The State of Sui DeFi

Sui

Sui Foundation 2023-2024

Contents

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Introduction

The following pages provide a walkthrough of Sui's nascent yet burgeoning DeFi ecosystem, shedding light on the different protocols, use cases, and assets that complete the landscape. We cover Sui's technological innovations to show how they enable rich products and features in the realm of decentralized finance.

We use on-chain data to narrate Sui's DeFi growth to showcase the chain's increasing product-market fit. We hope that the interested reader finds the attached material informative and educational, providing a wealth of knowledge for enthusiasts and investors alike.

Sui Tech is Built for DeFi

As in traditional (centralized) trading, DeFi users rely on technological advantages to obtain a financial edge. Sui's object-centric architecture, parallelizable execution, and programmability deliver a best-in-class venue for delivering on-chain financial services.

On the performance side, Sui's consensus engine is the fastest in all of web3 and getting even faster. Later in 2024, Sui's Narwhal consensus engine will be replaced by Mysticeti, delivering end-to-end client settlement finality of approximately 0.640 milliseconds (0.395 in the consensus part), enabling laser-fast execution in on-chain trading. This speed is critical for making sure that trading strategies, liquidations, and portfolio rebalancing operate as fast as possible to real time. Indeed, both Sui's AMM-based and CLOB-based decentralized exchanges have traditionally settled a large amount of on-chain volume driven by traders looking for this degree of execution.

In addition, Sui's parallelizable architecture ensures that different applications and use cases in DeFi can perform independently with regard to each other. Whether it's use cases across different DeFi dApps or different pools within the same DeFi dApp, Sui's performance in independent parts of the chain are unaffected by traffic in other parts of the chain. This ensures that traders interested in different assets, different execution venues, and different strategies need not worry about each other and Sui's execution is delivered locally within each use case.

Finally, Sui's developer experience offers a superior foundation for developers by reducing efforts to build new products, new features, and enabling quicker iterations between products. Sui's programmability is based on the power of the Move programming language which is inherently secure – a critical feature within the DeFi space.

Not only does Move enable safer development, it also increases the design surface by allowing developers to experiment more freely with their applications without incurring the risks associated with previous smart contracting languages.

"Move on Sui offers a best-in-class developer experience. It allowed us to build and test Suilend significantly faster than expected, meaning our product is likely to get to market ahead of schedule."
Suilend

To name one example, Programmable Transaction Blocks (PTBs) enable users to execute multi-step transactions across various DeFi dApps (and often touching many different assets!) in a single transaction through a one-click experience. This functionality is critical as it lets developers build true composability into their products and create much richer functionality across the DeFi ecosystem.

"Move on Sui allows us to do what other languages don't: combine transactions and customize transaction blocks. Large order swaps that require interacting with multiple pools can take place in one transaction directly from the user interface. Programming difficulty is also reduced, making Sui a perfect network for intent-based trading and interactions."
Cetus

Sui DeFi Ecosystem Overview

The Sui Network has a robustly growing DeFi ecosystem with over 20 active projects spanning applications such as decentralized exchanges (DEX), lending protocols, liquid staking (LST), derivatives, and collateralized lending positions (CDP).

Over the past 6 months, Sui's DeFi ecosystem has established itself as a top-10 player both in liquidity and volume terms across all DeFi ecosystems. During this period of explosive growth, Sui's total value locked (TVL) increased from virtually zero to $750M, building up deep liquidity in all of Sui's major assets. In addition, on-chain traded volume has risen ~$100-200M in daily flows, indicating that the chain's liquidity is being utilized heavily and healthily by the ecosystem.

Liquidity on Sui

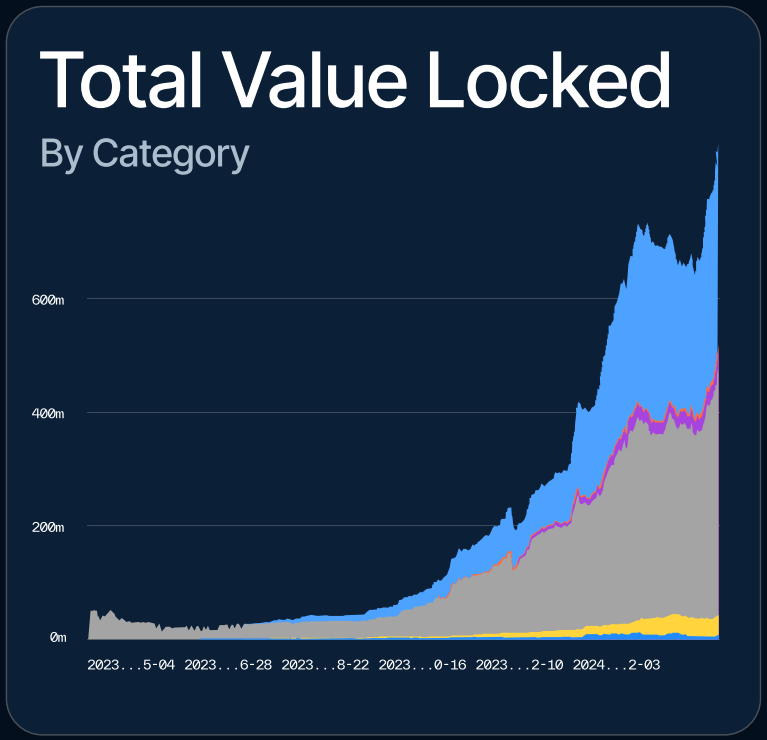
As of late March 2024, Sui's TVL has risen from essentially zero and peaking recently at $750M, positioning Sui as one of the top-10 chains when ranked by TVL.

TVL is often seen as a key DeFi indicator because it proxies how many assets are available on-chain so that dApps can use that liquidity to offer financial services to more third parties. All things equal, more liquidity is better because it means that the scope of financial services is broader and that asset markets are deeper.

The majority of Sui's liquidity stems from major lending protocols and decentralized exchanges, accounting for 90% of TVL in the Sui network. In particular, on the lending side, Scallop ($165M) and Navi ($175M) contribute the bulk of liquidity. Meanwhile, on the DEX side, liquidity is mainly driven by Cetus ($120M), Kriya ($65M), and Aftermath ($80M).

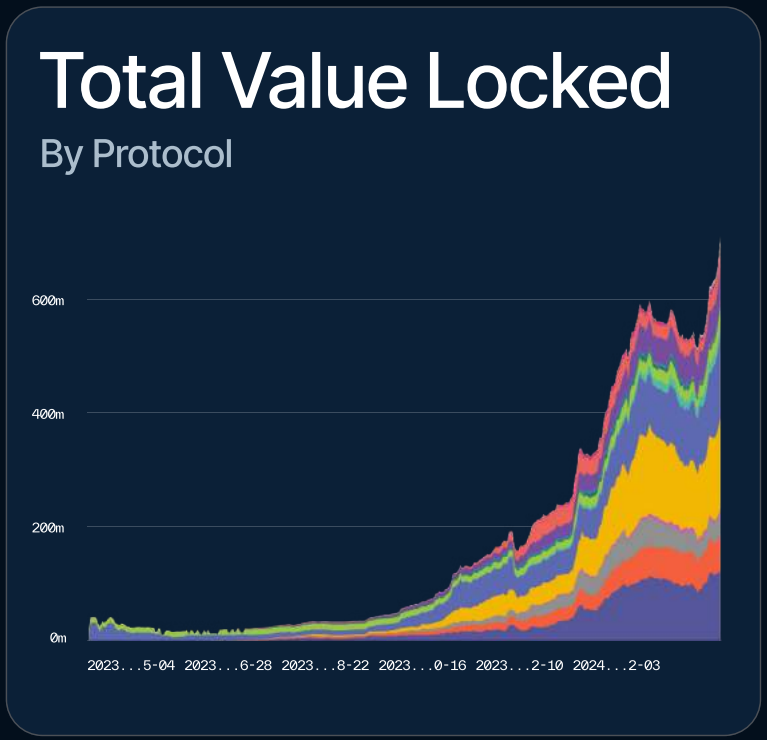
Total value locked by category

- Lending
- Yield
- Liquid Staking
- DEX
- Derivatives
- CDP



Total value locked by category

- Suilend
- OmniBTC
- Deepbook
- Aftermath
- ABEx
- Mole (Saving)
- Bucket
- Turbos
- Bluefin
- Cetus
- Scallop
- Typus
- FlowX
- Kriya
- NAVI



Volume on Sui

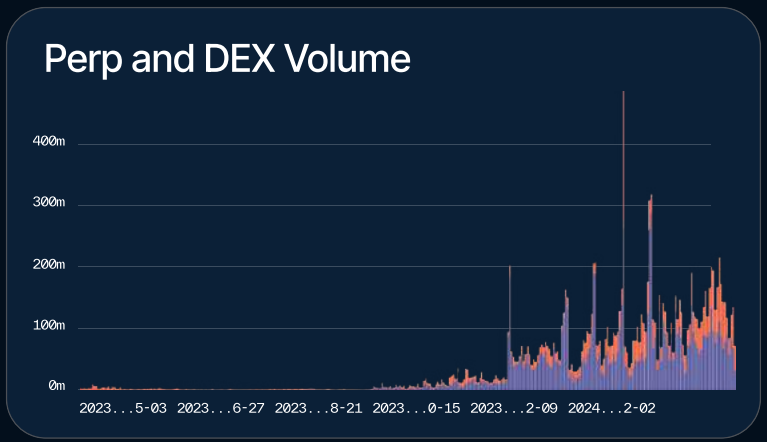
As of late March 2024, the two-week moving average of on-chain derivatives and spot trading volume is $166M and $125M, respectively. As in the case of TVL, Sui is a top-10 chain when ranked by its on-chain volume and is consistently increasing its market share.

While TVL is more commonly used to assess the growth of a DeFi ecosystem, volume is a richer metric because it proxies whether on-chain liquidity is used or not by DeFi participants. Indeed, high volume relative to TVL is an indication of ecosystem health since volume generates the fees used to reward liquidity providers. In contrast, an ecosystem with low volume risks losing liquidity as liquidity providers search for better options since their assets are sitting idly and generating few rewards.

Sui's volume metrics are very healthy for a nascent ecosystem, indicating that Sui's DeFi is achieving product market fit as traders and DeFi participants source that liquidity to power financial services. In the derivatives case, volume is highly concentrated with BlueFin powering over 90% of volume – the vast majority of which is trading of BTC, ETH, and SUI perpetuals. In the spot case, Cetus drives about half of the daily volume with the other half spread out mostly across Sui's four other major DEXs.

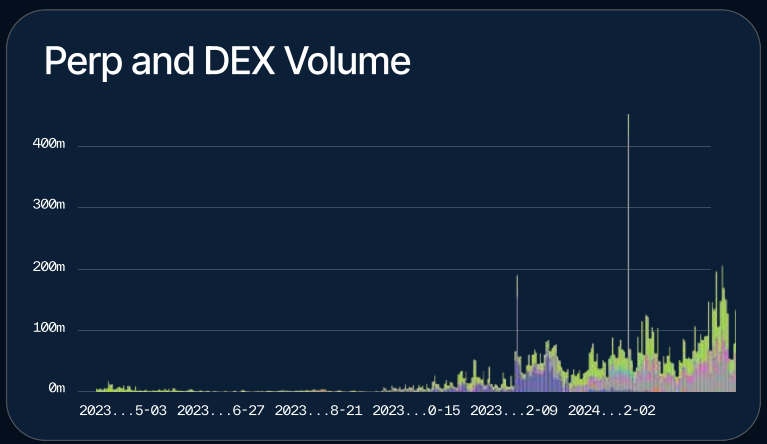
Perp and DEX Volume

- DEX (Spot)
- Perpetuals



Perp and DEX Volume

- Aftermath
- Cetus
- Kriya
- FlowX
- OmniBTC
- Turbos
- Deepbook
- ABEx
- Bluefin



Assets on Sui

Sui's TVL asset compositions break up largely into native SUI tokens, stablecoin assets and non-SUI volatile assets. To date, USDC and USDT need to be bridged into the ecosystem from other chains – in practice, mostly through the Wormhole bridge. Recently, First Digital announced that it will launch its FDUSD stablecoin natively on Sui and we expect additional native stablecoins to be issued on Sui in the near future.

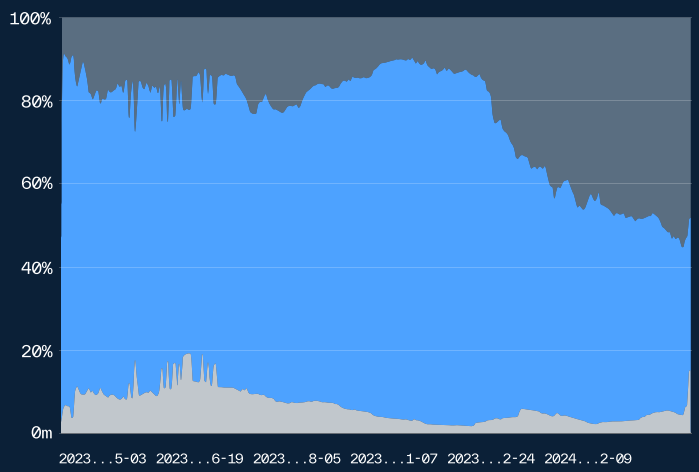
Amongst volatile assets, the native SUI token is the main contributor to TVL, followed by the DeFi protocol tokens such as CETUS (issued by Cetus), NAVX (issued by Navi) and SCA (issued by Scallop). In addition, memecoins also represent a share of volatile asset TVL. As the year progresses we expect more DeFi and gaming projects to launch tokens, and thus deliver a greater variety of non-SUI volatile assets into the ecosystem.

Perp and Dex Volume

- SUI
- Stable
- Non-SUI Volatile

Total Value Locked

By Asset Type



On the non-volatile side, there are more than $380M bridged stablecoins into the Sui network, the vast majority of which corresponds to bridged USDC at $265M (mostly bridged in from Ethereum). The remainder largely corresponds to USDT, which has a bridged amount of $115M. Majority of bridged USDC and USDC are from Ethereum through Wormhole bridge.

While stablecoins power many different on-chain use cases, stablecoins in Sui have mainly found product-market fit in DeFi with approximately 70% of USDC and USDT deposited into DeFi protocols. USDC and USDT thus contribute a significant share of TVL and power a substantial portion of Sui's on-chain volume.

Bridged balance by token
Balance > $10,000

- USDT
- WETH
- USDC

Protocols on Sui

Sui's on-chain volume has been consistently increasing driven by strong user demand for swapping, staking, borrowing and lending. In tandem with this demand boost, rewards to liquidity providers have also increased and thus generate strong yields for on-chain liquidity depositors.

To date, across Sui DeFi it is common to observe yields in the range of 20-40%, providing an attractive opportunity for interested investors. These yields can mainly be obtained by depositing liquidity in lending protocols so that third parties can borrow or depositing liquidity in DEX pools so that third parties can trade. Of course, as in all financial markets, higher yields tend to be accompanied by higher risks and it's important to be cognizant of these in order to make investment decisions appropriately.

In addition, for the more conservative liquidity providers – who prefer to take less risk even if it is at the expense of lower yields – Sui DeFi also offers opportunities. Namely, by depositing tokens into liquid staking protocols, investors can obtain a relatively safe 3-4% on their SUI tokens.

We now provide a deeper dive into specific DeFi use cases for anyone who is interested in exploring more.

Liquid Staking

Staking is the backbone of any proof of stake (POS) blockchain because it aligns the interest between ecosystem participants and validators. Staking allows users to lock their tokens into the Sui network and earn around 3.5% annual yield from validating transactions and maintaining the blockchain's integrity. Liquid staking goes one step beyond "standard" staking in that it lets users obtain a liquid staking token in exchange for locking their SUI tokens into native staking. The liquid staking token can then be used as a liquid asset in other parts of the DeFi ecosystem. Hence, liquid staking is a form of leverage and lets SUI token holders enhance their yields beyond that delivered by the stake reward APY.

The main liquid staking protocols on Sui are Haedal, Volo and Aftermath. By staking native SUI tokens into the LST protocols, users receive liquid staking tokens HaSUI, vSUI and afSUI as claims on their staked SUI tokens. In practice, the price of the liquid staking tokens tend to appreciate slowly relative to the price of SUI since they represent claims on both the underlying staked SUI and the earned stake rewards.

Decentralized Exchanges

Decentralized exchanges play an extremely important role in the DeFi ecosystem by facilitating liquidity provision and enabling swapping of value across on-chain assets on a 24/7 basis at decentralized trading venues.

The majority of existing DEXs are based on the design of automated market maker. In its classical form, an automated market maker (AMM) is a type of decentralized exchange that relies on an inverse function x*y = k to quote the price of asset x to y instantly. There are two types of participants on AMM DEX: liquidity providers and traders. Each DEX pool has a pair of two assets and liquidity providers (LP) deposit equal value of asset x and y into the liquidity pool, and in return, they receive part of the transaction fees as rewards for providing liquidity. Meanwhile, traders can swap asset x to y using the pool's liquidity. Importantly, note that most current DEXs implement more sophisticated versions of the traditional AMM model.

Providing liquidity on DEXs bears important risks, of which "Impermanent Loss" is one of the most important. In a nutshell, impermanent loss implies that acting as a liquidity provider to a DEX does not guarantee that this strategy will be profitable – indeed it can produce heavy losses. Impermanent loss happens because severe shifts in token prices are arbitraged away in DEXs by rebalancing the AMM pools. In practice, this means that if an asset's price appreciates strongly, then the pool will rebalance value from the side of the pool of the appreciating asset towards the side of the pool of the depreciating asset.

In other words, a liquidity provider will gain relatively less than if they had simply held on to the initial position without having deposited it into a DEX. On the other hand, trading volume generates fees that may fully or partially offset impermanent loss. Hence, in practice, stable pools such as USDC-USDT or stSUI-SUI typically suffer from little impermanent loss and are relatively low risk, whereas highly volatile pools can exhibit strong impermanent loss and thus may require sophisticated hedging strategies.

On the trading side, having enough liquidity is crucial to minimize slippage when traders transact on AMM-based DEXs. The more liquidity a certain pool acquires, the least slippage a trader experiences when swapping assets. The reason is simple: The more liquidity in a pool, the larger the ability of that pool to absorb a large trade without having to rebalance its pools strongly and thus offers a better price to the trader.

One important innovation in DEXs comes from the Uniswap V3 model which improves the capital efficiency by introducing the design of concentrated liquidity, allowing liquidity providers to concentrate their capital within custom price ranges. In doing so, liquidity providers construct individualized price curves that reflect their own preferences. As a result, traders are subject to lower degrees of slippage as liquidity is spread more efficiently across the price range. In the Sui DeFi ecosystem, Cetus and Turbos are based on the Uniswap V3 model. Kriya and FlowX adopt the Uniswap V2 model.

1 https://academy.binance.com/en/articles/what-is-an-automated-market-maker-amm

2 https://blog.uniswap.org/uniswap-v3

Finally, while we have mostly spoken about AMM-based DEXs, Sui has a fully on-chain central limit order book (CLOB) DEX called DeepBook which operates more similarly to traditional trading venues. In a CLOB, liquidity providers post buy/sell orders of differing size at various price ticks, while traders take those buy and sell orders and execute them in exchange for their own assets.

DeepBook is a key Sui differentiator because it performs all trading activities on-chain, including routing, matching, and settling orders, and is a key enabler of wholesale liquidity across all of Sui DeFi.

Lending Protocols

Lending protocols come as the next important pillar to support the DeFi ecosystem. Lending protocol enables one party to lend out spare assets and earn yield, while letting the other party borrow needed assets in exchange for an interest rate. Borrowers must post collateral to borrow – and often a lot more than 100% of the borrowed amount when the collateral assets are highly volatile. It is important that borrowers manage their positions accordingly, especially when the price of their collateral assets falls, in order to avoid having their positions closed and their collateral assets liquidated.

In the Sui DeFi ecosystem, Navi and Suilend are modeled on Compound V2 while Scallop is built upon Compound V3. The biggest difference between V2 and V3 is that V3 does not let a lender use their asset deposits if they choose to use them as collateral in order to borrow other assets.

In addition, V3 also takes different steps towards managing liquidation risk. Therefore, lenders on Navi and Suilend can utilize their supplied assets as collateral to borrow out other assets. But on Scallop, however, borrowing is separate from the lending pool, and borrowers need to deposit additional collateral to borrow other assets.

Lastly, Bucket is a version of a lending protocol called collateralized debt positions (CDPs) which allow users to mint stablecoins by collateralizing their existing assets. The stablecoin BUCK has been accepted by few DeFi and gaming applications as collateral or payment currency.

Derivatives

Derivatives are set to a great start in the Sui DeFi ecosystem. Perpetual exchanges allow traders to open positions with leverage, if they have strong directional views or hedging requirements. BlueFin is a perpetual exchange that is based on an off-chain orderbook, and aims to provide users with a seamless centralized exchange experience. Typus is building option vaults that help traders hedge their spot positions or provide yield enhancement opportunities for users.

However, perpetuals and options are considered more advanced financial instruments designed for sophisticated traders and require stronger risk management practices.

Appendix: Project Summary

Liquid Staking Protocols

Aftermath

Aftermath replicates the entire centralized exchange experience all completely on-chain (I.e. no required off-chain components (sequencers, matching engines, etc)) and transparent. This encompasses many DeFi verticals including spot trading (AMM + DEX Aggregator), perpetuals, money markets, and liquid staking. It also aims to blend the gap between the DeFi, NFTFi, and GameFi communities by building products that appeal to all and can be utilized uniquely by each category.

Website | Twitter | Docs

Haedal

Haedal is a liquid staking protocol built on Sui that allows anyone to stake their SUI tokens to contribute to governance and decentralization of the Sui blockchain. In the meantime, users will get haSUI in return so that they can continue to participate in DeFi activities to earn additional yields.

Website | Twitter | Docs

Volo

Volo is a liquid staking solution that helps you maximize utility and liquidity for SUI by offering vSUI.

Website | Twitter | Docs

Decentralized Exchanges

Cetus

Cetus is a pioneer DEX and liquidity protocol on the Sui network. The mission of Cetus is building a powerful and flexible underlying liquidity network to make trading easier for any users and assets. It focuses on delivering the best trading experience and superior liquidity efficiency to DeFi users through the process of building its concentrated liquidity protocol and a series of affiliate interoperable functional modules.

Website Twitter Docs

Aftermath

Aftermath replicates the entire centralized exchange experience all completely on-chain (I.e. no required off-chain components (sequencers, matching engines, etc)) and transparent. This encompasses many DeFi verticals including spot trading (AMM + DEX Aggregator), perpetuals, money markets, and liquid staking. It also aims to blend the gap between the DeFi, NFTFi, and GameFi communities by building products that appeal to all and can be utilized uniquely by each category.

Website Twitter Docs

Kriya

KriyaDEX is one of the most liquid trading venues on Sui, it aims to be the one stop solution for retail and institutions in the move ecosystem.

Products:

- KriyaSwap: a UniV2 style AMM with deep liquidity and locked staking farms (hosts exclusive pairs on Sui for vSUI and celer stables) + a pro trading terminal for users to place limit orders on top of Deepbook
- KriyaPerps: fully-onchain orderbook based perp DEX with cross-margin, multichain deposits / google zk-login etc. (Currently being audited, phase 1 testnet done)
- KriyaStrats : Sort of the advisory layer. 1-click strategies across lending x DEX like Instadapp / Kamino Multiply as well as full fledged vaults for DCA, Grid trading etc. (Some leverage lending strats live on mainnet)

Website Twitter Docs

Turbos

Turbos Finance is a non-custodial and hyper-efficient decentralized exchange (DEX). Built on Sui, Turbos brings a universal notion of digital asset ownership and unprecedent horizontal scalability to decentralized finance (DeFi). Founded in June 2022, Turbos is backed by experts in DeFi and cryptocurrency trading, including Jump. Turbos' mission is to make DeFi accessible to the next billion Web3 users and to serve as a pivot between Sui ecosystem projects and the market.

Website Twitter Docs

FlowX

FlowX is the ultimate destination for all trading needs, designed to provide a seamless, user-friendly experience for all. Key features include one stop project launch, one to all trading, and farming as a service.

Website | Twitter | Docs

Lending Protocols

Scallop

The Next Generation Money Market, prioritizes institutional-grade quality, enhanced composability, and robust security.

Protocol Highlights:

- Pioneering the exclusive Compound V3+ lending/borrowing model on non-EVM chains.
- Equipped with a 2 Layers SDK tailored for professional traders.
- UI for arbitrage trading, requiring zero coding skills.
- X-oracle: Multi-oracle strategy.
- The team with cybersecurity and CTF challenge background.

Website | Twitter | Docs

Navi

NAVI Protocol is the largest Defi on Sui - leading Lending + LSDefi. We achieved 200m TVL and 800k+ users since the main net 10 months ago. NAVI is Backed by OKX Ventures, Hashed and Dao5. Token Ticker is $NAVX and now traded at Kucoin, Gate, Bitget, HTX and LBank exchanges.

Website | Twitter | Docs

Suilend

Suilend is the fastest-growing lending protocol on Sui, built by the team behind Solend. With years of experience navigating the ups and downs of the toughest crypto markets, Suilend's risk management is best-in-class.

Website | Twitter

Collateralized Debt Position

Bucket

Bucket Protocol, one of the earliest DeFi builders on Sui that provides fixed/low-cost solutions for leveraging yield-bearing tokens (e.g. LST, USDY). Besides constructing a robust infrastructure for LSDFi and RWAFi, Bucket bridges the gap between DeFi and GameFi with stablecoin $BUCK, generated by Collateralized Debt Position (CDP).

Website Twitter Docs

Derivatives

BlueFin

BlueFin is the leading exchange on the most progressive, high throughput blockchain backed by the biggest HFTs, including SIG, Tower Research, Brevan Howard. It offers parallelized trade execution, with more than $11B in volume and 15kk users since the start of the year. Liquidity supported by IMC, Wintermute, Keyrock, GSR, Amber, and other leading market makers.

Website Twitter Docs

Typus Finance

Typus is your derivatives playground to transform into your Tails on chain, dive into DeFi gameplay, and experience dopamine-fueled rushes. Starting off with options, we're building a suite of derivatives products that allow users to bet on the volatility of longtail assets. Our new flagship product, hourly options, has helped us generate over $200M notional volume in 3 months. Through integrating our dNFT collection, Tails By Typus, as our on-chain user incentive system, Typus replicates the UX of Web3 games through a game economic model, the thrill of gambling and providing social experiences with asset flow.

Website Twitter Docs