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Landscape of Staking Providers

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Research and Insights

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Executive Summary

- Cryptocurrency staking has evolved and gained popularity since Ethereum's transition to a Proof of Stake (PoS) chain, especially with the high demand for liquid staking. Currently, the types of staking include solo staking, staking-as-a-service, pooled staking, and exchange staking.
- Staking service providers are the bedstone in staking. They play a crucial role by simplifying staking, providing slashing protection, and offering potential additional rewards for users. The main tasks of staking service providers include:
    - Providing the staking infrastructure and facilitating the staking process on behalf of users and entities.
    - Enabling individuals to participate in staking and engage as validators without having to deal with the technical complexities of the staking process.
    - Running high-quality validators to maximise staking rewards.
- In liquid staking, node operators are responsible for managing validators, providing the staking infrastructure, and maintaining the overall stability of the blockchain. STaaS providers serve as node operators that run validator nodes on behalf of liquid staking protocols; they can curate their validator sets and run as many validators as they want.
- The staking service provider market is diversified, and the top 11 players accounted for approximately 70% of the market share in assets under management (AuM).
- For Ethereum, Figment and Kiln comprise the majority: Together, they take up over half (34% and 27%, respectively) of the market share in terms of the total amount staked on these service providers. Additionally, Figment is also one of the most notable staking providers in the Solana and Cosmos ecosystems.
- With the development of Layer-1s and Layer-2s and the rising narrative in restaking, the staking service provider market could continue to develop and reach a new level.

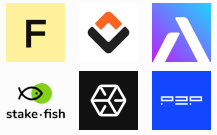
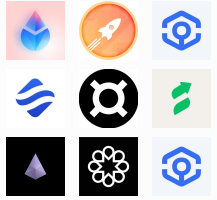
1. Introduction

Ethereum introduced the staking mechanism with the launch of the ETH Staking Deposit Contract in November 2020 in preparation for the transition from Proof of Work (PoW) to Proof of Stake (PoS). Staking requires users to lock up their funds (e.g., ETH) into PoS chains like Ethereum to secure the network and gain rewards as returns.

After 'The Merge' and Shanghai Upgrade, staking on Ethereum matured and gained popularity. Since then, the face of staking has evolved, and its landscape has vastly expanded, offering users different ways to stake their crypto assets.

Generally, there are five primary methods for staking. Outlined below are their key features, as well as their pros and cons.

Table: Comparison of Staking Types

Types	Description	Pros	Cons	Examples
Solo Staking	Users need to run their own validator node by depositing a minimum of required coins (32 ETH for Ethereum) and meeting hardware specifications, which are usually high.	• Offers maximum control of assets • High level of decentralisation	• High barriers in both capital and hardware requirement • Resource-intensive for most users • No liquidity	Individual stakers
Staking-as-a-Service *(STaaS)*	Allows users to earn native block rewards by delegating their coins to staking service providers without touching the hardware.	• No need to touch the hardware • Users have control of the withdrawal key	• High capital requirement • This entails placing a certain level of trust in the service provider • No liquidity	
DeFi Pooled Staking	Users can deposit any amount of native coins to staking pools, which will run validators and distribute the staking rewards proportionally based on users' deposits. Many of these options include what is known as 'liquid staking'.	• Low capital requirement (can stake any amount of ETH) • No need to touch the hardware • High liquidity for liquid staking	• Additional trust assumptions • Concerns on centralisation, as some popular pools concentrated a large proportion of funds	
Centralised Exchange Staking	Users stake their assets via a centralised exchange and get a 'receipt' of staked assets.	• Simple; no need to deal with an on-chain wallet and private key • High liquidity on the staked assets	• Has the highest trust assumptions • Delegate the ownership of funds	
Layer-2 Staking	When users deposit ETH into these Ethereum Layer-2 platforms (e.g., Blast), it is automatically staked as liquid ETH.	• Native staking rewards	• Smart contract risks	

Solo staking offers full participation rewards and increases the decentralisation of the underlying PoS networks. Hence, this staking method is considered a 'Golden Standard' for staking. However, solo staking requires users to stake large amounts of native tokens (32 ETH in Ethereum, worth approximately US$99,347 at the time of writing) to run a validator node, with the high configuration of computer hardware 24/7 — a relatively difficult task for the general public.

PoS Validator Node Specifications

Network	Processor	Memory	Storage	Required Minimum Stake (USD equivalent)
Ethereum	4 Core CPU > 2.08 GHz	16 GB	1 TB	32 ETH ($99,347.84)
Solana	12 Core CPU > 2.8 GHz	256 GB	500 GB	0.02685864 SOL
Cardano	2 Core CPU > 2 GHz	24 GB	150 GB	No minimum
Cosmos	4 Core CPU	8 GB	200 GB	No minimum
Polkadot	4 Core CPU > 3.4 GHz	32 GB	1 TB	250 DOT ($2,124.25)
Avalanche	8 Core CPU > 2 GHz	16 GB	200 GB	2,000 AVAX ($100,690)
NEAR	8 Core CPU	16 GB	500 GB	Dynamic
Tezos	2 Core CPU	8 GB	256 GB	6,000 XTZ ($6,705)

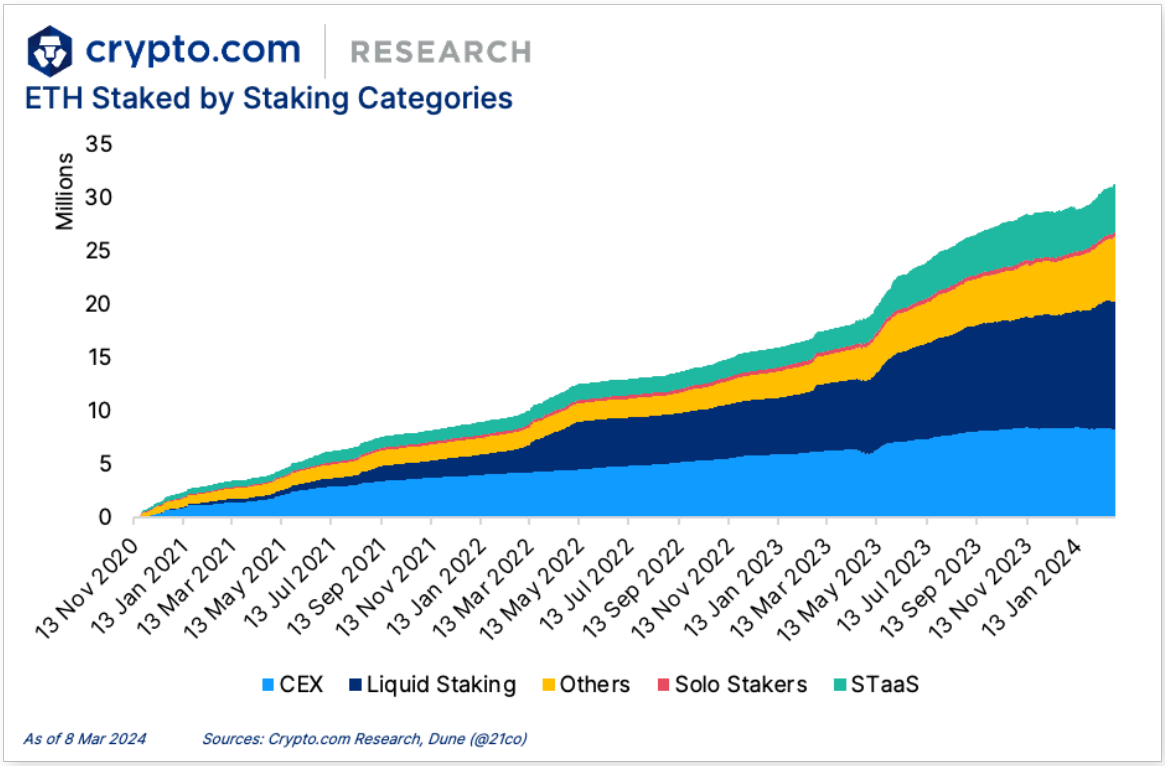
As of 18 March 2024 Sources: Crypto.com Research, Galaxy Digital, project websites
Note: The minimum stake requirement is to run a full validator that participates in consensus — minimum stake for delegation is excluded.

Staking-as-a-Service (STaaS) was introduced to solve the issues of the complex configuration in software and hardware, and facilitate the staking procedures. Typically, these options guide users through the process of generating validator credentials, uploading their signing keys to the service, and depositing their 32 ETH, which enables the service to perform validation on users' behalf. STaaS entails placing a certain level of trust in the provider. To mitigate counterparty risk, the keys a user needs to withdraw their ETH are typically retained by the staker.

Pooled staking involves a more collaborative approach, where multiple users combine their staking resources to participate in the staking process together. This method allows individuals to pool their funds designated for staking via staking pools, sharing the burden of the cost and rewards: By joining a staking pool, participants can earn staking rewards without the need for a significant initial investment, making staking more accessible to a broader range of users who may not have the resources to stake independently. Staking pools are typically run by a pool operator, with rewards distributed amongst participants

based on their contributions to the pool, and offer a way to earn staking rewards without the need for specialised equipment or large amounts of cryptocurrency.

In **centralised exchange staking,** users entrust their assets to the centralised exchange, which then, on behalf of the users, pools these assets with others to participate in the staking process. Centralised exchanges typically delegate the staking service to specific staking service providers. The ease of use and relatively high liquidity on the staked assets make it an appealing option for users, as the staking process is simplified. However, it is important to note there is some level of risk associated for a user trusting a third party with their assets.



1.1 Custodial & Non-Custodial Staking

Another type of classification in staking is based on whether to use a custodial or non-custodial staking service. Their distinction lies in the entity responsible for asset custody and control.

Custodial staking

- A third party (staking provider) takes custody of assets when staking
- Coins are transferred to the provider's wallet address
- The staking process is handled on the user's behalf for an agreed-upon portion of the rewards

- Operationally simpler for users, but risks exist regarding provider custody

Non-custodial staking

- Users maintain full control and custody of their assets during staking
- Users stake their coins directly from their own wallets, retaining control of their assets and keys
- Provides more control over users' assets, allowing them to choose which validators to delegate their funds to
- Users are responsible for their security, but the process can be more operationally complex

Staking service providers typically offer non-custodial staking and mainly take two forms: running a node or delegating the staking process to validators. Meanwhile, custodial staking is mostly found when staking on exchanges.

1.2 Staking Service Providers

Staking-as-a-Service, pooled staking, and centralised exchange staking usually need to rely on 'staking service providers' to handle the technicalities of the staking process, such as setting up nodes and running validators. Moreover, driven by the attractive rewards and perks offered by liquid staking, the staking service market further developed, and the staking service providers have been playing crucial roles in the cryptocurrency ecosystem, facilitating the participation of individuals and entities in staking activities without requiring in-depth blockchain knowledge or technical expertise.

In essence, staking providers deliver the staking infrastructure and simplify the overall staking process for their users. By enabling individuals and entities to participate as validators, these providers allow them to maximise staking rewards. Some key roles of staking service providers include:

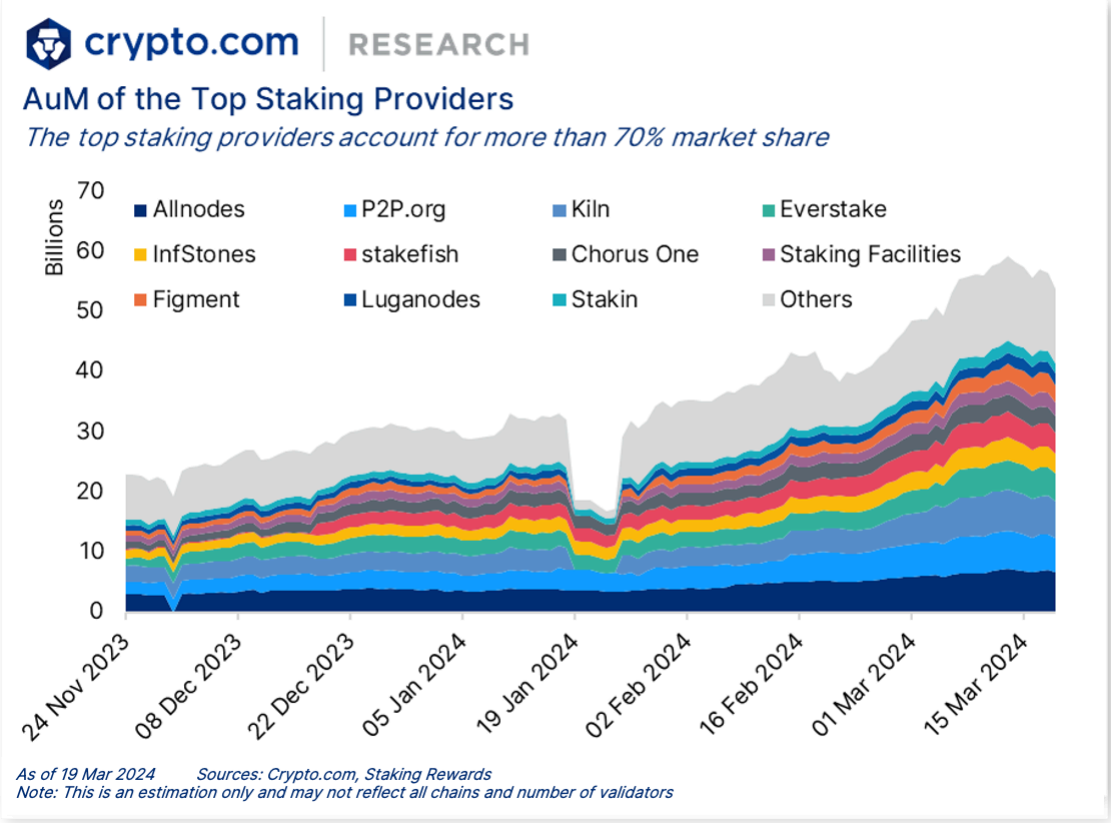
- **Accessibility:** Staking service providers lower barriers to entry by handling the technical complexity associated with staking. They enable users to stake tokens without having them run validators, making staking more accessible to a wider audience.
- **Slashing Protection:** Leading staking service providers operate robust infrastructures. They offer slashing and missed rewards coverage (e.g., Liquid Collective's Slashing Coverage Program or Figment's comprehensive slashing coverage) to protect customers from potential penalties and losses, enhancing the security of staked assets.

- **More Rewards:** Specialised staking service providers optimise infrastructure and develop strategies to maximise rewards for users. Their expertise in managing staking activities, including strategies like MEV optimisation, results in potentially additional rewards for stakers.

2. Landscape of the Staking Provider Market

2.1 Staking-as-a-Service (STaaS) Providers

There are about 285 STaaS providers in the market today supporting different PoS chains. The staking providers' market is diversified, and the top 11 players account for around 70% of the market share in terms of assets under management (AuM).

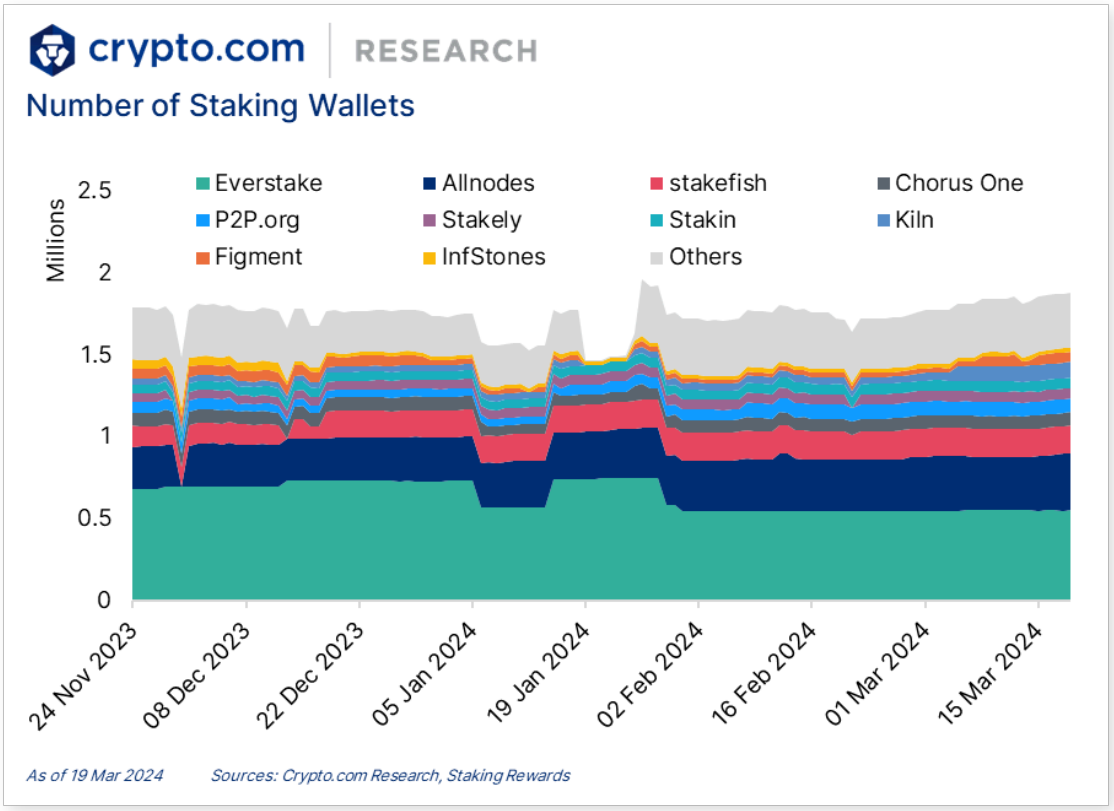


Top STaaS Providers by AuM

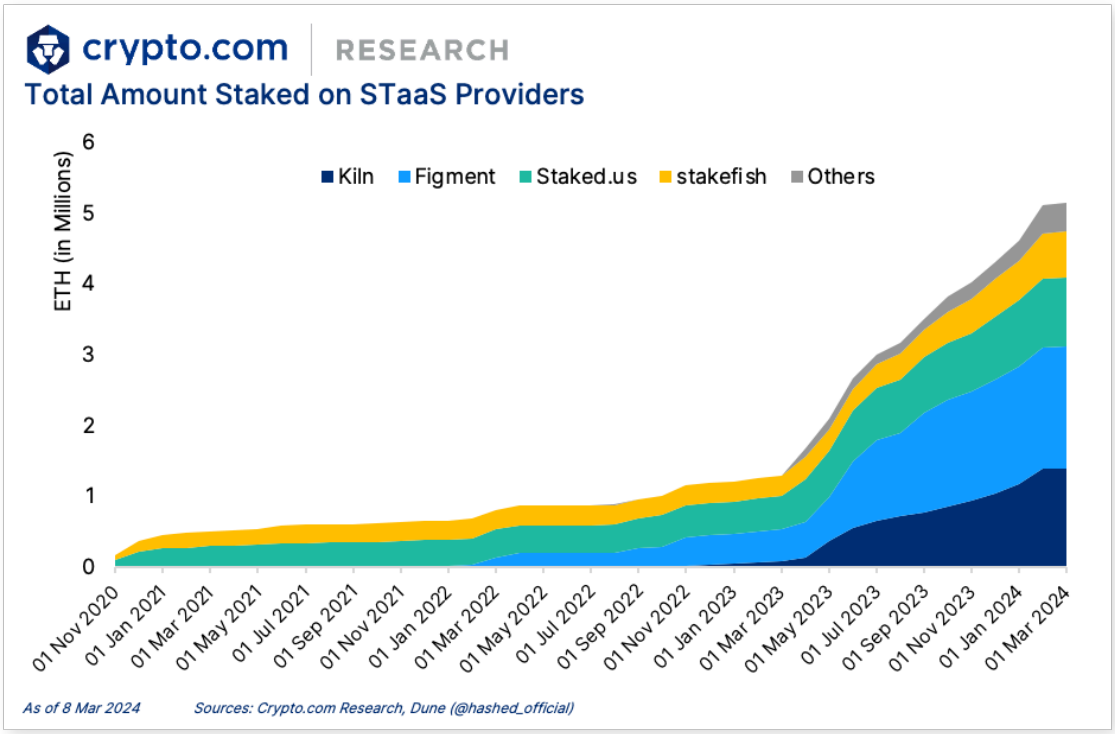
Logo	Name	Types of Staking Supported	Fees	ETH Staking Reward	Estimated AuM	MEV Optimi-sation	Slashing protection offered?
	Allnodes	Native staking	$5/mo.	2.8% + 1.2%	$6.15B	Supports MEV-Boost Relays	Yes
	Kiln	Native, pooled, and liquid staking	Custom	4%-10% *	$5.71B	Supports MEV-Boost Relays	Yes
	Everstake	Native, pooled, and liquid staking	10%	4%-10%	$4.34B	Supports MEV-Boost Relays	Yes
	stakefish	Native and NFT staking	10%	8.14%	$3.44B	Supports MEV-Boost Relays	Yes
	Chorus One	Native and liquid staking	0%	3.79%	$2.56B	Supports MEV-Boost Relays	Yes
	RockX	Native, liquid staking, and native restaking	3%-5%	5%-8%	$1.08B	N/A	Yes
	Staked.us	Native staking	10%	3.83%	$540.35M	Supports MEV-Boost Relays	Yes

As of 14 Mar 2024
Sources: Crypto.com Research, Staking Rewards, Staking Directory, project websites
Note: AuM are only estimates and may exclude private nodes run by validators
** denotes GRR (gross reward rate) may change over time, and fees may be deducted from rewards earned*

Additionally, the number of staking wallets saw positive growth year-to-date for most of the staking providers except Everstake and Chorus One, which experienced a 24% and 3% drop, respectively.



For Ethereum, together Figment and Kiln make up the majority, taking up over half (34% and 27%, respectively) of the market share in terms of the total amount staked on these service providers.



2.2 Operators in Liquid Staking

In liquid staking protocols, node operators play a key role in operating full nodes within the network, managing validators, and maintaining the overall stability of the blockchain. Validators, on the other hand, are network participants that run PoS chains — they are tasked with validating transactions and proposed blocks, securing the network based on their stake. STaaS providers serve as node operators that run validator nodes on behalf of liquid staking protocols, and they can curate their validator sets and run as many validators as they want.

As the biggest player in pooled staking, **Lido** dominates the liquid staking market by a ~70% market share, with a total value locked (TVL) of US$35.68 billion. Lido currently has over 300,000 active validators on its network and uses 39 node operators in its staking pool, including STaaS providers Kiln, Figment, P2P.org, and Allnodes, amongst others.

Liquid Staking Protocols (Pooled Staking) Ranked by Market Share

Logo	Project	LST (TVL)	Fees	30D APY	No. of Stakers	Market Share	No. of Node Operators
	Lido	stETH ($35.26B)	10%	3.48%	309.67k	81.48%	39
	Rocket Pool	rETH ($4.09B)	14%	3.04%	25.53k	6.83%	3,575
	Swell	swETH ($891.29M)	10%	3.61%	80.1k	2.02%	8
	Frax Finance	sfrxETH ($1.07B)	10%	4.23%	N/A	1.82%	1
	Stader	ETHx ($467.86M)	10%	3.43%	4.15k	1.10%	258
	Stakewise	osETH ($118.81M)	~10%	3.48%	2.51k	0.62%	8+
	Liquid Collective	LsETH ($239.83M)	N/A	3.77%	N/A	0.55%	N/A
	Ankr	ankrETH ($80.62M)	10%	3.51%	2.47k	0.18%	345*

As of 18 Mar 2024 *Sources: Crypto.com Research, DefiLlama, Staking Directory, Staking Rewards*
*Note: * denotes the number of nodes as of September 2023*

3. Staking in Other PoS Chains

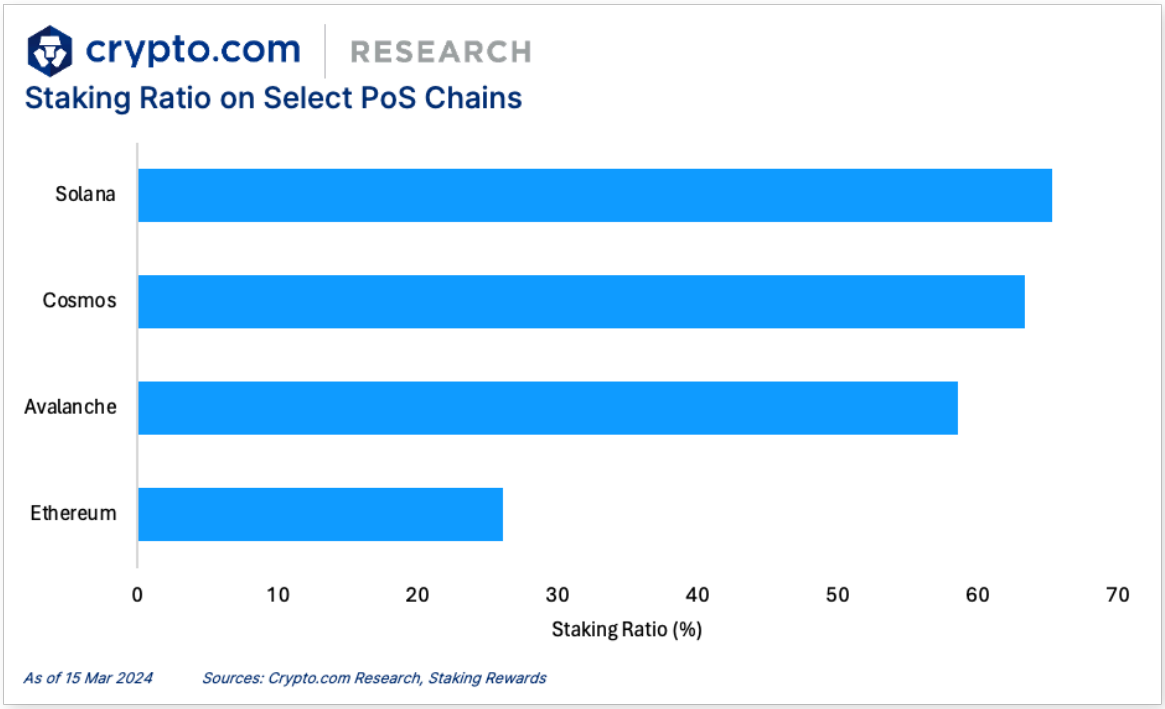
Proof of Stake Assets Performance

Project	Staking Market Cap	30D Change	Reward Rate
Ethereum	$117.84B	+47.42%	3.79%
Solana	$66.1B	+46.69%	7.39%
Avalanche	$13.85B	+42.66%	8.49%
Sui	$12.2B	-23.61%	3.59%
Aptos	$11.33B	+37.45%	7%
Celestia	$8.38B	-17.35%	14.36%
Polkadot	$7.86B	+38%	11.92%

Polygon	$4.15B	+32.37%	6.1%
Cosmos	$3.17B	+21.56%	16.68%

As of 15 Mar 2024 *Sources: Crypto.com Research, Staking Rewards*

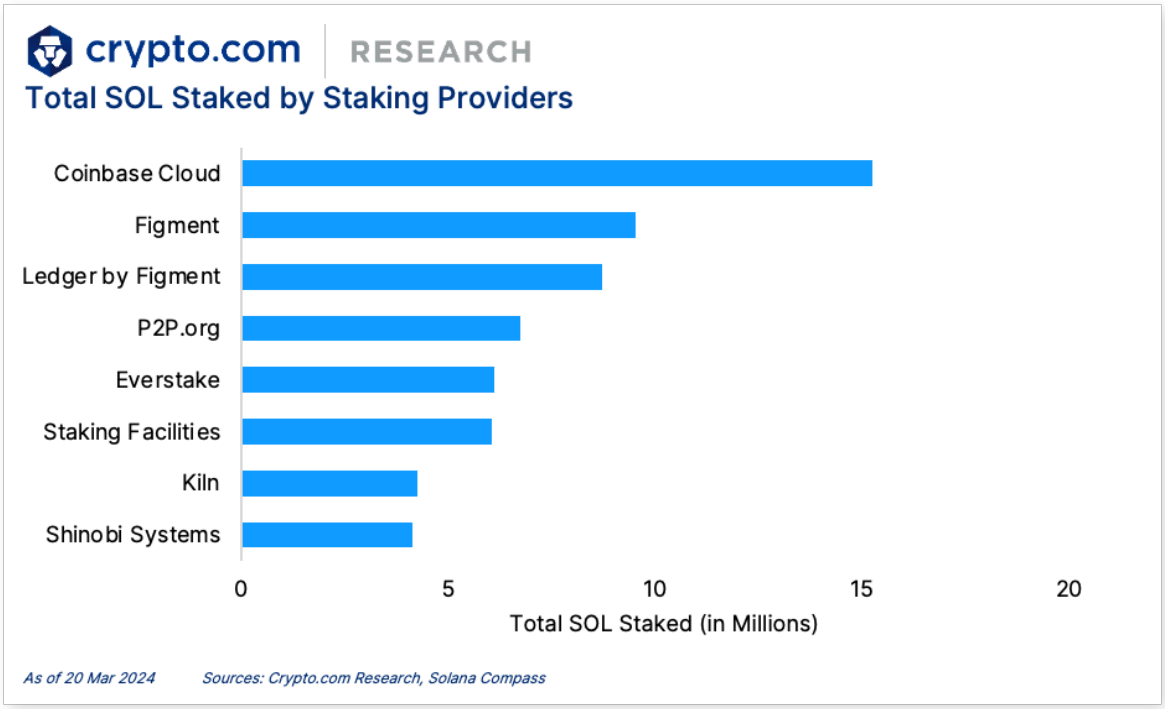
Compared to other major networks that also adopted PoS, Ethereum has a relatively low staking ratio. As per Staking Rewards, other chains exhibit staking ratios between 50% and 70%.



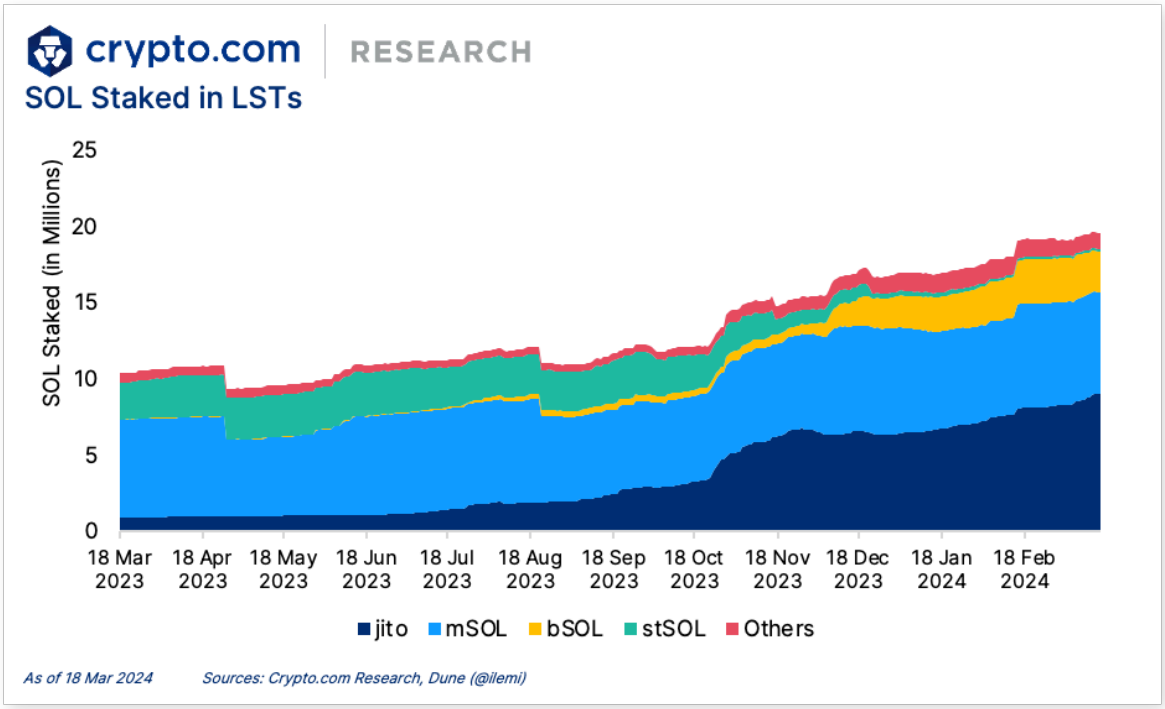
Ethereum staking ratio was lower than 15% in the first quarter of last year. Before the Shanghai Upgrade in April 2023, there was a withdrawal restriction that prevented users from accessing their staked ETH, which partly accounted for the lower ratio before.

Solana

Solana has nearly 1,700 active validators on its network, and over 370 million SOL tokens have now been staked. Taking its staking market into account, it is now estimated to be worth nearly US$6 billion in TVL.

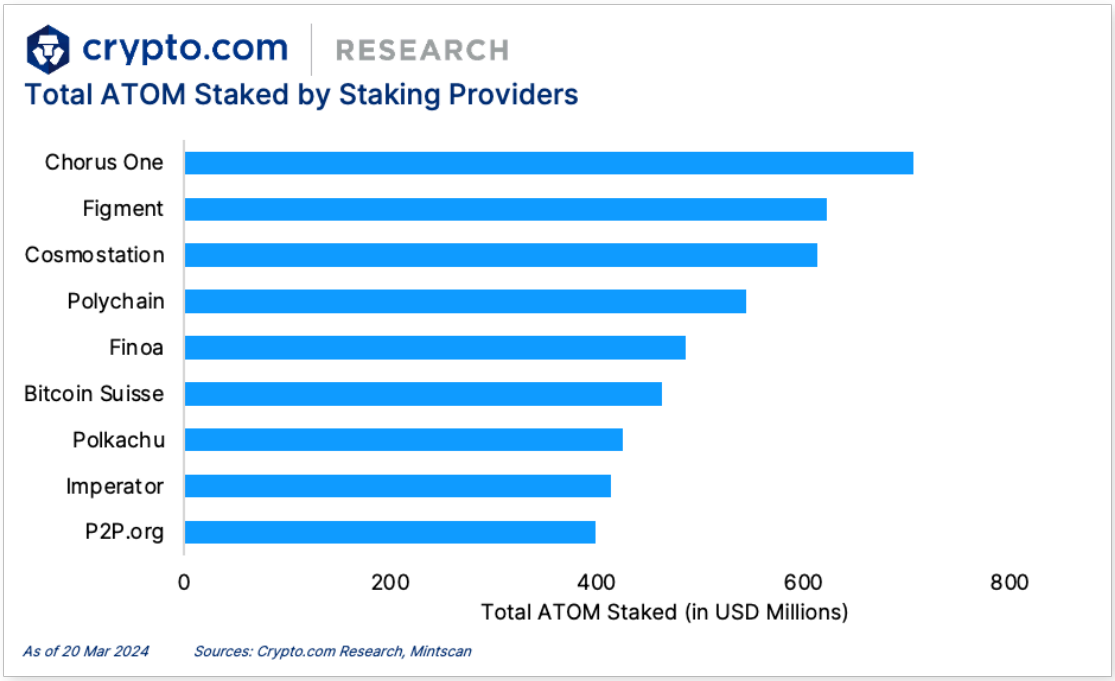


Liquid staking in the Solana ecosystem is driven forward primarily by the Jito and Marinade protocols, accumulating US$1.61 billion and US$1.21 billion in TVL, respectively.

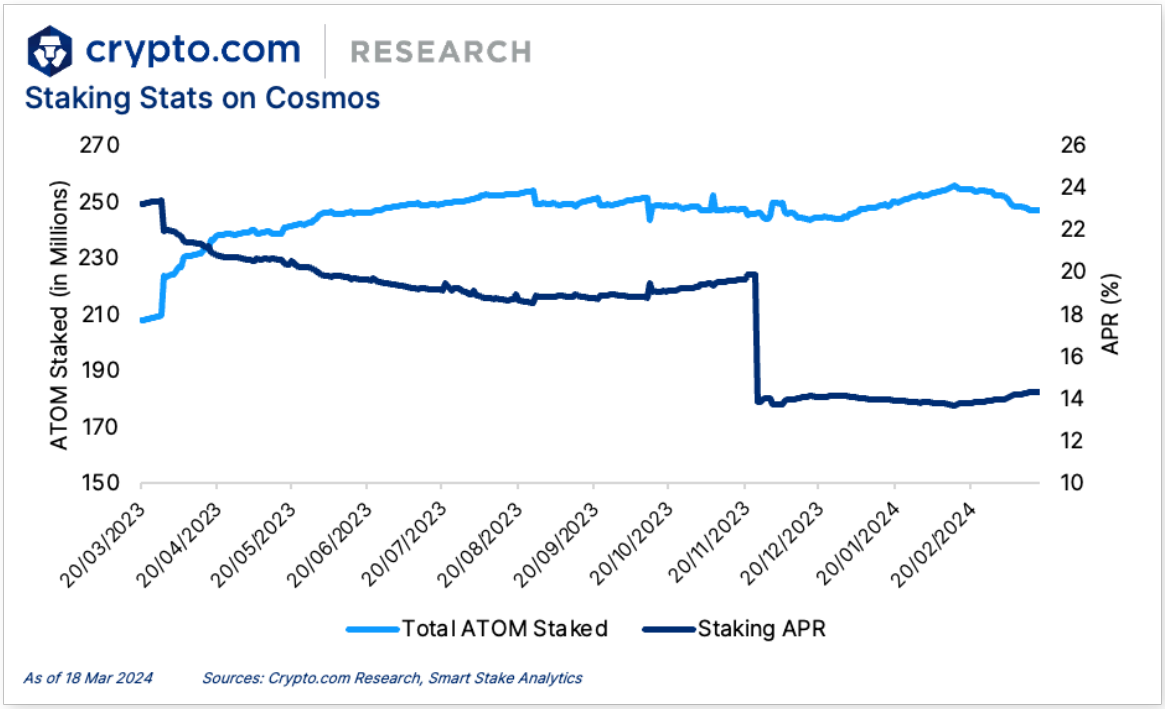


Cosmos

Unlike Ethereum and Solana chains, where staking is dominated by a single token (ETH or SOL), the Cosmos staking market is an amalgamation of all existing app chains. Composed of 94 independent chains, the Cosmos ecosystem has a valued market cap of about US$118 billion.



Being the largest chain in the Cosmos ecosystem by market cap, Cosmos Hub (ATOM) is boosting the liquid staking market forward. Approximately 247 million ATOM tokens have now been staked, representing 63% of the total ATOM supply. In September 2023, it was upgraded to launch a liquid staking module (LSM), which enables users to bypass the previous 21-day unbonding period for unstaking ATOM. It is also considered a key development that will benefit the entire Cosmos ecosystem, as it will potentially unlock over US$400 million worth of ATOM, likely accelerating the staked ATOM presence in protocols running on Cosmos.



4. Conclusion

The staking market has continued to grow over the past few years, drawing innovation and new participants to the space. The current landscape of staking service providers is an indication of a maturing cryptocurrency ecosystem and heightening adoption of the technology.

As more users adhere to the major staking categories today, we expect additional participants to be added to the sector. As a backbone of various types of staking, staking service providers streamline the staking process, making it accessible to a wider audience by handling technical complexities. They enhance security through slashing protection programmes, safeguarding customers from penalties and losses. Additionally, these providers optimise infrastructure and employ strategies like MEV optimisation, resulting in potential extra rewards for stakers. With the development of Layer-2s and restaking, the staking service provider market could also rise to a new level.

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