



November 2021

Digital Asset Investing

Blockchain Beyond Bitcoin: Investment Opportunities for the Next Few Years

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The background is a blurred office interior with a diagonal blue overlay. The overlay is a semi-transparent blue shape that starts from the bottom left and extends towards the top right, creating a modern, professional look.

VanEck[®]

About VanEck

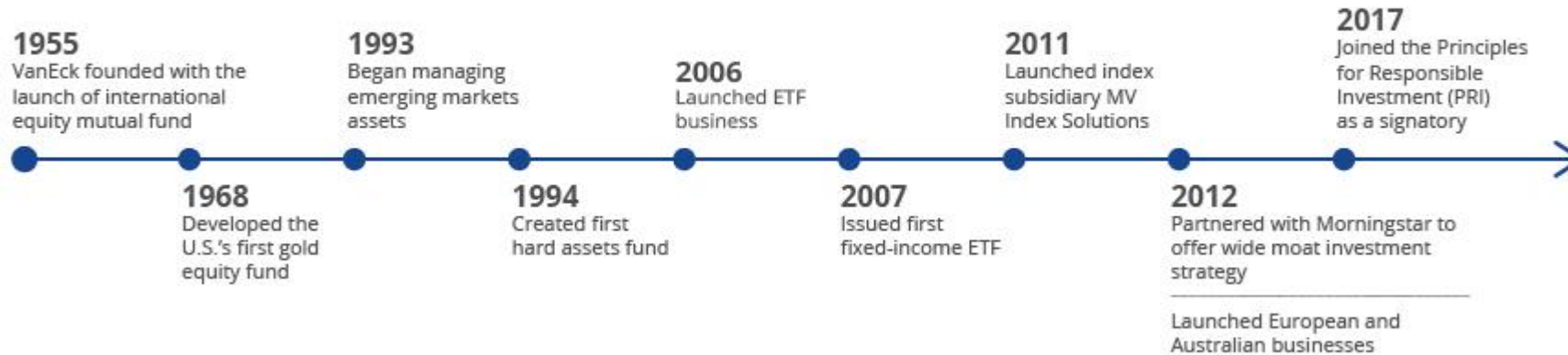
Mission and History



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VanEck's mission is to strengthen portfolios by offering forward looking, intelligent solutions

- **Transformative Investments:** Started offering active strategies in international equities (1955), gold shares (1968), emerging markets (1993); added passive strategies in 2006 and has emerged as the seventh leading ETF sponsor globally, by revenue¹
- **Private Ownership:** As an independent, private firm we can focus on client interests with a long-term perspective
- **Accessible Management:** We pride ourselves on being available to clients and engaging directly with them

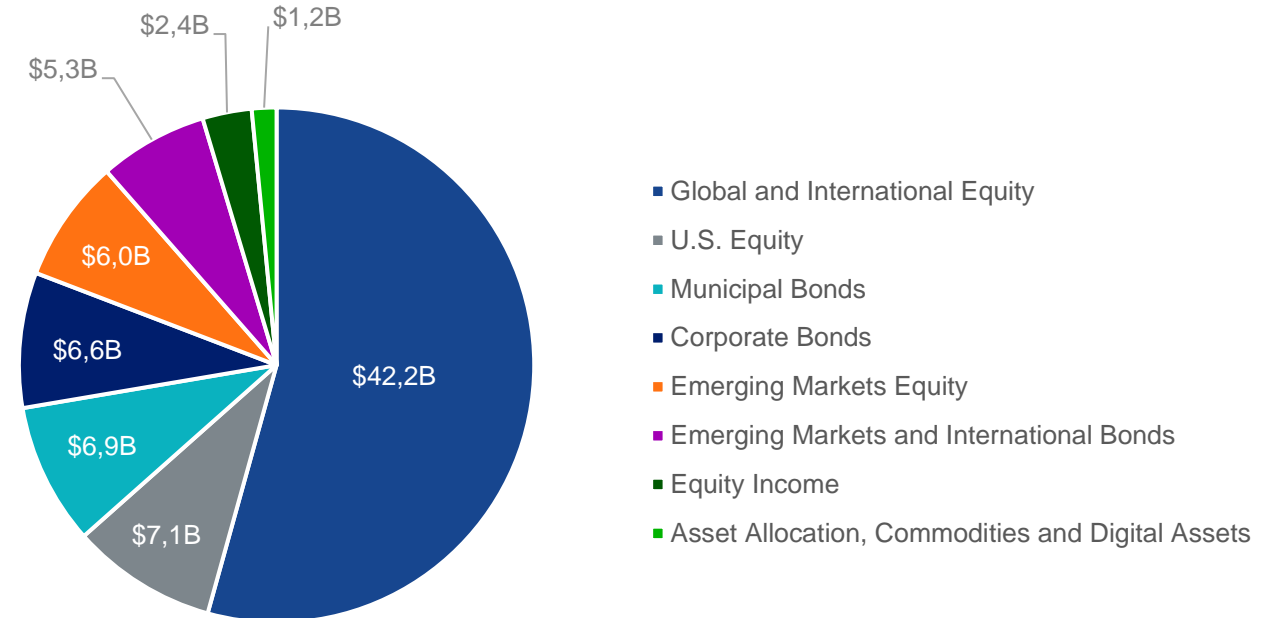


¹Source: ETF Database as of October 11, 2021.

Current Company Statistics

Today, VanEck manages approximately \$77.7 billion in assets

- Global headquarters in New York with robust lineups of local funds in Europe and Australia
- 320 full-time staff, including 57 investment professionals; portfolio managers average 23 years of experience
- Lead portfolio managers all have direct experience in the sectors and regions in which they invest
- Institutional and wealth management clients
- Active funds and smart beta ETFs have won numerous performance awards



Data as of September 30, 2021. Awards received available at <https://www.vaneck.com/news-and-insights/media-coverage/awards/>

Strategies offered in mutual, pooled and off-shore funds, separate accounts, variable insurance portfolios, sub-advisory, ETFs and limited partnerships.

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VanEck Digital Asset Capabilities



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VanEck is committed to supporting long-term, structural innovation of digital asset products and market innovation

In early 2017, VanEck determined that digital assets could provide:

- A store of value alternative to existing currencies and gold
- A host of technology solutions that could bring costs down dramatically in the payments and financial investing industries

We have undertaken an array of initiatives to bring investments in these areas to our clients while helping build out the ecosystem

Professional Pricing and Indexing	Regulatory and Institutionalization	Market Structure and Industry Relationships	Research and Media	Experience and Execution Capability
<p>VanEck's subsidiary MV Index Solutions (MVIS) was the first regulated index provider to offer digital asset indices to meet industry benchmarking standards.*</p>	<p>VanEck is advancing the institutionalization of digital assets by closely interfacing with global regulators on digital asset ETPs, indexing, surveillance and other important market issues.</p>	<p>VanEck and MVIS, have access to reputable organizations necessary for the operating of a pooled investment vehicle including indexing, custodians, traders, administration, accounting and other partners.</p>	<p>VanEck regularly publishes professional research and actively participates in forms of mainstream and social media regarding bitcoin and other digital assets.</p>	<p>VanEck is experienced in successfully running an efficient, regulated bitcoin ETP in Europe. As a leading ETF provider, VanEck trades with professional market participants.</p>

* <https://www.mvis-indices.com/news/corporate-news/mvis-and-cryptocompare-launch-digital-assets-crypto-index-series-press-release>

VanEck Digital Assets Team and Resources



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EU Business

Experienced team spanning product management and trading team manages 5 ETPs registered and traded in Europe. Additional resources available across VanEck's shared resource departments

Gijs Koning

COO VanEck Europe

Aaron Renkers

Head of Investments

Thomas-Pieter Francken

Investment Manager Digital Assets

Rob Uelderink

Jr. Portfolio Manager

US Business

- Experienced team spanning product management, research, trading, global risk, legal and compliance. Additional resources available across VanEck's shared resource departments

MVIS/CryptoCompare

- MVIS offers digital asset indices to meet industry benchmarking standards
- CryptoCompare is the industry's leading data provider based in London and is a service provider to MVIS

Strategic Investments

- Shareholder in leading Canadian crypto manager of open-end funds
 - Venture capital investments across the crypto opportunity spectrum
-



Crypto: Macro & Policy Update

Alternative Monetary Policy: Here to Stay?

Global Monetary Policy Map: Tightening

(Percentage of Central Banks: last rate move was a hike)

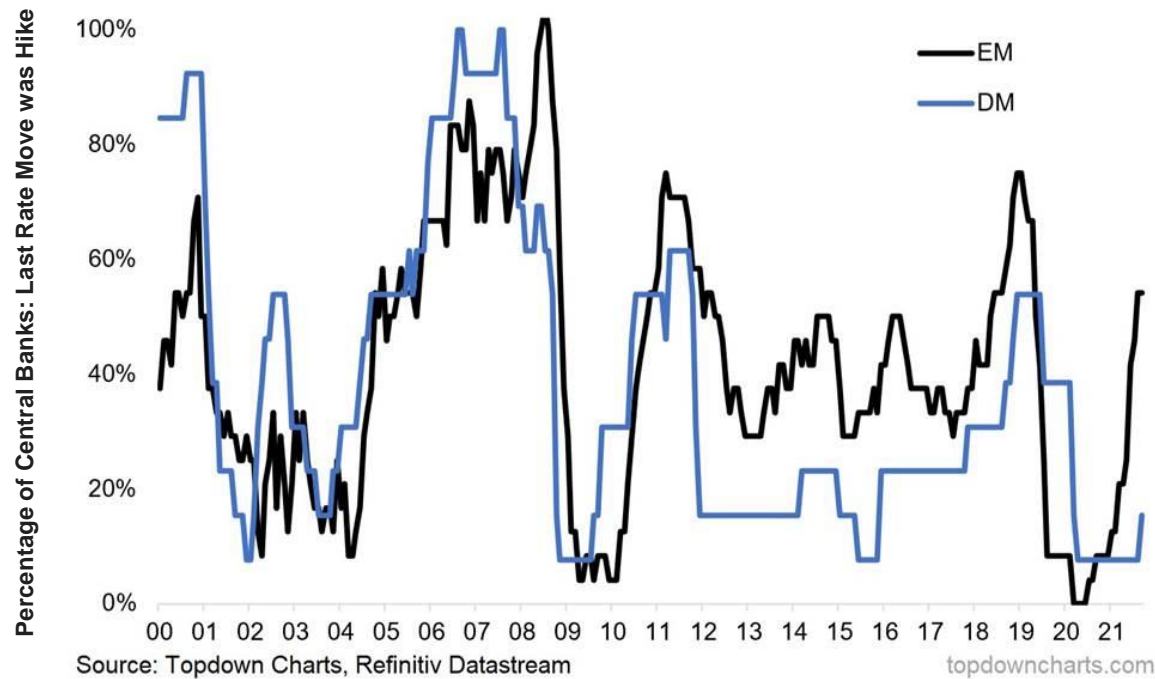
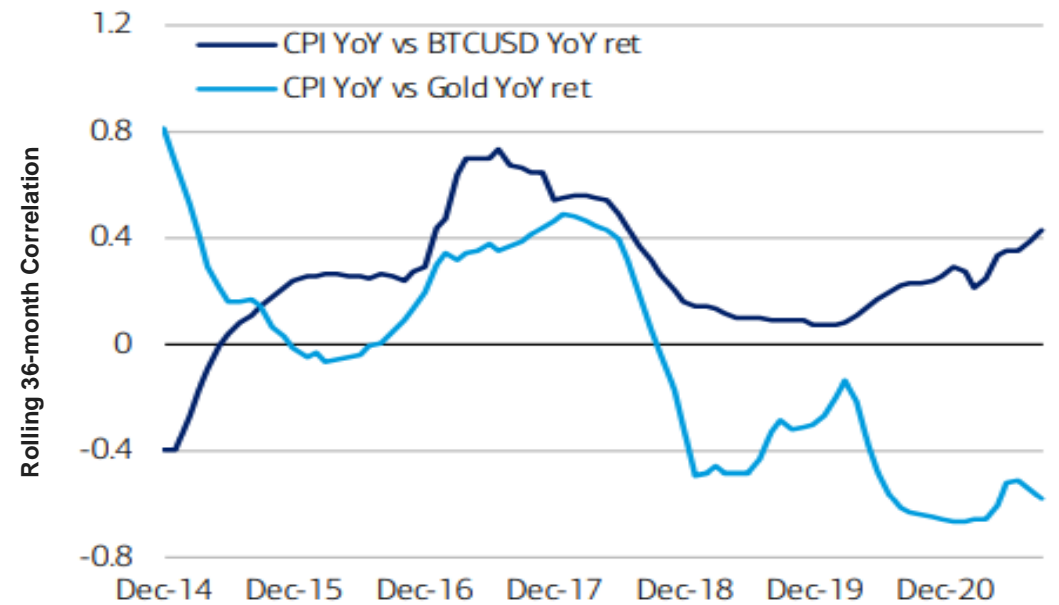


Exhibit 28: Some evidence Bitcoin correlates with CPI y/y over Gold, but more history and over longer cycles are needed

Rolling 36 month correlations

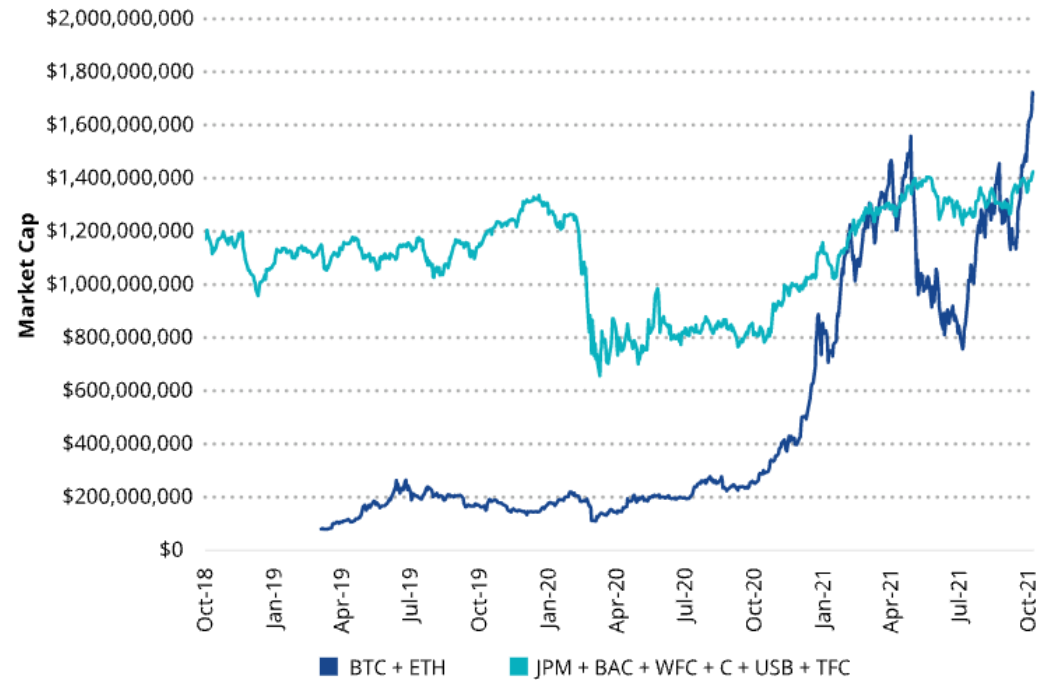


Source: CryptoCompare, Bloomberg, BofA Global Research

BOFA GLOBAL RESEARCH

Crypto is Taking Market Share from Gold & Banks

Market Cap: Bitcoin + Ethereum vs. Top 6 U.S. Banks



Source: Bloomberg, as of 10/21/2021. JPM: JPMorgan Chase, BAC: Bank of America, WFC: Wells Fargo, C: Citigroup, USB: U.S. Bancorp, TFC: Truist Financial Corp, BTC: Bitcoin, ETH: Ethereum.

Sources: Bloomberg, MVIS, JPMorgan, VanEck research

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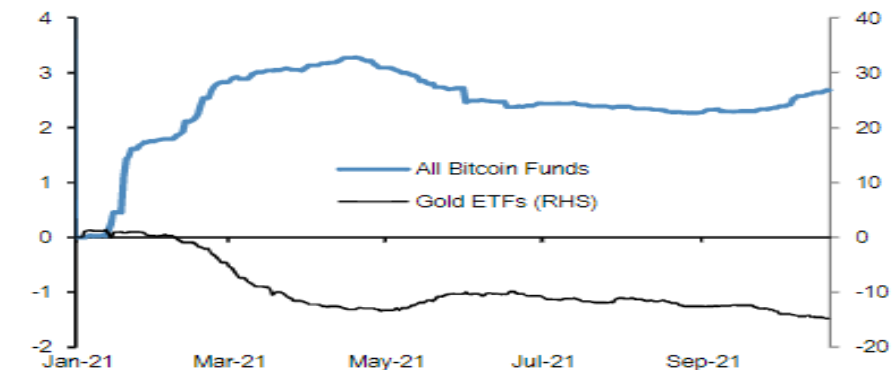
Gold Miners vs. Crypto Enablers (market cap)



— MVDAPP Constituents market cap — ARCA Gold Miners market cap

Figure 2: Cumulative Flows in all Bitcoin funds and Gold ETF holdings

Both the y-axis in \$bn



Source: J.P. Morgan

Pension Funds are Starting to Allocate to Bitcoin

PENSION FUNDS

October 21, 2021 12:12 PM

Houston Firefighters invests \$25 million in cryptocurrency

Blockchain [+ Add to myFT](#)

Celsius investment shows 'conviction' in blockchain, says CDPQ

Canadian pension fund 'absolutely not' considering investing directly in bitcoin

The crypto-friendly mayor of Miami says the city is moving toward paying public employees in bitcoin

Carla Mozée
© Oct. 13, 2021, 10:25 AM

SHARE

Your Market View

Cryptocurrencies [+ Add to myFT](#)

Australian pension fund considers crypto investment

Other retirement vehicles including Canada's CDPQ have also bought in to the digital asset space

Korea Teacher's Credit Union planning to invest in bitcoin

by Tim Copeland

October 25, 2021, 9:55AM EDT · 1 min read

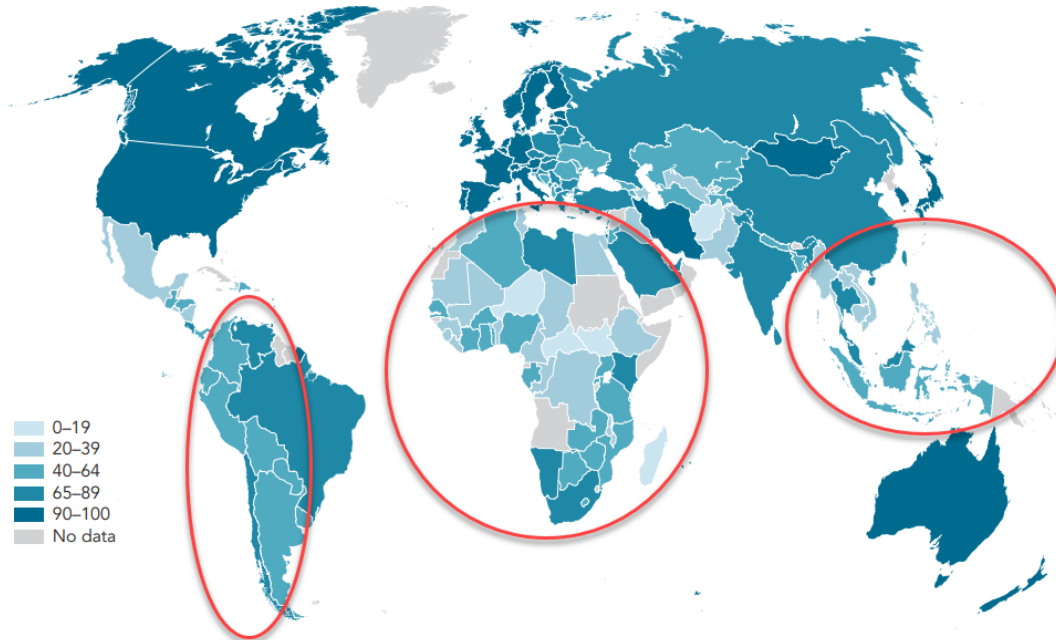
The Korea Teacher's Credit Union, which manages \$40 billion in assets, plans to start

Sources: FT, Business Insider, Pensions & Investments, TheBlock

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Bitcoin Accelerating Financial Inclusion...

Today, **69 percent** of adults around the world have an account
 Adults with an account (%), 2017



Source: Global Findex database.

= ~1.5b adults don't have a bank account

Sources: Chain Analysis as of August 2021; WSJ as of 10/22/21

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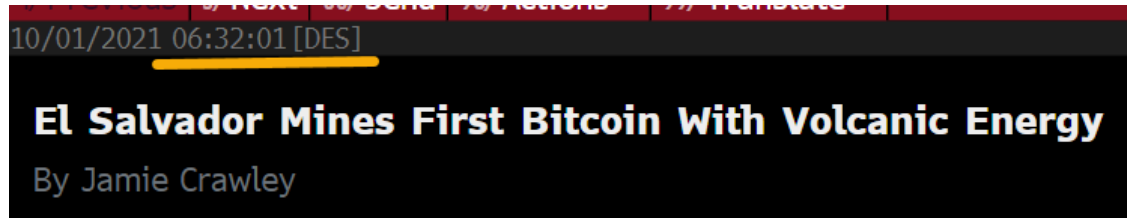
Top 20 crypto adoption by country

Country	Index score	Overall index ranking	Ranking for individual weighted metrics feeding into Global Crypto Adoption Index		
			On-chain value received	On-chain retail value received	P2P exchange trade volume
Vietnam	1.00	1	4	2	3
India	0.37	2	2	3	72
Pakistan	0.36	3	11	12	8
Ukraine	0.29	4	6	5	40
Kenya	0.28	5	41	28	1
Nigeria	0.26	6	15	10	18
Venezuela	0.25	7	29	22	6
United States	0.22	8	3	4	109
Togo	0.19	9	47	42	2
Argentina	0.19	10	14	17	33
Colombia	0.19	11	27	23	12
Thailand	0.17	12	7	11	76
China	0.16	13	1	1	155
Brazil	0.16	14	5	7	113
Philippines	0.16	15	10	9	80
South Africa	0.14	16	18	16	62
Ghana	0.14	17	32	37	10
Russian Federation	0.14	18	8	6	122
Tanzania	0.13	19	60	45	4
Afghanistan	0.13	20	53	38	7

As Afghanistan Sinks Into Destitution, Some Sell Children to Survive

U.N. warns that 95% of Afghans aren't getting enough to eat as winter approaches

...and Energy Independence



First steps...

#Bitcoin  

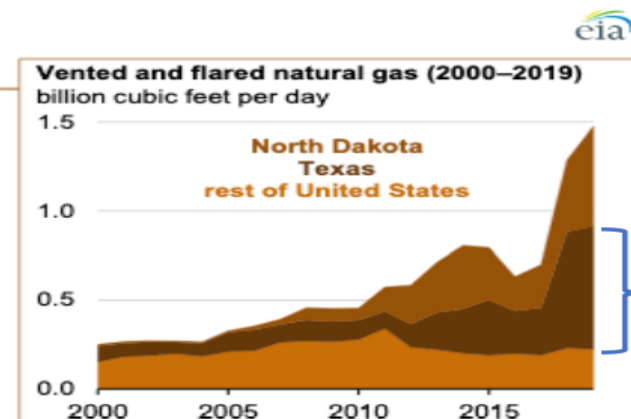


4:30 PM · Sep 28, 2021 · Twitter for iPhone



Blockchain is a booming industry that Texas needs to be involved in.

I just signed a law for Texas to create a master plan for expanding the blockchain industry in Texas.

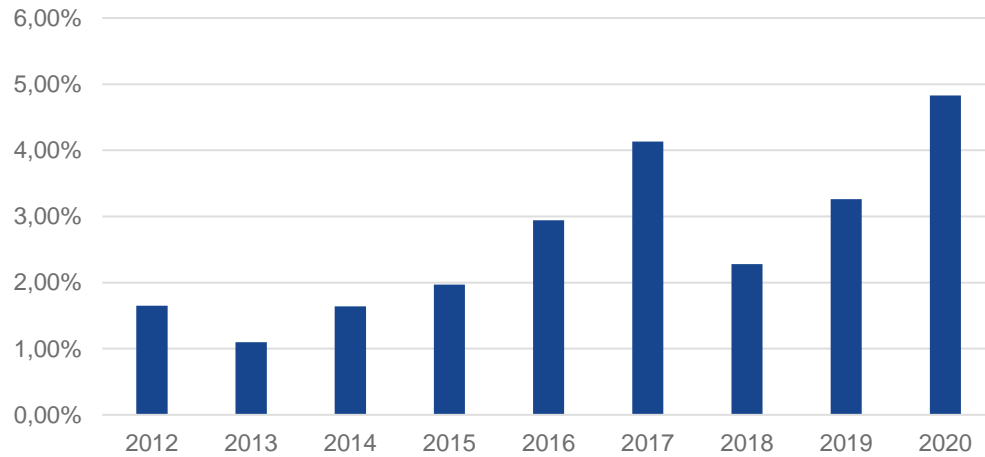


Source: [EIA](#)

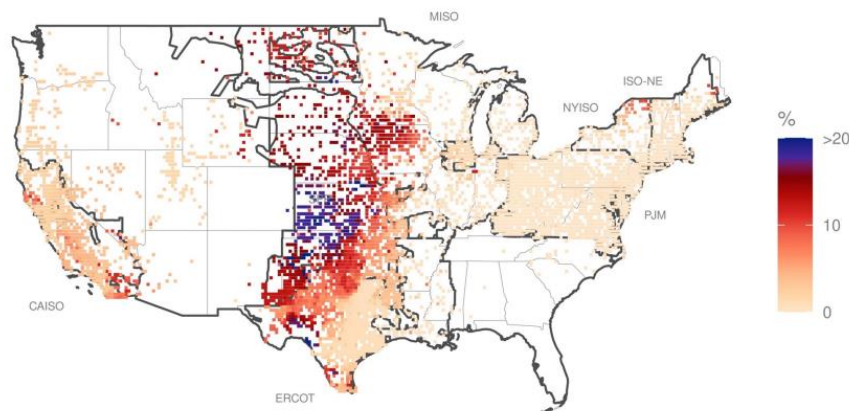
TX accounts for 47% of national flared gas

Rising Share of Renewables = More Negative Pricing Events

US electricity % Negative Pricing Frequency

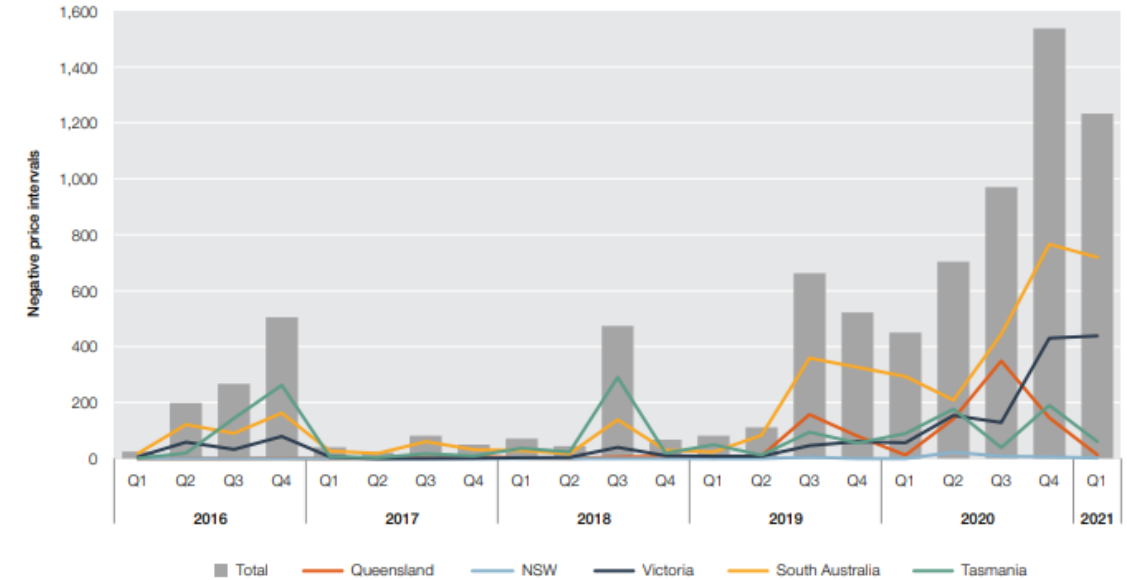


Negative pricing frequency (2020)



Australia frequency of negative power prices

Figure 2.23 Negative spot price count



Source: AER; AEMO (data).

Source: Australian Energy Regulator as of 2021 (right chart), Berkeley Lab as of 2020 (left charts)

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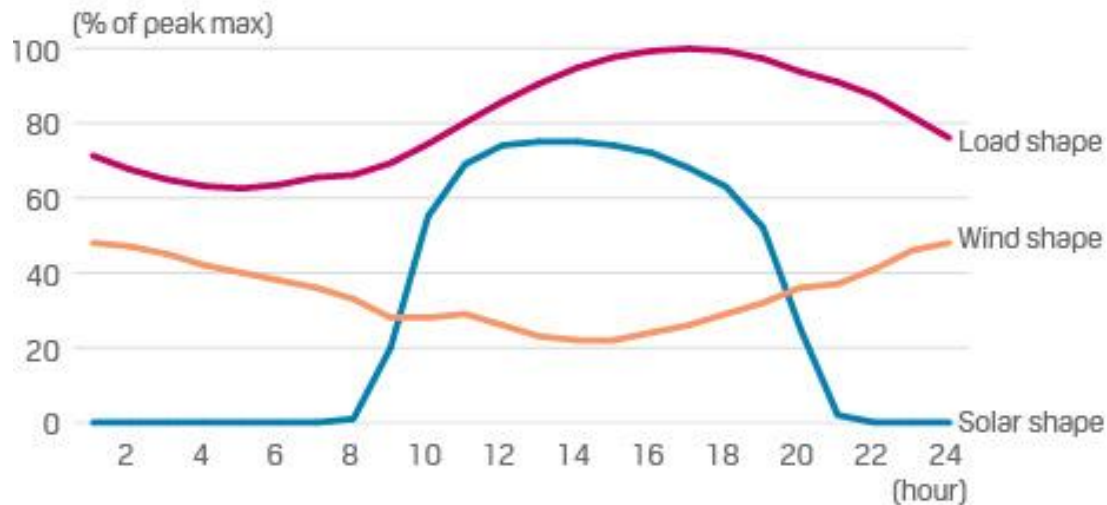
Decentralized US Electrical Grid is Well-Suited to Bitcoin Mining



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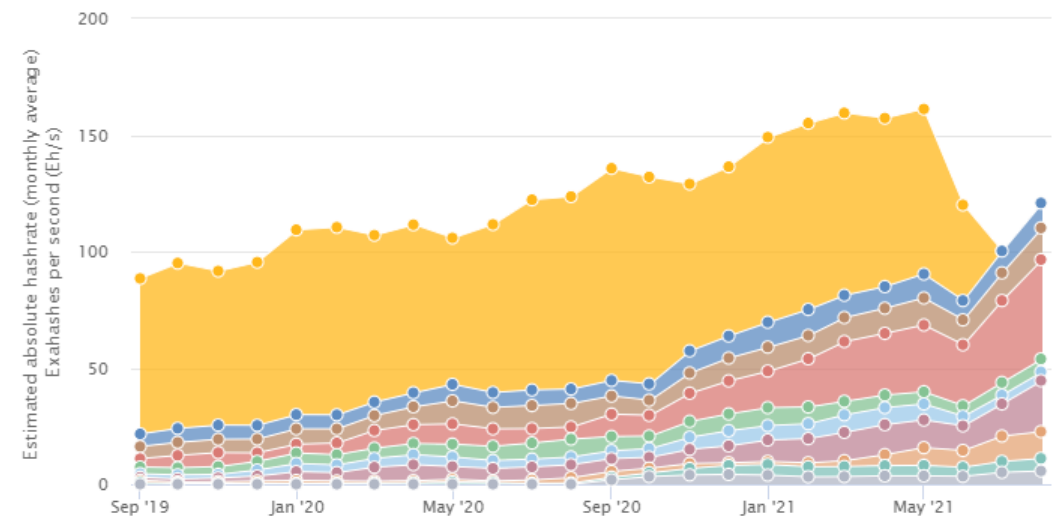
US Bitcoin mining market share has grown from 4% to 42% in two years

ERCOT AUGUST 2019 LOAD vs RENEWABLES



Source: S&P Global Platts Analytics, ERCOT

Evolution of network hashrate



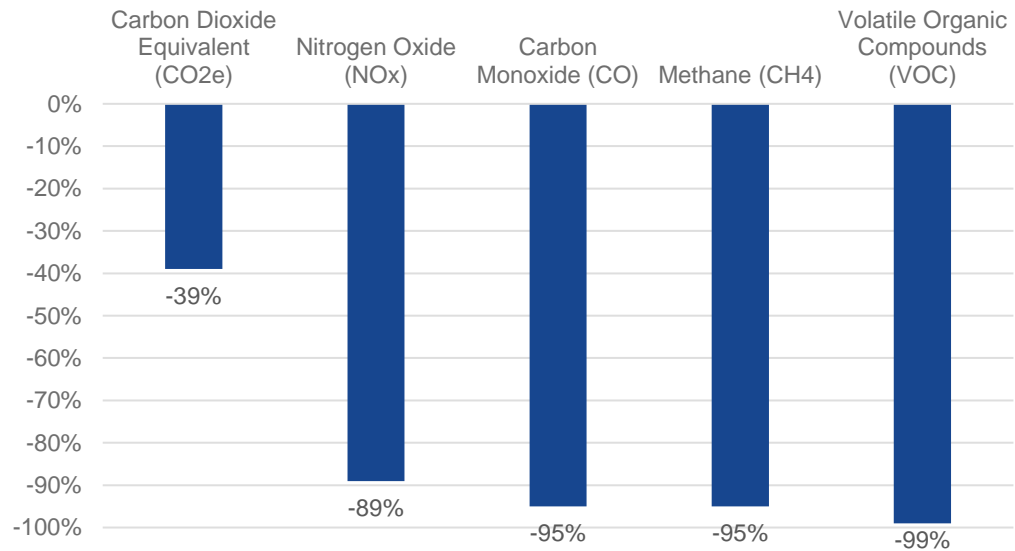
- Mainland China
- Other
- Russian Federation
- United States
- Malaysia
- Iran, Islamic Rep.
- Kazakhstan
- Canada
- Germany *
- Ireland *

Bitcoin Mining from Stranded Energy Can Cut Emissions & Recycle Chips



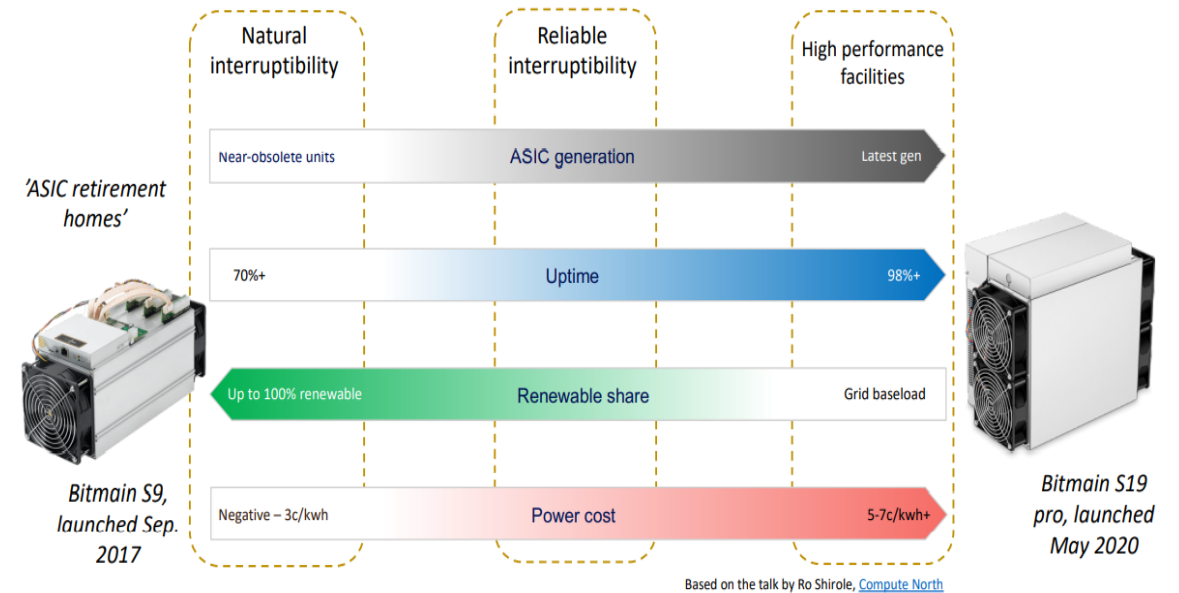
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Bitcoin Mining Emissions
(Relative to Continued Flaring)



'Lifecycle mining' applies older ASICs to intermittent, renewable sources of energy

Flexible offtake



Source: Crusoe Energy [presentation](#) (left chart), [Digital Mining Conference by Bitmain](#) (right chart)

Taxpayer-Funded Bitcoin Mining is Here



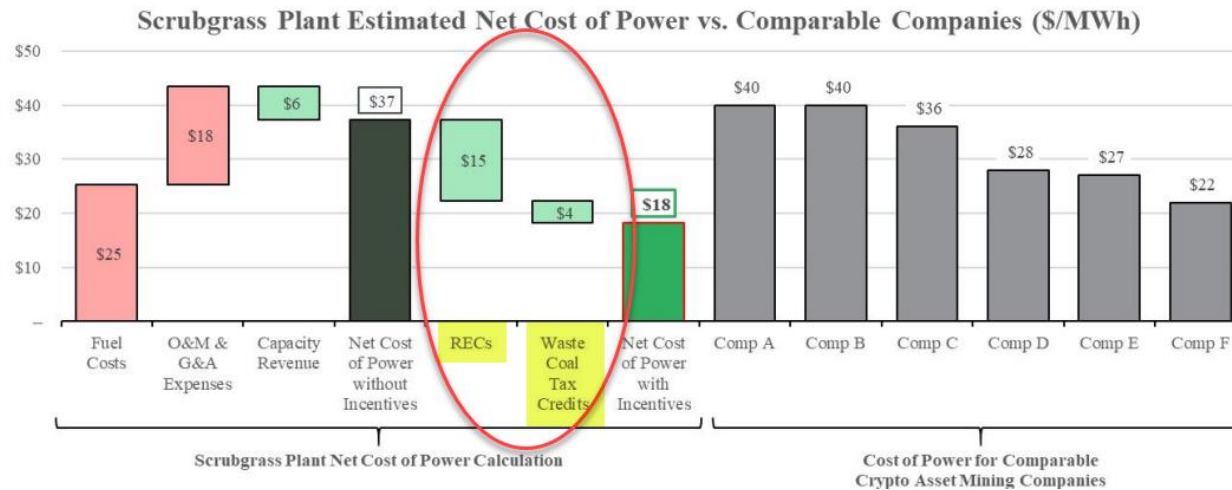
Coal refuse in Pennsylvania by the numbers:

840 piles

92 piles on fire as of December 2020

220 million tons

8,500 acres of land covered

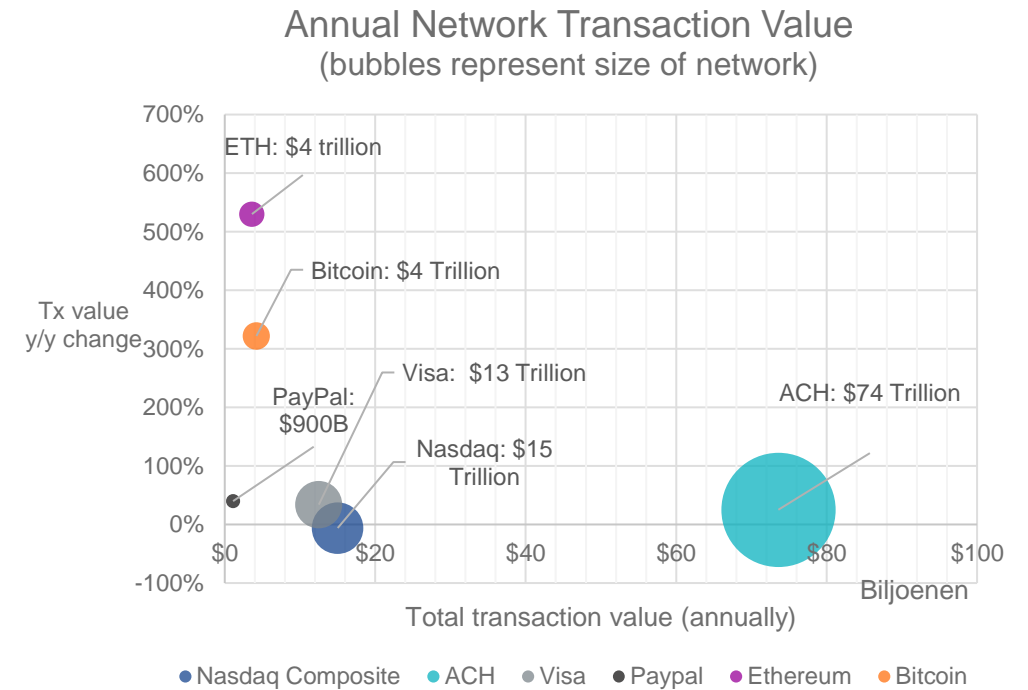


Source: Stronghold Digital Mining as of 2021

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Bitcoin: 4x Bigger than PYPL, Growing 4x Faster

~\$3.9 trillion will be sent across the Bitcoin network this year



Sources: Glassnode (left chart); Visa, Nacha.org, NasdaqTrader.com, Coinmetrics, VanEck estimates as of 2021 (right chart)

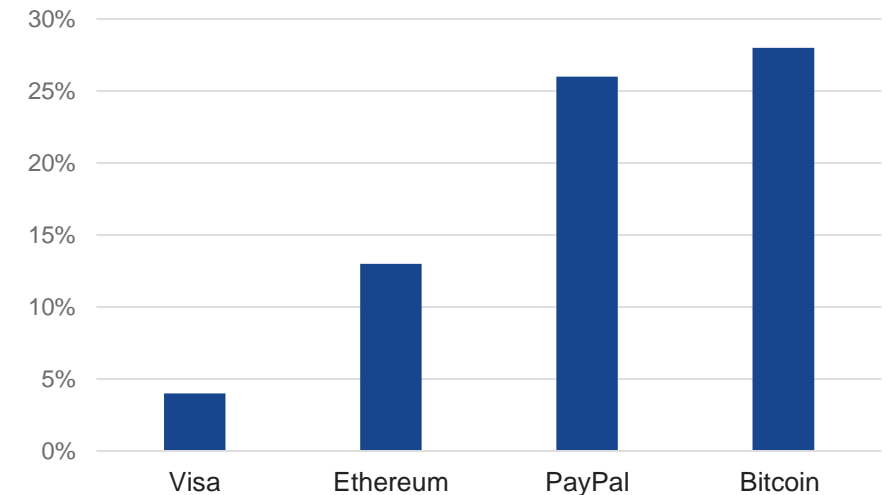
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Bitcoin: Valuation Techniques

- Versus Gold
- As ratio of transaction value
- "Stock-to-flow"



Market cap as % of annual network tx value

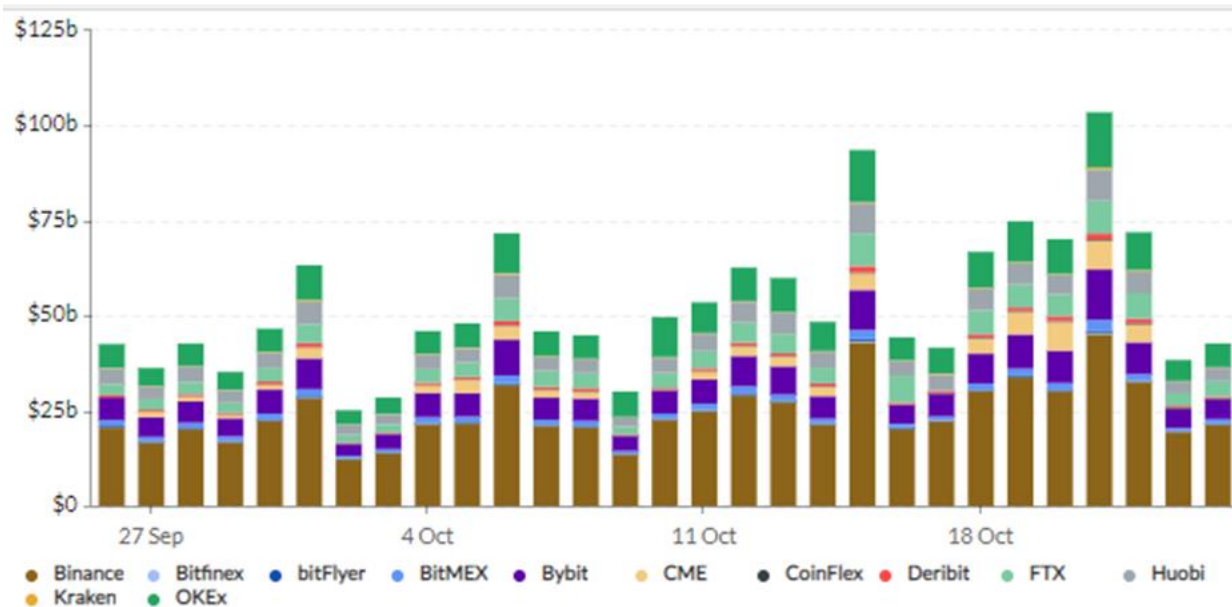


Sources: Glassnode (left chart); Paypal, Visa, Nacha.org, NasdaqTrader.com, Coinmetrics, VanEck estimates as of 2021 (right chart)

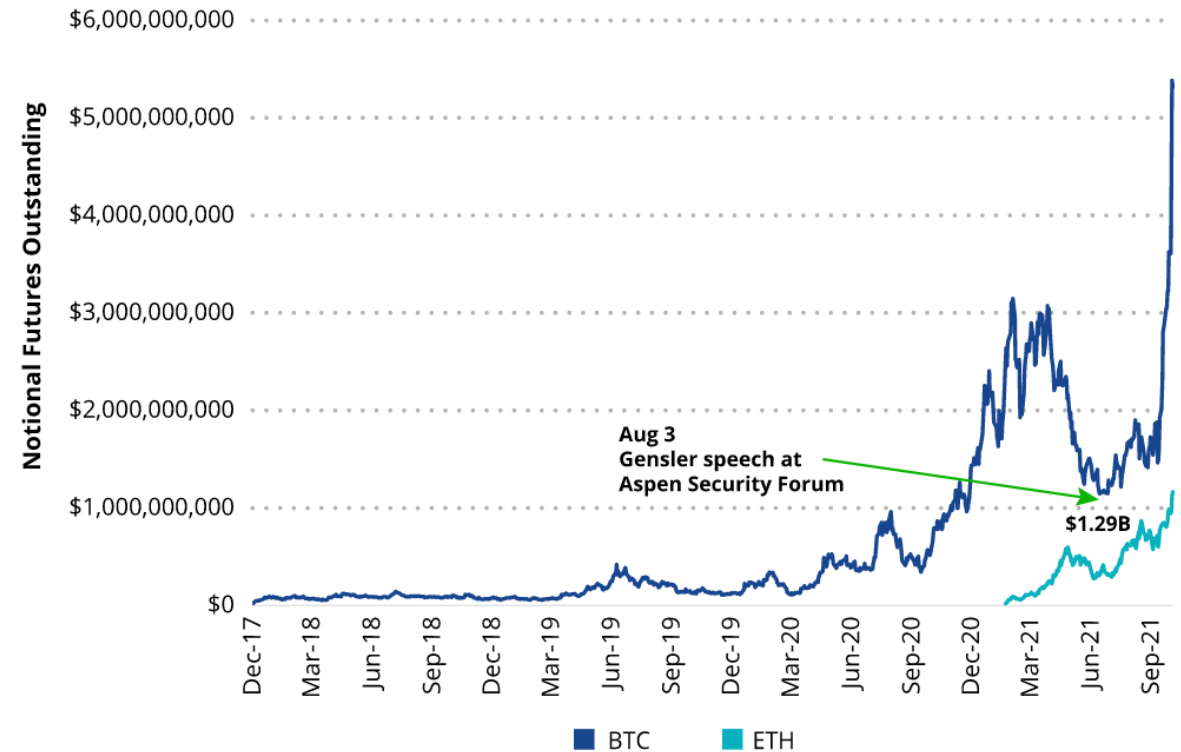
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Bitcoin Futures are Flooding the CME

CME has only 5-10% share of Bitcoin Futures, total volume of which reached \$105B Oct 21st; Gold \$98B, copper \$90B

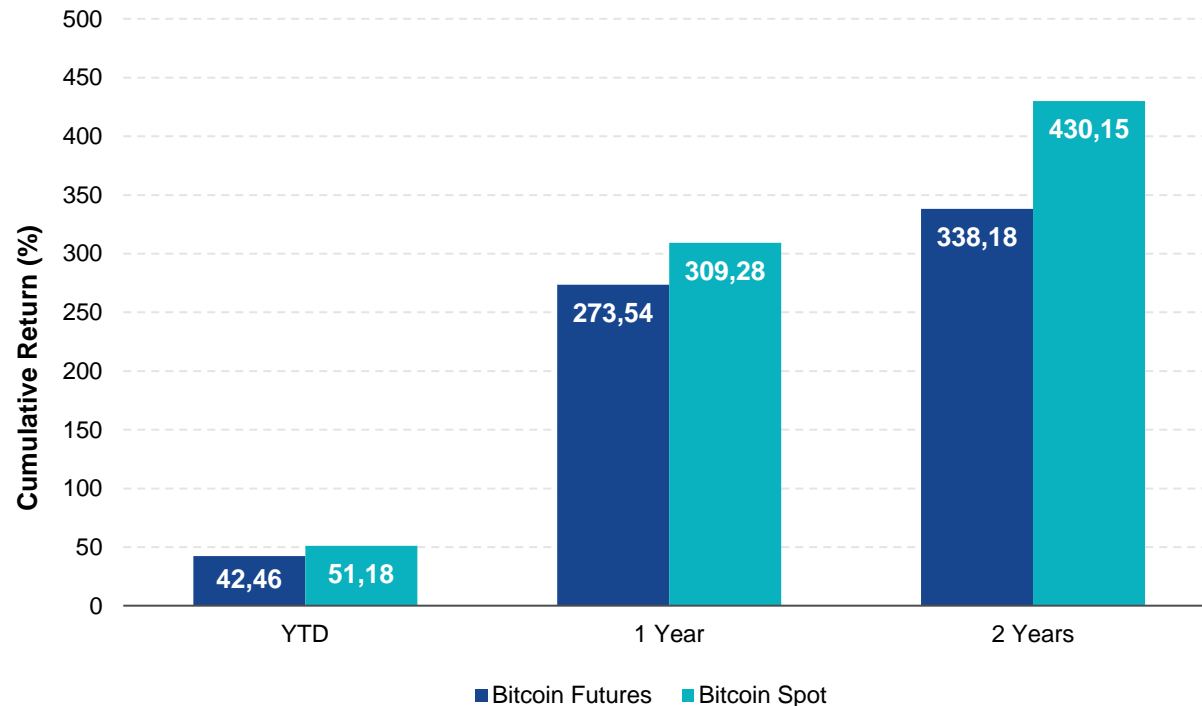


Ethereum CME futures OI reach same level as BTC on Aug. 3rd

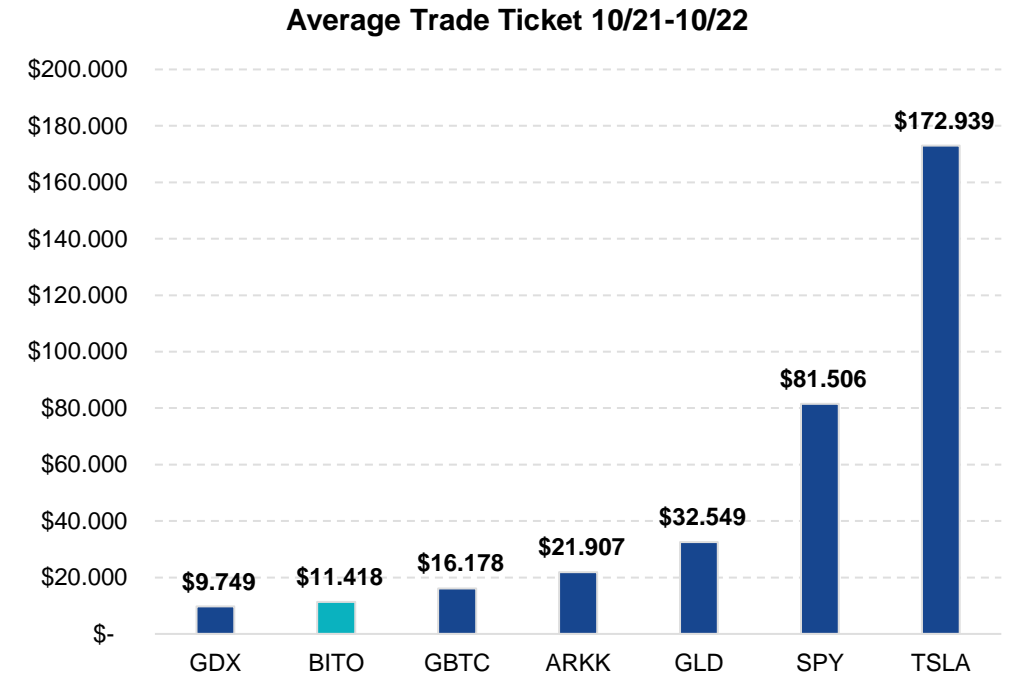


Bitcoin Futures are Flooding the CME

“Investor protection” in action
as of 9/30/2021



Bitcoin Futures ETF looks like retail buying



Sources: Bloomberg, VanEck

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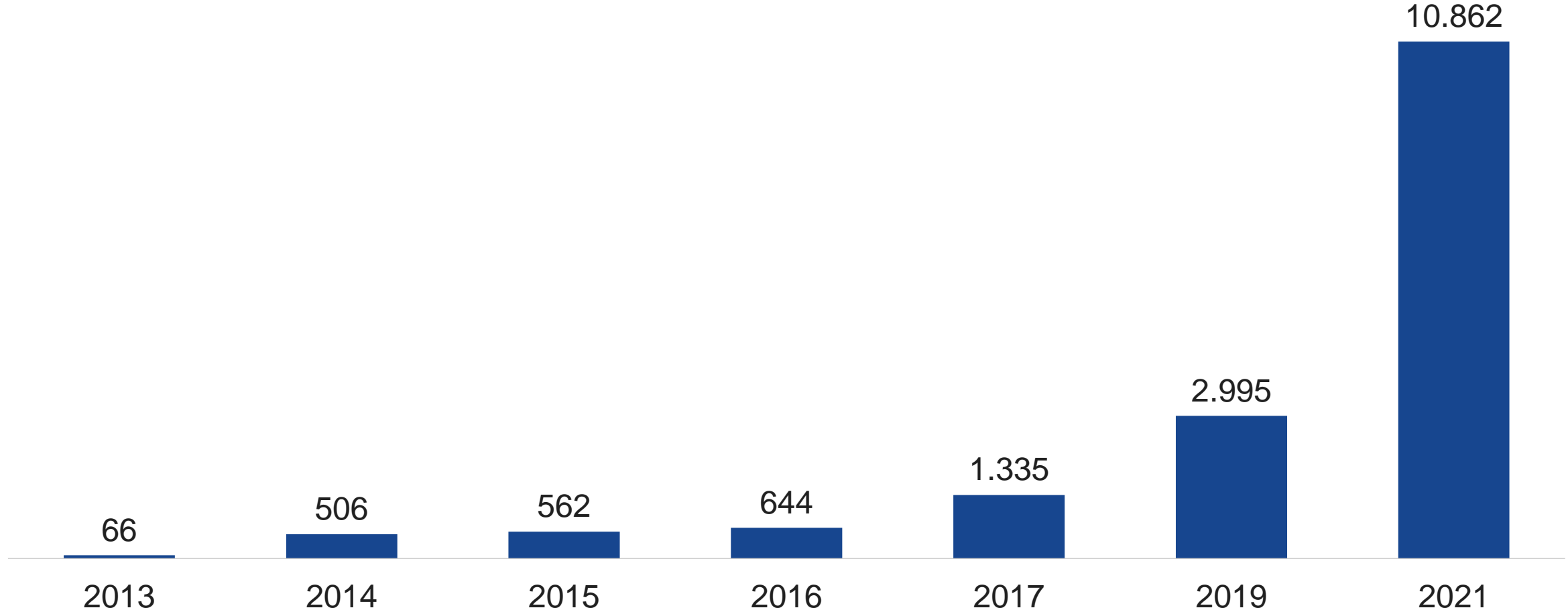


Smart Contracts: Crypto's Principal Innovation

Since the launch of Bitcoin, digital assets innovation has accelerated **VanEck**[®]

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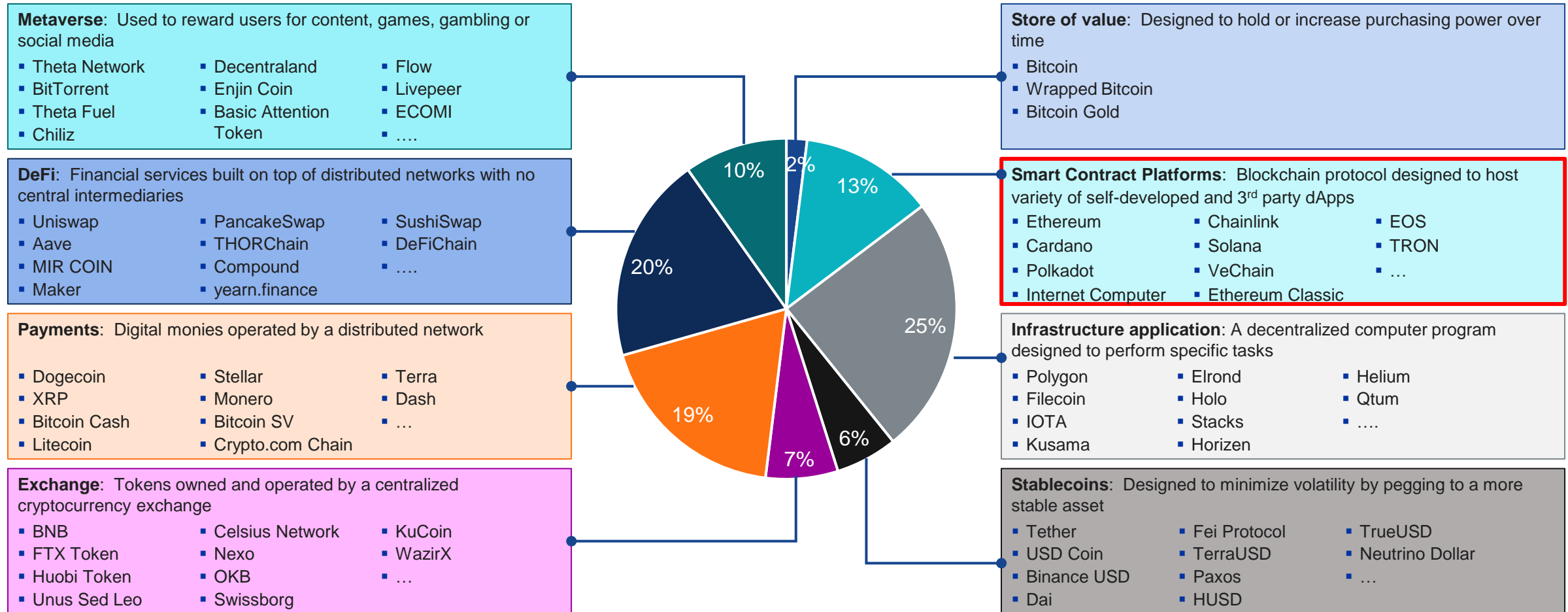
#Digital assets



We identify 8 categories of digital assets

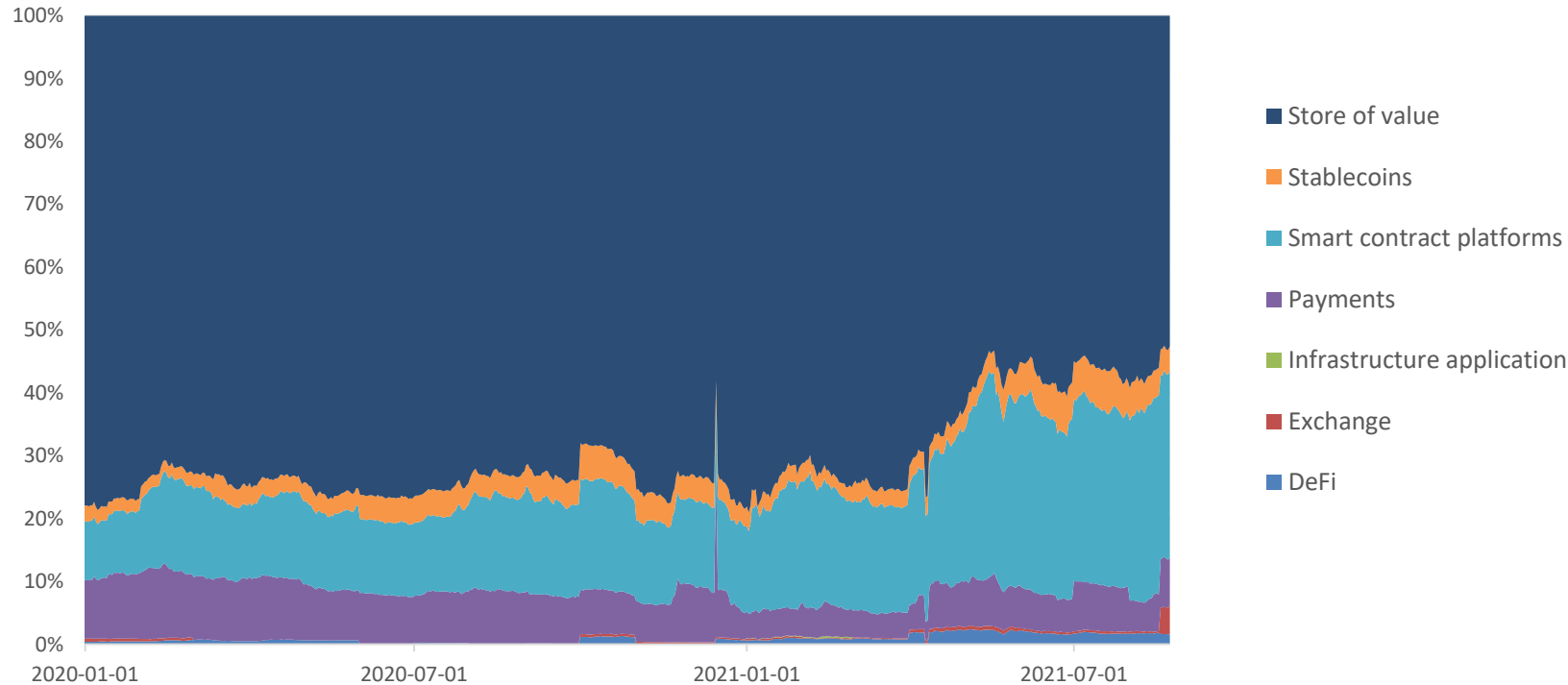
Top-200 digital assets

Focus for the rest of the presentation



Smart Contract Platforms have gained market share

Market Share by Category



Past performance is not a reliable indicator of future performance

Source: Cryptocompare, VanEck data as of 23/08/2021

- Several blockchains have emerged as platforms for a wider ecosystem of distributed applications (dApps)
- These “Smart Contract Platforms” capture the largest available markets within crypto currencies
- Like other application gateways such as Google Play and the Apple Store, smart contract platforms have the potential to enable wide variety of value creation, at lower costs than centralized competitors

Intro to Smart Contracts

“Bitcoin’s scarcity value and underlying hard-money ethos cemented the appeal of cryptocurrencies, but the true technological innovation will always be the smart contract, which **lets anyone with an internet connection program instructions into their money cheaply.**”

– Matthew Sigel, July 2021






Intro to Smart Contracts

Smart contracts are an open-source blockchain software protocol that enables instant, permissionless 365/24/7 global value transfer. They act as global, censorship-resistant computing systems that can execute arbitrary code and power decentralized applications.

- Smart contracts threaten Wall Street & Web 2.0 profits
 - The largest smart contract platform, Ethereum, is on pace to generate \$18b in revenues this year on gross transaction value of \$4 trillion, which would make it the 5th largest software company in the world after Microsoft, Oracle, SAP and Salesforce.com (1)
 - Collectively, “smart contract leaders” comprise \$612b in market cap; based on current market-based interest rates, they may pay out \$11b worth of fee revenue and block rewards (ex-Ethereum) over the next year to token holders and network validators (2)
- In our view, a bull case scenario could see total smart contract leaders’ market cap exceed \$4 trillion, assuming these platforms capture 5% of global lending, payments and capital markets revenues (\$3 trillion) & 15% of global cloud computing revenues (\$400b) (3)
- In the bear case, regulatory constraints and execution mishaps might hinder adoption, while smart contract protocols’ pro-cyclical monetary policies could exacerbate volatility, putting a cap on valuations. (4)
- We lean towards the bull case, and see diversified exposure to this growing sector as an attractive linchpin of growth-oriented portfolios.

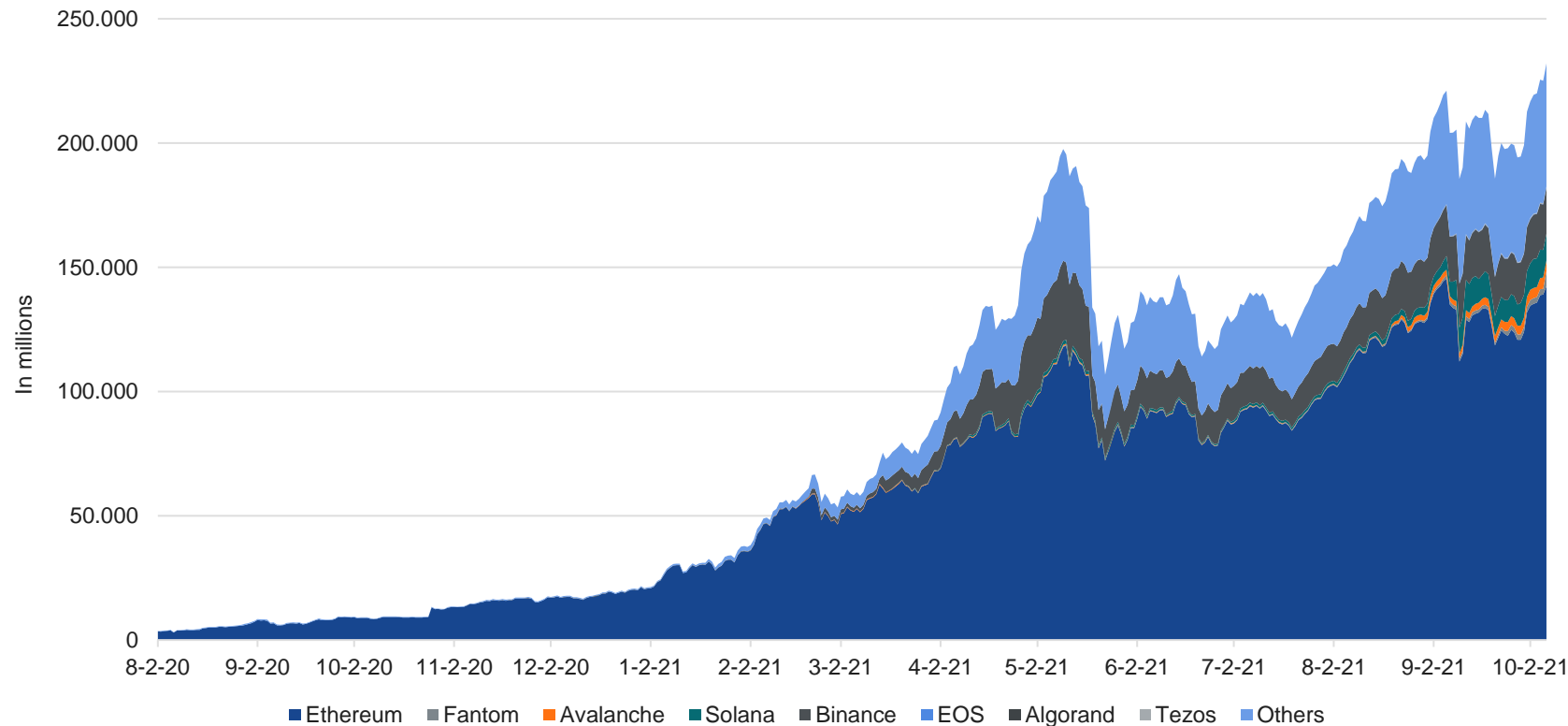
Sources: 1. Bloomberg, Coinmetrics, VanEck research. 2 Messari, VanEck research. 3 Messari, [Gartner](#), VanEck [research](#); This analysis further assumes that the market values smart contract “revenues” at 20x trailing sales; for context, the top 91 global internet companies traded at 16x trailing sales as of September 1st 2021.4 Smart contract platforms tend to “burn” a portion of their transaction fees to maintain a deflationary counter-balance to new issuance; when demand for network capacity is low and crypto prices are falling, this burning mechanism, akin to a share buyback, becomes less pronounced.

Smart Contract Platforms Create Unique Financial Ecosystems

 <p>Capital Asset</p>	<ul style="list-style-type: none">▪ Produces ongoing store of value; valued on net present value of expected returns▪ Owners have claim on the assets' future network fees
 <p>Consumable Asset</p>	<ul style="list-style-type: none">▪ You can consume it & transform it into another asset, but it does not yield an ongoing stream of value▪ For most digital assets the underlying currency is consumed via transaction fees any time value is transferred on the network
 <p>Store of Value</p>	<ul style="list-style-type: none">▪ Cannot be consumed nor can it generate income. Nevertheless, it has value▪ Most digital assets can be paired with other assets & "locked" (Used as collateral) on decentralized exchanges

Smart Contract Protocols Underpin Decentralized Finance

Total Locked in DeFi by Smart Contract Protocol

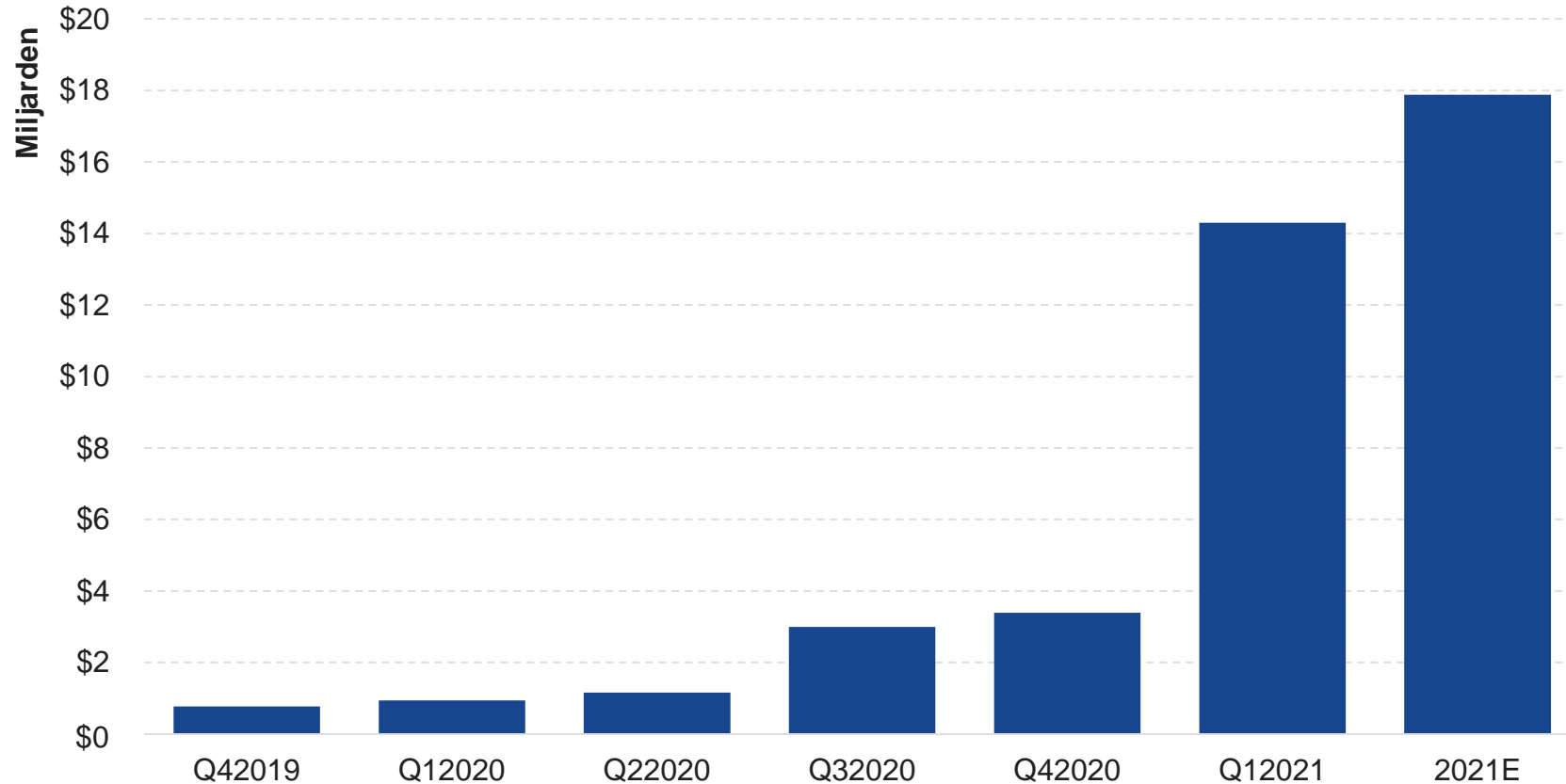


Smart Contract protocols on the rise:

- Smart contract protocols power Decentralized finance, NFTs and web 3.0 applications
- Ethereum was the early innovator, others are now catching up
- As total value locked in DeFi now exceeds \$200b, alternative blockchains have grown faster than Ethereum
- Smart Contract Leaders index aims to capture this growth

Ethereum's revenues will surpass \$15b this year

Ethereum revenues (annualized)



Past performance is not a reliable indicator of future performance

- Original “smart contract” built on easy-to-use “Solidity” programming language
- Most developer activity among all blockchains
- Largest number of decentralized applications
- Base layer for most DeFi (decentralized finance) trading activity
- Less energy intensive than proof-of-work digital assets such as Bitcoin

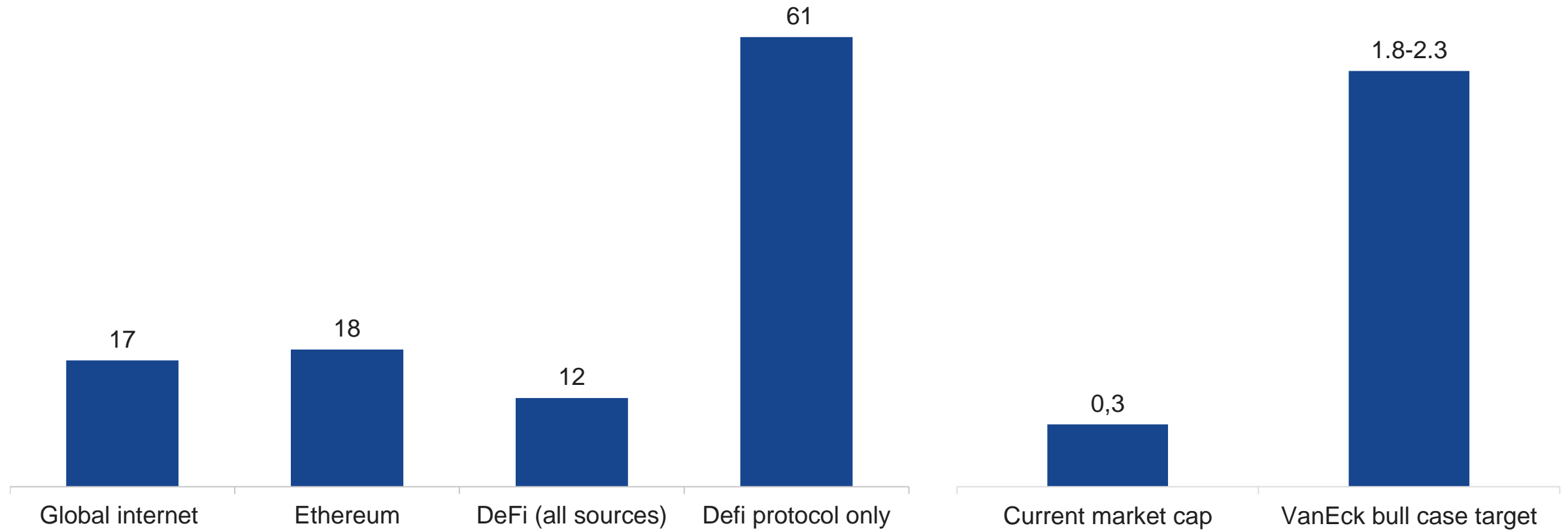
Ethereum's current valuation seems modest, by multiple criteria



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Price / 2021E sales ratio

Ethereum valuation, USD trillion



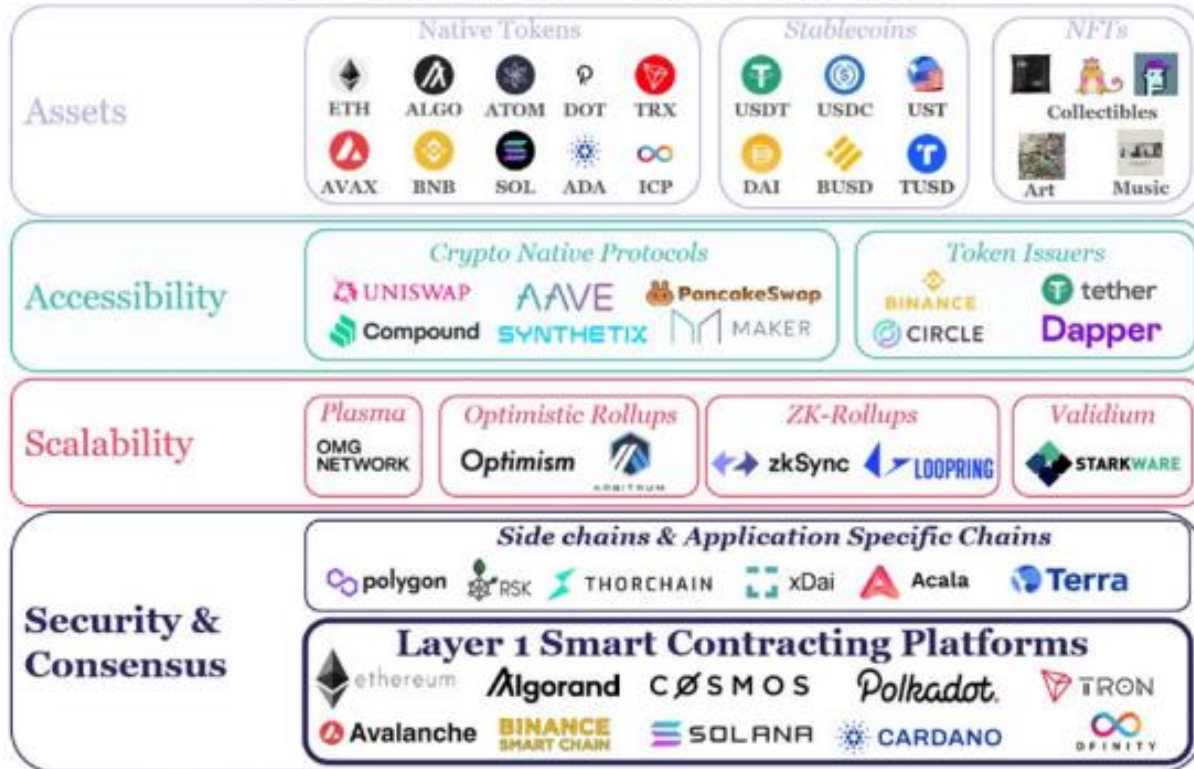
¹Assuming 5% of USD 3 trillion global banking and asset management revenues would be captured by smart contract platforms, with Ethereum capturing 2/3 of the value and assuming ETH market cap/revenue ratio remains steady at current 19x. Source: VanEck, Bloomberg. Data as of 31/07/2021



Comparing ETH to Other Smart Contracts

Smart Contracts Vary by Speed, Hardware Requirements, etc.

The Decentralized Economy Stack



Source: The Block Research

Validator Node Hardware Specs			
Platform	CPU Cores	RAM (GB)	Disk space (GB)
Algorand	2	4	100
Avalanche	2	4	200
BSC	8	16	1000
Cosmos	4	16	500
Ethereum 2.0	4	8	500
Polkadot	8	32	500
Solana	12	128	2000

Source: BlockDaemon, Platform Websites; Represents estimated values as of June 2021. Requirements are likely to change materially over time. Requirements do not include additional hardware required to run failover nodes.

Platform Performance Estimates					
Platform	TPS	Figure Source	Certainty Level	Block Time (sec)	Finality Time (sec)
Algorand	1,100	Mainnet Results	High	4.5	4.5
Binance Smart Chain	220	Mainnet Results	High	3	35
Ethereum	20	Mainnet Results	High	13	78
Solana	50,000	Testnet Results	Medium	0.4	2
Avalanche ⁽¹⁾	4,500	Testnet Results	Medium	-	2
Cosmos Hub	4,000	Testnet Results	Medium	7	7
Ethereum 2.0	100,000	Developer Estimate	Low	12	768
Polkadot	100,000	Developer Estimate	Low	6	12 - 60

Source: The Block Research, Platform Websites, Testnet Results; (1) Avalanche figures represent estimates for its DAG. Actual throughput and finality times could vary substantially depending on which chain transactions are executed on. Please see commentary below for a detailed explanation of the complexities behind these estimates.

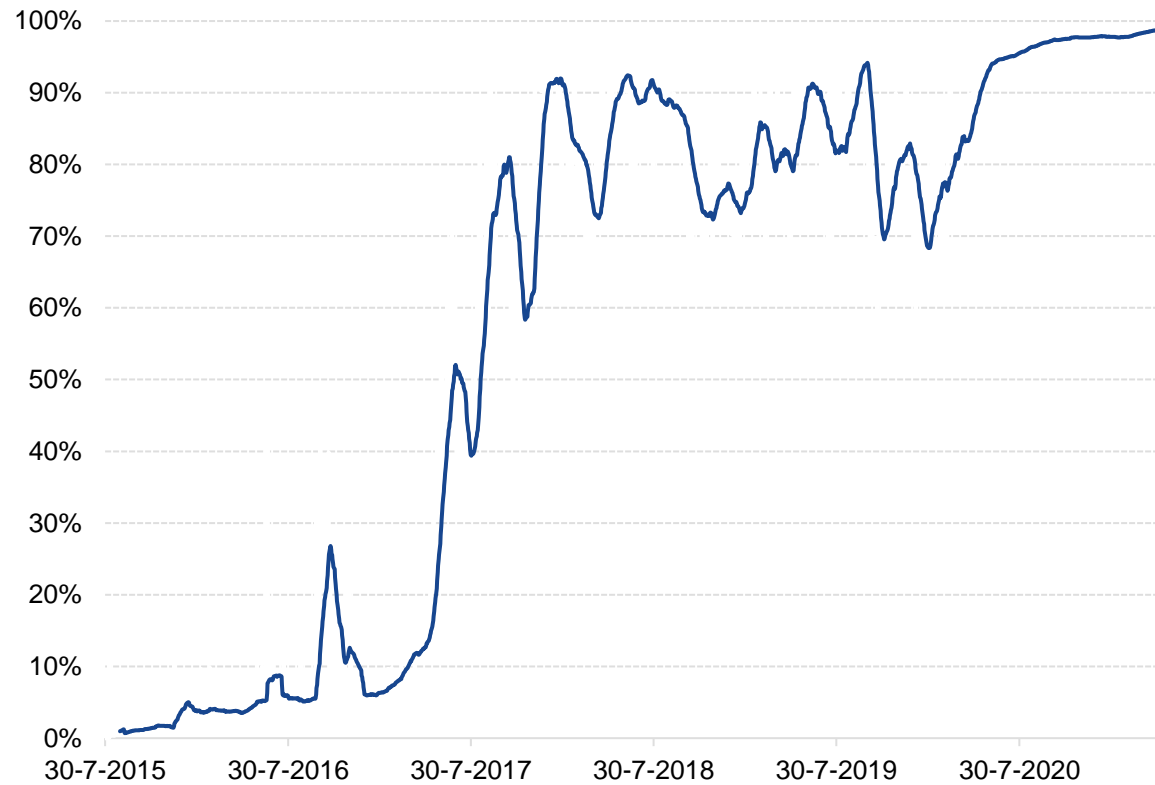
ETH 1.0 is too congested, opening opportunities for competitors



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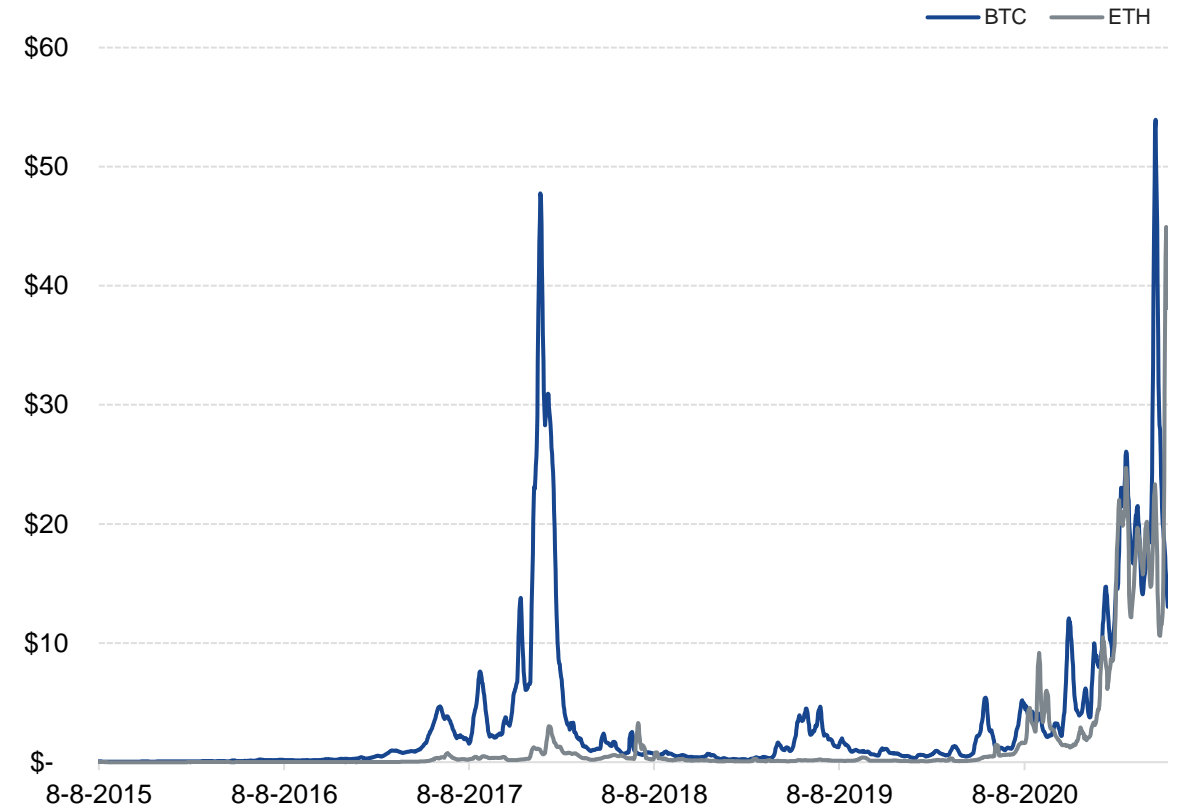
Ethereum average transaction fees surpassed Bitcoin's in May

Average Gas Used/Gas Limit (%) - Moving average 30days



Past performance is not a reliable indicator of future performance

Average Transaction Fee



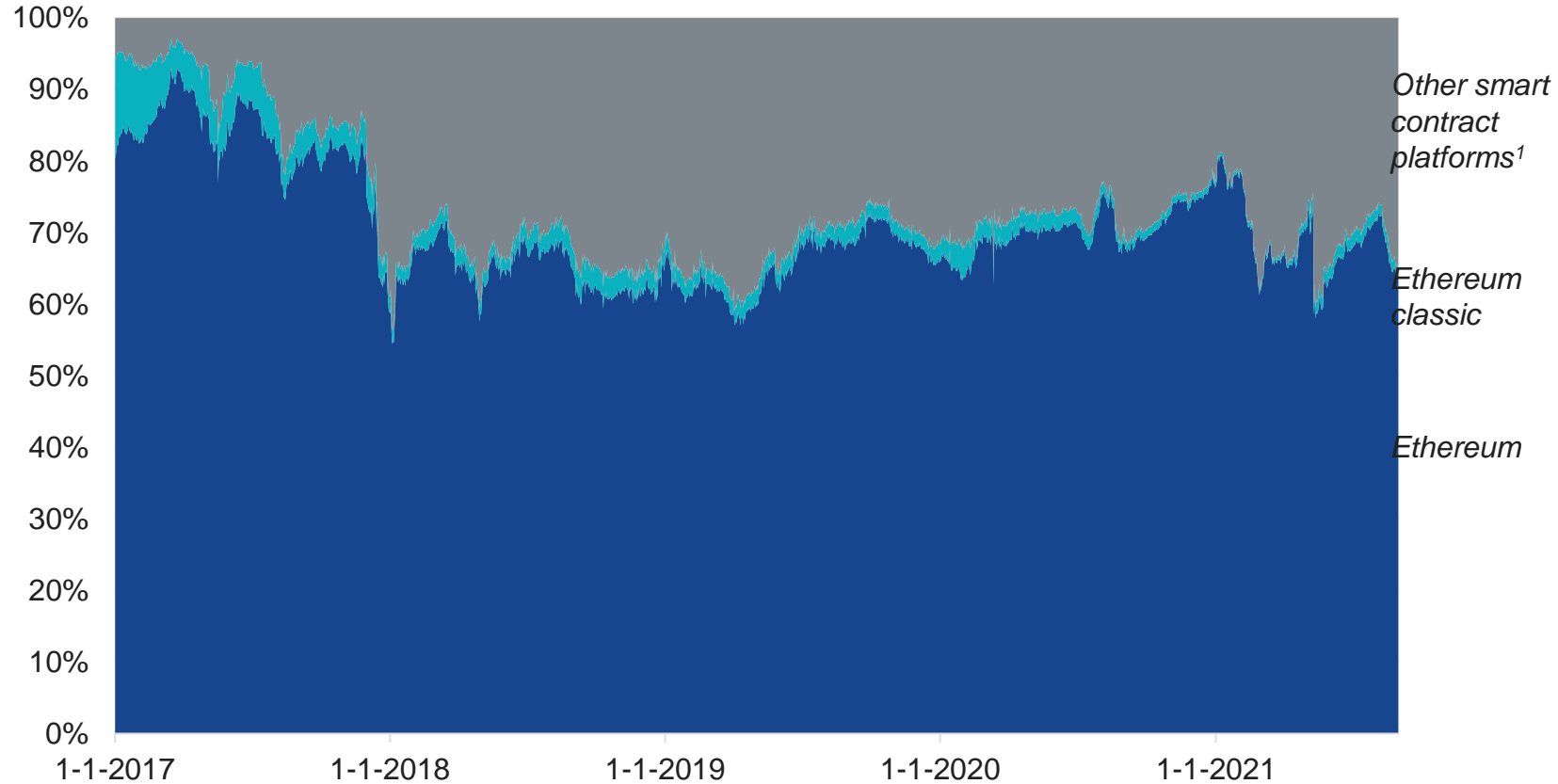
Past performance is not a reliable indicator of future performance

Source: Coinmetrics. Data as of 17/05/2021.

Gas is defined as the fee, or pricing value required to successfully conduct a transaction or execute a contract on the Ethereum blockchain.

Some newer Smart Contract Platforms may be technically superior to Ethereum

Smart Contract Platform Market Share



Past performance is not a reliable indicator of future performance

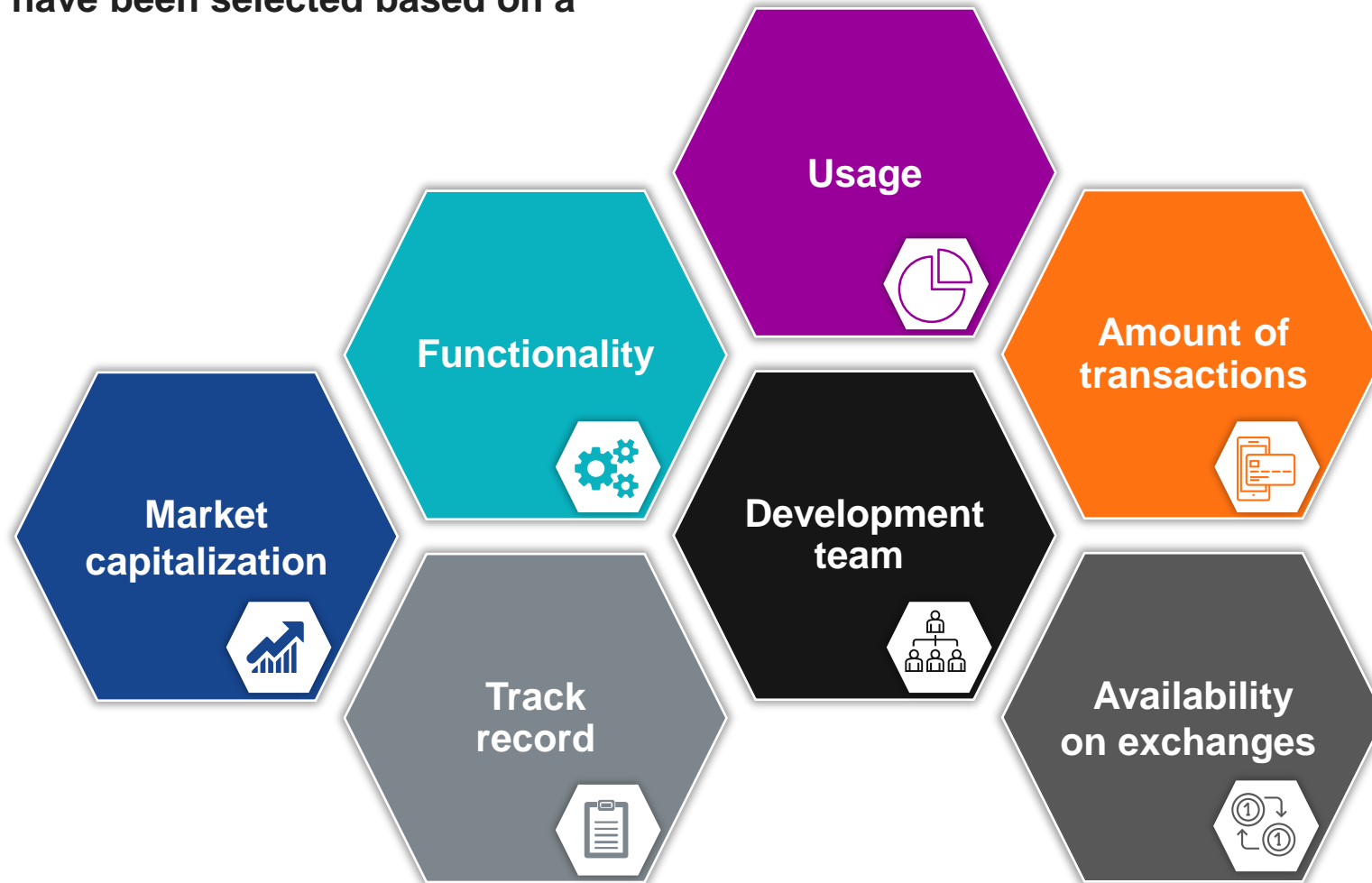
¹ Algorand, EOS, Solana, TRON, Cardano, Polkadot, Internet Computer, Tezos, NEO, Waves, NEM
Source: VanEck analysis, based on data from CoinMetrics and Messari. Data as of 31/08/2021

Blockchain vs. Web 2.0

- The original, decentralized web consolidated over decades to produce a handful of giant web 2.0 companies
- The blockchain ecosystem may develop differently thanks to its decentralized nature
- Several smart blockchain platforms are gaining significant developer traction
- Within digital assets, investors may consider exposure to multiple smart contract platforms

VanEck has selected three Smart Contract Platforms to wrap as ETNs: Polkadot, Solana and TRON¹

These digital assets have been selected based on a number of criteria



¹ The ETNs provide exposure to the underlying token of each of the Platforms – TRX, SOL and DOT

High level overview

	Bitcoin	Ethereum	Polkadot	Solana	TRON
Nickname	“Digital gold”	“World computer”	“Ecosystem of blockchains”	“Speedy Solana”	“Asian innovator”
Market cap	\$840B	\$378B	\$34B	\$47B	\$12B
# of active nodes	~83,000	3436 ¹	297	1074	1332
% coins in circulation	89%	NA	NA	56%	~70%
Block time	10 minutes	15 seconds	2 seconds	0.43 seconds	3 seconds

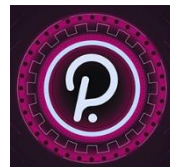
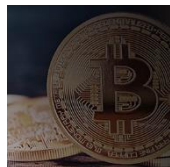
¹ In top-10 countries

Source: TRON, TRON Ecosystem Introduction, Kraken, Coinmarketcap, Solana, Polkadot, Coindesk, Ethereum foundation. Market cap and active nodes data as of September 13, 2021. Rest of the data July 2021
 DPOS: Nodes are selected to act as validator nodes for a set time period based off of the number of votes they receive from other nodes. For Tron, the nodes with the top 27 votes are selected to be the Super Representative nodes that process and verify new blocks. In order to vote for a Super Representative node, one must stake/freeze their TRX. Note: Our ETNs provide exposure to the underlying tokens of all digital assets: BTC, ETH, TRX, SOL and DOT.

Strategic Investment Allocation to Digital Assets at VanEck



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Product Name	VanEck Vectors Bitcoin ETN	VanEck Vectors Ethereum ETN	VanEck Vectors Polkadot ETN	VanEck Vectors Solana ETN	VanEck Vectors TRON ETN	VanEck Vectors Digital Assets Equity UCITS ETF
Product Ticker	VBTC	VETH	VDOT	VSOL	VTRX	DAPP
Custodian	Bank Frick & Co. AG	Bank Frick & Co. AG	Bank Frick & Co. AG	Bank Frick & Co. AG	Bank Frick & Co. AG	State Street Custodial Services (Ireland) Limited
Domicile	Liechtenstein	Liechtenstein	Liechtenstein	Liechtenstein	Liechtenstein	Ireland
Index Provider	MV Index Solutions GmbH	MV Index Solutions GmbH	MV Index Solutions GmbH	MV Index Solutions GmbH	MV Index Solutions GmbH	MV Index Solutions GmbH
Rebalance Frequently	None	None	None	None	None	Quarterly
Inception Date	19-Nov-20	26-Mar-21	13-Sep-21	13-Sep-21	13-Sep-21	30-Apr-21
Net Assets in \$ Million	\$ 323.00	\$ 149.30	\$ 5.70	\$ 60.20	\$ 87.80	\$ 35.30
Product Structure	Physically backed	Physically backed	Physically backed	Physically backed	Physically backed	Physically backed
Total Expense Ratio	1.00%	1.00%	1.50%	1.50%	1.50%	0.65%

Exposure to Crypto:

Bitcoin (BTC): **100.0%**

Crypto Segment:

Store of Value

Exposure to Crypto:

Ethereum (ETH): **100.0%**

Crypto Segment:

Smart Contract Platform

Exposure to Crypto:

Polkadot (DOT): **100.0%**

Crypto Segment:

Smart Contract Platform

Exposure to Crypto:

Solana (SOL): **100.0%**

Crypto Segment:

Smart Contract Platform

Exposure to Crypto:

Tron (TRX): **100.0%**

Crypto Segment:

Smart Contract Platform

Exposure to Equity in DAPP¹

Holding and Trading: **50.0%**

Miners: **45.4%**

Banking: **28.2%**

Exchanges: **26.9%**

Software and Services: **26.7%**

Hardware: **22.9%**

Payment Gateways: **18.5%**

¹Source: MVIS, VanEck as of 30.04.21. Weights reflect the percentage the MVIS Global Digital Assets Equity Index with exposure to a specific business line. Business lines are defined and evaluated by the index provider. Figure may not add up to 100% because some companies are involved in multiple business lines within the digital assets ecosystem. See important disclosures and index descriptions at end.

Source: TRON, TRON Ecosystem Introduction, Kraken, Coinmarketcap, Solana, Polkadot, Coindesk, Ethereum foundation. Market cap and active nodes data as of September 13, 2021. Rest of the data July 2021
 DPOS: Nodes are selected to act as validator nodes for a set time period based off of the number of votes they receive from other nodes. For Tron, the nodes with the top 27 votes are selected to be the Super Representative nodes that process and verify new blocks. In order to vote for a Super Representative node, one must stake/freeze their TRX. Note: Our ETNs provide exposure to the underlying tokens of all digital assets: BTC, ETH, TRX, SOL and DOT.

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VanEck Crypto ETN's

VanEck Vectors ETN's



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The VanEck Vectors ETN's are a convenient way to get Digital Asset exposure

The VanEck Vectors ETN's are fully-collateralized exchange traded notes listed on regulated segment exchanges, such as Euronext Amsterdam, XETRA Deutsche Boerse and SIX Swiss Exchange.

- **Securitization on a regulated exchange:** The VanEck Vectors ETN's trade like a stock or an ETP on regulated exchanges (*but may generally not be redeemed versus the Issuer*)
- **Safety:** Every Euro invested is used to buy crypto. To protect the crypto, VanEck is using a regulated custodian (Bank Frick & Co. AG) with limited crypto insurance to store the asset in cold storage (*but there is no Issuer guarantee*)
- **100% physically backed by crypto:** Every Euro invested into the VanEck Vectors ETN's will be used to buy crypto. The product is fully collateralized and each note represents a certain amount of ether collateral
- **Eligibility:** The VanEck Vectors ETN's trades on regulated exchanges. Unlike crypto, it can be traded and kept in custody by the traditional members of the financial supply chain
- **Total Return:** The performance of the ETN is directly linked to the price of the underlying crypto. The product replicates the price and yield performance of the relevant MVIS CryptoCompare VWAP Close Index

Safety with Regulated Custodian

Bank Frick & Co. AG, a fully licensed credit institution, is a regulated custodian under the “Law on Tokens and Trusted Technology Service Providers” (TTTL, or “Blockchain Act”) from 1 January 2020 and a holder of a “TT Token Depository” license..

Multiple layers of protection

- Bank Frick & Co. AG: Regulated custodian under Liechtenstein’s Blockchain Act
- State-of-the-art digital asset custody technology
- Cold Storage
- Limited Insurance of digital asset(s)

Risks to consider:

Custodian might not be able to protect the digital assets against sophisticated hacking attacks; insurance coverage only up to a limited amount.

Securitization and Central Clearing

The VanEck Vectors Ethereum ETN is easy to trade like any other regular and liquid financial asset

Direct

- Technical expertise and understanding needed
- Crypto exchanges that may or may not be regulated
- Risk of loss of private keys
- Risk of theft through unauthorized access by third party

Indirect Through VanEck Vectors Ethereum ETN

- Can be bought/sold like a stock or an ETP
- Trades on a regulated exchange (Deutsche Börse Xetra) with central clearing reducing counterparty risk in settlement of transactions
- Use of regulated digital assets custodian
- No need to store digital assets on a wallet

MVIS CryptoCompare Ethereum VWAP Close Index (MVETHV)

Key Features

- Tracks the second biggest cryptocurrency, Ethereum.
- Measures the performance of a digital asset portfolio which invests solely in Ethereum, with a closing value based on a 1h VWAP price.

Index Calculation

- Daily real time calculation between 00:00 and 24:00 CET and dissemination to vendors every 15 seconds.
- Closing value is calculated at 16:00 CET using the 1h volume weighted average price (VWAP) for Ethereum.
- Closing value based on VWAP makes Ethereum price harder to manipulate, as volume on all selected exchanges is taken into account (CCCAGG).
- CryptoCompare takes into account prices from multiple selected exchanges to calculate the price for Ethereum.
- Exchanges have to meet an extensive list of criteria before their Ethereum prices are taken into account.

Index Provider:

- MV Index Solutions.

Total Return: Offers Exposure to Complete ETH Performance

Major hard forks are included in the price and yield performance of the MVIS CryptoCompare Ethereum VWAP Close Index.



Notable forks in the index

- **The DAO:** Forked at block 191,999, 20 July 2017, for each Ethereum (ETH), an owner got 1 Ethereum Classic (ETC) – controversial hard fork of ETH as a consequence of the hack of “The DAO”

Digital Asset Custody Overview

There are three critical components of successful digital asset safekeeping

Cold Storage	Air-gapped cold storage wallets are devices that contain private keys and are not connected to the Internet or any other computer network. This process protects from unauthorized access, cyber hacks, and other system vulnerabilities.
Multi-Signature Transactions	Bitcoin transactions must be digitally signed using more than one private key. Signatures must come from a quorum of vetted individuals. Multi-signatures safeguard against key person risk and dependency on trusting individuals at custody providers
Insurance	Policies should cover loss of bitcoin by theft, destruction, bitcoin in transit, computer fraud (i.e., hacking attack), and other losses of private keys. Proceeds should go to the benefit of the asset owner, not the custodian, where proceeds may be shared with other clients of the custodian. The goal should be to maintain insurance coverage at a one-to-one ratio with bitcoin holdings.

Current Custody Solutions

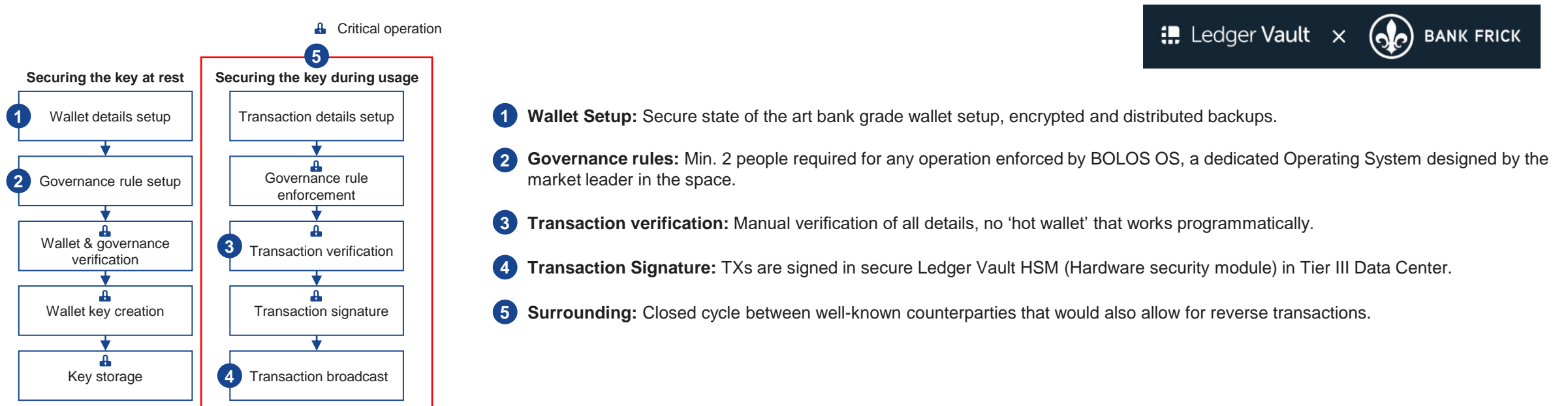
- **On trading platform (Online wallet)** – Risk of targeted hacks but some exchanges can and have reimbursed losses
- **Self Custody** – High risk operational business processes and controls
- **3rd party Custody provider** – High counterparty risk, Potential conflicts of interest, front running, lack of transparency
 - Brand names such as Bank Frick & Co. AG have more recently started offering 3rd party custody space
 - ICE venture Coinbase, Gemini and Bakkt are also noteworthy providers

Cold Storage & Ledger Vault

“A type of crypto asset custody that involves always keeping the private keys (See “Private key”) offline for safety against hacking. This type of custody involves manual confirmation before signing a transaction to ensure the amount and the receiving address are correct. Hardware wallets are used for cold storage.”

Bank Frick Blockchain Glossary

- Bank Frick uses Ledger Vault to allow secure and easy handling of digital assets while keeping client assets safe
- Includes: Segregated user roles (Administrators, operators, shared owners), personal security devices (PSD), Ledger Vault insurance, multi-authorization scheme („multi-sig“), separated approval groups
 - Ledger Vault is a digital platform for crypto-custodian businesses
 - Key features of the transaction workflow and segregation of duties are tailor made rules defined by the client



KYC & AML

High AML standards applied

What are „tainted“ coins?

- Tainted coins are not „clean“ – Only freshly mined coins are considered „clean“
- More generally referred to as UTXOs that were used in nefarious activities

How do bitcoins reach the Issuer wallet(s)?

- Only Authorised Participants can create and redeem with the Issuer
- **In-kind creations:** Bitcoins are sourced from major crypto exchanges (Kraken, Coinbase, Gemini, Bitstamp, ...)
- **Cash creations:** Issuer buys bitcoins on major crypto exchanges vs. USD
- Custodian is using on-chain forensics companies to monitor UTXO history
- Issuer has the right to replace underlying if AML concerns materialize

The logo for Elliptic, featuring the word "ELLIPTIC" in a bold, black, 3D-style font with white highlights and shadows, set against a light gray background.

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VanEck Crypto Equity Infrastructure

Invest in the Digital Transformation

VanEck Vectors Digital Assets Equity UCITS ETF (DAPP)

Provides exposure to companies involved in the digital transformation of the global economy. “DAPP” stands for “decentralized applications;” some companies are centralized solutions that rely on a decentralized network.

- Companies at the forefront of the digital assets transformation
- Diversified exposure to digital asset exchanges, miners, and other infrastructure companies
- Access to companies that have the potential of getting 50% of revenue from digital assets



Why Invest? Digital Assets Are Maturing.

- Bitcoin has grown, with tens of millions of owners¹, used by mainstream payment applications², and held by large cap companies³
- Interest can be earned on cryptocurrency and other digital assets⁴
- Transactions on crypto exchanges are instantaneous and trading is 24/7; we believe this framework may be better than the traditional stock exchange model
- More items, like collectibles and music, are offered on this ecosystem
- The software and data infrastructure is developing for a new “Crypto Wall Street” – Jan van Eck, CEO



¹Source: Statista. ²Source: Square, Paypal. ³Source: Tesla, Square. ⁴Source: Blockchain.com. See important disclosures and index descriptions at end.

What is the Digital Transformation?

Digital Assets



Cryptocurrency

A digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralized authority.

Platforms

Consists of many services, representing a unique collection of software or hardware services of a company used to deliver its digital strategy.

Decentralized Applications

Computer programs or applications that exist and run on a blockchain, or peer-to-peer network of computers.



Non-Fungible Tokens (NFTs)

A digital file whose unique identity and ownership are verified on a blockchain.

Rise of the Digital Asset Economy

- A digital asset is an asset issued and transferred using distributed ledger or blockchain technology.

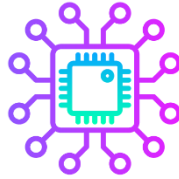
Exposure to Digital Transformation Companies

Digital transformation companies engage in a wide variety of business lines within the broader ecosystem.



Payment Gateways

Companies that process credit card and digital assets payments for websites and commerce platforms as well as traditional brick and mortar stores.



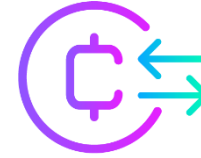
Hardware

Companies that create components which are used to mine or store digital assets, such as semiconductor chips.



Crypto Miners

Companies involved in processing transactions among users on public ledgers.



Exchanges

Companies which provide a platform to facilitate the trading of digital assets similar to traditional equity stock exchanges.



Crypto Holding and Trading

Companies which hold significant amounts of digital assets on their corporate balance sheet, or are otherwise involved in the trading of digital assets for profit.



Software and Value Added Services

Companies that create digital asset software or otherwise facilitate digital asset transactions, payments and the operation of digital asset applications.



Banking & Asset Management

Companies that provide a link between traditional financial services and the emerging digital asset economy, often in the form of payment and custody solutions.

Exposure to business lines in DAPP¹

- Holding and Trading: **50.0%**
- Miners: **45.4%**
- Banking: **28.2%**
- Exchanges: **26.9%**
- Software and Services: **26.7%**
- Hardware: **22.9%**
- Payment Gateways: **18.5%**

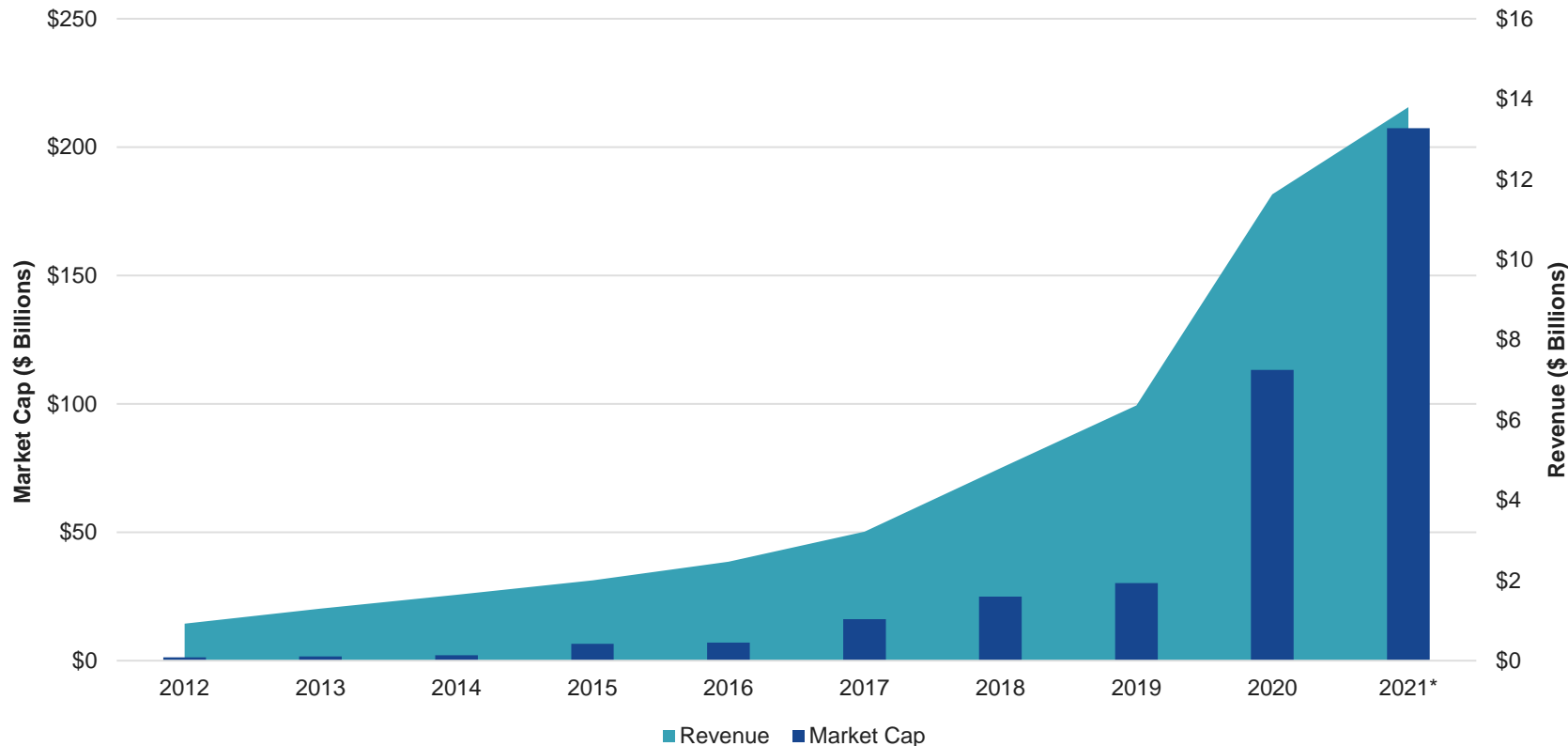
¹Source: MVIS, VanEck as of 30.04.21. Weights reflect the percentage the MVIS Global Digital Assets Equity Index with exposure to a specific business line. Business lines are defined and evaluated by the index provider. Figure may not add up to 100% because some companies are involved in multiple business lines within the digital assets ecosystem. See important disclosures and index descriptions at end.

Digital Transformation – Structural Growth Opportunity



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Revenue and Market Cap of Publicly-Traded Digital Transformation Companies (2012 – 2021)



Rise of the Digital Asset Economy

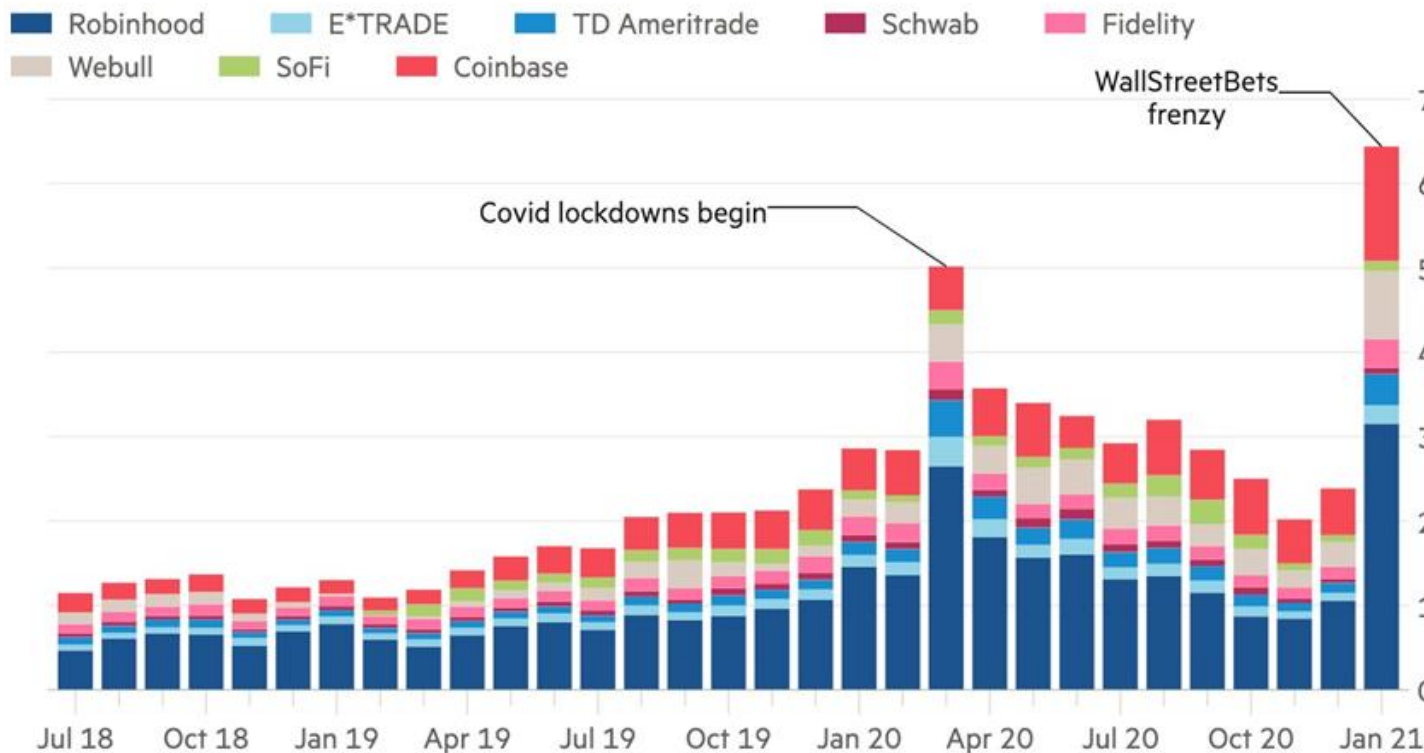
- Digital assets usage and implementation – including cryptocurrency and decentralized applications – are projected to grow as global adoption continues.
- Revenues, number of users, and valuations of publicly-listed digital asset companies have grown significantly in recent years.

Source: VanEck, MVIS as of 26.04.2021. Revenues and market cap reflect pure-play digital asset companies as defined by MVIS and included in the composition of the MVIS Global Digital Assets Equity Index on 26.04.2021. The Index was not live prior to 08.03.2021.

*For 2021, market cap valuations represented as of 21.04.2021. For 2021 revenues, VanEck applied a 19% growth rate to 2020 revenues to calculate a forward projection. 19% represents half of the annualized growth rate of revenues of pure-play companies from 2012-2020. **Pure-play digital asset company:** as determined by the index provider, companies which (i) generate at least 50% of its revenues from digital assets projects; (ii) generate at least 50% of its revenues from projects that, when developed, have the potential to generate at least 50% of their revenues from the digital assets industry; and/or (iii) have at least 50% of its assets invested in direct digital asset holdings or digital asset projects. See important disclosures and index descriptions at end.

Retail Investors Participating in Digital Transformation

Number of Retail Brokerage Application Downloads per Month, in Millions¹



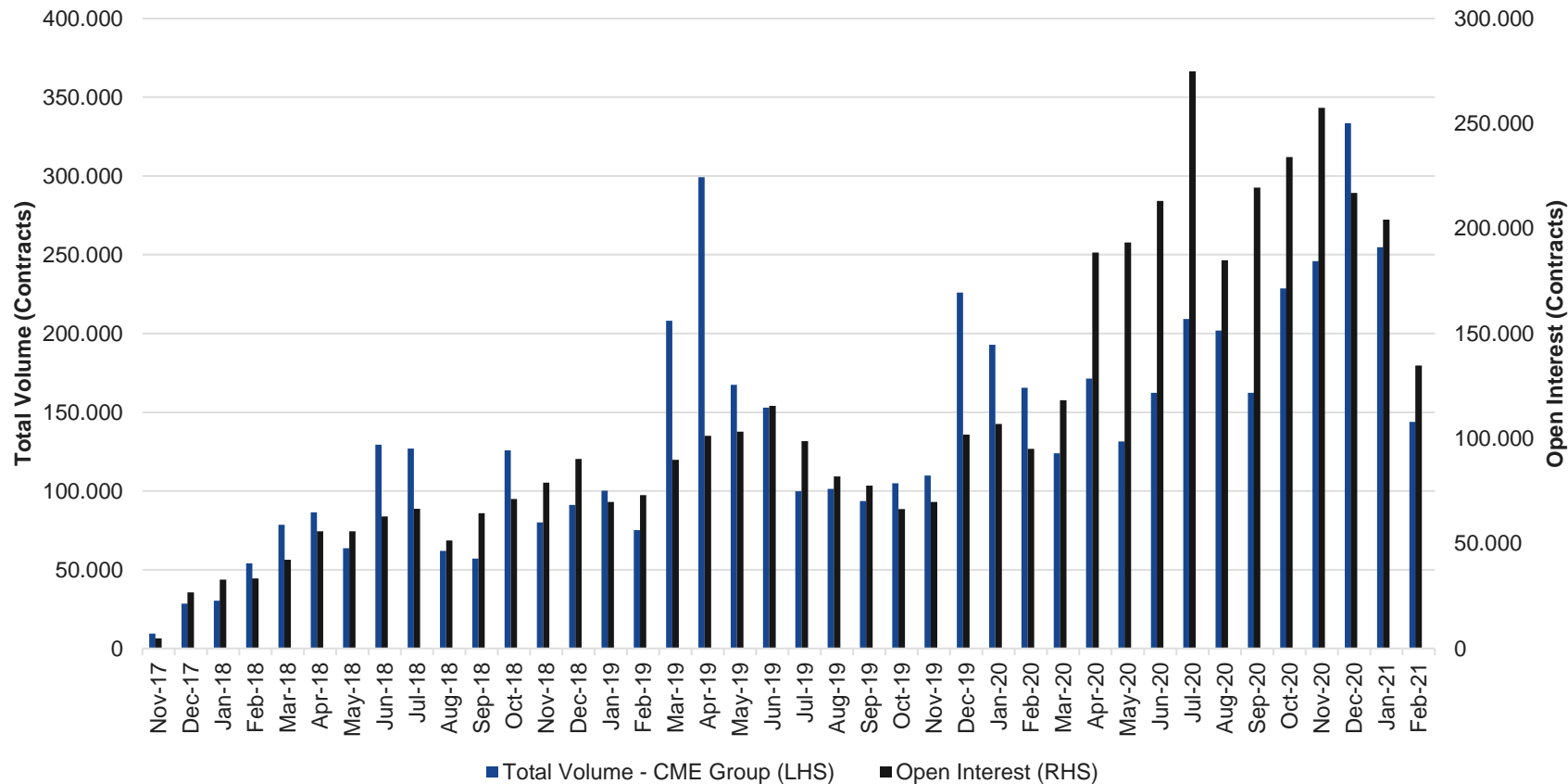
New Investors Leads to New Themes

- Rise of the retail trader has led to a growth in retail trading platforms²
- Generational wealth transfer from Baby Boomers to Generation X and Millennials underway³
- New investing themes, like digital assets, esports and ESG, have proliferated in recent years⁴

¹Source: Financial Times; JPM Securities as of January 2021. ²Source: CNBC. ³Source: Forbes. ⁴Source: VanEck. See important disclosures and index descriptions at end.

Institutional Support Reflects Digital Transformation

CME Total Volume and Open Interest¹ (November 2017 – February 2021)



Institutions are investing

- CME Bitcoin Futures have shown consistent, prolonged growth in volume over time
- CME Bitcoin Futures are used by institutions (not individuals) to gain access to bitcoin as an investable asset class
- Non-traditional finance companies like Tesla and MicroStrategy are investing their treasury reserves into digital assets²

¹Source: CME Group. ²Source: Tesla, MicroStrategy. See important disclosures and index descriptions at end. This is not an offer to buy or sell, or recommendation to buy or sell any of the securities mentioned herein. Futures carry additional risks and are not suitable for all investors. **The VanEck Vectors Digital Transformation ETF will not invest in digital assets (including cryptocurrencies) (i) directly or (ii) indirectly through the use of digital asset derivatives.**

MVIS[®] Global Digital Assets Equity Index



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- **To be initially eligible for index inclusion**

- Companies must i) generate at least 50% of its revenues from digital assets projects; (ii) generate at least 50% of its revenues from projects that, when developed, have the potential to generate at least 50% of their revenues from digital assets or digital asset projects; and/or (iii) have at least 50% of its assets invested in direct digital asset holdings or digital asset projects.
- May include semiconductor companies and online money payment companies to meet target component number
- 8% weighting cap on individual securities ensures that no single company dominates the index
- Fast-track inclusion process designed to add eligible names to the index on an accelerated timeline
- Size and liquidity minimums to facilitate primary market trading activity

- **What companies or assets don't meet inclusion requirements?**

- Cryptocurrencies or derivatives designed to provide exposure to cryptocurrencies, including initial coin offerings (ICOs)
- Tech conglomerates, financial services, and other companies with less than 50% of revenues from digital assets

Included in Index	Reason for Inclusion	Excluded from Index	Reason for Exclusion
Marathon Digital Holdings	Digital asset patents and tech	Bitcoin / Ethereum	Cryptocurrency
Canaan	Bitcoin mining manufacturer	Grayscale Bitcoin Trust	Cryptocurrency Vehicle
Square	Pure-play financial services	Amazon	Tech retail (revenue test)
Riot Blockchain	Digital currency miner	Alphabet	Tech conglomerate (revenue test)
Silvergate Capital	Pure-play financial services	Microsoft	Tech conglomerate (revenue test)

Source: MVIS, VanEck as of 31.03.2021. See important disclosures and index descriptions at end. **The VanEck Vectors Digital Assets Equity UCITS ETF will not invest in digital assets (including cryptocurrencies) (i) directly or (ii) indirectly through the use of digital asset derivatives.**

Exposure to Digital Transformation Companies

INFORMATION TECHNOLOGY							
Name	Crypto Miners	Payment Gateways	Software and Value Added Services	Banking/Asset Management	Hardware	Crypto Holding/Trading	Exchanges
Square		❖				❖	
Marathon Digital	❖		❖				
Riot Blockchain	❖						
Canaan	❖				❖		
MicroStrategy						❖	
Voyager Digital				❖		❖	❖
Hive Blockchain Technologies	❖						
Northern Data	❖		❖		❖	❖	
Argo Blockchain	❖					❖	
Hut 8 Mining	❖		❖			❖	
Ebang International					❖		
Bitfarms	❖						
Dmg Blockchain Solutions	❖		❖		❖		
Huobi Technology			❖	❖	❖	❖	❖
Taiwan Semiconductor					❖		
Nvidia					❖		
Paypal		❖					

Source: MVIS, VanEck. Table reflects holdings of the MVIS Global Digital Asset Equity Index as of 30.04.2021. This is not an offer to buy or sell, or recommendation to buy or sell any of the securities mentioned herein. See important disclosures and index descriptions at end.

Exposure to Digital Transformation Companies

FINANCIALS							
Name	Crypto Miners	Payment Gateways	Software and Value Added Services	Banking/Asset Management	Hardware	Crypto Holding/Trading	Exchanges
Coinbase			❖	❖		❖	❖
Silvergate		❖	❖	❖			
Galaxy Digital	❖			❖		❖	❖
Bit Digital	❖						
Diginex				❖		❖	❖
Big Blockchain Intelligence			❖			❖	❖
Bitcoin Group						❖	❖

CONSUMER DISCRETIONARY							
Name	Crypto Miners	Payment Gateways	Software and Value Added Services	Banking/Asset Management	Hardware	Crypto Holding/Trading	Exchanges
Future Fintech			❖				

COMMUNICATION SERVICES							
Name	Crypto Miners	Payment Gateways	Software and Value Added Services	Banking/Asset Management	Hardware	Crypto Holding/Trading	Exchanges
BC Technology						❖	❖

Source: MVIS, VanEck. Table reflects holdings of the MVIS Global Digital Asset Equity Index as of 30.04.2021. This is not an offer to buy or sell, or recommendation to buy or sell any of the securities mentioned herein. See important disclosures and index descriptions at end.

Index Characteristics

MVIS® Global Digital Assets Equity Index (MVDAPPTR)

Index Details

Index Ticker	MVDAPPTR
# of Constituents	25
Price/Earnings Ratio	-15.4

Sector Exposure (%)

Information Technology	72.88
Financials	23.45
Consumer Discretionary	3.67

Top 10 Holdings

Name	Weight (%)
MARATHON DIGITAL HOLDINGS INC	9.9
COINBASE GLOBAL INC -CLASS A	9.3
SQUARE INC - A	7.8
MICROSTRATEGY INC-CL A	7.2
SILVERGATE CAPITAL CORP	6.6
RIOT BLOCKCHAIN INC	5.6
HUT 8 MINING CORP	5.2
HIVE BLOCKCHAIN TECHNOLOGIES	5.0
BITFARMS LTD/CANADA	4.2
ARGO BLOCKCHAIN PLC	4.1
Total	64.1

Country Exposure (%)

United States	52.98
Canada	18.82
Cayman Islands	17.66
United Kingdom	4.10
Germany	3.27
Jersey	1.38
Singapore	0.91
British Virgin Islands	0.86

Source: MVIS. Data as of 20.10.2021. You cannot invest directly in an index. See important disclosures and index descriptions at end. This is not an offer to buy or sell, or recommendation to buy or sell any of the securities mentioned herein.

Digital Transformation Investment Risks

Digital transformation companies present investors with a unique set of risks

Digital Asset Volatility Risk

- Volatility in digital assets may affect digital transformation companies, as their profitability and revenue metrics can be closely tied to the price of digital assets themselves

Fraud and cyber-attack

- Certain features of digital asset technologies, such as decentralization, open source protocol, and reliance on peer-to-peer connectivity, may increase the risk of fraud or cyber-attack by potentially reducing the likelihood of a coordinated response

Blockchain Risk

- Technology relating to digital assets, including blockchain, is new and developing, and the risks associated with digital assets may not fully emerge until the technology is widely used

Regulatory Risk

- Changes in laws and regulations could materially impact investor access and sentiment related to digital assets, which could in turn negatively affect digital transformation companies

Valuation Risk

- Digital transformation companies may become overvalued as digital adoption grows, leading to the possibility that digital transformation companies may undergo a drop in price or high levels of volatility

Early-Stage Company Risk

- New entrants into the digital transformation industry may fail to execute on their business strategies, or otherwise fail to compete against larger, more financially-sound companies that are already well-established

VanEck Vectors Digital Assets Equity UCITS ETF (DAPP)


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VanEck Vectors Digital Assets Equity UCITS ETF seeks to replicate as closely as possible, before fees and expenses, the price and yield performance of the **MVIS Global Digital Assets Equity Index**, which is intended to track overall performance of the digital assets segment. These companies may include those that operate digital asset exchanges, payment gateways, digital asset mining operations, software services, equipment and technology or services to the digital asset operations, digital asset infrastructure businesses, or companies facilitating commerce with the use of digital assets, among others. They may also include companies which own a material amount of digital assets, or otherwise generate revenues related to digital asset projects.

Key ETF Features

- Provides exposure to companies involved in Digital Assets.
- Tracks the MVIS Global Digital Assets Equity Index (MVDAPPTR)
 - Global Scope
 - Pure-play focus
- Registered for public distribution in AT, DE, DK, ES, FI, IE, IT, NL, NO, SE, FR & UK.

Fund Details

Inception Date	30 April 2021
Base Currency	USD
Investment Strategy	Industry
Product Structure	Physical (Full Replication)
Income Treatment	Reinvestment
Rebalance Frequency	Quarterly
TER	0.65%
Domicile	Ireland
AUM(30 September 2021)	\$23.1 M

Companies at the forefront of the digital assets transformation

Diversified exposure to digital asset exchanges, miners, and other infrastructure companies

Access to companies that have the potential of getting 50% of revenue from digital assets

Trading Information

Exchange	ISIN	Currency	Ticker	Bloomberg	SEDOL
London Stock Exchange	IE00BMDKNW35	USD	DAPP	DAPP LN	BMDX935
London Stock Exchange	IE00BMDKNW35	GBP	DAGB	DAGB LN	BMDX9V3
Deutsche Börse	IE00BMDKNW35	EUR	DAVV	DAVV GY	-
Borsa Italiana	IE00BMDKNW35	EUR	DAPP	DAVV IM	-
Six Swiss Exchange	IE00BMDKNW35	CHF	DAPP	DAPP SE	-

Source: VanEck. Data as of 30 September 2021. The Index is unmanaged and not securities in which investments can be made. You cannot invest in an Index. Past performance is not a guarantee of future results. Index performance is not illustrative of fund performance.

The Fund will not invest in digital assets (including cryptocurrencies) (i) directly or (ii) indirectly through the use of digital asset derivatives.

Digital assets content



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VanEck is committed to communicating with clients clearly about the opportunities and risks associated with bitcoin and other digital assets

Blog Series:

October 18th, 2021: [Putting Bitcoin futures in perspective](#)

October 17th, 2021: [What investors should know about Bitcoin Futures](#)

October 3rd, 2021: [Bitcoin is undervalued; yes, really!](#)

September 27th, 2021: [Smart Contracts Outperform amid overall crypto weakness](#)

September 3rd, 2021: [Ethereum Futures React to NFT “Jpeg Economy”](#)

August 10th, 2021: [Ethereum Competitors and the Race to Innovate](#)

July 13th, 2021: [Is Crypto Still Deflationary?](#)

July 7th, 2021: [Q&A: The Bull and Bear Case for Ethereum](#)

June 17th, 2021: [Tracking Sovereign Adoption of Bitcoin: A Potential Tipping Point?](#)

June 6th, 2021: [Dispatch from the Bitcoin Conference: Meet the Other Maximalists](#)

May 25th, 2021: [The DeFi Threat to Wall Street](#)

Podcast Series

June 29th, 2021: [No Jargon Bitcoin – Ep. 4 Bad Actors in Bitcoin with Jake Chervinsky](#)

April 20th, 2021: [No Jargon Bitcoin – Ep. 3 How to Trade Bitcoin with Ari Paul](#)

March 9th, 2021: [No Jargon Bitcoin – Ep. 2 Bitcoin’s Growing Popularity with Institutions](#)

February 5th, 2021: [No Jargon Bitcoin – Ep. 1 What is Bitcoin with Pierre Rochard](#)

Index Descriptions

Index returns assume reinvestment of all income and do not reflect any management fees or brokerage expenses associated with fund returns. Returns for actual fund investors may differ from what is shown because of differences in timing, the amount invested and fees and expenses. You cannot invest directly in an index.

MVIS Global Digital Assets Equity Index: intends to track the largest and most liquid companies in the digital assets segment.

MVIS CryptoCompare Bitcoin Index: intends to track the price of Bitcoin.

MVIS CryptoCompare Ethereum Index: intends to track the price of Ethereum.

NASDAQ 100 Index: intends to track 100 of the largest non-financial companies listed on the Nasdaq stock market.

S&P 500 Index: intends to track the performance of 500 large companies listed on stock exchanges in the United States

MSCI ACWI Index: seeks to track the investment results of an index composed of large and mid-capitalization developed and emerging market equities.

Bloomberg US Aggregate Bond Index: intends to track the total U.S. investment-grade bond market. This includes Treasuries, government-related and corporate securities, MBS, ABS and CMBS.

MVIS CryptoCompare Smart Contract Leaders Index (MVSCLE) 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.

Definitions

Digital Transformation Company: companies (i) that operate digital asset exchanges, operate payment gateways (i.e., a merchant service that authorizes direct payments processing for businesses), engage in and/or assist with the digital asset mining operations, provide software services, equipment and technology or services to digital asset operations, operate digital asset infrastructure businesses, or facilitate commerce with the use of digital assets (these items are collectively referred to herein as “digital asset projects”) and/or (ii) that own a material amount of digital assets or otherwise generate revenues related to digital asset projects.

Digital Asset: anything that exists in a digital format and comes with the right to use. Data that do not possess that right are not considered assets.

Decentralized Application: computer applications that run on a distributed computing system.

Blockchain: a decentralized, distributed, and oftentimes public, digital ledger consisting of records called blocks that is used to record transactions across many computers so that any involved block cannot be altered retroactively, without the alteration of all subsequent blocks.

Cryptocurrency: digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend. Many cryptocurrencies are decentralized networks based on blockchain technology—a distributed ledger enforced by a disparate network of computers.

Non-Fungible Token (NFT): A digital file whose unique identity and ownership are verified on a blockchain.

Internet of Things: the network of physical objects—“things” or objects—that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the Internet

Pure-play digital asset company: as determined by the index provider, companies which (i) generate at least 50% of its revenues from digital assets projects; (ii) generate at least 50% of its revenues from projects that, when developed, have the potential to generate at least 50% of their revenues from the digital assets industry; and/or (iii) have at least 50% of its assets invested in direct digital asset holdings or digital asset projects.

A smart contract is a self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code.

Definitions

Bitcoin is a decentralized digital currency, without a central bank or single administrator, that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries.

Ethereum is a decentralized, open-source blockchain with smart contract functionality. Ether is the native cryptocurrency of the platform. Amongst cryptocurrencies, Ether is second only to Bitcoin in market capitalization.

Cardano is a public blockchain platform. It is open-source and decentralized, with consensus achieved using proof of stake. It can facilitate peer-to-peer transactions with its internal cryptocurrency, Ada.

Solana is a public blockchain platform. It is open-source and decentralized, with consensus achieved using proof of stake and proof of history. Its internal cryptocurrency is SOL.

Polkadot is a sharded heterogeneous multi-chain architecture which enables external networks as well as customized layer one "parachains" to communicate, creating an interconnected internet of blockchains.

Algorand is a blockchain-based cryptocurrency platform that aims to be secure, scalable, and decentralized. The Algorand platform supports smart contract functionality, and its consensus algorithm is based on proof-of-stake principles and a Byzantine Agreement protocol.

The Internet Computer is the world's first blockchain that runs at web speed and serves content on the web, with unbounded capacity.

Cosmos is a network of many independent blockchains, called zones. The zones are powered by Tendermint BFT [8], which provides a high-performance, consistent, secure PBFT-like consensus engine, where strict fork-accountability guarantees hold over the behaviour of malicious actors. The Tendermint BFT consensus algorithm is well suited for scaling public proof-of-stake blockchains.

Tezos is a decentralized, open-source proof of stake blockchain network that can execute peer-to-peer transactions and serve as a platform for deploying smart contracts.

Fantom is a fast, high-throughput open-source smart contract platform for digital assets and dApps.

EOS is a blockchain-based platform that enables the development of business applications, or DApps. EOS supports secure access and authentication, permissioning, data hosting, usage management, and communication between the DApps and the Internet. EOS.IO is the system architecture.

Important Disclosures

The Fund will not invest in digital assets (including cryptocurrencies) (i) directly or (ii) indirectly through the use of digital asset derivatives. The Fund also will not invest in initial coin offerings. Therefore the Fund is not expected to track the price movement of any digital asset.

Investors in the Fund should be willing to accept a high degree of volatility in the price of the Fund's Shares and the possibility of significant losses. An investment in the Fund involves a substantial degree of risk. An investment in the Fund is not a deposit with a bank and is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Therefore, you should consider carefully the following risks before investing in the Fund, each of which could significantly and adversely affect the value of an investment in the Fund.

An investment in the Fund may be subject to risks which include, among others, risks related to investing in digital transformation companies, investing in equity securities, Canadian issuers, small- and medium-capitalization companies, information technology and financials sectors, foreign securities, market, operational, index tracking, authorized participant concentration, new fund, absence of prior active market, trading issues, passive management, fund shares trading, premium/discount and liquidity of fund shares, non-diversified and concentration risks which may make these investments volatile in price or difficult to trade. Small- and medium-capitalization companies may be subject to elevated risks.

The technology relating to digital assets, including blockchain, is new and developing and the risks associated with digital assets may not fully emerge until the technology is widely used. Digital asset technologies are used by companies to optimize their business practices, whether by using the technology within their business or operating business lines involved in the operation of the technology. The cryptographic keys necessary to transact a digital asset may be subject to theft, loss, or destruction, which could adversely affect a company's business or operations if it were dependent on the digital asset. There may be risks posed by the lack of regulation for digital assets and any future regulatory developments could affect the viability and expansion of the use of digital assets.

Investing involves substantial risk and high volatility, including possible loss of principal. An investor should consider the investment objective, risks, charges and expenses of the Funds carefully before investing. To obtain a prospectus and summary prospectus, which contain this and other information, call 800.826.2333 or visit vaneck.com. Please read the prospectus and summary prospectus carefully before investing.

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Investors should conduct extensive research into the legitimacy of each individual cryptocurrency, including its platform, before investing. The features, functions, characteristics, operation, use and other properties of the specific cryptocurrency may be complex, technical, or difficult to understand or evaluate. The cryptocurrency may be vulnerable to attacks on the security, integrity or operation, including attacks using computing power sufficient to overwhelm the normal operation of the cryptocurrency's blockchain or other underlying technology. Some cryptocurrency transactions will be deemed to be made when recorded on a public ledger, which is not necessarily the date or time that a transaction may have been initiated.

- Investors must have the financial ability, sophistication and willingness to bear the risks of an investment and a potential total loss of their entire investment in cryptocurrency.
- An investment in cryptocurrency is not suitable or desirable for all investors.
- Cryptocurrency has limited operating history or performance.
- Fees and expenses associated with a cryptocurrency investment may be substantial.

There may be risks posed by the lack of regulation for cryptocurrencies and any future regulatory developments could affect the viability and expansion of the use of cryptocurrencies. Investors should conduct extensive research before investing in cryptocurrencies.

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