

Global Cryptocurrencies and Digital Assets

Digital Assets: In the flow

Strategy

7-day Performance to March 7: S&P 500 +0.4%, Nasdaq +0.7%, Digital Assets Top 100 -5%, Top 5 blockchain/scaling solution tokens (BTC, ETH, BNB, ADA, MATIC) -4%, DeFi TVL -3%, Top 4 stablecoins (USDT, USDC, BUSD, DAI) -0.3%

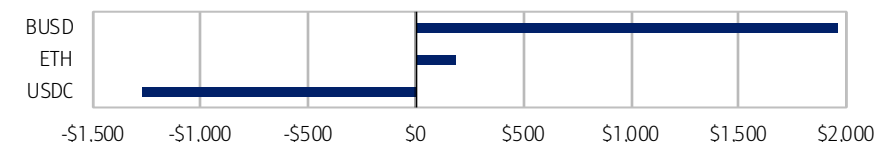
Above the Crowd: Our client conversations last week were largely around the drivers of this year's digital asset outperformance during equity market rallies and underperformance during equity market pullbacks. The primary driver (this year and in prior years) remains that digital assets are part of an emerging high-growth asset class and trade as high-beta risk assets. Declining liquidity for digital assets last year due to lower speculative retail trading may be exacerbated by Silvergate's wind down as its clients will no longer have access to a major vehicle for 24/7 settlement. Longer-term trends continue around regulation, institutional investor interest, developer activity, and corporate engagement, specifically NFT adoption for marketing by traditional companies like Nike, Starbucks, Disney, LVMH, Walmart [and many others \(see our 12/2 report\)](#). Media reports indicate Amazon's NFT strategy is in the works.

In the Weeds: Last week, Digital Assets Large-Cap Index (MVDALC) -5%; Mid-Cap Index (MVDAMC) -10%; Small-Cap Index (MVDASC) -11%. Large-cap index pressured by BTC (-4%) and stablecoin BUSD (-20%) following a SEC Wells notice and NYDFS order to cease issuance directed at BUSD-issuer Paxos.* Mid-cap weakness was driven by a TON reversal (-8% last week, +7% prior week due to the release of its governance system), and OKB profit taking (-15% last week, +99% ytd prior to last week). Small-cap underperformance driven by STX profit taking (-23% last week, +321% ytd prior to last week due to continued excitement around expanding Bitcoin functionality), partially offset by MKR (+17%) following an executive (governance) proposal to increase stability (borrowing) fees and a proposal to allow MKR as collateral, potentially driving demand.**

Weekly Flows: BTC exchange net outflows last week were close to flat, offsetting 4% of exchange net inflows over the prior 3 weeks. Muted flows for 2 consecutive weeks, tight supply and decreasing liquidity indicate investors are likely moving to the sidelines (*neutral*). ETH exchange net outflows last week were 2.7x larger than the prior week's, but activity remains muted with flows ytd -68% y/y when ignoring direction. Muted flows and stable price (-7% last 4 weeks) indicate that investors remain focused on the Shanghai upgrade expected during the first two weeks of April (*neutral*). Top 4 stablecoins saw large exchange net outflows for the fourth consecutive week, indicating that investor sentiment has shifted increasingly bearish (*bearish*).

Exhibit 1: 1 week net flow (\$mn) into personal digital asset wallets

BUSD +\$2.0bn, ETH +\$187mn, USDC -\$1.3bn



Source: BofA Global Research, Glassnode; Data: 3/1/23 – 3/7/23

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Ecosystem at a glance

- ~\$1tn: crypto mkt value
- ~\$429bn: bitcoin mkt value
- ~\$595bn: altcoin mkt value
- ~50: altcoins with mkt value \$1bn+
- ~\$136bn: stablecoin mkt value
- ~\$48bn: DeFi TVL
- ~\$3.3bn: NFT ytd sales volume

Source: CoinMarketCap, DefiLlama, Dune Analytics (<https://dunexyz/rchen8/opensea> & https://dune.com/kit_kwan/blurio-analytics)

Social Media

- Largest mentions increase wk/wk: MKR, FTM, UNI
- Largest mentions decrease wk/wk: AAVE, FLOW, DAI

DeFi = Decentralized Finance

NFT = Non-Fungible Token

TVL = Total Value Locked

*Stablecoin performance calculated with market values. Token performance calculated with price.

**Digital Asset Performance Tracker

***BUSD exchange outflows due to redemptions may skew stablecoin flow analysis.

Digital asset analytics

Exhibit 2: Tokens included in our flows analysis

23 tokens with a combined market value of \$671bn

Token	Ticker	Price	7-day / YTD	Volume (\$mn)	Smart Contract	Mkt Value (\$bn)
Bitcoin	BTC	\$22,219.77	-4% / +34%	\$19,388	NA	\$429.1
Ether	ETH	\$1,561.93	-3% / +31%	\$6,602	27%	\$191.1
Polygon	MATIC	\$1.15	-4% / +52%	\$412	66%	\$10.0
Shiba Inu	SHIB	\$0.000011	-8% / +37%	\$187	NA	\$6.1
Lido Staked ETH	stETH	\$1,552.76	-3% / +32%	\$8	NA	\$5.4
Uniswap	UNI	\$6.42	-1% / +24%	\$79	47%	\$4.9
Chainlink	LINK	\$6.87	-4% / +23%	\$257	57%	\$3.6
Wrapped Bitcoin	WBTC	\$22,206.60	-4% / +35%	\$146	66%	\$3.4
Unus Sed Leo	LEO	\$3.39	+2% / -6%	\$2	97%	\$3.2
OKB	OKB	\$44.00	-15% / +69%	\$39	NA	\$2.6
Cronos	CRO	\$0.07	-10% / +26%	\$15	2%	\$1.8
ApeCoin	APE	\$4.73	-6% / +30%	\$90	NA	\$1.7
Quant	QNT	\$122.57	-3% / +16%	\$21	41%	\$1.5
Decentraland	MANA	\$0.59	-6% / +99%	\$88	33%	\$1.1
Aave	AAVE	\$75.19	-3% / +45%	\$60	56%	\$1.1
The Sandbox	SAND	\$0.61	-11% / +59%	\$147	NA	\$0.9
Maker	MKR	\$922.38	+17% / +81%	\$92	43%	\$0.9
Kucoin Token	KCS	\$8.53	-2% / +32%	\$0.9	1%	\$0.8
Huobi Token	HT	\$4.94	-5% / -5%	\$13	30%	\$0.8
Loopring	LRC	\$0.32	-7% / +71%	\$34	23%	\$0.4
Basic Att. Token	BAT	\$0.25	-13% / +51%	\$30	19%	\$0.4
Compound	COMP	\$45.38	-7% / +45%	\$25	40%	\$0.3
Wrapped Ether	WETH	\$1,561.97	-3% / +31%	\$1,075	NA	NA

Source: CoinMarketCap, Glassnode

All data as of 3/7/23

Volume measures the avg daily trading volume across major exchanges from 3/1/23 – 3/7/23. Smart contract measures the avg daily percent of a token's supply held in smart contracts from 3/1/23 – 3/7/23.

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Token prices moved lower with few exceptions over the last week as the digital asset ecosystem's market value declined by 5%.

Market value of the top 100 digital assets declined by 5% over the last week, but is up 26% ytd.

Exhibit 3: Stablecoins included in our flows analysis

4 stablecoins with a combined market value of \$129bn

Stablecoin	Ticker	Price Range	Volume (\$mn)	Mkt Value (\$bn)
Tether	USDT	\$0.9999 - \$1.00	\$27,757	\$71.6
USD Coin	USDC	\$0.9997 - \$1.00	\$3,213	\$43.6
Binance USD	BUSD	\$0.9996 - \$1.00	\$5,149	\$8.4
Dai	DAI	\$0.9981 - \$1.00	\$145	\$5.2

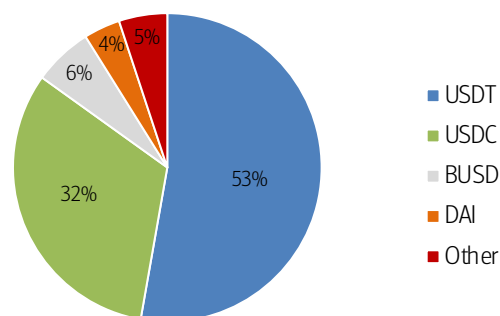
Source: CoinMarketCap

Price ranges and market values as of 3/7/23

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Exhibit 4: USDT's market value +8% ytd, taking share from BUSD's (-50% ytd), DAI's (-10%) and USDC's (-2%)

Stablecoins have a market value of \$136bn

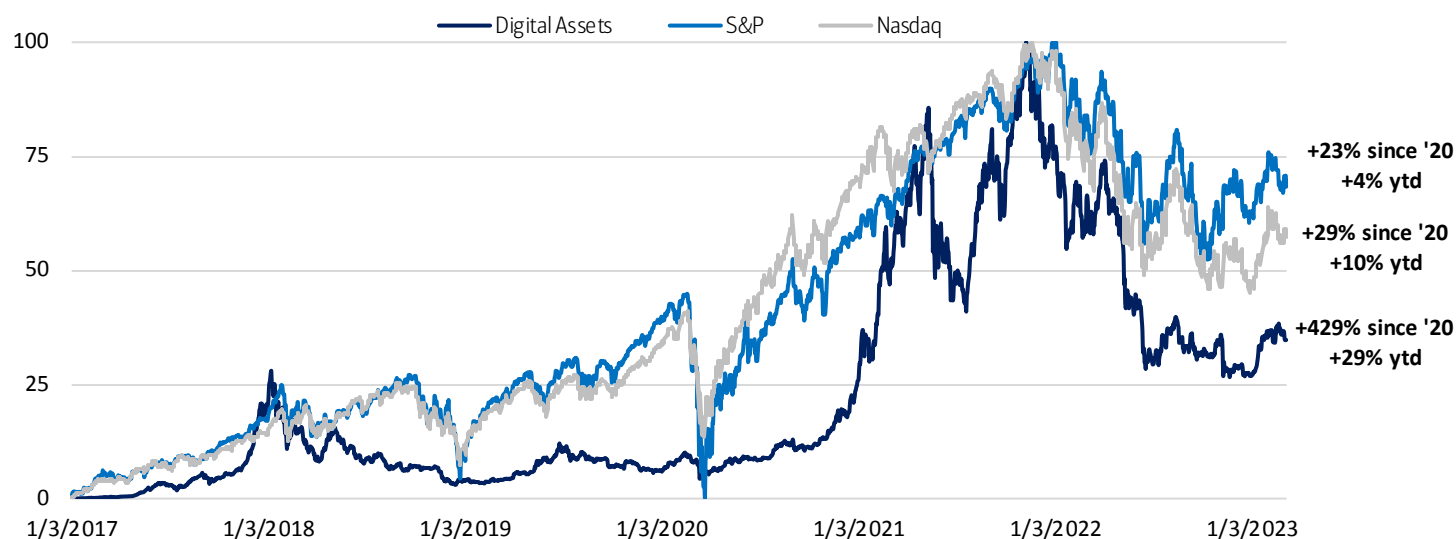


Source: CoinMarketCap

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Exhibit 5: Digital assets' market value has risen 29% ytd after falling 64% in 2022

Digital assets' market value appreciation relative to S&P (SPX) and NASDAQ (CCMP) performance



Source: CoinMarketCap, Bloomberg

Performance calculated from 12/31/19 – 3/7/23 and 12/31/22 – 3/7/23. Digital Assets' performance represents the change in the ecosystem's market value. Note that +23% and +4% is the performance of the S&P 500 Index (SPX) and +29% and +10% is the performance of the NASDAQ (CCMP).

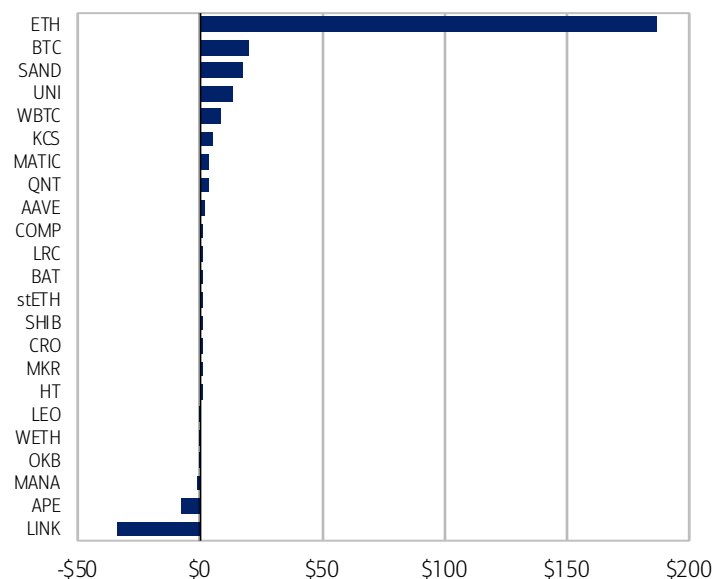
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4-Week Performance to March 7: S&P 500 -4%, Nasdaq -5%, Digital Assets Top 100 -5%, Top 5 blockchain/scaling solution tokens -6%, DeFi TVL -1%, Top 4 stablecoins -2%

YTD Performance to March 7: S&P 500 +4%, Nasdaq +10%, Digital Assets Top 100 +26%, Top 5 blockchain/scaling solution tokens +32%, DeFi TVL +23%, Top 4 stablecoins -3%

Exhibit 6: 1 week net flow (\$mn) into personal wallets (tokens)

ETH +\$187mn, BTC +\$20mn, APE -\$8mn, LINK -\$34mn



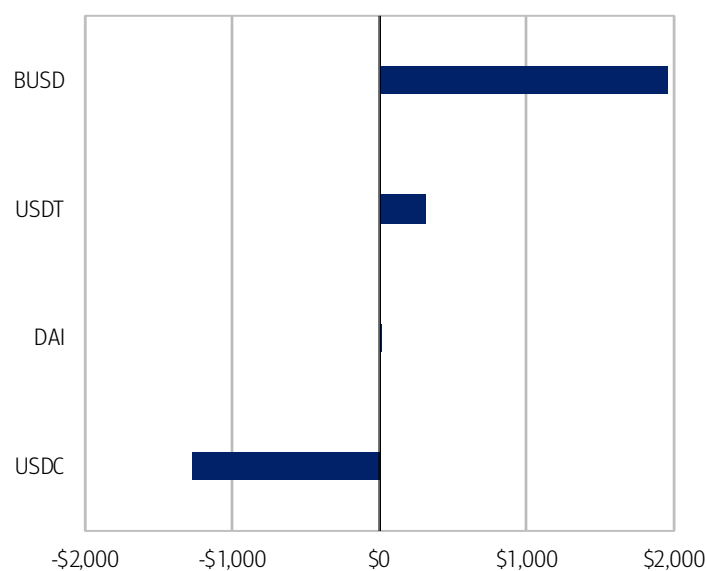
Source: BofA Global Research, Glassnode

Data: 3/1/23 – 3/7/23

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Exhibit 7: 1 week net flow (\$mn) into personal wallets (stablecoins)

USDC -\$1.3bn, DAI +\$6mn, USDT +\$318mn, BUSD +\$2.0bn



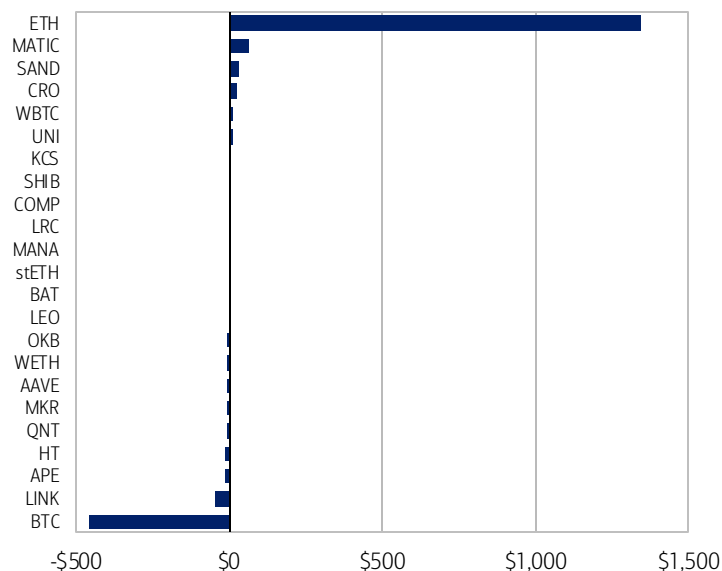
Source: BofA Global Research, Glassnode

Data: 3/1/23 – 3/7/23

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Exhibit 8: 4 week net flow (\$mn) into personal wallets (tokens)

ETH +\$1.3bn, MATIC +\$60mn, LINK -\$49mn, BTC -\$461mn

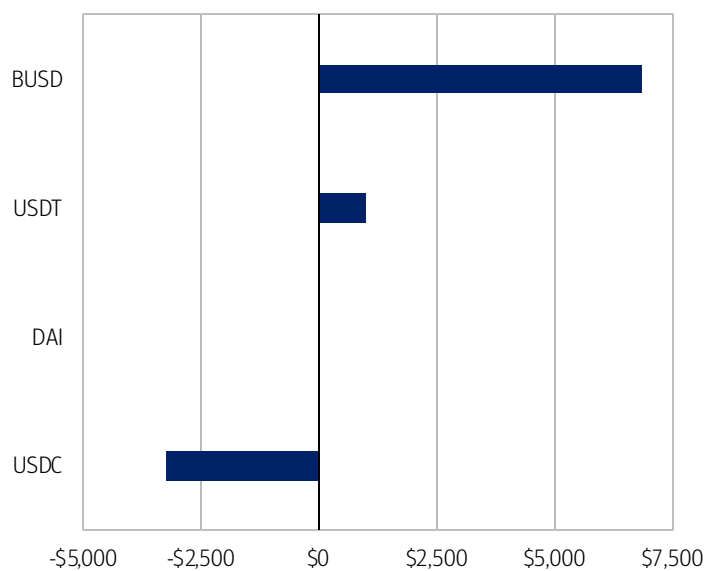


Source: BofA Global Research, Glassnode
Data: 2/8/23 – 3/7/23

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Exhibit 9: 4 week net flow (\$mn) into personal wallets (stablecoins)

USDC -\$3.3bn, DAI +\$15mn, USDT +\$989mn, BUSD +\$6.9bn

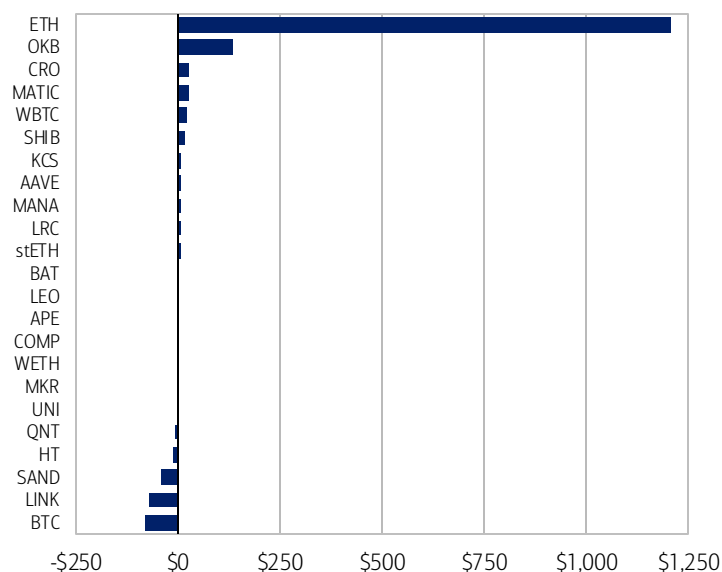


Source: BofA Global Research, Glassnode
Data: 2/8/23 – 3/7/23

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Exhibit 10: YTD net flow (\$mn) into personal wallets (tokens)

ETH +\$1.2bn, OKB +\$135mn, LINK -\$72mn, BTC -\$83mn

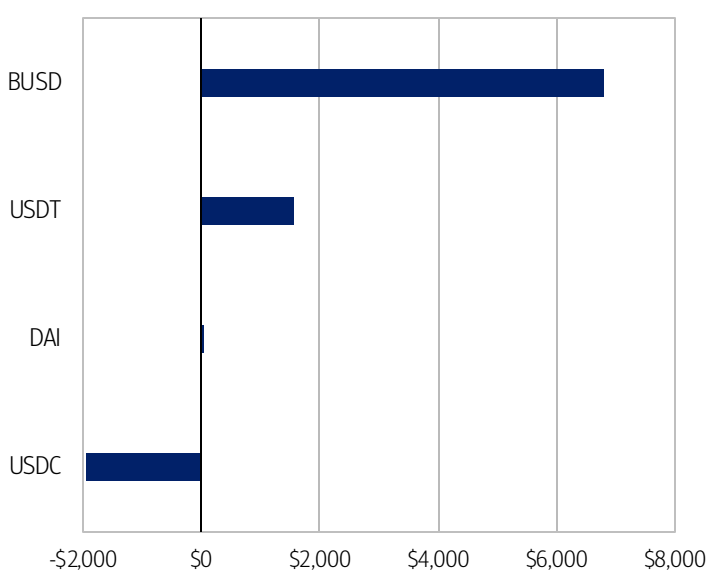


Source: BofA Global Research, Glassnode
Data: 1/1/23 – 3/7/23

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Exhibit 11: YTD net flow (\$mn) into personal wallets (stablecoins)

USDC -\$2.0bn, DAI +\$37mn, USDT +\$1.6bn, BUSD +\$6.8bn



Source: BofA Global Research, Glassnode
Data: 1/1/23 – 3/7/23

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What can flows tell us about investor sentiment?

Tokens: transfer to exchange wallets means an increase in sell pressure

Investors generally prefer to hold tokens in their personal digital asset wallets and frequently transfer them to digital asset exchange wallets (net outflow) when they intend to sell them, indicating a potential increase in sell pressure. Large inflows into exchange wallets can quickly put downward pressure on prices. Conversely, investors transfer tokens from exchange wallets to their personal wallets (net inflow) when they intend to hold them (or HODL), indicating a potential decrease in sell pressure.

Stablecoins: transfer to exchange wallets means a decrease in sell pressure

Stablecoins are digital assets pegged to another asset such as a fiat currency (like the US dollar), a commodity (like gold), other digital assets or a combination of assets with the goal of maintaining a stable value. Digital asset holders and traders use stablecoins to transfer funds between exchanges or between exchanges and personal wallets, reduce exposure to more volatile digital assets without converting digital assets back to a fiat currency, lock in gains from trading and act as a safe haven if expecting a downturn or during a pullback.

Determining potential buy or sell pressure from stablecoin flows is the reverse of how we determine it using token flows. Investors frequently transfer stablecoins from their personal wallets to exchange wallets (net outflow) when they intend to purchase tokens, indicating a potential decrease in sell pressure. Conversely, investors transfer stablecoins from exchange wallets to their personal wallets (net inflow) when they do not intend to buy tokens or following a token sale, indicating a potential increase in sell pressure.

See our Methodology section for how we calculate flows in dollar terms and for a list of exchanges included in our analysis of each token.

Digital Asset Performance Tracker

Exhibit 12: Performance of the top 10 tokens by market value

2023 is off to a much better start for digital asset investors who realized last year that it's not a straight line up. Token prices are trading higher ytd with few exceptions. The market value of digital assets is 30% higher than the 2022 lows touched on 11/22.

Top 10 Tokens		Percent Change			
Token	Ticker	1 week	4 week	YTD	1 year
Bitcoin	BTC	-4%	-4%	+34%	-42%
Ether	ETH	-3%	-7%	+31%	-39%
BNB	BNB	-4%	-13%	+17%	-23%
XRP	XRP	+1%	-6%	+12%	-48%
Cardano	ADA	-6%	-17%	+34%	-60%
Polygon	MATIC	-4%	-9%	+52%	-20%
Dogecoin	DOGE	-8%	-20%	+5%	-39%
Solana	SOL	-8%	-15%	+103%	-76%
Polkadot	DOT	-8%	-16%	+36%	-66%
Litecoin	LTC	-8%	-14%	+23%	-15%

Source: CoinMarketCap

Data: 1 week performance: 3/1/23– 3/7/23, 4 week performance: 2/8/23 – 3/7/23, YTD performance: 1/1/23 – 3/7/23, 1 year performance: 3/7/22 – 3/7/23.

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Exhibit 13: Performance of digital asset indexes

The top 20 tokens out of the top 100 by market value have underperformed YTD relative to the middle 30 and bottom 50

Index		Percent Change				
Ticker	1 week	4 week	YTD	1 year	3 year	
MVDA	-5%	-5%	+26%	-43%	+167%	
MVDALC	-5%	-5%	+25%	-41%	+171%	
MVDAMC	-10%	-11%	+27%	-60%	+142%	
MVDASC	-11%	-10%	+62%	-50%	+102%	
Ticker	1 week	4 week	YTD	1 year	3 year	
MVSCLE	-8%	-11%	+37%	-65%	+182%	

Source: Bloomberg

Data: 1 week performance: 3/1/23– 3/7/23, 4 week performance: 2/8/23 – 3/7/23, YTD performance: 1/1/23 – 3/7/23, 1 year performance: 3/7/22 – 3/7/23, 3-year performance: 3/7/20 – 3/7/23.

Indexes:

- 1) MVIS® CryptoCompare Digital Assets 100 Price Index (MVDA) - Market cap-weighted index which tracks the performance of the 100 largest digital assets and is rebalanced monthly.
- 2) MVIS® CryptoCompare Digital Assets 100 Large-Cap Price Index (MVDALC) - Market cap-weighted index which tracks the performance of the 20 largest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.
- 3) MVIS® CryptoCompare Digital Assets 100 Mid-Cap Price Index (MVDAMC) - Market cap-weighted index which tracks the performance of the 30 mid-size digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.
- 4) MVIS® CryptoCompare Digital Assets 100 Small-Cap Price Index (MVDASC) - Market cap-weighted index which tracks the performance of the 50 smallest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.
- 5) MVIS® CryptoCompare Smart Contract Leaders Index (MVSCLE) - Market cap-weighted index which tracks the performance of the largest and most liquid smart contract assets in the MVIS CryptoCompare Smart Contract Index and is rebalanced monthly.

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Large Cap Index (MVDALC) & Constituent Performance

Exhibit 14: MVDALC (Digital Asset Large Cap) Index Performance

YTD Performance: +25% // 2022 Performance: -64%



Source: CoinMarketCap

MVIS® CryptoCompare Digital Assets 100 Large-Cap Price Index (MVDALC) - Market cap-weighted index which tracks the performance of the 20 largest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Exhibit 15: MVDALC Constituent YTD Outperformers/Underperformers

Top 5 Outperformers YTD: SOL, MATIC, AVAX, SHIB, DOT // Top 5 Underperformers YTD: BUSD, DAI, USDC, DOGE, USDT

Constituent Outperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Solana	SOL	0.8%	-8%	-15%	+103%	-76%
Polygon	MATIC	1.1%	-4%	-9%	+52%	-20%
Avalanche	AVAX	0.6%	-5%	-22%	+48%	-78%
Shiba Inu	SHIB	0.7%	-8%	-23%	+37%	-53%
Polkadot	DOT	0.8%	-8%	-16%	+36%	-66%

Constituent Underperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Binance USD	BUSD	1.4%	-20%	-48%	-50%	-53%
Dai	DAI	0.6%	-1%	-11%	-10%	-47%
USD Coin	USDC	4.9%	+3%	+4%	-2%	-17%
Dogecoin	DOGE	1.1%	-8%	-20%	+5%	-39%
Tether	USDT	8.2%	+1%	+5%	+8%	-10%

Source: CoinMarketCap

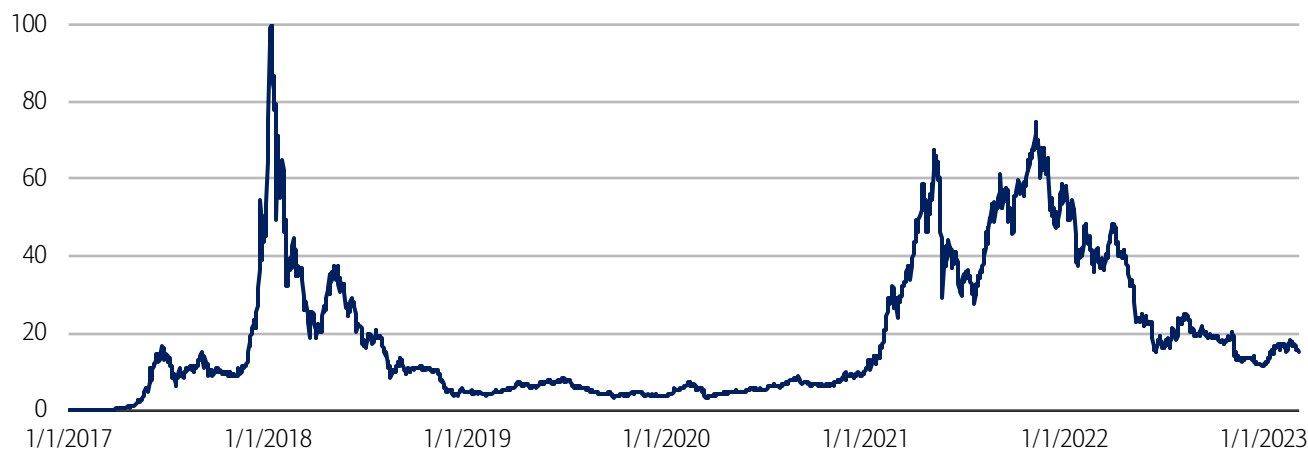
MVIS® CryptoCompare Digital Assets 100 Large-Cap Price Index (MVDALC) - Market cap-weighted index which tracks the performance of the 20 largest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Mid Cap Index (MVDAMC) & Constituent Performance

Exhibit 16: MVDAMC (Digital Asset Mid Cap) Index Performance

YTD Performance: +27% // 2022 Performance: -78%



Source: CoinMarketCap

MVIS® CryptoCompare Digital Assets 100 Mid-Cap Price Index (MVDAMC) - Market cap-weighted index which tracks the performance of the 30 mid-size digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Exhibit 17: MVDAMC Constituent YTD Outperformers/Underperformers

Top 5 Outperformers YTD: APT, LDO, GRT, FTM, MANA // Top 5 Underperformers YTD: XMR, TON, QNT, XLM, ETC

Constituent Outperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Aptos	APT	3.8%	-6%	-31%	+222%	NA
Lido DAO	LDO	4.2%	-15%	-1%	+167%	+22%
The Graph	GRT	2.3%	-10%	-33%	+148%	-58%
Fantom	FTM	2.2%	-7%	-32%	+100%	-72%
Decentraland	MANA	2.2%	-6%	-27%	+99%	-76%

Constituent Underperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Monero	XMR	5.8%	+0.02%	-11%	+2%	-6%
The Open Network	TON	7.4%	-8%	-2%	+6%	+43%
Quant	QNT	2.9%	-3%	-14%	+16%	+10%
Stellar	XLM	4.5%	-5%	-10%	+16%	-52%
Ethereum Classic	ETC	5.4%	-7%	-17%	+22%	-28%

Source: CoinMarketCap

MVIS® CryptoCompare Digital Assets 100 Mid-Cap Price Index (MVDAMC) - Market cap-weighted index which tracks the performance of the 30 mid-size digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Small Cap Index (MVDASC) & Constituent Performance

Exhibit 18: MVDASC (Digital Asset Small Cap) Index Performance

YTD Performance: +62% // 2022 Performance: -82%



Source: CoinMarketCap

MVIS® CryptoCompare Digital Assets 100 Small-Cap Price Index (MVDASC) - Market cap-weighted index which tracks the performance of the 50 smallest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Exhibit 19: MVDASC Constituent YTD Outperformers/Underperformers

Top 5 Outperformers YTD: CFX, AGIX, STX, IMX, OP // Top 5 Underperformers YTD: TWT, BSV, HT, NEXO, PAXG

Constituent Outperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Conflux Network	CFX	1.7%	+13%	+214%	+901%	+82%
SingularityNET	AGIX	1.8%	-16%	-29%	+810%	+362%
Stacks	STX	3.5%	-23%	+117%	+223%	-37%
Immutable X	IMX	3.1%	+2%	+3%	+183%	-6%
Optimism	OP	2.2%	-11%	-21%	+162%	NA

Constituent Underperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Trust Wallet Token	TWT	2.0%	-5%	-22%	-12%	+84%
Bitcoin SV	BSV	2.9%	-8%	-13%	-9%	-52%
Huobi Token	HT	3.2%	-5%	-11%	-5%	-46%
Nexo	NEXO	1.4%	-8%	-18%	-3%	-67%
Pax Gold	PAXG	2.0%	-0.1%	-3%	-1%	-9%

Source: CoinMarketCap

MVIS® CryptoCompare Digital Assets 100 Small-Cap Price Index (MVDASC) - Market cap-weighted index which tracks the performance of the 50 smallest digital assets in the MVIS CryptoCompare Digital Assets 100 Index and is rebalanced monthly.

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Smart Contract Leaders Index (MVSCLE) & Constituent Performance

Exhibit 20: MVSCLE (Digital Asset Smart Contract Leaders) Index Performance

YTD Performance: +37% // 2022 Performance: -82%



Source: CoinMarketCap

MVIS® CryptoCompare Smart Contract Leaders Index (MVSCLE) – Market cap-weighted index which tracks the performance of the largest and most liquid smart contract assets in the MVIS CryptoCompare Smart Contract Index and is rebalanced monthly.

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Exhibit 21: MVSCLE Constituent YTD Outperformers/Underperformers

Top 5 Outperformers YTD: APT, SOL, FTM, HBAR, NEAR // Top 5 Underperformers YTD: TRX, ATOM, ALGO, ETH, ADA

Constituent Outperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
Aptos	APT	2.1%	-6%	-31%	+222%	NA
Solana	SOL	7.8%	-8%	-15%	+103%	-76%
Fantom	FTM	1.2%	-7%	-32%	+100%	-72%
Hedera	HBAR	1.8%	-9%	-16%	+72%	-69%
Near	NEAR	1.8%	-10%	-20%	+59%	-80%

Constituent Underperformers						
Token	Ticker	Weight	1 week	4 week	YTD	1 year
TRON	TRX	6.8%	-4%	+1%	+22%	+12%
Cosmos	ATOM	3.5%	-4%	-21%	+26%	-58%
Algorand	ALGO	1.6%	-11%	-22%	+26%	-71%
Ethereum	ETH	33.3%	-3%	-7%	+31%	-39%
Cardano	ADA	12.4%	-6%	-17%	+34%	-60%

Source: CoinMarketCap

MVIS® CryptoCompare Smart Contract Leaders Index (MVSCLE) – Market cap-weighted index which tracks the performance of the largest and most liquid smart contract assets in the MVIS CryptoCompare Smart Contract Index and is rebalanced monthly.

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Determining and calculating digital asset performance

Determining the digital asset ecosystem's performance

Digital assets are part of an emerging asset class and performance should be measured similarly to how the performance of traditional indexes are measured. Our view is that the market value of all ~23k tokens in existence is a proxy for the ecosystem's growth and development, but calculating performance using these market values is problematic. For example, the S&P500 index includes the 500 largest US companies and is rebalanced quarterly, but comparing the performance of these 500 companies (503 stocks) to the performance of the continuously expanding ecosystem of tokens results in an apples-to-oranges comparison in which the digital asset ecosystem's performance is skewed upward as new tokens are issued.

Calculating performance with digital asset indexes

We use 4 MVIS CryptoCompare Digital Assets Indexes that are rebalanced quarterly and track the performance of the largest 100 tokens by market value (MVDA), largest 20 tokens by market value (MVDALC), largest 30 tokens by market value after the largest 20 tokens (MVDAMC) and the smallest 50 tokens by market value out of the largest 100 tokens. These indexes include a constant number of tokens and are readjusted monthly, which allows us to compare digital asset performance over time and in relation to traditional indexes. The MVIS indexes also exclude tokens that do not meet volume requirements, which addresses potential market value manipulation. For example, we could create and issue 1mn AlkeshAndrew (AA) tokens, put the tokens in a liquidity pool on a decentralized exchange and then swap 1 AA for \$1 worth of another token. If 1 million tokens were issued, then the market value for the AlkeshAndrew token would be \$1mn, even if only one trade ever occurred.

Decentralized Finance (DeFi): Total Value Locked (TVL) Tracker

TVL: a proxy for DeFi user adoption and developer interest

TVL measures the total value of tokens staked (deposited) in DeFi protocols. The TVL on a blockchain (operating system), may indicate user adoption of specific DeFi protocols and developer interest in building applications on top of specific blockchains.

Our view is that increasing TVL on a specific blockchain indicates user adoption and network development, likely leading to accelerating transaction fees (cash flows) on the underlying blockchain due to demand for the blockchain's native token to pay gas (transaction) fees. Conversely, a decreasing TVL likely indicates waning user adoption and developer interest, but a rapid drop in TVL does not necessarily indicate a slowdown in the digital asset ecosystem's development. Note that an increasing or decreasing TVL does not provide clarity on how many new users entered the DeFi space, how many unique users increased or decreased their DeFi stake or the distribution of TVL across applications on a specific blockchain.

Exhibit 22: The TVL of the top 8 blockchains/scaling solutions has increased by an average of 36% ytd when including Arbitrum and Optimism but has increased by an average of 17% when excluding them

Top blockchains by TVL

Blockchain	Token	TVL (\$bn)	TVL Percent Change			
			1 week	4 week	YTD	1 year
Ethereum	ETH	28.59	-2%	-1%	+26%	-60%
Tron	TRX	4.93	-6%	-5%	+18%	+19%
BSC	BNB	4.77	-3%	-11%	+10%	-46%
Arbitrum	-	1.95	-2%	+34%	+91%	+30%
Polygon	MATIC	1.11	-4%	-7%	+16%	-65%
Optimism	OP	0.97	-0.2%	+19%	+93%	+244%
Avalanche	AVAX	0.95	-0.01%	-3%	+23%	-90%
Fantom	FTM	0.46	-5%	-15%	+12%	-93%

Source: CoinMarketCap, DefiLlama

Total Value Locked (TVL) measures the total value of tokens staked in DeFi protocols. TVL data as of 3/7/23. 1 week TVL % change: 3/1/23 – 3/7/23, 4 week TVL % change: 2/8/23 – 3/7/23, YTD TVL % change: 1/1/23 – 3/7/23, 1 year TVL % change: 3/7/22 – 3/7/23. Green/red shading indicates above/below average TVL percent change for the time period.

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Exhibit 23: Market value to TVL ratios of top blockchains and scaling solutions by TVL

Top blockchains and scaling solutions by TVL

Blockchain	Token	TVL (\$bn)	Mkt Value/TVL	Concentration	Large Projects
BSC	BNB	4.77	9.58	51%	6
Polygon	MATIC	1.11	9.05	27%	3
Ethereum	ETH	28.59	6.69	32%	23
Avalanche	AVAX	0.95	5.54	36%	2
Fantom	FTM	0.46	2.39	20%	0
Tron	TRX	4.93	1.23	65%	3
Optimism	OP	0.97	0.78	33%	2
Arbitrum	-	1.95	-	27%	3

Source: CoinMarketCap, DefiLlama

Total Value Locked (TVL) measures the total value of tokens staked in DeFi protocols. TVL and market data as of 3/7/23. Note that Arbitrum does not have a native token. Concentration measures the percent of TVL locked in one DeFi protocol. Large Projects measures the number of projects with TVL greater than \$100mn.

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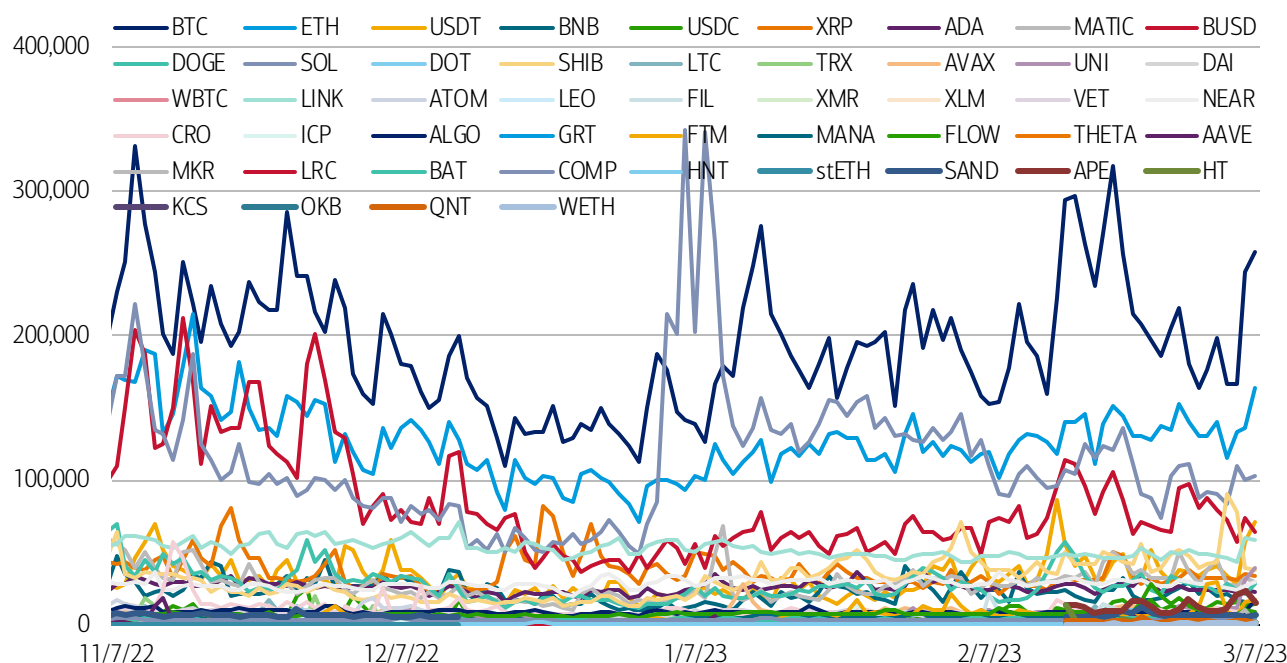
The market value to TVL (MV/TVL) ratio for **BSC** and **Polygon** is elevated relative to other blockchains' and the MV/TVL ratio for **Optimism** is low relative to other blockchains'. Note that the **Ethereum** ecosystem of DeFi applications is expansive and its TVL appears more distributed across applications than the TVL distribution of other blockchains. The Ethereum ecosystem also includes additional applications beyond DeFi that likely drive its market value. Conversely, a significant share of **Tron's** TVL (65%) and **BSC's** TVL (51%) are held in one DeFi application.

Social Media Indicators

Along with our BofA Predictive Analytics team, we used NLP to analyze Reddit and Twitter from November 7, 2022 – March 7, 2023. We note that significant increases in the number of social media mentions have at times coincided with outsized price appreciation since we began tracking. However, the number of mentions on social media is not necessarily an indication of bullish or bearish sentiment, given base effects and the potential for negative feedback loops to increase mentions while reinforcing negative sentiment.

Exhibit 24: Reddit and Twitter token mentions

Total mentions for 49 tokens across Reddit and Twitter



Source: ListenFirst, BofA Global Research

Data: 11/7/22 – 3/7/23. Note that searches for mentions included token names and tickers.

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Mentions of **MKR** accelerated (+350% wk/wk) following an executive proposal placed into the voting system that would increase stability (borrowing) fees, increase the maximum debt ceiling and alter liquidation parameters for several tokens. The executive proposal, which expires on Apr 6, has received 91% of the votes needed to pass. A previous proposal that would allow DAI borrowers to deposit MKR as collateral has also driven interest. If the proposal passes, it could drive MKR demand by individuals intending to use the token as collateral and lead to increasing stability fees from current MKR holders who want to generate leverage by borrowing DAI. We note that Feb marked Maker Protocol's 5th consecutive month of accelerating fees.

Exhibit 25: Change in Reddit and Twitter token mentions

Rank and change in mentions for 49 tokens across Reddit and Twitter

Rank		Token		Percent Change		Mkt Value
Last Week	Prior Week	Ticker	Name	Mentions 1wk/1wk	7-day \$ value	in \$bn
1	1	BTC	Bitcoin	-3%	-4%	\$429
2	2	ETH	Ether	-0.2%	-3%	\$191
3	3	SOL	Solana	-3%	-8%	\$8
4	4	BUSD	Binance USD	-1%	-	\$8
5	6	SHIB	Shiba Inu	+15%	-8%	\$6
6	5	LINK	Chainlink	+3%	-4%	\$4
7	8	USDT	Tether	+21%	-	\$72
8	7	MATIC	Polygon	-12%	-4%	\$10
9	9	XRP	XRP	+1%	+1%	\$19
10	11	NEAR	Near Protocol	-6%	-10%	\$2
11	10	DOGE	Dogecoin	-14%	-8%	\$10
12	12	ADA	Cardano	-10%	-6%	\$11
13	13	BNB	BNB	-8%	-4%	\$46
14	25	FTM	Fantom	+174%	-7%	\$1
15	23	UNI	Uniswap	+117%	-1%	\$5
16	16	APE	ApeCoin	+9%	-6%	\$2
17	15	USDC	USD Coin	+2%	-	\$44
18	17	AVAX	Avalanche	-11%	-5%	\$5
19	21	ALGO	Algorand	+14%	-11%	\$2
20	18	CRO	Cronos	+0.4%	-10%	\$2
21	14	FLOW	Flow	-49%	-12%	\$1
22	20	VET	VeChain	-7%	-12%	\$2
23	22	SAND	The Sandbox	-20%	-11%	\$0.9
24	24	LTC	Litecoin	-2%	-8%	\$6
25	19	DOT	Polkadot	-29%	-8%	\$7
26	27	ATOM	Cosmos	+6%	-4%	\$3
27	26	TRX	Tron	-7%	-4%	\$6
28	29	MANA	Decentraland	-3%	-6%	\$1
29	30	BAT	Basic Att. Token	-9%	-13%	\$0.4
30	28	FIL	Filecoin	-29%	-8%	\$2
31	45	MKR	Maker	+350%	+17%	\$0.9
32	31	COMP	Compound	-1%	-7%	\$0.3
33	35	GRT	The Graph	-8%	-10%	\$1
34	34	QNT	Quant	-26%	-3%	\$1
35	36	LEO	Unus Sed Leo	-11%	+2%	\$3
36	38	ICP	Internet Computer	-9%	-8%	\$2
37	32	DAI	Dai	-48%	-	\$5
38	41	XMR	Monero	+12%	+0.02%	\$3
39	37	THETA	Theta Network	-36%	-11%	\$1
40	33	AAVE	Aave	-57%	-3%	\$1
41	39	XLM	Stellar	-29%	-5%	\$2
42	43	OKB	OKB	-5%	-15%	\$3
43	42	LRC	Loopring	-17%	-7%	\$0.4
44	40	HT	Huobi Token	-46%	-5%	\$0.8
45	46	WETH	Wrapped Ether	-1%	-3%	NA
46	44	KCS	Kucoin Token	-27%	-2%	\$0.8
47	48	HNT	Helium	-22%	-12%	\$0.3
48	47	WBTC	Wrapped Bitcoin	-35%	-4%	\$3
49	49	stETH	Lido Staked ETH	-31%	-3%	\$5

Source: ListenFirst, CoinMarketCap, BofA Global Research

Rank shows the total number of mentions over the last week (3/1/23 – 3/7/23) and over the prior week (2/22/23 – 2/28/23). Mentions week-over-week calculation period: 2/22/23 – 2/28/23 and 3/1/23 – 3/7/23. Market values as of 3/7/23. Note that searches for mentions included token names and tickers.

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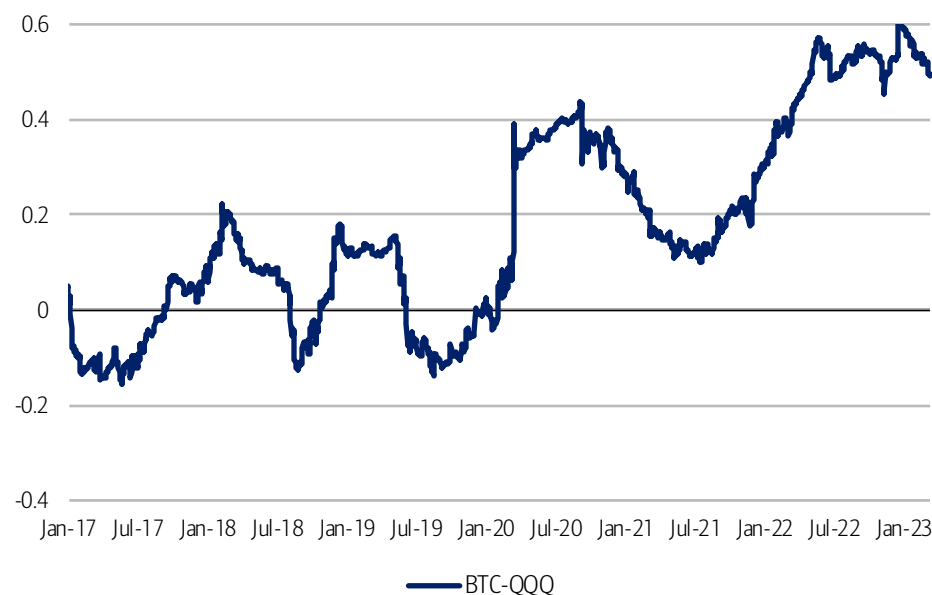


Digital assets trade as risk assets

Bitcoin/Nasdaq 100 correlation drops to 0.50

Exhibit 26: Bitcoin's correlation with QQQ

180-day rolling correlation between bitcoin and the Nasdaq 100



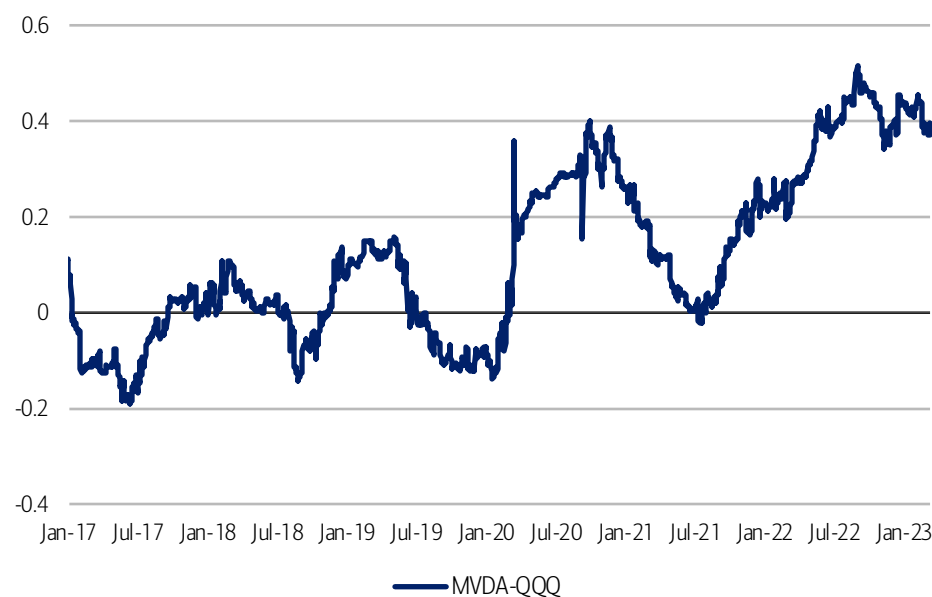
Source: Glassnode, Bloomberg
Data: 1/1/17 – 3/7/23

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Bitcoin's correlation with the Nasdaq 100 Index has fallen to 0.50 from 0.59 at the beginning of Jan'23.

Exhibit 27: MVDA's correlation with QQQ

180-day rolling correlation between MVDA and the Nasdaq 100



Source: Glassnode, Bloomberg
Data: 1/1/17 – 3/7/23. MVIS® CryptoCompare Digital Assets 100 Price Index (MVDA) - Market cap-weighted index which tracks the performance of the 100 largest digital assets and is rebalanced monthly.

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MVDA's correlation with the Nasdaq 100 Index has fallen to 0.40 from 0.45 at the beginning of Feb'23.

Methodology

The blockchain's transparency gives us insight into the digital asset ecosystem that's not available in traditional financial markets. We observe inflows into and outflows from digital asset exchange wallets and plan to expand our analysis. Flows in dollar terms are calculated by multiplying the daily number of tokens transferred on to or off of an exchange by the token price at the end of the day. See below for a complete list of the digital asset exchange wallets included in our flows analysis.

AAVE exchanges: Bibox, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

BAT exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Cobinhood, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

BTC exchanges: Binance, Bitfinex, Bithumb, BitMEX, Bitstamp, Bittrex, Coinbase, Coincheck, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, Luno, OKEx, Poloniex

BUSD exchanges: Binance, Bittrex, Coinbase, Gate.io, Gemini, HitBTC, Huobi, KuCoin, OKEx, Poloniex

COMP exchanges: Bibox, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex

CRO exchanges: Bibox, BigONE, Binance, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, KuCoin, OKEx, Poloniex

DAI exchanges: Bibox, BigONE, Binance, Bitfinex, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex

ETH exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Cobinhood, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

FTT exchanges: Binance, Bitfinex, Bithumb, Bittrex, CoinEx, Gate.io, Gemini, HitBTC, Huobi, KuCoin, OKEx, Poloniex

LINK exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

LRC exchanges: Bibox, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex

MANA exchanges: Bibox, BigONE, Binance, Bitfinex, Bittrex, Cobinhood, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

MATIC exchanges: Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

MKR exchanges: Bibox, Binance, Bitfinex, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex

UNI exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

USDC exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

USDT exchanges: Bibox, BigONE, Binance, Bitfinex, Bithumb, Bittrex, Cobinhood, Coinbase, CoinEx, Gate.io, Gemini, HitBTC, Huobi, Kraken, KuCoin, OKEx, Poloniex, ZB

WBTC exchanges: BigONE, Binance, Bitfinex, Bittrex, Coinbase, Gate.io, Gemini, HitBTC, Huobi, KuCoin, OKEx, Poloniex

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