Ethereum: Bull & Bear Case

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Director, Digital Asset Product – VanEck
What is Ethereum

Stablecoins: ETH’s first killer app

DeFi & Web 3.0: The Next Killer Apps

ETH 2.0: The Supply Side Debate
What is 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

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)**

- Q4 2019
- Q1 2020
- Q2 2020
- Q3 2020
- Q4 2020
- Q1 2021
- 2021E

**Ethereum revenues (annualized)**

- Q4 2019
- Q1 2020
- Q2 2020
- Q3 2020
- Q4 2020
- Q1 2021
- 2021E

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

Banking & Payment Industry Revenues

Global wealth & investable assets

- $0
- $50
- $100
- $150
- $200
- $250
- $300
- $350
- $400
- $450

Trillions

Total Wealth Financial assets non financial assets Global GDP

Global Banking & Payments Comprise:

- 3.5% Of GDP
- 1.5% Of global financial assets

Putting internet into perspective

FAANMG market cap as % of S&P 500

FAANGM vs. S&P EPS revisions

Top 90 Global Internet Companies

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.

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.

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**

<table>
<thead>
<tr>
<th></th>
<th>0%</th>
<th>200%</th>
<th>400%</th>
<th>600%</th>
<th>800%</th>
<th>1000%</th>
<th>1200%</th>
<th>1400%</th>
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<tbody>
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<td>Global internet</td>
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<td>Ethereum</td>
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<td>DeFi</td>
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**Price / 2021E sales ratio**

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<thead>
<tr>
<th></th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
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<tbody>
<tr>
<td>Global internet</td>
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<tr>
<td>Ethereum</td>
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<tr>
<td>DeFi (all sources)</td>
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<tr>
<td>DeFi protocol only</td>
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</tr>
</tbody>
</table>

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

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.

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.

Source: David Hoffman Twitter, Chegg (re-printed w/ permission).
## Ethereum = triple-point asset?

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

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Source: VanEck
Stablecoins

The first killer app on Ethereum
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

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

Ethereum: Bull & Bear Case

Stablecoin history: checkered past gives way to bright future?

2014
- First stablecoin BitUSD launched
- Tether stablecoin listed on Bitfinex

2016
- Crypto-collateralized stablecoin SteemUSD launches

2017
- Bitfinex & Tether stop supporting US customers; Tether “breaks the buck” for first time
- MakerDao launches a crypto-collateralized stablecoin on Ethereum

2018
- First fiat-collateralized stablecoin with regular attestations, TrueUSD launches
- Gemini launches fiat-collateralized Gemini dollar (GUSD); Paxos launches fiat-collateralized Paxos Standard; Circle announces USDC
- Tether trades at 5½ discount; Coinbase joins Circle and allows buy/sell off USDC
- DOJ investigates Tether
- BitUSD breaks peg, never recovers; stablecoin project “Basis” also shuts down

2019
- Terra launches first algorithmic stablecoin 100% collateralized on-chain by LUNA
- Facebook unveils plans for "globalcoin" Libra stablecoin with partners Uber, eBay, Visa & Mastercard
- MakerDao launches Dai stablecoin

2020
- Facebook redesigns stablecoin project to comply with regulatory concerns
- Stablecoin market cap hits $20b

2021
- US bank regulator OCC (Office of Comptroller of the Currency) allows federally chartered banks to use stablecoins for payments & settlement
- Tether & Bitfinex reach settlement with NY attorney general, agree to pay $18.5m fine
- Stablecoin on-chain volume surpasses $1 trillion monthly
- Facebook Diem relocates from Switzerland to US, registers as money services business with US Treasury; Tether daily volume hits $100b

Source: The Block Research, CoinDesk, VanEck.
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?

<table>
<thead>
<tr>
<th></th>
<th>Tax efficiency (keep money on blockchain vs. converting to fiat)</th>
<th>Exploit arbitrage opportunities (highly fragmented market = different prices on different venues)</th>
<th>Growth capital (Growing dAPP* ecosystem needs capital to fund growth; You can’t buy alt-coins with USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Hodler&quot;</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Trader</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Exchange</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Blockchain entrepreneur</td>
<td>✓</td>
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<td>✓</td>
</tr>
</tbody>
</table>

* dAPP is defined as Decentralized Applications

Source: VanEck

Ethereum: Bull & Bear Case
# Wide stablecoin array brings diversification benefits

## Types of stablecoins

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

### Examples
- Gemini Dollar
- USD Coin
- TrueUSD
- Tether
- Binance USD
- Dai
- Ampleforth
- Basis
- Digix
- Paxos Gold

### Advantages
- Simple
- Stable
- Scalable
- Efficient
- Transparent
- 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

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Source: Corporate Finance Institute, Coinmetrics.io
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

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

Blockchain venture capital investment will surpass 2018 peak

Crypto-enabled wallets are taking share

Supply-side: ETH 1.0 is too congested…

Ethereum transaction fees now rival that of bitcoin

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 supply side

ETH 2.0 launches in July
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)


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: Van Eck.
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
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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- 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.

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