

Q3 2022

# Digital Assets Quarterly

Chart Pack

Your world,  
indexed

# Market Wrap-Up

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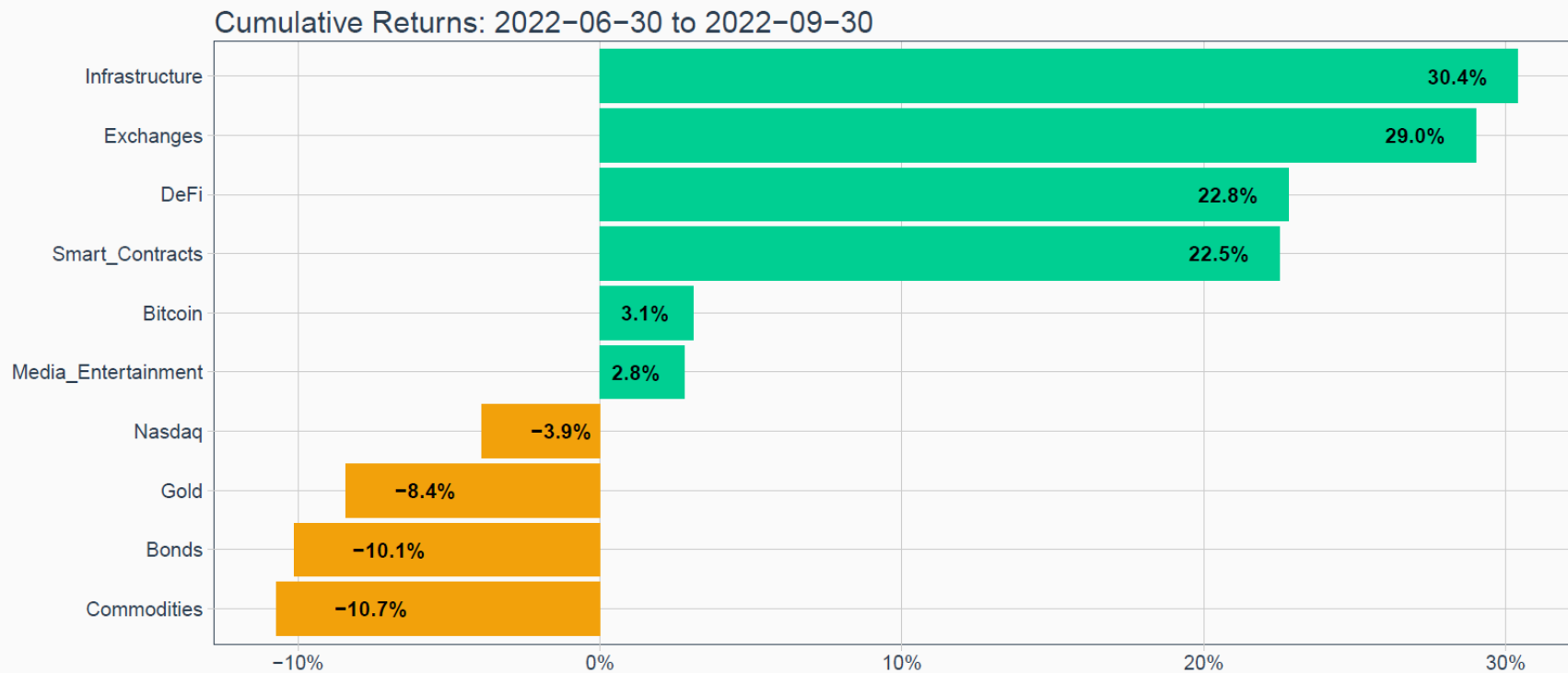
- Q3 2022 was a positive quarter for crypto, despite the negative sentiment. The Ethereum Merge was a dominant driver for the whole ecosystem. Although the Merge was a great success, it was a classic “buy the rumor, sell the news” event. Generally speaking, the direction of the whole crypto market is still dominated by FED action and the movement of the USD. Traditional assets including commodities were down, mainly spooked by the FED pivot getting further postponed.
- Interestingly, crypto assets, first and foremost bitcoin, have seen some decoupling in recent weeks. What is exciting about Bitcoin in specifically, is not that it is an inflation hedge or an uncorrelated asset but a non-state control hedge against unstable monetary regimes, wherever those regimes might be. A currency-like asset class that is not controlled by the government is bound to be an important hedge for a growing number of people.
- Correlations and Volatility are coming down in the last quarter indicating that the liquidation event from the Terra Luna debacle and the collapse of the 3AC hedge funds is maybe behind us. An encouraging signal especially with an equity market, which is still heading towards the recent lows.
- On a category basis, we saw some dispersion in terms of performance. Infrastructure Applications (i.e. scaling solutions, oracles, data management) did much better than the Media & Entertainment categories (i.e. Metaverse, Gaming, Social Token). Bitcoin was slightly positive with a greater outperformance at the end of the quarter.
- On a longer-term basis, centralized exchange tokens have shown a lot of resilience in this bear market. People love the combination of utility (discount on fees, using it as collateral, early access to token launches) and economic incentives (some of the revenue gets burned).
- The overall bear market is taking its toll on all asset classes. If you monitor a global market portfolio (global equities, global bonds and commodities) the annualized return since the end of 2014 is just 2.67%. Even with the hard selloff this year the impact of Bitcoin and cryptoassets is still positive. If you add Bitcoin to the portfolio, you could have increased the annualized return to 6.42%, and with a diversified basket (MVDA10 index) even higher to 7.90%.

# Digital Asset Returns (USD, ending 30 September 2022)

Q4-2019	Q1-2020	Q2-2020	Q3-2020	Q4-2020	Q1-2021	Q2-2021	Q3-2021	Q4-2021	Q1-2022	Q2-2022	Q3-2022
Smart Contract Platforms 71.2%	Mid-Cap 3.0%	Ethereum 70.8%	Ethereum 58.4%	Bitcoin 163.2%	Small-Cap 361.2%	Ethereum 14.2%	Smart Contract Platforms 71.2%	Media & Entertainment 62.0%	Bitcoin -3.7%	Exchanges -53.3%	Infrastructure Applications 34.8%
Small-Cap 45.3%	Ethereum 1.7%	Small-Cap 62.2%	Smart Contract Platforms 36.2%	Ethereum 103.1%	Mid-Cap 300.1%	Smart Contract Platforms -9.0%	Small-Cap 45.3%	Exchanges 43.2%	Top 10 -11.2%	Bitcoin -58.2%	Ethereum 31.6%
Mid-Cap 41.8%	Top 10 -3.2%	Smart Contract Platforms 56.6%	Top 10 34.5%	Top 10 93.1%	Smart Contract Platforms 256.6%	Top 10 -14.8%	Mid-Cap 41.8%	Ethereum 25.6%	Ethereum -12.7%	Top 10 -64.3%	Exchanges 29.0%
Ethereum 41.5%	Smart Contract Platforms -3.6%	Bitcoin 42.5%	Mid-Cap 26.5%	Smart Contract Platforms 73.0%	Top 10 174.2%	Mid-Cap -19.4%	Ethereum 41.5%	Mid-Cap 14.9%	Smart Contract Platforms -12.9%	Mid-Cap -64.5%	Decentralized Finance 21.1%
Top 10 37.2%	Bitcoin -10.8%	Top 10 34.8%	Bitcoin 17.6%	Mid-Cap 40.9%	Ethereum 153.8%	Small-Cap -29.3%	Top 10 37.2%	Infrastructure Applications 13.6%	Mid-Cap -15.3%	Decentralized Finance -67.2%	Mid-Cap 19.7%
Bitcoin 25.8%	Small-Cap -14.5%	Mid-Cap 32.0%	Small-Cap -7.8%	Small-Cap 37.2%	Bitcoin 107.9%	Bitcoin -42.1%	Exchanges 35.1%	Small-Cap 12.9%	Exchanges -15.8%	Small-Cap -67.8%	Smart Contract Platforms 18.2%
							Bitcoin 25.8%	Top 10 12.4%	Small-Cap -20.0%	Ethereum -68.4%	Top 10 15.8%
							Infrastructure Applications 21.0%	Bitcoin 10.5%	Infrastructure Applications -27.4%	Infrastructure Applications -71.0%	Small-Cap 6.1%
								Smart Contract Platforms 9.9%	Decentralized Finance -28.4%	Smart Contract Platforms -71.7%	Media & Entertainment 5.8%
								Decentralized Finance -9.0%	Media & Entertainment -32.3%	Media & Entertainment -76.9%	Bitcoin 3.1%

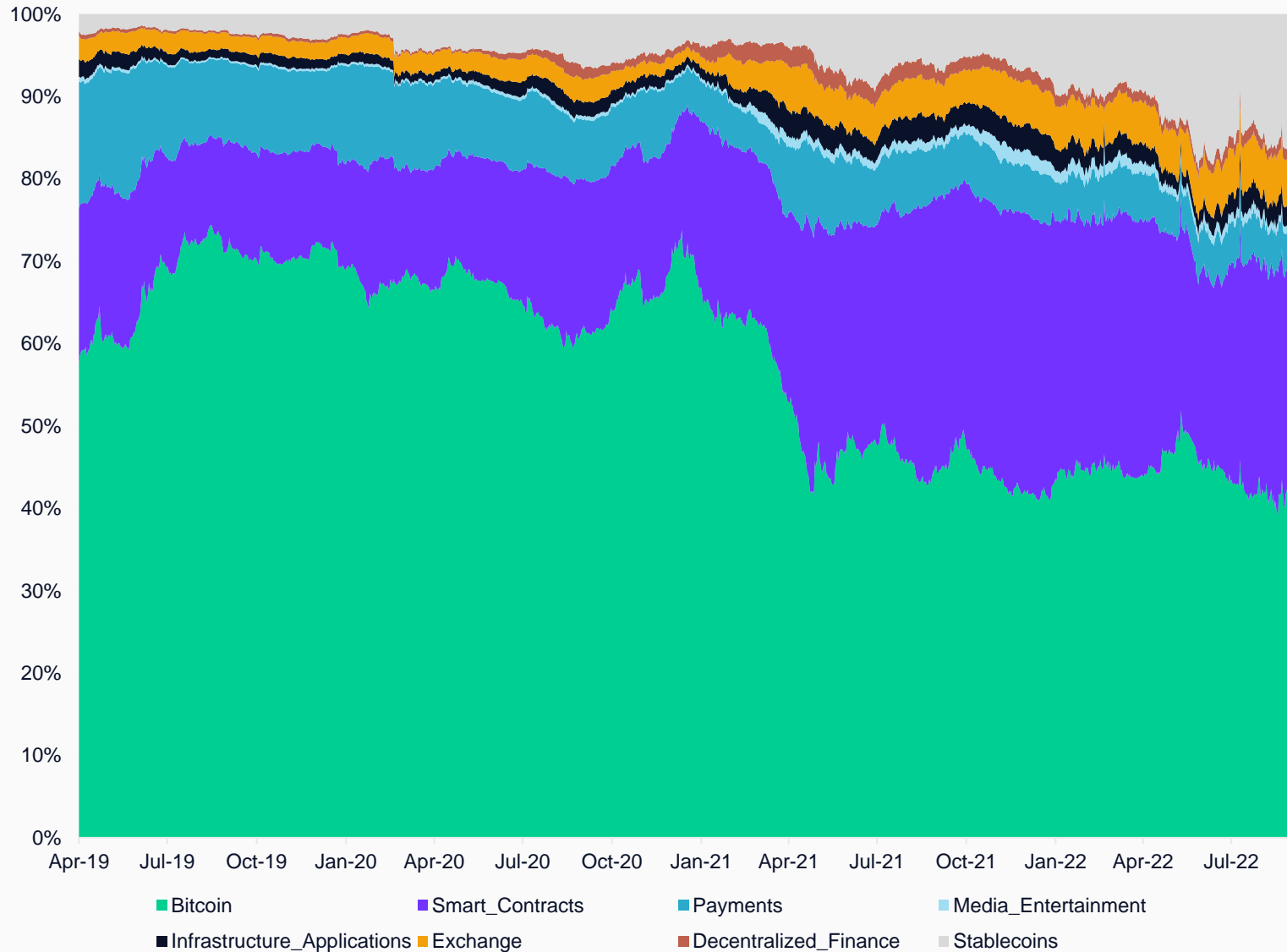
Source: MarketVector Indexes. Index returns are the equal weighted returns of underlying Thematic indexes listed in Exhibit 2.

# Cross Asset Return



Source: MarketVector Indexes™, Yahoo Finance. Indexes used MVBTC, MVCEX, MVDF, MVIAP, MVME, MVSC. Traditional returns based on ETF returns from GLD, TLT, GSG and QQQ. Daily log returns used since 2021-03-31.

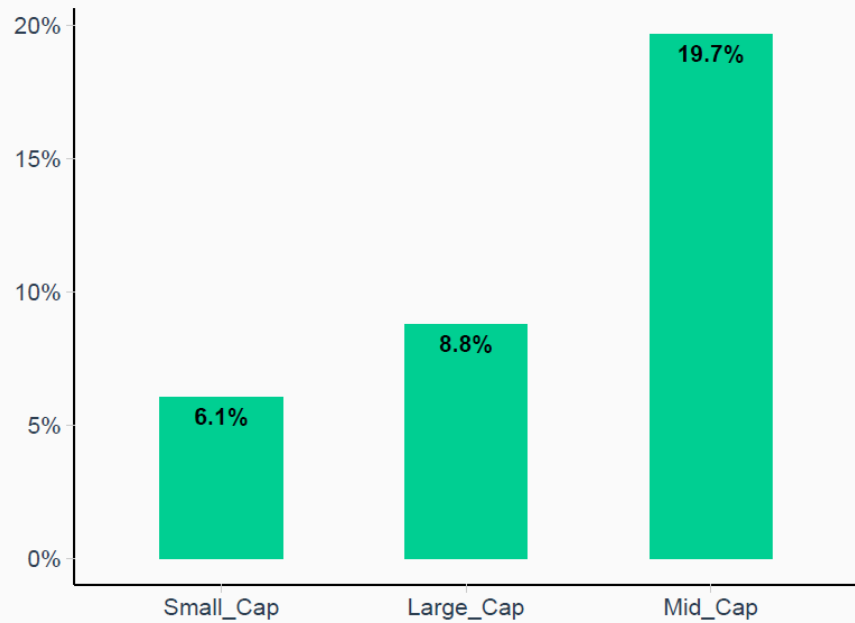
# Category Dominance



Source: MarketVector, data as of Sep 30, 2022. Dominance: Market Cap of category index in relation to the total market cap of the digital asset universe.

# Performance according to size Q3/2022

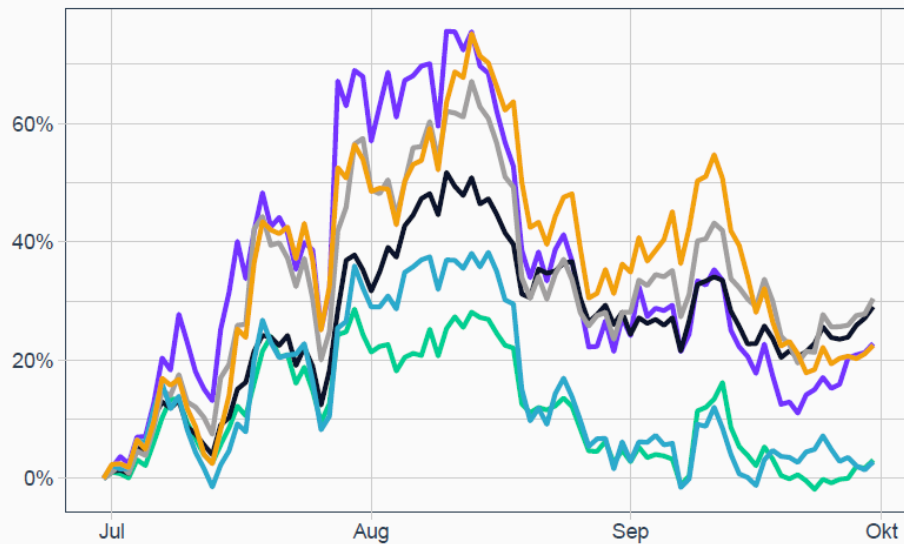
Cumulative Return: 2022-06-30 to 2022-09-30



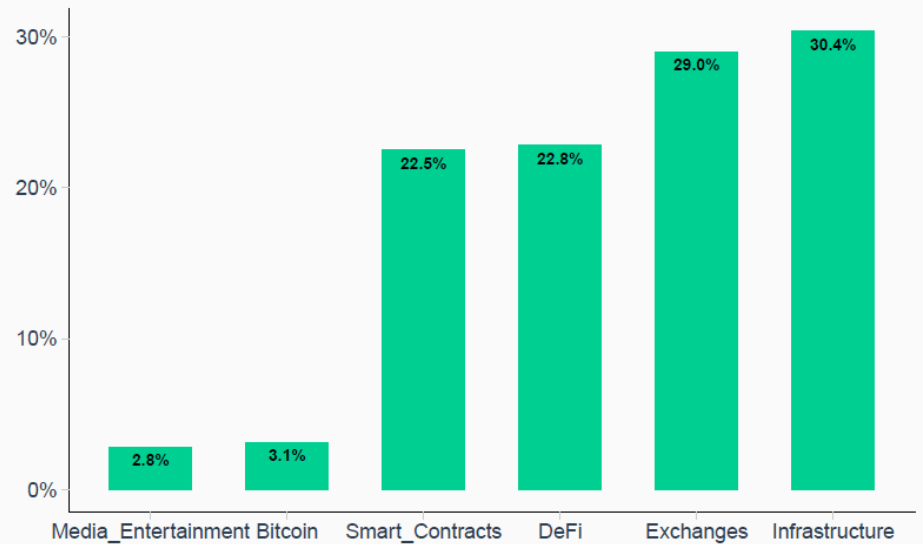
Source: MarketVector, data as of Sep 30, 2022. Indexes used: MVDA10 = Large Cap, MVDAMC = Mid Cap, MVDASC = Small Cap. The MVIS® CryptoCompare Digital Assets 100 Large-Cap Index (MVDALC) is a market cap-weighted index which tracks the performance of the 20 largest digital assets in the MVIS CryptoCompare Digital Assets 100 Index. The MVIS® CryptoCompare Digital Assets 100 Mid-Cap Index (MVDAMC) is a market cap-weighted index which tracks the performance of the 30 mid-size digital assets in the MVIS CryptoCompare Digital Assets 100 Index. The MVIS® CryptoCompare Digital Assets 100 Small-Cap Index (MVDASC) is a market cap-weighted index which tracks the performance of the 50 smallest digital assets in the MVIS CryptoCompare Digital Assets 100 Index.

# Category Index Performance Q3/2022

Cumulative Return: 2022-06-30 to 2022-09-30



— Bitcoin    — Exchanges    — Media\_Entertainment  
— DeFi    — Infrastructure    — Smart\_Contracts



Source: MarketVector Indexes™, Indexes used: MVBTC = Bitcoin, MVCEX = Exchanges, MVDF = DeFi, MVIAP = Infrastructure, MVME = Media\_Enetertainment, MVSC = Smart\_Contracts.

# Correlation Matrix

	Bitcoin	Bonds	Commodities	DeFi	Exchanges	Gold	Infrastructure	Media_Entertainment	Smart_Contracts	Nasdaq (QQQ)
Bitcoin	1.00	-0.07	0.06	0.64	0.52	-0.01	0.61	0.62	0.35	0.31
Bonds		1.00	-0.15	-0.03	0.03	0.30	0.00	-0.06	0.00	0.00
Commodities			1.00	0.07	0.09	0.38	0.05	0.09	0.04	0.07
DeFi				1.00	0.74	0.07	0.67	0.82	0.36	0.34
Exchanges					1.00	0.10	0.51	0.70	0.28	0.18
Gold						1.00	-0.01	0.06	0.01	0.03
Infrastructure							1.00	0.67	0.32	0.21
Media_Entertainment								1.00	0.32	0.37
Smart_Contracts									1.00	0.21
Nasdaq (QQQ)										1.00

Source: MarketVector Indexes™, Yahoo Finance. Indexes used MVBTC, MVCEX, MVDF, MVIAP, MVME, MVSC. Traditional returns based on ETF returns from GLD, GSG and QQQ. Daily log returns used since 2021-03-31.



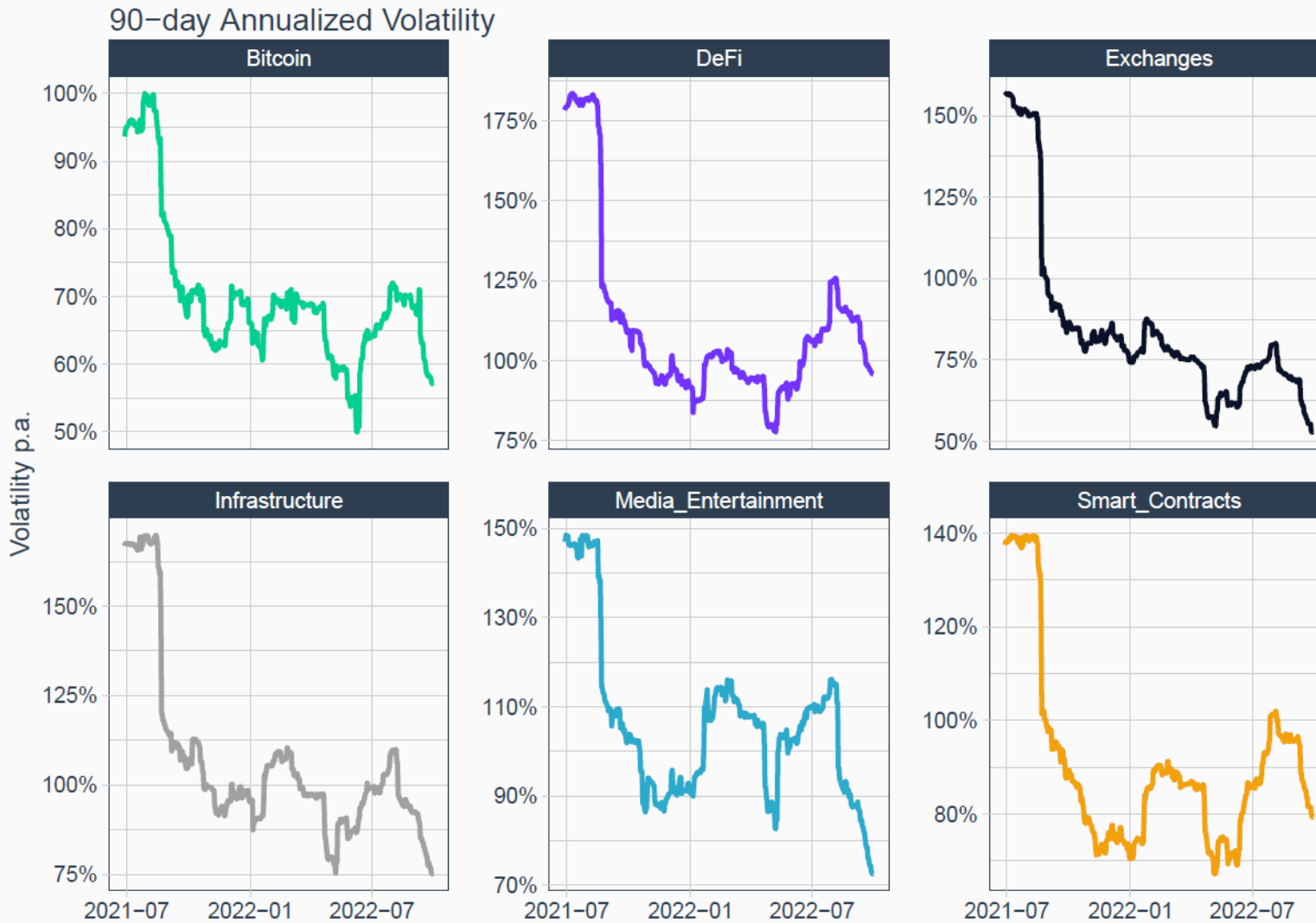
# Rolling Correlations

90-Day Rolling Correlations, Digital Asset Index vs Nasdaq  
Relationships are dynamic vs static correlation (red line)



Source: Source: MarketVector Indexes™, Yahoo Finance. Indexes used MVBTC, MVCEX, MVDF, MVIAP, MVME, MVSC. Traditional returns based on ETF returns from QQQ. Daily log returns used since 2021-03-31.

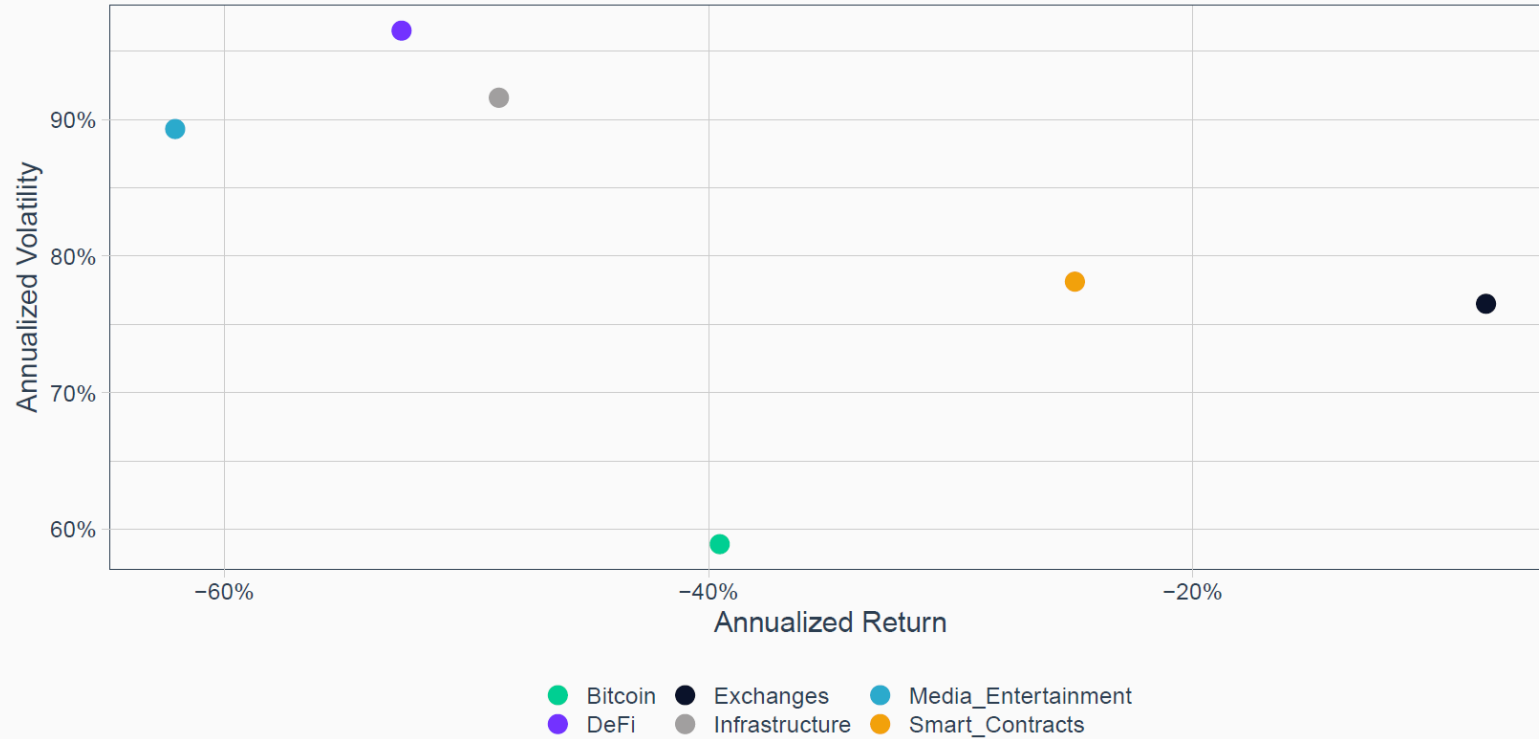
# Rolling Volatility



Source: Source: MarketVector Indexes™. Indexes used MVBTC, MVCEX, MVDF, MVIAP, MVME, MVSC.

# Risk & Return

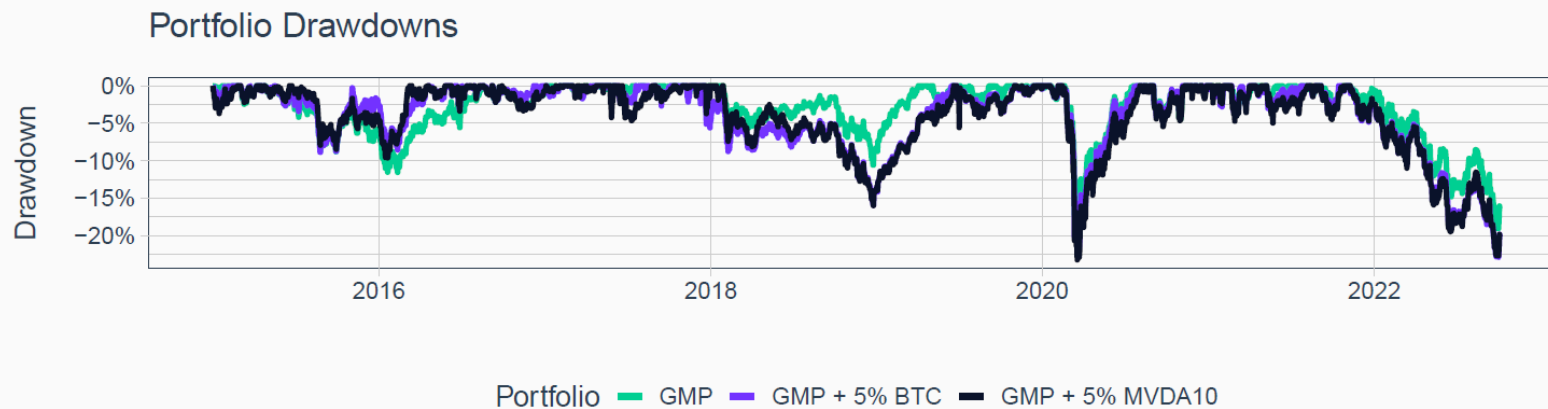
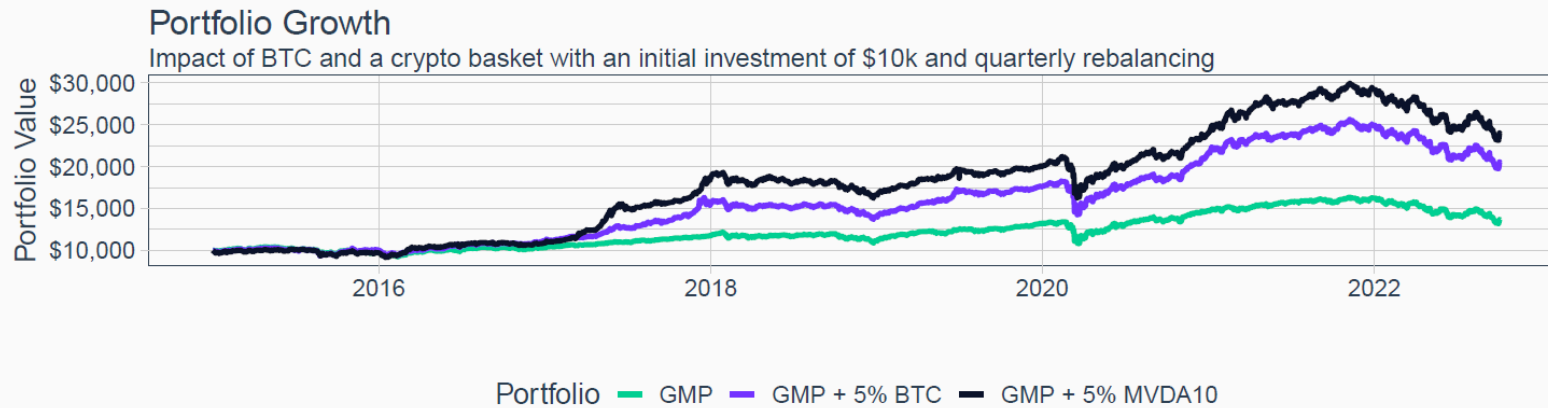
Risk & Return since 2021-03-31



	AnnualizedReturn	AnnualizedSharpe(Rf=3.38%)	AnnualizedStdDev	max Drawdown
<b>Bitcoin</b>	-39.54%	-0.71	58.92%	72.61%
<b>DeFi</b>	-52.68%	-0.56	96.50%	91.49%
<b>Media_Entertainment</b>	-62.03%	-0.71	89.30%	91.47%
<b>Exchanges</b>	-7.89%	-0.14	76.51%	70.79%
<b>Infrastructure</b>	-48.66%	-0.55	91.59%	88.14%
<b>Smart_Contracts</b>	-24.87%	-0.35	78.13%	82.12%

Source: Source: MarketVector Indexes™. Indexes used MVBTC, MVCEX, MVDF, MVIAP, MVME, MVSC. Daily returns used since 2021-03-31.

# Asset Allocation: Adding Crypto to a Global Market Portfolio (GMP)



	AnnualizedReturn	AnnualizedSharpe(Rf=3.38%)	AnnualizedStdDev	max Drawdown
<b>GMP</b>	2.67%	0.33	8.00%	19.39%
<b>GMP + 5% Bitcoin</b>	6.42%	0.68	9.49%	22.89%
<b>GMP + 5% MVDA10</b>	7.90%	0.79	10.01%	23.20%

Source: Source: MarketVector Indexes™, Yahoo Finance. Indexes used MVBTC, MVDA10. Traditional returns based on ETF from ACWI, BND, GSG. Daily returns used since 2014-12-31.

# Index Returns (USD, ending 30 September 2022)

Main	Universe	Index Ticker	Index Name	Meta Theme	Launch Date	Base Date	Quarterly Returns (USD)				Last3 Years (USD)		
							Q3-2022	Q2-2022	Q1-2022	Q4-2021	Ann Ret	Ann Stdev	Draw-Down
MVBTC	Single Token	MVBTC	MVIS CryptoCompare Bitcoin	Bitcoin	10.23.17	01.31.12	3.1%	-58.2%	-3.7%	10.5%	33.4%	78.9%	-40.5%
MVALGOV	Single Token	MVALGOV	MVIS CryptoCompare Algorand VWAP Close Index	Algorand	12.22.21	06.30.19	22.2%	-70.5%	-44.5%	9.8%	14.0%	117.5%	-55.9%
MVAVAXV	Single Token	MVAVAXV	MVIS CryptoCompare Avalanche VWAP Close Index	Avalanche	11.18.21	09.30.20	7.3%	-83.7%	-7.7%	62.4%			
MVLINKV	Single Token	MVLINKV	MVIS CryptoCompare Chainlink VWAP Close Index	Chainlink	03.07.22	10.31.19	28.6%	-66.2%	-13.0%	-14.8%			
MVETH	Single Token	MVETH	MVIS CryptoCompare Ethereum Index	Ethereum	10.23.17	08.31.15	31.6%	-68.4%	-12.7%	25.6%	96.3%	111.7%	-47.7%
MVFTTV	Single Token	MVFTTV	MVIS CryptoCompare FTX Token VWAP Close Index	FTT	12.22.21	11.30.21	3.1%	-54.1%	27.5%	-21.7%			
MVNEARV	Single Token	MVNEARV	MVIS CryptoCompare NEAR VWAP Close Index	NEAR	03.07.22	09.30.20	12.6%	-77.5%	-9.8%	133.2%			
MVMATICV	Single Token	MVMATICV	MVIS CryptoCompare Polygon VWAP Close Index	Polygon	11.18.21	09.30.20	77.9%	-74.7%	-34.8%	135.1%			
MVXRP	Single Token	MVXRP	MVIS CryptoCompare XRP Index	XRP	10.23.17	01.31.15	51.9%	-60.7%	-4.6%	-11.1%	22.6%	175.8%	-66.5%
MVDA	Multi Token	MVDA	MVIS CryptoCompare Digital Assets 100 Index	Top 100	10.23.17	12.31.14	9.3%	-58.5%	-10.1%	11.0%	42.1%	77.0%	-35.2%
MVDA5	Multi Token	MVDA5	MVIS CryptoCompare Digital Assets 5 Index	Top 5	10.23.17	12.31.14	18.6%	-64.6%	-11.7%	14.4%	47.4%	92.3%	-40.4%
MVDA10	Multi Token	MVDA10	MVIS CryptoCompare Digital Assets 10	Top 10	10.23.17	12.31.14	15.8%	-64.3%	-11.2%	12.4%	53.2%	93.7%	-38.6%
MVDA25	Multi Token	MVDA25	MVIS CryptoCompare Digital Assets 25 Index	Top 25	10.23.17	12.31.14	15.4%	-65.7%	-15.2%	11.0%	48.8%	98.7%	-35.0%
MVDALC	Multi Token	MVDALC	MVIS CryptoCompare Digital Assets 100 Large-Cap Index	Large-Cap	10.23.17	12.31.14	8.8%	-57.6%	-9.2%	10.6%	41.5%	76.1%	-35.4%
MVDAMC	Multi Token	MVDAMC	MVIS CryptoCompare Digital Assets 100 Mid-Cap	Mid-Cap	10.23.17	12.31.14	19.7%	-64.5%	-15.3%	14.9%	68.1%	95.9%	-33.7%
MVDASC	Multi Token	MVDASC	MVIS CryptoCompare Digital Assets 100 Small-Cap	Small-Cap	10.23.17	12.31.14	6.1%	-67.8%	-20.0%	12.9%	27.5%	103.3%	-38.0%
MVLEADV	Multi Token	MVLEADV	MVIS Cryptocompare Crypto Leaders VWAP Close Index	Crypto Leaders	12.07.21	12.31.18	8.4%	-66.5%	-10.2%	7.3%	52.4%	94.1%	-38.4%
MVGCFI	Multi Token	MVGCFI	MVIS CryptoCompare Optimum Global Cryptoasset Index	Fixed Multi Coins	02.18.22	12.31.20	12.0%	-64.5%	-9.2%	6.7%			
MVWTAR	Multi Token	MVWTAR	Weiss MVIS Top Tech Adoption Rating Index	Weiss Tech Adoption Rating	12.16.20	12.31.17	12.9%	-62.9%	-10.0%	11.8%	51.1%	87.0%	-42.0%
MVCEX	Multi Token	MVCEX	MarketVector Centralized Exchanges Index	Exchanges	06.01.22	02.28.21	29.0%	-53.3%	-15.8%	43.2%			
MVDF	Multi Token	MVDF	MVIS CryptoCompare Decentralized Finance	Decentralized Finance	10.08.21	01.31.21	22.8%	-69.4%	-22.4%	-9.0%			
MVDFLE	Multi Token	MVDFLE	MVIS CryptoCompare Decentralized Finance Leaders	Decentralized Finance	10.08.21	01.31.21	19.3%	-65.0%	-34.3%	-9.1%			
MVIAP	Multi Token	MVIAP	MVIS CryptoCompare Infrastructure Application	Infrastructure Applications	10.08.21	12.31.20	30.4%	-70.1%	-27.1%	14.4%			
MVIALE	Multi Token	MVIALE	MVIS CryptoCompare Infrastructure Application Leaders	Infrastructure Applications	10.08.21	12.31.20	39.2%	-71.8%	-27.8%	12.8%			
MVME	Multi Token	MVME	MVIS CryptoCompare Media & Entertainment	Media & Entertainment	10.08.21	03.31.21	2.8%	-76.5%	-33.7%	40.1%			
MVMELE	Multi Token	MVMELE	MVIS CryptoCompare Media & Entertainment Leaders	Media & Entertainment	10.08.21	03.31.21	8.8%	-77.3%	-30.8%	83.8%			
MVSC	Multi Token	MVSC	MVIS CryptoCompare Smart Contract	Smart Contract Platforms	10.08.21	12.31.17	22.5%	-70.9%	-12.9%	14.3%	75.8%	108.4%	-43.5%
MVSCLE	Multi Token	MVSCLE	MVIS CryptoCompare Smart Contract Leaders	Smart Contract Platforms	10.08.21	12.31.17	13.9%	-72.4%	-12.9%	5.6%	62.1%	125.5%	-43.9%

Source: MarketVector Indexes™. Price Return Indexes. Ratios based on monthly returns.

# Digital Asset Classification Scheme

There is currently no standard definition of digital assets types, as there are for securities in various jurisdictions. Drawing distinctions between different types of digital assets is important because the regulatory treatment of a particular digital asset depends in large part on whether or not it is a “security”. MarketVector Indexes™ categorizes digital asset coins into distinct, non-overlapping categories that form the building blocks of a new crypto classification scheme. Categories capture the value and use case related to a coin. Using a qualitative process, each coin is categorized into one category.

Category	Definition	Examples
DeFi	Financial services built on top of distributed networks with no central intermediaries	Uniswap, Aave
Exchange	Tokens owned and operated by a centralized cryptocurrency exchange	Binance, FTX
Infrastructure Applications	A decentralized computer program designed to perform specific tasks	Polygon, Chainlink
Media & Entertainment	Used to reward users for content, games, gambling or social media	Axie Infinity, Basic Attention Token
Payments	Digital, non-stable money for use in a distributed network	Bitcoin Cash, Litecoin, wallet apps
Smart Contract Platforms	Blockchain protocol designed to host variety of self-developed and 3rd party applications	Ethereum, Cardano, Solana
Stablecoins	Designed to minimize volatility by pegging to a more stable asset	Tether, USDC
Store of value	Designed to hold or increase purchasing power over time	Bitcoin

# Important Disclosure

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