

LSDFi:

When Liquid Staking meets DeFi

June 2023



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Key Takeaways

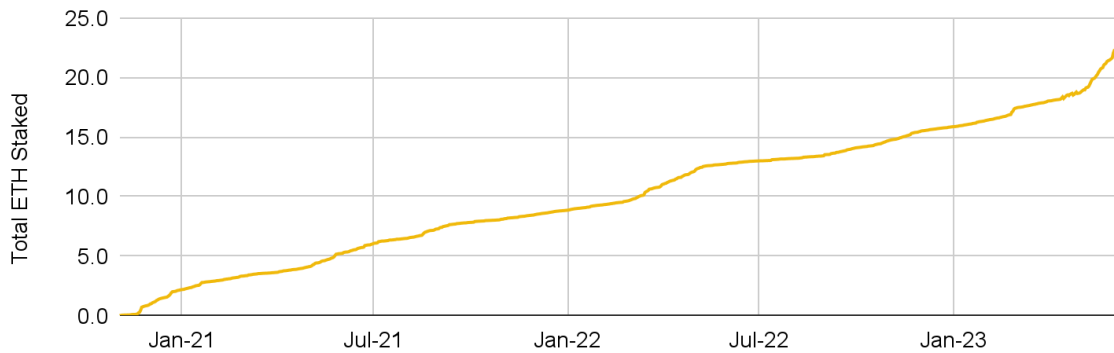
- ◆ LSDfi refers to DeFi protocols that are built on top of liquid staking derivatives (“LSDs”). By offering additional yield-generating opportunities, LSDfi protocols allow LSD holders to put their assets to work and maximize yield.
- ◆ LSDfi protocols have experienced a rapid increase in total value locked (“TVL”) over the past few months, benefiting from the adoption of liquid staking. Cumulative TVL in top LSDfi protocols has crossed the US\$400M mark, having more than doubled since a month ago.
- ◆ Tailwinds for LSDfi growth include the growth of staked ETH, as well as the current low penetration of LSDfi. TVL in LSDfi protocols currently represents less than 3% of the total addressable market.
- ◆ While LSDfi presents attractive opportunities for LSD holders, users should be aware of the associated risks, which include but are not limited to slashing risks, LSD price risks, smart contract risks, and third-party risks.

2

The State of LSDs

The successful transition of Ethereum to Proof-of-Stake (“PoS”) and the subsequent enablement of staked ETH withdrawals after the Shapella upgrade have contributed to a massive growth in staking.

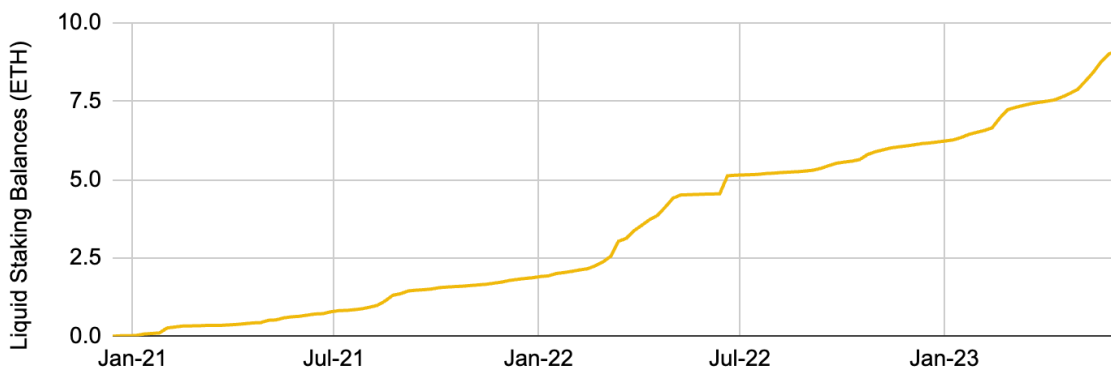
Figure 1: Total ETH staked has accelerated and surpassed 22.8M ETH



Source: Dune Analytics (@hildobby)
As of 14 June 2023

Correspondingly, we have also seen significant growth in liquid staking derivatives (“LSDs”). As a recap, LSDs are tokens issued by liquid staking platforms (e.g., stETH, rETH, WBETH, etc.). There are considerable technical difficulties and heavy capital requirements to run a solo node, which may not be suitable for everyone. As such, **liquid staking protocols allow more users to participate in the staking process with lower barriers to entry** while also retaining the liquidity of staked assets. This retention of liquidity is achieved by issuing a liquid staking token for users of the protocol, which can then be used to participate in the broader crypto ecosystem.

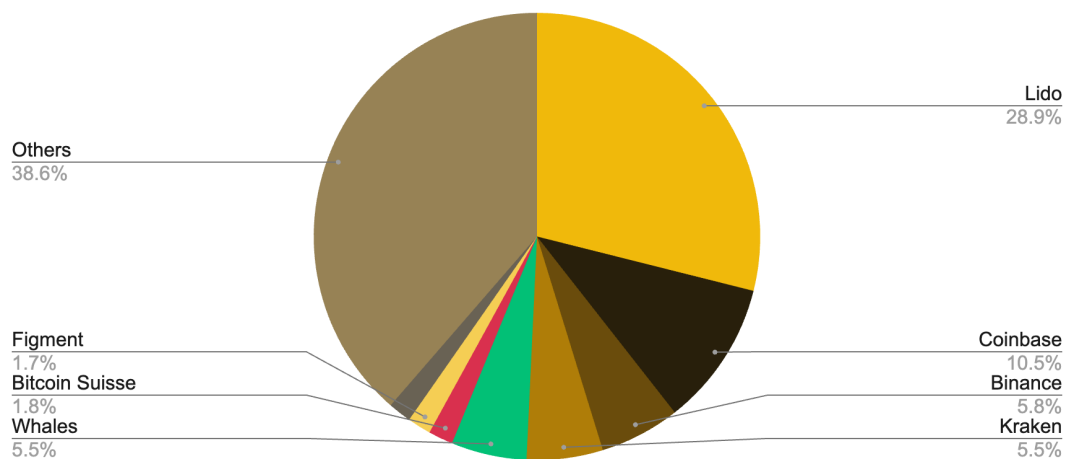
Figure 2: Liquid staking balances have grown alongside the overall staking market



Source: Dune Analytics (@eliasimos)
As of 14 June 2023

Looking at the overall ETH staking landscape today, Lido is the largest player with a 28.9% market share. This is followed by centralized exchanges such as Coinbase, Binance, and Kraken. There are also a few smaller liquid staking providers, but they account for a much smaller fraction of staked ETH.

Figure 3: Market share of ETH staking providers based on deposits



Source: Etherscan
As of 14 June 2023

Liquid staking providers issue their own LSDs, thereby unlocking liquidity and allowing holders to participate in broader opportunities within the crypto ecosystem. LSDs can be rebasing or reward-bearing tokens. Holders of rebasing tokens such as stETH experience a change in balance as token supply changes in accordance with staking rewards or slashing penalties. Conversely, reward-bearing tokens reflect accrued yields through changes in token values instead of changes in balances.

Figure 4: Liquid staking providers for the Ethereum ecosystem

	Lido	RocketPool	Frax	Binance	Coinbase
Token	stETH, wstETH	rETH	frxETH, sfrxETH	BETH, WBETH	cbETH
Mechanism	Rebasing (stETH) / Reward - Bearing (wstETH)	Reward - Bearing	Reward - Bearing	Rebasing (BETH) / Reward - Bearing (WBETH)	Reward - Bearing
Fees	10%	15%	10%	5%	25%
APY	4.0%	4.0%	4.6%	4.1%	3.4%

Source: Projects' Websites, DeFi Llama
As of 14 June 2023

While this report predominantly focuses on the Ethereum liquid staking landscape, note that liquid staking is not restricted to the Ethereum ecosystem.

For example, liquid staking is a sector in the BNB ecosystem with roughly US\$150M in TVL.⁽¹⁾ Similar to ETH liquid staking mechanics, stakers of BNB receive liquid staked BNB, which provides instant liquidity and can be used in other aspects of Decentralized Finance (“DeFi”) to generate additional yield.

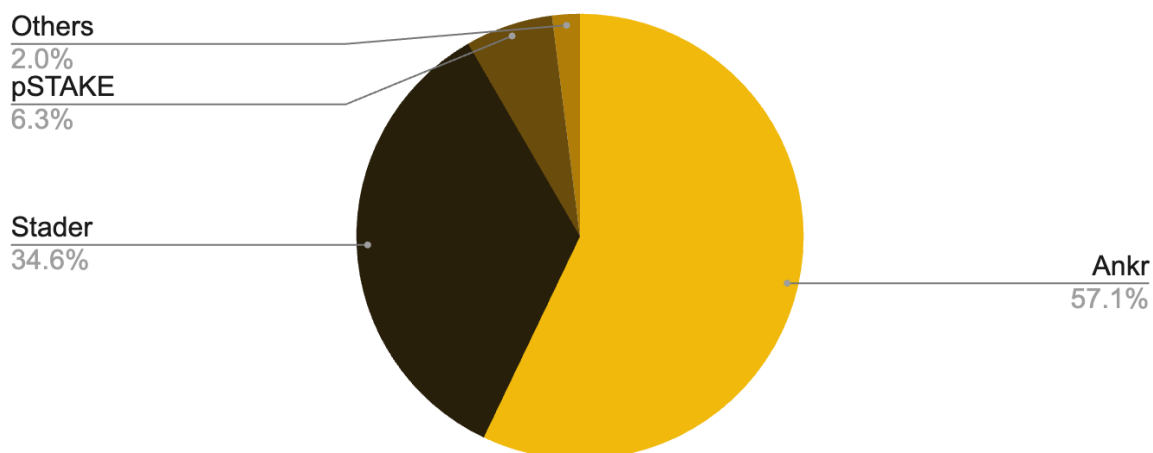
Figure 5: Liquid staking providers for the BNB Chain ecosystem

	Ankr	Stader	pSTAKE
Token	ankrBNB	BNBx	stkBNB
Mechanism	Reward-Bearing	Reward-Bearing	Reward-Bearing
Fees	5%	10%	5%
APY	3.4%	3.5%	3.3%

Source: Projects’ Websites
As of 14 June 2023

Within the BNB Chain ecosystem, Ankr is the largest liquid staking provider, with more than 214K BNB staked with the protocol.⁽²⁾ Together with Stader and pSTAKE, the three protocols are the dominant liquid staking providers on BNB Chain. Fees are generally similar and competitive across the protocols, but the availability and liquidity of the respective liquid staked tokens differ across decentralized applications (“dApps”) in DeFi.

Figure 6: Market share of BNB Chain liquid staking providers by TVL



Source: DeFi Llama
As of 14 June 2023

3 The Financialization of LSDs

Suppose you own LSDs and are earning staking rewards on your holdings. This is nice, but what if you could take it a step further and generate additional yield on top of the base staking rate?

Welcome to the world of LSDfi.

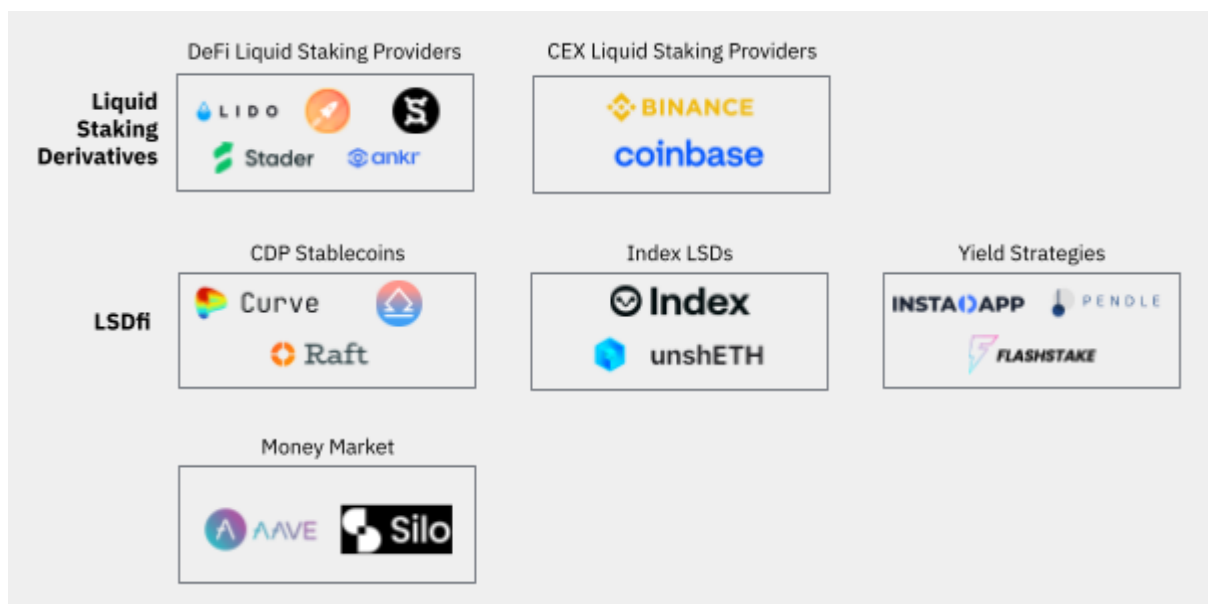
LSDfi refers to DeFi protocols built on top of liquid staking derivatives. By offering additional yield-generating opportunities, LSDfi protocols allow LSD holders to put their assets to work and maximize yield.

3.1 LSDfi Ecosystem

The LSDfi ecosystem includes a mix of mature DeFi protocols that have integrated LSDs as part of their diverse product suite, as well as more recent projects that are predominantly based on LSDs.

For completeness, we have also included the major LSD protocols and providers.

Figure 7: Liquid staking and LSDfi map

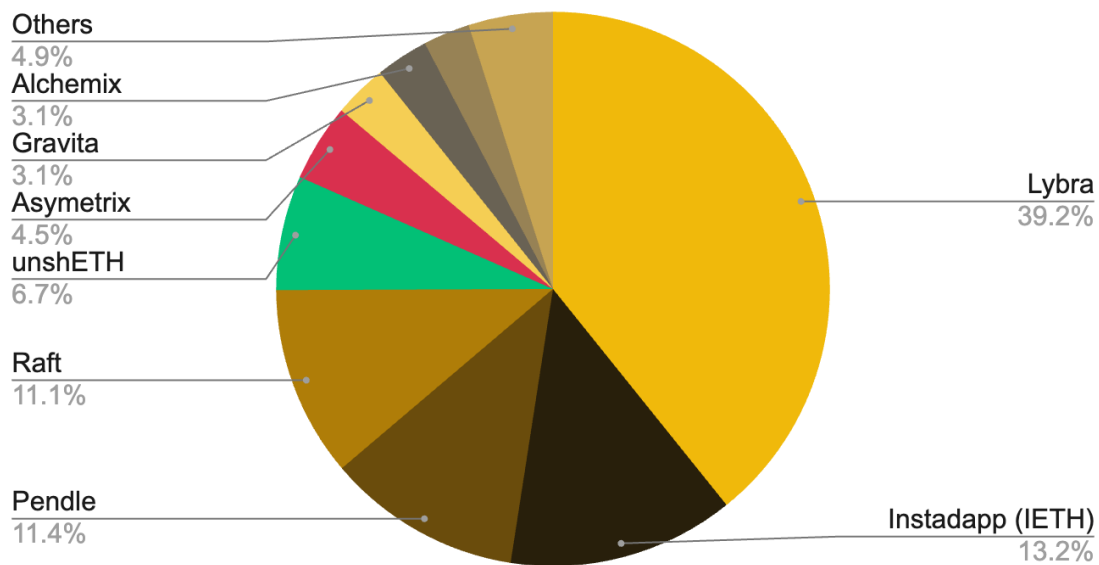


Source: Binance Research
As of 14 June 2023

- ◆ **DeFi liquid staking providers:** DeFi providers that enable users to partake in staking and receive LSDs in return
- ◆ **CEX liquid staking providers:** centralized exchanges (“CEXs”) that offer liquid staking services
- ◆ **CDP stablecoins:** collateral debt position (“CDP”) protocols that allow users to mint stablecoins using LSDs as collateral
- ◆ **Index LSDs:** tokens that represent a stake in a basket of LSDs
- ◆ **Yield strategies:** protocols that enable users to access additional yield opportunities
- ◆ **Money market:** protocols that facilitate lending and borrowing activities using LSDs







The LSDfi landscape is relatively concentrated, with the top 5 players possessing over 81% of TVL. Lybra is the market leader, and its rise to the top has been rapid, considering that the project only went live on its mainnet in April.

Figure 8: Market share by TVL of LSDfi ecosystem players



Source: Dune Analytics (@defimochi)
As of 14 June 2023

Figure 9: Overview of LSDfi projects

	Project	LSD TVL (US\$M)	Description
	Lybra	161.6	The Lybra Protocol allows users to deposit ETH/stETH and mint an interest-bearing stablecoin (eUSD).
	Instadapp (IETH)	54.5	Users can deposit ETH/stETH into a desired Instadapp vault that executes DeFi strategies and earns yield.
	Pendle	46.6	Pendle is a yield-trading protocol enabling users to purchase assets at a discount or gain leveraged yield exposure.
	Raft	45.9	Raft allows users to deposit stETH to generate R, a decentralized USD stablecoin.
	unshETH	27.6	unshETH is a diversified liquid-staked ETH basket that earns staking ETH yield and swap fees, all wrapped in a single ERC-20 token.
	Asymetrix	12.7	Asymetrix provides an asymmetric yield distribution generated from staking.

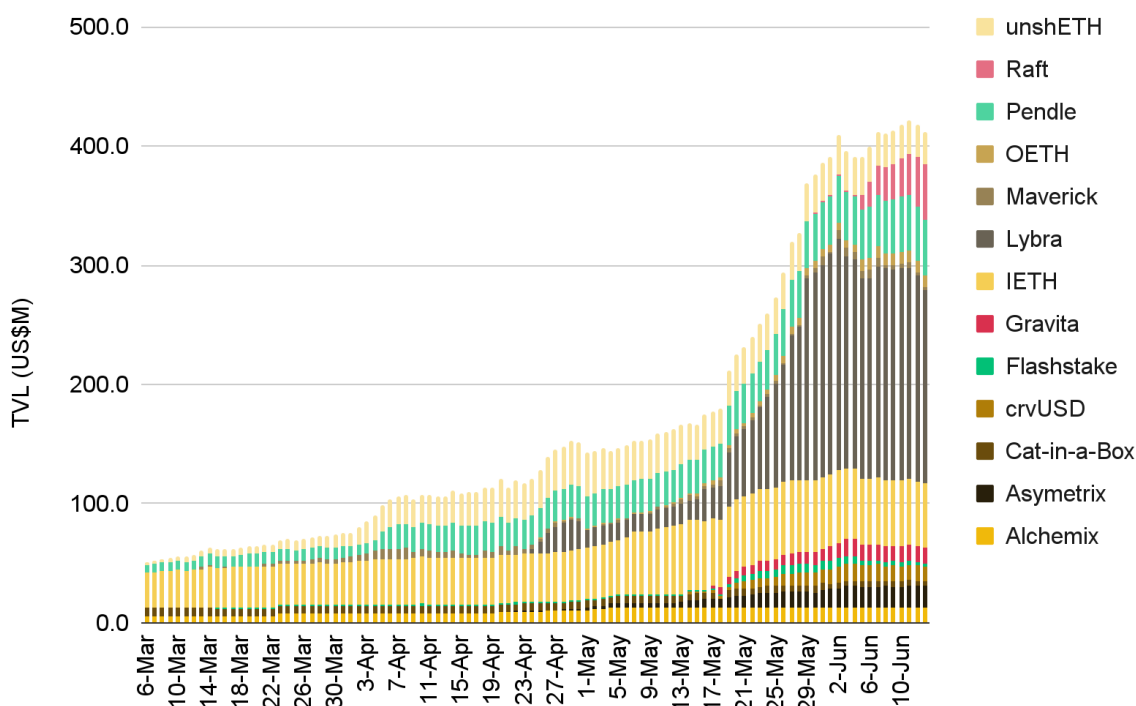
Source: Projects' Websites, Dune Analytics (@defimochi), Binance Research
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The table above provides an overview of several LSDfi projects. There is a wide variety of projects, from CDP stablecoins to automated yield strategies. With time, it is foreseeable that there will be more innovation in the space, benefitting LSD holders by providing more yield-generating options.

3.2 The Growth of LSDfi

LSDfi protocols have experienced a rapid increase in TVL over the past few months, benefiting from the adoption of liquid staking. As the narrative gained steam, **cumulative TVL in top LSDfi protocols crossed the US\$400M mark** and has more than doubled since a month ago.

Figure 10: TVL in LSDfi protocols has seen strong exponential growth since mid-May

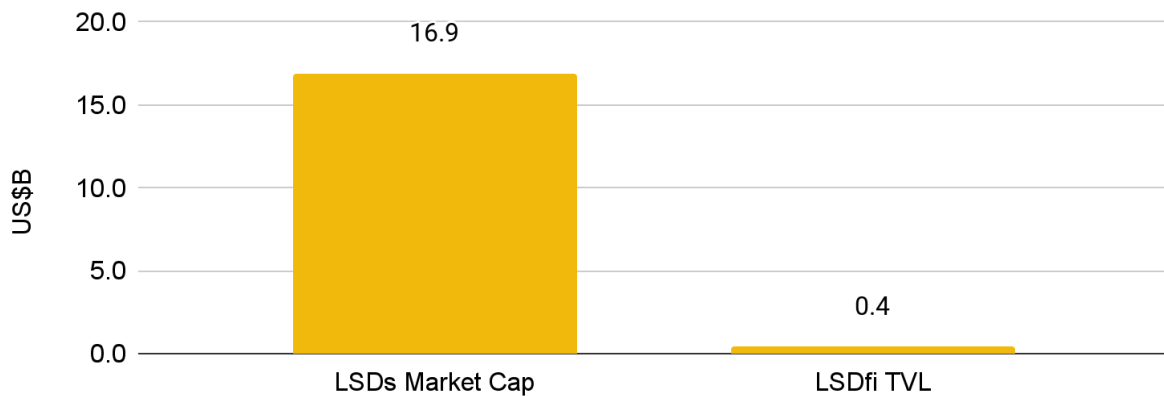


Source: Dune Analytics (@defimochi)

As of 14 June 2023

The growth of LSDfi protocols has benefited from the structural tailwind of an increase in staked ETH post-Shapella. With greater participation in staking, liquid staking adoption has also risen. Naturally, holders of LSDs have also looked towards LSDfi protocols to generate additional yield. Such growth is unsurprising, considering there is over US\$16.9B in LSDs on Ethereum and a TVL of only around US\$412M in LSDfi protocols (~2% penetration).

Figure 11: LSDfi has barely scratched the surface when evaluating against the total addressable market



Source: Dune Analytics (@eliasimos, @defimochi)
As of 14 June 2023

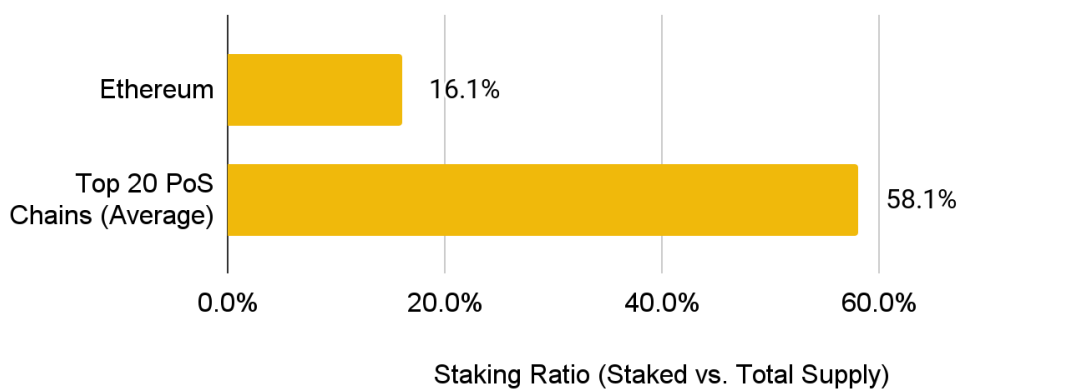
3.3 LSDfi Outlook

Tailwind 1: Staked ETH growth

The staking ratio of ETH is currently at 16.1%, a level significantly lower than the average of 58.1% of the top 20 PoS chains. Going forward, this gap should narrow as the enablement of withdrawals post-Shapella has increased the attractiveness of staking by allowing stakers to exit their position at any time.

If the staking ratio does increase, then the influx of staked ETH would serve as a **positive catalyst and structural tailwind** for LSD and LSDfi protocols.

Figure 12: ETH’s low staking ratio exhibits significant potential for growth



Source: Staking Rewards, Binance Research
As of 14 June 2023

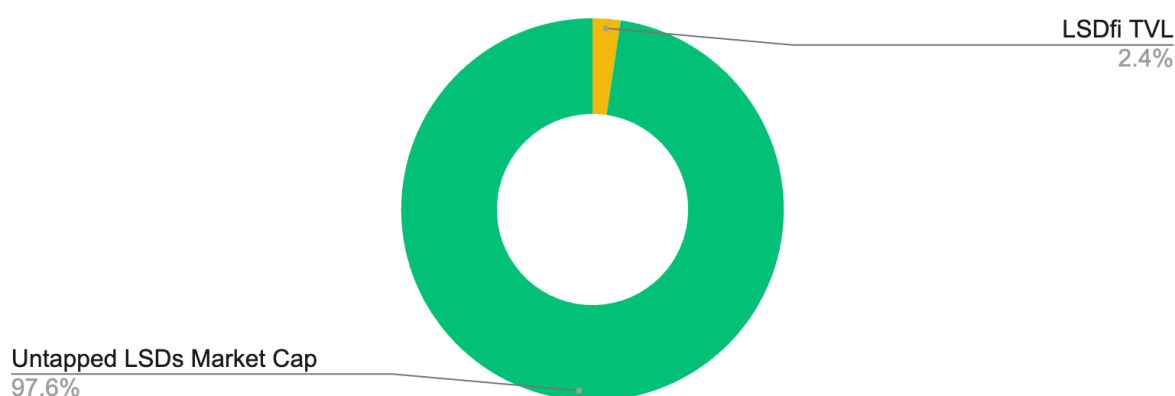
Referring to on-chain data, **there are already indications of heightened demand for ETH staking**. The staking ratio has increased slightly from less than 15% pre-Shapella to more than 16% today, and more than 4.6M ETH has been staked since the Shapella upgrade.⁽³⁾ Additionally, demand for staking is further evident from the current validation queue of 46 days.⁽⁴⁾ Any new validator wishing to enter the network and stake their ETH must wait 46 days.

Tailwind 2: LSDfi Penetration

While the adoption of LSDfi protocols (as measured by TVL) has increased, it is still a relatively small industry. Given that most projects have launched in the past couple of months, it is still early days for the industry. Nonetheless, as LSDs continue to gain traction and more holders look to generate yield, it would be unsurprising to see more innovation and project launches to capitalize on rising demand.

From another perspective, **TVL in LSDfi protocols currently represents less than 3% of the total addressable market** (using LSD market capitalization as a proxy). Admittedly, while some LSD holders may have reservations about using LSDfi protocols and it would be practically impossible to achieve 100% penetration, a low single-digit penetration represents large headroom for growth.

Figure 13: LSDfi penetration is still relatively low



Source: Dune Analytics (@eliasimos, @defimochi), Binance Research
As of 14 June 2023

3.4 Risks

It is crucial to note that LSDfi is a relatively young market, and as with all emerging technologies, one should be aware of the risks involved in interacting with such projects. These include risks associated with liquid staking in general.

- ◆ **Slashing risks:** Validators face penalties for failing to achieve certain staking parameters (e.g., going offline), and holders of LSDs may be exposed to these slashing risks.
- ◆ **LSD price risks:** Prices of liquid staking tokens may fluctuate and differ from the underlying token due to market forces. This may expose users to price volatility and potential liquidation risks if used as collateral.
- ◆ **Smart contract risks:** Every smart contract that a user interacts with presents new layers of smart contract vulnerabilities.
- ◆ **Third-party risks:** Certain projects may utilize other dApps as part of their normal operations (e.g., yield strategies). In such cases, users are exposed to additional counterparty risks.

Additionally, the aforementioned factors do not include project-specific risks that differ across projects. **Users should conduct thorough due diligence before participating.**

Closing Thoughts

LSDfi protocols have opened up new opportunities for yield-seeking LSD holders. By providing additional use cases for liquid staking tokens, LSDfi incentivizes staking participation and has the potential to accelerate the growth of liquid staking. Given that the sector is in its early stages of development, it will be exciting to observe further innovations in the space and to monitor the adoption of LSDfi.

Liquid staking is a burgeoning ecosystem, and we have barely scratched the surface. With that in mind, keep a lookout for an upcoming report in the next few weeks for a deep dive into liquid staking from a data-driven perspective.

References

1. <https://defillama.com/protocols/liquid%20staking/BSC>
2. <https://www.ankr.com/staking-crypto/binance-bnb/>
3. <https://dune.com/hildobby/eth2-staking>
4. <https://wenmerge.com/>

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