

Around the block

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

November 11, 2022

Three noteworthy items this month:

1. A prominent institutional study revealed:

- 58% of global institutional investors have invested in digital assets
- Price volatility is the primary barrier to investor interest among 50% of those surveyed
- Most of these investors consider digital assets as an independent asset class.

2. A new digital asset classification system

- Coin Metrics, MSCI and Goldman Sachs designed an institutional standard classifying digital assets by: Class/Sector/Sub-sector similar to how S&P classifies stocks.

3. FTX exchange turmoil sends shockwaves

- FTX, one of the largest crypto exchanges by volume, is the focus of an SEC and Department of Justice investigation.
- Its overlapping business and ownership interests with Alameda Research present potential implications of fraud.
- This story is rapidly developing and will be covered in a separate publication soon.

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



Industry developments

- Google is launching cloud-based blockchain software to store and validate Ethereum transactions enabling enhanced security for Web 3 developers. They also will partner with Coinbase for custody.
- Meta's (Facebook) metaverse, *Horizon Worlds*, lowered expectations for user growth after its initial user base decline.

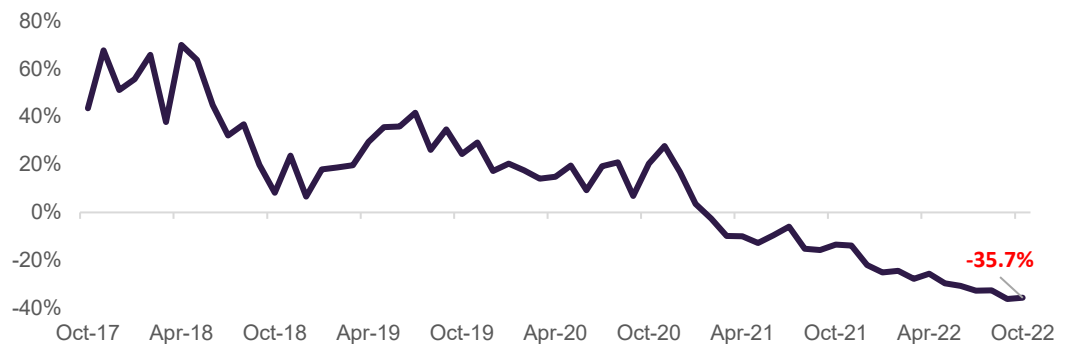
Regulatory developments

- The Texas State Securities Board has alleged that crypto exchange FTX is offering unregistered securities
- Regulators CFTC and SEC are examining Three Arrows Capital, the bankrupt crypto hedge fund, for misleading investors with misrepresented financials.

Chart of the month —Grayscale Bitcoin Trust at 35% discount

The Grayscale Bitcoin Trust (GBTC) aims to mimic the underlying performance of bitcoin. GBTC currently trades at a 35% **discount** largely due to supply/demand imbalances during the ongoing crypto winter but has also traded at a significant **premium** making this, in our view, an undesirable way to own bitcoin.

Grayscale Bitcoin Trust Premium/Discount to NAV



Data sources: Truist IAG, Morningstar Direct

Investment and Insurance Products:

- Are Not FDIC or any other Government Agency Insured
- Are Not Bank Guaranteed
- May Lose Value

Wealth

Performance monitor (10/31/2022)

Crypto and traditional indices

Bitcoin/Ethereum	Composition	1 Mo	YTD	1 Yr
CMBI Bitcoin		3.8%	-55.6%	-66.4%
CMBI Ethereum		16.4%	-57.0%	-63.1%
CMBI Btc/Eth		10.9%	-57.4%	-65.7%
Diversified Baskets				
CMBI 10 Cap Wgt	cap weight	12.0%	-60.1%	-67.6%
CMBI 10 Even Wgt	equal weight	19.8%	-65.0%	-69.9%
CMBI ex-bitcoin	CMBI 10 - BTC	19.2%	-63.5%	-68.6%
MVIS CryptoCompare DA 10	30% coin cap	11.6%	-59.0%	-65.8%
MVIS CryptoCompare DA 25	20% coin cap	8.9%	-63.4%	-68.8%
MVIS Sector Leaders				
Smart Contracts		3.2%	-71.8%	-76.5%
DeFi		4.0%	-71.5%	-77.2%
Media and Entertainment		-10.1%	-84.6%	-85.8%
Infrastructure		8.4%	-69.3%	-74.3%
Equities				
NYSE Factset Global Blockchain	digital equities	1.2%	-65.3%	-72.9%
MVIS Global Digital Assets Equity	digital equities	-5.4%	-75.2%	-83.3%
S&P 500		8.1%	-17.7%	-14.6%
MSCI World ex USA		5.5%	-22.2%	-22.0%
MSCI EM		-3.1%	-29.4%	-31.0%
Fixed Income				
Bloomberg US Agg Bond		-1.3%	-15.7%	-15.7%
Bloomberg US Treasury US TIPS		1.2%	-12.5%	-11.5%
Commodities				
Bloomberg Commodity		2.0%	15.8%	11.2%
SPDR® Gold Shares		-2.0%	-10.3%	-7.7%

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



Crypto assets month in review

Crypto assets outperformed traditional assets in led by a 16.4% gain in ether. All sectors were positive except for Media and Entertainment. Gains for the month were broad-based as illustrated by the CMBI 10 Even Weight index up over 19% from the September lows.

Crypto prices continue to follow the path of most other risk assets, like equities, remaining highly sensitive to the Fed's ongoing monetary tightening, giving back much of the gains from the pandemic era as market liquidity has receded. The space remains sensitive to negative stories such as the ongoing saga at crypto exchange FTX.

We anticipate the conclusion of the mid-term U.S. elections could present an opportunity for Congress to restart regulatory efforts. Previous regulatory momentum had been somewhat bipartisan. Once final election results conclude we are optimistic that any leadership transitions among House Financial services and Senate Banking and Agricultural committees to be brief and orderly.

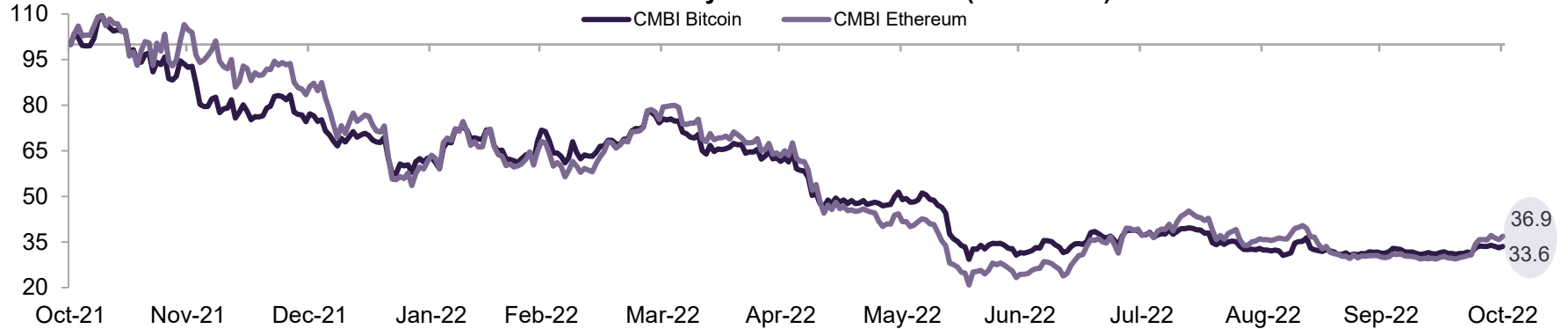
Notable callouts for the month:

- Ethereum, the second largest crypto asset led the way in October bouncing back from its post-Merge lows.
- Digital equity indices continue to struggle as Bitcoin miners continue to be challenged by a liquidity crunch characterized by higher operating costs, lower rewards and depressed bitcoin prices.
- Details with crypto exchange FTX continue emerge with collateral damage yet to be defined.

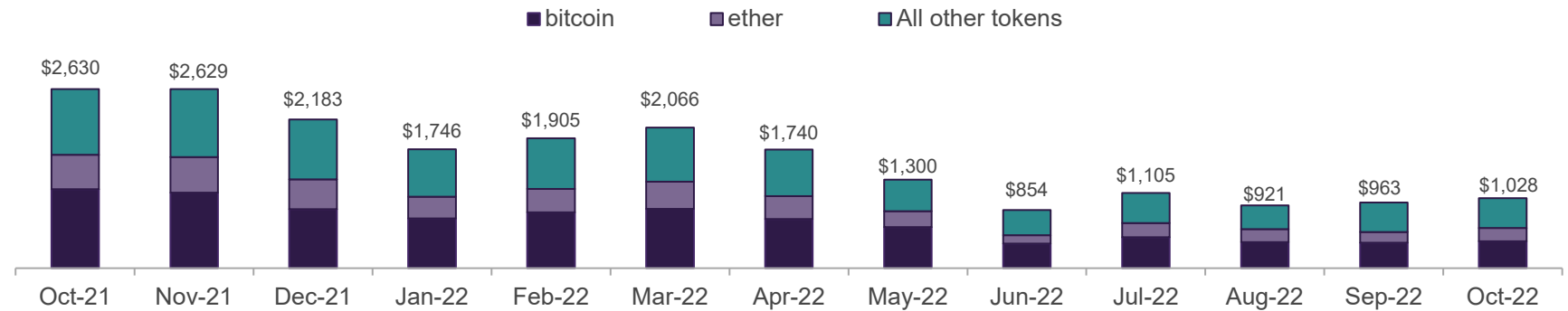
Cryptocurrency ecosystem snapshot as of 10/31/22

- Bitcoin and ether 1-year returns remain more than 60% below their record highs from November 2021
- The crypto ecosystem market value remains range bound near \$1 trillion with combined Bitcoin and Ethereum dominance at roughly 60%

Bitcoin and ether 1-year indexed returns (10/31/2022)



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



Data sources: Truist IAG, CoinMetrics, Messari

October 2022 top 25 tokens by market cap

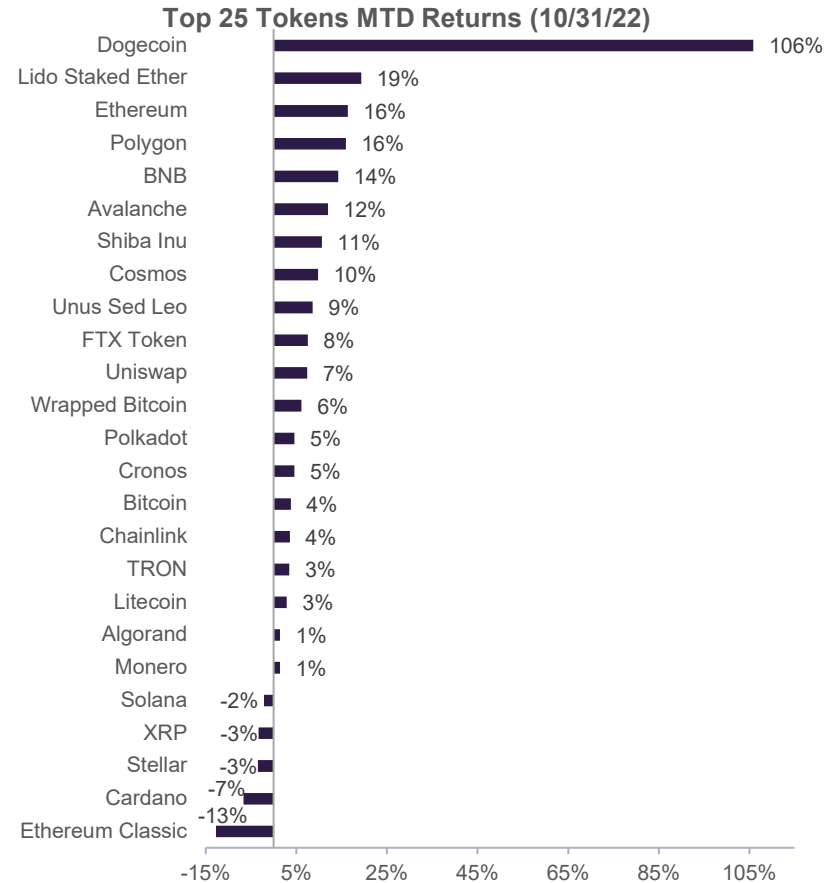
Top 25 cryptocurrencies and top five stablecoins:
91% of total crypto market cap

Rank	Name	Symbol	Sector	Mkt Cap (\$billions)	Mkt Cap Dominance	Cumulative Mkt Cap Dominance
1	Bitcoin	BTC	Currencies	\$ 394.2	38.3%	38.3%
2	Ethereum	ETH	Smart Contract Platforms	\$ 194.9	18.9%	57.3%
3	BNB	BNB	Smart Contract Platforms	\$ 51.5	5.0%	62.3%
4	XRP	XRP	Currencies	\$ 23.1	2.2%	64.5%
5	Dogecoin	DOGE	Currencies	\$ 18.4	1.8%	66.3%
6	Cardano	ADA	Smart Contract Platforms	\$ 14.1	1.4%	67.7%
7	Solana	SOL	Smart Contract Platforms	\$ 11.8	1.1%	68.8%
8	Polygon	MATIC	Scaling	\$ 7.8	0.8%	69.6%
9	Polkadot	DOT	Smart Contract Platforms	\$ 7.7	0.8%	70.3%
10	Shiba Inu	SHIB		\$ 7.5	0.7%	71.1%
11	Lido Staked Ether	STETH		\$ 7.3	0.7%	71.8%
12	TRON	TRX	Smart Contract Platforms	\$ 5.8	0.6%	72.3%
13	Avalanche	AVAX	Smart Contract Platforms	\$ 5.7	0.6%	72.9%
14	Uniswap	UNI	Decentralized Exchanges	\$ 5.4	0.5%	73.4%
15	Wrapped Bitcoin	WBTC		\$ 5.0	0.5%	73.9%
16	Unus Sed Leo	LEO	Centralized Exchanges	\$ 4.4	0.4%	74.3%
17	Cosmos	ATOM	Smart Contract Platforms	\$ 4.0	0.4%	74.7%
18	Litecoin	LTC	Currencies	\$ 4.0	0.4%	75.1%
19	Chainlink	LINK	Data Management	\$ 3.8	0.4%	75.5%
20	FTX Token	FTT	Centralized Exchanges	\$ 3.5	0.3%	75.8%
21	Ethereum Classic	ETC	Smart Contract Platforms	\$ 3.3	0.3%	76.2%
22	Cronos	CRO	Payment Platforms	\$ 3.3	0.3%	76.5%
23	Stellar	XLM	Currencies	\$ 2.8	0.3%	76.7%
24	Monero	XMR	Currencies	\$ 2.7	0.3%	77.0%
25	Algorand	ALGO	Smart Contract Platforms	\$ 2.6	0.3%	77.3%

Top 5 Stablecoins						
Tether	USDT	Stablecoins	\$ 69.1	6.7%	6.7%	
USD Coin	USDC	Stablecoins	\$ 43.7	4.2%	11.0%	
Binance USD	BUSD	Stablecoins	\$ 21.4	2.1%	13.0%	
Dai	DAI	Stablecoins	\$ 5.8	0.6%	13.6%	
FRAX	FRAX	Stablecoins	\$ 1.2	0.1%	13.7%	

Data sources: Truist IAG, Messari

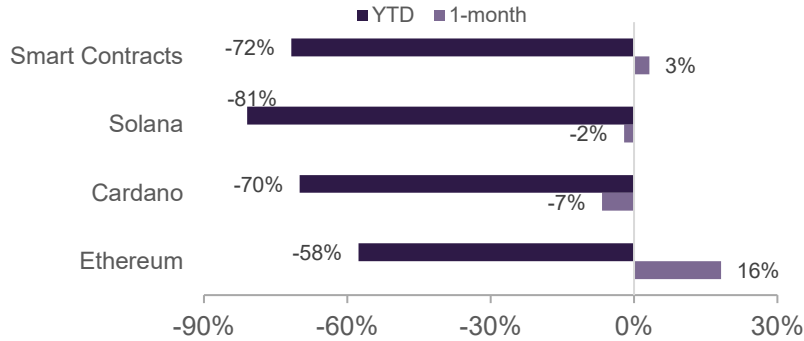
Top 25 October 2022 performance rankings



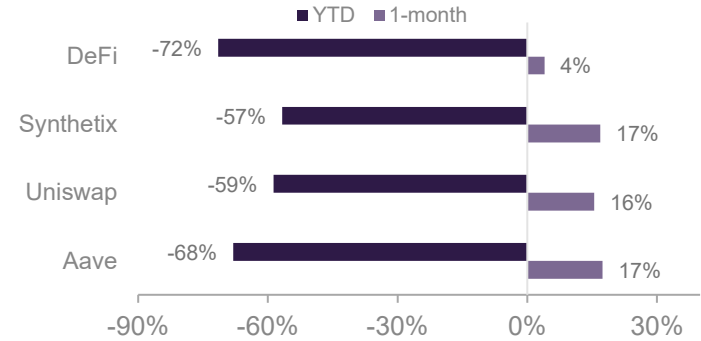
Key crypto sectors 10/31/22

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

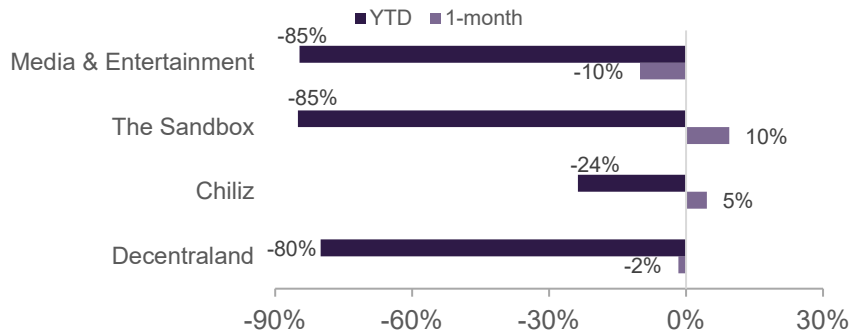
Smart contract index and top 3 tokens



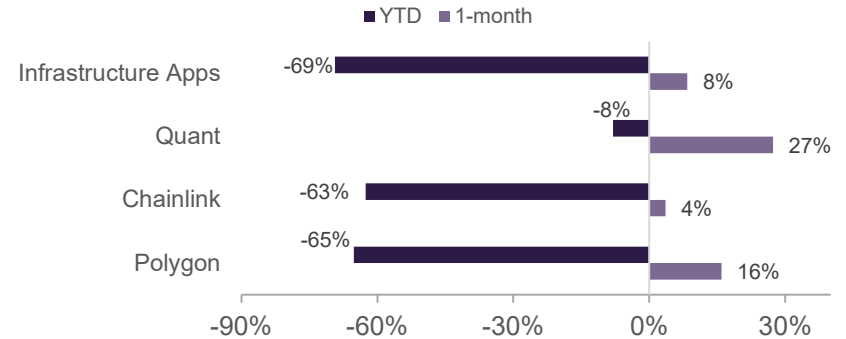
DeFi index and top 3 tokens



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.

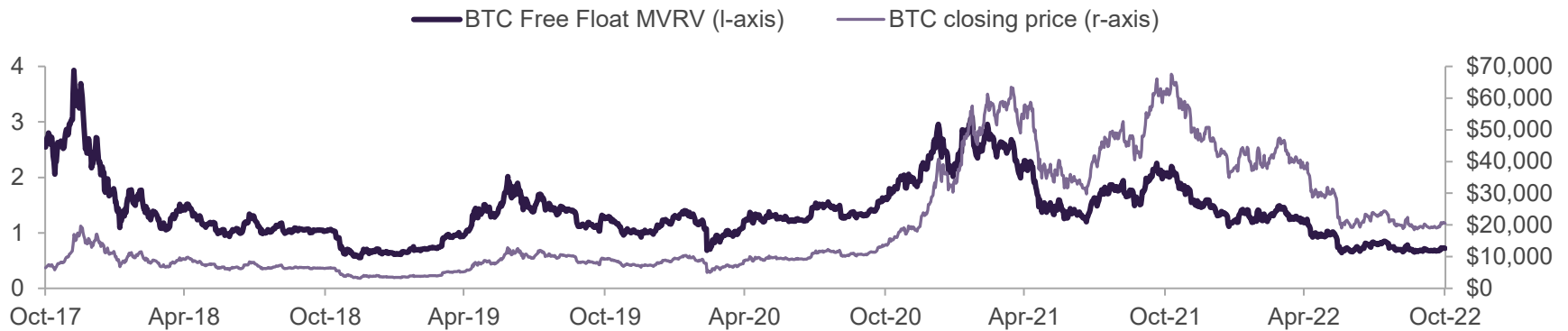
Valuation corner

Truist Advisory Services, Inc.

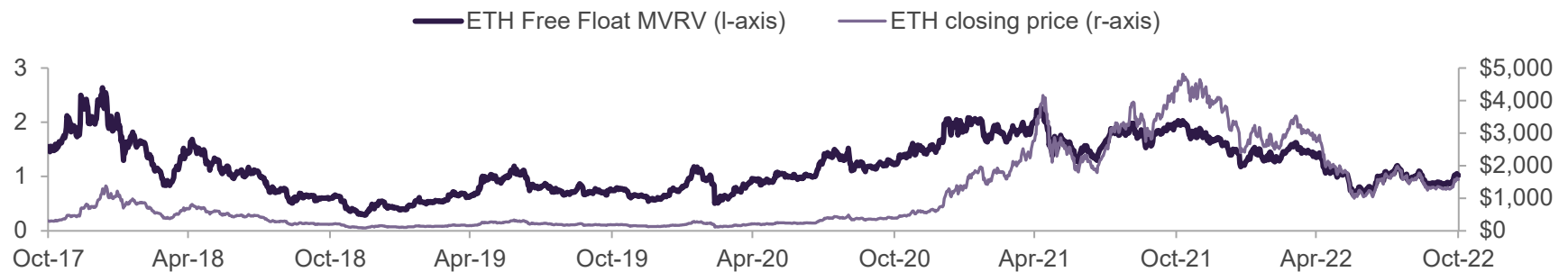
Market value to realized value (MVRV) is a popular crypto valuation metric. MVRV compares the current market value of the active supply of a given cryptocurrency over its realized value, or the value each unit of cryptocurrency's last transaction.

In simple terms, MVRV measures current market value over aggregate cost basis, thereby providing an estimate of unrealized gain/loss. A value of one, or the break-even level, is a key support level while values below one, especially in more mature tokens like bitcoin, have historically presented buying opportunities. **Bitcoin presently has an MVRV of .7 which historically has represented attractive valuation. Ether, has nudged up to 1.02 a level that historically suggested fair value.**

Bitcoin MVRV



Ethereum MVRV



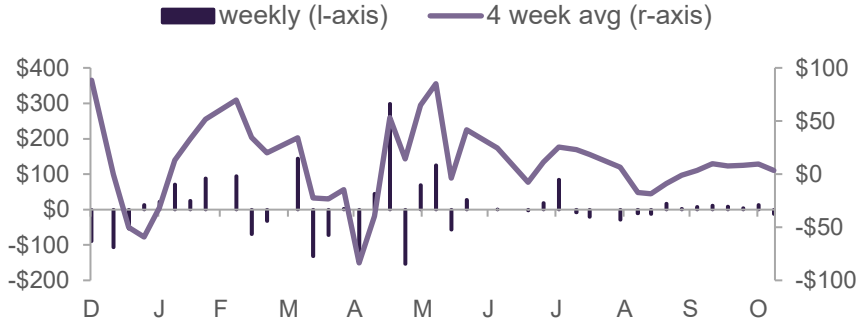
Data sources: Truist IAG, CoinMetrics



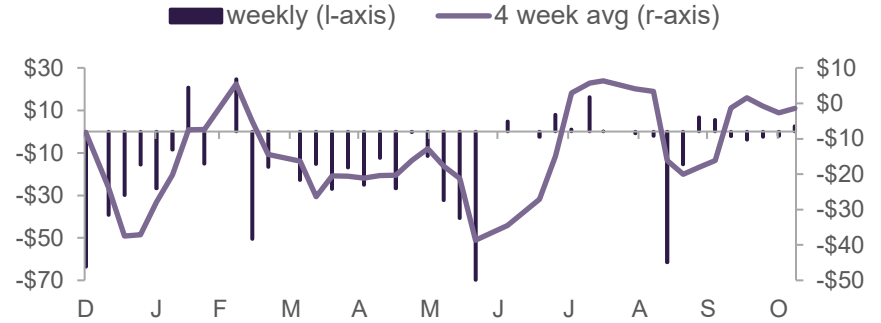
Wealth

Year-to-date exchange-traded, mutual fund, and trust product fund flows (in \$ millions)

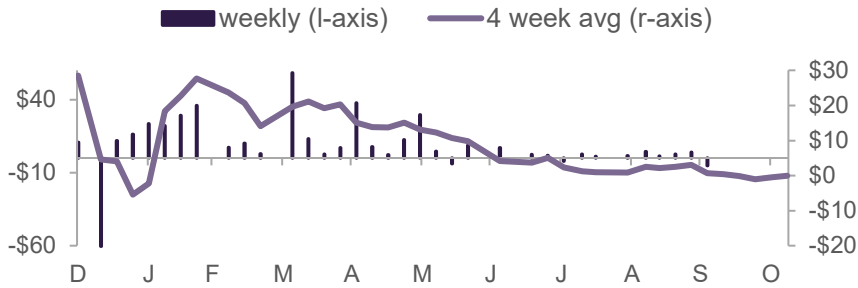
Bitcoin product flows



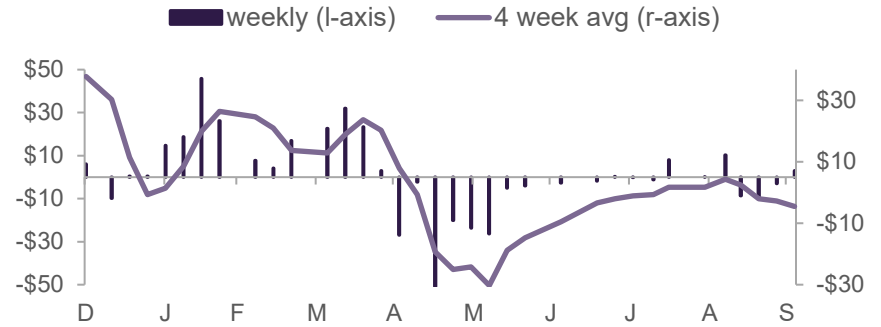
Ethereum product flows



Non bitcoin/ether product flows (ex short bitcoin)



Blockchain equity product flows



Data sources: Truist IAG, CoinShares. Product flows measured by ETPs, mutual funds, and OTC trusts.

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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Investments into crypto currencies and/or digital assets are subject to material and high risk including the risk of total loss. The calculated prices may not be achieved by investors as the calculated price is based on prices from different trading platforms. Furthermore, an investment into crypto currencies and/or digital assets may become illiquid depending on the trading platform or investment product used for the specific investment. Investors should carefully review all risk factors disclosed by the relevant trading platform or in the product documents of relevant investment products.

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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