

INSIGHTS

FALCONX

The Benefits of Staking

01. Introduction

to staking and consensus algorithm – Proof of Work and Proof of Stake
02. Benefits

of staking, as well as other use cases
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of staking
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associated with staking
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unique to FalconX

Summary

This report provides key insights into the state of staking:

01. Introduction

As new institutional investors continue to enter the crypto ecosystem, something that has been on many investors' minds is how to generate attractive and passive yields. A topic that often comes up in relation to generating yields is staking. For new entrants to the world of crypto, staking may be a confusing and novel concept, one that doesn't have an analog in the world of traditional finance.

In order to understand what staking is, it's important to take a step back and understand how blockchains work

- One of the core pieces of any decentralized blockchain network is a **consensus algorithm**.
- In a decentralized network, consensus mechanisms provide a way for disparate individuals and machines to coordinate and reach a common agreement about the present state of the distributed ledger.
- Consensus algorithms achieve security and reliability through ensuring that every new block added to the blockchain is the only version of the truth, agreed upon by all the nodes in the blockchain.
- The consensus mechanisms are crucial for blockchains to operate as decentralized and self-regulating systems on a global scale with no centralized authority.

02. What is Staking? Proof of Work versus Proof of Stake

The first consensus algorithm to emerge was Bitcoin's **Proof of Work (PoW)** – which involves solving a complex mathematical problem in order to achieve distributed consensus and create new blocks in the blockchain. The process is known as 'mining,' and the nodes (special computers) in the network that engage in mining are known as 'miners'. The process of solving the puzzle requires significant computational power and the incentive for mining transactions lies in economic payoffs, where the winning miner that earns the right to add a new block to the blockchain is rewarded in the form of the blockchain's native currency.

On the other hand, there are **some challenges with PoW algorithms**.

- First, miners consume significant amounts of computing power in order to find the solution to the mathematical puzzle, resulting in high costs of energy and hardware.
- Secondly, PoW has low scalability, as solving puzzles is a time consuming process and blocks can only be mined consecutively and are set in size.

Proof of Stake (PoS) is another common consensus algorithm that evolved as a low-cost, low-energy consuming, and high-scalability alternative to the PoW algorithm. Ethereum, the world's second most popular blockchain platform next to Bitcoin, is going through **The Merge** – transitioning from a PoW to a PoS network.

The PoS algorithm involves the allocation of responsibility in creating a new public ledger to validators who 'stake' or pledge their tokens in a pool for the opportunity to verify transactions. Staking serves a similar function as mining in PoW – verifying transactions and adding new blocks so that all nodes can reach consensus on the state of the open blockchain.

Similar to miners in PoW, the chosen validators receive blockchain's native currency as rewards. However, if blocks are not validated properly or validators attest to malicious blocks, they may lose some or all of their pledged assets – a process called slashing.

PoS consensus algorithm offers several improvements to the PoW algorithms:

- First, the process of creating and maintaining distributed ledgers becomes much more energy efficient, as PoS consensus mechanism does not require miners to spend significantly high electricity on duplicative processes.
 - Second, the PoS network has much lower barriers to entry, creating stronger immunity to centralization.
 - Third, the PoS algorithm offers significantly reduced transaction time, increasing scalability.
- However, the PoS network comes with tradeoffs as well. First of all, it incentivizes hoarding cryptocurrency instead of spending, which could potentially lead to centralization. Moreover, the lower barrier to entry as a validator could lead to less robust security of the network. Lastly, it is much easier for nefarious actors to attack a PoS network than PoW network, as attackers would only incur the upfront cost of purchasing tokens rather than ongoing energy costs.

	PoW	PoS
Description	Miners (nodes) solving a complex mathematical problem in order to achieve distributed consensus and create new blocks in the blockchain	Allocation of responsibility in creating a new public ledger to validators who 'stake' or pledge their tokens in a pool for the opportunity to verify transactions
Pros	<ul style="list-style-type: none">Robust security	<ul style="list-style-type: none">Energy efficientLower barriers to entryHigh scalability
Cons	<ul style="list-style-type: none">High costs of energy and hardwareLow scalability	<ul style="list-style-type: none">Incentivizes hoarding cryptocurrencyLow security
Major Blockchains	<ul style="list-style-type: none">BitcoinEthereumLitecoin	<ul style="list-style-type: none">Ethereum 2.0AvalancheSolana

Total Circulating Bitcoin

The total number of mined bitcoin that are currently circulating on the network.

Source: [Blockchain.com](#) as of 2 August 2022.

Staking Yield versus Inflation-Adjusted Staking Yield

Staking yield is typically the rate of return earned on tokens staked – quoted as an annualized percentage yield (APY). However, staking yield comes in the form of additional token participation in the network instead of in the form of interest or dividends, like in traditional finance.

Inflation-adjusted staking yield measures the real return of staking, adjusted by the supply expansion and share dilution. For tokens that have a higher staking yield than supply inflation, staking increases holders' fractional ownership – resulting in a positive inflation-adjusted staking yield. SOL, for example, has a staking yield of ~5.99% but only ~1.44% after adjusting for inflation.

Let's look at two examples using Solana and BNB Chain:

SOLANA

Delegate SOL Run A Validator

	Stable	Moderate
Risk	Stable	Moderate
Complexity	Easy	Professional
Reward	5.4%	5.99%
Adj. Reward	0.88%	1.44%
Minimum	1	1
Lock Up	5d	5d
Avg. fee	9.73%	-
Staking Ratio	99.6%	0.4%

Source: [Staking Rewards](#) as of 2 August 2022

BNB Chain

Delegate SOL Run A Validator

	Moderate	Risky
Risk	Moderate	Risky
Complexity	Easy	Professional
Reward	4.97%	5.62%
Adj. Reward	4.97%	5.62%
Minimum	1	642,442
Lock Up	7d	7d
Avg. fee	11.55%	-
Staking Ratio	-	-

Source: [Staking Rewards](#) as of 2 August 2022.

04. Why staking? Ethereum 2.0 Case Study

Ethereum 2.0 illustrates how ETH-denominated rewards that validators receive for staking ETH can make ETH an attractive investment, even after taking into account the impact of potential inflation.

Sometime in late 2022, Ethereum is expected to undergo "The Merge," where Ethereum mainnet will officially transition to PoS from PoW. As The Merge continues to gain attention from traditional finance investors, a narrative has started to emerge around staked ETH.

When The Merge happens and Ethereum becomes a PoS blockchain, the ETH-denominated rewards that validators receive for staking ETH in their validator nodes effectively make ETH similar to an investable asset. Currently on Ethereum's Beacon Chain, there is ~13.9MM ETH staked among ~412k validators, earning a 4.2% APR.

Staked Ether

History of daily staked Ether, which is the sum of all Effective Balances.

Source: [BeaconChain](#)

The Beacon Chain

The Beacon Chain's current 4.2% APR pales in comparison to levels that researchers estimate staking APR will reach following The Merge. Based on Ethereum researcher Justin Drake's estimates, staking APR inclusive of issuance and fees could be around 7-11%, or over twice the current APR of the Beacon Chain on the high end.

Total ETH staked	Total validators	Current APR
13,878,581 ETH	411,613	4.2%

Source: [Ethereum.org](#) as of 2 August 2022.

Fee mechanism

Meanwhile, Ethereum is likely to be deflationary post-merge, which will result in even higher adjusted staking yield. In 2021, Ethereum implemented Ethereum Improvement Proposal (EIP) 1559, splitting the transaction fees that were formerly paid to all miners into a base fee and a tip to the miner. Under the new system, the miner gets the tip, but the base fee is burned. Since EIP's launch in August, ~2.6MM ETH has been burned – completely removed from circulation. Burning ETH limits the supply of the currency and reduces its inflation rate – currently at ~4% yearly

Source: [Consensys](#) as of 2 August 2022.

Proof of Work requires significantly more ETH issuance to incentivize miners since the validation process requires heavy infrastructure and resources. After Ethereum's transition to the Proof of Stake mechanism, the amount of new token issuance is projected to drop by 90%. This change would be analogous to Bitcoin's "supply halvings."

The drop in new issuance to secure the network, plus the burn mechanism at work now, would drive a new trend where more ETH will be burned than issued. A simulation taking into consideration The Merge, burn rate, and issuance rate projects Ethereum supply growth, currently ~2%, will drop to around ~(-2%) following The Merge, with an estimate of ~-3MM ETH burned per year. The important takeaway is that post merge, ETH is likely to become a deflationary, or a store of value asset.

05. It's Easy to Stake

There are three main ways to stake, depending on how a blockchain's consensus mechanism is structured:

- Become a validator.**

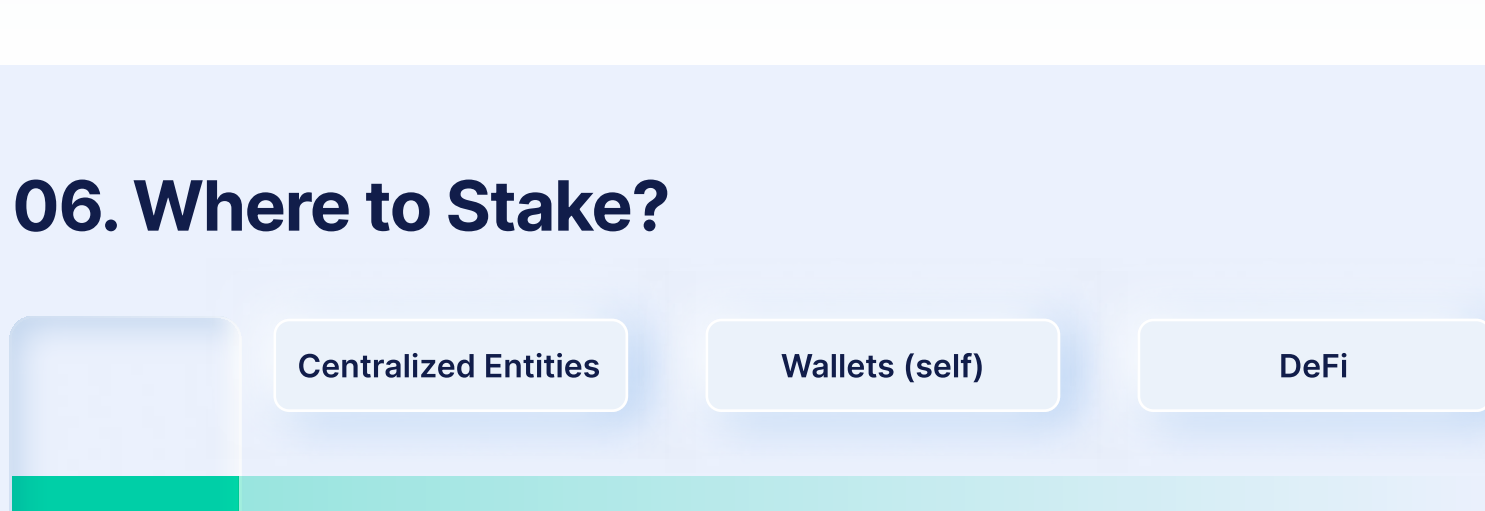
In the aforementioned example from ETH 2.0, anyone with 32 ETH can activate their own validator on a personal computer, dedicated for the purpose of validating.
- Delegate your stake to a stake pool run by a third-party validator**

Using this method, staked funds are exposed to the risk of slashing if illegal behaviors occur by the chosen validator.
- Participate in liquid staking**

Using ETH as an example, liquid staking lowers the barrier to entry by allowing users to stake almost any amount of ETH, which is combined with other users' smaller ETH contributions to obtain the 32 ETH requirement to be an active validator.

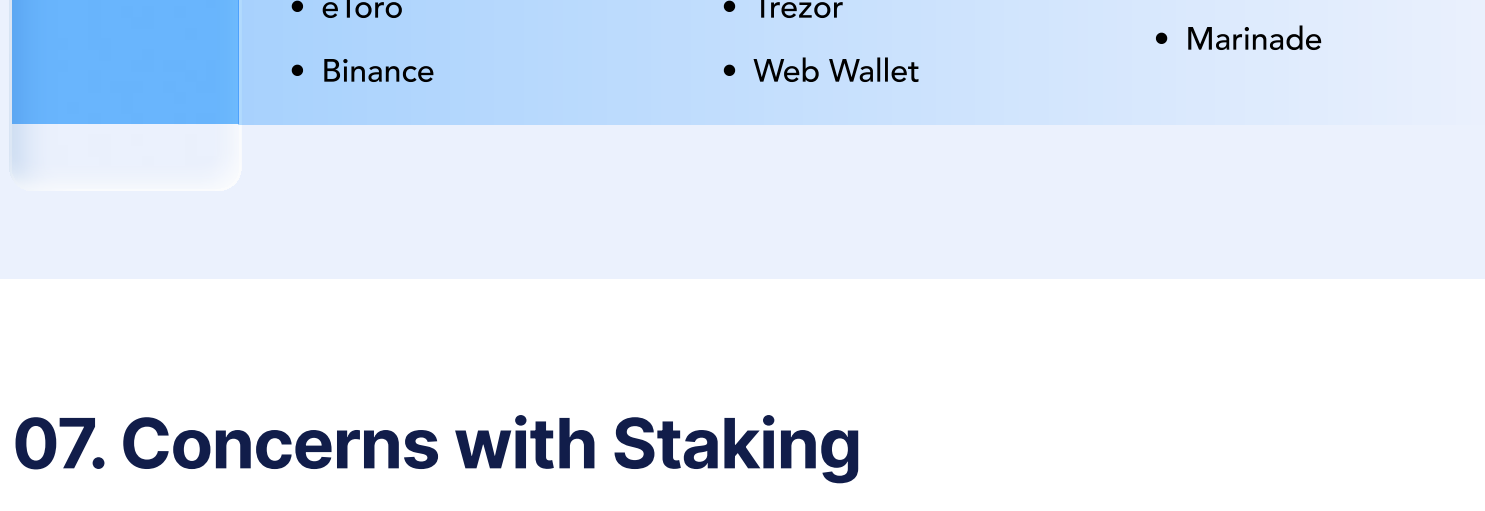
Lido is currently the leader in liquid staking with \$7.1Bn in TVL as of the time of writing. However, Lido's TVL is down ~65% from its peak of \$20.8Bn in early April 2022, which reflects the inherent risk of participating in liquid staking. As a result of turbulence in the crypto markets in recent months, the swap rate between ETH and stETH has deviated from its one-to-one peg, with stETH trading at a discount of around 6% to ETH at one point during the recent market volatility. Since stETH is used as collateral for leveraged positions, deviation from the peg could place anyone with a leveraged position at risk of liquidation.

DeFi Llama



Source: [DeFi Llama](#) as of 2 August 2022.

Collateral risk monitor



Source: [Deepnote](#) as of 2 August 2022.

As seen in the previous chart, risky collateral as a percentage of total liquidity was above 100% in June. These events illustrate that while liquid staking is an attractive option for anyone who can't or doesn't want to run their own validator, it also comes with its own associated risks.

06. Where to Stake?

	Centralized Entities	Wallets (self)	DeFi
Pros	<ul style="list-style-type: none">Unstake optionAvoid slashing riskLow barrier to entry	<ul style="list-style-type: none">Safer asset storage	<ul style="list-style-type: none">Low feeAvoid Slashing riskLow barrier to entry
Cons	<ul style="list-style-type: none">Lower rewardsRelying on centralized entity	<ul style="list-style-type: none">Minimum tokens requirementHigh learning curveNo capital efficiency	<ul style="list-style-type: none">Possibility of smart contract hackCan't vote on projectsNo capital efficiency
Examples	<ul style="list-style-type: none">FalconXCoinbaseeToroBinance	<ul style="list-style-type: none">LedgerTrust WalletTrezorWeb Wallet	<ul style="list-style-type: none">LidoRocket PoolMarinade

07. Concerns with Staking

There are three main pain points associated with staking:

- Fragmentation of wallets**

Participants need different wallets for different blockchains and it can be hard to get a holistic view
- Lock-up periods**

It's not easy to pull out funds quickly from taking given the bonding time. This can be concerning if the token has volatile pricing.
- Slashing**

This is the loss of tokens when a block is not properly validated, usually due to validator downtime or double signing. However, not all PoS networks impose slashing. For example, Algorand, which uses a unique variation of PoS called Pure Proof of Stake (PPoS), does not make use of slashing and has low minimum staking requirements.

FalconX's competitive staking offering is designed to help mitigate the concerns mentioned above.

08. Staking at FalconX

FalconX's Staking-as-a-Service allows institutional investors to support the networks they are invested in and receive a reward for validating transactions on the network. They can also use staked tokens as **collateral for credit** and **FalconX can provide liquidity during the unstaking process** through our derivative offering. This is important because unstaking can take anywhere from a few days to a month, during which time revenue on the currency is not earned.

Our offering benefits investors who want to stake their assets to earn yield on their assets, and who may also want to borrow against these holdings to capture short-term profit options. We are the only central institutional counterparty that enables investors to use staked tokens as collateral – offering institutional investors the flexibility to **access staking rewards while maintaining capital efficiency**.

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