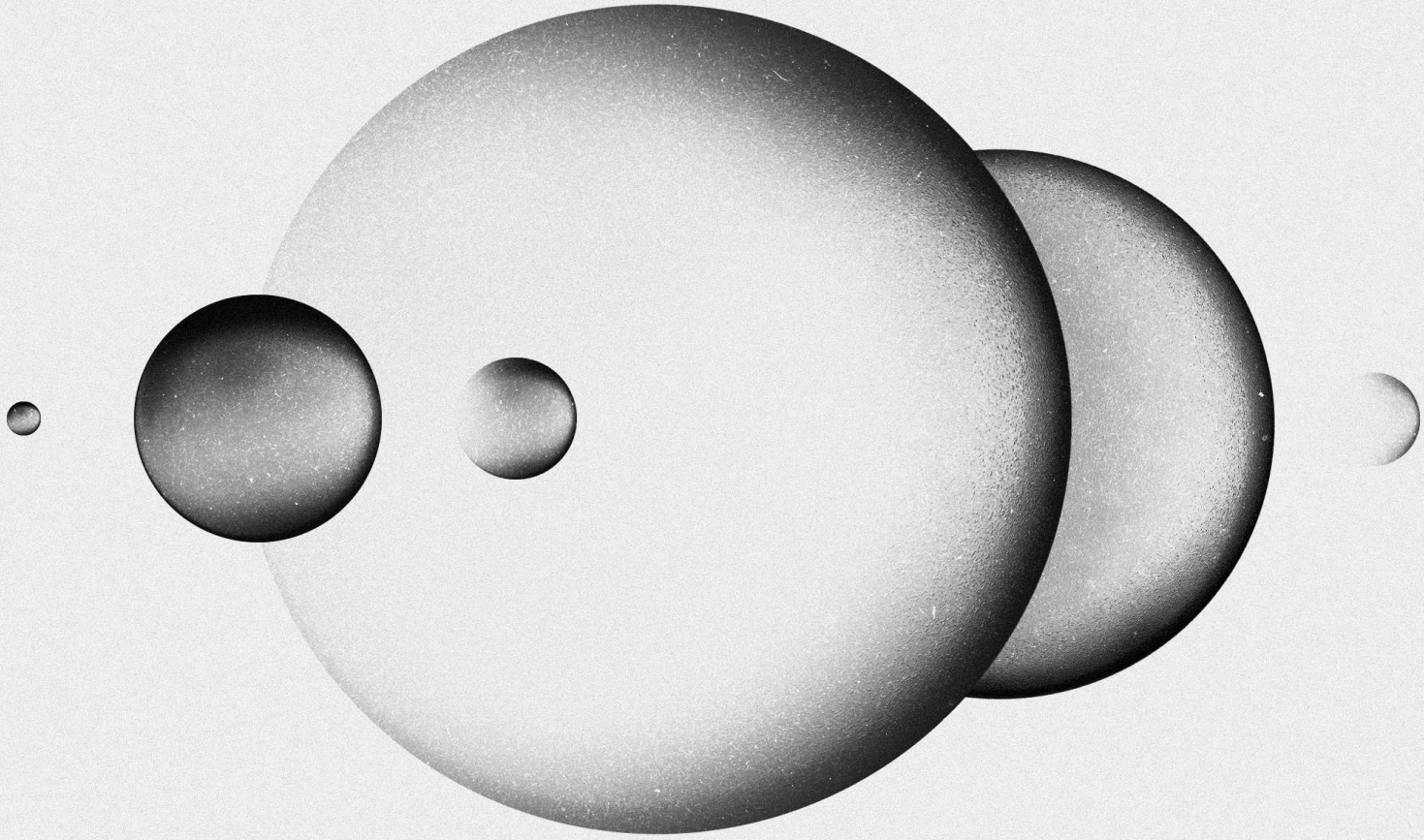
DIGITAL ASSETS
AUGUST 2024

A Classification Framework for Digital Assets

Sorting out the crypto world



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A Classification Framework for Digital Assets

"The world has evolved from a singular focus on Bitcoin to a much broader adoption of DeFi apps, distributed computing platforms, NFTs, and more. Effective classification of digital assets is crucial for institutional adoption, as it introduces a structured approach similar to that used in traditional equity markets. This systematic categorization into sectors and themes enhances the accessibility and comparability of digital assets, enabling institutions to make informed investment decisions and allocate assets more strategically."

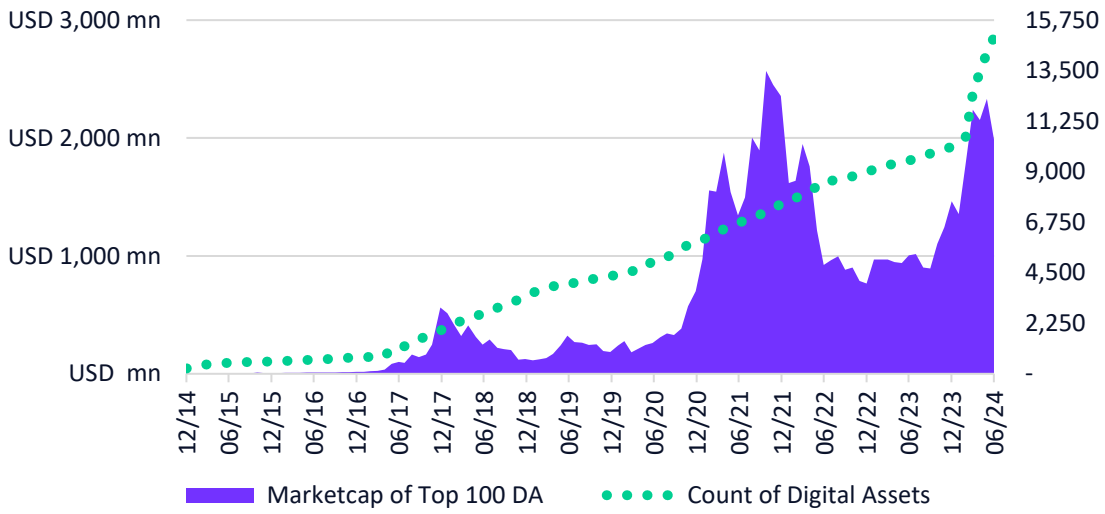
"Classifications are valuable tools for identifying market cycles and quickly assessing which sectors are outperforming. They allow investors to leverage market trends to potentially boost portfolio performance."

"MarketVector Indexes™ ("MarketVector") has developed a comprehensive classification framework for digital assets This framework includes category indexes, helping users measure and benchmark the performance and characteristics of specific digital asset categories. This makes digital assets more accessible to traditional finance investors while providing crypto-native funds with additional benchmarking capabilities."

Navigating the Complex Landscape of Digital Assets

According to our database, there are over 14,000 digital assets available, presenting both opportunities and challenges for investors. With so many tokens, investors face questions like: Are all these tokens necessary for facilitating payments? How should investors choose among the various options? How should they evaluate and monitor their investments?

Exhibit 1: Growth of Digital Assets Replace Chart with the new data

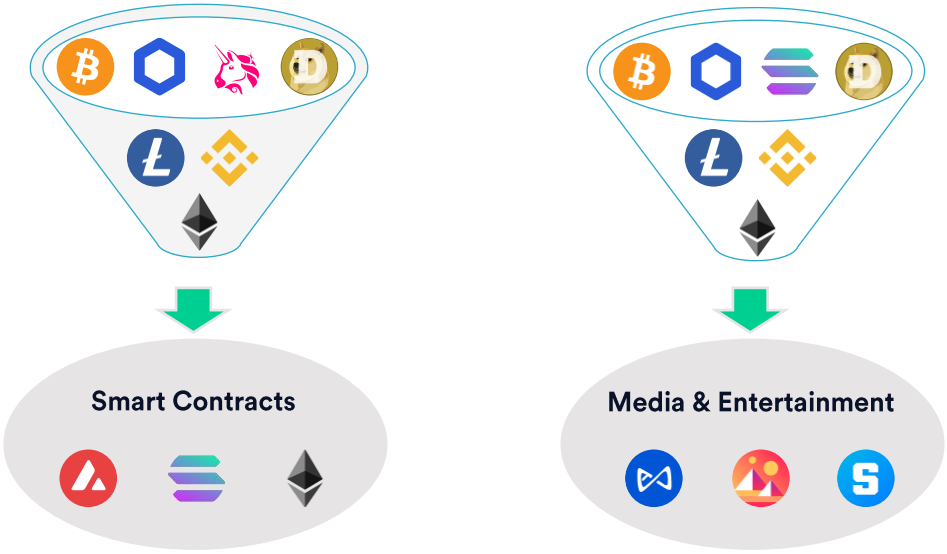


Source: MarketVector Research. Data as of June 30, 2024.

These questions are complex. As software, these tokens perform different functions, and their use cases can change over time. To simplify decision-making, investors increasingly focus on the actual usage, underlying microeconomics, and unique growth drivers of various tokens. Grouping and categorizing tokens are essential steps in structuring optimal investment decisions.

The world has moved beyond a singular focus on Bitcoin to a broader adoption of various digital assets, including DeFi apps, distributed computing platforms, and NFTs. MarketVector's digital asset categories use a top-down approach to reduce the complexity of the highly fragmented crypto space, allowing investors to see market developments beyond short-term speculation on individual tokens.

Exhibit 2: Categorizing Digital Assets



Source: MarketVector Research.

Understanding the Layers of the Crypto Ecosystem

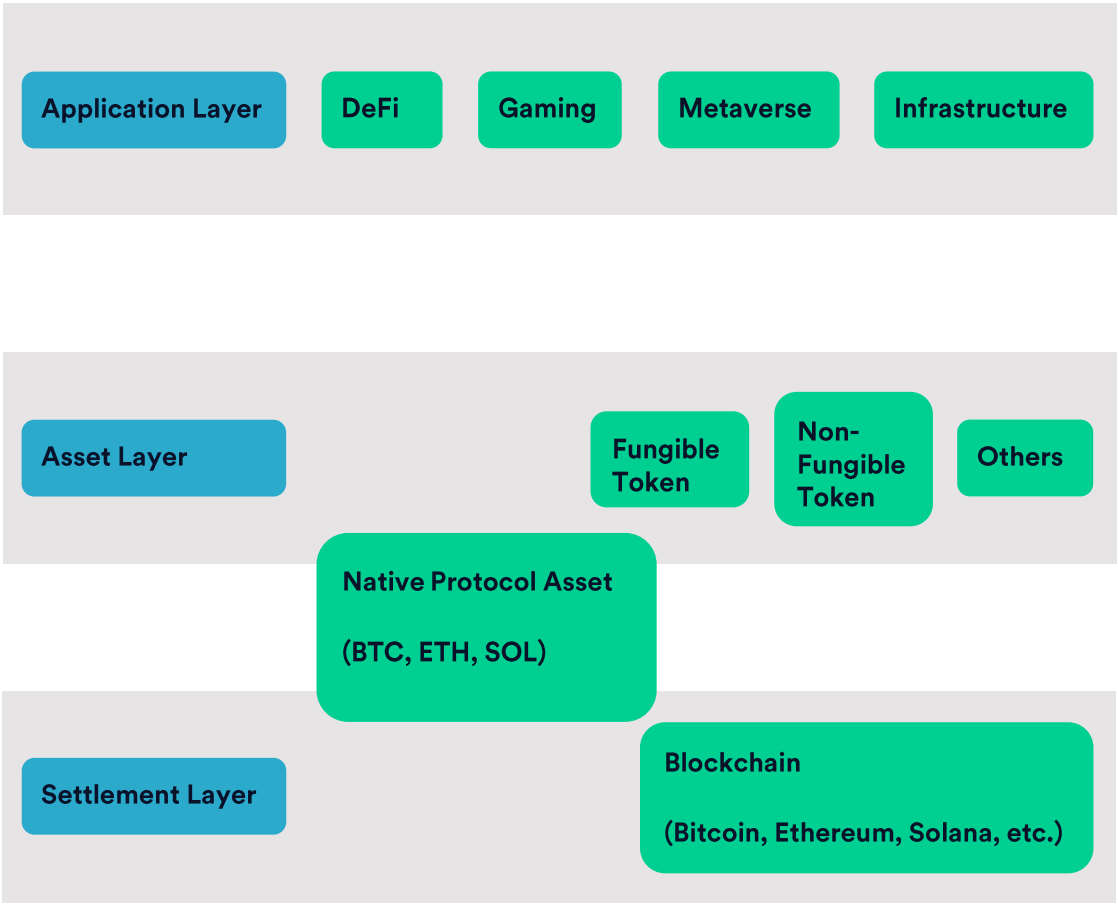
Understanding the layers of the crypto ecosystem is crucial for investors because it provides a foundational framework for analyzing and evaluating digital assets. Each layer represents a different aspect of the blockchain infrastructure, from the underlying settlement mechanisms to the application protocols that drive functionality. By distinguishing between these layers, investors can better assess the value propositions, risks, and growth potential of various digital assets, leading to more informed and strategic investment decisions. This layered approach also helps investors to navigate the complexities of the crypto market, ensuring they are better equipped to identify and capitalize on emerging opportunities within the ecosystem.

The crypto ecosystem is structured in different layers, which must be differentiated first:

1. Settlement Layer: The foundation for all activities in a decentralized ecosystem, consisting of the blockchain and its native asset. This layer securely stores information, value, and ownership, ensuring that any change in ownership follows the network's rules. It provides trustless execution and serves as the ultimate dispute resolution and settlement layer for transactions and state transitions.

2. Asset Layer: This layer includes all assets issued on top of the settlement layer, such as the network's native asset (e.g., ETH, SOL, ADA) that fuel and secure the ecosystem. It also includes various token types—fungible and non-fungible—each with unique characteristics and properties[1].
3. Protocol Layer: Provides the core functionality of decentralized applications, which are implemented as smart contracts or collections of smart contracts that users or applications can interact with[2].

Exhibit 3: Digital Asset Layers



Source: MarketVector Research.

[1] Fungible tokens are digital assets that are interchangeable and identical in value and function. Each token is indistinguishable from another, similar to how one dollar bill is equivalent to another dollar bill. Non-fungible tokens (NFTs) are unique digital assets that represent ownership or proof of authenticity of a specific item or piece of content, often used for digital art, collectibles, and other assets where uniqueness is crucial.

[2] Smart contracts are self-executing contracts with the terms of the agreement directly written into lines of code. These contracts automatically enforce and execute the agreement when the predefined conditions are met, without the need for intermediaries.

As the digital asset ecosystem grows and evolves, tracking and defining these layers will become increasingly complex.

The MarketVector Digital Asset Classification Scheme: Built on a history of innovation

MVDACS Overview

Hierarchical Structure

MarketVector Digital Asset Classification Scheme (MVDACS) is a three-tiered, hierarchical industry classification system that categorizes crypto assets both quantitatively and qualitatively. Each protocol is allocated a single classification based on its primary business activity. MarketVector considers economic drivers and end-user demand as critical factors in determining a protocol's primary business activity. Additionally, market perception and technical changes are reviewed monthly to ensure the classification's relevance.

Inspired by the Global Industry Classification Standard (GICS) framework used in equity markets, MVDACS aims to provide a similar structure tailored to the unique characteristics of the crypto asset class. By classifying crypto assets based on their underlying software protocols and primary use cases, MVDACS offers investors a systematic approach to understanding and navigating the diverse range of digital assets. This allows for easier comparison and analysis across different sectors and sub-sectors, enabling more informed investment decisions.

Key Figures

- ✓ 9 Categories
- ✓ 32 Industry Groups
- ✓ 86 Industries

Exhibit 4: MarketVector Digital Asset Categories

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, OKX
Infrastructure Applications	A decentralized computer program designed to perform specific tasks	Chainlink, Render, Hivemapper
Media & Entertainment (Metaverse)	Used to reward users for content, games, gambling or social media	Axie Infinity, Decentraland, Basic Attention Token
Payments	Digital, non-stable money for use in distributed network	Bitcoin Cash, Litecoin, XRP
Smart Contract Platforms	Blockchain protocol designed to host variety of self-developed and 3rd party applications	Ethereum, Polkadot, Solana
Stablecoins	Designed to minimize volatility by pegging to a more stable asset	Tether, USDC, DAI
Store of Value	Designed to hold or increase purchasing power over time	Bitcoin
Memecoins	Inspired by internet memes and jokes, these coins thrive on strong community engagement and social media buzz	Dogecoin, Bonk, Pepe

Source: MarketVector Research.

Benefits for Investors

Identifying Market Cycles

Classifications are crucial for identifying market cycles and assessing outperforming sectors This structure helps investors take advantage of market narratives, enhancing their portfolio returns. Our taxonomy helps create sector-based and sector-rotation strategies, allowing for consistent comparison and reporting on sector exposures versus peers or benchmarks.

Methodology

Monthly Screening Process

On a monthly basis, we screen the token universe by market cap. Whenever a token exceeds USD 250 million in size, we conduct an in-depth analysis and screen the protocol. Our process includes:

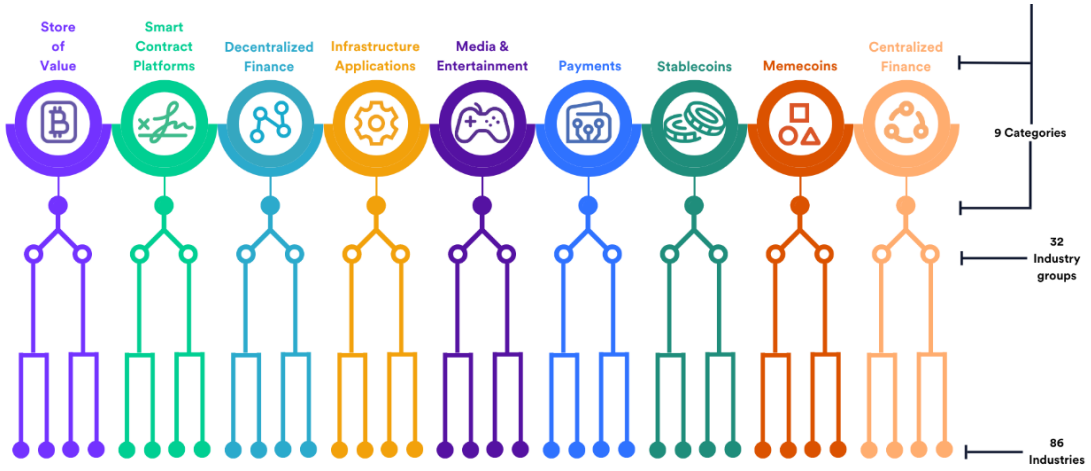
- Identify Key Categories: Begin by identifying the major categories or sectors within the crypto asset space. This could include categories such as decentralized finance (DeFi), Smart Contract Platforms, Stablecoins, etc.
- Gather Data: Collect data on existing crypto assets within each category. This includes information on market capitalization, trading volume, use case, underlying technology, and community activity.
- Review Market Trends: Stay updated on current market trends and developments in the crypto space. This includes monitoring news, announcements, regulatory changes, and technological advancements.
- Consult Experts: Engage with industry experts, analysts, and thought leaders to gain insights into emerging trends and potential classification criteria.
- Consider Use Cases: Analyze the practical applications and use cases of each crypto asset to determine its primary function within the ecosystem.
- Assess Community Support: Evaluate the level of community support and developer activity surrounding each crypto asset, as this can indicate long-term viability and adoption potential.

Classification Tiers

MVDACS employs a three-tier system:

- **Categories**: The broadest level, encompassing major areas of digital asset activity.
- **Industry Groups**: More specific groupings within each category, focusing on particular sectors of the digital asset market.
- **Industries**: The most granular level, detailing individual industries within each group.

Exhibit 5: MarketVector Classification Tiers



Source: MarketVector Research.

Example of Classification

Category: Decentralized Finance (DeFi)

Industry Group: Lending Platforms

Industry: Collateralized Lending

Mutual Exclusivity

In adherence to the principle of mutual exclusivity, each digital asset must be classified into only one category at any given level. As we classify digital assets based on the software protocol they are associated with, we ensure that each asset is placed in the most appropriate category, considering its primary function and usage within the blockchain ecosystem.

Mutual exclusivity is important in the context of digital asset classification because it ensures that each asset is assigned to only one category, preventing overlap and confusion. This clarity is crucial for accurate analysis, comparison, and reporting. By assigning each asset to a single category based on its primary function, investors can better understand its role within the ecosystem, make informed decisions, and avoid double-counting or misinterpreting data. This approach also enhances the precision of sector-based strategies and ensures that performance metrics are accurately attributed to the appropriate category.

Review Process

Dynamic Updates

To maintain the classification system's accuracy and relevance, market perception and technical developments are reviewed and incorporated during the monthly review process. This ensures that the classification reflects current market conditions and evolving technologies.

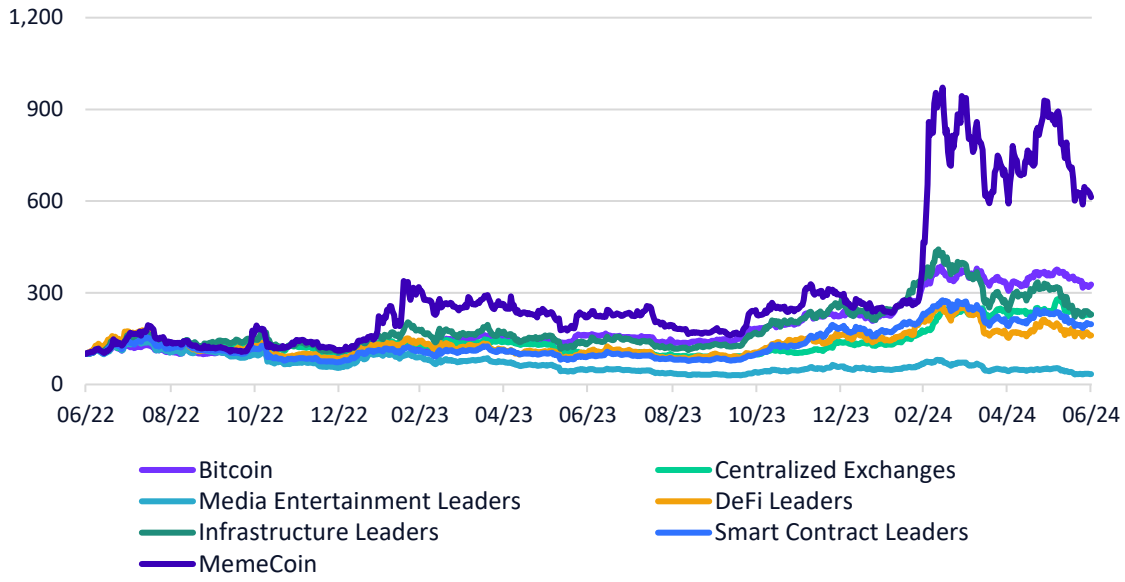
While the goal is to maintain a stable taxonomy, the dynamic nature of the market occasionally requires reclassification. These adjustments are essential to ensure the taxonomy remains accurate and relevant, aligning with emerging trends, technological innovations, and regulatory shifts.

Category Performance

Exhibit 6 presents a comprehensive view of the performance across various crypto sectors from July 2022 to July 2024. The index values reflect a wide range of volatility and growth patterns, underscoring the dynamic nature of the crypto market. Memecoins, represented in green, show the most significant volatility with a dramatic rise and subsequent fall in the first half of 2024, indicating periods of heightened speculative activity or significant market events affecting exchange-based tokens.

In contrast, Bitcoin, illustrated in purple, demonstrates steady and consistent growth, maintaining its status as a relatively stable and dominant player in the crypto space. The DeFi Leaders (orange) and Infrastructure Leaders (black) display moderate growth with occasional spikes, highlighting ongoing interest and investment in decentralized finance and blockchain infrastructure technologies.

Exhibit 6: Cumulative returns by Classification



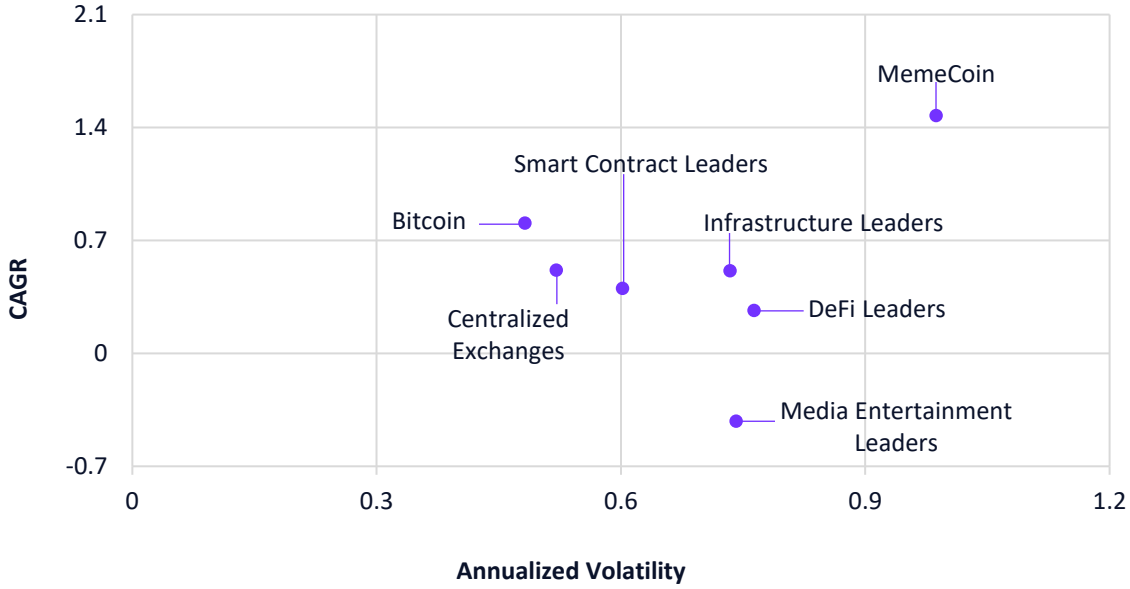
Source: MarketVector Research. Data as of June 30, 2024.

Exhibit 7: Performance Ratios since April 2021 Start

	CAGR	Sharpe Ratio (Rf=5%)	Annualized Volatility	Max Drawdown
Bitcoin	81%	1.34	48%	-35%
Centralized Exchanges	51%	0.96	52%	-45%
Media Entertainment Leaders	-42%	-0.44	74%	-79%
DeFi Leaders	26%	0.60	76%	-54%
Infrastructure Leaders	51%	0.86	73%	-50%
Smart Contract Leaders	40%	0.77	60%	-53%
MemeCoin	147%	1.32	99%	-53%

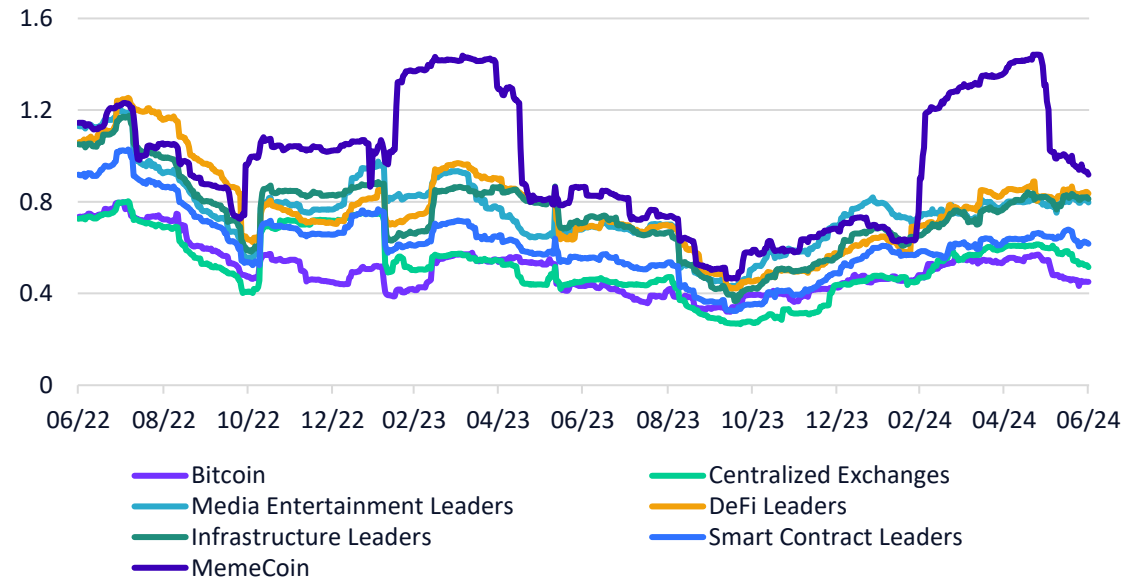
Source: MarketVector Research. Data as of June 30, 2024.

Exhibit 8: Risk-Return



Source: MarketVector Research. Data as of June 30, 2024.

Exhibit 9: 90 day rolling volatility chart per sector



Source: MarketVector Research. Data as of June 30, 2024.

As illustrated, significant differences in annualized returns and volatility profiles exist across various sectors, highlighting distinct value drivers and current market narratives. As the market matures, investors must recognize that different sectors require different approaches due to their unique value drivers. For example, Bitcoin has little in common with a gaming token, and a gaming token is fundamentally unrelated to a decentralized wireless network token.

Integrating Classification Schemes to Deliver Better Investment Solutions

MarketVector has six digital asset categories as an index available:

- The MarketVector™ Centralized Exchange Index (ticker: MVCEX),
- The MarketVector™ Decentralized Finance Leaders Index (ticker: MVDFLE),
- The MarketVector™ Infrastructure Application Leaders Index (ticker: MVIALE),
- The MarketVector™ Media & Entertainment Leaders Index (ticker: MVMELE),
- The MarketVector™ Smart Contract Leaders Index (ticker: MVSCLE),
- The MarketVector™ Memecoin Index (MEMECOIN)

Please note that additional indexes will be introduced as the crypto space matures and liquidity increases. In the meantime, we can create customized versions tailored to our clients' needs at any time, whether based on specific categories or industries.

Please see our index website for the specific methodology of our indexes here.

Conclusion

Classifications are essential for identifying market cycles and assessing outperforming sectors. By identifying and assessing outperforming sectors, investors can strategically capitalize on market narratives to improve their portfolios' alpha. MarketVector's digital asset category indexes allow users to measure, benchmark, and capture the performance and characteristics of targeted categories, making digital assets more comprehensible to traditional finance investors and providing crypto-native funds with additional benchmarking capabilities.

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Jonas Weber is an emerging expert in digital assets and investment strategies. As a Digital Asset Analyst at MarketVector, he excels in generating innovative index ideas, conducting in-depth research, and supporting client communications. Before joining MarketVector, Jonas honed his skills as a working student in Investment Consulting. At Lurse AG, a pension consultancy firm, he was instrumental in developing new investment strategies and analyzing the risk and performance of model portfolios. His collaboration with Lurse AG also extended to his master’s thesis, which he completed summa cum laude, focusing on various investment strategies and deriving optimal guarantee levels.

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