



ETHEREUM'S ROLE IN THE MODERN PORTFOLIO

JANUARY 2021





INTRODUCTION TO ETHEREUM

Bitcoin technology, built on the Bitcoin blockchain, allows users to send bitcoin (BTC) balances. The Bitcoin blockchain maintains each user's BTC balance, making Bitcoin an excellent non-sovereign store-of-value with unique monetary properties.

Ethereum takes blockchain technology further. On the Ethereum blockchain, all value is programmable as “smart contracts” implement if/then logic into money itself. Imagine you have a \$1 bill into which you can implant computer code. For example: *if* spending the \$1 at a grocery store, *then* approve the transaction; *if* spending the \$1 at a candy store, *then* reject the transaction. Ethereum introduces this into every asset, and in doing so, it significantly expands the world's choices for interacting with money.

Since 2015, the Ethereum blockchain has grown into the most actively used blockchain in the world. Ether (ETH), the cryptocurrency which powers the Ethereum blockchain, is now the second-largest cryptocurrency by market capitalization at \$130 billion.¹ The Ethereum blockchain's open-source rails allow for the development of decentralized applications, which tap into smart contracts as their backend servers.

Upon inception, 72 million ETH were created and distributed in an initial crowdsale. To control the rate of new supply issuance, Ethereum's disinflationary mechanism caps supply at an additional 16 million ETH per year. This is to prevent the arbitrary creation of new supply that would potentially lead to inflation. Like bitcoin mining, ETH miners who successfully package transactions into blocks and upload them to the blockchain receive “block rewards” for their effort. Block rewards began at 5 ETH. The current reward (as of the publishing date of this piece) is 2 ETH.

[1] Galaxy Digital Research as of January 2021



ETHEREUM IS A NEW INTERNET LAYER

Programmer Vitalik Buterin and several others co-founded the Ethereum blockchain in 2015. They realized that Bitcoin’s principles extend beyond one currency to entire computer programs where identical inputs and programs produce agreement on outputs. This is known as “general programmability.”

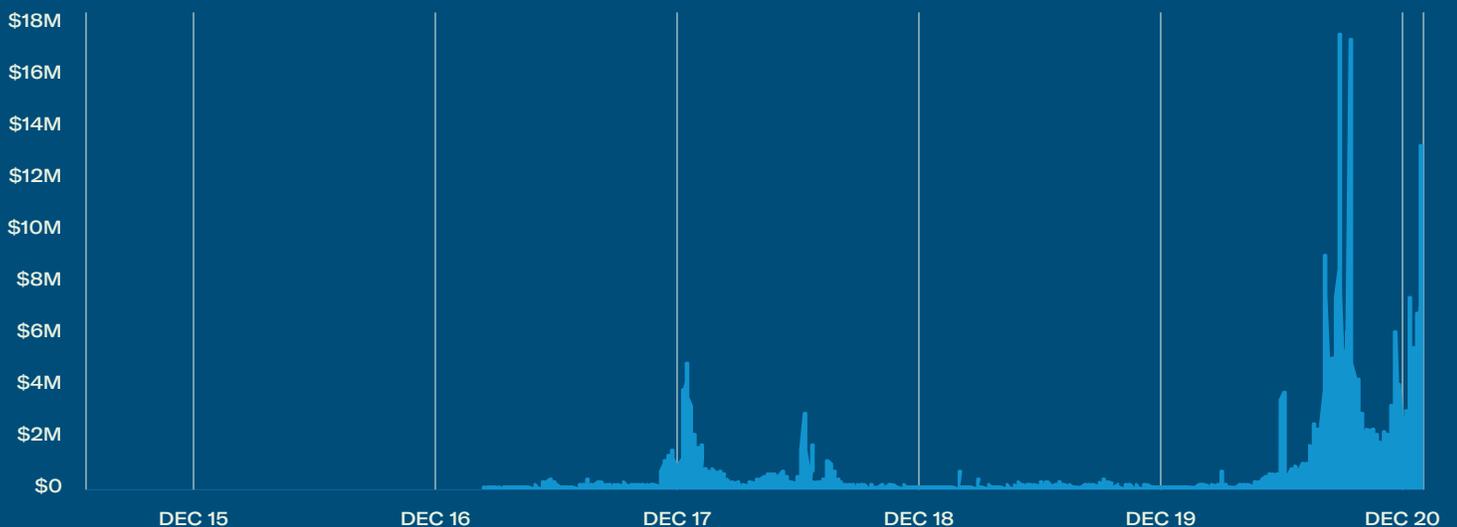
Ethereum enables properties that were never before possible on the internet. In this sense, it is the next iteration of the internet.

First, the internet has no native concept of value. Before blockchains, money did not live on the internet; money was transferred online and settled offline. PayPal would have preferred to make an internet-native currency, for example.

Second, applications and data are bundled. This allows tech conglomerates to manage silos that mine, sell, monopolize, and potentially abuse user data and access. Bundling applications and data also lands Big Tech between a rock and a hard place, forcing tech conglomerates to be both moderators and curators for content on the internet. Consider, for example, Facebook’s Cambridge Analytica scandal. Or Twitter’s recent banning of President Trump. The next iteration of the internet offers an imperturbable content substrate that platforms can tap into.

Third, closed applications stifle innovation. They do not incentivize open-source development and they hinder natural market competition. The next iteration of the internet is a collection of open, public APIs. Open-source code allows users to compose modular programs to create a superset of functionality.

TRANSACTION FEES PER DAY (AS OF JAN 2021)



The amount spent on Ethereum transaction fees is a proxy for the demand for the network, which has gone parabolic in recent months. The network processes roughly 1.1 million transactions per day.



THE RISE OF DECENTRALIZED FINANCE

We're seeing, in real-time, just how useful Ethereum technology really is as we watch the rise of Decentralized Finance (DeFi). DeFi is a global, open alternative to traditional financial services, including: savings, loans, trading, insurance, yield-generation, and more. Ethereum now hosts six DeFi applications valued at more than \$1 billion, including: Compound, Uniswap, and Aave. These protocols are quietly producing up to hundreds of millions in annualized revenue.

DeFi runs on smart contract blockchains such as Ethereum, automatically executing contracts when conditions are met. Ethereum's general programmability allows for this sophisticated functionality and enables developers to build financial services decentralized apps. DeFi has experienced exponential growth in 2020 that we anticipate will continue in 2021.

MARKET CAP OF PROTOCOLS VS. SELECT RECENTLY-PUBLIC TECH CO'S



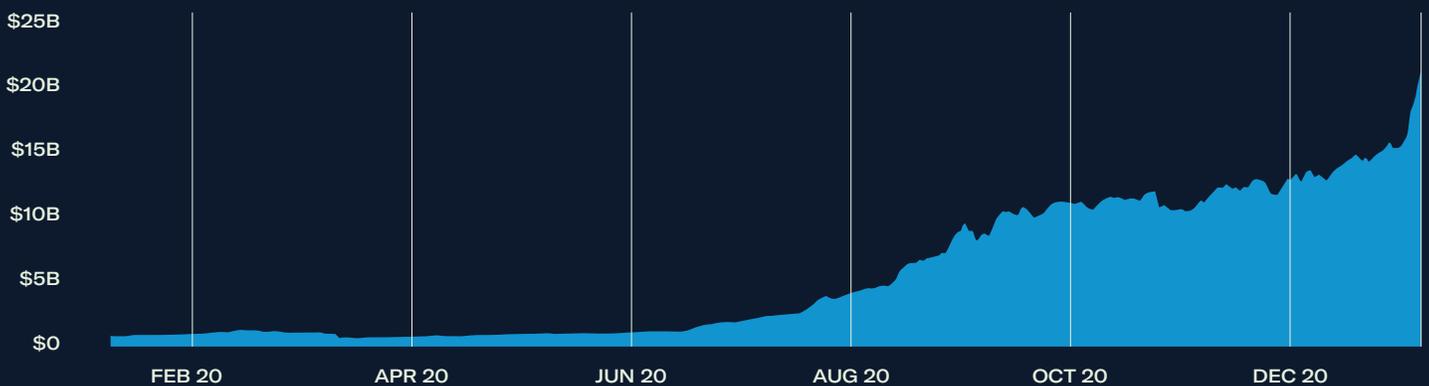
Source: Galaxy Digital Research as of January 2021

ANNUALIZED REVENUE OF PROTOCOLS VS. SELECT RECENTLY-PUBLIC TECH CO'S
(30D VS. QUARTERLY ANNUALIZED)



Source: Galaxy Digital Research as of January 2021

TOTAL VALUE LOCKED (USD) IN DEFI (AS OF JAN 2021)



Source: DeFi Pulse as of 1/15/21



ETHEREUM 2.0

Ethereum 2.0 is the initiative to increase the scalability of the Ethereum blockchain, which began in December 2020. The existing Ethereum implementation can only scale to 30 transactions per second. This caused “gas prices” (the amount of ETH required to fuel transactions) to rise throughout 2020. In late August and early September 2020, there was general consensus that something needed to be done to address rising “gas prices.”

When complete, the redesigned Ethereum 2.0 blockchain will see throughput—transaction speed—rise to 2000+ transactions per second with additional gains coming from “off-chain” optimizations. Phase 0 is the initial phase in what will be a 2-year process to make the Ethereum 2.0 blockchain production-ready. Launching the Ethereum 2.0 initiative required 524,288 ETH of deposits in a smart contract to provide the initial economic security. At the end of November 2020, more than 1,190,000 ETH were deposited. Investors took it as a vote of confidence: ETH rose 58.0% that month.

Ethereum 2.0 will not cause any disruption to current ETH holders. Ethereum 1.0 will seamlessly become part of the 2.0 chain.

ETHEREUM COMPARISON

ETHEREUM 1.0

ETHEREUM 2.0

TRANSACTIONS PER SECOND

30

2,000+

SECURITY MECHANISM

PROOF OF WORK

PROOF OF STAKE

NUMBER OF BLOCKCHAINS

1

64+



ETHEREUM IN THE PORTFOLIO

ETH is a growth asset: it is a bet on the growing network effect of an exciting new information substrate. It is a bet that more billion-dollar applications will be built on the Ethereum blockchain.

It is closest to a basket of early-stage, high-growth technology stocks that provides investors exposure to the explosion of next-gen smart contracts and decentralized applications. In this sense, investing in ETH is like investing in the future of the internet. We expect the value of ETH to increase as the Ethereum blockchain solidifies its position as the preferred blockchain for the next iteration of the internet.

Like bitcoin, investing in nascent ETH is primarily about allocation sizing. Allocation sizing depends on an investor's risk profile and time horizon. But, if you conceptualize ETH as analogous to an index of high-growth technology stocks, you might consider sizing it accordingly.

ETH's last bull run was mainly tied to bitcoin's concurrent run. Three years later, ETH now stands on its own with clear, real-life use cases. The Ethereum blockchain will continue to mature as the base layer technology for smart contracts and decentralized applications. And ETH will stand to benefit as the next iteration of the internet evolves.



CONTACT US



STEVE KURZ

Head of Asset Management
Steve.kurz@galaxydigital.io



PAUL CAPPELLI

Portfolio Manager
Paul.cappelli@galaxydigital.io

GENERAL INQUIRES

(212) 390 9205

GFM@galaxydigital.io

galaxyfundmanagement.com



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