

JANUARY 2023 PERFORMANCE

The Fort Stable Fund generated a return of +1.91% for the month of January 2023. ETH had a substantial 30.47% rally from \$1201 to \$1567. As we wrote last month, given our concerns around the unresolved Genesis bankruptcy and whether DCG would be caught up in that, we maintained our cautious positioning at 5% long ETH. With volatility relatively subdued we decided to buy some March expiry 1300 straddles on which we took some profit on the large upside movement in the ETH price. Our positioning remains at 5% long as we expect some pullback in price after January's corrective rally.

The year-end set up was dominated by a great deal of uncertainty, the situation with Genesis and DCG unresolved, a lot of tax loss harvesting selling pressure and the uncertainty around central banks and the path of rate hikes given the inflation and growth outlook.

The macroeconomic backdrop changed over the month from one fearing an imminent global recession to one where there was a building consensus that we were like to avoid an immediate economic calamity. Global growth is still relatively robust, employment relatively strong and most importantly inflation pressures have eased. Certainly, we aren't seeing deflation but the fact that prices have stopped accelerating at such a rapid pace has eased the fear that rate hikes would continue at the pace of the last year has given a green light to risk generally. However most importantly the most rate sensitive parts of the investment spectrum have benefitted, including digital assets.

The last point to note is the continued resolution of bankrupt players in the space. Genesis this last month filed for bankruptcy which will ensure an orderly winding up of that business leaving the other DCG

TOTAL NET RETURN

PERIOD	FUND RETURN		
1 Month	+1.91%*		
Life to date	-21.68%*		
*Post management, performance and entry fees			
Past performance is not indicative of future			
performance.			

businesses, including Grayscale, relatively untouched. The implication being that the dissolution of the Grayscale Trusts and the associated forced selling of BTC and ETH appears unlikely which was a huge relief to the market. The FTX bankruptcy equally, is progressing, and while a long way from resolution there is a clearer picture as to the assets and liabilities and subsequently any ancillary selling pressure in the space will have eased. Another reason adding to ETH upside was the progress towards the Shanghai upgrade allowing ETH to be unstaked. As we wrote in last month's report:

"One mitigating factor and a view which is becoming more prevalent in recent weeks is that more ETH is likely to be staked via liquid staking protocols than the demand to unstake ETH."

Activity and interest in Liquid Staking Protocols has picked up substantially in January. We decided it was worth taking a look at the space in this month's piece as we expect they will play a significant role in the Ethereum ecosystem in the years to come.

From an investment perspective, we have been interested in FSF participating in ETH staking but the indefinite lock up of ETH made this unfeasible. Staking solves the real-world problem of securing the Ethereum blockchain in a decentralised manner which supports the ecosystem. With ETH being a non-inflationary asset since Proof-of-stake was implemented, staking also provides a real yield (currently in the range of 4%-6%).



Over the next two months, we intend to evaluate some of the Liquid Staking Protocols as well as direct staking in the ETH2 contract to participate in ETH staking. While some of the LSDs are relatively new, as they attract more TVL, they attract more attention which means more eyes are focused on security vulnerabilities which makes these protocols more secure over time.

ETH Liquid Staking Derivatives

Introduction

Ethereum moved to a proof-of-stake system just months ago through the merge, an event that fused the Ethereum mainnet with the Beacon Chain, a preliminary proof-of-stake version of Ethereum launched in December 2020. Proof-of-stake networks allow users to deposit funds to become validators and help authenticate on-chain transactions; such users accrue rewards in the form of newly generated tokens. Since December 2020, users have been able to stake their ETH and earn rewards. The Shanghai upgrade promises to deliver something Ethereum users have been eagerly awaiting: a way to redeem the \$27 billion worth of ETH that they have pledged to the network through its staking program. Originally the tokens pledged were locked in the protocol with no way of exiting.

Changing the priorities of the ethereum roadmap appears to be in response to public pressure from ETH investors and stakers eager to access liquidity that has been locked up for an indefinite period. 82.9% of ETH2 staking deposits were made when Ethereum was trading at a higher price against the dollar. The median staker is down nearly 50% in USD terms. Further delays to withdrawals going live would not be welcomed by trapped stakers who want to sell. After many lengthy delays on implementing the merge, the Ethereum developer community appears keen to avoid the criticisms and is moving quickly to implement the Shanghai upgrade.

For some years there has been discussion as to what would happen to the security of the Ethereum proof of stake blockchain once ETH stakers could withdraw their ETH. One security measure set out was to put withdrawal limits in place after they were enabled to maintain an adequate number of stakers to secure the network. One feature of the upgrade will be to throttle the withdrawal process which will allow the market to find a balance in an orderly manner once withdrawals are permitted.

The crypto industry began to think of ways to allow more users to be able to stake ETH without the technical challenges of running one's own node and without having to come up with a minimum of 32 ETH to be able to stake. The solution is the topic of today's piece, Liquid Staking Derivatives (LSDs). More recently, we've witnessed a surge in popularity of LSDs as ETH has become a deflationary asset since the Merge, the yields available from staking are in the range of 5% in real terms and that once ETH withdrawals are enabled on mainnet, a lot of this ETH will flow to LSDs largely driven by the advantages they provide.



What is staking again?

Ethereum transitioned to a Proof of Stake blockchain during September 2022. Blockchains rely on privileged participants known as validators to verify user transactions and publish them by assembling them into a "block". With Proof of Stake, blockchain security is assured by requiring each validator to lock up (or "stake") valuable tokens. As with any system it's all about the incentives, if your goal is secure a network there must be rewards and penalties, the reward is the return you make, and the penalty is the risk of being "slashed". Tokens are forfeited ("slashed") if the validator fails to follow the rules of the chain. This is how Proof of Stake solves the "nothing- at- stake" problem and discourages bad actors.

The nothing-at-stake problem is a conceptual issue with some proof-of-stake mechanisms where there are only rewards and no penalties. If there is nothing at stake, a pragmatic validator is equally happy to attest to any, or even multiple, forks of the blockchain, as this increases their rewards. <u>Ethereum gets around</u> <u>this using finality conditions and slashing to ensure</u> one canonical chain.

How does staking currently work on Ethereum?

Staking on Ethereum means depositing 32 ETH to activate validator software. The user who is staking becomes responsible for storing the state of the

blockchain, processing transactions, and producing blocks - this is all done automatically by the software, but the user must ensure their server is always working and online. In exchange for this work, validators earn ETH.

Staking is the only source of native yield on Ethereum. Holding ETH should be more attractive as it's now yield bearing, although the APY varies with the total staked. To stake, you'll need to be technically proficient (setting up and managing a server). Funds cannot be un-staked until the 'Shanghai' upgrade and to ensure there are always enough funds staked to secure Ethereum, unstaking is rate limited.

Native staking presents three challenges:

- technical barrier to entry
- illiquidity
- requires 32 ETH (~\$50,000)

source: here

Changes to the Ethereum Roadmap - The Shanghai upgrade.

ETH withdrawal capability will launch as the central component of Ethereum's much-anticipated <u>Shanghai</u> <u>upgrade</u>. As mentioned, back in September 2022, the previous upgrade, known as the "<u>merge</u>," officially transitioned Ethereum to a proof-of-stake system, which involves network participants known as



validators pledging ETH to the network in order to verify transactions and keep the network secure. These validators also earn newly minted ETH as a reward for staking. Even before the merge, network users were given the opportunity to start staking on Ethereum in anticipation of the upgrade.

Given that more than 16 million ETH is currently staked with the network, introducing the ability to withdraw those funds is understandably a priority for the Ethereum community, and the network's developers. This is the primary reason why there was a change to the ETH roadmap in favour of prioritising ETH withdrawals and will dramatically improve the investible characteristics of the asset.

While the <u>Shanghai upgrade</u> will gradually solve the illiquidity challenge, it doesn't address the other challenges involved in native staking. What we've seen emerge in the crypto industry is a variety of decentralised protocols and even some large crypto exchanges which offer ways to stake ETH without the previously mentioned challenges. These are commonly known as Liquid Staking Derivatives (LSDs).

Liquid Staking Derivatives - What are they?

LSDs are tokens issued by a custodian. Their value is derived from the value of a claim on the staked ETH held by the issuer. These staking derivatives are called 'liquid' because they can be freely traded with other users on-chain through a DEX (Decentralized exchange). This means a user who has staked through an LSD service can sell a token representing their stake to another user at the market price, receiving access to funds without waiting for the Shanghai upgrade (or for the rate-limited withdrawal queue to clear). Users can earn yield on their staked ETH with lower minimum deposits than native staking. In exchange for providing these services, LSD providers retain a portion of the available yield which they collect as a fee.

The LSD Market

Protocol	ETH Staked	Share Of Liquid Staking	Share of Total Stake
Lido	4,620,896	74.00%	29.39%
Coinbase	987,945	15.82%	6.28%
Rocket Pool	329,168	5.27%	2.09%
Ankr	112,832	1.81%	0.72%
Stakewise	69,664	1.12%	0.44%
Frax Finance	44,707	0.72%	0.28%
StakeHound	37,504	0.60%	0.24%
CREAM	25,184	0.40%	0.16%
SharedStake	16,000	0.26%	0.10%
staked.finance	960	0.02%	0.01%

Source: Dune Analytics

Lido Finance which issues the token "stETH" is the largest entity staking on the Beacon Chain, with a 29.4% market share, including a 74.0% share among liquid stakers. The protocol has benefited from a firstmover advantage, as it was the first LSD issuer to launch at scale in December 2020. In doing so, they built up a key competitive advantage: deep liquidity. Liquidity has been the top priority for stakers in the pre-Shanghai era, as secondary markets for LSDs have been the only way to exit a position.



The Lido DAO was founded in 2020 by a group of prominent individuals and organizations including P2P Validator, ParaFi Capital, Stani Kulechov (Aave), and Twitter personality Jordan Fish (@cobie). The initial goal was to resolve some of the user experience issues in the Ethereum staking process, i.e., the significant upfront capital investment (32 ETH minimum), technical challenges around the validation process, and illiquid funds (locked until after The Merge).

The Lido liquid staking protocol launched a few weeks after the Beacon Chain in December 2020. After gaining traction, Lido went multi-chain, adding Solana (September 2021), Kusama (February 2022), Polygon (March 2022), and Polkadot (June 2022Lido also continued to diversify its validator set by onboarding additional node operators through governance.

How Lido Works

The Lido DAO governs the five Lido liquid staking protocols. While each of the five supported PoS networks, Ethereum, Solana, Kusama, Polygon and Polkadot, have differences in design, the general mechanics around their liquid staking protocols are similar.



Source: <u>@Leo_Glisi</u>c, Messari

The two main parties involved are the users (stakers) and node operators (validators). The key protocol components are the staking smart contracts, the tokenized staking derivatives (stAssets), and the external DeFi integrations (e.g., <u>Curve</u>).

Node Operators

The first critical component of a liquid staking protocol is its node operators because they are responsible for the actual staking. As of now, node operators are added and removed through the Lido DAO.

Lido is also non-custodial, meaning node operators can't directly access user funds. Instead, they must use a public validation key to validate transactions with staked assets. To align incentives, Lido node operators are compensated with a commission on the staking rewards generated from delegated funds.

Staking Contracts

Users delegate stake to node operators through Lido's smart contracts. The three main smart contracts are the NodeOperatorsRegistry, the staking pool, and the LidoOracle. The staking pool is the protocol's central smart contract. Users interact with the staking pool by depositing and withdrawing their crypto assets and minting/burning stAssets. The staking pool distributes the deposits uniformly (round-robin) to node operators using their addresses and validation keys. The staking pool contract is also responsible for distributing fees to the Lido DAO treasury and node operators.





How LidoOracle ("Oracle") interacts with the staking pool on Ethereum. Source: <u>The Lido Blog</u>

The LidoOracle is responsible for keeping track of staking balances. The net staking reward, the difference between the staking yield and any slashing penalties, is tallied up daily and sent to the staking pool contract. The staking pool distributes 10% of the net staking reward by minting a proportional amount of the stAsset: 5% goes to node operators and 5% to the Lido DAO treasury. The remaining 90% of net staking rewards go to stAsset holders.

Depending on the network, the rewards either show up as increases in the stAsset through its balance (via the rebasing mechanism) or its exchange rate. For a more detailed understanding of how LIDO works, you can read about it here: https://blog.lido.fi/ how-lido-works/

The stETH token is currently a purely synthetic, closedend derivative since it can't be directly redeemed for its underlying ETH until after the Shanghai upgrade. Instead, holders looking to convert their stETH to ETH rely on exchanges (e.g., Curve, Uniswap) for pricing/ liquidity.

DeFi Integrations - DEXs

In order to keep stETH liquid, the Lido DAO incentivizes the Curve stETH:ETH pool, currently the deepest AMM pool in DeFi. The Lido DAO token (LDO) and CRV incentives help attract liquidity by bolstering the pool's APY. This pool, along with others like Uniswap and Balancer, gives stETH holders the ability to exit their staked positions for ETH before the unlock.

The price of 1 stETH should never really go above 1 ETH. This "ceiling" is in place because 1 ETH can always be used to mint 1 stETH through the Lido staking contract. However, the arbitrage mechanics aren't as clear the other way around. Since stETH can't be burned for its underlying ETH on the Lido protocol, the exchange rate currently relies on the market's price discovery under the ceiling.



A few factors come into play for the current (and historical) discount including the fact that stETH has less liquidity, less utility (e.g., can't be used to pay gas fees), and more technical (smart contract) risk than ETH. However, the stETH price does not usually dip very far below 1:1 with ETH because it then starts offering arbitrageurs an attractive discount at future (post-unlock) redemption value.

Lending and Borrowing

While Lido stakers can just hold their tokens or provide low risk (from impermanent loss) liquidity to a DEX, they multiply their opportunities when they start using stAssets as collateral. Some notable lending protocol integrations include Aave and Maker DAO for stETH and Solend for stSOL. The most popular strategy so far has been recursive borrowing to get further leverage on stAssets. An example is leveraging stETH on Aave, which allows users to borrow up to 70% of collateral value. Repeatedly borrowing ETH and then resupplying stETH under this parameter allows users to triple their staking rewards, albeit with added risk to themselves and stETH.



The next closest decentralized competitor, Rocket Pool, has gained some ground and fanfare since launching in November 2021. Nevertheless, despite more than tripling its staked ETH, Rocket Pool's market share in non-custodial liquid ETH staking remains just over 5%.

The biggest difference between Rocket Pool and Lido is the validator set. Lido's approach concentrates validators with professional, carefully selected node operators. Rocket Pool's goal is to allow permissionless entry into the validator set and to secure stake through economic incentives rather than reputation/ past performance. While Rocket Pool's system does lead to wider participation in the validation process, it also creates capital inefficiency (i.e., requiring node operators to put up 16/32 ETH for each validator), which makes scaling a challenge.

Another major difference between the two protocols is around liquidity. The Lido DAO currently spends over 4 million LDO per month to incentivize liquidity across chains and their respective DEXs, with the vast majority of spend on the stETH:ETH pair. Rocket Pool, on the other hand, has no spend allocated towards liquidity. Lido's incentive system boosts demand for stETH by simultaneously reducing slippage and creating a sort of "built-in", base yield for stETH holders.

Coinbase

Coinbase's cbETH has the second largest share of liquid staking. The CEX-issued LSD has captured a 33.6% share of the inflows into liquid staking since the merge, likely from being able to convert its existing pool of stake into cbETH. With Coinbase having immense resources at its disposal as the largest CEX in the United States, it is likely to maintain competitiveness for the foreseeable future.



Benefits of LSDs

Liquid staking comes with a wide range of improvements for all stakeholders involved. The most relevant ones are:

Capital efficiency: tokens locked in staking escrow accounts can be used as collateral to expand the yield opportunities.

- Increased chain security: with no trade-off between staking and earning, there's virtually no reason not to stake tokens. This would result in higher security and stability of Proof-of-Stake blockchains over the medium-long term.
- Increased liquidity: for some Proof-of-Stake protocols that have a higher share of staked tokens over total supply, there could be relatively low liquidity traded on markets with potentially harmful consequences in terms of price discovery. Liquid staking tokens allow investors to enhance trading volume for protocols that do not want to compromise their security in favor of price efficiency
- Cross-chain interaction: liquid staking tokens are basically derivatives contracts. Hence, they can theoretically be chain-agnostic and circulate among different protocols.
- Ease of use: liquid staking tokens allow investors to be involved in staking but not in the ancillary complexities such as re-staking, unbonding periods, reward withdrawals and delegation technicalities.

Risks of LSDs

Liquid staking has two layers of risks. One of the two, the most visible one, is financial risk while the other one is governance risk, a mostly overlooked risk factor.

Financial risks:

- Liquidity risk: the immediate redemption of liquid staking token implies that protocols must maintain a certain amount of idle tokens to satisfy early withdrawal requests. In case of a sudden market shock, a "bank run" scenario could occur and leave some protocols in potential liquidity distress.
- Systemic risk: since liquid staking tokens can be used on multiple chains, a failure in one of these could trigger a negative spill over effect on liquid tokens of other protocols with potential systemic distress.

Governance risks:

- Centralization of staking: liquid tokens need a certain level of trading/borrowing activity to deploy their yield potential. Therefore, it's likely that liquid staking protocols will be limited in number to gather as much liquidity as possible to sustain their issued liquid tokens. Since these platforms are responsible for delegating tokens to validators, an excessive concentration of liquid staking issuance could lead to stake centralization.
- Slashing risk: if validators incur in downtime or double signing, their staking rewards will be slashed, and the loss will be suffered by investors that have delegated their tokens too. This would result in a liquid staking token backed by a lower amount of underlying token than the initial one with potential risks in case of liquid token redemption.



• Validators' misbehaviour: a validator could theoretically "short-sell" his/her own liquid staking token and take profit from a malicious behaviour that leads to a reduction in his/her liquid staking token value.

The Outlook for Ethereum staking and LSDs

As more use cases for blockchains develop over coming years, we believe that ETH staking will grow significantly. While today, there exist various technical complexities and risks to staking, the ability to gain exposure to a pre-eminent crypto asset which is non-inflationary, liquid and provides a real yield will appeal to many investors. Only 14% of ETH's supply is currently staked compared with roughly 70% for the next two largest Layer 1 blockchains, Cardano and Solana.

Source: here

This leaves considerable room for growth once liquidity concerns are removed and the staking-asa-service providers prove themselves over time. Ideally, they will develop in a way which also benefits Ethereum's overall decentralisation. LSDs appear to be a particularly interesting class of protocols. Unlike much of DeFi, they solve a real problem and support the ecosystem. LSDs are profitable business models which means they can achieve self-sustainability.

In conclusion

The pace at the which the development of the Ethereum platform continues to evolve remains impressive. The Shanghai upgrade is expected in the next quarter and further strengthens the network in terms of security and staking participation. From our perspective as investors, the upgrade fundamentally changes the profile of the asset and improves ETH's attributes as an investible asset further reinforcing investment narrative. We expect that the macro backdrop will continue to drive the near-term price action and that the inflationary impulses we have felt will see rate hikes priced out and financial conditions remain easy in the short term.



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