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DIGITAL ASSETS

Ethereum: Bull & Bear Case

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What is Ethereum?

Intro to Ethereum

Ethereum is an open-source blockchain software protocol that enables instant, permissionless 365/24/7 global value transfer.

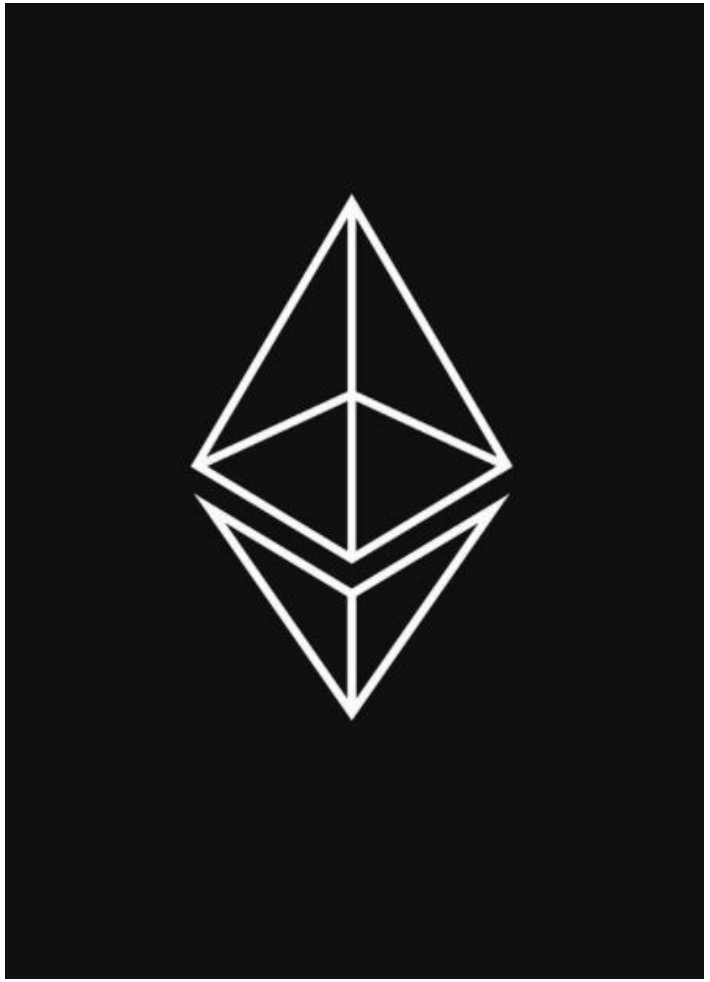
- Ethereum threatens Wall Street & Web 2.0 profits
  - The Ethereum protocol is on pace to generate $18b in revenues this year on gross transaction value of $4 trillion, which would make it the 5th largest software company in the world after Microsoft, Oracle, SAP and Salesforce.com
- In our view, a bull case scenario could see total ETH market cap exceed $2 trillion, but that requires successful execution on a crucial product upgrade scheduled for July
- In the bear case, ETH 2.0's massive capacity increase fails to attract latent demand, and the protocol's pro-cyclical monetary policy prints too much ETH
- We lean towards the bull case

Source: CoinMetrics

Ethereum = Internet + Banking?

What is Ethereum?

- The world's computer; a global, open-source platform for decentralized applications
- Internet money (write code that controls digital value)
- Ownership stake in code-based Ethereum economy ($330b market cap)



Source: CoinMetrics

Ethereum = Internet + Banking Paradigm Shift

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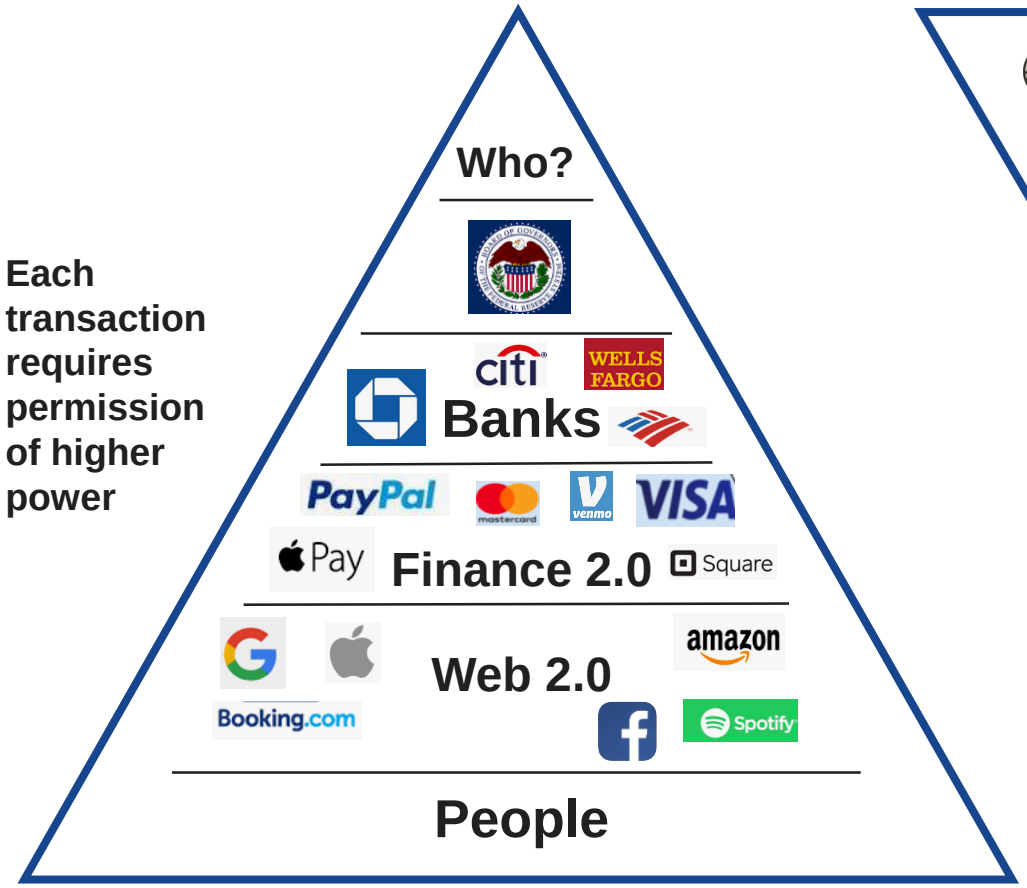
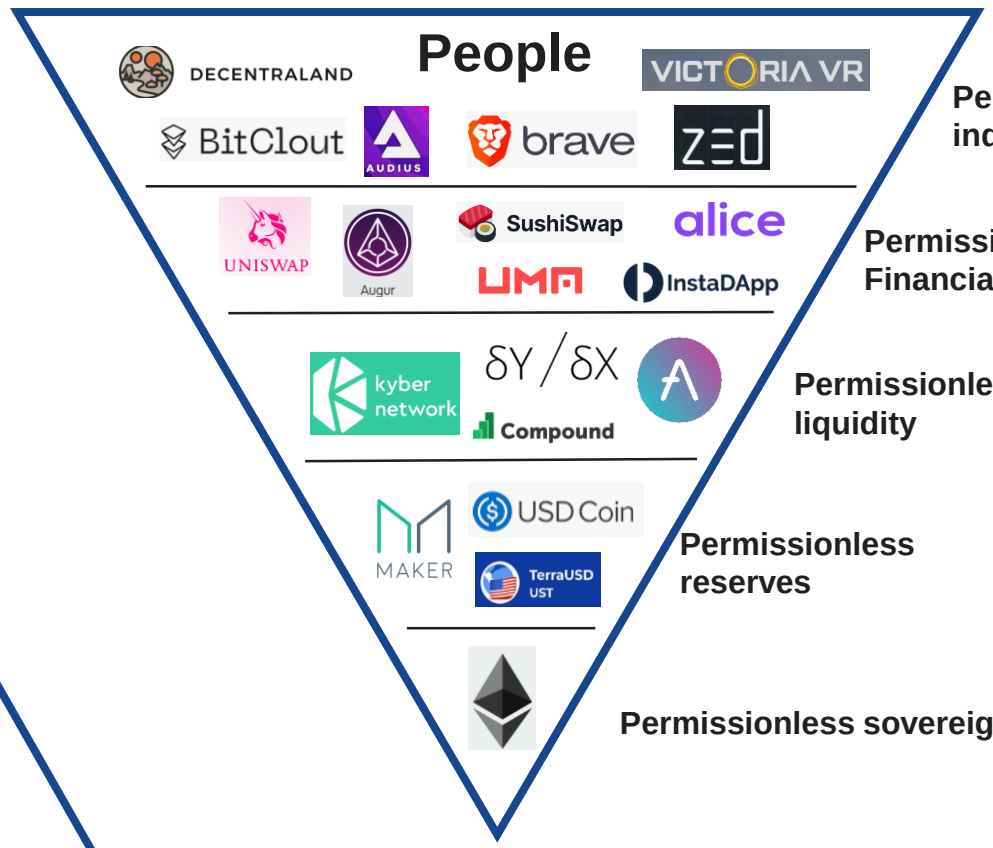
Each transaction requires permission of higher power





Permissionless individual economies

Permissionless Financial apps

Permissionless liquidity

Permissionless reserves

Permissionless sovereign

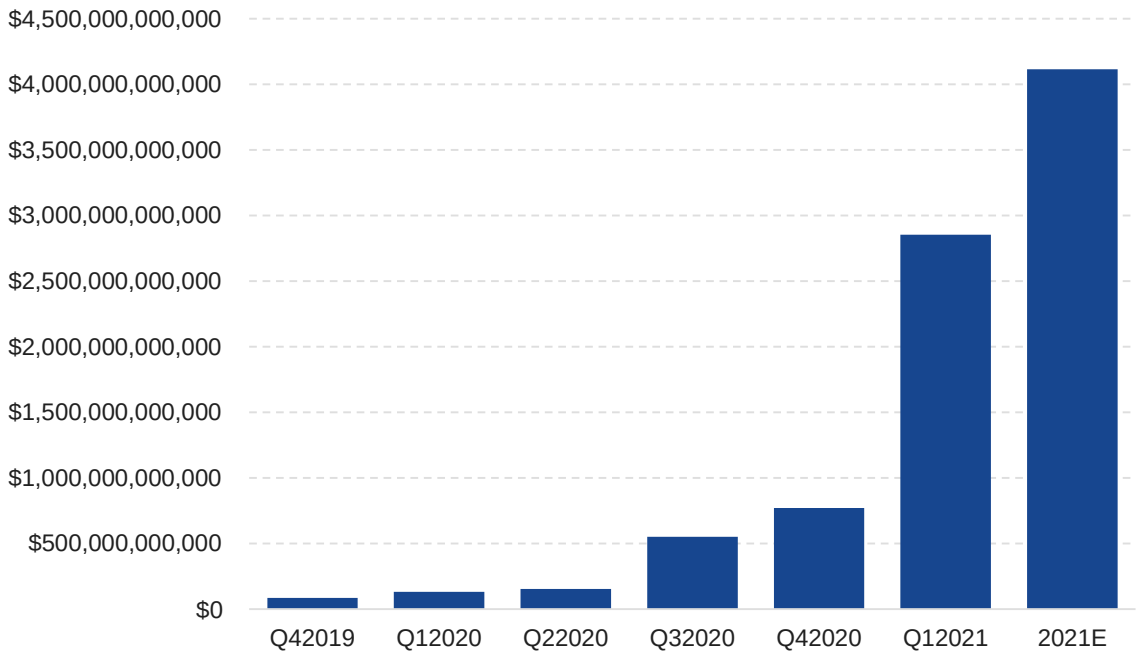
Each transaction follows code-based rules

Permissionless refers to a code based mechanism whose rules are fixed and transparent
Permission refers to an organization, corporate or sovereign whose rules are ad-hoc or based on trust

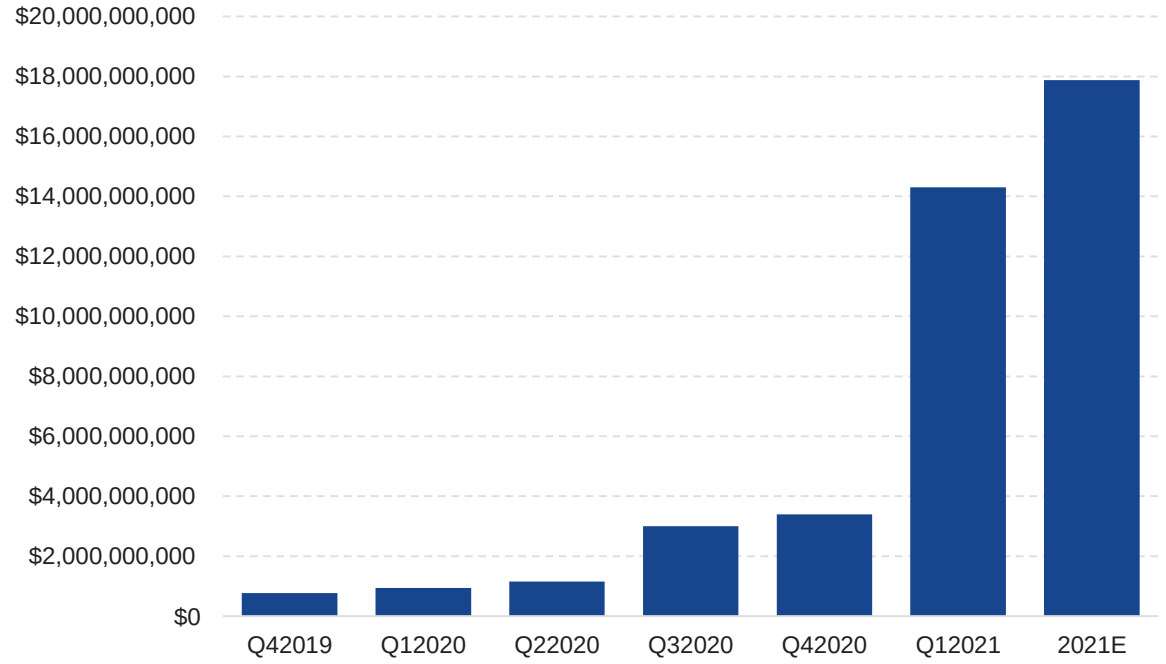
How big is Ethereum right now?

Ethereum's transaction value and revenues have ballooned

Total value of transactions on Ethereum network (annualized)



Ethereum revenues (annualized)



Sources: Messari, Vaneck. Data as of 5/31/2021. ETH revenues = 2021 VanEck estimated miner revenues (transaction fees + block rewards) of $18b.

Putting banking into perspective

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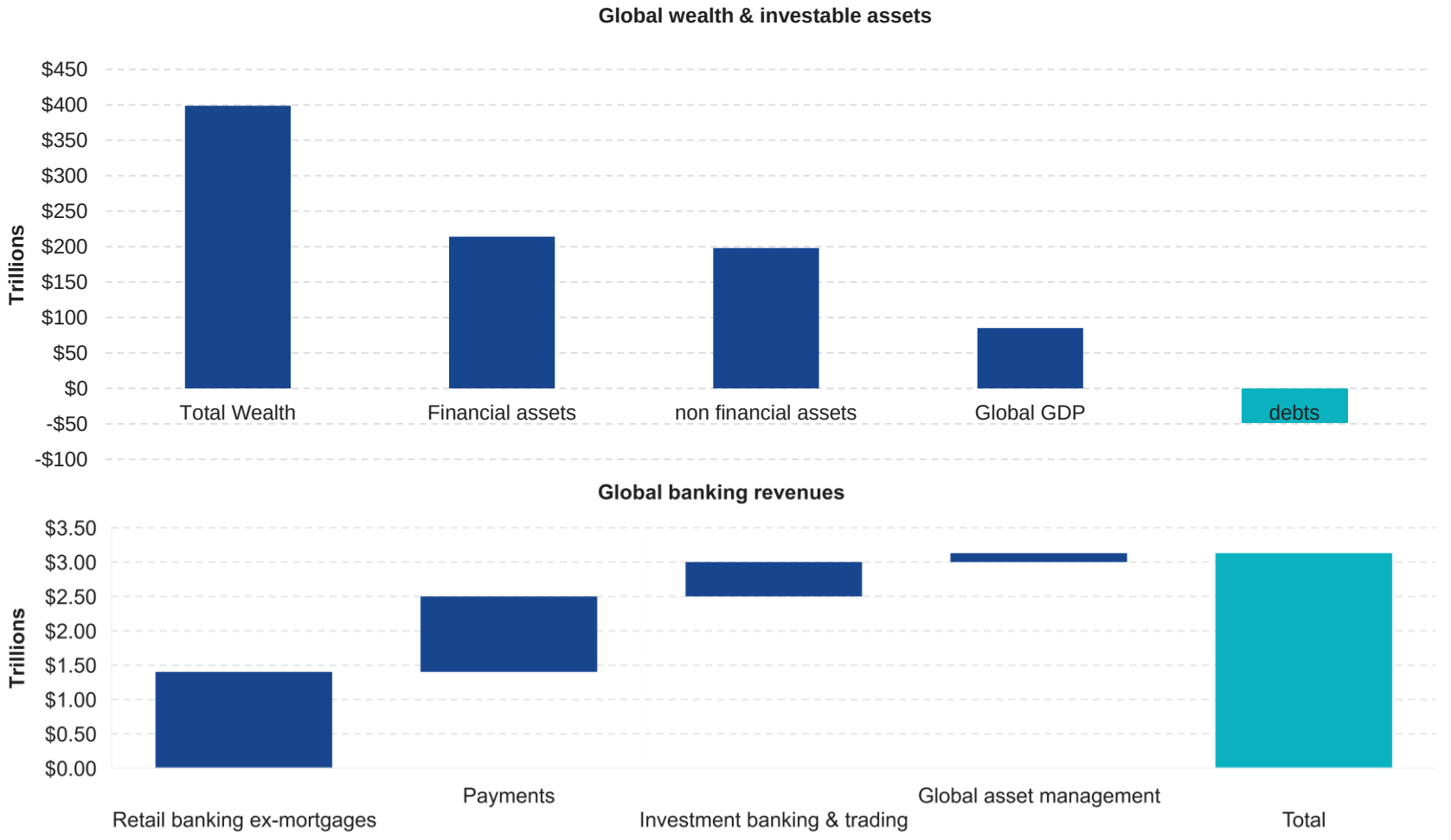
Banking & Payment Industry Revenues



Global Banking & Payments Comprise:

Source: Credit Suisse, Boston Consulting Group, Morgan Stanley/Oliver Wyman, J.P. Morgan, VanEck. Global wealth data as of April 2021. Global banking revenues data as of May 2020.

Putting internet into perspective

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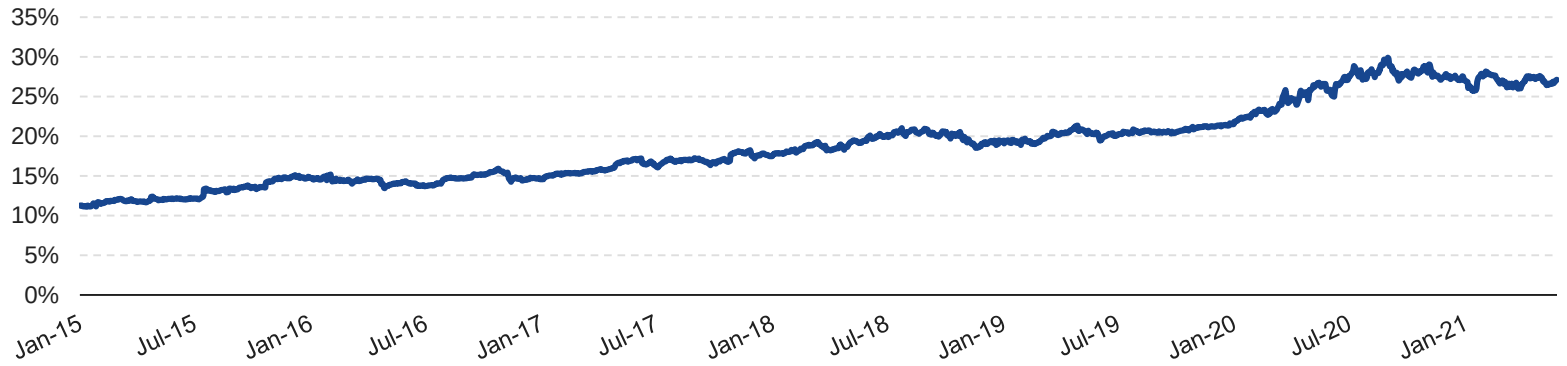
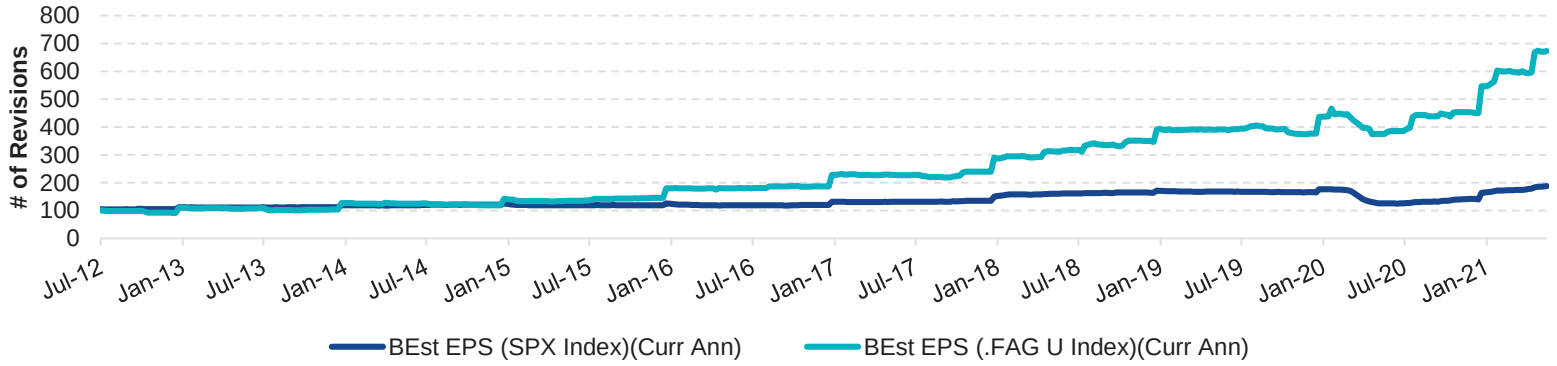
FAANMG market cap as % of S&P 500



FAANGM vs. S&P EPS revisions



Top 90 Global Internet Companies

Revenues: $2.1 trillion

Market Cap: $11.5 trillion

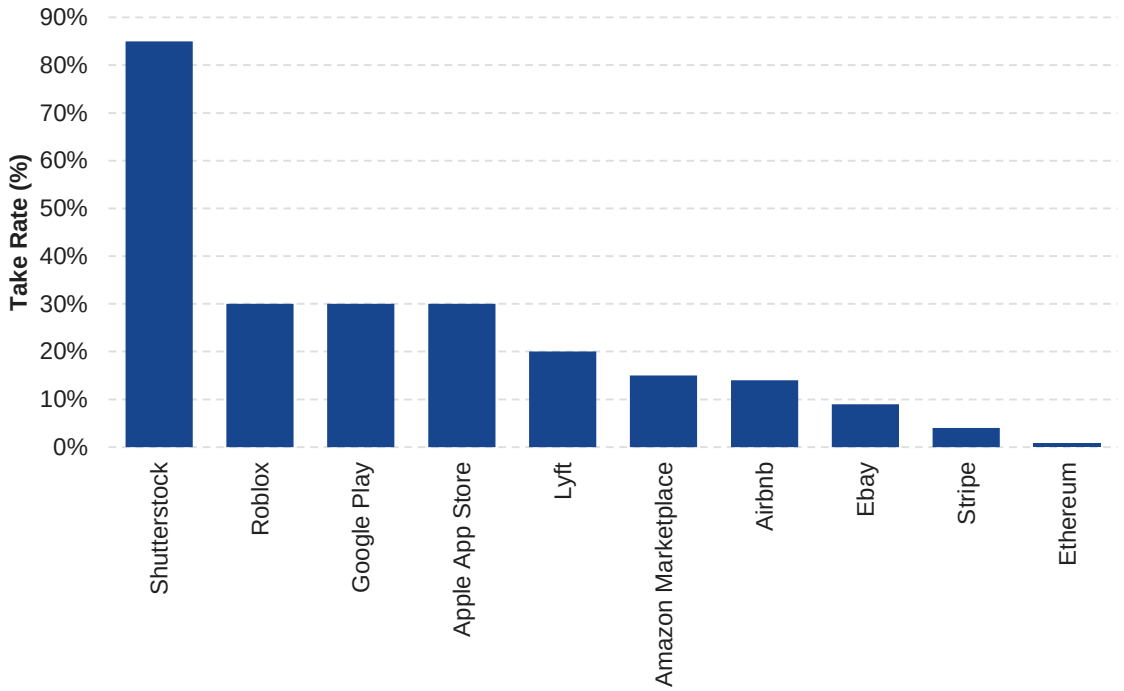
Source: Yardeni, Bloomberg, VanEck. Data as of 5/26/2021.
FAANMG is an acronym for Facebook, Amazon, Apple, Netflix, Microsoft and Google. BEst EPS revisions are the number of analyst revisions on their EPS estimates on publicly listed companies.

Internet vs. Ethereum Take Rates

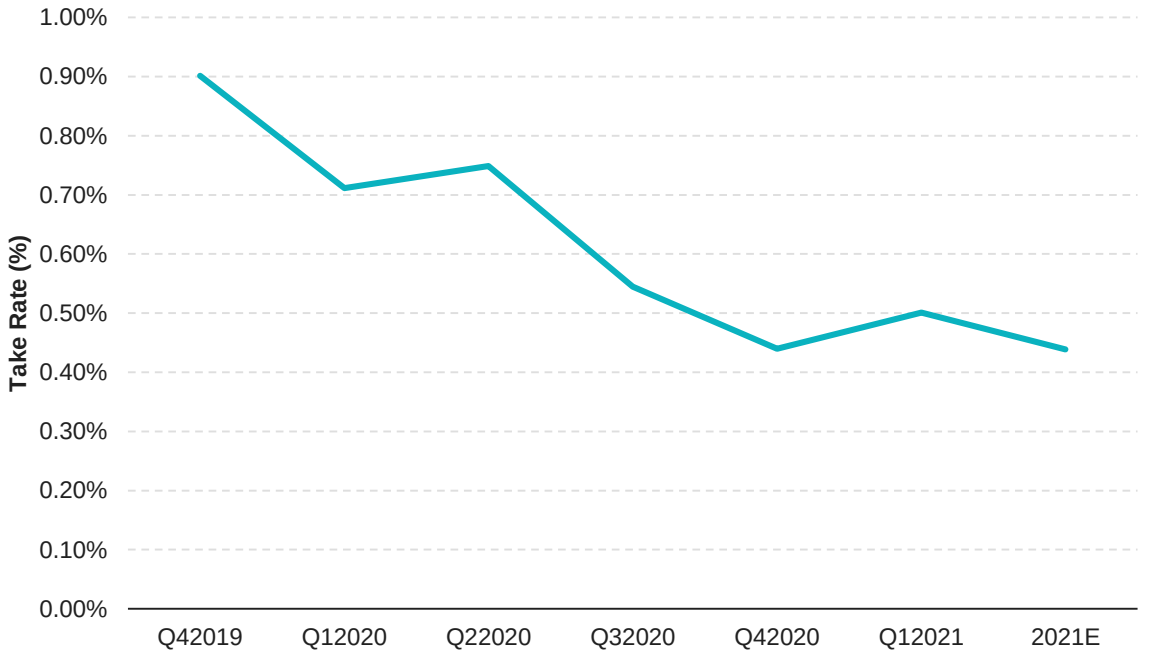
Take rates are defined as the ratio between revenues and transaction values

- Take rates for Ethereum are small compared to established internet companies
  - Ethereum take rates have been trending lower since Q4 2019.

Internet company take rates



Ethereum network take rate



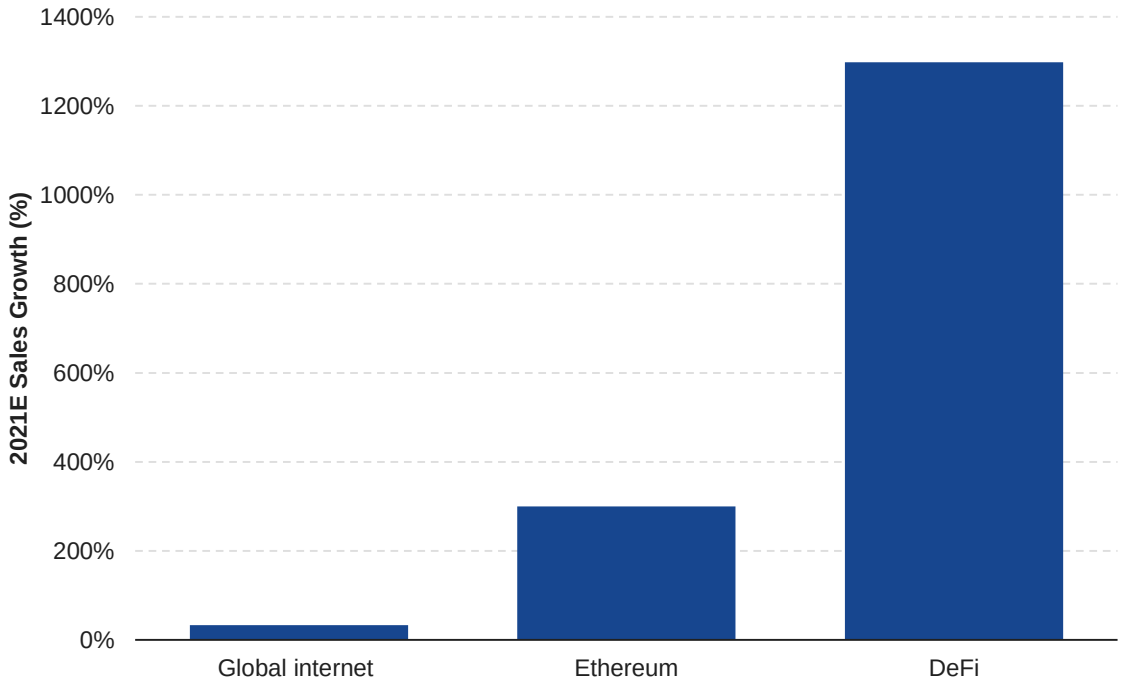
Sources: The Block, Coinmetrics, Bloomberg, VanEck calculations. Data as of 5/31/2021.

Internet vs. Ethereum Sales Growth

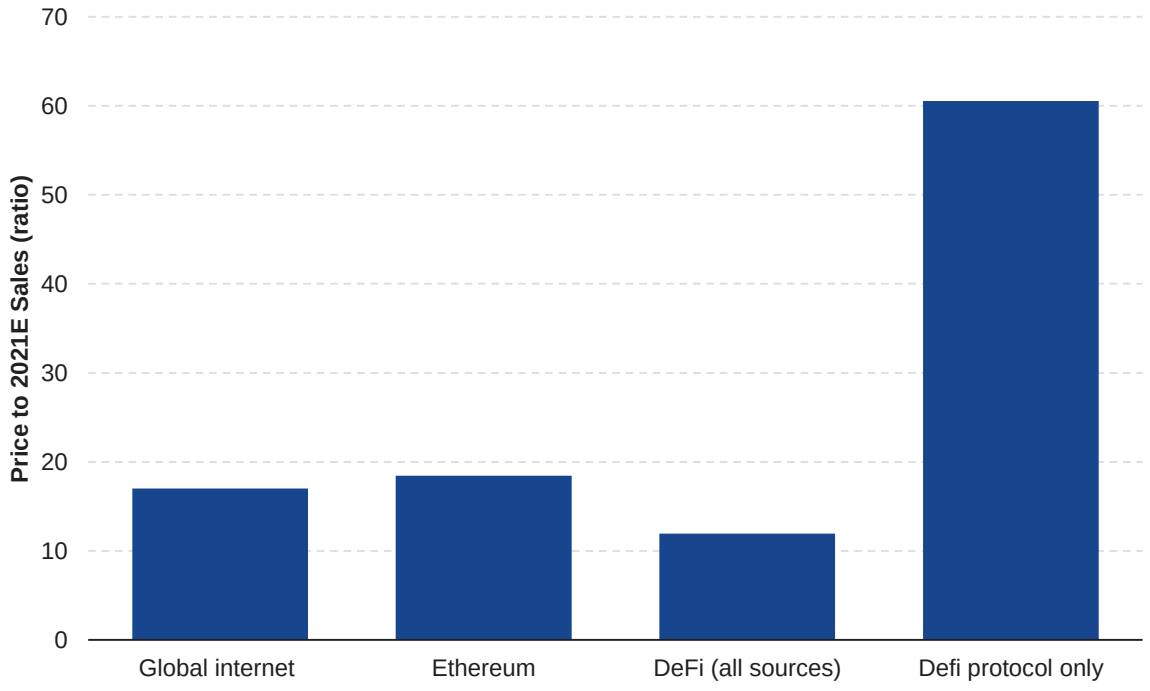
Sales growth of decentralized finance and Ethereum eclipse that of the global internet

- Meanwhile, Ethereum remains at a reasonable valuation compared to global internet companies

2021E sales growth



Price / 2021E sales ratio

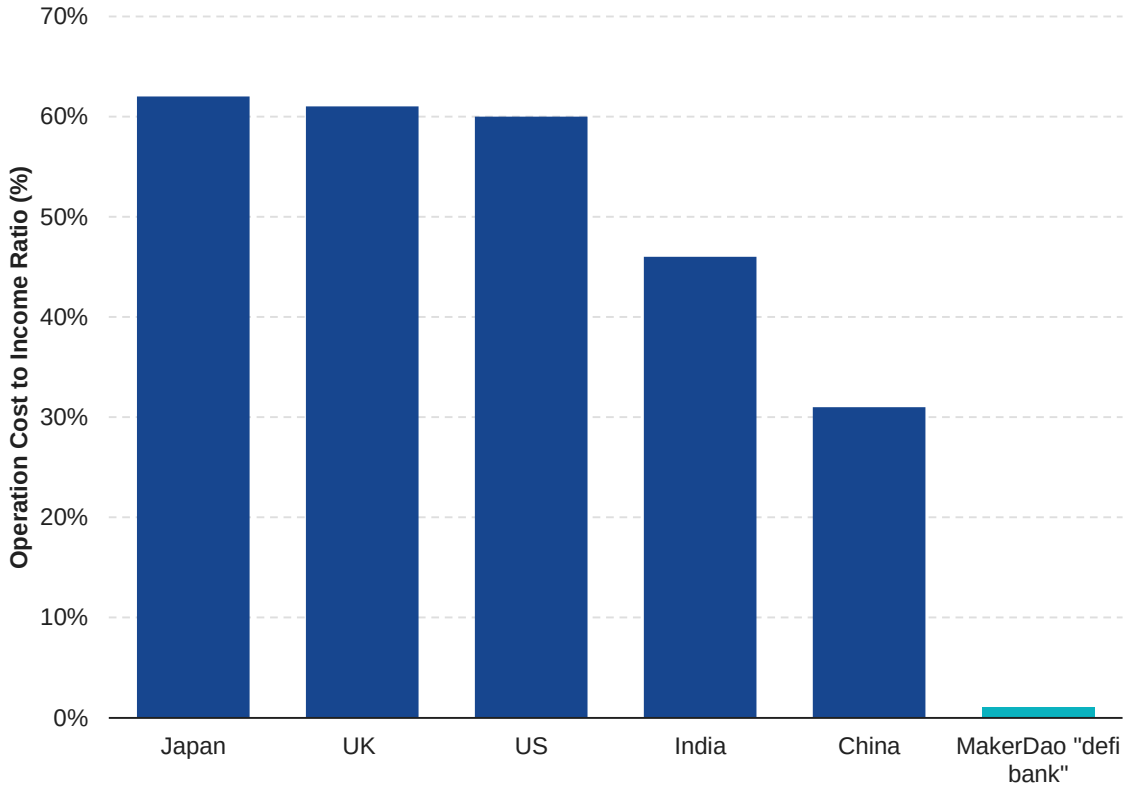


Sources: The Block, Coinmetrics, Bloomberg, VanEck calculations. Data as of 5/31/2021. Internet price-sales based on median ratio of top 90 global internet companies per Bloomberg. Defi revenues include both supply-side & protocol revenue, only on Ethereum.

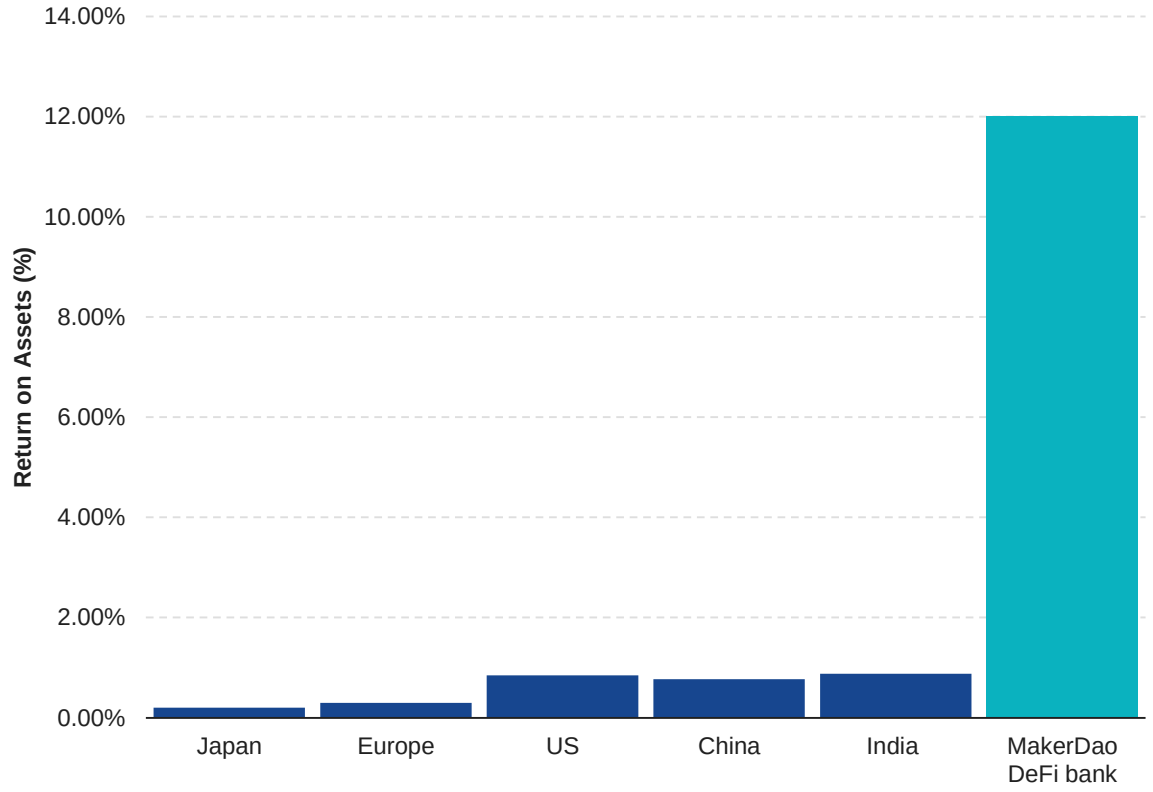
Ethereum vs. Banking

Operating costs are substantially lower for DeFi, leading to a higher ROA

Operating cost / income ratio for banks

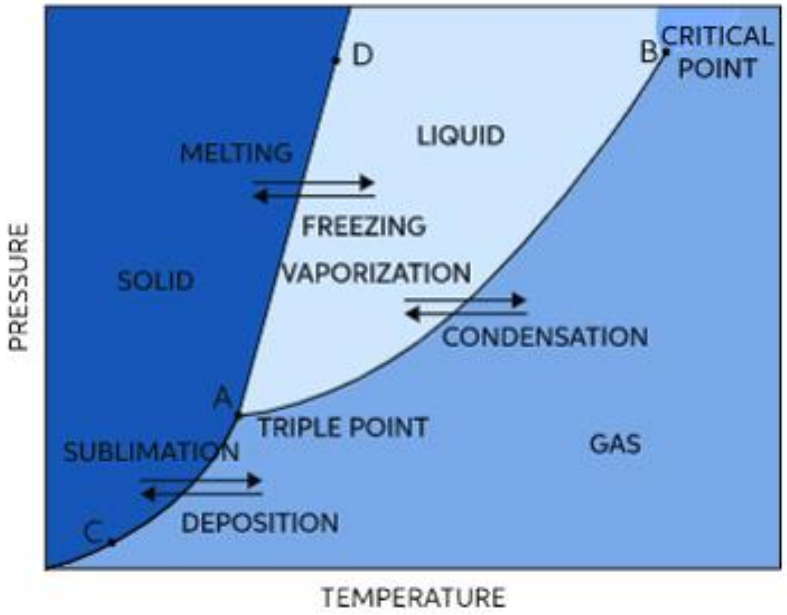


Return on Assets, assorted banks

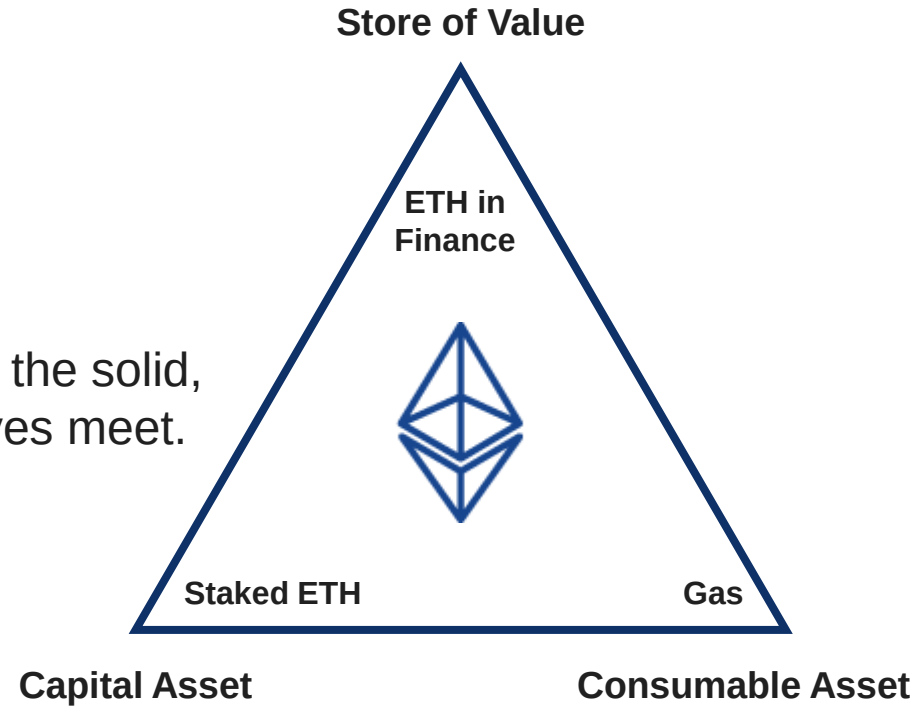


Sources: Bloomberg, VanEck calculations; MakerDao last 12 months net income divided by average assets. Operating cost / income ratio for banks data as of 3/31/2021. Return on Assets, assorted banks data as of 12/31/2020.

Ethereum = triple-point asset?



The triple point occurs where the solid, liquid, and gas transition curves meet.



Source: David Hoffman Twitter, Chegg (re-printed w/ permission).
ETH in Finance is defined as using Ethereum as collateral in a interest bearing account on a decentralized finance exchange. Staked ETH is defined as the commitment to run a Ethereum node without daily liquidity of the underlying capital. Gas is defined as the fee, or pricing value required to successfully conduct a transaction or execute a contract on the Ethereum blockchain.

Ethereum = triple-point asset?

	Capital Asset	Consumable Asset	Store of Value
General characteristics	Produces ongoing store of value; valued on net present value of expected returns	You can consume it & transform it into another asset, but it does not yield an ongoing stream of value	Cannot be consumed nor can it generate income. Nevertheless, it has value.
How Ethereum does it?	Owners have claim on Ethereum's future network fees	Ether is consumed via transaction fees any time value is transferred on the network	ETH can be paired with other assets & "locked" (used as collateral) on decentralized exchanges

Source: VanEck

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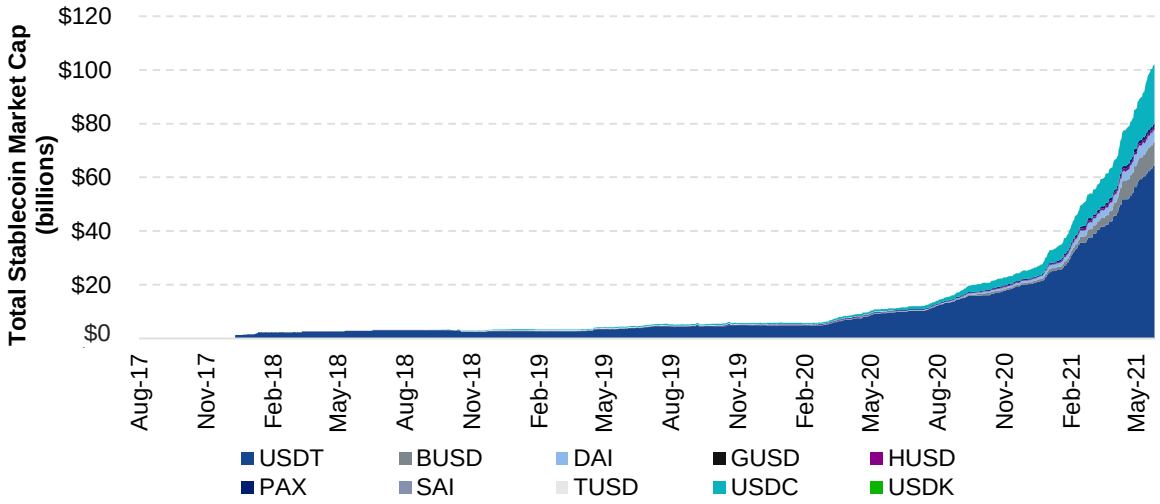
Stablecoins

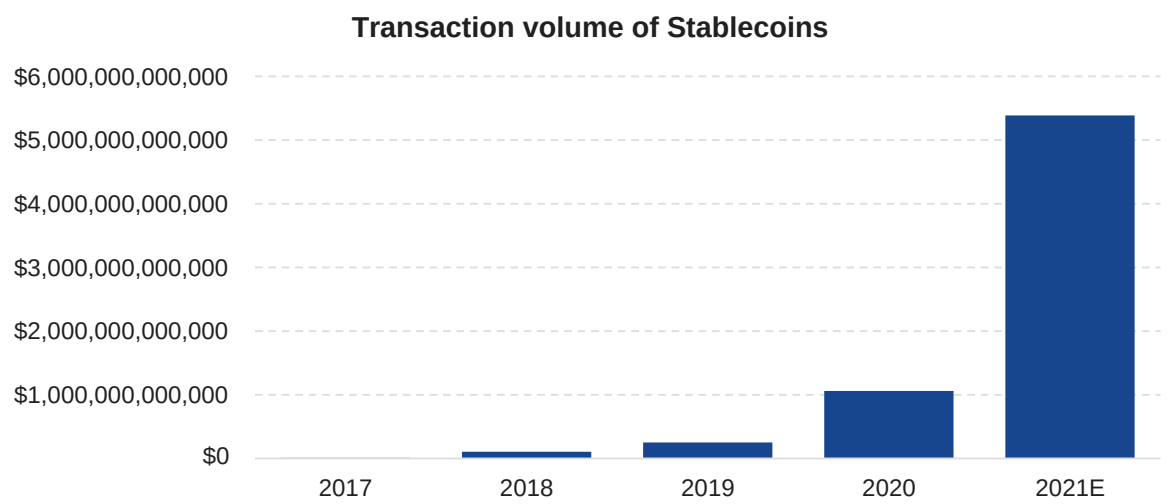
The first killer app on Ethereum

Stablecoins: key building blocks of the Ethereum economy

What is a stablecoin?

- Stablecoin refers to a range of crypto currencies that are pegged or backed by assets such as fiat, gold, or an algorithm in order to maintain a stable value
- They offer security, speed & the ability to transfer value peer-to-peer 365/24/7
- Stablecoins facilitate:
  - More efficient cross-trading of previously illiquid crypto pairs
  - More efficient payments solution for emerging Web 3.0 applications
- Stablecoin market cap has grown to $100b+ from sub $10b y/y
- 2/3 of all value transferred on-chain now occurs via stablecoins



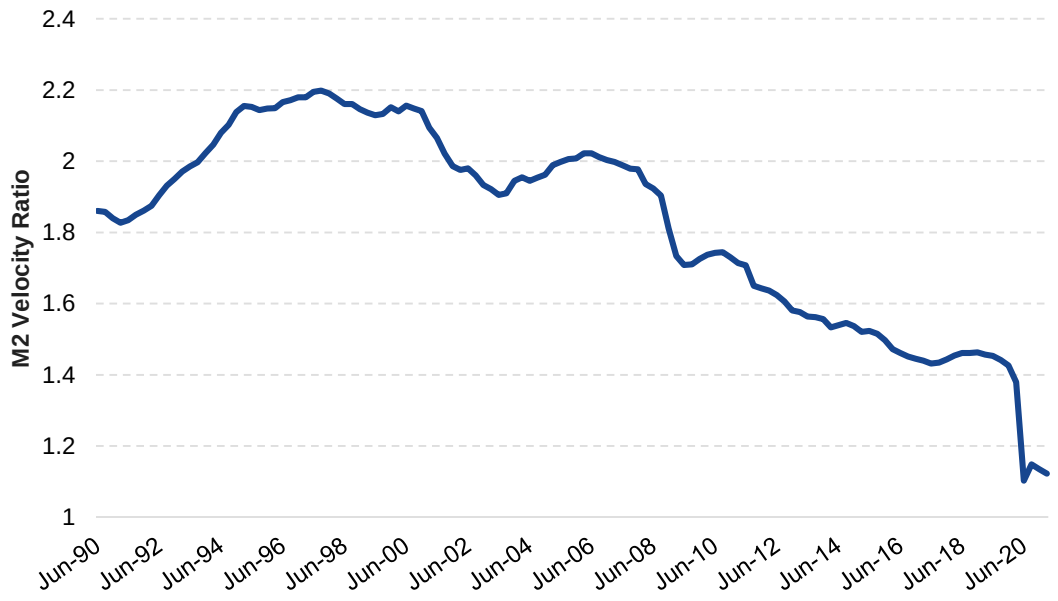


Source: Coinmetrics.io, VanEck estimates. Total Stablecoin Market Cap Data as of 5/30/2021. Transaction volume of Stablecoin data as of 5/19/2021.

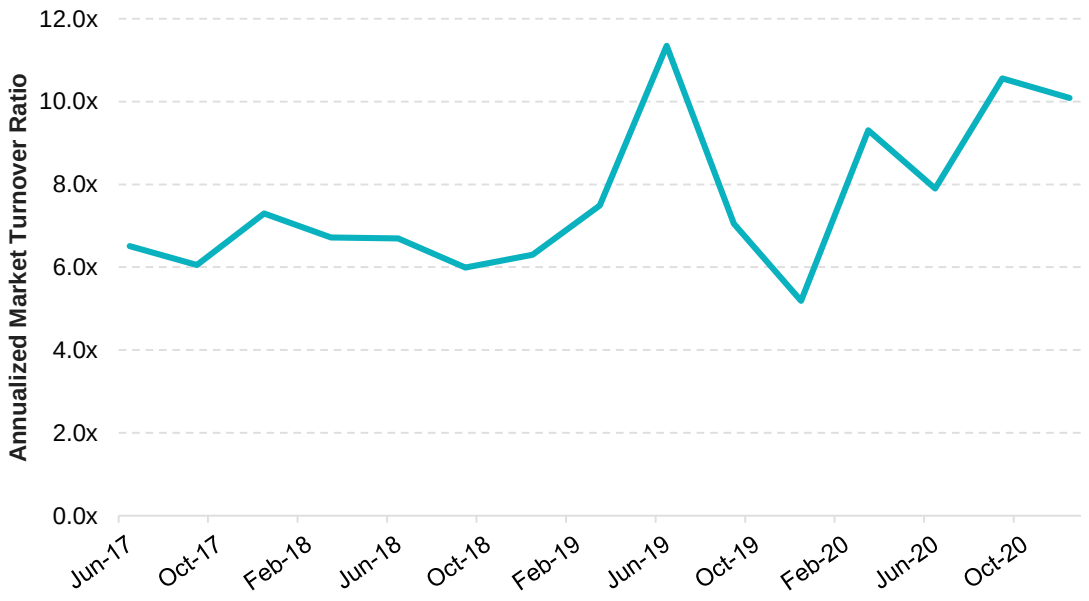
Stablecoins increase velocity of money

"Stablecoins were designed to **improve capital and operational efficiency** across all digital asset marketplaces and they bring about a number of benefits, including 24/7 money movement capability, payments for goods and services, using a stable store of value, and participation in the burgeoning DeFi space. **Obtaining regulatory approval and maintaining compliance is key to ensuring appropriate guard rails** are in place to provide transparency and customer protection." — Yusuf Hussain, Gemini

US M2 Velocity of Money

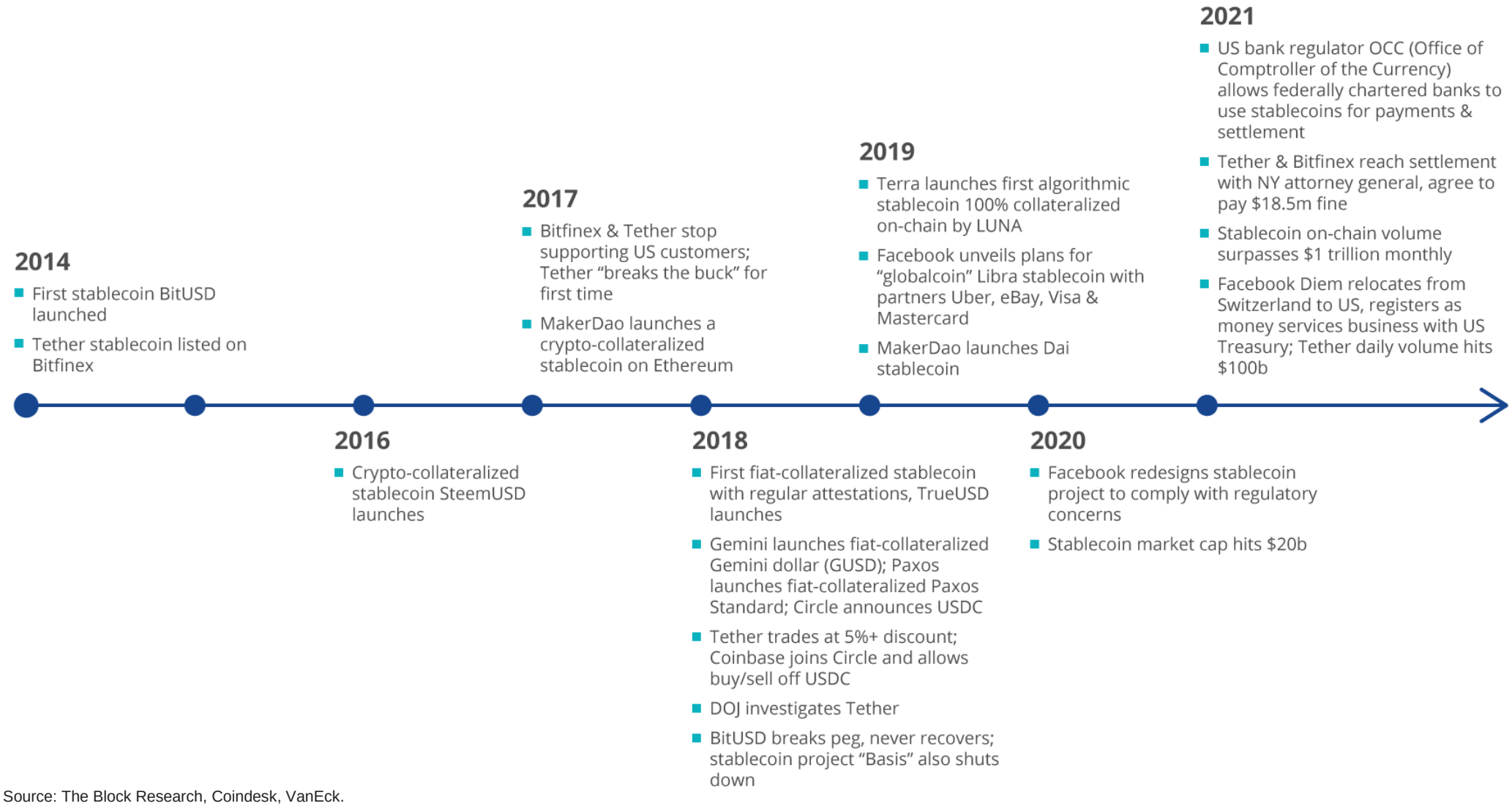


Annualized Crypto Market Turnover



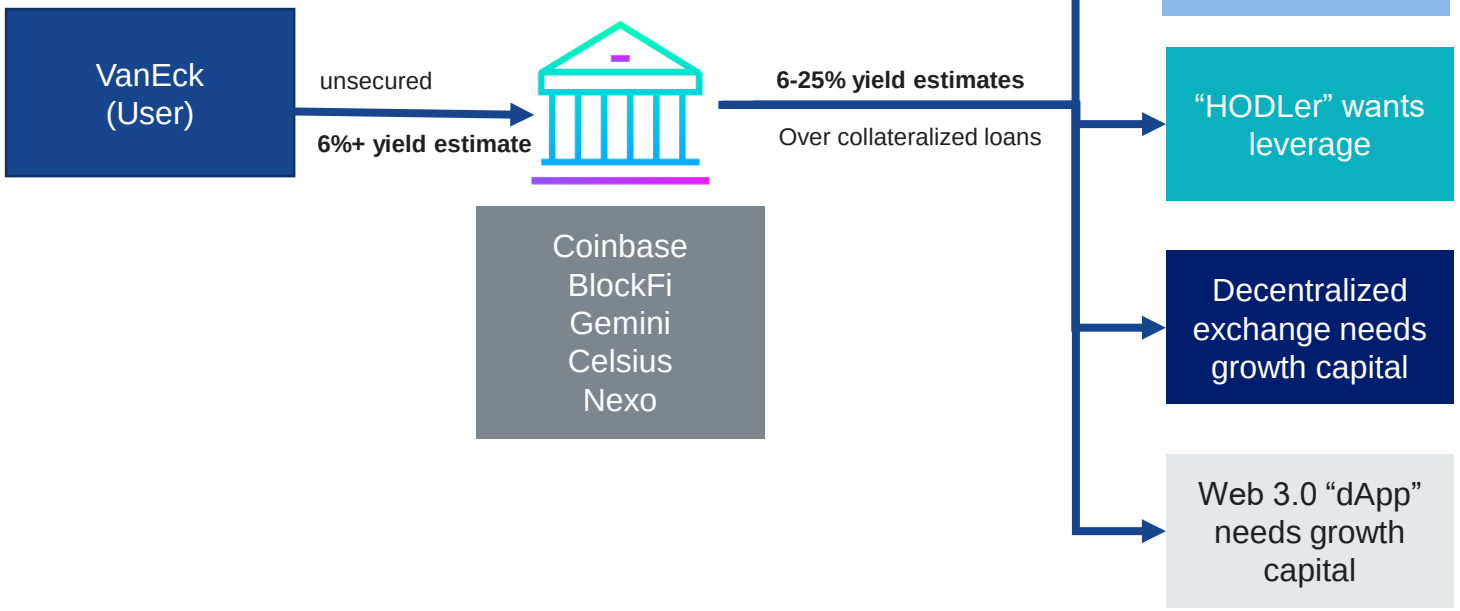
Source: Bloomberg, Goldman Sachs. M2 velocity ratio = quarterly turnover / quarterly GDP; Crypto Market Turnover – volume / market cap. US M2 Velocity of Money data as of 3/31/2021. Annualized Crypto Market Turnover data as of 12/31/2020.

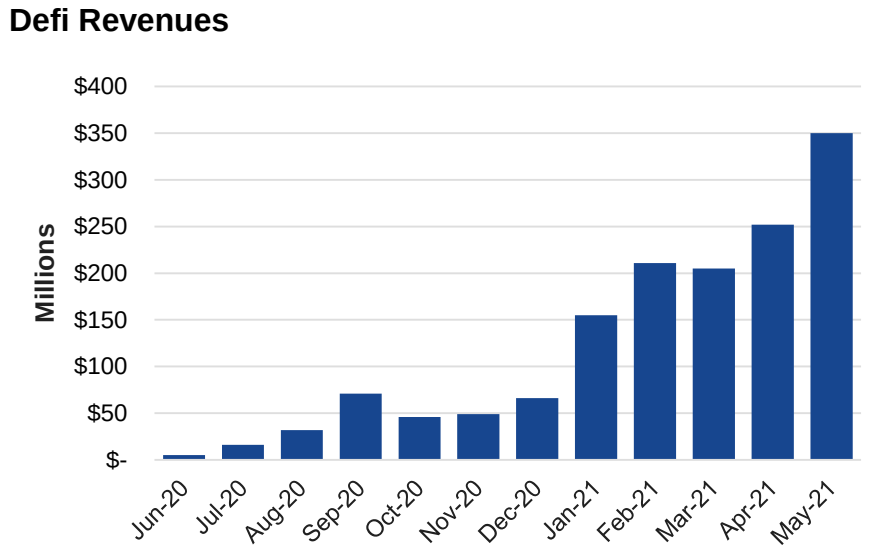
Stablecoin history: checkered past gives way to bright future?

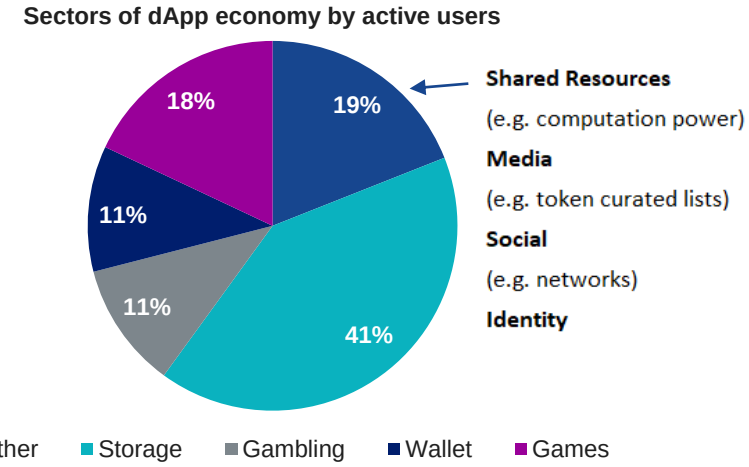


Source: The Block Research, Coindesk, VanEck.

Stablecoin lending chain







Source: European Central Bank. Lending involves risk including loss of capital. There is no guarantee that the yields stated above will be achieved. Past performance is not a guarantee of future results

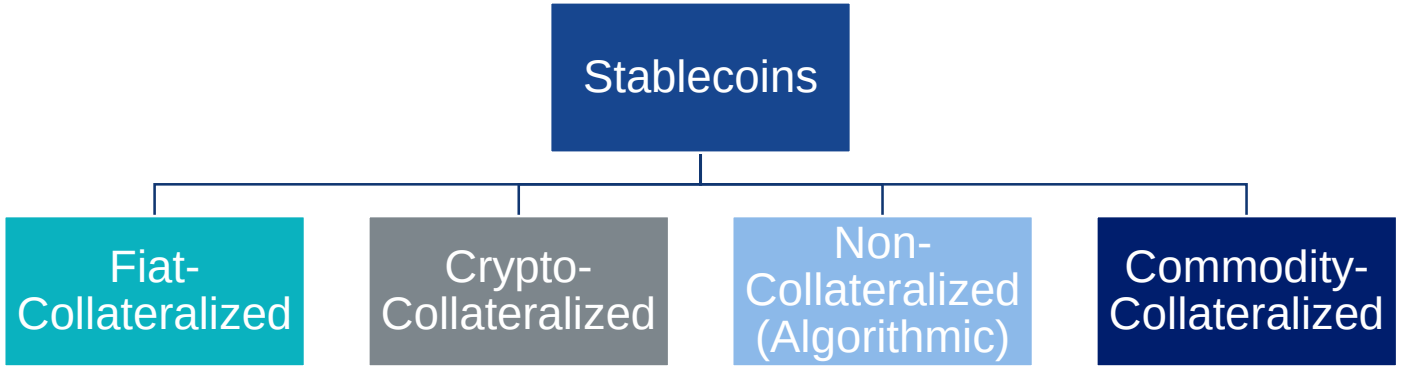
What do crypto borrowers want?

	Tax efficiency (keep money on blockchain vs. converting to fiat)	Exploit arbitrage opportunities (highly fragmented market = different prices on different venues)	Growth capital (Growing dAPP* ecosystem needs capital to fund growth; You can't buy alt-coins with USD)
"Hodler"	✓	✓	
Trader	✓	✓	
Exchange		✓	✓
Blockchain entrepreneur	✓		✓

Source: VanEck
* dAPP is defined as Decentralized Applications

Wide stablecoin array brings diversification benefits

Types of stablecoins



	Fiat-Collateralized	Crypto-Collateralized	Non-Collateralized (Algorithmic)	Commodity-Collateralized
Examples	- Gemini Dollar - USD Coin - TrueUSD - Tether - Binance USD	- Dai	- Ampleforth - Basis	- Digix - Paxos Gold
Advantages	- Simple - Stable - Scalable	- Efficient - Transparent - Decentralized	- Decentralized - No Need for Collateral	- Simple - Back by Real Assets
Disadvantages	- Centralized - Opaque - Expensive	- Complex - Experimental - Less Capital Efficient	- Complex - Unproven	- Centralized - Required Audit - Large Number of Intermediaries

Source: Corporate Finance Institute, Coinmetrics.io

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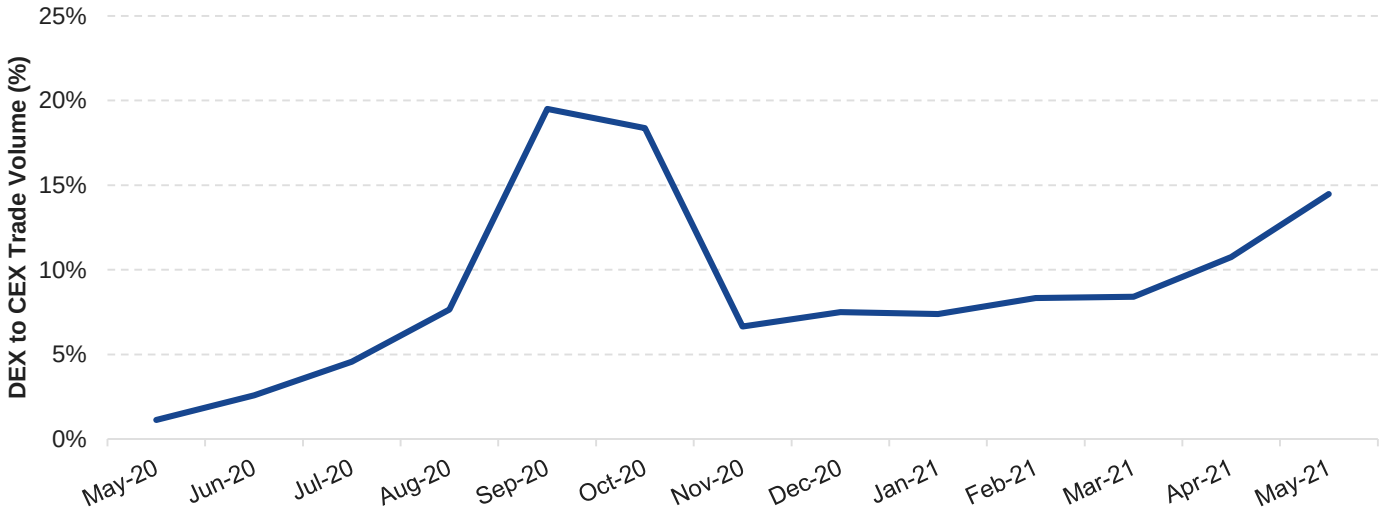
DeFi & Web 3.0

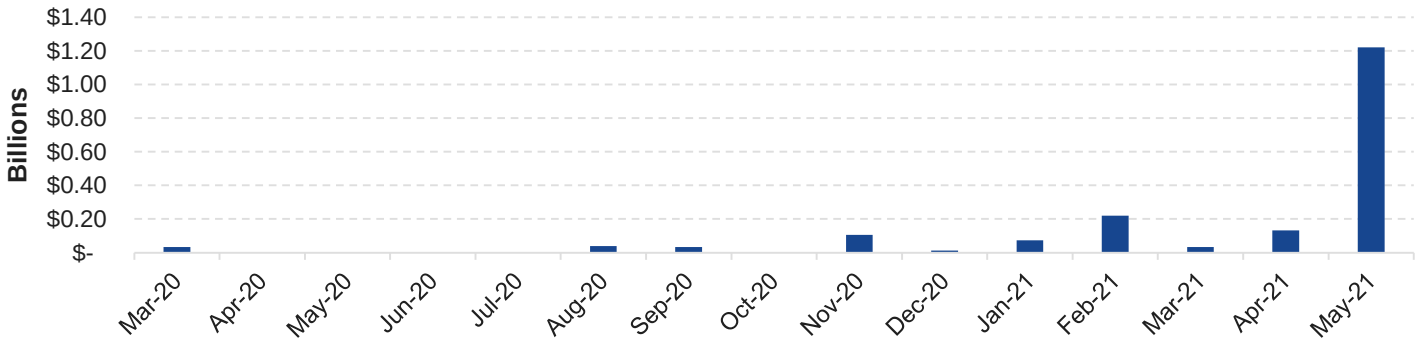
The next killer apps on ETH

ETH Demand Case Study: DeFi platforms are very efficient

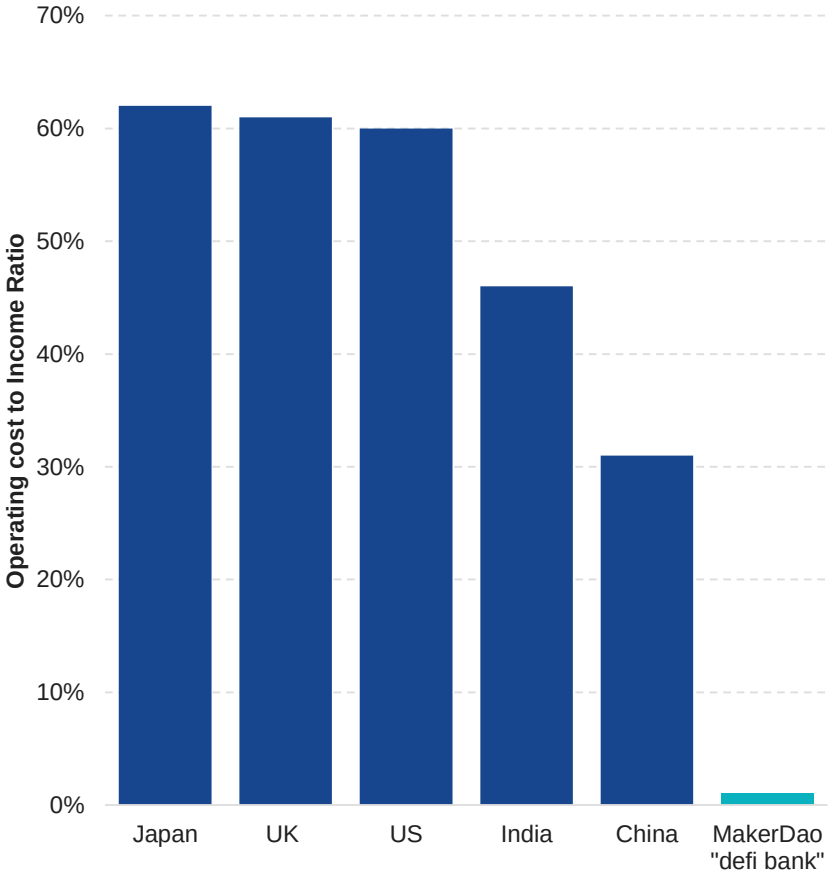
Defi volumes as % of centralized exchange volumes / DEX to CEX Spot Trade Volume %



Auto-liquidation preserves exchange profits / Monthly liquidations on major DeFi platforms



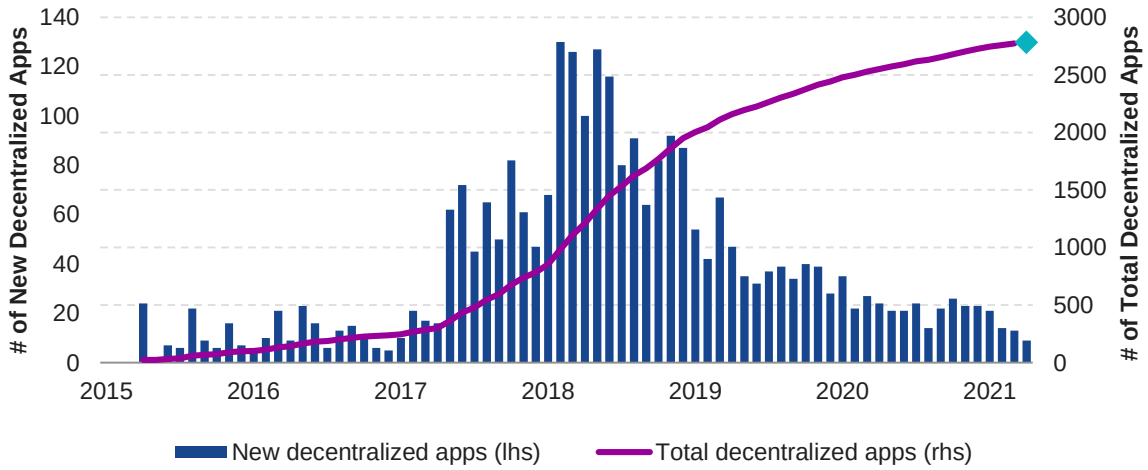
Decentralized financial companies will compete on price / Operating cost / income ratio for banks



Source: The Block, Bloomberg, MakerDao, VanEck. Data as of 5/31/2021. Operating cost / income ratio for banks data as of 12/31/2020.

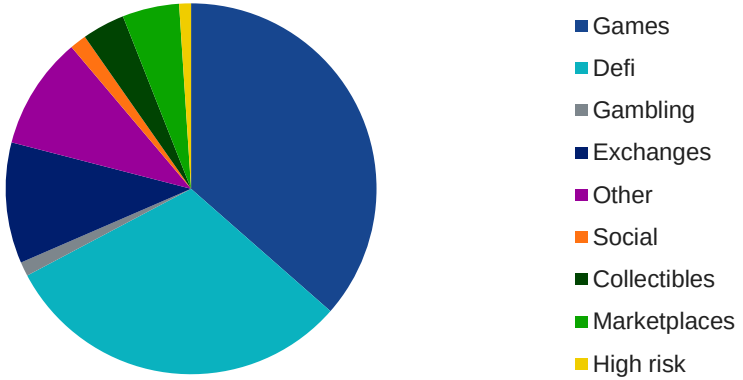
ETH Demand Case Study: Web 3.0 heats up

Decentralized apps set to accelerate w/ ETH 2.0

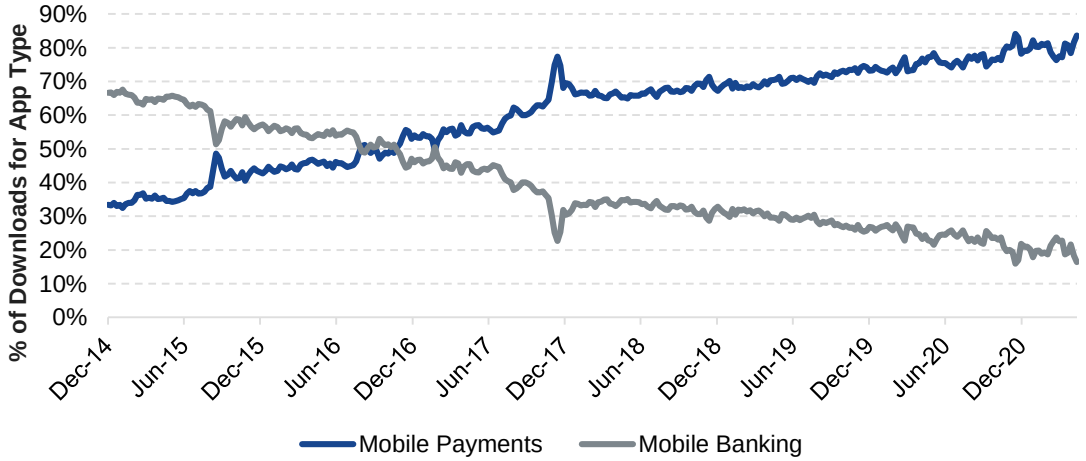


Diverse use case for smart contracts /

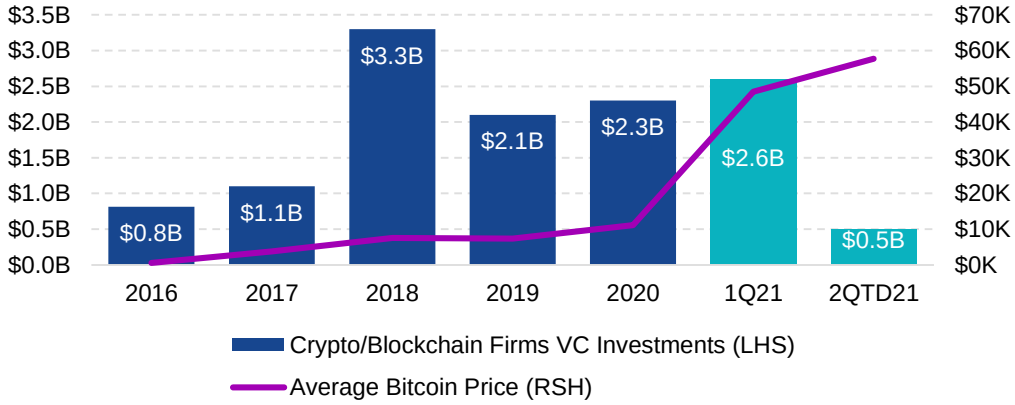
of unique wallets interacting with smart contracts by use case



Crypto-enabled wallets are taking share



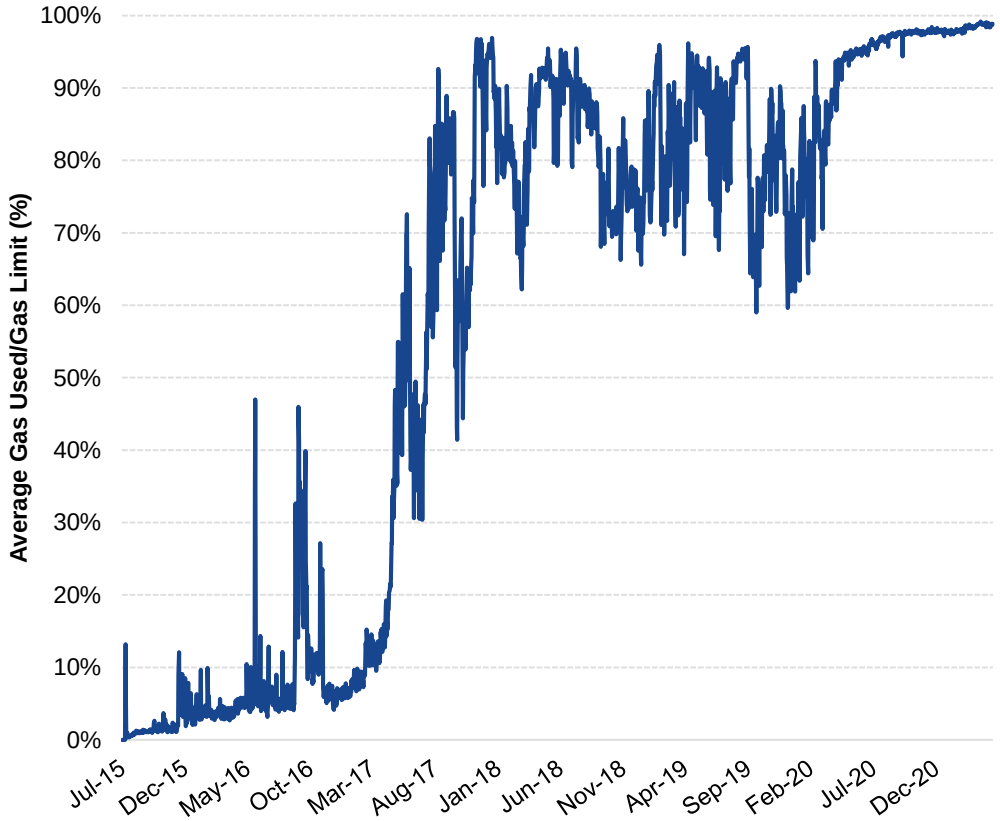
Blockchain venture capital investment will surpass 2018 peak

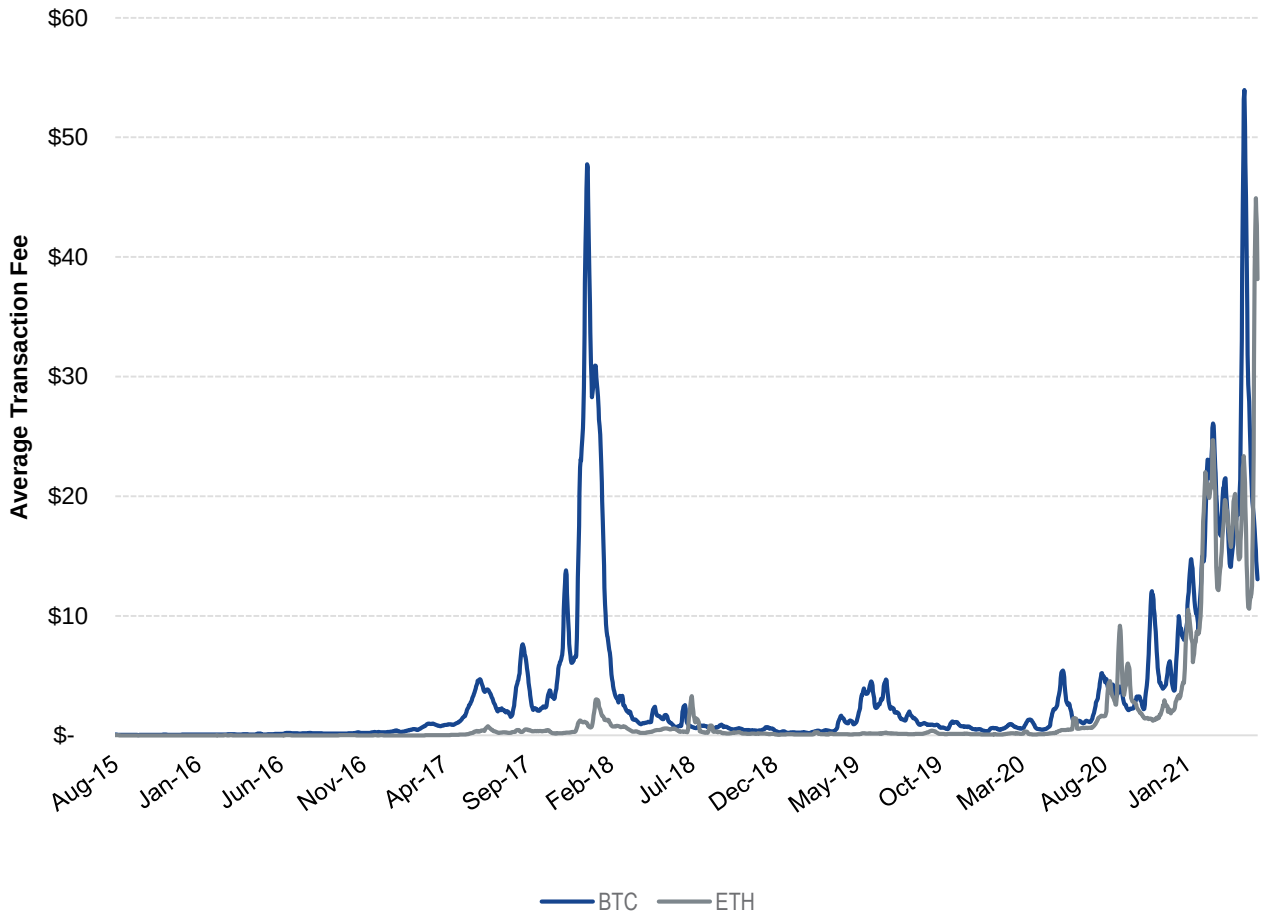


Sources: JPMorgan, UBS Evidence Lab, DappRadar, VanEck Calculations, CB Insights. Decentralized apps data as of 4/15/2021. Share of downloads for app types data as of 5/10/2021. Diverse use case for smart contracts and blockchain venture capital investment data as of 5/31/2021.

Supply-side: ETH 1.0 is too congested…

Ethereum transaction fees now rival that of bitcoin





Source: Coinmetrics. Data as of 5/17/2021.
Gas is defined as the fee, or pricing value required to successfully conduct a transaction or execute a contract on the Ethereum blockchain.

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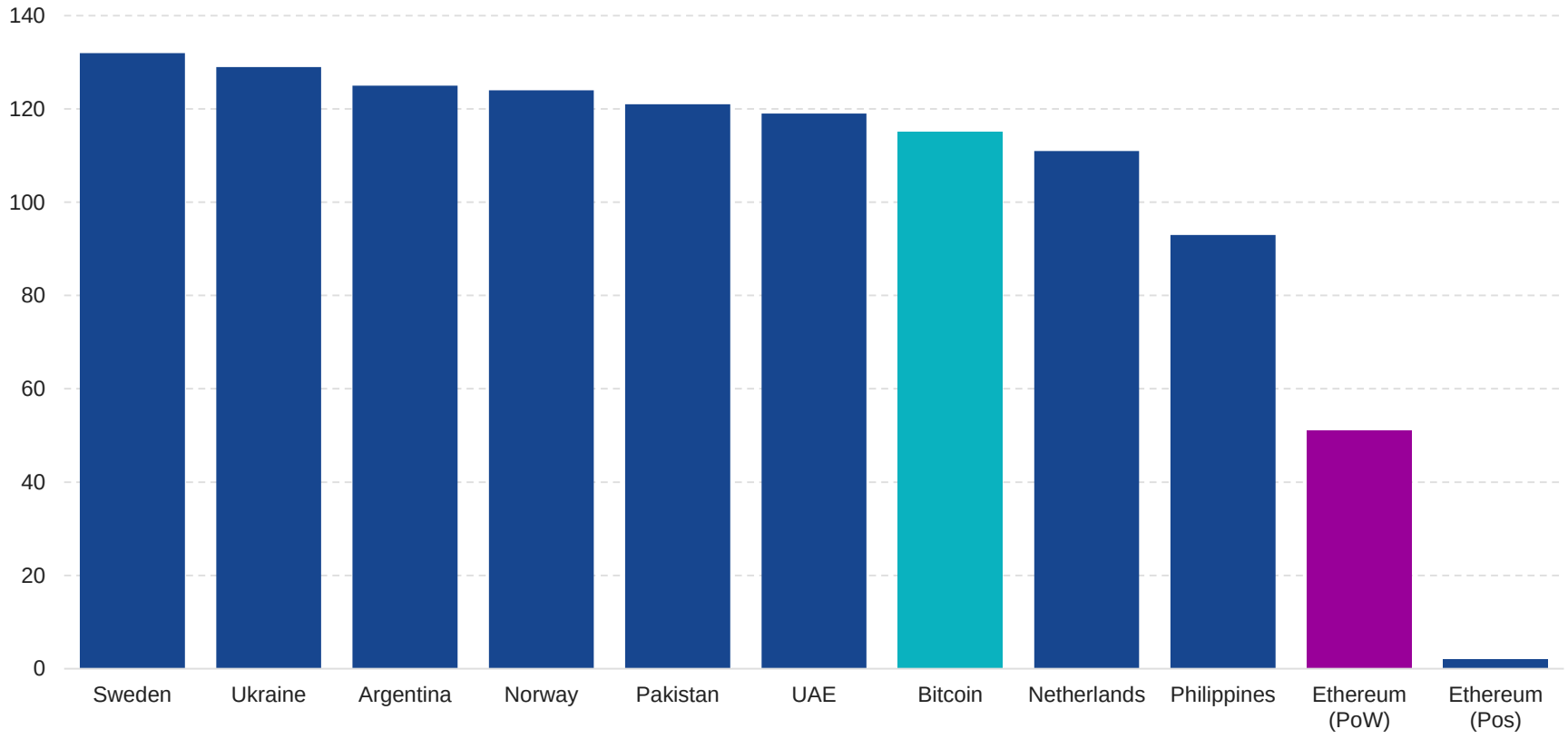
Ethereum: the supply side

ETH 2.0 launches in July

…so ETH 2.0 introduces a new model

Ethereum 2.0 greatly reduces energy consumption compared to its predecessor and various other countries



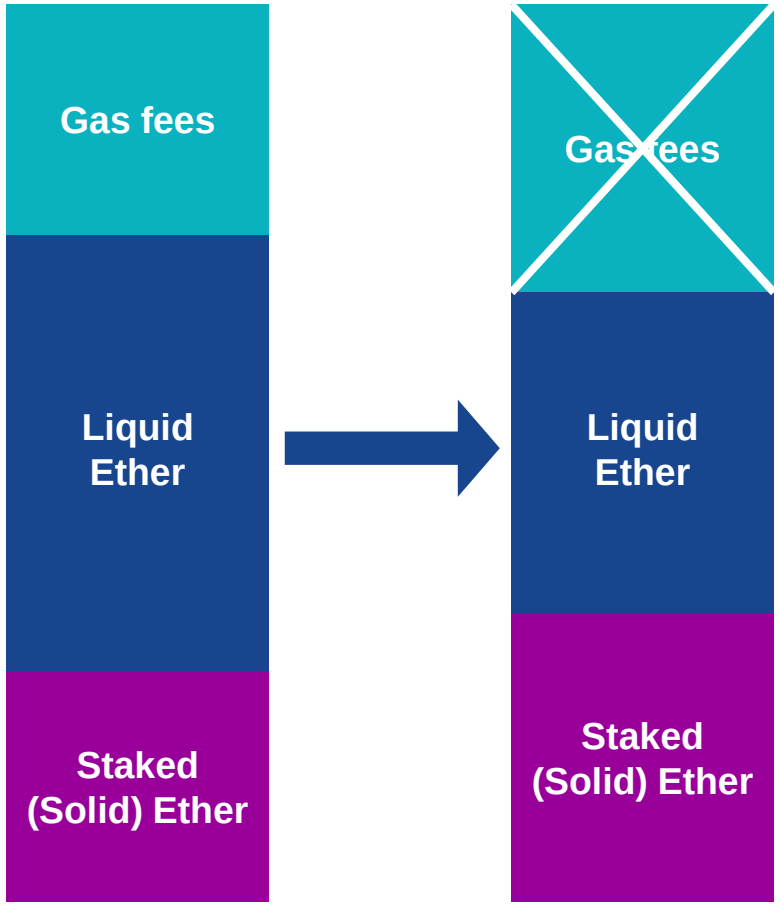
Proof-of-Stake (PoS) Improvements

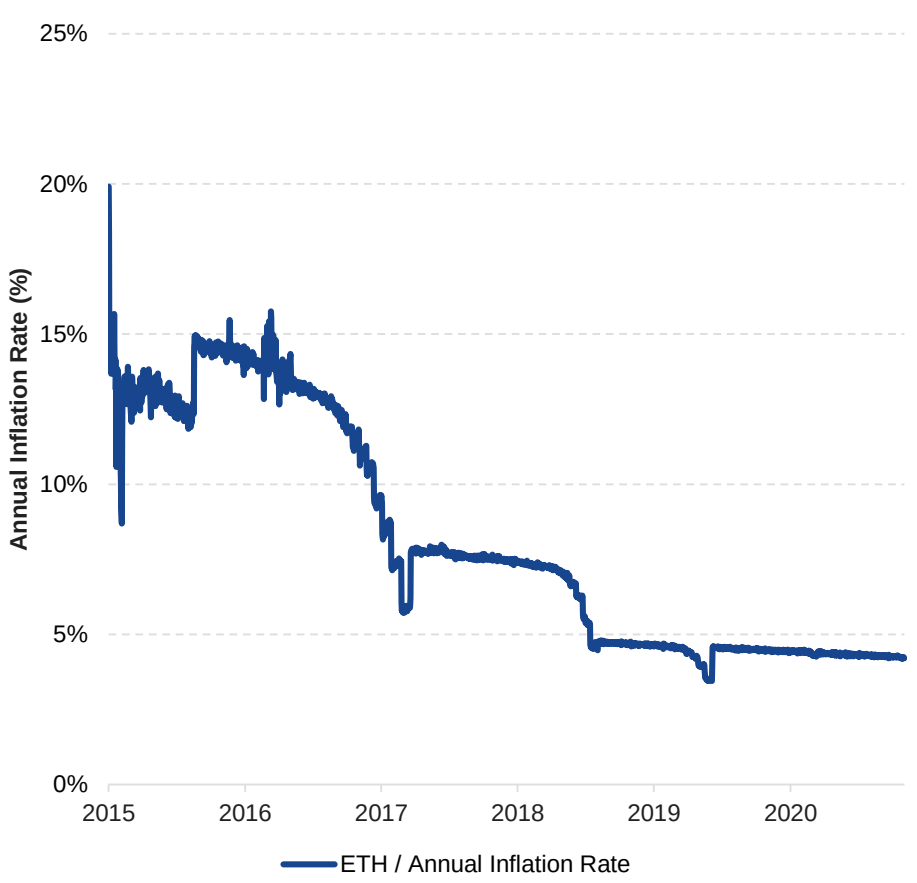
- Better energy efficiency (95% lower than ETH 1.0; 99% lower than Bitcoin)
- Lower barriers to entry (reduced hardware requirements)

Source: Cambridge Bitcoin Electricity Consumption Index. Data as of 3/31/2021.
PoW refers to Proof of Work, a decentralized consensus mechanism that required members of a network to expend effort solving an arbitrary mathematical puzzle to prevent anybody from gaming the system. PoS refers to Proof of Stake, a class of consensus mechanisms for blockchains that work by selecting validators in proportion to their quantity of holdings in the associate cryptocurrency.

ETH 2.0: unanswered questions regarding future supply growth

Ethereum's new pricing mechanism brings a deflationary component



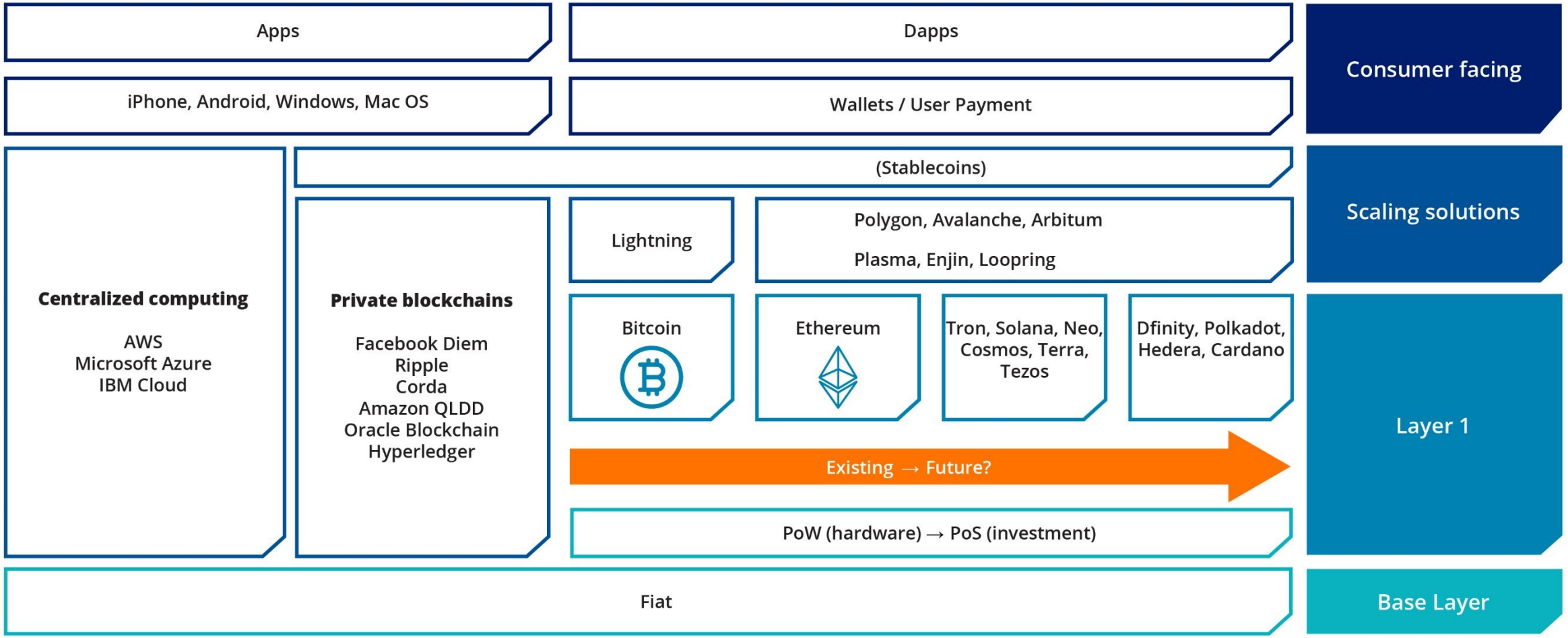


New Pricing Mechanism on EIP - 1559

- Gas fees will be "burned" for the benefit of all token-holders (similar to share buy-back)
- The higher the transaction volume, the greater the probability that ETH inflation evaporates (more supply burned as fees than created in new rewards issuance)

Source: Coinmetrics, VanEck. Data as of 5/31/2021.
Gas is defined as the fee, or pricing value required to successfully conduct a transaction or execute a contract on the Ethereum blockchain.

Ethereum: the competitive landscape



Source; Vaneck.

Digital assets content

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

Blog Series:

June 17th, 2021: Tracking Sovereign Adoption of Bitcoin: A Potential Tipping Point?

June 6th, 2021: Dispatch from the Bitcoin Conference: Meet the Other Maximalists

June 3rd, 2021: Ethereum: Crypto's Evolutionary Platform

May 25th, 2021: The DeFi Threat to Wall Street

April 19th, 2021: Bitcoin Mining and ESG Presentation

March 31st, 2021: The Investment Case for Bitcoin

March 12th, 2021: Why Invest in Bitcoin?

February 16th, 2021: No Jargon Answer to What is Bitcoin?

February 8th 2021: Bitcoin Is in a Supply Shortage

December 30th, 2020: The Latest on Bitcoin—Without the Jargon

Podcast Series

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

Twitter: Crypto market insights and commentary provided by @gaborgurbacs, @matthew_sigel and @vaneck_us

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Questions?

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