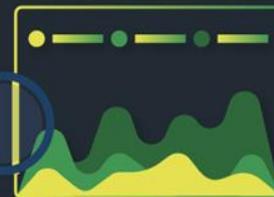
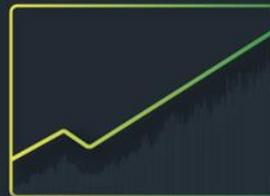




CoinGecko

November 2020

Monthly Crypto Report



MARKET LANDSCAPE

Market capitalization kept climbing and set a new yearly-high of \$554 billion

+46%

Top-30 Coins Market Cap Growth in November 2020

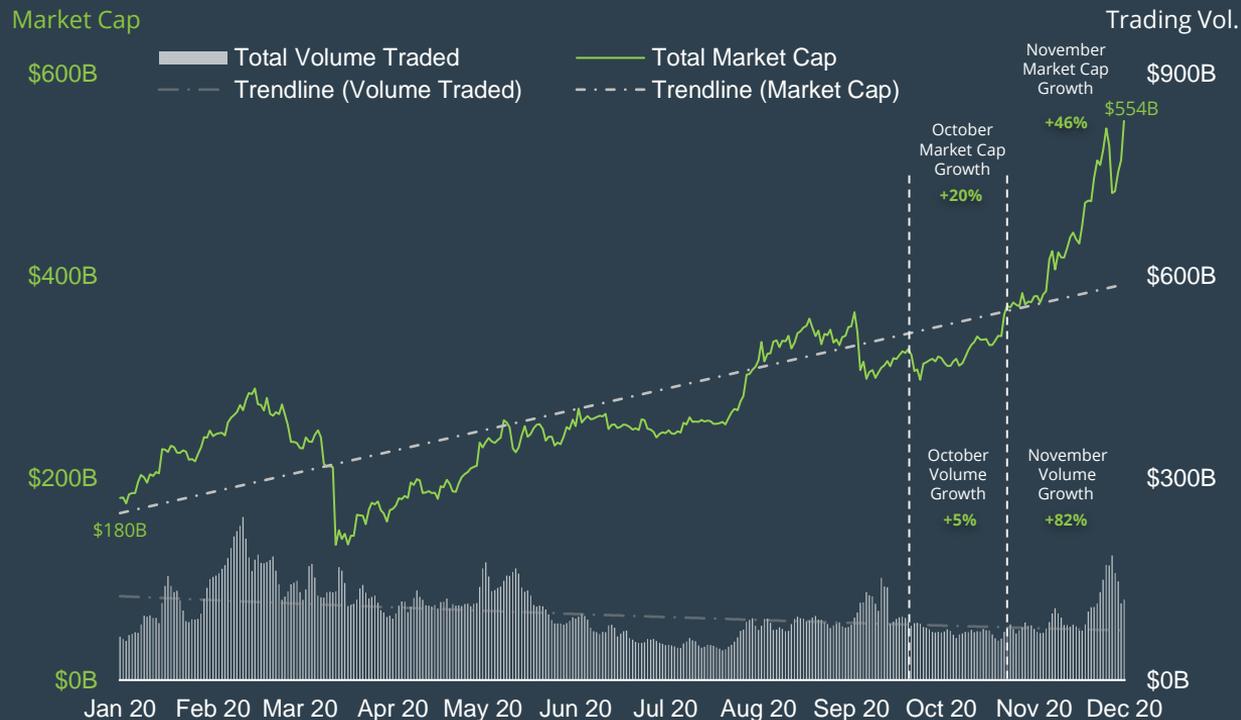
November's Top-30 coins' market capitalization growth **outperformed** October's growth (**46% vs. 20%**) and continued to set another **yearly-high of \$554 billion in market capitalization**.

Trading volume for November 2020 closed out with a bang, recorded an **82% increase** to \$4 billion.

The November rally **was institution-led** as Bitcoin received recognition by BlackRock, the world's largest asset manager, as an alternative to gold.

Additionally, S&P Dow Jones Indices will be launching cryptocurrency indices in 2021. This further **strengthens market sentiment** on the crypto market.^{[1][2]}

Top-30 Market Cap & Spot Trading Volume



[1] <https://www.coindesk.com/blackrock-exec-says-bitcoin-could-replace-gold-to-a-large-extent>

[2] <https://www.reuters.com/article/cryptocurrencies-sp-s-p-dow-jones-indices-to-launch-cryptocurrency-indices-in-2021-idUSL1N2J0TG>

Top-5 Crypto Returns

XRP and Ethereum closed the month with a higher price growth than Bitcoin



+71%
Average Top-5 Crypto Returns* in November 2020

Price returns Nov 2020
(vs. Oct 2020)

 **+42.3%**
(+25.7%)

 **+58.7%**
(+6.5%)

 **+177.1%**
(-1.1%)

 **+56.9%**
(+16.5%)

 **+21.0%**
(+15.1%)

Cryptocurrencies are gaining more institutional support and recognition by the mainstream media. As **Bitcoin rallied +42%**, other major altcoins displayed strength as well. **XRP saw its month-on-month growth skyrocketed by +177%**.

*Top-5 Cryptocurrencies exclude Tether (USDT) stablecoin

Top-30 Coins Dominance

Ethereum and XRP outperformed Bitcoin in terms of dominance - altcoin season?

Market Dominance November 2020

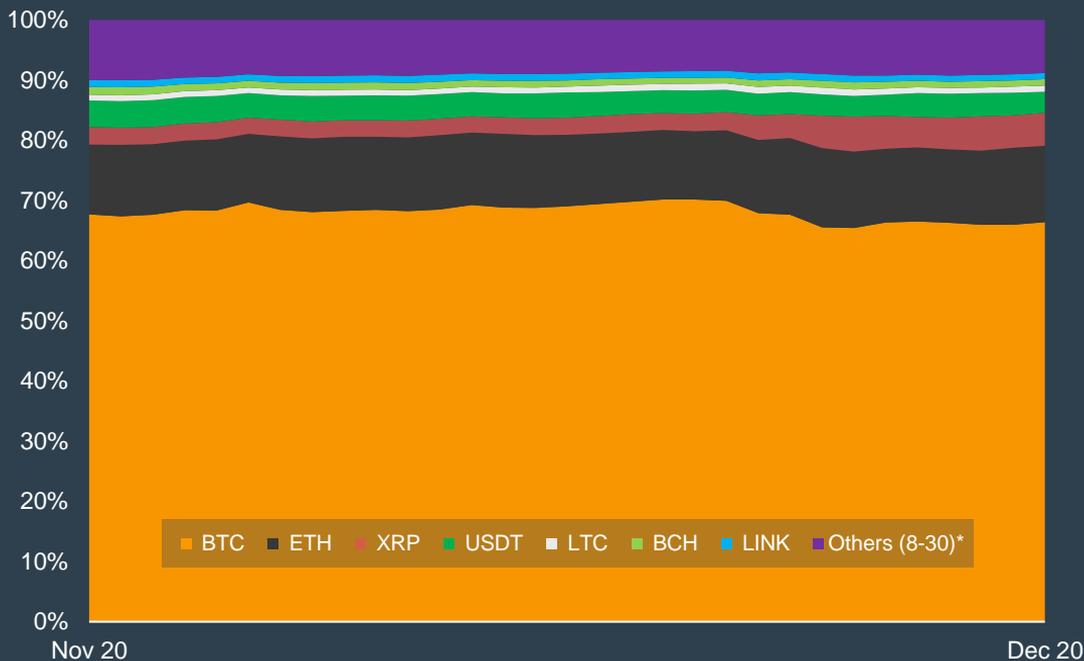
(vs. October 2020 market dominance)



Despite the recent rally, Bitcoin's dominance **dropped 1.5%** to 65.7%, making it the biggest loser among all other coins. Ethereum's and XRP's dominance meanwhile **rose 1.1% and 2.6%** respectively.

Bitcoin's consolidation around \$19,000 with a seemingly strengthening altcoin market **hints at a return of the altcoin season.**

Top-30 Cryptocurrency Dominance Chart

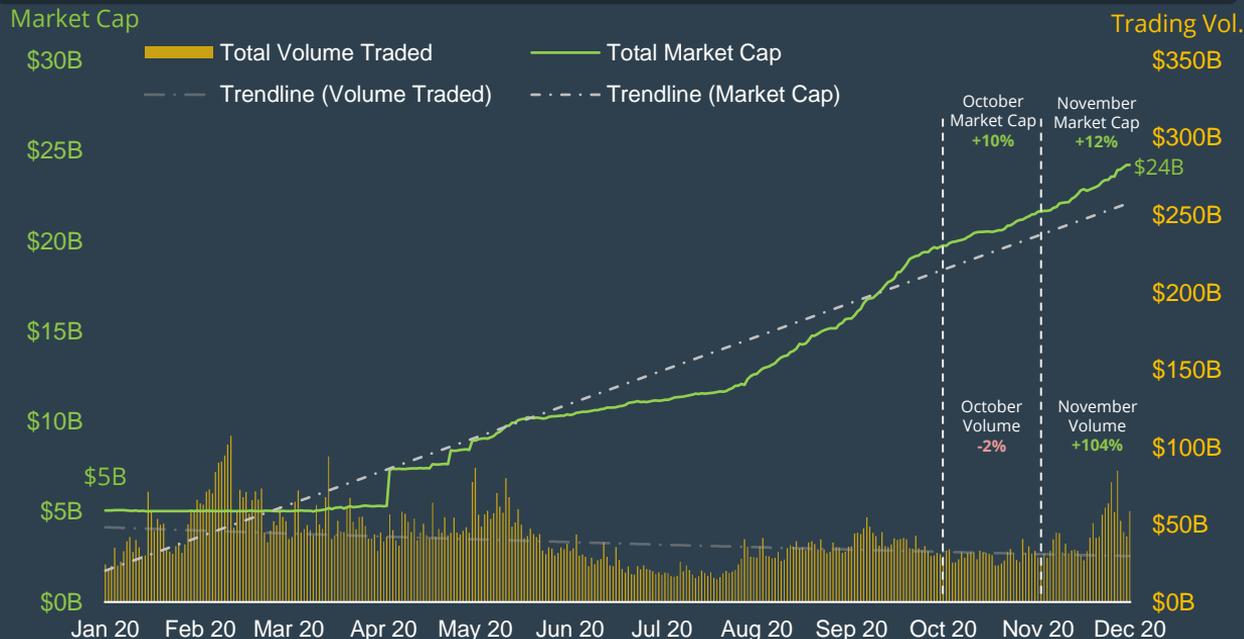


*Others (8 - 30) refers to top 8 - 30 coins by Market Capitalization on CoinGecko as of 1st December 2020

Top-5 Stablecoins Trading Volume

Stablecoins circulating supply increased marginally by 12% to \$24 billion

Top-5 Stablecoins November 2020 Overview



+\$2.5_B
 Top-5 Stablecoins Market Cap in November 2020

Nov 2020 Circulation (change vs Oct 2020)

	\$19.1B +\$2.5B (+15%)
	\$2.9B +\$37M (+1%)
	\$1.1B +118M (+13%)
	\$691.8M -\$18 (-3%)
	\$404.4M -\$26M (-6%)

The stablecoin market capitalization **grew marginally faster** in November compared to October (+12% vs +10%). However, trading volume far outpaced market cap growth with a **104% increase**, likely fueled by **market volatility**.

Top-5 stablecoins by market capitalization taken on CoinGecko as of 1st December 2020. For the latest stablecoins statistics, visit [coingecko.com/en/stablecoins](https://www.coingecko.com/en/stablecoins)

Bitcoin Price vs. Trading Volume

Bitcoin mimics its 2017 trajectory as retail and institutions pushed it to a new ATH



+173%
BTC price growth YTD 2020

Bitcoin rapidly gained momentum and hit a **new all-time high at \$19,725 (+42%)** on 30th Nov, surpassing previous ATH of \$19,665 in 2017.

News of institutional adoption as well as the launch of Dow Jones crypto indexes likely contributed to a positive sentiment for BTC.^{[1][2]}

	Price Return	Trading Volume
Jan-20	29%	136%
Feb-20	-8%	-34%
Mar-20	-25%	-3%
Apr-20	34%	104%
May-20	10%	-58%
Jun-20	-3%	-28%
Jul-20	24%	13%
Aug-20	3%	-6%
Sep-20	-8%	-12%
Oct-20	28%	22%
Nov-20	42%	59%
YTD	173%	71%

[1] <https://www.coindesk.com/blackrock-exec-says-bitcoin-could-replace-gold-to-a-large-extent>
 [2] <https://www.reuters.com/article/cryptocurrencies-sp/sp-dow-jones-indices-to-launch-cryptocurrency-indexes-in-2021-idUSL1N21J0TG>

Bitcoin Price vs. Trading Volume

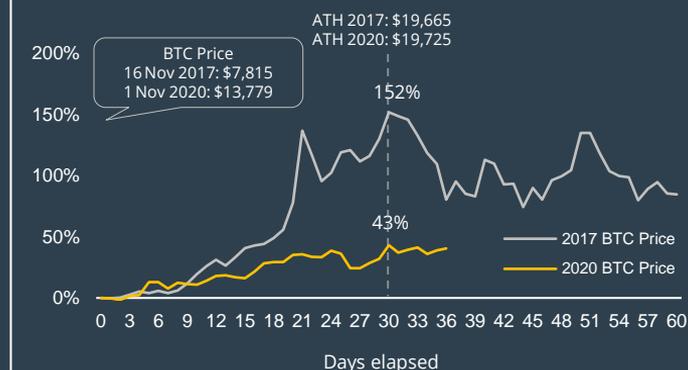
... However, is this the new peak, or can it potentially go higher?

Daily Bitcoin Price & Trading Volume (2015 - 2020)



Unlike the 2017 cycle, the ongoing Bitcoin rally **appears to be more gradual, seemingly bolstered** by increased institutional participation & retail interest.

Price Return BTC 2017 vs. 2020 (Before vs. After ATH)



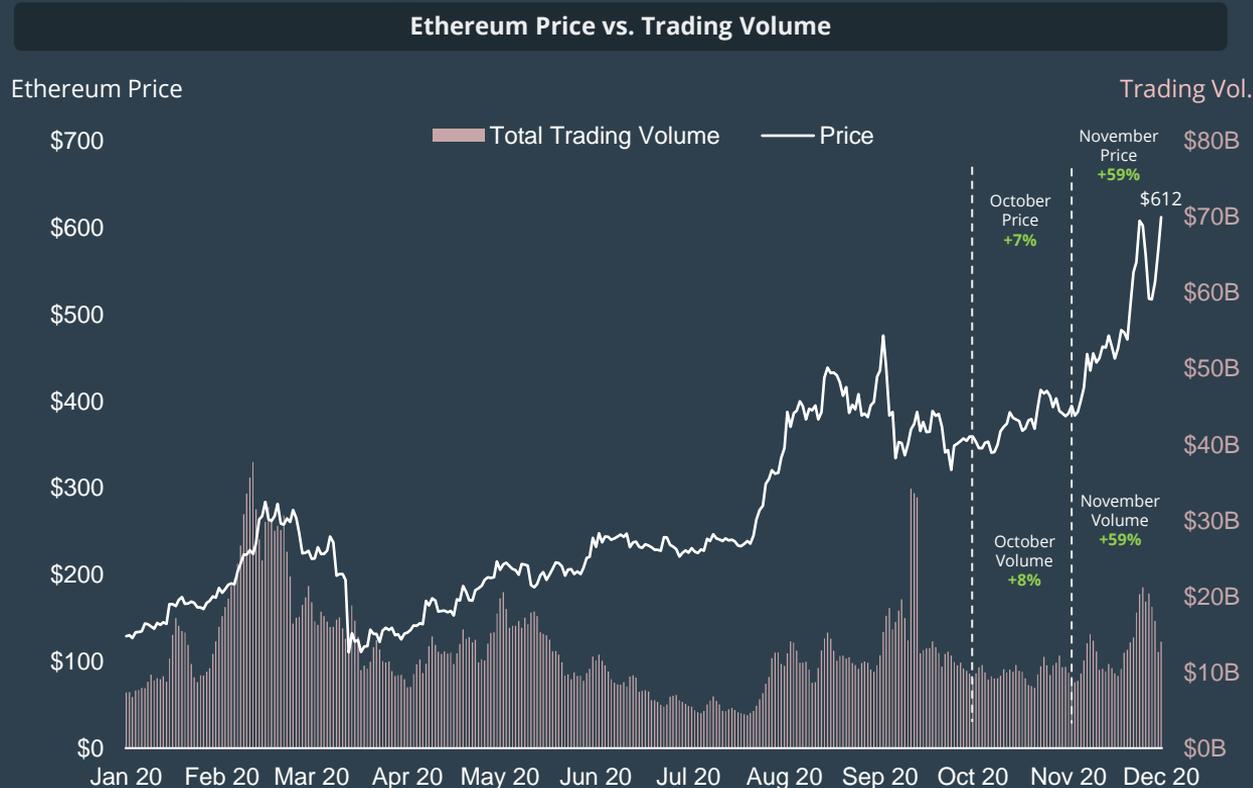
Google Search Trend on "Bitcoin" term (2015 - 2020)



Google search trend for the "Bitcoin" keyword indicates that **the current market only has about 1/4 of the 2017 hype**. This could be a hint at further potential growth for Bitcoin in 2021.

Ethereum Price vs. Trading Volume

Ethereum's price broke past the \$600 mark in anticipation of ETH 2.0



+374%
ETH price growth YTD 2020

Ethereum's price jumped over **50% in November** and **broke \$600**, a first since June 2018. ETH now sits **58% below** its ATH of \$1,448 on 13th Jan 2018.

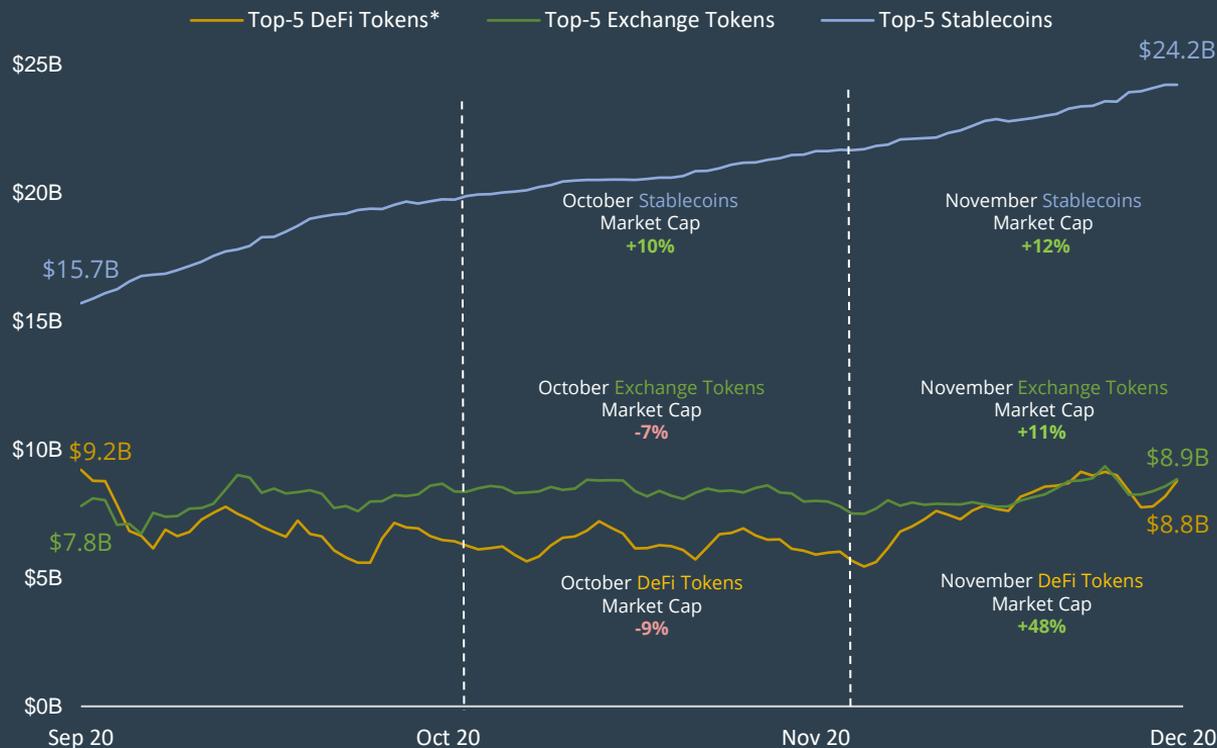
For the trading volume, it ended the month with an **59% increase**, higher relative to the previous month (+8%).

	Price Return	Trading Volume
Jan-20	39%	40%
Feb-20	22%	22%
Mar-20	-39%	-39%
Apr-20	54%	56%
May-20	13%	12%
Jun-20	-3%	-2%
Jul-20	53%	54%
Aug-20	26%	27%
Sep-20	-17%	-17%
Oct-20	7%	8%
Nov-20	59%	59%
YTD	374%	394%

Decentralized Finance (DeFi)

DeFi tokens begin to pick up steam again, while stablecoins continue the ascent

Market Capitalization of Top-5 Tokens as of 1st December (September - November 2020)



November saw **the resurgence of the DeFi sector back to its Aug-Sep level** as the total market capitalization of the top-5 DeFi tokens rose from **\$5.9 billion** to **\$8.8 billion**.

Stablecoins continued to show an upward trend with a new high of **\$24 billion** in market capitalization as trading activity ramps up.

Overall, DeFi **greatly outperformed** all other categories. This illustrates a strong rebound from DeFi as market regained its momentum.

*Includes figures for LEND from 1st September onwards, before and after migration to AAVE. AAVE market cap included from 3rd October onwards. Top-5 tokens by each category is taken on CoinGecko as of 1st December 2020.

Cryptocurrencies experienced a bull market during the month of November

Top-10 DeFi Tokens Price Return (June - December 2020)

	Jun	Jul	Aug	Sep	Oct	Nov	YTD
Top-10 DeFi Tokens							
LINK	10%	70%	101%	-37%	14%	27%	694%
AAVE	-	-	-	-	-47%	156%	54%
LEND*	54%	131%	143%	-28%	-44%	155%	5235%
UNI	-	-	-	21%	-46%	66%	15%
YFI	-	-	749%	-32%	-56%	150%	3762%
SNX	146%	100%	90%	-36%	-36%	57%	334%
MKR	-1%	22%	22%	-16%	-9%	8%	29%
UMA	35%	120%	432%	-60%	-24%	20%	2508%
COMP	175%	-38%	81%	-45%	-32%	23%	45%
AMPL	132%	-56%	118%	-68%	50%	45%	67%
ZRX	6%	8%	220%	-53%	20%	31%	136%
Top-5 Cryptocurrencies**							
BTC	-3%	24%	3%	-8%	28%	42%	167%
ETH	-3%	53%	26%	-17%	7%	59%	363%
XRP	-14%	48%	9%	-15%	-1%	177%	227%
LTC	-10%	41%	5%	-24%	20%	57%	116%
BCH	-7%	35%	-9%	-17%	15%	21%	40%

Outside of DeFi tokens, XRP emerged as a surprise winner with a **177% jump** in November, crowning it as the top performer amongst selected crypto assets. It is likely **that the Bitcoin rally has attracted a new wave of retail investors** into XRP.

Amongst DeFi tokens, Aave led the November DeFi increase with **+156% gain**. This may be due to the anticipation of Aave v2 that was launched on 3rd December 2020.

This is followed by a **+150%** price increase for YFI in conjunction with its **5 blitzscaling mergers in the last week of November**.

Top-10 DeFi tokens based on 1st December 2020

* LEND is being migrated to AAVE at a rate of 100 LEND per 1 AAVE from 2nd October 2020.

**USDT is excluded from the Top-5 Cryptocurrencies

EXCHANGES

Top-7 Cryptocurrency Exchanges

Trading volumes of CEXs and DEXs rebounded by 97.8%

Top-7 CEX + DEX Trading Volume (June - November 2020)



+97.8%

Total Exchange Volume Growth in November 2020

In November, trading volumes across the top-7 centralized and decentralized exchanges **increased by a staggering \$172 billion**, hitting 2020 high of **\$348 billion monthly volume**. CEXs contributed to all of the increase while DEXs saw a slight drop of **\$3.3 billion (-15.8%)**.

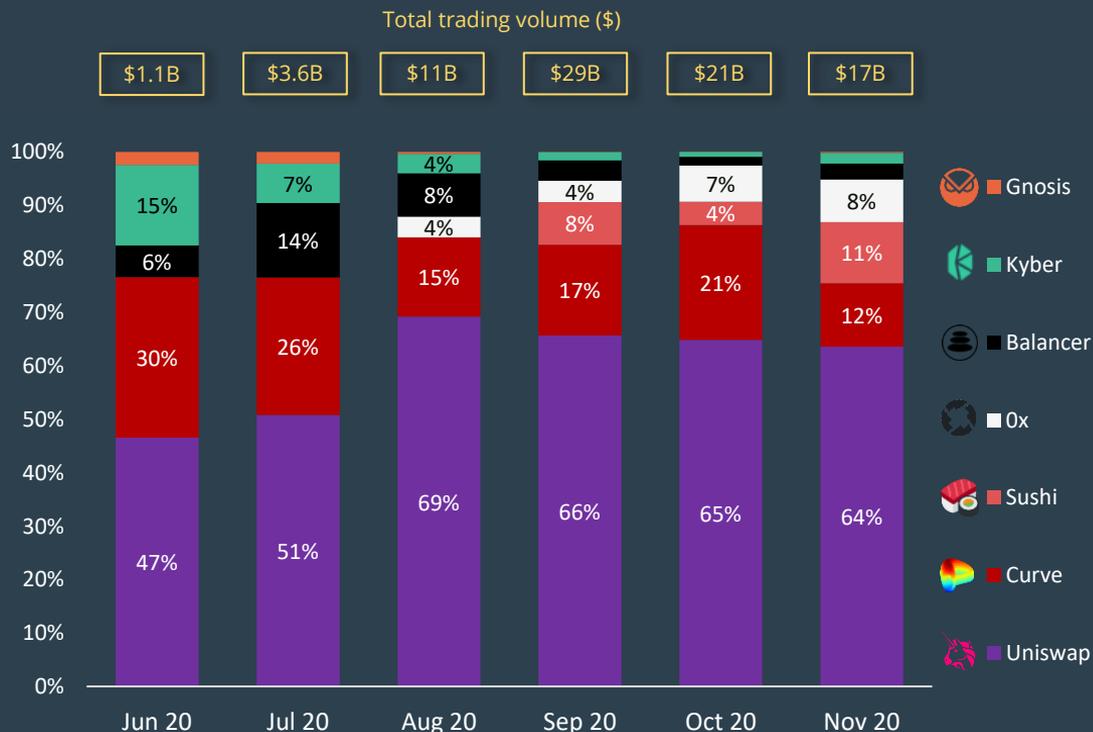
The enormous gains for CEXs likely stem from **positive global macroeconomic events** such as the conclusion of the U.S. election and strong institutional interest in cryptocurrencies.

Despite strong gains throughout the year, DEXs failed to capitalize on the November surge as volumes fell. The DEX-CEX volume ratio **fell from 12% to 5%** in November.

Top-7 Decentralized Exchanges (DEX)

Uniswap maintained its dominance while SushiSwap leapfrogged ahead

Top-7 DEX Trading Volume Dominance (June - November 2020)



-\$3.3B
 Top-7 DEX Total Trading Volume decreased in November 2020

The downward trend for DEX trading volumes continued in November, where total volume **fell by \$3.3 billion (-15.8%)**.

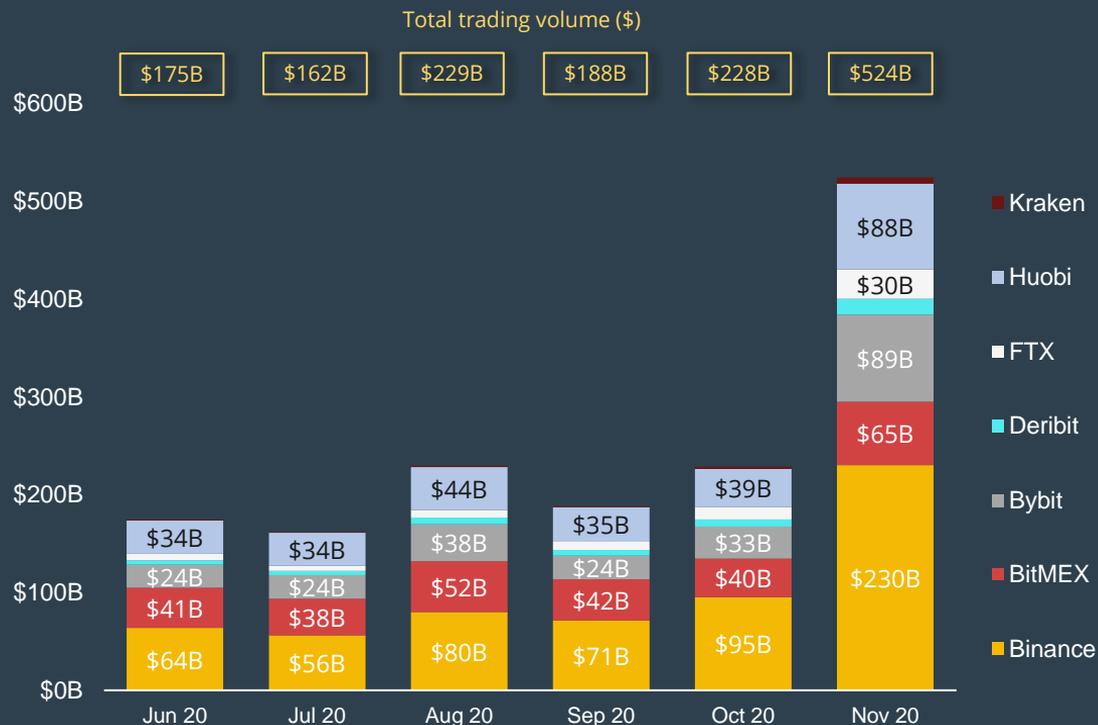
Uniswap and Curve lost **\$2.39 billion and \$2.41 billion** respectively. However, relative to each platform's own trading volumes, Curve was hit harder, **losing 9% in dominance**. In comparison, Uniswap lost a mere 1% lead.

SushiSwap was the biggest winner in November, registering a significant **\$1.1 billion increase** in volume, raising its dominance to its highest yet from **4% to 11%**.

Derivatives Exchanges – Bitcoin Perpetual Swaps Volume

BTC Perpetual swaps volume reached a yearly record of \$524 billion

Aggregate Monthly Bitcoin Perpetual Trading Volume (June – November 2020)



+130%

Total BTC Perpetual Swaps Volume Growth in November 2020

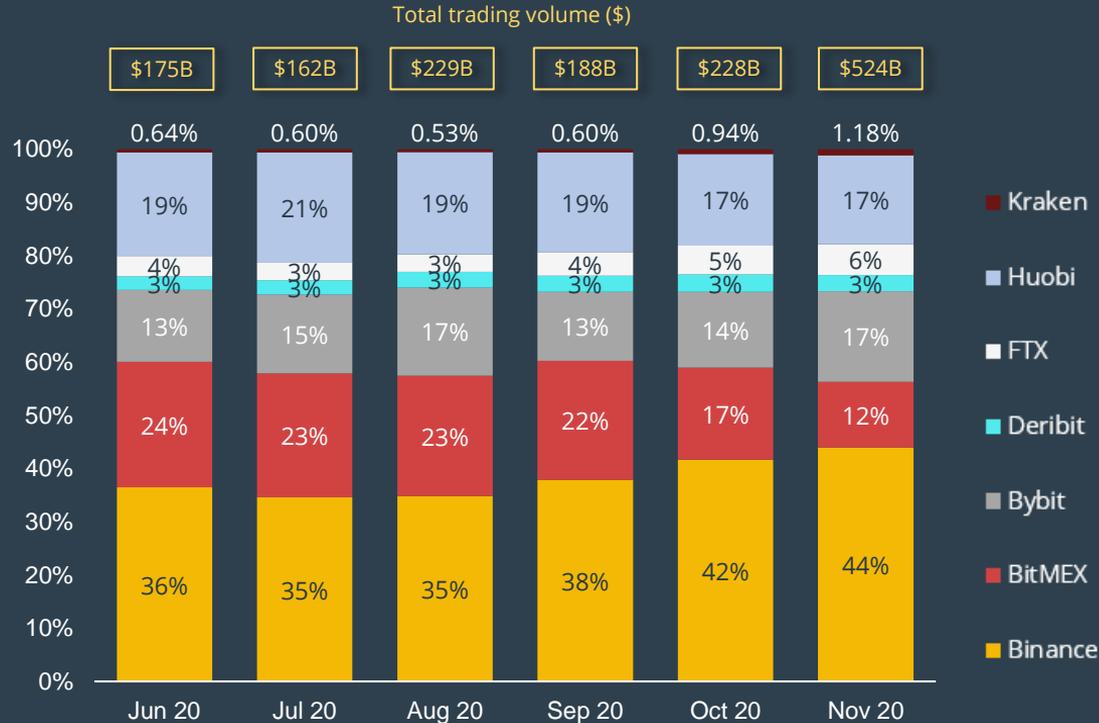
Bitcoin's recent rally to above \$18,000 pushed BTC Perpetual Swap volumes to rebound strongly in November. Total monthly volume **increased by 130% to \$524 billion**, reaching its highest monthly volume in 2020.

46% of the increase was driven by Binance (**+\$135 billion**), followed by **19%** by Bybit (**+\$57 billion**) and **16%** from Huobi (**+\$48 billion**).

Derivatives Exchanges – Bitcoin Perpetual Swaps Volume

Binance solidified its lead, Bybit rebounds and BitMEX faltered

Aggregate Monthly Bitcoin Perpetual Volume Dominance (June – November 2020)



Binance’s Bitcoin Perpetual swap volume dominance in November **increased to 44%**, further strengthening its lead.

Additional uptick in dominance is covered by Bybit which **increased to 17%**, returning to levels **last seen in August this year**.

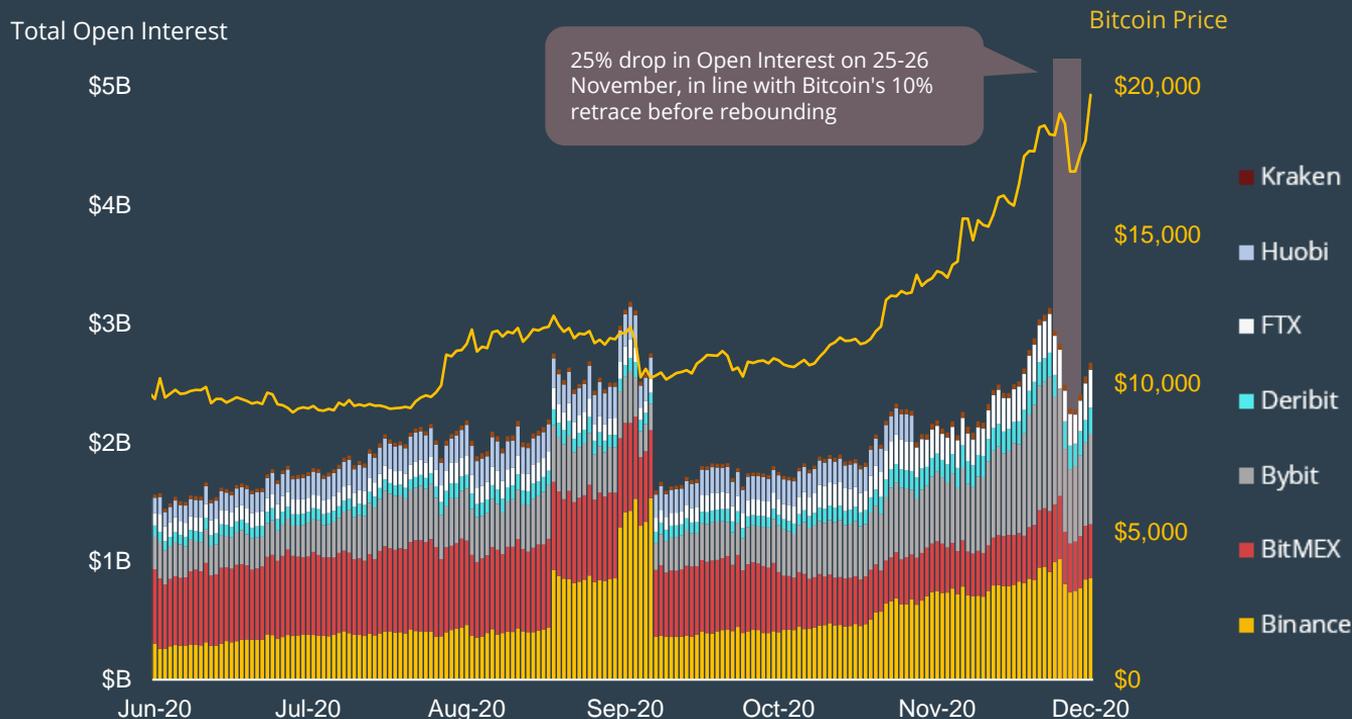
Amongst all platforms, BitMEX was **the only loser** as it continued to witness its November share drop from **17% to 12% month-on-month**.

Data source: CoinGecko. Open Interest is measured for Bitcoin Perpetual swaps trading pair of top-7 exchanges.

Derivatives Exchanges – Bitcoin Perpetual Swaps Open Interest

Open Interest on BTC Perp swaps rises to \$2.7 billion, in lock-step with Bitcoin's price rally

Aggregate Monthly Bitcoin Perpetual Open Interest (June - November 2020)



Open Interest (OI) surged to a high of **\$3.13 billion** on 23rd November, before closing the month down at **\$2.7 billion**. Overall, OI had a **+21%** increase.

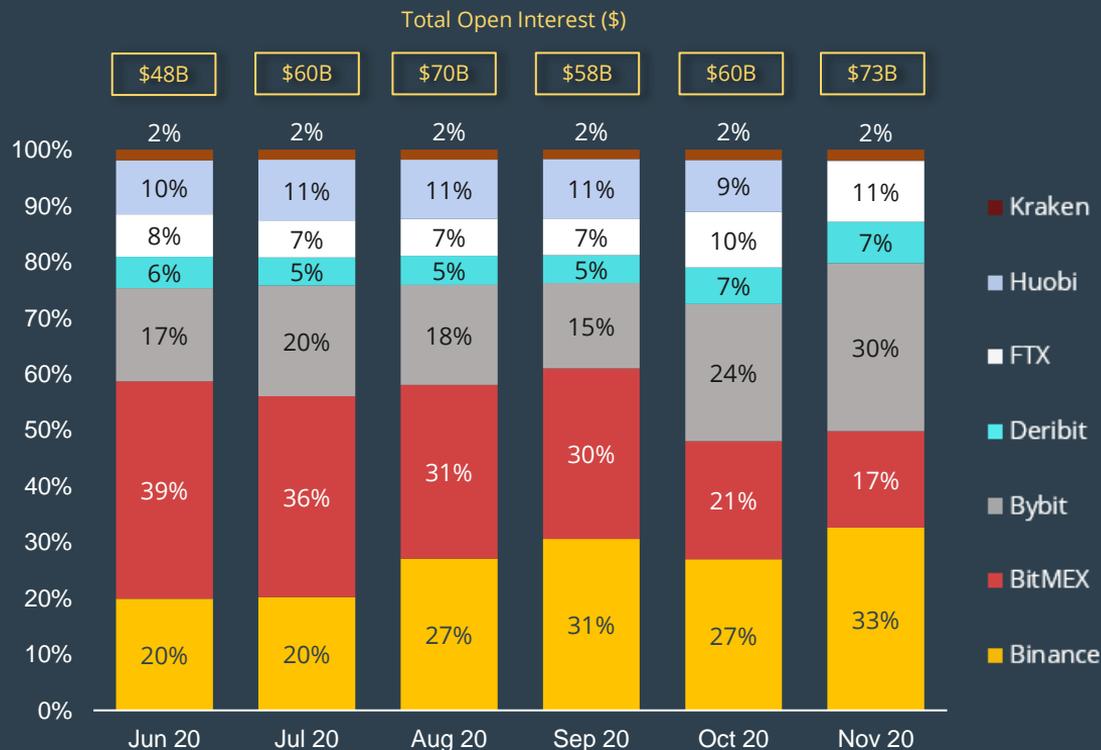
Binance came out on top with Bitcoin Perpetual Open Interest at **\$845 million**, followed by Bybit at **\$700 million**. Both platforms accounted for the majority of OI growth, with **40%** and **39%** respectively.

The increase in Open Interest was likely driven by **strong institutional interest** in Bitcoin, which in turn fueled the asset's own rally to its new all-time high of \$19,725 on 30th November.

Derivatives Exchanges – Bitcoin Perpetual Swaps Open Interest

BitMEX OI dominance continued to slide while Binance and Bybit won big

Aggregate Monthly Bitcoin Perpetual Open Interest Dominance (June - November 2020)



November saw BitMEX's market share slide further from **21% to 17%**, making the month its **5th consecutive drop**. Overall, it has **lost 22% in OI dominance** since June.

This continual drop is likely due to BitMEX's **ongoing legal proceedings** with the CFTC, which has significantly impacted **trading sentiment** on the platform.

Huobi saw a **staggering loss** in dominance in November, owing to China's **recent crackdown** of several crypto exchanges. Nearly **\$300 million** flowed out of the platform to Binance.

Binance and Bybit both enjoyed **a significant increase** in market share, with a **6% gain** for each platform, giving them their **highest OI dominance** yet.

Data source: CoinGecko. Open Interest is measured for Bitcoin Perpetual swaps trading pair of top-7 exchanges. Note: For month of November, Huobi is omitted due to irregularities in data.

CRYPTO HIGHLIGHTS

DeFi Economic Exploitation – Flash Loan Attack

Almost \$70 million has been exploited from five DeFi protocols via flashloan attacks

Throughout October and November, **five high-profile exploits of DeFi protocols** led to nearly **\$70 million** worth of cryptocurrencies stolen.

Protocol	Date	Audited	Amount lost	Exploit method	Fund Recovery
 Harvest Finance	26 Oct 2020	✓	\$34 million ^[1]	Hacker took out a \$50M USDT flash loan, then used Curve (y pool) to swap funds and stretch stable coin prices out of proportion.	\$2.5M
 Akropolis	12 Nov 2020	✓	\$2 million ^[2]	Fake token was deposited multiple times and withdrew for DAI.	N/A
 Value DeFi	14 Nov 2020	✓	\$6 million ^[3]	Value DeFi used Curve as their price oracle and over \$100M of USDT & DAI were swapped for USDC to manipulate its price.	N/A
 Origin Protocol	17 Nov 2020	✓	\$7 million ^[4]	The attacker used a malicious contract to manipulate Origin's "minting" code and extracted approximately 20M OUSD.	N/A
 Pickle Finance	21 Nov 2020	✓	\$20 million ^[5]	The hacker drained funds by reallocating funds from the original jar to a fake Pickle Jar.	N/A



IMPORTANT: Audits do NOT guarantee fund security.

[1] <https://medium.com/harvest-finance/harvest-flashloan-economic-attack-post-mortem-3cf900d65217>

[2] <https://cointelegraph.com/news/akropolis-defi-protocol-paused-as-hackers-get-away-with-2m-in-dai>

[3] <https://www.coindesk.com/value-defi-suffers-6m-flash-loan-attackhttps://www.coindesk.com/value-defi-suffers-6m-flash-loan-attack>

[4] <https://news.bitcoin.com/origin-defi-protocol-suffers-massive-flash-loan-attack-ousd-stablecoin-value-plunges-85/>

[5] <https://www.coindesk.com/defi-protocol-pickle-finance-token-loses-almost-half-its-value-after-19-7m-hack>

Impacted protocols experienced lower prices and user confidence

Dates of exploitation

Harvest Finance (FARM): 26 Oct 2020

Akropolis (AKRO): 12 Nov 2020

Value Liquidity (VALUE): 14 Nov 2020

Origin Dollar (OUSD) 17 Nov 2020

Pickle Finance (PICKLE): 21 Nov 2020

All 5 native tokens of the protocol dropped in price after suffering the exploitation.

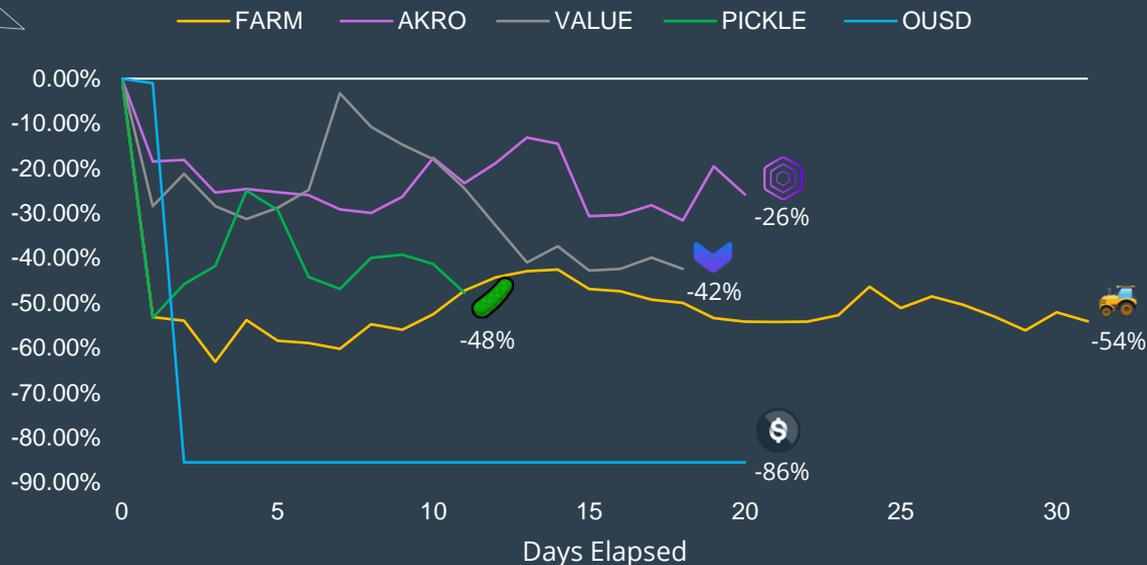
OUSD **suffered the worst with 85% drop** in price from **\$1 to \$0.16** right after the attack.

The exploit on Harvest Finance plummeted the value of its FARM token by **more than 50% from \$234**.

All the affected protocols **struggled to rebound** to their previous price points post-exploit.

Users have probably **lost their confidence** in these affected protocols and deemed them to be vulnerable to future attacks.

Price Return Post Flash Loan Attacks (October - November 2020)



Taproot: Bitcoin's Next Technical Upgrade

Improving Bitcoin using Schnorr Signatures and Taproot

What are Schnorr Signatures and Taproot?

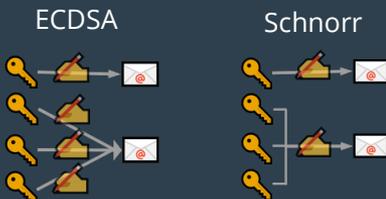
- On 15 October 2020, a set of Bitcoin Improvement Proposals (BIP [340](#), [341](#), [342](#)) was merged into the main Bitcoin code repository.
- Dubbed **Taproot**, this is the **most significant upgrade** on the Bitcoin codebase since **SegWit** in 2017.
- Besides Taproot, this update will also replace Bitcoin's current digital signature algorithm (ECDSA) with Schnorr Signature, a different signature algorithm.
- While this upgrade has yet to be decided, a **soft fork** is likely to occur. Up to **82.05% of Bitcoin's mining pools** are in support of the soft fork.

What is Taproot?



At its core, Taproot aims to **hide transaction scripts** so that they appear as normal transactions on the blockchain.

What is Schnorr Signature?



A key advantage of Schnorr is the ability to **aggregate multiple keys** into **a single unique signature**.

How Taproot Improves Bitcoin?



Security

Improved security from Schnorr Signatures as less assumptions are required in the algorithm.



Scalability

More transactions can occur per block as Schnorr Signatures remove data bloat from having multiple signatures in transactions.



Transaction Privacy

Complex transactions are indistinguishable from simple ones to a blockchain observer.

Eth2: Ethereum's Next Upgrade

A phase-by-phase implementation to address Ethereum's issues

Eth2 refers to the **latest infrastructure upgrade** of the current Ethereum blockchain (Eth1) that would improve the network's scalability, efficiency, and sustainability to iron out the current bottlenecks and enable the network to process more transactions. It will be conducted in 4 phases.

! Issues with Eth1

1 Poor Scalability

Growing # of transactions and throughput limitation leads to:

1. **Network congestion**
2. **High fees**

✔ Eth2's Solutions

1 Sharding for Scalability

In Eth2, the Ethereum blockchain is split into shards. By dividing the data processing & validation across nodes, a much higher theoretical throughput of **1M transactions/second** can be achieved.

2 High Energy Use

Proof-of-work (PoW) requires **large amounts** of computational power (and **electrical power**) to keep the network secure and operational.

2 Proof of Stake for Sustainability

Change of consensus mechanism from Proof of Work (PoW) to Proof of Stake (PoS). In PoS, validators stake ETH as collateral to validate blocks in place of mining.

This is much **less energy intensive** and can potentially be more **sustainable** in the long run.

Which phase are we in now?

● Phase 0 - Beacon & Staking (1st December 2020)

● Phase 1 - Sharding (est. 2021)

● Phase 1.5 - Migration of Eth1 to Eth2 (est. 2021)

● Phase 2 - Execution Environments Ready (est. 2022 and onwards)

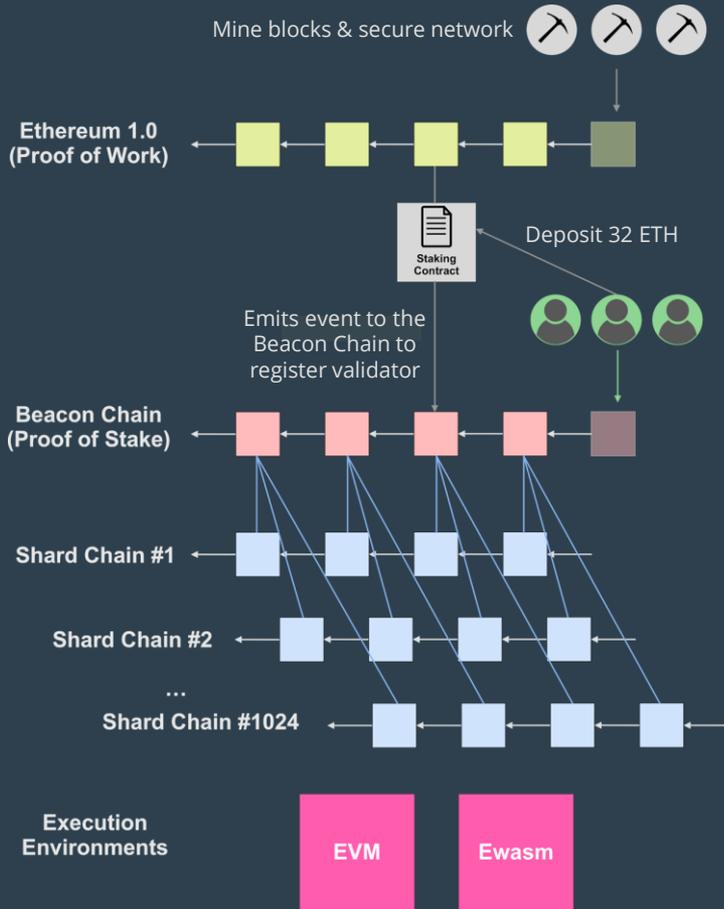
Is Eth2 a separate blockchain?

Yes, but it will eventually be merged with Eth1 in Phase 1.5.

What will happen to my Ethereum holdings?

Eth1 Ether 'hodlers', will not be required to take any action as the chain will merge automatically with Eth2 under the existing infrastructure.

Eth2: Ethereum's Next Upgrade



Phase 0
(1ST Dec 2020)

Phase 1
(2021)

Phase 1.5
(2021)

Phase 2
(2022)

Eth 1.0 & Eth 2.0

- Eth 2.0 will be a separate blockchain, developed in phases.
- Eth 1.0 blockchain will continue to operate in parallel, as existing smart contracts may not be compatible with Eth 2.0

**Phase 0 (Q1 2020)
Beacon & Staking**

- Eth 1.0 holders can deposit 32 ETH into a staking contract as a commitment to Eth 2.0 ([Here's how much you can make.](#))
- Stakers validate blocks on Beacon Chain via [Proof-of-Stake.](#)
- The Beacon Chain does not do much by itself, it cannot validate or execute transactions yet.

**Phase 1 (Q1 2021)
Sharding**

- Multiple chains (shards) will be deployed to facilitate scaling.
- Computational loads spread out across multiple chains rather than being dependent on a single chain as is on Eth 1.0
- Beacon Chain is the Beacon that "points the way" for all shards to maintain sync and data integrity within shards.

**Phase 2 (2022)
Execution Env.**

- Allows processing of transactions, tokens & smart contracts
- Ethereum 2.0 finally ready to launch!



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