

A Tale of Three DeFi Indices

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If you are like me, you probably do not have time to monitor your portfolio constantly due to time constraints. You want to keep yourself from gluing your eyes to your screen 24/7 to keep your mind sane.

Yet, you do not want to miss out on the potential high returns cryptocurrencies have to offer. Passive investing can be your savior, and one of the popular passive investing strategies is via ETF. Play the long-term game and win the market.

An ETF is a type of structured security that can track anything such as an index (e.g., S&P500), commodities (e.g., precious metals), or other assets. An ETF can be purchased or sold on a stock exchange.

Historically, index funds and ETF have a better return than actively managed strategies like mutual funds.¹ In 2020, the global ETF had \$7.74 trillion in Assets Under Management (AUM), and its volume is one-third of global equity trading volume.^{2,3,4}

While DeFi ETFs have amounted to approximately \$204 million AUM, it is not far-fetched to imagine this figure could reach trillions of dollars in the coming years. There is a high potential for large capital inflow into DeFi, and we are very early in DeFi index investing.

But how early are we in the DeFi ETF space?

This report will uncover the DeFi indices market landscape by splitting it into two sections: indices protocols and indices funds. The first section will compare the top-3 protocols under four different metrics: AUM, valuation, protocol income, and strategies. In the second section, we will look at indices funds in terms of performance, fund fees, and yield farming opportunities.

¹ (2020, April 20). Passive Management Marks Decade Of Beating Active US ... - Forbes. Retrieved February 9, 2021, from <https://www.forbes.com/sites/icarrell/2020/04/20/passive-beats-active-large-cap-funds-10-years-in-a-row/>

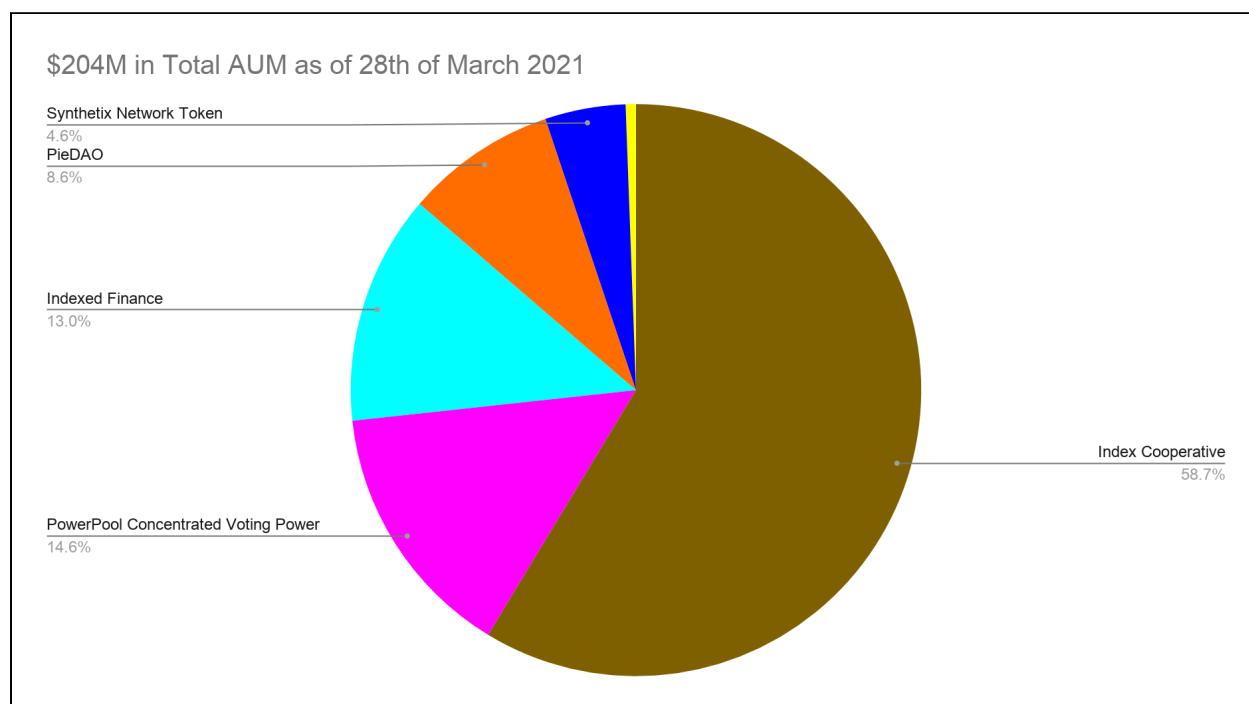
² "Worldwide ETF assets under management 2003-2020 - Statista." 18 Feb. 2021, <https://www.statista.com/statistics/224579/worldwide-etf-assets-under-management-since-1997/>. Accessed 9 Mar. 2021.

³ "Institutional investors | iShares - BlackRock." <https://www.ishares.com/us/resources/institutional-investors>. Accessed 9 Mar. 2021.

⁴ "ETF assets reach \$7tn milestone | Financial Times." 9 Sep. 2020, <https://www.ft.com/content/e59346a7-b872-4402-8943-2d9bdc979b08>. Accessed 9 Mar. 2021.

First, an overview of the DeFi ETF landscape and the players:

DeFi ETF Landscape



(Date source: CoinGecko)

- There are over **14 DeFi Index Tokens** and counting.
- Total AUM of the 6 indices protocols is approximately \$204 million (0.003% of global traditional ETF AUM).
- The AUM is only 0.5% of **DeFi TVL** (0.5% of \$41.2 billion)
- The penetration is barely 0.013% of **total cryptocurrency market capitalization** (0.013% of \$1.55 trillion).
- As at 28th March 2021, the Top-3 indices protocol takes up roughly 86% (\$176 million) of the total DeFi indices market share - **Index Cooperative** (59%), **PowerPool Concentrated Voting Power** (15%), and **Indexed Finance** (13%).
- The cryptocurrency indices market is still a small niche and we are still very early.

Overview of Top-3 Largest Indices Protocols

Indices protocols here refer to the asset managers, and index tokens are the products offered by them that are equivalent to ETF.

These index tokens represent your share of the index fund and entitle you to receive profits from the capital appreciation of the underlying assets. For some protocols, you have the voting rights in meta-governance decisions.

1. Index Cooperative (INDEX)

The Index Coop is the oldest decentralized indices protocol. It enables users to gain broad exposure to different protocols of varying themes across the cryptocurrency industry via its products. Notably, Index Coop is founded by Set Labs Inc., which is the same company that built Set Protocol.

Indices token holders can own, have exposure to, and can directly redeem the underlying assets that comprise the index.

There are three indices available under Index Coop:

- I. **DeFiPulse Index (DPI)**
- II. **CoinShares Crypto Gold Index (CGI)**
- III. **Flexible Leverage Index (FLI)**

2. Indexed Finance (NDX)

Indexed Finance is a protocol that focuses on portfolio management and it has an integrated Automated Market Maker (AMM) mechanism that was forked from Balancer. This allows Indexed Finance to rebalance their indices and users are able to mint, swap or burn the indices token and the underlying assets. Indexed Finance is made of five team members and three of them are anonymous.

There are currently five pools available under them:

- I. **DEGEN Index (DEGEN)**
- II. **Cryptocurrency Top 10 Tokens Index (CC10)**
- III. **Oracle Top 5 Index (ORCL5)**
- IV. **DEFI Top 5 Tokens Index (DEFI5)**
- V. **NFT Index (NFTP)**

3. PowerPool Concentrated Voting Power (CVP)

PowerPool's indices are smart pools based on Balancer's automated market maker (AMM) with additional functionality built in. Their main purpose is to pool governance tokens together for lending, borrowing, and executing meta-governance. Additionally,

users can directly swap one governance token for another. PowerPool is run by an anonymous team.

Currently, PowerPool has four indices:

- I. **Power Index Pool Token (PIPT)**
- II. **Yearn Ecosystem Token Index (YETI)**
- III. **ASSY Index (ASSY)**
- IV. **Yearn Lazy Ape (YLA)**

To see the constituents of each index fund, kindly refer to [the Appendix](#).

Market Barometer

Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFI5	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
Index Funds TVL (AUM)	\$119M	\$1M	\$5M	\$13M	\$9M	\$4M	\$0.5M	\$0.7M	\$7M	\$6M	\$4M	\$13M
Percentage Contribution	95.23%	0.52%	4.25%	50.00%	32.19%	13.32%	1.84%	2.65%	25.02%	19.60%	11.95%	43.42%
TOTAL TVL (AUM)	\$125M			\$26M					\$30M			
Market Cap (Project Indices)	\$55M			\$17M					\$27M			
FDV (Project Indices)	\$412M			\$52M					\$244M			
Mcap/TVL	0.4X			0.6X					0.9X			
FDV/TVL	3.3X			2X					8.2X			
No. of underlying assets	12	3		5	10	10	5		8	4	8	
Entry fee	-	-	0.10%	-	-	-	-	-	0.10%	0.10%	0.10%	0.10%
Swap fee*	-	-	-	2.50%	2.50%	2.50%	2.50%	2.50%	0.20%	0.20%	0.20%	0.20%
Asset Manager Treasury	-	-	-	-	-	-	-	-	0.10%	0.10%	0.10%	0.10%
LP return	-	-	-	2.50%	2.50%	2.50%	2.50%	2.50%	0.10%	0.10%	0.10%	0.10%
Management Fee**	0.95%	0.60%	1.95%	-	-	-	-	-	-	-	-	-
Asset Manager	0.65%	0.24%	1.17%	-	-	-	-	-	-	-	-	-
Methodologist	0.30%	0.36%	0.78%	-	-	-	-	-	-	-	-	-
Exit fees	-	-	0.10%	-	-	0.50%	-	0.50%	0.10%	0.10%	0.10%	0.10%
Price return since inception (Date of launch)	217.11% (Sep 2020)	-9.84% (Feb 2021)	-22.44% (Mar 2021)	97.84% (Dec 2020)	64.46% (Dec 2020)	9.86% (Mar 2021)	4.04% (Mar 2021)	N/A (Mar 2021)	155.31% (Dec 2020)	15.04% (Jan 2021)	56.56% (Dec 2020)	N/A *** (Mar 2021)
Price return YTD (28th March 2021)	243.34%	-9.84%	-22.44%	97.84%	64.46%	9.86%	4.04%	N/A	163.70%	15.04%	116.53%	N/A
Fund Weighting	Market Cap-Weighted	Market Cap-Weighted	Based on Current Lever Ratio	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Equal-weighted mcap	Market Cap-Weighted	Market Cap-Weighted	Adaptive weights proportional to vaults TVL

Source: CoinGecko, Index Cooperation, Indexed Finance, Powerpool, Tokensets. Taken as at 28th March 2021

* When the user swap one of the underlying assets from one to another.

** Annualized

*** Price Return for YLA is excluded because the underlying is stablecoins LP token that are pegged to \$1

The table above gives the information about the top-3 largest indices protocols. We have summarized it to several key metrics, split into two sections:

Indices Protocol

1. [Asset Under Management \(AUM\)](#)
2. [Valuation](#)
3. [Protocol Revenue \(Fee structure\)](#)
4. [Protocol Strategies](#)

Index Funds

5. [Index Token Performance since Inception](#)
6. [Fund Fees \(Fee Structures\)](#)
7. [Yield Farming Opportunities](#)
8. [Fund-Weighting](#)

We have [a Risk Section](#) too and you can find [our conclusion here](#).

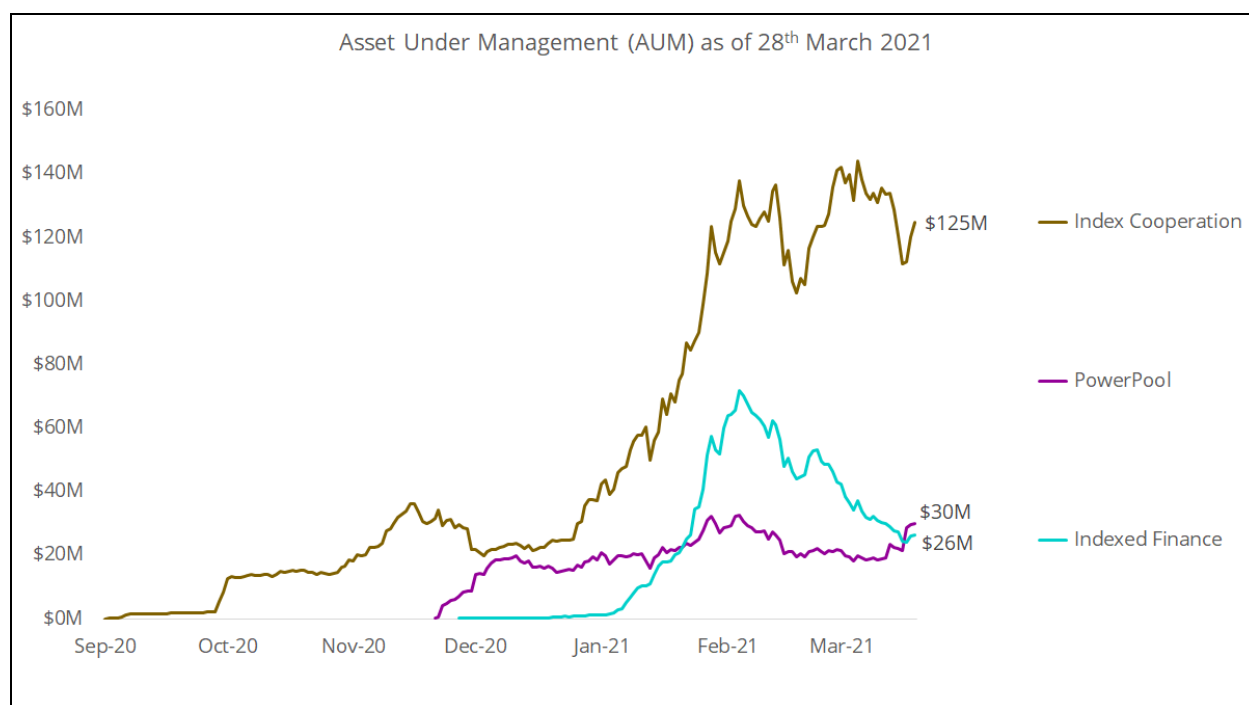
You may skip to whichever sub-section you wish to read by clicking on the links above.

Indices Protocol

1. Asset Under Management (AUM)

Total Value Locked (TVL) represents the amount of locked or staked assets in a specific decentralized application (Dapp). It is an important and most commonly used metric to identify how much capital in a protocol. This is similar to AUM; hence, each index fund's TVL is used as a reference point equivalent to AUM.

Due to the mercenary nature of TVL, we will be looking at TVL over time to show the capital retention of each indices protocol.

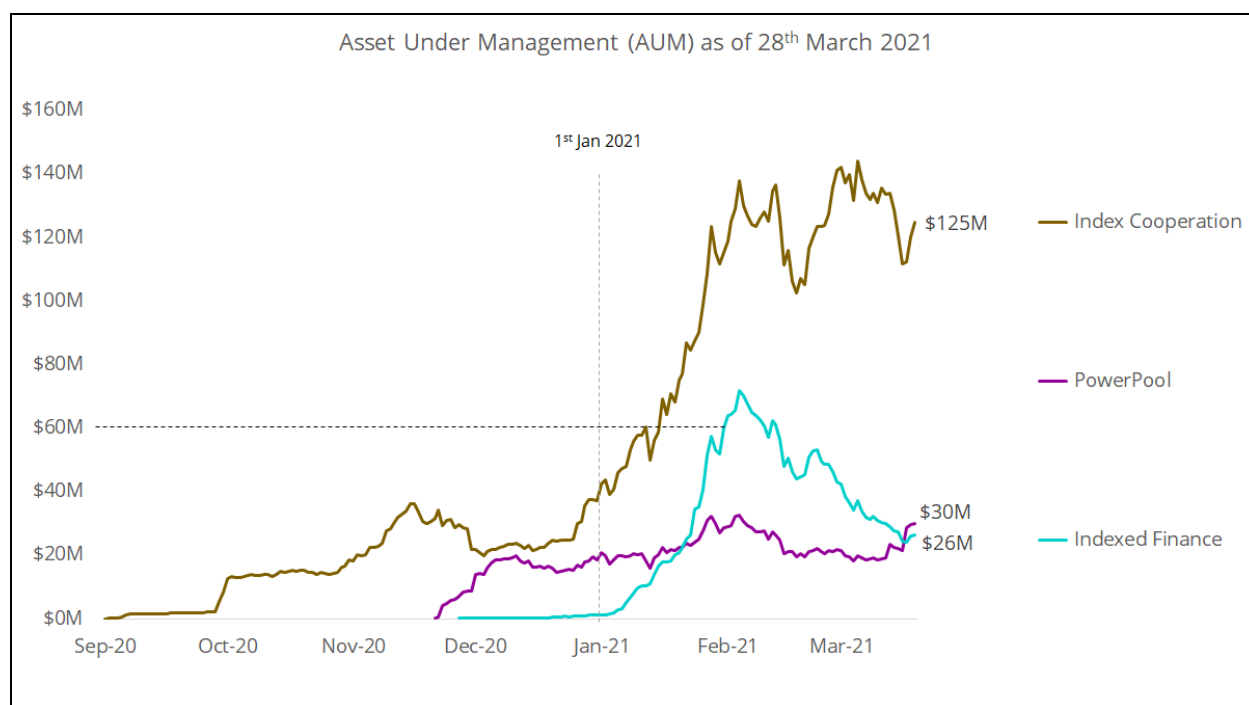


(Date source: CoinGecko, *Duneanalytics by Oxboxer*)

Amongst the top-3 indices protocols, AUM has grown by over 344% year-to-date (data as of 28th March 2021). Index Coop holds the lion's share of AUM at \$125 million (69%).

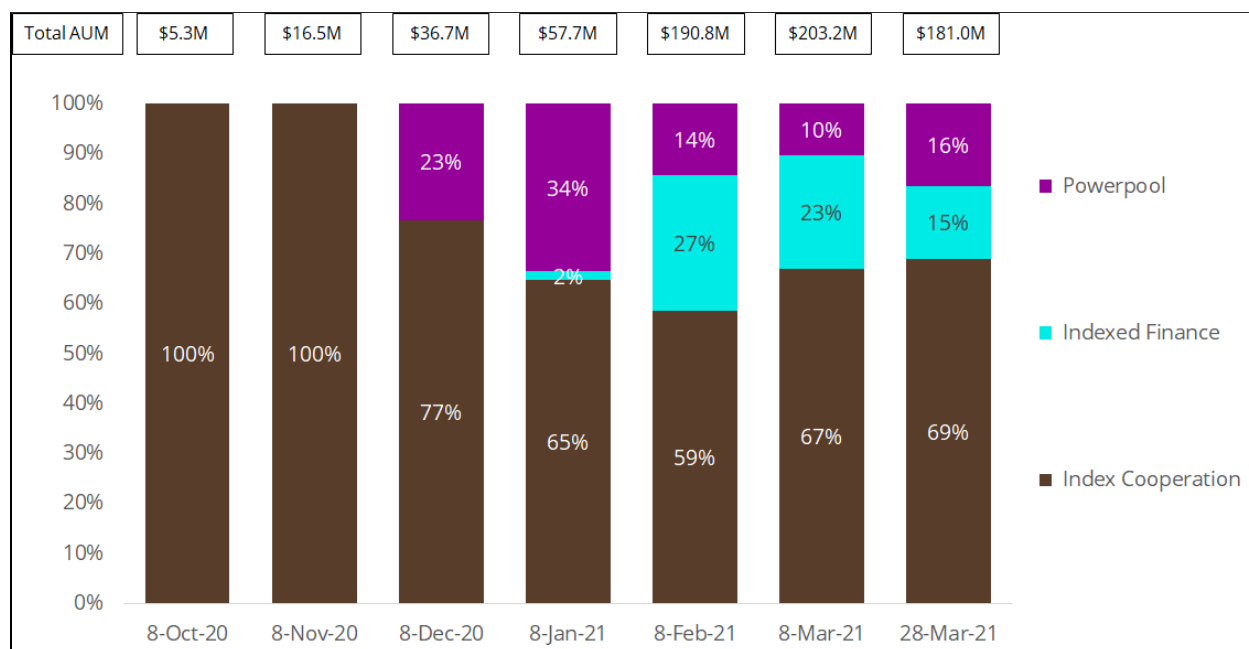
Indice Projects	Index Cooperation	Indexed Finance	PowerPool	Total
Jan 1st 2021	\$25M	\$1M	\$15M	\$41M
Mar 28th 2021	\$125M	\$26M	\$30M	\$181M
YTD Growth	404.50%	3929.16%	94.52%	344.82%
Average Monthly Growth	134.83%	1309.72%	31.51%	114.94%

On the other hand, Indexed Finance rose as a new competitor to Index Coop from the 6th December 2020. Their AUM has outperformed Index Coop and PowerPool at an astounding 3,929% year-to-date, albeit from a low base.



(Date source: CoinGecko, *Duneanalytics by 0xboxer*)

It took Index Coop approximately 133 days to achieve \$60 million in AUM since inception. In contrast, Indexed Finance only took half of that duration to achieve the same level of AUM.



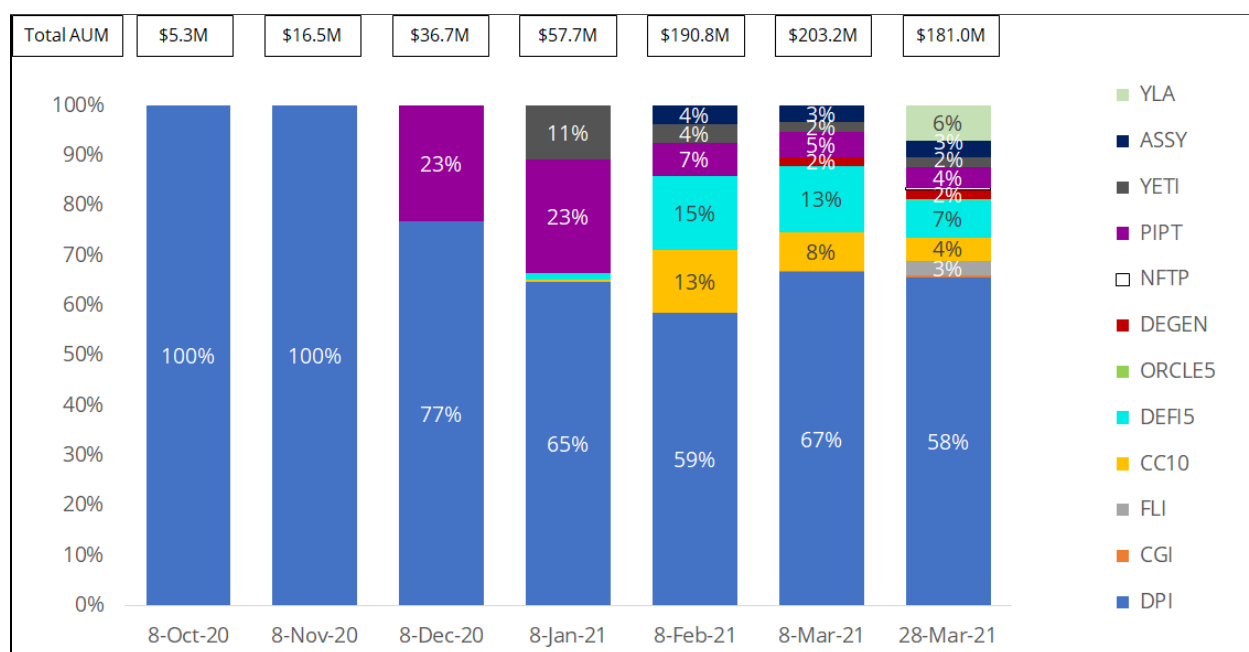
Index Coop was the only player during October and November 2020. When PowerPool launched its first index pool (PIPT) in December 2020, it took 23% of the market share.

Indexed Finance, the newest player in the indices protocol sector, overtook Powerpool in February 2021 (27% vs. 14% respectively) only 3 months after it went live.

Unfortunately, Indexed Finance could not maintain its position as the second largest indices protocol at the end of March 2021. PowerPool saw its AUM market share grow back to 16%.

Index Coop has maintained its lead with 69% market share as at 28th March 2021.

The whole industry has grown 34 times since October 2020 following the recent DeFi hype.



The chart above shows the breakdown of the protocol's AUM by their indices.

Despite launching two new indices (CGI and FLI), DPI remains the main contributor to Index Coop's AUM. Nevertheless, FLI's AUM rose to \$5 million within 2 weeks since it went live on 15th March 2021 - equivalent to 3% of the market share.

DEFI5 and CC10 contributed to the rise of Indexed Finance. They have grown to 13% and 8% in early March 2021. Unfortunately, their market share halved towards the end of the month to 7% and 4% respectively.

PowerPool's indices (PIPT and YETI) have fallen out of the ranking in March 2021 (at 4% and 2% each). YETI was at one point a top-3 index in January 2021. PowerPool's latest index (YLA),

have accumulated \$13 million in AUM within 25 days since it launched - it instantly took 6% of the indices market share.

Key Takeaway:

Index Coop has the largest AUM with a dominance of more than 50%. However, Indexed Finance has the highest AUM growth year-to-date and became the third largest indices protocol.

2. Valuation

Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFI5	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
TVL (AUM)	\$119M	\$1M	\$5M	\$13M	\$9M	\$4M	\$0.5M	\$0.7M	\$7M	\$6M	\$4M	\$13M
Percentage Contribution	95.23%	0.52%	4.25%	50.00%	32.19%	13.32%	1.84%	2.65%	25.02%	19.60%	11.95%	43.42%
TOTAL TVL (AUM)	\$125M			\$26M					\$30M			
Market Cap (Project Indices)	\$55M			\$17M					\$27M			
FDV (Project Indices)	\$412M			\$52M					\$244M			
Mcap/TVL	0.4X			0.6X					0.9X			
FDV/TVL	3.3X			2X					8.2X			
No. of underlying assets	12	3	2	5	10	10	5	10	8	4	8	5

Source: CoinGecko, taken as at 28th March 2021

To analyze the valuation of each protocol, we will look into their governance tokens.

1. Index Cooperation (INDEX)
2. Indexed Finance (NDX)
3. PowerPool Concentrated Voting Power (CVP)

Based on the market capitalization over TVL, INDEX seems to be the most undervalued (0.4x) compared to its peers despite it having the highest AUM. CVP is priced more than 2 times higher at 0.9x.

On a Fully Diluted Valuation (FDV) over TVL basis, NDX is priced the cheapest (2x). In comparison, CVP might be overvalued (8.2x) if TVL fails to grow significantly in the near future.

Key Takeaway

Both INDEX and NDX are undervalued in both Mcap/TVL and FDV/TVL relative to CVP.

3. Protocol Revenue

Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFI5	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
Entry fee (Mint)	-	-	0.10%	-	-	-	-	-	0.10%	0.10%	0.10%	0.10%
Swap fee*	-	-	-	2.50%	2.50%	2.50%	2.50%	2.50%	0.20%	0.20%	0.20%	0.20%
Asset Manager Treasury	-	-	-	-	-	-	-	-	0.10%	0.10%	0.10%	0.10%
LP return	-	-	-	2.50%	2.50%	2.50%	2.50%	2.50%	0.10%	0.10%	0.10%	0.10%
Management Fee**	0.95%	0.60%	1.95%	-	-	-	-	-	-	-	-	-
Asset Manager Treasury	0.65%	0.24%	1.17%	-	-	-	-	-	-	-	-	-
Methodologist	0.30%	0.36%	0.78%	-	-	-	-	-	-	-	-	-
Exit fees (Burn/Redeem)	-	-	0.10%	-	-	0.50%	-	0.50%	0.10%	0.10%	0.10%	0.10%

Source: CoinGecko, Index Cooperation, Indexed Finance, Powerpool, Tokensets. Taken as at 8th March 2021

* When the user swap one of the underlying assets from one to another.

** Annualized

Index Coop

There is only one charge: the management fees.

- It is split between Index Coop and the methodologist of each index at 0.95% and 0.60% respectively (**DeFiPulse** and **CoinShares**).

Indexed Finance

- If you mint, buy, or burn a single asset out of the five underlying assets, a 2.5% fee will be charged and distributed to the LP holders in the form of the input token in any swap.
- DEGEN is the only index that accrues the protocol's revenue with the 0.5% exit fee as part of their newly launched **Sigma program**.

PowerPool

There are three types of fees: Entry, Swap, and Exit fees

- If you were to mint an index token, you would be charged 0.1% as an entry fee.
- 0.2% swap fees apply to users who swap one governance token for one another. The swap fee is then split evenly between the index fund liquidity providers and the treasury.
- If you exit the indices, you will be charged an additional 0.1%.

Key Takeaway

Index Coop would earn the most revenue as it charges the highest fee on all its indices.

Indexed Finance only has one source of earning - an exit fee of 0.5% from its DEGEN and NFTP.

CVP in the meanwhile has a more diversified income from minting and exit fees.

4. Strategies

This section will look at the product-onboarding process and how the fund-weighting is decided.

Product Onboarding Process

Index Cooperation

1. New product ideas are proposed and discussed with their community members.
2. Product application is submitted to the community via the Governance forum.
3. First snapshot vote to move forward with vetting review.
4. Passed proposals are reviewed by Index Coop's team.
5. Second snapshot vote on product release.
6. Product launch.

Index Coop has a stringent process for product approval. In total, there are two stages of community voting. For example, FLI's proposal was tabled on 11th January 2021 and launched 3 months later in March 2021.^{5,6,7}

Indexed Finance

Relative to Index Coop, Indexed Finance moves faster.

For example, ORCL5 was the first index fund that was up for voting. It took them **a total of 20 days** to ship a product starting from the proposal date (30th January 2021).^{8,9}

Powerpool Concentrated Voting Power

The latest index product by Powerpool is Yearn Lazy Ape, which was proposed on the 15th of January, 2021.¹⁰ But it was only launched almost **3 months later**, on the 3rd of March 2021.^{11,12}

Key takeaway:

Currently, Index Coop has only launched 3 indices, while both Indexed Finance and PowerPool have four indices, respectively.

⁵ (2021, January 14). IIP 13 - Flexible Leverage Index - Proposals - The Index Coop. Retrieved March 29, 2021, from <https://gov.indexcoop.com/t/iip-13-flexible-leverage-index/717>

⁶ (n.d.). Snapshot. Retrieved March 29, 2021, from <https://snapshot.org/>

⁷ (2021, March 17). Index Coop on Twitter: "🦊 Introducing the Flexible Leverage Index Retrieved March 29, 2021, from <https://twitter.com/indexcoop/status/1372268192530243584>

⁸ (n.d.). Oracle Top 5 Token Index proposal - Proposals - Indexed Finance. Retrieved March 29, 2021, from <https://forum.indexed.finance/t/oracle-top-5-token-index-proposal/89>

⁹ (2021, February 19). Indexed Finance on Twitter: "The \$ORCL5 index is live! The initial Retrieved March 29, 2021, from <https://twitter.com/ndxfi/status/1362839864106840064>

¹⁰ (2021, January 14). Proposal: Yearn yTokens Index - Proposals - PowerPool. Retrieved March 29, 2021, from <https://gov.powerpool.finance/t/proposal-yearn-ytokens-index/633>

¹¹ (n.d.). PowerPool - Accumulate governance power in Ethereum based Retrieved March 29, 2021, from <https://app.powerpool.finance/>

¹² (2021, January 16). Power Pool \$CVP on Twitter: "Proposal 18: Yearn Lazy Ape Index Retrieved March 29, 2021, from <https://twitter.com/powerpoolcwp/status/1350658954607509505>

Indexed Finance is only 4 months-old, while PowerPool is 8-months old. Hence, Indexed Finance is the fastest at launching products.

That said, Index Coop and PowerPool teams work with their methodologist to ensure their products are safe and consider all the associated factors and risks.

Indexed Finance may lose the speed as they launched the Sigma program. The program allows them to collaborate with external partners, which would take a longer time. For instance, DEGEN was the index fund they partnered with Redphonecrypto in late December 2020; it went live 3 months later in early March 2021.

Final Thoughts on Indices Protocol

Index Coop has the largest AUM - dominating the market. But a new opponent has risen, Indexed Finance, and they are vying for Index Coop's throne.

Two reasons on why Indexed Finance can win:

1. Indexed Finance became the third largest indices protocol within 3 months it was live on the mainnet. They grow fast.
2. Indexed Finance is more efficient at product-onboarding. They move fast.

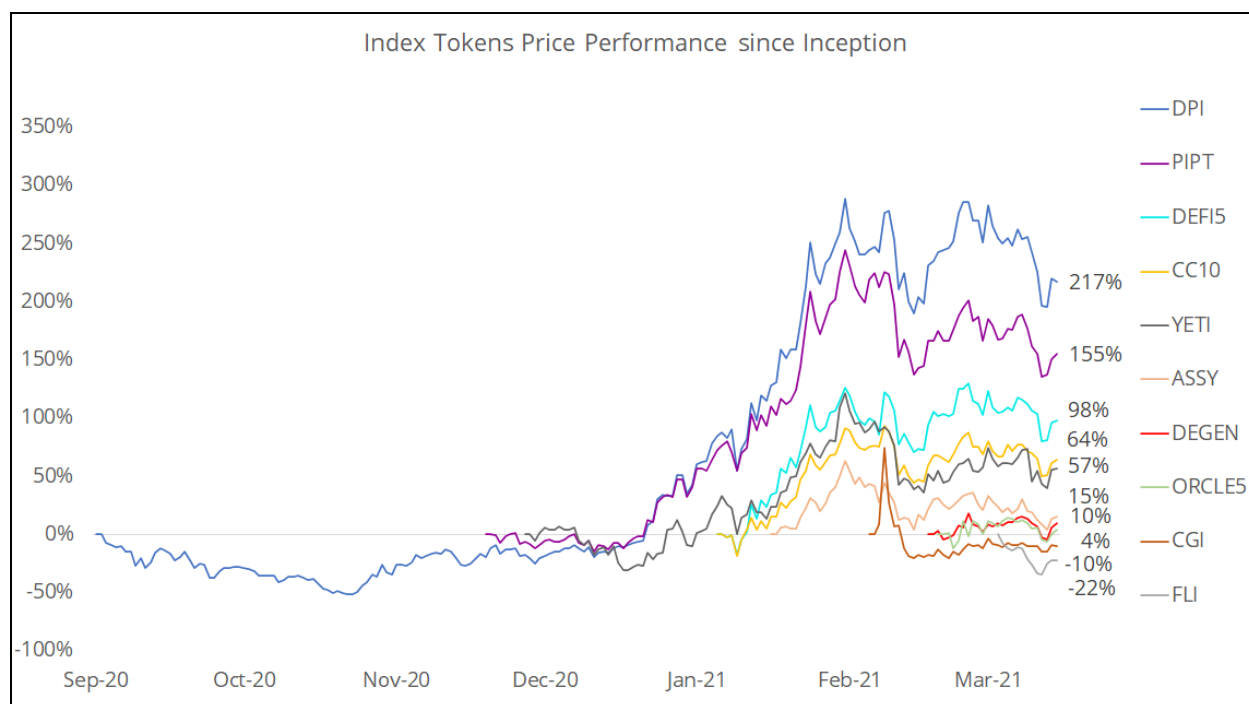
The only drawback is that protocol investors may be less attracted with Indexed Finance's lack of revenue at the moment.

Which Index Fund should you invest in?

There are a total of 7 index tokens you can look into from these three protocols.

For simplicity, we will focus on the differences between the top index fund from each protocol (DPI, DEFI5 and PIPT) in terms of fees and yield farming return.

5. Index Token Performance since Inception



Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFIS	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
Price return since inception (Date of launch)*	217.11% (Sep 2020)	-9.84% (Feb 2021)	-22.44% (Mar 2021)	97.84% (Dec 2020)	64.46% (Dec 2020)	9.86% (Mar 2021)	4.04% (Mar 2021)	N/A (Mar 2021)	155.31% (Dec 2020)	15.04% (Jan 2021)	56.56% (Dec 2020)	N/A *** (Mar 2021)
Price return YTD (28th March 2021)	243.34%	-9.84%	-22.44%	97.84%	64.46%	9.86%	4.04%	N/A	163.70%	15.04%	116.53%	N/A

(Date source: CoinGecko)

Among all index tokens, DPI outperformed the rest with a ~217% gain since it first launched and ~243% year-to-date.

**Disclaimer: The price return may have been understated as we only started to track the following index tokens a few days after they went live. DPI was launched on 10th Sep 2020, but the price was only tracked on 14th Sep 2020. Similarly, CGI went live on 11th Feb 2021 and only was tracked on 18th Feb 2021. CC10 and DEFIS were launched on 6th Dec 2020, but were tracked 18th January 2021. ORCL5 went live on 19th Feb 2021, the price was tracked on 4th Mar 2021. While DEGEN went live on 1st Mar 2021, but were tracked on 4th Mar 2021. As for PIPT, YETI and ASSY, they went live on 1st Dec 2020 and 23rd Jan 2021 respectively. However, they were tracked on 2nd Dec 2020 and 29th Jan 2021.*

6. Fund Fees

Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFI5	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
Entry fee (Mint)	-	-		-	-	-	-		0.10%	0.10%	0.10%	0.10%
Swap fee*	-	-		2.50%	2.50%	2.50%	2.50%		0.20%	0.20%	0.20%	0.20%
Asset Manager Treasury	-	-		-	-	-	-		0.10%	0.10%	0.10%	0.10%
LP return	-	-		2.50%	2.50%	2.50%	2.50%		0.10%	0.10%	0.10%	0.10%
Management Fee**	0.95%	0.60%		-	-	-	-		-	-	-	-
Asset Manager Treasury	0.65%	0.24%		-	-	-	-		-	-	-	-
Methodologist	0.30%	0.36%		-	-	-	-		-	-	-	-
Exit fees (Burn/Redeem)	-	-		-	-	0.50%	-		0.10%	0.10%	0.10%	0.10%

Source: CoinGecko, Index Cooperation, Indexed Finance, Powerpool, Tokensets. Taken as at 8th March 2021

* When the user swap one of the underlying assets from one to another.

** Annualized

As a fund investor, you should buy the index fund that is the cheapest, all else being equal.

In this case, DEFI5 is the cheapest amongst DPI and PIPT, assuming you buy it off Uniswap. This is because there is no ongoing cost, unlike DPI at 0.95%. Additionally, there is no exit or entry fees, unlike PIPT at 0.10%.

Key takeaway

As a long-term holder, fees matter.

DEFI5 will be the cheapest option to have exposure to DeFi blue chips. Arguably, DPI has the best performance to-date, despite it having the highest fee.

7. Yield Farming Opportunities

Metrics	Index Cooperative (INDEX)			Index Finance (NDX)				PowerPool Concentrated Voting Power (CVP)			
Collateral asset 1	DPI	CGI	FLI	DEFI5	CC10	ORCL5	DEGEN	PIPT	ASSY	YETI	YLA
Collateral asset 2	ETH	N/A	N/A	ETH	ETH	ETH	ETH	N/A	N/A	N/A	USDC
Rewards	INDEX	NA	NA	NDX	NDX	NDX	NDX	CVP	CVP	CVP	CVP
APY (28th March 2021)	24.5%	NA	NA	32.1%	45.6%	101.4%	53.7%	28.1%	25.0%	66.3%	159.0%

DEFI5 offers the highest APY at 32.1%, while PIPT at 298.1% and DPI the lowest at 24.5%.

For DEFI5 and DPI, the investors will first need to provide liquidity in Uniswap with ETH before they can stake at their respective protocols.

DEFI5's reward is given in NDX. Thus, the fund investors should be wary of the price volatility. For instance, NDX's price fell over 20% on 28th February 2021 as over 19,000 NDX was stolen via Furucombo, resulting in a market dump within a few hours.¹³

As for PIPT, investors only need to stake it as a single asset - where impermanent loss risk is not as prominent as DEFI5 or DPI.

P.S: Assuming you are just here for the short-term, perhaps DEGEN would be a better option, even if they are expensive due to 0.5% exit fee.

Key takeaway

Funds investors could earn passive income with all the funds, with DEFI5 providing the highest DeFi index APY at 32.1%.

8. Fund-weighting

Index Projects	Index Cooperative (INDEX)			Index Finance (NDX)					PowerPool Concentrated Voting Power (CVP)			
Index Funds	DPI	CGI	FLI	DEFI5	CC10	DEGEN	ORCL5	NFTP	PIPT	ASSY	YETI	YLA
Fund Weighting	Market Cap-Weighted	Market Cap-Weighted	Based on Current Lever Ratio	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Sqrt of Market Cap	Equal-weighted mcap	Market Cap-Weighted	Market Cap-weighted	Adaptive weights proportional to vaults TVL

1. Market-Cap weighting - DPI

It tracks each asset's market caps dynamically, where the allocation of each asset is proportional to their market capitalization relatives to the other assets in the index.

That means the index will be concentrated towards larger market capitalization relative to smaller ones; enabling the index to mimic the actual market performance closely.

2. Square root of Market Cap-weighted - DEFI5

All indices on Indexed Finance are based on the dynamic squared root of the market capitalization relative to each underlying asset.

This weighting approach would dampen the effect of market performance skewed towards larger market capitalizations, unlike the market-weight capitalization.

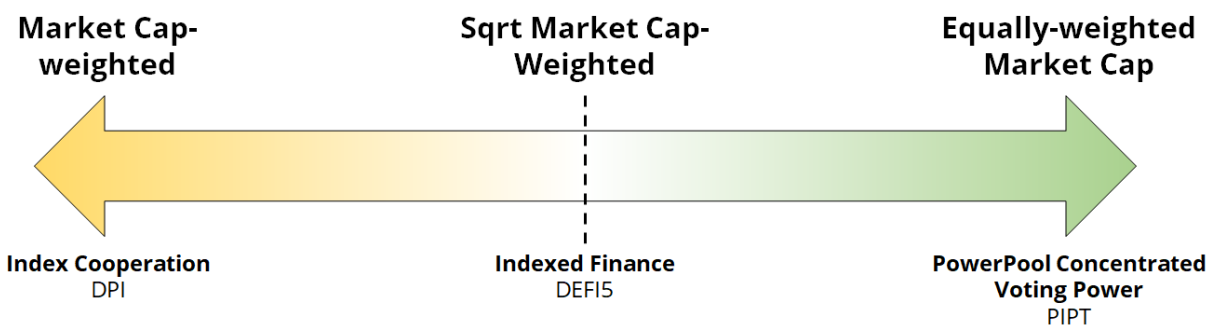
3. Equally-Weighted Market Cap - PIPT

The asset allocation is equally set. There are 8 underlying assets in PIPT. Hence each of the assets is set to 12.5% each.

¹³ "defiprime on Twitter: "🚨 Just in: Furucombo exploited 🚨 If you" 27 Feb. 2021, <https://twitter.com/defiprime/status/1365743488105467905>. Accessed 15 Mar. 2021.

An equal-weighted strategy is driven by price momentum and would favor smaller market capitalization.

They are then being placed as the same importance as the large market-caps, and it carries less risk than that of market-cap weighting.



Key takeaway

DPI utilises market cap-weighting - which is very popular even in the traditional financial market. Your portfolio will be heavily concentrated towards large-caps assets.

Whereas, square root-weighting (DEF15) and equal-weighting (PIPT) will have more weights towards the lower-caps assets.

Notable Mentions

Index Coop just released a new leverage index called Flexible Leverage Index (FLI). It basically functions similarly to a **leveraged ETF**. They are also planning to release two new index tokens - Metaverse Index (MTI) and Token Terminal Index (TTI).¹⁴

For Indexed Finance, there is a **proposal** to launch NFTI Index in a collaboration with NFTX. This index involves actual NFTs instead of NFT governance tokens.

PowerPool, on the other hand, has recently launched an index that involves Yearn's stablecoin vault called Yearn Lazy Ape (**YLA**).

Other protocols that were not mentioned:

1. Synthetix Network Token (SNX) - sDEFI (**SDEFI**) and iDeFi (**IDEFI**)
2. PieDAO - PieDAO DEFI++ (**DEFI++**)

¹⁴ (n.d.). Snapshot. Retrieved March 18, 2021, from <https://snapshot.org/>

3. Bonfida - Holy Trinity (**HOLY**) and Serum Ecosystem (**SECO**).

Associated Risks

Here are the three big risks when it comes to investing in these DeFi indices protocols and funds:

1. Code is law in this space

All the top-3 indices protocols have been audited and that should address most of the issues found on their contracts and infrastructures.^{15,16,17,18}

However, investors need to keep in mind that audited protocols are not hack-proof. Despite the audits, there have been numerous hacks happening in the cryptocurrency space, and more often than not, the funds are irrecoverable.

2. Mercenary Capital

To incentivize liquidity providers and bootstrap liquidity, most protocols launch yield-farming programs. However, much of these capitals are typically known as “mercenary capital”. They are purely searching for returns and will exit as soon as another protocol with higher yield appears.

Consequently, once yield-farming rewards dry up, it may result in mass withdrawals leading to a downward spiral for a protocol - less liquidity, less trading volume, less revenue, less demand for token, less liquidity, and so on.

This is obviously not ideal, but better designs in liquidity mining programmes can mitigate that, so you’ll have to keep an eye out. Here’s an excellent **write up by Mechanism Capital**.

3. Systemic Risk

Composability in DeFi space can be a double-edged sword where protocols can be stacked on top of each other like a money lego.

This might be problematic and the perfect example of this is Yearn Lazy APE (YLA) by PowerPool because investing in it will let you have 10 different risk exposures.

¹⁵ (2020, September 4). Set Protocol Audit – OpenZeppelin blog. Retrieved March 17, 2021, from <https://blog.openzeppelin.com/set-protocol-audit/>

¹⁶ (n.d.). Security Audits - Power Pool. Retrieved March 17, 2021, from <https://docs.powerpool.finance/security/security-audits>

¹⁷ (n.d.). monoceros-alpha/audit-indexed-finance-2020-10 - GitHub. Retrieved March 17, 2021, from <https://github.com/monoceros-alpha/audit-indexed-finance-2020-10>

¹⁸ (n.d.). maxsam4/indexed-finance-review - GitHub. Retrieved March 17, 2021, from <https://github.com/maxsam4/indexed-finance-review>

Allow me to illustrate.

Yearn Lazy Ape (YLA) has exposure to five different Yearn's vaults.

<ol style="list-style-type: none"> 1. yvCurve-Compound (8.6%) <ol style="list-style-type: none"> a. cDAI b. cUSDC 2. yvCurve-3pool (36.0%) <ol style="list-style-type: none"> a. DAI b. USDT c. USDC 3. yCurve-GUSD (17.3%) <ol style="list-style-type: none"> a. GUSD b. DAI c. USDT d. USDC 	<ol style="list-style-type: none"> 4. yUSD (27.0%) <ol style="list-style-type: none"> a. yDAI b. yUSDC c. yUSDT d. yTUSD 5. yvCurve-BUSD (11.1%) <ol style="list-style-type: none"> a. yBUSD b. yDAI c. yUSDC d. yUSDT
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Essentially, YLA interacts with 10 different protocols that are layered on top of each other. YLA token holders will thus be exposed to 10 different risks. The protocols that are involved in Yearn's vaults are:

Protocol Risks	Stablecoin Risks
<ol style="list-style-type: none"> 1. PowerPool 2. Yearn Finance 3. Curve 4. Compound 	<ol style="list-style-type: none"> 5. DAI 6. USDC 7. USDT 8. BUSD 9. GUSD 10. BUSD

If one of the underlying assets are compromised, YLA holders may experience massive loss. This is similar to systemic risks that caused the Global Financial Crisis (GFC) in 2008 when the Collateralized Debt Obligation (CDO) market collapsed.

Conclusion

1) The index sector is still small (0.6% of DeFi TVL)

We are still very early in the indices market, accounting for only \$204 million in AUM. This makes up 0.5% of the DeFi TVL and only 0.013% of the global cryptocurrency market capitalization. It is not crazy to think that this figure will increase to billions of dollars in AUM in the upcoming years.

Additionally, most Ethereum dApps are becoming cross-chains, such as SUSHI, COMP, YFI, 1INCH, and CRV. This will open up more capital inflow to indices that have these underlying assets and accrue more value for the indices protocol.

2) NDX is threatening INDEX's dominant position

Index Coop is currently the largest indices protocol as it commands 60% of market share.

However, Indexed Finance, which launched just 4 months ago has seen fast growth and is currently the third-largest indices protocol.

Indexed Finance has the fastest growing AUM to-date and it has on-boarded 5 indices on its platform.

3) DEFI5 is the cheapest option to get DeFi exposure on your portfolio

DEFI5 saw its index increase 98% year-to-date. Although twice lower than that of DPI's growth, index investors would not be charged any fees, including management fee.

Moreover, the investors could earn passive income by participating in its yield farming program to earn up to 32.5% APY.

DEFI5 square-root market capitalization weighting strategy is also able to withstand the volatility of the crypto market and dampen the effect when the market goes down.

Source

<https://www.coingecko.com/en/categories/index-coin>
<https://www.coingecko.com/en/categories/defi-index>
<https://duneanalytics.com/0xBoxer/indices-products>
<https://www.indexcoop.com/>
<https://snapshot.org/#/index>
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<https://powerpool.finance/>
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<https://www.msci.com/documents/10199/cb704602-b417-4077-a277-c170501a70d7>
<https://blog.shrimpy.io/blog/cryptocurrency-index-funds-step-by-step-guide>

Appendix

1. Index Cooperative (INDEX)

There are two indices available under Index Coop:

I. DeFiPulse Index

- | | |
|--------------------|---------------|
| a. Uniswap (34.8%) | g. YFI (4.7%) |
| b. AAVE (17.8%) | h. REN (3.7%) |
| c. SNX (9.9%) | i. LRC (2.6%) |
| d. SUSHI (7.7%) | j. BAL (2.3%) |
| e. MKR (7.7%) | k. KNC (2.2%) |
| f. COMP (6.5%) | l. MTA (0.2%) |

II. ETH 2x Flexible Leverage Index (FLI)

- a. cETH (205.7%)
- b. cUSDC (-105.7%)

III. CoinShares Crypto Gold Index

- a. WGLD (44.2%)
- b. WBTC (32.6%)
- c. WETH (23.2%)

2. Indexed Finance (NDX)

There are currently four pools available under Indexed Finance:

I. DEGEN Index (DEGEN)

- | | |
|---------------------------------|--------------------------------------|
| a. Thorchain (RUNE) (15.4%) | f. Ocean (9.8%) |
| b. REN (REN) (13.1%) | g. Alpha Finance (ALPHA) (8%) |
| c. Reserve Rights (RSR) (12.6%) | h. Badger (BADGER) (7.5%) |
| d. Curve (CRV) (9.8%) | i. Polkastarter (POLS) (6.5%) |
| e. 1Inch (10%) | j. Wrapped Mirror Token (MIR) (7.3%) |

II. Cryptocurrency Top 10 Tokens Index (CC10)

- | | |
|---------------------------------------|---------------------------------|
| a. Uniswap (UNI) (23.2%) | f. Curve Dao Token (CRV) (8.1%) |
| b. Chainlink (LINK) (22.2%) | g. Yearn.Finance (YFI) (4.6%) |
| c. Aave (AAVE) (9.9%) | h. UMA (UMA) (6.5%) |
| d. Synthetix Network Token (SNX) (9%) | i. Maker (MKR) (6.9%) |
| e. Compound (COMP) (8.3%) | j. OMG Network (OMG) (2.2%) |

III. Oracle Top 5 Index (ORCL5)

- | | |
|-----------------------------|-----------------|
| a. Chainlink (LINK) (48.2%) | d. BAND (10.5%) |
| b. ORAI (22.2%) | e. DIA (6%) |
| c. UMA (13%) | |

IV. NFT Platform Index (NFTP)

- | | |
|--------------------------------|--------------------------------|
| a. Enjin (ENJ) (23.1%) | f. Axie Infinity (AXIS) (7.4%) |
| b. Decentraland (MANA) (17.1%) | g. EthernityChain (ERN) (7.4%) |
| c. SAND (SAND) (10.4%) | h. Gala (GALA) (7.1%) |
| d. AUDIUS (AUDIO) (9.4%) | i. Rarible (RARI) (4.8%) |
| e. SuperFarm (SUPER) (0.5%) | j. NFTX (NFTX) (4.5%) |

V. DEFI Top 5 Tokens Index (DEFI5)

- | | |
|--|----------------------------------|
| a. Uniswap (UNI) (39.6%) | e. Curve Dao Token (CRV) (13.9%) |
| b. Aave (AAVE) (17%) | |
| c. Compound (COMP) (14.3%) | |
| d. Synthetix Network Token (SNX) (15.3%) | |

3. PowerPool Concentrated Voting Power (CVP)

There are two indices available under PowerPool:

I. Power Index Pool Token (PIPT)

- | | |
|-----------------|-----------------|
| a. AAVE (12.5%) | d. CVP (12.5%) |
| b. YFI (12.5%) | e. COMP (12.5%) |
| c. SNX (12.5%) | f. WNXM (12.5%) |

g. MKR (12.5%)

h. UNI (12.5%)

II. Yearn Ecosystem Token Index (YETI)

a. YFI (38.1%)

b. SUSHI (18.5%)

c. CREAM (8.7%)

d. AKRO (8.7%)

e. PICKLE (8.7%)

f. KP3R (8.7%)

g. CVP (8.7%)

III. ASSY Index (ASSY)

a. Aave (41.9%)

b. SNX (24.6%)

c. SUSHI (21.8%)

d. YFI (11.7%)

IV. Yearn Lazy Ape (YLA)

a. yvCurve-3Pool (36.0%)

b. yUSD (27%)

c. yCurve-GUSD (17.3%)

d. yvCurve-BUSD (11.1%)

e. yvCurve-Compound
(8.6%)

Note: Constituent weights for each index pool taken on 28th March 2021.