up to 62% of FTT was held by FTX, Alameda or affiliates. This could have subjected investors to lack of liquidity and transparency risk.



Data sources: Truist IAG, Coin Metrics



FTX update 12/13/2022

Background:

FTX, once one of the world's largest cryptocurrency exchanges, filed for bankruptcy on November 11. We provided detailed coverage of this in our November 16 publication [Portfolio Perspective – The Collapse of FTX: Lead balloon or silver lining?](#)

Context:

Sam Bankman-Fried (SBF), founder and CEO of the FTX group of companies was arrested on fraud, conspiracy and money laundering charges in the Bahamas at the request of U.S. regulators. These charges were levied by the combined efforts of the U.S. District Court for the Southern District of New York, the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC).

Current FTX CEO, John Jay Ray, who was appointed to steer FTX through its bankruptcy, testified before the House Financial Services Committee that the collapse of FTX was “good old-fashioned embezzlement”. Mr. Ray was appointed CEO by the bankruptcy court due to his prior experience of steering Enron through its bankruptcy from 2004-2009.

It is important to distinguish between the broader crypto and digital asset ecosystem and the actions of SBF. While the FTX debacle highlights the need for greater regulation, it is not necessarily an indictment of the entire crypto ecosystem and more about the alleged criminality behind the FTX enterprise.

A Sarbanes-Oxley moment?

The FTX bankruptcy represents an important call to action to enhance enforcement of existing rules and regulations by the SEC and CFTC.

This event could be crypto's Sarbanes-Oxley moment. The 2002 Sarbanes-Oxley Act was in response to the Enron scandal and was aimed to improve the reliability of corporate accounting, disclosure and governance standards.

These are also key themes, among others, that are central to the alleged malfeasance at FTX. Though the fallout from the FTX collapse has inflicted pain for its customers, investors and creditors, we think the silver lining might be the potential acceleration of new legislation.

What's next?

Two existing draft proposals are potential legislative starting points. One is the Digital Commodities Consumer Protection Act proposed by the Senate Agriculture, Nutrition and Forestry Committee, which oversees the CFTC and would make them a primary regulator.

The other potential legislation, the Responsible Financial Innovation Act may be the most sweeping example of comprehensive customer protections.

Performance monitor (11/30/2022)

Crypto and traditional indices

Bitcoin/Ethereum	Composition	1 Mo	YTD	1 Yr
CMBI Bitcoin		-16.4%	-62.9%	-70.3%
CMBI Ethereum		-17.9%	-64.6%	-72.3%
CMBI Btc/Eth		-18.1%	-65.1%	-71.0%
Diversified Baskets				
CMBI 10 Cap Wgt	cap w eight	-18.9%	-67.7%	-72.8%
CMBI 10 Even Wgt	equal w eight	-29.2%	-75.2%	-77.8%
CMBI ex-bitcoin	CMBI 10 - BTC	-20.7%	-71.0%	-75.4%
MVIS CryptoCompare DA 10	30% coin cap	-17.9%	-66.4%	-72.4%
MVIS CryptoCompare DA 25	20% coin cap	-19.8%	-70.6%	-74.6%
MVIS Sector Leaders				
Smart Contracts		-27.5%	-79.5%	-83.0%
DeFi		-22.2%	-77.8%	-80.0%
Media and Entertainment		-27.7%	-88.9%	-91.6%
Infrastructure		-11.7%	-72.9%	-74.5%
Equities				
NYSE Factset Global Blockchain	digital equities	-17.9%	-71.5%	-78.8%
MVIS Global Digital Assets Equity	digital equities	-27.2%	-81.9%	-87.5%
S&P 500		5.6%	-13.1%	-9.2%
MSCI World ex USA		10.7%	-13.9%	-9.5%
MSCI EM		14.8%	-19.0%	-17.4%
Fixed Income				
Bloomberg US Agg Bond		3.7%	-12.6%	-12.8%
Bloomberg US Treasury US TIPS		1.8%	-10.9%	-10.7%
Commodities				
Bloomberg Commodity		2.7%	19.0%	23.2%
SPDR® Gold Shares		7.0%	-4.0%	-3.2%

Data sources: Truist IAG, Morningstar, CoinMetrics, Messari
See disclosures for more on index definitions and methodology.



Crypto assets month in review

Despite an ugly month for crypto, bitcoin and ether demonstrated relative outperformance versus the broader crypto indices in November.

Interestingly, traditional assets such as equities, fixed income, commodities and gold posted strong gains in November. Additionally, though large equity drawdowns during the 2022 bear market have impacted weak crypto returns, November showed that traditional assets seem somewhat immune from unique risks in the crypto space.

The CMBI even weight index, which gives equal weights to all crypto assets included in their universe, suffered the steepest drawdown as smaller projects suffered disproportionate losses versus bitcoin and ether.

We continue to believe that despite the deep drawdowns during the ongoing crypto winter (like past crypto winters) negative returns have been amplified by the FTX debacle but not caused by it. FTX may be seen as a case of fraudulent excess not an indictment on crypto or its underlying blockchain technology.

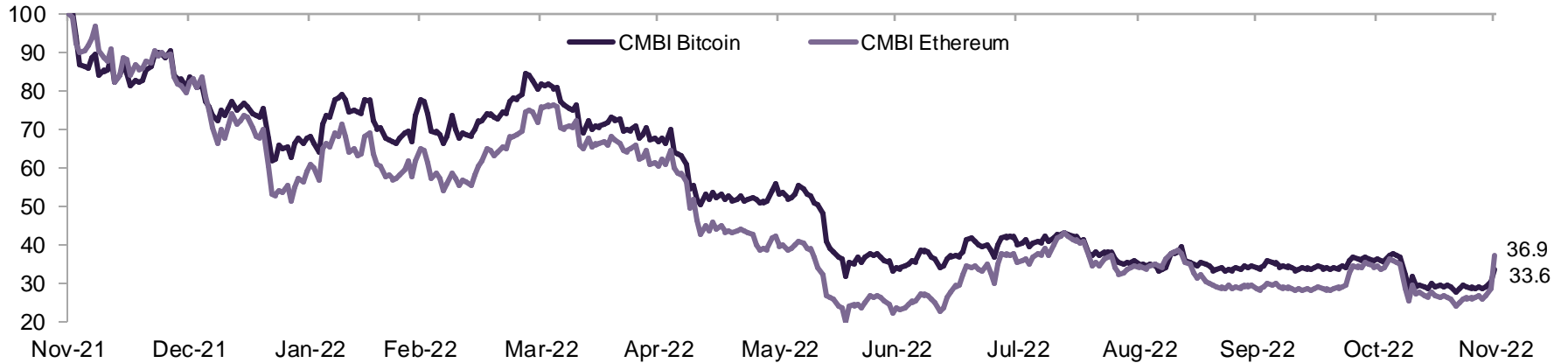
Notable callouts for the month:

- Infrastructure related projects led the way in November with tokens such as Chainlink and Polygon leading the way.
- The smart contract sector was heavily impacted by a 57% decline in Solana due to its relationship with FTX who was a heavy user and owned 10% of Solana tokens through its Alameda research affiliate.
- Negative returns for digital asset equities were heavily influenced by difficulty with Bitcoin miners and crypto-related banks.

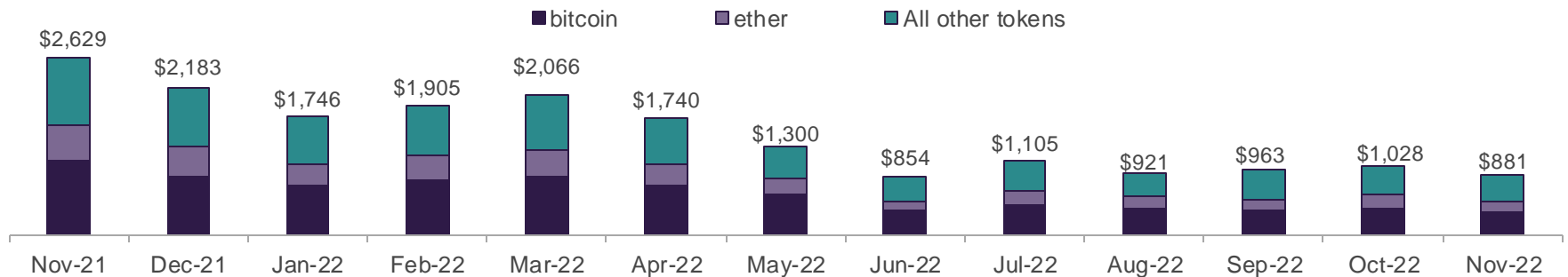
Cryptocurrency ecosystem snapshot as of 11/30/22

- Bitcoin and ether 1-year returns remain more than 60% below their record highs from November 2021
- The crypto ecosystem market value lost roughly 14% in November in the aftermath of the collapse of the FTX cryptocurrency exchange

Bitcoin and ether 1-year indexed returns (11/30/2022)



Cryptocurrency aggregate market cap (\$billions) with bitcoin and ethereum dominance



Data sources: Truist IAG, CoinMetrics, Messari

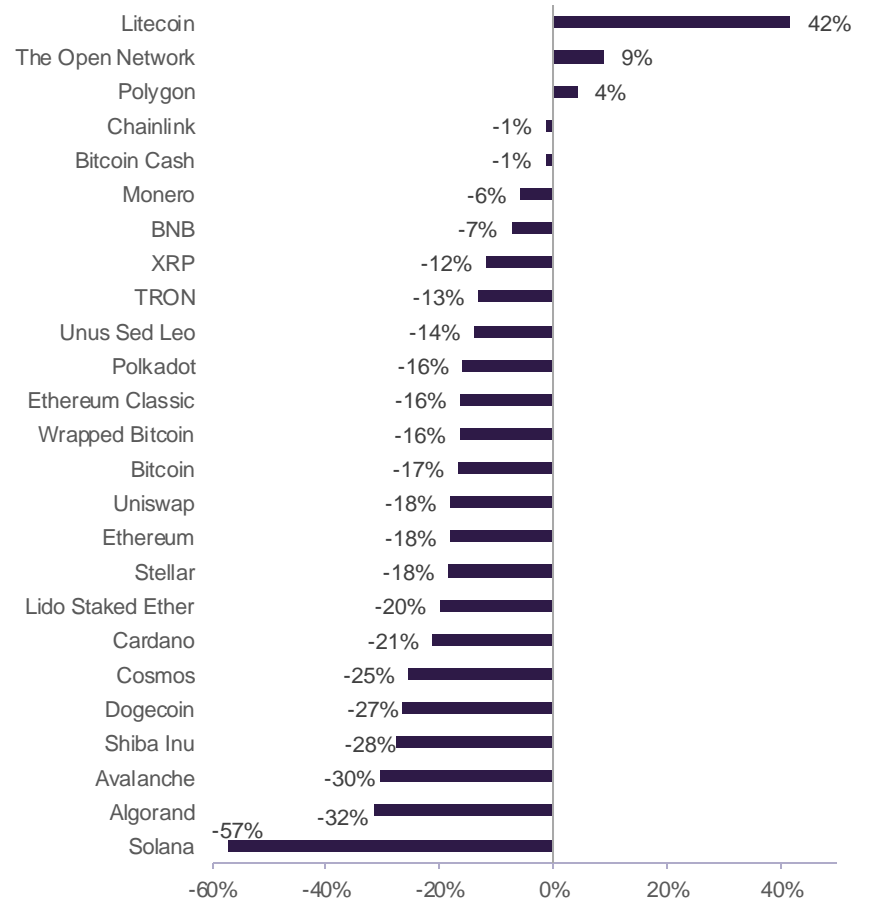
November 2022 top 25 tokens by market cap

Top 25 cryptocurrencies and top five stablecoins:
90% of total crypto market cap

Rank	Name	Symbol	Sector	Mkt Cap (\$billions)	Mkt Cap Dominance	Cumulative Mkt Cap Dominance
1	Bitcoin	BTC	Currencies	\$ 328.5	37.3%	37.3%
2	Ethereum	ETH	Smart Contract	\$ 158.6	18.0%	55.3%
3	BNB	BNB	Smart Contract	\$ 48.1	5.5%	60.7%
4	XRP	XRP	Currencies	\$ 20.6	2.3%	63.0%
5	Dogecoin	DOGE	Currencies	\$ 14.0	1.6%	64.6%
6	Cardano	ADA	Smart Contract	\$ 11.0	1.3%	65.9%
7	Polygon	MATIC	Scaling	\$ 8.1	0.9%	66.8%
8	Polkadot	DOT	Smart Contract	\$ 6.4	0.7%	67.5%
9	Lido Staked Ether	STETH		\$ 6.1	0.7%	68.2%
10	Litecoin	LTC	Currencies	\$ 5.6	0.6%	68.9%
11	Shiba Inu	SHIB		\$ 5.5	0.6%	69.5%
12	TRON	TRX	Smart Contract	\$ 5.0	0.6%	70.1%
13	Solana	SOL	Smart Contract	\$ 5.0	0.6%	70.6%
14	Uniswap	UNI	Exchanges	\$ 4.4	0.5%	71.1%
15	Avalanche	AVAX	Smart Contract	\$ 4.0	0.5%	71.6%
16	Chainlink	LINK	Data Management	\$ 3.9	0.4%	72.0%
17	Unus Sed Leo	LEO	Exchanges	\$ 3.7	0.4%	72.4%
18	Wrapped Bitcoin	WBTC		\$ 3.7	0.4%	72.9%
19	Cosmos	ATOM	Smart Contract	\$ 3.0	0.3%	73.2%
20	Ethereum Classic	ETC	Smart Contract	\$ 2.8	0.3%	73.5%
21	The Open Network	TONCOIN		\$ 2.6	0.3%	73.8%
22	Monero	XMR	Currencies	\$ 2.6	0.3%	74.1%
23	Stellar	XLM	Currencies	\$ 2.3	0.3%	74.4%
24	Bitcoin Cash	BCH	Currencies	\$ 2.2	0.2%	74.6%
25	Algorand	ALGO	Smart Contract	\$ 1.8	0.2%	74.8%

Top 5 Stablecoins						
Tether	USDT	Stablecoins	\$ 65.4	7.4%		7.4%
USD Coin	USDC	Stablecoins	\$ 43.3	4.9%		12.3%
Binance USD	BUSD	Stablecoins	\$ 22.4	2.5%		14.9%
Dai	DAI	Stablecoins	\$ 5.2	0.6%		15.4%
FRAX	FRAX	Stablecoins	\$ 1.0	0.1%		15.6%

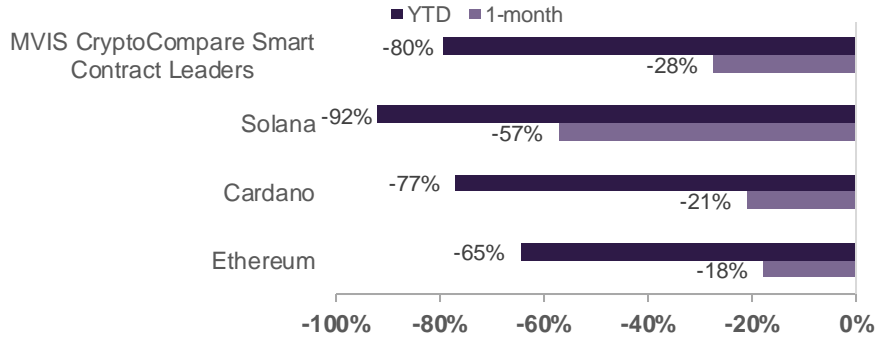
Top 25 November 2022 performance rankings



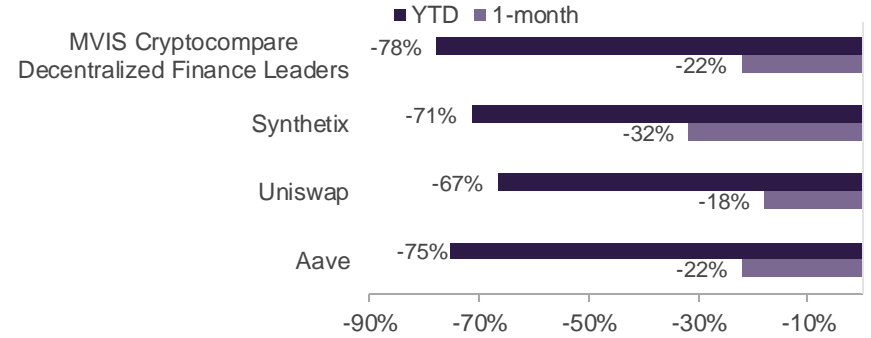
Key crypto sectors 11/30/22

Differentiating between crypto sectors provides industry perspective similar to sectors within the S&P 500.

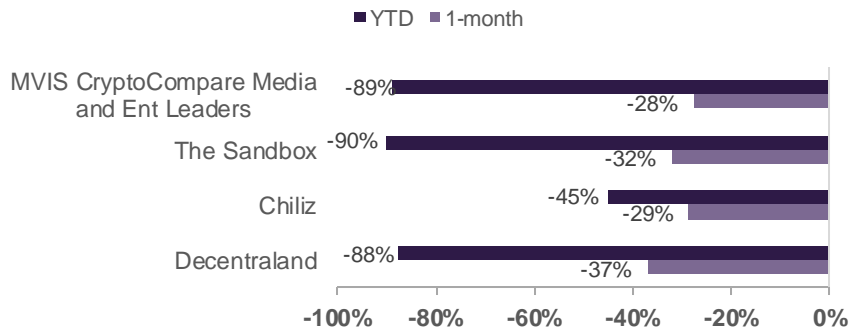
Smart contract index and top 3 tokens



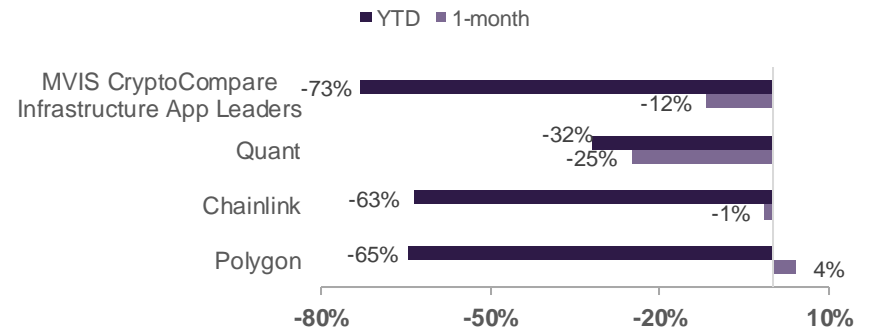
DeFi index and top 3 tokens



Metaverse index and top 3 tokens



Infrastructure index and top 3 tokens



Data sources: Truist IAG, MVIS CryptoCompare, Messari, Morningstar.

See disclosures for more on index definitions and methodology.

Digital glossary

Digital technologies

Cryptocurrency refers to cryptographic currencies like bitcoin and alternative coins or 'altcoins', launched after the success of bitcoin. This category of digital assets is designed to work as a medium of exchange, store of value, or to power applications.

Token is a subset of cryptocurrencies. Tokens are units of value issued by platforms built on top of existing blockchains.

Bitcoin was the first system of global, decentralized, scarce, digital money as initially introduced in a white paper titled Bitcoin: A Peer-to-Peer Electronic Cash System by Satoshi Nakamoto.

Ethereum is a decentralized, public blockchain network that supports composable smart contracts which can support decentralized applications as well as peer-to-peer transfers. "ether" is the native cryptocurrency of the Ethereum network.

Stablecoins are the tokens designed to track the value of an off-chain asset, such as a fiat money or exchange traded commodity, most commonly U.S. dollars.

Smart contract is a software, typically carried on a decentralized public blockchain, that can execute or enforce pre-determined actions or agreements without the intervention of a centralized intermediary.

DeFi means decentralized finance; a peer-to-peer software-based network of protocols that can be used to facilitate traditional financial services like borrowing, lending, trading derivatives, insurance and more through non-custodial smart contracts carried on public blockchain networks.

NFT means non-fungible tokens. For example, money (or a single unit of bitcoin) is fungible—each one unit is considered equal to any other unit of identical size. Conversely, artwork is not fungible—no two paintings are identical. Non-fungible tokens represent unique digital property, whether a collectible, artwork, intellectual property, or something else.

Metaverse is a network of 3D virtual worlds focused on social connection. This can include virtual reality, augmented reality, and the digital economy.

Central Bank Digital Currency (CBDC) is a digital version of a government-issued fiat currency that's managed by a central bank.

Web 3.0 is the third generation of the internet where technologies such as machine learning, decentralized ledgers, and artificial intelligence allow for a transparent environment that does not rely on central entities to manage and distribute content.

Data sources: Truist IAG, Galaxy Digital

Digital glossary

Digital technology concepts

Digital asset is any digital asset built using blockchain technology, including cryptocurrencies, stablecoins, non-fungible digital collectibles (NFTs) and security tokens.

Exchanges are platforms where you can buy and sell cryptocurrencies. Notable exchanges include Coinbase and Binance.

Decentralization is the process of removing intermediaries in a process and pushing power over a system out to the edges of the system, or to the users as a collective.

Public ledger is a transparent, distributed digital record of transactions that can be downloaded by anyone around the world.

Blockchain means a cryptographically secure digital ledger that maintains a record of all transactions that occur on the network and follows a consensus protocol for confirming new blocks to be added to the blockchain.

Block is a batch of confirmed transactions on the digital ledger. Blocks are added to an existing blockchain as transactions occur on the network. Miners are rewarded for “mining” a new block and sometimes awarded a token.

Mining is the process by which new blocks are created, and thus new transactions are added to the blockchain. The term “miner” typically refers to an entity that participates in block production on a Proof of Work network, whereas “validator” typically refers to an entity that participates in block production on a Proof of Stake network.

Double spend means the act of spending the same coin twice. If money can be double spent, it cannot function properly as it loses its scarcity and counterparties cannot trust that they alone have received payment. Solving the double-spend problem without the use of a central intermediary had never been accomplished until Bitcoin.

Address is a payment instruction for a digital asset. When receiving a payment, the recipient communicates their address to the payer, and the payer can send funds to that address.

Wallet is a tool that stores public and private keys and enables the user to use those keys to interact with a blockchain network. Wallets can be software, hardware, or physical (paper, metal, etc.).

Cold storage means the storage of private keys in any fashion that is disconnected from the internet. Common cold storage examples include offline computers, USB drives, or paper records.

Private key in asymmetric cryptography is a piece of data held in secret by an entity. It is used to compute digital signatures upon other data that can be verified by a third-party cheaply simply by knowing the public key.

Public keys are used with digital signatures to validate that the holder of a cryptocurrency coin did legitimately authorize the transfer of that coin to a new address or entity.

Fork is an event in open source software development when part of a community breaks away by making changes to the software.

Data sources: Truist IAG, Galaxy Digital

Disclosures

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Asset classes are represented by the following indexes. An investment cannot be made directly into an index.

U.S. Large Cap Equity is represented by the S&P 500 Index which is an unmanaged index comprised of 500 widely-held securities considered to be representative of the stock market in general.

Emerging Markets is represented by the MSCI Emerging Markets Index captures large and mid cap representation across 24 Emerging Markets (EM) countries. With 1,125 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

The MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries --excluding the United States. With 910 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

U.S. Core Taxable Bonds are represented by the Bloomberg U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency).

The Bloomberg Barclays US Treasury Inflation-Linked Bond Index measures the performance of the US Treasury Inflation Protected Securities (TIPS) market. Federal Reserve holdings of US TIPS are excluded from the index.

Commodities are represented by the Bloomberg Commodity Index which is a composition of futures contracts on physical commodities. It currently includes a diversified mix of commodities in five sectors including energy, agriculture, industrial metals, precious metals and livestock. The weightings of the commodities are calculated in accordance with rules that ensure that the relative proportion of each of the underlying individual commodities reflects its global economic significance and market liquidity.

The Coin Metrics Bletchley Index **(CMBI) Bitcoin** is a cryptoasset benchmark designed to measure the performance an investor would expect from purchasing and holding Bitcoin. The benchmark represents a market aggregate USD value for Bitcoin. It aggregates data from the major global BTC/USD markets that conform to the Coin Metrics Market Selection Framework.

The Coin Metrics Bletchley Index **(CMBI) Ethereum** is a cryptoasset benchmark designed to measure the performance an investor would expect from purchasing and holding Ether. The benchmark represents a market aggregate USD value for Ether. It aggregates data from the major global ETH/USD markets that conform to the Coin Metrics Market Selection Framework.

The Coin Metrics Bletchley Index **(CMBI) Bitcoin and Ethereum** is a cryptoasset benchmark designed to measure the performance of a portfolio of Bitcoin and Ethereum, weighted by their free float market capitalization. It aggregates data from the major global BTC/USD and ETH/USD markets that conform to the Coin Metrics Market Selection Framework.

The **CMBI 10** is designed to measure the performance an investor would expect from investing in a diversified basket of crypto assets, weighted by their free float market capitalization. The 10 largest crypto assets, defined by an asset's expected 10 year future market capitalization, are selected as the index constituents.

The **CMBI 10 Even** offers an alternative to the CMBI 10 market cap weighted indexes. Even weighting strategies reflect the performance an investor would expect from investing an equal amount in a diversified basket of the largest crypto assets. Equal weighting is one of the oldest and best known methods of factor investing and aims to overcome weighting concentrating an index too heavily in a few large assets.

Disclosures

The **CMBI 10 Excluding Bitcoin** is designed to measure the performance an investor would expect from investing in a diversified basket of the largest non-Bitcoin crypto assets, weighted by their free float market capitalization. As Bitcoin is often an investor's first exposure to crypto assets, the CMBI10EX was designed to provide a simple mechanism to diversify into other large cap crypto assets. The same constituents as the CMBI10, with the exception of Bitcoin, are selected as the index constituents.

The MVIS CryptoCompare Smart Contract Leaders Index is designed to track the performance of the largest and most liquid smart contract assets, and is an investable subset of MVIS CryptoCompare Smart Contract Index.

The MVIS CryptoCompare Decentralized Finance Leaders Index is designed to track the performance of the largest and most liquid decentralized finance assets, and is an investable subset of MVIS CryptoCompare Decentralized Finance Index.

The MVIS CryptoCompare Media and Entertainment Leaders Index is designed to track the performance of the largest and most liquid media & entertainment assets, and is an investable subset of MVIS CryptoCompare Media & Entertainment Index.

The MVIS CryptoCompare Infrastructure Application Leaders Index is designed to track the performance of the largest and most liquid infrastructure application assets, and is an investable subset of MVIS CryptoCompare Infrastructure Application Index.

The MVIS Global Digital Assets Equity Index tracks the performance of the largest and most liquid companies in the digital assets industry. This is a modified market cap-weighted index, and only includes companies that generate at least 50% of their revenue from digital asset services and products, such as exchanges, payment gateways, mining operations, software services, equipment and technology, digital asset infrastructure, or the facilitation of commerce with the use of digital assets. MVDAPP covers at least 90% of the investable universe.

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