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The State Of The Onchain Structured Product Market

An Annual Report

From Index Coop

July 2023

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Introduction

Welcome to the Index Coop's annual report on the state of the onchain structured products market.

The Index Coop DAO is a decentralized autonomous organization that powers a range of on-chain index, inverse, leverage and yield products. In time, Index Coop will also open access to its protocol, enabling permissionless access and use.

The Index Coop DAO believes onchain structured products have several major advantages and that this market will grow to a considerable size. Today, however, this market is small and a niche of crypto itself. Furthermore, as you'll see later in this paper, there are currently significant headwinds and barriers to adoption. That said, many in this space are inspired by the promise of onchain structured products and confident that collectively we can overcome the challenges before us.

With that in mind, we have worked to be even-handed in this report. Because this space is so new, creating categories and definitions for the different projects, products, and protocols was a complex process that generated many internal debates. Readers may define some things differently, but hopefully that's just on the edge cases. Data for this report was last collected on July 3rd, 2023.

Our goal with this report is to provide value to our users, community members, collaborators, and even competitors. We hope it stimulates debate and leads to progress.

Thank you for your time. Let's begin!

Warmly,
The Index Coop DAO

The Onchain Structured Product Market Today

2.1 A brief history of the market

Following the launch of Ethereum in 2015, the ability to write smart contracts and deploy them onchain enabled the first decentralized finance projects ("DeFi"). As onchain protocols, projects and assets proliferated, builders saw an opportunity to create the tools and mechanisms that could be leveraged to develop structured products onchain.

For the purposes of this paper, we've defined onchain structured products as any token, platform or vault that enables access to digital asset risks and returns and is delivered via a blockchain without the involvement of a centralized or traditional financial institution. We include some but not all products from protocols, in accordance with our definition of onchain structured product. If your protocol looks light on TVL later on, this is why.

Enzyme Finance, which launched in July of 2016 as Melonport, was the first onchain digital asset portfolio solution. Enzyme offered the ability for any user to create a strategy-based investment product onchain while automating the process of setting up investment contracts and facilitating account paperwork. They were followed quickly by Set Protocol in 2017. Set Protocol's TokenSets tool allowed DeFi users to create their own Ethereum-based ("ERC-20") token representing of a basket of underlying digital assets. These early entrants were prescient and the market exploded in 2020, when 20 projects were launched including Yearn, Compound and the Index Coop.

In total, 49 projects have launched in the onchain structured product space since 2016, with the majority of projects offering index or yield-earning products. Of the 49 that launched, 9 have ceased operations, and 13 have suffered exploits.

The remaining 40 operational projects are in the vanguard of a completely new industry.

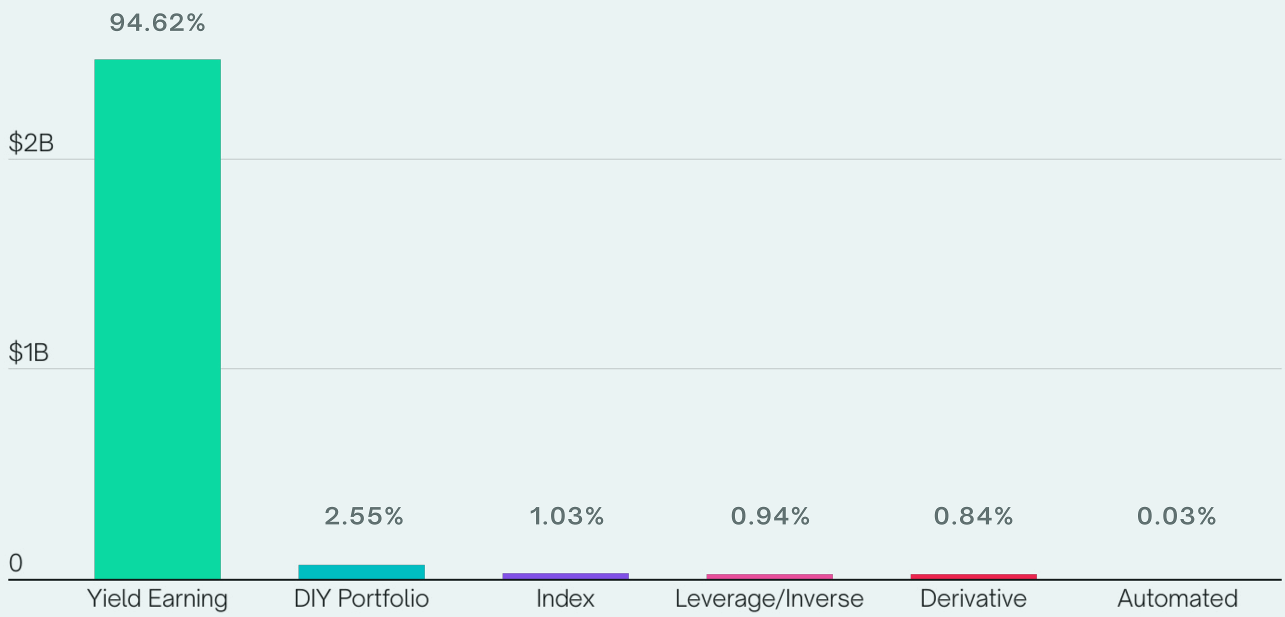
2.2 Current size of the market

The onchain structured product market makes up 0.21% of the crypto market overall, with a combined Total Value Locked (TVL) of $2.46bn across all protocols. In comparison, there are $48.29bn in assets in the DeFi market and $1.19tn in assets in the crypto market. While the market today is relatively small, many think there's considerable room for growth.

2.3 Onchain Product Types Capturing Assets

For this paper, we've analyzed six categories of onchain structured products: yield, index, leverage/inverse, derivative, DIY portfolios, and automated proprietary strategies. We have included indexes of liquidity provisioning (LP) positions (i.e. market making) but excluded pure LP positions, which we see as market infrastructure. In our survey of the current market, when looking at protocols we have focused on those with over $1M of TVL; and when looking at products in each category, we have sought to include as many as possible - to show the market's diversity - but sometimes reduced focus either the top 20 or those with >$100k TVL..[1]

Here's how the product types have captured assets:



*As of July 3rd, 2023

Yield Earning Products

Yield products enable the holder to access yield from one or more digital assets, currencies or strategies. Examples of yield products include Yearn's ETH and stETH vaults and Index Coop's leveraged staked ETH yield token, icETH.

The top 20 products by TVL are most commonly earning yield in relation to base assets like

1. We define real activity to mean TVL from products, exclusive of governance tokens

BTC, ETH or stablecoins, and optimize or leverage yield, as listed here:

Product Name	TVL	Project	Category	Network
Aave wstETH yield multiple (3.57x)	$1.18B	Summer.Fi	Yield	Ethereum
Aave wstETH yield multiple (10x)	$204.86m	Summer.Fi	Yield	Ethereum
Yearn ETH Vault	$120.50m	Yearn	Yield	Ethereum
50z UNI V3 DAI / USDC 0.01% tier	$106.71m	Summer.Fi	Yield	Ethereum
DAI savings rate	$100.67m	Summer.Fi	Yield	Ethereum
Yearn stETH Vault	$58.54m	Yearn	Yield	Ethereum
50x UNI V3 DAI / USDC 0.05% tier	$61.32m	Summer.Fi	Yield	Ethereum
BNB Savings (8x) - USDT-BNB PancakeSwap...	$46.19m	Alpaca	Yield	Binance Smart Chain
Yearn DAI Vault	$36.53m	Yearn	Yield	Ethereum
Yearn Staked yCRV Vault	$34.19m	Yearn	Yield	Ethereum
TranchessV2 BTCB QUEEN	$31.27m	Tranchess	Yield	Binance Smart Chain
Instadapp Ether 2	$30.55m	Instadapp	Yield	Ethereum
Yearn USDC Vault	$26.26m	Yearn	Yield	Ethereum
flamincomed Wrapped BTC	$23.66m	Flamincome	Yield	Ethereum
flamincomed Tether USD	$23.57m	Flamincome	Yield	Ethereum
Origin Dollar	$21.68m	Origin	Yield	Ethereum
Interest Compounding ETH Index	$21.18m	Index Coop	Yield	Ethereum
Market Neutral (8x) - BNB-USDT PancakeSwap...	$20.04m	Alpaca	Yield	Binance Smart Chain
Market Neutral (8x) - BNB-USDT PancakeSwap...	$19.99m	Alpaca	Yield	Binance Smart Chain
TranchessV2 wBNB QUEEN	$17.71m	Tranchess	Yield	Binance Smart Chain

Ethereum   Binance Smart Chain

*As of July 3rd, 2023

The list of protocols providing these top products is dominated by Summer.fi[2] (previously known as Oasis), Yearn and Alpaca, with products making the list also coming from Flamincome, Tranchess, Instadapp Lite, Index Coop and Cian.

To-date, vaults—pools of funds which pursue a strategy, or multiple strategies, for maximizing returns on the assets in the vault—have been the infrastructure of choice for yield products.

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2. As is customary in DeFi, we use the nomenclature total value locked (TVL) throughout this paper. However, Summer.fi prefers assets under management (AUM) because they describe themselves as a front-end for other protocols and do not, in fact, have an assets locked in their protocol.

Vault strategies can include supplying collateral and borrowing other assets, providing liquidity, accumulating trading fees, or farming rewards or incentives (i.e., “yield farming”). In contrast, ERC-20 tokens are more frequently used for more traditional indexes and leveraged products.

Yield products currently hold approximately 95% of the assets in the onchain structured products market.

The dominance of yield-earning products can partly be attributed to the relatively high APYs offered by these products over the last few years. Until recently, traditional financial markets offered lower yields than onchain products. During DeFi Summer, in 2020, many projects offered especially attractive yields and incentives that drove gross APYs even higher for onchain, yield-earning products.

December 2020 APY Opportunities

December 2020 APY						
Fed Funds Effective	Vanguard Federal Money Market Investor (VMFXX)	ECB Deposit Facility Rate	Aave USDC (Dec. ‘20 average)	Compound USDC (Dec. ‘20 average)	Aave DAI (Dec. ‘20 average)	Compound DAI (Dec. ‘20 average)
0.09%	0.45-0.58%	-0.50%	6.99%	8.15%	5.12%	4.64%

DIY Portfolios

DIY portfolios represent the second largest product category with $66.49m in TVL. DIY products enable users to allocate funds to their own asset mix. Enzyme Finance is the primary protocol we observed and examples of such products include Rhino Fund. Set Protocol, accessed via TokenSets.com, was another similar protocol, but has been sunset by Set Labs who appear to be exiting the market. Babylon Finance, which was conceptually similar to Enzyme, shut its doors in August 2022 after failing to regain momentum in the wake of a costly exploit. Within this category, this is how products across protocols have attracted assets:

Product Name	TVL	Project	Category	Network
USF Fund I	$29.22m	Enzyme	DIY Portfolio	
Nexus Mutual Treasury Yield	$21.90m	Enzyme	DIY Portfolio	
Sushi DAO House	$4.53m	Set Protocol	DIY Portfolio	
Guttastemning	$2.13m	Enzyme	DIY Portfolio	
AGF Digital Dollar Yield Vault	$2.10m	Enzyme	DIY Portfolio	
Enzyme Treasury Management	$1.80m	Enzyme	DIY Portfolio	
Rhino Fund	$1.42m	Enzyme	DIY Portfolio	
Civa	$1.22m	Enzyme	DIY Portfolio	
HDAO Treasury	$1.12m	Enzyme	DIY Portfolio	
CelsiusX cxETH Reserve Vault	$1.05m	Enzyme	DIY Portfolio	

Ethereum

*As of July 3rd, 2023

Index Tokens

The third largest product segment of this market is index tokens. Index products enable users to hold many crypto assets or strategies in one product to gain diversified exposure. The products could capture the whole crypto market, or a market segment or theme, via a methodology. A sub-category would be index products which tokenize off-chain assets in a traditional custodian, like the Alongside Crypto Market Index (AMKT). There are fewer products in this category that have attracted over >$1m TVL, let alone $10m TVL. Of the products which have attracted assets, so far they are mostly 'theme capturing' strategies, not total crypto market products. Generally speaking, crypto natives have not used broad market indexes at scale thus far because today's cohort of crypto users are early adopters and many are more interested in actively trading crypto.

Product Name	TVL	Project	Category	Network
DeFi Pulse Index	$17.43m	Index Coop	Index	Ethereum
Alongside Crypto Market Index	$2.95m	Alongside	Index	Ethereum
Metaverse Index	$2.54m	Index Coop	Index	Ethereum
SNX Debt Mirror by Toros	$2.12m	dHedge	Index	Optimism
Bitcoin, Ethereum, DeFi Index	$1.20m	Index Coop	Index	Ethereum
Balanced Crypto Pie	$0.57m	PieDAO	Index	Ethereum
Colony Avalanche Index	$0.48m	Phuture	Index	Avalanche
DeFi Index Pie	$0.28m	PieDAO	Index	Ethereum
Total Crypto Market Cap Index	$0.22m	Cryptex	Index	Ethereum
Phuture DeFi Index	$0.15m	Phuture	Index	Ethereum
Bankless DeFi Innovation Index (Deprecated)	$0.12m	Index Coop	Index	Ethereum

Ethereum Optimism Avalanche

*As of July 3rd, 2023

Compared to yield products, a higher percentage of index products are built on Ethereum. Very few index products have been built on other chains.

The Index Coop has a number of products in this table and we expect this sub-market to grow in absolute terms over future crypto cycles and in relative terms compared to onchain yield products, driven, in part, by a decline in correlation across crypto assets.

Leverage and Inverse Leverage Products

Leverage/inverse products enable leveraged or inverse exposure to an asset. Examples include a 2x ETH product where if the price of ETH goes up or down 10% the holder's position is up or down 20%. This category is even smaller than the index product category with just $25.5m in TVL.

Product Name	TVL	Project	Category	Network
Ethereum 2x Leveraged Index	$17.29m	Index Coop	Leverage	
Long Squeeth: ETH² Leverage	$6.08m	Opyn	Leverage	
Bitcoin 2x Leveraged Index	$2.13m	Index Coop	Leverage	

Ethereum

*As of July 3rd, 2023

Only three products could be identified using our criteria, all of them built on ETH Mainnet. Two are Index Coop's Ethereum Flexible Leverage Index (ETH2x-FLI) and Bitcoin Flexible Leverage Index (BTC2x-FLI). The third is Opyn's Long Squeeth: ETH2 Leverage product (OSQTH). We expect this segment to grow in time for a few reasons, including but not limited to:

1. Blockchain technology is more efficient at delivering these products than older technology, because the smart contracts eliminate intermediaries.
2. Individual Web3 communities can be uniquely enthusiastic about the projects they contribute to and may be especially interested in leveraged access to their own tokens, or tokens of their favorite projects. The Index Coop's forthcoming leveraged Rocket Pool ETH Index Token (icRETH) is an example of such a product.

Derivative Products

Derivative products enable the holder to access returns from an asset, strategy or group of assets and strategies via options, futures or perpetual contracts.

Product Name	TVL	Project	Category	Network
Crab USDC Strategy V1	$4.89m	Opyn	Derivative	Ethereum
Ribbon stETH Earn Vault	$4.26m	Ribbon	Derivative	Ethereum
Ribbon stETH Covered Call Vault	$2.24m	Ribbon	Derivative	Ethereum
Crab USDC Strategy V2	$2.20m	Opyn	Derivative	Ethereum
Ribbon USDC Put-Selling Vault	$1.91m	Ribbon	Derivative	Ethereum
Ribbon Earn Vault	$1.40m	Ribbon	Derivative	Ethereum
stETH Volatility Vault	$1.40m	Pods	Derivative	Ethereum
ETH Put Selling Strategy	$1.31m	Stake DAO	Derivative	Ethereum

Ethereum

*As of July 3rd, 2023

Derivative products make up just under 1% of the onchain structured products market. There are more observable derivative products than leveraged/inverse products. Many of these products are seeing broader adoption on layer 2s because scaling solutions offer lower fees and higher speed transactions, which is particularly useful for options and futures trading. In fact, it was not possible to create many of these products before the advent of layer 2s. Opyn Finance, Ribbon Finance and stakeDAO complete the podium and lead the mentions generally, with Volmex FInance also making a solid appearance for itself and for Polygon. Five products have captured over $1m TVL, only one has >10m TVL, and base assets are mostly ETH and USD with some use of BTC.

We also expect the onchain derivative products markets to be far larger in future crypto cycles. Blockchain-based finance creates more relative value in this area of the market than others, making it significantly easier and more efficient to offer complicated products in a simple token or vault.

Automated Proprietary Strategy Products

Product Name	TVL	Project	Category	Network
Momentum Ensemble by Momentum Coordinator	$0.44m	dHedge	Automated	Optimism
ETH-BTC Trend	$0.13m	Sommelier	Automated	Ethereum
ETH-BTC Momentum	$0.07m	Sommelier	Automated	Ethereum
Steady ETH	$0.04m	Sommelier	Automated	Ethereum
Steady BTC	$0.03m	Sommelier	Automated	Ethereum

Ethereum Optimism

*As of July 3rd, 2023

Automated proprietary strategies enable users to access the returns from strategies which execute within a token or vault. Four of five of the products in this category come from Sommelier Finance, though the actual strategies are managed by their partners ClearGate Capital and Patache. The largest product is from dHedge and built on Synthetix. These products are sometimes described as being analogous to quantitative funds in traditional finance.

As with other sub-markets above, we think the automated proprietary strategies sub-market might be small—not even a total of $1m TVL combined—but ripe for growth. As onchain markets mature, there should be more opportunities to deploy complex trading strategies in a token or vault.

2.4 Blockchains Hosting Onchain Structured Products

Onchain structured products exist across several major blockchains including Ethereum, Binance Smart Chain, Polygon, Arbitrum, Fantom, and Avalanche. However, the vast majority of products are built on Ethereum mainnet, which hosts over 90% of this activity.

After Ethereum, Binance Smart Chain (BSC) has a notable minority share, with lending protocol Alpaca Finance and yield protocol Tranchess making up the majority of activity. Polygon, Avalanche, Optimism and Fantom, all of which are newer blockchains compared with Ethereum and BSC, make up the remaining blockchains used, but with very small percentages hosting onchain structured products.

TVL of Onchain Structured Products by Blockchains

Product Name	Sum of TVL	Percentage
Ethereum Total	$2.36B	90.67%
BSC Total	$162.80m	6.23%
Fantom Total	$7.57m	0.29%
Polygon Total	$30.68m	1.17%
Avalanche Total	$21.37m	0.82%
Optimism Total	$21.20m	0.81%
Grand total	**$2.61B**	100.00%

*As of July 3rd, 2023

2.5 Major Protocol Players[3]

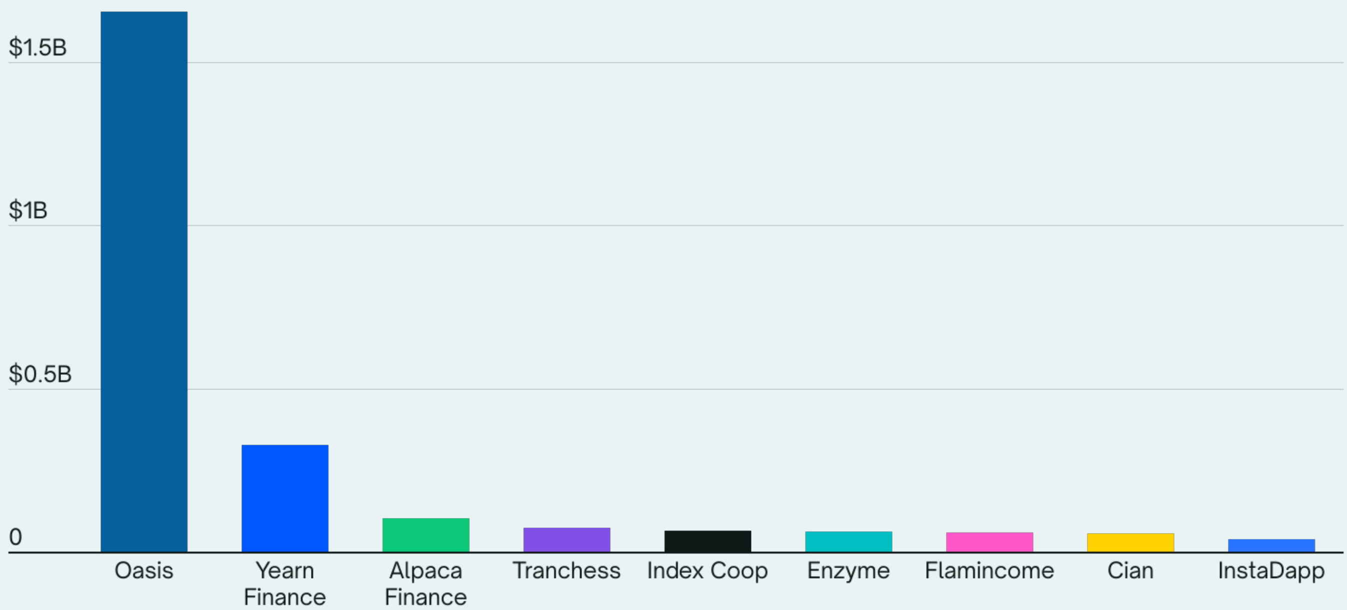
Project Name	Sum of TVL	Percentage
Summer.fi Total	$1.65B	62.97%
Yearn Finance Total	$328.01m	12.49%
Alpaca Finance Total	$100.99m	3.85%
Tranchess Total	$72.94m	2.78%
Index Coop Total	$63.55m	2.42%
Enzyme Total	$61.96m	2.36%
Flamincome Total	$57.71m	2.20%
Cian Total	$56.31m	2.14%
Instadapp Lite Total	$37.02m	1.41%
Origin Ether Total	$25.19m	0.96%
Origin Dollar Total	$21.68m	0.83%
dHedge Total	$21.60m	0.82%
Sommelier Finance Total	$15.77m	0.60%
Vesper Total	$13.27m	0.51%
Opyn Finance Total	$13.17m	0.50%
Idle Finance Total	$12.92m	0.49%
mStable Total	$10.78m	0.41%
Ribbon Finance Total	$10.60m	0.40%
Gro Protocol Total	$9.51m	0.36%
Bella Protocol Total	$8.41m	0.32%
Reflexer Total	$8.22m	0.31%
Notional Total	$5.99m	0.23%
Set Protocol Total	$4.53m	0.17%
Alongside Total	$2.95m	0.11%
Badger DAO Total	$1.97m	0.08%
Stake DAO Total	$1.51m	0.06%
Pods Finance Total	$1.40m	0.05%
Volmex Finance Total	$1.24m	0.05%
Phuture Total	$1.01m	0.04%

3. Note that for this paper we used only those products that fit our criteria to determine relevant protocol TVL. For example, we include TVL from Yearn's vaults, but not from other offerings on Yearn's home page.

In the onchain structured product space, Summer.fi is the largest protocol by far with over 60% of the market. Yearn has the second-highest TVL making up just over 14% of the market, before a shoulder and tail of smaller protocols with single-digit percentage market share. As we continue writing these reports, we shall keep an eye on the profile of this distribution.

In terms of size, it is notable how few protocols currently hold >$50m and even >$10m of TVL—8 and 17 protocols respectively.

Top Ten Protocols by TVL



*As of July 3rd, 2023

Strengths and Challenges for Onchain Structured Products

3.1 Strengths

Long-term, we're bullish on the promise of onchain structured products because of their advantages. Let's explore some of the advantages of onchain structured products.

Strengths
Transparency
Security
Efficiency to Enter or Exit Position
Accessibility
Efficiency to Hold
Automation
Liquidity
Tracking

- **Transparency**

With onchain products, all holdings and transactions are recorded on a public blockchain, making it easy for users to track their holdings and ensure they get the expected returns. Still, there is room for improvement in user experience. Most people do not understand smart contracts, and there needs to be clearer documentation, cleaner user interfaces, and publicized audits to help users understand and visualize what is happening under the hood.

- **Security**

While there have been several exploits of onchain structured products, including Indexed Finance, Amun, BasketDAO, and PowerPool, in the long-term, many see enhanced security as an advantage for onchain products. The ability to self-custody assets, and the immutability of the smart contracts themselves, and the transparency of onchain assets, will all contribute to enhanced security for onchain structure products. In time, with a history of security, scale and performance, onchain structured products will be seen as equally, or more, secure than off-chain alternatives.

- **Efficiency to Enter or Exit Position**

The efficiency of entering or exiting onchain structured products is determined by the gas (or the native blockchain's cost) combined with the product's internal complexity and efficiency. Via Ethereum Gas Tracker, it was $9.92 or 43 Gwei to swap one token for another on Uniswap on June 29th, 2023. The gas costs users must pay to buy, sell, issue and redeem digital assets is going down as more layer 2 scaling solutions are implemented and integrated into existing applications.

- **Accessibility**

Onchain products don't have market hours and trading windows; they can be bought or sold at all times via decentralized exchanges (DEXs), DEX aggregators, centralized exchanges or wallets. They can also be issued via protocols and smart contracts at any time.

Anyone with an Internet connection in a non-restricted jurisdiction can access these products, regardless of location, demography or financial resources. However, work must be done to improve the overall user experience, in particular reducing the complexity and number of steps users must take to transact in wallets or dApps. These improvements will allow larger portions of the global population to access these products.

Finally, most onchain structured products—like Index Coop and Yearn products—are suitable for small and large holders alike. While some onchain products are more attractive for larger purchasers due to the cost to enter or exit the position, onchain products do not typically have purchase minimums and/or other user requirements.

- **Costs**

Onchain structured products are quite efficient to hold already. The costs to hold onchain structured products from Alpaca Finance, Index Coop and Yearn are quite representative.

  - Alpaca Finance's automated vaults charge a 2% management fee and 15% performance fee
  - Index Coop products' expense ratios range from 0.25% to 1.95%
  - Yearn vaults can have anywhere from 0% to 2% management fees plus 10% to 20% performance fees

We expect these costs to trend towards zero as scaling becomes a solved problem in DeFi and more transactions avoid the costs of Ethereum mainnet.

- **Automation**

Onchain structured products can be programmed with smart contracts, which automatically execute certain actions when conditions are met, reducing the need for intermediaries, while lowering costs and improving efficiency of executing a strategy. This automation will bring access to more complex strategies to more people.

- **Liquidity and Composability**

Onchain structured products can offer significant liquidity and composability benefits. They can be traded 24/7 on centralized or decentralized exchanges, or in wallets, and also be issued any time using the underlying protocol and smart contract/s. Innovative use-cases can also be created due to the shared settlement layer of Ethereum. For example, DPI from Index Coop has been listed on Aave's lending market, allowing holders to access liquidity on their DPI token without selling it. Additionally, Yearn's yield-bearing vaults have been used as collateral within Alchemix to allow users to take self-repaying loans.

- **Tracking**

Tracking errors can be a significant problem for holders of off-chain digital asset products, where discounts to NAV can be large and persistent. Onchain products, on the other hand, generally track more reliably. For example, Index Coop index tokens track their target strategy or benchmark closely, minus some NAV decay incurred during rebalancing.

3.2 Challenges

Challenges
Regulatory ambiguity
Lower relative APYs
Insufficient onchain capital for DIY products
Infrastructure limitations
Lack of marketing attribution
Few investable assets
High correlation across crypto assets
Few assets can be used as collateral
Lack of access to tax advantaged accounts
Lack of insurance coverage
User preference for picking winners
Varying institutional engagement

- **Regulatory ambiguity**

A lack of regulatory clarity around onchain structured products is a significant head wind, preventing more regulated user types from engaging with them. Some jurisdictions, such as the United Arab Emirates, the European Union, the United Kingdom, and Singapore, are moving to address this, but even they are one to three years away from fully addressing permissionless onchain products. In contrast though, other major markets are not moving with much speed or signal on this issue.

In the absence of purpose-built digital asset regulations, some commentators in the digital asset space have criticized the practice of regulation by enforcement.[4] Regulators, in turn, have asserted that existing regulations cover digital assets and that no new regulations are needed.

With increased regulatory clarity, and improved products and strategies being offered onchain, more regulated institutions will be able to engage with the space.

4 Deffenbaugh, Ryan, and Ben Brody. 2022. “What Is Regulation by Enforcement — and Is It Bad? - Protocol.” Www.protocol.com. Protocol. August 5, 2022. https://www.protocol.com/policy/what-is-regulation-by-enforcement.

- **Lower relative APYs**

The crypto market is deep in a bear cycle, with lower relative APYs on yield products compared to alternatives, often off-chain. As a result, today, onchain yield products are often used by those who need to keep capital onchain, rather than users soley seeking the best risk adjusted returns (in their analysis).

New product innovation, and improved market conditions, may help remove this headwind. Onchain structured products related to ETH staking are examples of products which are showing some signs of success in an otherwise bleak market. We think the next crypto upcycle is more likely to be part led by non-yield products solving different use cases. Indexes of staking returns might become a substantial sub-sector, as well.

- **Insufficient onchain capital for DIY products**

There is currently insufficient capital in the onchain digital asset market to support DIY onchain product creation at scale. Enzyme finance's TVL, for example, is largely made up of a few whales. And, Set Labs, the other main purveyor of an onchain DIY product-building tool, has deprecated their TokenSets interface which allowed users to create baskets of digital assets as a single ERC20 token; they appear to be withdrawing from the onchain structured products space entirely.

- **Infrastructure limitations**

At the Index Coop, distributed engineers have been working to improve and develop the protocol and related infrastructure to overcome a number of limitations which reduce the user experience of the product holder. It also seems many external engineers and teams in the space have encountered similar challenges, including but not limited to:

- Cross-chain asset support remains challenging, stymying efforts to create onchain total market cap and general index products. Current bridging solutions are notorious for their security breaches (exploits have impacted many protocols including THORchain, Wormhole, and Axie Infinity's Ronan Bridge). Wrapped assets do provide a workaround, but result in a reliance on off-chain actors to custody the underlying assets. As onchain infrastructure improves, we are optimistic that it will become easier to support assets across many chains and new products will be possible.
- High and volatile issuance and redemption costs make it expensive for operators to maintain products. Even worse, these costs can make it inefficient for users to enter and exit a position, and lower the efficiency and consistency of arbitrage. Many protocols utilize arbitrageurs to bring products in line with NAV. At the moment engineers at the Index Coop and externally are exploring the use of vaults to make products more cost efficient for users, while also exploring the possibility of putting issuance contracts on L2 chains

to reduce the cost of maintaining products, and to make arbitrage more efficient.

- Rebalancing onchain products remains a challenge with slippage and price impact negatively affecting rebalance efficiency. At the Index Coop, engineers are exploring auction-based rebalancing as a potential solution to lessen NAV decay.
- Because of volatile gas costs, high transaction costs, and slippage, it can be cost prohibitive to have actively managed strategies on Ethereum mainnet. It may be more feasible to operate actively managed strategies on L2s, especially as liquidity improves.

Other protocols and teams are grappling with similar technical challenges and we expect to see the results more clearly in the next upcycle.

Lack of marketing attribution

Marketers of onchain products today lack a range of the data and attribution tooling that marketers in Web2 are used to. As such, acquisition, CAC and LTV are harder to understand. We also expect this to change soon, with projects and protocols, such as Oamo, Safary and Spindl, working to build the acquisition and attribution tools that will empower Web3 marketers.

Few investable assets

Crypto is an early stage, small market with few quality assets and strategies - and has yet to experience a range of financialization trends that other markets have. Bitcoin has been around for little over a decade and some crypto assets only a year or two, resulting in a limited sample size of average annual volatility and returns data to use in product building - affecting indexes, which are meant to add value via diversification, especially.

High correlation across crypto assets

Correlations across crypto assets have been high, reducing the rationale of holding an index. Readers might remember their first forays into crypto, via the majors such as BTC and then ETH - a path that seems quite common. This might be one of the reasons a significant percentage of onchain natives express themselves via large percentage allocations to Bitcoin and/or Ether and/or their other favorite digital assets.

Few assets can be used as collateral

Overall there is little use of onchain products as collateral today. Other than Index Coop's DeFi Pulse Index (DPI), no onchain structured products are listed as collateral on DeFi money markets. We'd expect this to change in time, as more quality products emerge and risk managers at DeFi money markets gain comfort with the potential quality of collateral of these products.

- **Lack of access to tax advantaged accounts**

While it is possible to put onchain structured products in tax advantaged accounts the friction to overcome to do this is significant and larger than users may be used to when putting other assets in such accounts. Much of this friction comes from onchain structured products not being made widely available by major fintech platforms or financial applications.

- **Lack of insurance coverage**

It is possible to insure some onchain structured products using Nexus Mutual or other onchain insurance markets/pools. However, the efficiency of onchain insurance is not high at this time, with costs from the likes of Nexus Mutual—the category leader—eating into returns. The insurability of products in this market has a long way to mature before users feel a level of comfort and peace of mind they are used to.

- **User preference for picking winners**

Many crypto market participants have demonstrated a belief in their ability to pick winners, reducing their demand for some onchain structured products. Whether they are indeed able to pick winners or not in the long-term—it would be a statistical departure from long-term financial market statistical trends—these crypto investors have been labeled as more 'degenerate,' even celebrating the label with the abbreviated term 'degen'. There are even Degen Scores. Users with addresses with high Degen Scores have even been able to enjoy preferred access to some protocols, airdrops, NFTs and other crypto bounties. We expect the influence of so-called "degen" users to wane as more off-chain capital moves onchain; for now though, their disinterest in some onchain structured products represents a headwind.

Varying institutional engagement

If our partnerships team's engagement with institutions is at least partly representative of the wider onchain structured product sector, we believe institutional engagement trends could potentially look like this:

Crypto apps and wallets	Already Integrated	• Almost all digital assets are supported. *Examples: Argent, Metamask, Ledger.*
Crypto Custodians		• Many digital assets are supported. *Examples: Bitgo, Coinbase, Copper, Fireblocks*
CEXs		• Most digital assets supported. *Examples: Coinbase, Gemini, Kraken, OKX*
FinTechs		• Some digital assets are supported. *Examples: Paypal, Robinhood, Venmo*
Indexing and information brands		• Almost no on-chain structured products launched to track benchmarks and strategies.
TradFi asset managers		• ETPs and private funds launched, but almost no on-chain structured products.
TradFi banks and custodians	Little Engagement	• Rarely support digital assets directly yet. Where they do, it's often via a third party, white labeled solution. Few digital assets and services are supported. *Examples: BNY, Northern Trust, State Street*

It goes without saying that FTX's collapse and heightened regulatory scrutiny and enforcement has slowed institutional progress into crypto.

Conclusion

The onchain structured products market, like the wider crypto market, has been pummeled by this current Bear Market. The good news is that many of the featured protocols are either well funded for a few years or have cut expenditure significantly. We expect many protocols to make it through the remaining Bear Market and bring a range of new products and infrastructure to larger numbers of users in the next upcycle. Until this upcycle appears though, building and attracting new TVL will continue to be difficult - with a minority of products and protocols enjoying new or sustained traction.

There are also related and potentially helpful trends and phenomena appearing to help push this sector through the Bear Market and then grow and mature it on the other side. We expect this survival and then thriving to happen, continuing to see the technology of blockchains as superior for building structured products on. Longer-term, we think it's inevitable that much of what people consider day-to-day financial activity will happen in what Chris Burniske calls the 'Internet Financial System'.

CeFi and financial apps are increasingly looking to integrate DeFi products on the back end - the 'DeFi mullet' as it's been termed. The Index Coop has enjoyed a few such partnerships, as have other protocols. The ignominious collapse of centralized digital asset organizations such as FTX, Celsius and BlockFi certainly slowed the development of many of these partnerships. However, we are heartened to see that many market participants correctly understood those crises to be an indictment of poorly managed centralized financial entities, and not of decentralized finance.

We also have the emergence of AI to watch for its engagement with blockchains generally. Given AI's need for open, verifiable data structures, we expect AI and digital assets to be a winning combination. While the ultimate impact of AI remains unforeseeable, we envision using AI to identify trends in crypto assets rapidly and tokenize strategies around them. AI could also buy and trade onchain products itself given it will find it tricky to trade similarly off-chain where legacy KYC infrastructure doesn't support non-humans or non-recognized legal entities. Overall, we expect AI to live the financial part of its life in the 'Internet Financial System'

However, while it's pleasing to see the traction generated in the onchain structured products space at least partly sustain itself during this Bear Market, builders in this space have much larger ambitions. A number of household name protocols (in crypto households!) have emerged in this market to-date, but if builders in this space are being honest they will want to see significantly larger adoption numbers in terms of TVL but perhaps more importantly in percentage crypto market capture. This later metric, whether now or in the next upcycle, is something for builders to really watch to judge if their products are adding value. We also think we will need to see far more integrations enabling users to flow from CeFi and financial apps before this percentage crypto market capture number can rise strongly.

We'll publish this report again next year, continuing to note percentage crypto market capture of this space, winning products, protocols and more. Let us know what else you'd like to see included on Twitter or LinkedIn.

Thank you for reading. Let's keep building and learning - there's much to be done.

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