

AXIS

The Future of Open Finance: Lightspeed DeFi Dedicated Interoperable Superchain

Litepaper



AXIS

Draft for open community review. Subject to change.

"There is a quiet revolution going on and it is shaping the way we will work, invest, save and borrow – DeFi".

- Forex Trading

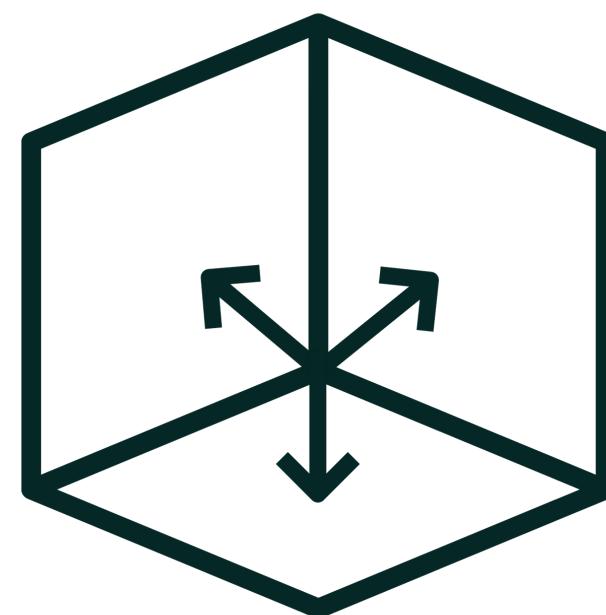


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Overview

The mission of AXIS is to bring the rest of the cryptocurrency world to DeFi by building the first interoperable superchain with native, margin enabled, customizable synthetic DeFi assets with built-in risk mitigation. Simply put, a dedicated DeFi protocol with complete Wall Street functionality. With a two-level staking schema to provide flexibility for various risk preferences, up to 16x for highest trade profit level and a customizable risk profile, AXIS is the future of open finance.

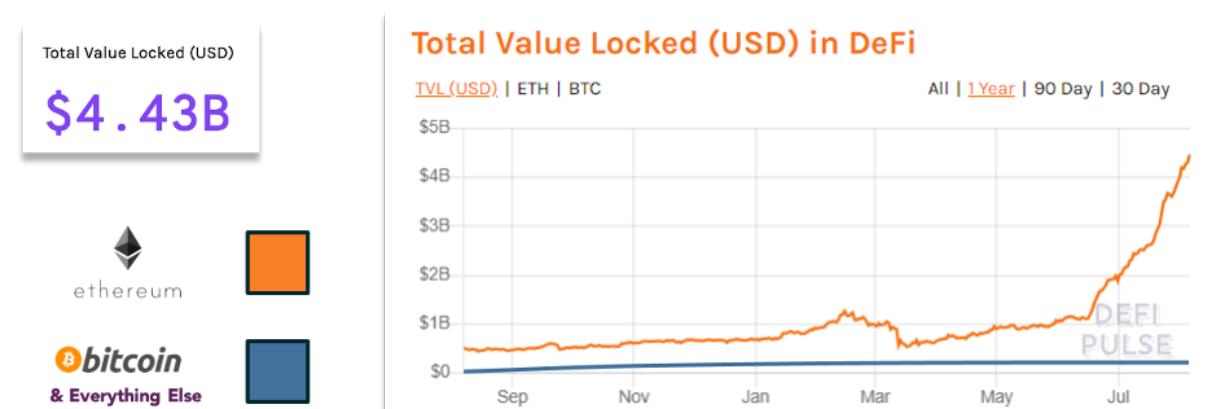


Understanding DeFi & Problems Facing the Market

In simple terms, DeFi is a decentralized financial infrastructure built on a blockchain network.

DeFi's main cryptocurrency staking has been dominated by Ethereum, which are controlled by a network of computers, rather than centralized financial institutions. DeFi is set to take over the financial services industry, primarily because of its global accessibility; no one can be denied service. They operate an open and decentralized marketplace; there are no third parties to oversee and implement withdrawal fees, identify verification, or sign ups. Moreover, DeFi does not issue credit checks.

Synthetic assets are currently being traded on DeFi platforms. Synthetic assets require no capital to buy the underlying asset therefore they are less risky and diversify a portfolio. There are four main categories of synthetic assets – fiat currencies, commodities, cryptocurrencies, and inverse cryptocurrencies. The current global crypto market is valued at \$210 Billion, while the estimated global crypto derivative market is expected to rise up to \$1.2 Trillion.



As of August 5th, 2020, the total value locked (USD) in DeFi hit an all-time high of \$4.43B. The decentralized lending platform MakerDAO dominates the market at over 50% and the synthetic asset issuance platform, Synthetix, became the second largest platform months after launch. Ethereum (ETH) and all ERC-20 tokens combined are only ~18% (\$56B) of the total cryptocurrency market, yet, ETH makes up 99%+ of the DeFi space.

With these projects dominating the market, DeFi is experiencing many limitations.

1. Ethereum-based DeFi architecture issues and minimal interoperability

- a. Scalability: Currently 12-15 trx/s. Ethereum 2.0 still caps at a few hundred trx/s.
- b. Lack of dedicated DeFi chain: High transaction costs and governance issues.
- c. Missing 82% of the cryptocurrency market: Current ETH-based DeFi architecture is not interoperable with non-ETH protocols.

2. Missing on-chain margin trading capability

- a. Lack of on-chain margin trading, stop loss, and grace period: Currently relies on exchange infrastructure that's mostly centralized or too slow.
- b. Extreme crypto price volatility leads to collateral pool collapse: This leads to over-collateralization for liquidity providers which still doesn't protect users from pools collapsing.

3. Lack of protection mechanism from market meltdown or Collateral Pool Collapse

- a. On March 12, 2020 there was a major collapse in the DeFi space.
 - i. The Maker protocol works by creating DAI loans when users load ETH or Basic Attention Token (BAT) into the system as collateral. Maker then automatically sells that collateral when the market tanks in order to get DAI off the market until the system hits its 150% collateral target. But the price dropped too sharply for MakerDAO's automated auctions to keep up.
- a. Source:
<https://ca.finance.yahoo.com/news/defi-leader-makerdao-weighs-emergency-184052140.html>

3rd Generation of DeFi

Gen 1: Deltas & DEXs

Year: 2016

Overview: EtherDelta pioneered the beginning of Decentralized exchanges. Could swap any ERC-20 token with another

Key Players:



Challenges: Outdated Orderbook infrastructure, regulatory issues, significant speed lags.

Gen 2: Current Synthetic Issuance & Swaps

Year: 2018

Overview: Synthetics created using no middleman and counterparty risk and lending being done by community.

Key Players:



Challenges: However, March 2020 crash saw holes in the non-interoperability and high reliance solely on ETH with no failsafe in place.

Gen 3: Interoperable, Full Functionality DeFi

Year: 2020

Overview: Bringing sophisticated trading to DeFi with Wall Street standards without sacrificing the DeFi ethos. Embedded meltdown, margin call mechanism – native DCP, BCVM, risk mitigation, and more.

Key Players:



Core Components & Products

With native, margin enabled, customizable synthetic DeFi assets with built-risk mitigation, AXIS is the future of open finance.

Core Components of AXIS:

AXIS DeFi Superchain provides the distributed ledger service, which has native AXIS coin as utility tokens to carry all functionality, a native DeFi protocol implementation by-side the blockchain kernel to provide the core DeFi service, DeFi contract virtual machine to extend DeFi with interoperability to 3rd generation chain. Superchain using DPOs consensus which also provide staking gain for validators.

DEMS (Decentralized Execution Management System) is the core “trade engine” between traders to its counter-party (the DACP). As it directly executes the order with a decentralized counter-party, no book exists; the quote comes from external data sources (Oracles).

DACP (Decentralized Adaptive Counter Party Pool) is the critical component around the native DeFi protocol. DACP acts as the “central counter-party” for all traders to buy or sell from. The fund pool raised by liquidity provider’s staking. For every DEMS order execution, DACP provide account service include fund checking, margin confirm, and adaptive rate updating to final asset clearing.

Liquidity Provider is the gathering point for all funds coming into DACP. Investors staking the AXIS utility token receive the benefits of transaction fee dividends, etc. When LP stakes AXIS, it forges dGld (decentralized gold used as base currency in AXIS system). When LP withdraws, it destroys dGld if LP has no debts. When LP takes benefits from DACP, it also has the liability to maintain its margin rate.

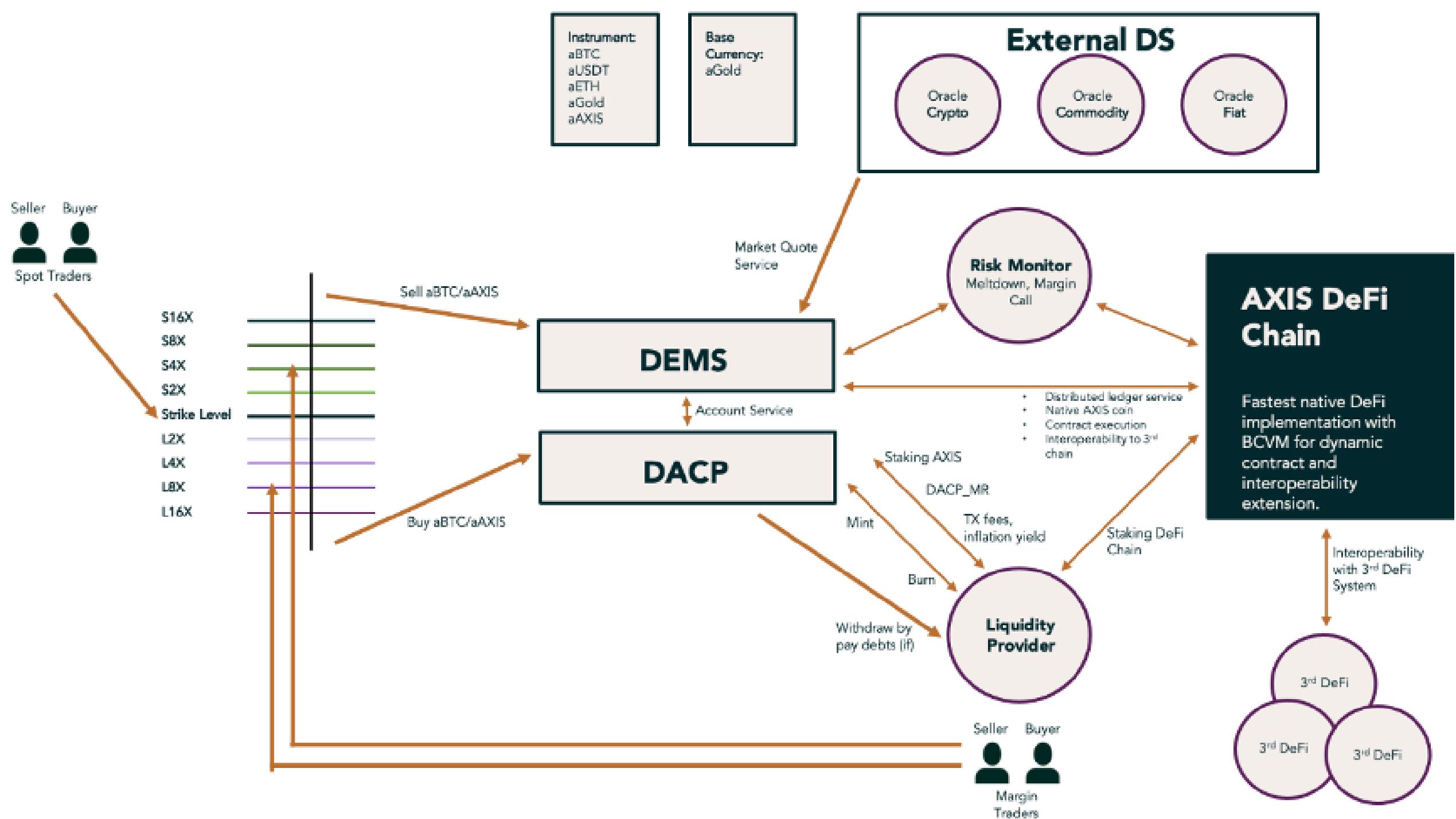
DRM (Decentralized Risk Monitor) is the risk control center inside the AXIS system. It updates the margin rate for all market participants including DACP, LP and all traders. DRM also has a built-in mechanism which will hang up the AXIS system for a certain period (15mins) when DACP_AR is below some level (100%), market meltdown.

External Oracle couples the external asset quote into the AXIS system. DEMS uses these quotes with adaptive algorithm’s to adjustment as the asset price for execution.

Delivering True 3rd Generation DeFi

- Use DeFi gold as base currency instead of USD; promote DeFi above single jurisdiction.
- Multi-asset integration as simple as plug & play.
- Make it possible to construct complex DeFi derivatives with extraordinary blockchain power.
- Individual customization risk control can enhance capital security.
- Enhanced on-chain security - in our design we have risk monitor - a mechanism for meltdown (ex. >30% in 2 minutes) - First to DeFi - to halt the market like NYSE to enable more secure trading.
- Individual margin call if you use leverage. DCP margin rate, if falls below %, triggers or locks account access, margin rate (750%), and protects capital.

Technical Architecture



A simple scenario.

- Let's create a simple scenario walkthrough of all components and roles in AXIS Defi system.
- Starting from LP, when LP staker injects AXIS into the liquidity contract, e.g. 20000 AXIS at market price 1\$ each, DACP margin rate is 200%, \$10,000 value of vGld (let's assume vGld is just vUSD for now), will mint into DACP (=20000 AXIS * \$1 /200%). If that moment totals 2M AXIS in LP, this account will get 1% (=20k/2m) transaction fee redistribution weekly plus staking yield gain, 0.054% daily (= 20% yield gain / 365 for first year). 20,000 AXIS tokens are stake locked into the liquidity pool. When a trader sends an order to buy 1 vBTC/vGld, if Oracle quote price for vBTC/vGld is \$10,000/btc, DEMS will instruct DACP credit buyer's account with 1vBTC and destroy 10,000vGld.
- If Oracle quote price for vBTC/vGld changes to \$10,100/BTC and the same trader sells 1vBTC to vGld, DEMS will instruct DACP credit traders account with 10,100 vGld and destroy 1vBTC.

- Of course, multiple trading activities will happen during the whole day, but we are just simplifying the scenario here.
- By end of the day, the trader has 50 vGld (= 100vGld - 0.5% as tx fees) P&L, LP total net assets book now is 10,100 vGld. 10,050 vGld belong to the trader and total minted vGld is still 10,000vGld, and 50vGld is waiting to distribute to staker. the DACP's margin rate changed to $20,000/10,050 = 199\%$.
- If DACP's margin rate is 200% and maintenance margin call is 180%, the staker account is qualified to generate tx fees and yield gain. But if DACP's margin rate is below 180%, margin call will trigger, staker will need to add more funds into LP and privilege will be revoked from capital gain. In a pretty well-balanced market, asset price is up and down and LP margin rate is volatile in certain range, the whole system just keeps moving.
- In a biased market , e.g. all buyers no sellers, the adaptive mechanism will be triggered by trailing B/S ratio, if the ratio diversity is above 50% in an

Technical Architecture

hourly average, adaptive will increase DEMS price from oracle quote price + or - 50 base point to create a spread for arbitrage trader to provide more liquidity to balance LP's exposure. The spread will be covered by both bias side and commission fee weaving. With this adaptive mechanism, LP's P&L will maintain its stability (less risk).

Quantitative explanation of internal mechanism

After this simple user case, let's go deeper into the AXIS system's internal protocol.

DACP margin rate

DACP margin rate is one of the core parameters inside the AXIS system. When LP is not within the diversity range (usually 20%) of this margin rate, staking accounts will either (above) generate dividend and yield gain or (below) margin call will be triggered and hang up from activities.

$$MRDACP = Vstaking / TADACP$$

MRdACP, the DACP margin rate.

Vstaking, the total staked asset in LP.

TADACP, the total asset value in DACP.

vGld mint

When staker injects AXIS utility token into LP, based on DACP margin rate, certain amount of vGld will be minted.

$$Vmint = Vstaking / MRdACP.maintenance$$

MRdACP.maintenance DACP's maintenance margin rate. (eg. 200% for now)

vAsset swap

When vAsset swaps from A to B, and the price for A/B is X, in DACP, Va will be destroyed, and Vb = Va / X will be credited.

DACP total asset

DACP is the pool with all assets with all minted vGld as collaterals.

$$TADACP = \sum_{i=1}^N V_i * P_i - \sum_{k=1}^M T_k$$

TADACP Total assets inside the DACP.

N Number of assets.

V_i Volume of asset i.

P_i price of asset i vs vGld.

M Total un-distributed transaction fees.

T_k Fee of transaction k.

DACP dynamic margin rate

$$MRDACP = Vstaking / \left(\sum_{i=1}^N V_i * P_i \right)$$

Formula (1)

So far, we assume Vstaking is a constant variable. In real situations, the AXIS price won't be stable.

Since, Vstaking=Qaxis*Paxis

$$Then MRDACP = Qaxis * Paxis / \left(\sum_{i=1}^N V_i * P_i \right)$$

*Pik=1MTk)

Formula (2)

Major factor in DACP dynamic margin rate

Now let's try to figure out how the DACP margin rate changes.

$$\frac{d(MRDACP)}{dPaxis} = \frac{d(Qaxis * Paxis / \left(\sum_{i=1}^N V_i * P_i \right))}{dPaxis} = \frac{Qaxis}{\left(\sum_{i=1}^N V_i * \frac{dP_i}{dPaxis} \right)}$$

Conclusion:

From formula 3, we see DACP dynamic margin rate change rate depends on liquidity pools' multiple asset's price change rate. The major factor is the ratio of all asset price change rate vs AXIS price change rate.

Technical Architecture

DACP risk exposure

Before we can measure DACP's risk exposure, we have to realize that the total minted vGld is from a dynamic process. When new staking is injected into DACP, it is minted based on TTM (to the moment) margin maintenance rate.

Hence, total vGld on DACP's asset book is:

$$V_{vGld} = \sum_{i=1}^M S_i * M R_i$$

- S_i the volume of single time staking.
M total times of staking.
MR_i TTM DACP margin maintenance rate.

On the other side, the total assets backed by DACP is:

$$S_{assets} = \sum_{i=1}^N V_i * P_i$$

Then DACP's Net asset value is:

$$NV = V_{vGld} - S_{assets} - \sum_{j=1}^{LT} T_j - \sum_{k=1}^N V_k * P_k$$

T_{all} all transaction fees.

In extreme situations, if this net value is negative, it means LP owns debts from DACP. AXIS system will tolerate a certain range for these debts (20%), but if debts break this range's button, staking participants will get a margin call.

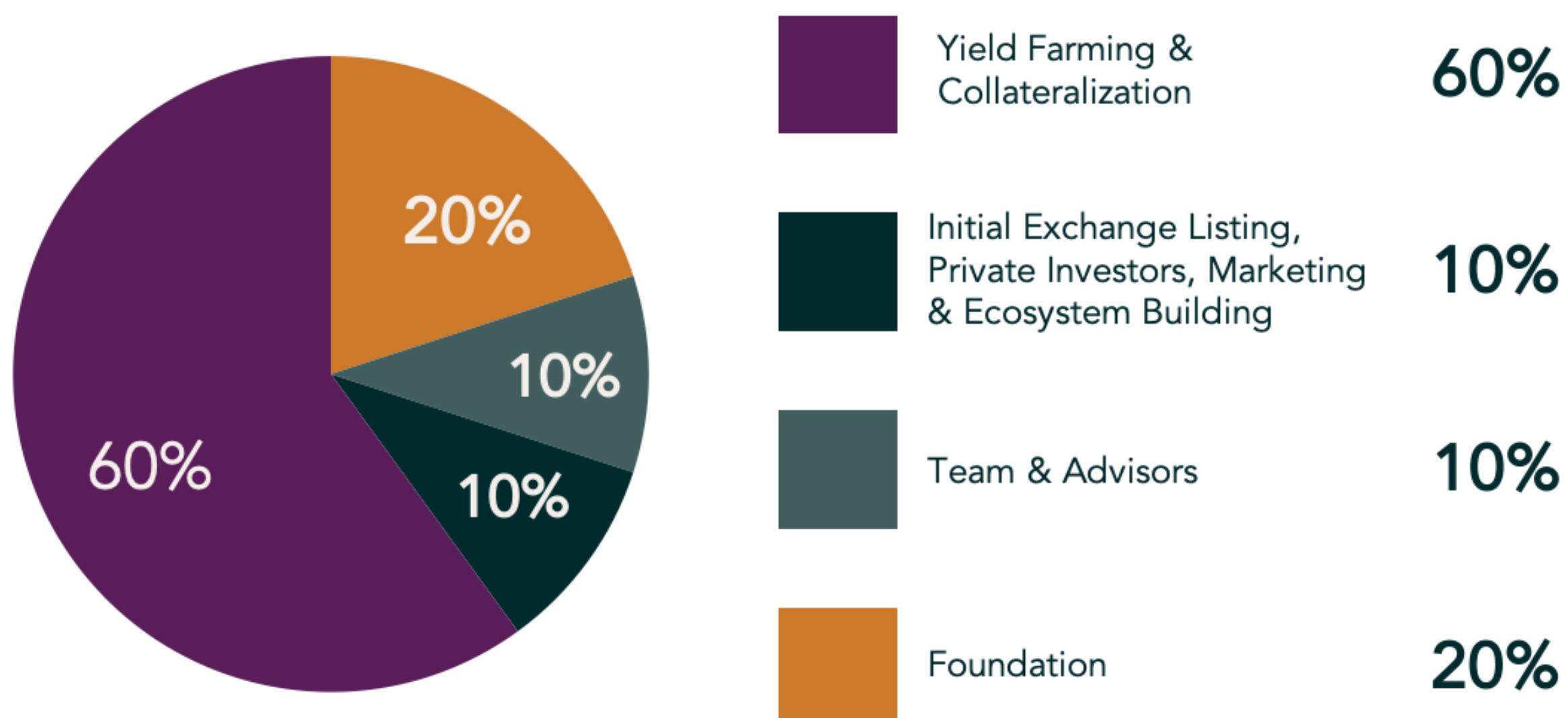
Terms:

- DEMS: Decentralized Execution Management System
DACP: Decentralized Adaptive Counter Party Pool
DACP_MR: Decentralized Adaptive Counter Party
Pool Margin Rate
DACP_AR: Decentralized Adaptive Counter Party
Pool Adaptive Rate
LP: Liquidity Provider
dGld: Decentralized Gold Measuring All Assets Inside the AXIS System
dFund: Decentralized Fund
dCrypto: Decentralized Finance Crypto

AXIS Token Economics

AXIS Token Launch: 24 Million AXIS Token

Token Distribution



Initial Exchange Listing, Private Investors, Marketing & Ecosystem Building

- Percentage: 10
- Marketing & Ecosystem Building: No lockup
- Private Sale: 6 months linear vesting

Team & Advisors

- Percentage: 10
- Lockup Period: Linear vesting over 24 months

Foundation

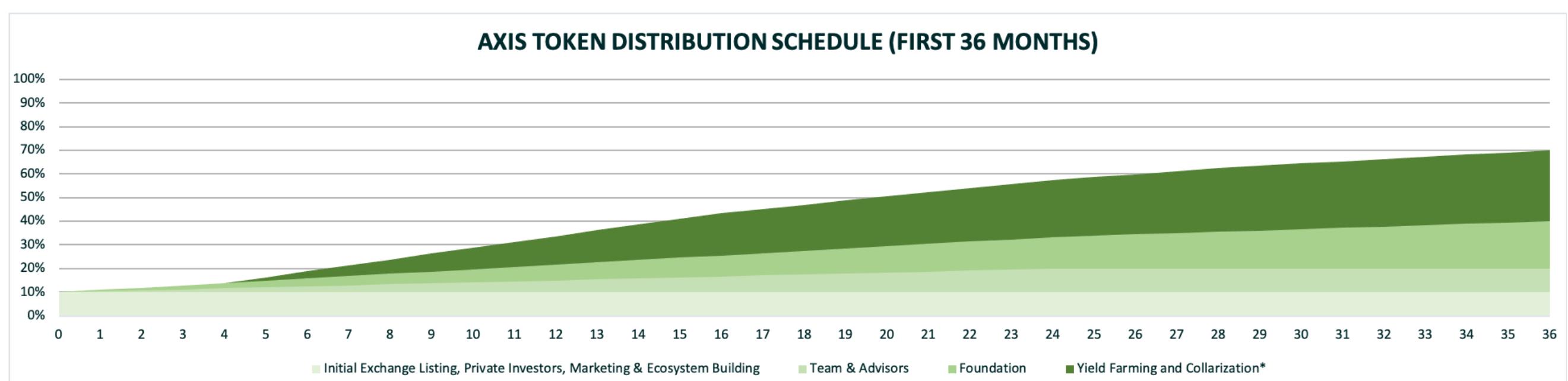
- Percentage: 20
- Lockup Period: Linear vesting over 36 months

Yield Farming & Collateralization

- Percentage: 60
- Lockup Period: First year = 30% of pool and it starts halving every year

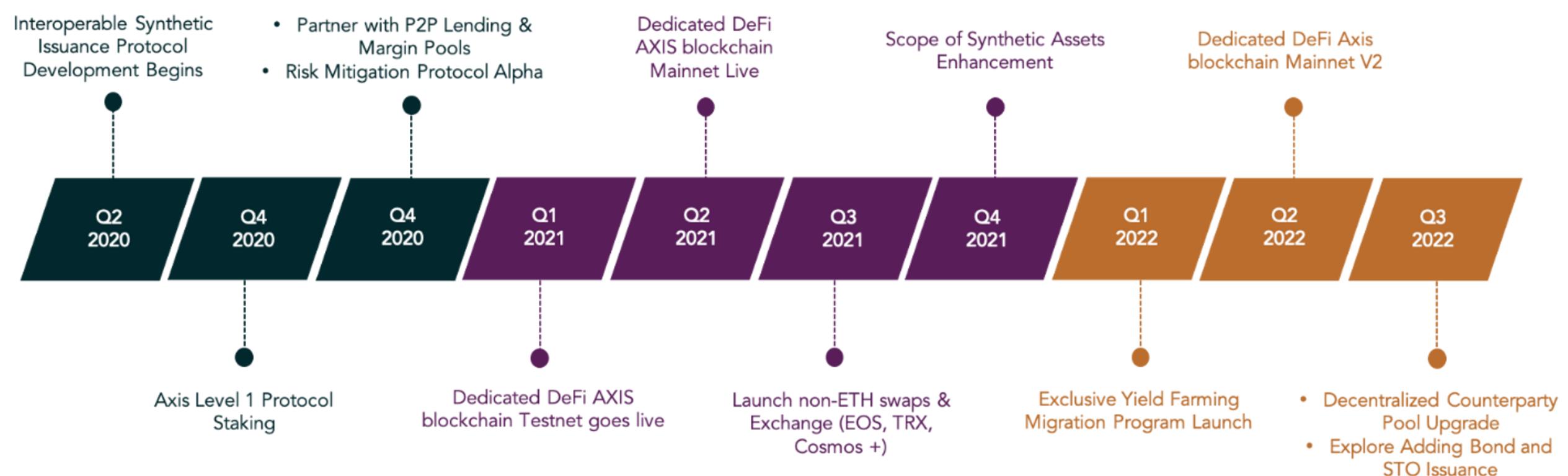
$$POY_N = 60\% * \frac{30\%}{2^N}$$

POY: yield farming potion of year N
N, number of year, $N \in [0, \infty)$



Future Milestones

AXIS Roadmap



Competitors

Firstly, we must emphasize that currently we are unaware of any truly dedicated or interoperable DeFi focused chains. Therefore, we see AXIS as a new market and industry catalyst. However, we carefully analyzed the main competitors of AXIS that are mostly ERC-20 based, and the results are detailed as follows:

1. MakerDAO (61.18% dominance)

- a. MakerDAO, a stablecoin project, is the TOP 1 DeFi in this area, dominating about 61.18% of the Total Value Locked on Ethereum-based DeFi.
- b. MakerDAO is characterized by the governance token MKR and the USD-pegged stable currency DAI/SAI, which is generated in the collateralization of about 400%.
- c. Both SCD (Single-Collateral Dai, SAI) and MCD (Multi-Collateral Dai, DAI) are activated, supporting ETH (2.4M ETH locked) and BAT as the collateral assets for now.
- d. Main products of MakerDAO include Oasis (platform to trade, borrow, and save using DAI), Migrate (platform for system updates) and the community for governance and ecosystem building.
- e. With the launch of Multi-Collateral DAI (MCD), MakerDAO reaches the historical milestone, the stablecoin DAI has been the most popular stablecoin in the DeFi world, boosting the long-term growth potentials with the dominance of over 60%.

2. Compound (12.9% dominance)

- a. Compound, the second best DeFi on Ethereum, is an algorithmic, autonomous interest rate protocol — allowing users & applications to earn interest or borrow Ethereum assets from the market.

- b. Compound is characterized by the “liquidity pool” that users interact with the market (borrow or lend assets) instead of borrowing/lending directly.
- c. Compound supports seven kinds of assets including BAT, DAI/SAI, ETH, REP, USDC, WBTC and ZRX with a dynamic collateral factor (less than 100%).
- d. The main interfaces of Compound include Compound Interface, Coinbase Wallet, Huobi Wallet, Dharma and Zerion, etc.

3. Synthetix (12.8% dominance)

- a. Synthetix is a platform for the issuance, management and trading of synthetic assets.
- b. Synthetix is characterized by the rich and complicated synthetic assets, providing infinite assets for trading.
- c. SNX is the only collateral asset with a high collateralization ratio of over 750%.
- d. The main products of Synthetix include Synthetix Exchange (markets for trading), Mintr (tool for asset issuance and management), Dashboard (tool for public info).

4. Harbor

- a. Harbor is a ST issuance platform for alternative assets, which is built for issuers, investors and placement agents of alternative assets in a compliant means.
- b. Harbor's FINRA-registered broker-dealer and SEC-registered transfer agent subsidiaries offer complementary services for issuers and broker-dealers.
- c. Harbor is characterized by the “STO under regulation”, allowing the end users to issue and trade the dividends of assets.

Competitors

5. Binance Staking

- a. Based on the global top-tier exchange Binance, sharing Binance's world-leading ecosystem, brand, user base and compliance, etc.
- b. Centralized and able to provide users the best and simplest way to stake and trade crypto assets. Users can earn rewards for supported chains by simply holding coins in their Binance account.
- c. The interface of Binance staking is integrated into the Binance exchange, providing the most convenient entrance for users.

	MakerDAO	Compound	Synthetix	Harbor	KAVA	Binance Staking	AXIS
Native Token	MKR/DAI/SAI		SNX		KAVA	BNB	AXIS
Decentralized	✓	✓	✓		✓		✓
Interoperability				✓	✓	✓	✓
Collateral-based Asset Issuance	✓		✓	✓			✓
Asset Trading	✓	✓	✓	✓		✓	✓
Real Asset Tokenization				✓			✓
Staking as Service						✓	✓
Borrowing/ Lending	✓	✓			✓	✓	✓
Product/Mainnet Alive	✓	✓	✓		✓	✓	
Listed on Exchanges	✓		✓		✓	✓	

Conclusion

Decentralized Finance may prove to be one of the greatest spinoffs from blockchain technology to date. The cryptocurrency industry continues to rise and DeFi has quickly emerged as the new frontier for finance and technology, however, the industry, like many others, has experienced growing pains and has some major underlying issues. When it comes to investing, you put your trust in financial advisors to advise you on schemes, mutual funds, and share market in exchange for a cut in your return. The return here is more but it's risky as the advisors can also make mistakes or fail to see market risk. So, you receive just a fraction of the money from the investment.

In the case of the share market, how many of us directly hold shares of companies?

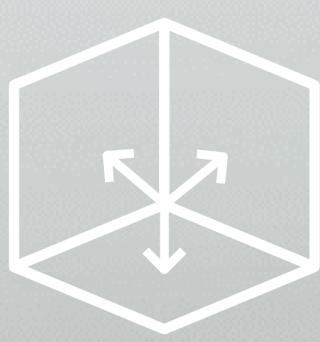
Though compared to 2017, now middle-class people own much more stock but it's still widely disparate to what the rich hold. NYU economist Edward Wolff's research showcases that the top 1% of households by wealth owned nearly 38% of all stocks shares. While the top 10% of Americans have investments in stocks over \$1,000,000, the next 40% have an average of \$100,000, with most of the rest having none. There are people in countries where they don't even have access to the stock market.

Also, we have very little to no say in where our money gets invested and how it is handled by these corporations – meaning there's a lack of transparency present.

All the issues arise because of the centralization of the finance that underpins the global economy, but it is definitely not an open system. (Source: <https://blockgeeks.com/guides/demystifying-defi-ultimate-guide/>)

The solution is for decentralization.

AXIS will bring the world of DeFi into its next generation. With native, margin enabled, customizable synthetic DeFi assets with built-risk mitigation. The promise of DeFi is strong, yet with the feature-rich on-chain promise of AXIS, a catalyst for the future of DeFi is upon us. AXIS is the future of finance.



AXIS

The Future of Finance: Lightspeed DeFi Dedicated Interoperable Superchain

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